The Dynamics of Political Embeddedness in China:

The Case of Publicly Listed Firms

Heather A. Haveman
Department of Sociology and Haas School of Business
University of California, Berkeley
410 Barrows Hall, Berkeley, CA 94720-1980
haveman@berkeley.edu   510-642-3495

Nan Jia
Department of Management and Organization
Marshall School of Business
University of Southern California
HOH 518, 701 Exposition Blvd., Los Angeles, CA, USA 90089
nan.jia@marshall.usc.edu   213-740-1045

Jing Shi
School of Finance, Actuarial Studies and Applied Statistics
Faculty of Economics and Commerce
Australian National University
College of Business and Economics Building 26C, Canberra ACT 0200, Australia
jing.shi@anu.edu.au   (+61) 2 612 54864

Yongxiang Wang
Department of Finance and Business Economics
Marshall School of Business
University of Southern California
HOH 520, 701 Exposition Blvd., Los Angeles, CA, USA 90089
yongxiaw@marshall.usc.edu   213-740-7650

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Abstract

Markets developed rapidly in China during the reform era, opening many new opportunities for business, increasing competition, and heightening uncertainty. But because the political system remained autocratic, state officials retained considerable power over the economy through their control over resources such as land and capital. Moreover, decentralization gave local officials substantial authority over local businesses. We argue that in this context, politically embedded firms (*i.e.*, those with ties to state authorities) bore lower regulatory burdens and had easier access to state-controlled resources; therefore they faced less uncertainty, could more easily take advantage of new business opportunities, and performed better than politically unembedded firms. Political embeddedness was especially important in more competitive markets because there was more uncertainty and more at stake there, and for smaller firms because they were not well-positioned to handle increased competition or gain access to state-controlled resources. We investigate two mechanisms by which political embeddedness affected firm performance in this context: by facilitating access to bank loans and by protecting firms from pressure to make loans to other firms in their business groups. Analysis of panel data from 1992 to 2007 on firms listed on the domestic stock exchanges supports our arguments about overall firm performance and both mechanisms. In combination, these results suggest that connections between economic and state actors have highly contingent effects – strong in some contexts, for some firms – and that they operate through flows of funds into and out of firms.

In China after 1978, markets developed rapidly. Transactions for producer goods at market prices (rather than through state mandate) rose from 0% of the total in 1978 to 87% in 2003; for farm commodities, they rose from 6% to 97%; and for retail purchases, they rose from 3% to 96% (Dougherty, Herd, and He 2007). The portion of the labor force working in non-state-owned enterprises rose from 2% in 1992 to over 40% in 2007; in the same period, the portion of capital (fixed-asset) investments in non-state-owned enterprises increased from 16% to 68% (*China Statistical Yearbook* various years).[1] In contrast, China's political institutions changed little. The Chinese Communist Party retains absolute control over electoral politics, except village elections; but even there, Party members dominate many villages' elected councils (Oi and Rozelle 2000; Lu 2012). As a result, China's political regime has been persistently and firmly authoritarian: its Polity IV rating has remained -7 since 1976, indicating strong autocracy.[2]

The combination of economic reform and political autocracy has given Chinese political institutions considerable power over the economy (Walder 1995; Wank 1999, 2002; Y. Lin 2001; Yang 2005; Tsai 2007; Yang 2007). Most basically, because ownership and control of many productive enterprises have not been transferred to the private sector, state bureaucrats still direct a large share of the economy. Beyond this, state bureaucrats still control access to many key resources, notably land (mostly owned by local state authorities), capital (most banks in China are state-owned and all are tightly regulated), and government contracts (Y. Lin 2001; Bai, Lu, and Tao 2006; Hsing 2006; Shih 2008; Nee and Opper 2010, 2012; Choo 2014). Bureaucrats have the power to authorize many business activities through entry permits and business licenses, and they set business fees and tax schedules (Walder 1995; Peng and Luo 2000; Y. Lin 2001; Yang 2005; Nee and Opper 2010, 2012). Although many laws to create and regulate property rights were passed, the normative power

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[1] Estimates based on stricter criteria for classifying firms as non-state-owned show similar but more muted upward trends, with the percentage of fixed-asset investments by non-state-owned firms rising from 17% in 1998 to 34% in 2005 (Huang 2008: 21, Table 1.2, line 5b).

[2] Polity IV scores (http://www.systemicpeace.org/polity/polity4.htm) range from -10 (fully institutionalized autocracy) to +10 (fully institutionalized democracy). These scores are derived from coding a nation's central political system, including the competitiveness of political participation, the openness and competitiveness of executive recruitment, and constraints on the chief executive.

of those laws developed very slowly (Oi and Walder 1999; Clarke 2008; Potter 2013), which makes the use of social relations especially important for building trust and confidence between economic and political actors (Wank 1996, 1999). Many of these laws are enforced by local (province-level and below) bureaucrats, who are less strictly supervised than they were during the Maoist regime, and whose interests may lie in subverting these legal institutions for their own personal gain (Y. Lin 2001). Finally, economic actors cannot hold state authorities accountable for their actions through democratic processes.

The upshot is that the market sector in China did not become "autonomous" of the state sector (*cf.* Cao and Nee [2000: 1176]). Instead, an embedded, developmentally focused, entrepreneurial state came into being (Johnson 1982; Evans 1995; Duckett 1998): embedded through close social ties between political and economic elites, developmental in co-ordinating economic activities to achieve official growth targets, and entrepreneurial in creating and expanding a wide array of state-owned business ventures. Thus, economic and political institutions became imbricated in the market-development project in China (Polanyi 1944, 1957). Any analysis of economic activity in reform-era China must take into consideration both social connections between economic and political actors (Granovetter 1985) and the cultural schemas these actors share (DiMaggio 1990; Zukin and DiMaggio 1990).

In this paper, we argue that as economic reform drove market development, many new opportunities opened up, competition increased, uncertainty heightened, and the stakes grew larger (there were both bigger potential upsides and bigger potential downsides). The persistent power of the state over economic activity, on the one hand, and the increase in opportunities, competition, uncertainty, and variation in potential outcomes, on the other hand, made ties to state bureaucrats increasingly critical for firms' success (Bian and Zhang 2014). Such ties reduce uncertainty for firms and make it easier for them to grasp new opportunities by stabilizing their operations (Pfeffer and Salancik 1978; Burt 1982; Tsui and Farh 1997), by providing access to resources and customers, minimizing regulatory burdens, and reducing fees and taxes. Such ties also make it possible for

firms to influence the development and implementation of government policies, at least at local levels. In sum, business-state ties make firms more competitive.

In making these arguments, we enter a long-standing debate about relations between political and economic actors in China. On one side of this debate stand many economists and some rational-choice political scientists and sociologists, who hold a *laissez-faire* market, entirely untouched by the state, as the ideal and who frown on state intervention in the economy (*e.g.*, Nee and Matthews 1996; Cao and Nee 2000; Allen, Qian, and Qian 2005). They have trouble explaining how China's economy has grown so rapidly when the state has been so deeply involved in it, and they predict that, as market development proceeds, the state will have less influences on economic activity. On the other side of this debate stand most sociologists and political scientists, whose arguments are based on more realistic views of state-economy relations, recognizing that states can be both developmental and predatory (*e.g.*, Walder 1995; Y. Lin 2001; Michelson 2007). They predict that state influence on economic activity will persist, even in the face of market development. Our goal is to provide solid empirical evidence to move beyond this simple debate, to detail not just whether business-state relationships matter, but rather for what types of firms these relationships matter, in what contexts, and through what causal mechanisms.

To provide such evidence, we analyze panel data on all firms in China listed on the domestic stock markets from 1992 (the year after the stock markets were founded) to 2007 (the year before the global financial crisis erupted). These firms are among the largest in China, they dominate many industries, and there is an abundance of reliable data available on them, which make them a strategic site for research on China's political-economic transition (Walder 2011). We study one common form of informal business-state tie: having former bureaucrats serve as executives or directors, which literally embeds political institutions in economic institutions (Chen and Dickson 2010). Our central argument is that as market development proceeded, being politically embedded in this way had increasingly positive effects on firm performance. We ground this argument in general sociological theories of the economy, as well as in theories and evidence that are specific to China. To move the study of state-economy relations in China in fruitful new directions, we further we

argue that the impact of political embeddedness was not uniform, but contingent: it mattered more in some contexts and for some kinds of firms. First, as market development proceeded, political embeddedness became more beneficial for firms in more competitive industries because uncertainty was greater and the stakes were higher there. Second, smaller firms had fewer slack resources than larger firms and the former benefit less from economies of scale, so they were poorly positioned to handle the increased competition that accompanied the transition toward market-mediated transactions. As a result, as market development proceeded, political embeddedness was more beneficial for smaller firms than for larger ones. Empirical analysis of listed firms supports all of these predictions.

After demonstrating effects of political embeddedness on overall firm performance, we investigate two outcomes that stand causally in-between political embeddedness and performance, in order to build more analytically rigorous theory (Gross 2009; Hedström and Ylikoski 2010). The first intermediate outcome is access to bank loans, which fuels growth and which even today remains largely controlled by state bureaucrats (Shih 2008; Nee and Opper 2010; Allen, Qian, Zhang, and Zhao 2013). The second intermediate outcome is protection from pressures by controlling shareholders to siphon funds to support other member of shareholders' business groups through loans and loan guarantees to other group members. Because interest on many of these within-group loans is not paid and many loans are never repaid, these transactions essentially funnel financial resources out of listed firms and thus impair their performance (Fisman and Wang 2010; Jiang, Lee, and Yue 2010).

Our empirical strategy clarifies causality in two ways. First, we use propensity-score matching to reduce concerns about the endogeneity of political embeddedness, and the consequent possibility that any observed relationship between political embeddedness and firm behavior and performance is spurious. We "balance" differences between politically embedded and politically unembedded firms in terms of key observable characteristics. This reduces concerns about time-varying observable factors that may yield spurious results (Rosenbaum and Rubin 1983). Second, we estimate fixed-effects models that compare within-firm, over-time changes and so eliminate

concerns about time-invariant unobservable differences between firms that may yield spurious results (Halaby 2004).

Theory

Economic activity is inextricably social. Social scientists have long recognized that any analysis of economic systems requires an understanding of social relations (Polanyi 1944, 1957). Although economic action can be distinguished from social action in ideal-typical, perfectly competitive markets, as neoclassical economics and rational-choice economic sociology holds, such a distinction cannot be drawn in real, empirically observable economies, which stray far from the ideal-typical model. Instead, all economic action is "embedded and enmeshed in institutions, both economic and non-economic" (Polanyi 1957: 250). Therefore, any analysis of economic action must consider the impact of social factors, such as cultural schemas, status hierarchies, and social networks.

One of the most fruitful lines of sociological analysis of economic action has focused on economic actors' embeddedness in social networks, which shape the allocation and valuation of resources (Granovetter 1985). In this view, all economic transactions "are rife with social connections" (Granovetter 1985: 493). By generating trust among economic actors, embeddedness facilitates co-operation, reduces uncertainty, and so makes economic transactions predictable. In turn, increased predictability lowers the perceived costs of exchange and increases the perceived benefits. The trust engendered by embeddedness in social relations makes many forms of economic exchange possible, including access to bank loans (Uzzi 1999; Ferrary 2003), public offerings of stock (Stuart, Hoang, and Hybels 1999), and profitable trade between manufacturers and subcontractors (Uzzi 1996).

One of the most important forms of social relation that affect economic activity is connections between economic and political actors (Polanyi 1957: 250; Lie 1991; Krippner 2001). Political actors like state bureaucrats affect economic institutions in several ways (Campbell and Lindberg 1990; Dobbin 1994; Fligstein 2001). States create property-rights laws that define the rules setting the conditions of ownership and control over the means of production, as well as over

products themselves. Property-rights constraints on economic activity include limitations on what can and cannot be sold and under what circumstances, who can and cannot sell it, and who can and cannot profit from selling it. In addition to regulating property rights, states create monetary systems that provide stable media of exchange. States also regulate competition and adjudicate disputes between firms. In addition, states supply the infrastructure – transportation systems to move goods and people, educational systems to train workers, and communication systems to exchange information – that is essential for doing business. Finally, states shape culture by giving rise to new cognitive schemas about the roles economic actors play, novel understandings of their power vis-à-vis their exchange partners, and innovative conceptions of the nature of their exchanges.

Economic behavior is not just embedded in social networks; it is also embedded in culture, in the shared cognitive schemas that shape what people think can and should be done (DiMaggio 1990; Zukin and DiMaggio 1990). Cultural schemas not only affect the likelihood that people will act with economic rationality (Bourdieu 1972 [1977]), they also affect what people perceive of as economically rational (Swidler 1986). People tend to view economic actions in terms of role relationships – normative scripts with evaluative and sanctioning power that define who can interact with whom, what can be exchanged during those interactions, and how such interactions should proceed. Culture thus both shapes the structures within which economic action occurs and constrains that action. Moreover, culture can both motivate and organize action before it occurs and justify it after the fact (Vaisey 2009).

Culture comes to the forefront of economic analysis in "unsettled times" (Swidler 1986), such as periods of economic reform and market development. At such times, culture is highly visible and explicit, so it is especially powerful in justifying the worldviews and practices that people use to construct new strategies of action to suit the new situations they encounter. And at such times, people are not only more aware of the cultural "tools" at their disposal, they are also better able to articulate their use of those tools, both to motivate and to justify their behavior.

Analysis of economic embeddedness must therefore take into consideration both relationships between economic and political actors and the shared meanings attached to those

relationships. If economic activity is inherently bound up with social relations, and if some of the most important social relations are with state authorities, then relations between those authorities and economic actors should be valuable for business. Basically, political embeddedness – ongoing relations between economic and political actors, relations that are variously bureaucratic, instrumental, and affective (Michelson 2007: 356) – will benefit firms. And if economic behavior is inherently bound up with culture, then those relationships that are widely accepted as normal, legitimate, and "proper" will have the biggest impact on economic actors.

Relations between economic and political actors in reform-era China. Before the reform era began, state bureaucrats directed the economy through their control over virtually all productive enterprises. During the reform era, some 2,000 formerly state-owned enterprises were reorganized as joint-stock companies and listed on the domestic exchanges, and millions of privately enterprises were founded. Yet state bureaucrats still directed the large share of the economy that was produced by state-owned and state-controlled enterprises, including many listed firms. Moreover, during the reform era, the state became more deeply enmeshed in the economy through three new pathways. First, the Chinese state became an embedded one (Johnson 1982; Evans 1995), as close social ties between political and economic elites were forged. For example, despite a 1989 ban, the Party opened its ranks to entrepreneurs in the early 1990s, in order to co-opt them; it formally legitimated this practice in 2002 (Dickson 2003, 2008). Other co-optive efforts involved creating formal linkages between the Parry and entrepreneurs in trade, professional, and industry associations (Kennedy 2005). Second, state officials increasingly focused on fostering economic development (Evans 1995), in order to achieve growth targets set by central authorities (Y. Lin 2001).[3] Starting in 1994, with the doctrine of "grasping the large and letting go of the small" [*zhuada fangxiao*], the developmental state bifurcated, with central authorities promoting and tightly managing development in sectors deemed strategic and local authorities overseeing enterprises in other sectors. Third, by launching a wide

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[3] Note that the locus of state embeddedness in China differed from that in South Korea, Evans's (1995) model embedded state, where there were close social ties between state elites and the dominant players in civil society, rather than business. Moreover, the Chinese state has sometimes revealed itself to be predatory, rather than developmental (Baum and Shevchenko 1999; Pei 2006).

array of state-owned business ventures, many local officials went beyond mere development to create an entrepreneurial state (Duckett 1998). In myriad ways, then, state authorities gained increasing influence on economic activity during the reform era. This happened even though the state bureaucracy at the beginning of the reform era was weak, disorganized, and fragmented (U 2007; Landry 2008; Choo 2014).

State influence on the economy was enhanced by the decentralization of the state's decision-making authority and the accompanying decline in the central state's monitoring power (Walder 1994, 1995; Wang 1995; Y. Lin 2001; Naughton 2007; Pearson 2011). As economic reform proceeded, much power to regulate land use, issue business permits, levy taxes, and impose fees and fines was delegated from the central state bureaus to local (province-level and below) bureaus, and local authorities were authorized to build up funds to disburse as they saw fit (Walder 1995; Wang 1995; Y. Lin 2001; Naughton 2007; Landry 2008).[4] State influence on the economy was also enhanced by the lack of political reform. Businesspeople in China cannot hold state authorities accountable for their actions: there are no elections that might unseat politicians and so no democratically driven political changeovers that might force bureaucrats out of office.

Political embeddedness and firm performance in China. We argue that, given the lack of political reform in China and the increasing influence of the Chinese state on economic activity, ties between business and state became increasingly important for Chinese firms to gain access to resources and customers and stabilize their operations. Economic reform opened up novel opportunities and unleashed intense competition over both resources and customer demand, which increased the uncertainty facing firms. Such uncertainty can be reduced by developing ties to the state (Pfeffer and Salancik 1978; Burt 1982; Tsui and Farh 1997). The decentralized state system that emerged during the reform era provides many opportunities for negotiation between businesses and local bureaucrats; to profit from these negotiations, business enterprises need good relationships with local bureaucrats (Parish and Michelson 1996; Wank 1999, 2002; Y. Lin 2001). Relationships with

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[4] There was recentralization and retrenchment of state authority following the Tiananmen Square protests in June 1989, but this trend was reversed starting in 1992.

local bureaucrats also give businesspeople indirect influence over the development and implementation of local government policies.

New kinds of relationships between economic and political actors were forged as state authorities, especially local ones, shucked off their former roles as allocators and redistributors of economic resources and developed new roles as regulators and brokers of market transactions, as well as investors in and managers of for-profit enterprises (Bian 1994; Walder 1995; Duckett 1998; Yang 2002; Wank 1999, 2002; Choo 2014). As regulators and brokers, local bureaucrats gained considerable power over the businesses that depended on them to sell land-use rights, issue business and building permits, offer tax breaks, reduce fees, and waive fines. But the power-dependence relations ran both ways: as state budgets hardened, local bureaucrats depended more and more on the extra-budgetary funds that they derived from fees, fines, and taxes. And as investors in and managers of for-profit enterprises, local bureaucrats became the drivers of "the entrepreneurial state" (Duckett 1998).

The value of social relations between economic and political actors is enhanced by the Chinese legal system's common-law foundations. Business-state relations should become more important as new rules to guide and constraint economic activity are put in place and tested in the courts (Potter 2002, 2013). In particular, the lack of a history of legal decisions about economic activity will allow litigants to negotiate with judicial officials and end up with decisions based on social relations. This line of argument suggests that social relations between business and state actors will complement, rather than contradict, the legal system as a tool for getting things done, and that such ties will become more, not less, important as economic reform proceeds (*cf.* Guthrie 1999).

We study one specific instantiation of the enmeshing of economic and political institutions in reform-era China: having former bureaucrats serve as executives or on boards of directors. This practice literally embeds political institutions in economic institutions (Chen and Dickson 2010).[5]

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[5] At the same time, having state authorities own listed firms, even if that ownership is only partial, embeds economic institutions in political institutions, creating mutual embeddedness (Yang 2005; Fligstein and Zhang 2009).

Former bureaucrats' informal social ties to current bureaucrats, based on their shared work history, create opportunities for bargaining for preferential treatment. Within the Chinese state bureaucracy, social relations have long been essential, not only for carrying out assigned tasks but also for facilitating career advancement (Zhou 2010; Zhou, Ai, and Lian 2012). Both lateral and vertical relations help officials manage uncertainty, gather information, mobilize resources to get things done, and solve unexpected problems. In these ways, officials use social ties to "soften" the iron cage of bureaucracy. During the reform era, social relations became even more important to bureaucrats, as a system of impersonal rules and incentive mechanisms was put in place, which greatly increased the amount of uncertainty bureaucrats faced (Zhou, Ai, and Lian 2012). Because the social ties forged by working in the state bureaucracy are so valuable to bureaucrats, they are likely to be maintained (Wank 1999), even after bureaucrats take positions as executives or directors in business concerns.

These lasting informal connections facilitate exchanging favors; they help former bureaucrats persuade current ones to lighten the regulatory load, fast-track licenses and permits, and grant preferential access to land, government contracts, and other state-controlled resources (Y. Lin 2001; Chen and Dickson 2010; Nee and Opper 2010, 2012). In addition, working as bureaucrats teaches people how things get done in state agencies. This knowledge is valuable to firms that must navigate state agencies to get authorization for their activities, preferential treatment in the application of regulations, relief from taxation and fees, or access to resources controlled by state authorities (Yang 2007). These things became more important as market development proceeded because there was more at stake: market development heightened competition between firms, increased their uncertainty, and opened up new opportunities to them, and ties to state bureaucrats were critical for reducing competition and uncertainty and for grasping opportunities (Bian and Zhang 2014). Accordingly, we predict:

> **Hypothesis 1**: *As market development proceeds, political embeddedness will have increasingly positive effects on firm performance.*
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> *In what contexts does this dynamic play out?* The debate about the impact of political

embeddedness has recently become more nuanced, focusing on contingent rather than universal

effects; specifically, on the contexts within which the hypothesized effect will be most likely to be seen (*e.g.*, Y. Lin 2001; Nee and Opper 2010, 2012). One obvious and important contingency is industry. Economic reform in China affected different industries very differently (Walder 1996; Lu and Tang 1997; Kennedy 2005; Naughton 2007; Brandt and Rawski 2008). Specifically, differences in the pace and nature of economic reform generated very different distributions of firms, in terms of ownership (state versus non-state) and size, which in turn created very different levels of competition. For instance, in the early 2000s, the steel industry remained dominated by large state-owned enterprises and was more "socialized" than "marketized," so competition was limited; in contrast, the software industry was dominated by small privately owned firms and competition was intense (Kennedy 2005). The more competitive an industry, the more uncertainty firms in that industry face. Firms can reduce this uncertainty by developing ties to state bureaucrats (Pfeffer and Salancik 1978; Burt 1982; Tsui and Farh 1997). Moreover, in industries where firms face more intense competition, they have more to gain with political support – and more to lose without it (Bian and Zhang 2014). Where and when competition is intense, if politically embedded firms can more easily get financing from state-controlled banks and if they have easier access to permits, licenses, and land-use rights, and are less burdened by fees, fines, and taxes, they are better positioned to take advantage of new business opportunities and expand to meet growing customer demand. In turn, these processes improve politically embedded firms' performance. Therefore, we predict that the benefits of political embeddedness will be more pronounced in more competitive industries:

> **Hypothesis 2:** *The positive interaction between political embeddedness and market development will be stronger in more competitive industries.*

> *With what type of firms will this play out?* In addition to context, the nature of the firms themselves is an important contingency.[6] In particular, larger firms in China tend to have more

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[6] In results not shown here, we investigated a second firm-specific contingency: ownership. We compared results on state-controlled and non-state-controlled firms but found no consistent effects. This may be due to the fact that, among listed firms, the line is blurry: state-controlled firms have some shares held by private investors, and non-state-controlled firms may have some shares held by state bureaus. In addition, shares in

political influence than smaller firms because they dominate the industry associations that serve as one conduit to state authorities and because their scale helps them attract bureaucrats' attention (Kennedy 2005). Larger firms also have easier access to state-controlled resources and lower risks of government expropriation of their assets than smaller ones (Cull and Xu 2005; Li and Zhang 2007; Li, Meng, Wang, and Zhou 2008). In China, as elsewhere, larger firms have more opportunities than smaller ones to acquire resources from sources outside the state; for example, larger firms are likely to have more retained earnings that they can use to finance growth and take advantage of the opportunities opened up by market development. Larger firms are also more likely than smaller ones to be in more central positions in China's power structure: larger firms are likely to have more ties to bureaucrats, and to more powerful bureaucrats (Guthrie 1999, 2002; Y. Lin 2001).[7]

But larger firms may need to cultivate their ties to state agents less than smaller firms, for two reasons. First and most basically, larger firms benefit from scale economies: larger firms can acquire lower-priced inputs than smaller ones and so can produce outputs at lower cost; therefore, they are better able to compete on price. Second, larger firms are more prestigious and more visible to bureaucrats than smaller ones (Scott 2003: 265, n. 7), so they may get preferential treatment without having to ask for it – or, at least, without having to try very hard. This prediction accords with the argument that social connections are "weapons of the weak" (Yang 1994: 126), and that smaller enterprises must work harder to secure the benefits that accrue easily to larger ones. Hence, we predict that the benefits of political embeddedness will be more pronounced for smaller firms than for larger ones.

> **Hypothesis 3:** *The positive interaction between political embeddedness and market development will be stronger for smaller firms.*

Probing causal mechanisms. To explore the mechanisms by which political embeddedness may benefit firms, and thus develop more analytically rigorous theory (Gross 2009; Hedström and

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many listed firms are divided among multiple state bureaus, so state control may be limited, due to free-riding or the conflicting interests of different state owners.

[7] In this regard, Chinese firms are similar to Hungarian firms after the transition to market capitalism: larger ones are more likely than smaller ones to have former bureaucrats in management (Róna-Tas 1994).

Ylikoski 2010), we first turn to consider one important resource that connections to state bureaucrats may help Chinese firms acquire: loans from banks, most of which are state-owned or state-controlled. We then consider one important harm that connections to state bureaucrats may protect firms from: pressure from their controlling shareholders to make loans and loan guarantees to other firms in their business groups, in what are called "related-party transactions."

Access to bank loans. Chinese financial markets are firmly under the control of state authorities (Allen *et al.* 2013). In 2007, the end of our study period, the assets of the "big five" state-owned commercial banks (Bank of China, China Construction Bank, Industrial and Commercial Bank of China, Agricultural Bank of China, and Bank of Communications) totalled 63% of all bank assets. Other, smaller state-owned or state-controlled banks accounted for another 24% of all bank assets, leaving in 13% for non-state-owned banks. Examining deposits shows a very similar pattern: 61% in the "big five" state-owned commercial banks, 27% in other state-owned or state-controlled banks, and 12% in non-state-owned banks. Non-state-owned banks, despite their growth near the end of our study period, were subject to intensive state regulation (Shih 2008; Nee and Opper 2010; Allen *et al.* 2013). Moreover, reforms in the banking sector progressed at a much slower pace than reforms in other sectors. As a result, the state still exerts great influence on bank lending; for instance, Shih (2008: 3) concluded: "China's lumbering banking sector … continues to serve as an instrument of state policies."

Many firms, especially those that are not state-owned, have limited access to bank loans from the largely state-owned and state-controlled banks. They must instead turn to their own retained earnings, which are often quite constrained. The only other alternative is private banks or the unofficial financial system, which includes friends, family members, and unofficial credit agencies, where lenders charge high interest rates and demand substantial collateral (Tsai 2002; Allen *et al.* 2005; Nee and Opper 2010, 2012), and lenders are unlikely to be able to make loans big enough to meet the substantial funding needs of listed firms. In contrast, politically embedded listed firms can borrow money from banks at dramatically lower interest rates and with far less collateral (Allen *et al.* 2005). Because financial resources become much more valuable as markets develop and new

business opportunities arise, not having access to bank financing harms firms much more when markets are well developed than when the state allocates and redistributes most economic resources. Therefore, we predict:

> **Hypothesis 4:** *As market development proceeds, political embeddedness will have increasingly positive effects on firms' access to bank loans.*

Related-party transactions. All listed firms are members of business groups, collections of firms controlled by the same shareholder and connected through a mix of equity, debt, personnel, and trade (Keister 2000; Zheng 2013; see Granovetter 1993 on business groups more generally). Most of these groups were formed during the listing process, when state-owned enterprises (SOEs) carved out the most profitable parts of their operations and applied to have them listed on the domestic exchanges. During this process, SOEs were restructured as business groups that controlled their listed firms, along with a number of other, unlisted, enterprises (Zheng 2013). Other business groups were formed by the private (non-state) controlling shareholders of listed firms, as they extended their control to other (non-listed) business concerns. Listed firms often exchange information, funds, goods, or services with other business-group members in what are called "related-party transactions." Such transactions usually occur in response to pressure from controlling shareholders. Through their power to appoint executives and board members, controlling shareholders exercise considerable influence over firms' strategies and operations, even if they have less than majority ownership stakes in those firms. Although listed firms in China are required to report related-party transactions, their controlling shareholders face few external governance mechanisms (such as takeovers or lawsuits by minority shareholders) that would deter such transactions (Zheng and Kim 2011).

One particularly important form of related-party transaction involves loans and loan guarantees made by listed firms to other firms in their business groups. Because listed firms are usually the financially strongest in their groups, they have resources that can be deployed to support other group members in need. Their financial strength, plus their relatively transparent financial statements, which follow tightly regulated disclosure requirements, makes it preferable for listed

firms to guarantee loans made to other business-group members by outside parties. But doing so puts listed firms at risk of repaying these loans if the borrowers default. Interest on many loans is not paid and many loans are never repaid, so these transactions essentially funnel financial resources out of listed firms and thus impair their performance (Fisman and Wang 2010; Jiang *et al.* 2010).

As market development proceeds, the performance of business-group member firms may deteriorate under the heightened competition that results from marketization. When this happens, controlling shareholders will increasingly pressure listed firms to support fellow business-group members financially. Listed firms that are politically embedded are better able to defend themselves from pressures exerted by their controlling shareholders to "bleed" them financially. Former bureaucrats have greater visibility with current bureaucrats, including easier access to the China Securities Regulatory Commission (CSRC). As a result, former bureaucrats can more credibly threaten to have related-party transactions more closely monitored or sanctioned. Regulators view these transactions with great suspicion and have imposed increasingly stringent control over them; for example, on August 28, 2003, the CSRC issued a regulation demanding detailed plans from listed firms for decreasing the amount of related-party transaction by 30% per year. Having former bureaucrats serve as executives and directors may enable firms to obtain more effective enforcement of the formal checks and balances that regulators impose on controlling shareholders' behavior.[8] Political embeddedness is more beneficial to listed firms when pressures to engage in related-party transactions are stronger – that is, when market development is greater. Therefore, we predict a negative effect of the interaction between market development and political embeddedness on related-party transactions:

> **Hypothesis 5:** *As market development proceeds, political embeddedness will have increasingly negative effects on firms' related-party transactions.*

Scope conditions. Our theory of political embeddedness is especially relevant to countries making the transition from state socialism to market capitalism because the state used to be *the* most

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[8] Thus, while state-business ties have generally been linked to corruption, this line of thought suggests that they can instead fend off unlawful rent-seeking (see also Michelson 2007).

powerful actor in those countries. History matters: the development of economic systems exhibits strong path dependence; specifically, the social and economic institutions that exist in any point in time are built on the foundations of the social and economic institutions that existed at earlier points in time (North 1999; Pierson 2004; for transition economies in particular, see Stark 1996; Stark and Bruszt 1998). It is not surprising, then, that the state continues to be a powerful actor in transition economies – if not always *the* most powerful one. In Hungary and Russia, for example, former cadres (specifically, enterprise directors) continued to control productive and financial enterprises after the Communist regimes ended (Stark 1990, 1996; Róna-Tas 1994; Hanley, Yershova, and Anderson 1995; Boycko, Shleifer, and Vishny 1995).

We recognize that political embeddedness is also important in many capitalist economies, where former bureaucrats often take positions in business. In the United States, there is a "revolving door" between the public and private sector (Etzion and Davis 2008), although this is frowned upon and regulations abound to limit movement through this door. In Japan, the *amakudari* ("descent from heaven") system, in which high-ranking civil servants take corporate positions upon retirement, has long been an accepted part of business-state relations. This gives firms access to government decision makers and improves their positions vis-à-vis competitors (Johnson 1974; Calder 1989; Colignon and Usui 2003). In France, the *pantouflage* ("shuffling wearing indoor slippers") system, in which high-level bureaucrats leave to work in large corporations, has existed since the Third Republic (Lalumière 1959). As in Japan, this provides firms with valuable contacts in government (Eymeri-Douzans 2012). But because there is great cross-country variation in relations between economic and political institutions (*e.g.*, the resources state agents control, the social relations businesses conceive of building with them), we restrict our analysis to transition economies.

Among transition economies, the theory we develop may be most germane to China because social relations [*guanxi*] have long been central to Chinese social and economic life (Fei 1948 [1992]; Hwang 1987; King 1991; Lo and Otis 2003). *Guanxi*, a lasting legacy of Confucianism, consists of carefully constructed and maintained relationships that bear both obligations and benefits, and that

can have expressive and/or instrumental functions (Hwang 1987). In China, social relations are not only more central to social life than in many other societies, they are also more oriented toward mutual obligation and expectations of reciprocity. Given this historical legacy, it is not surprising that some have described the post-reform economic system in China as "networked capitalism" (Boisot and Child 1996), to reflect the cultural embeddedness of economic activity (DiMaggio 1990; Zukin and DiMaggio 1990) in that country, specifically the widespread acceptance of using social relations to get things done in the economic sphere.

Although social relations have long been important in China, their nature, meaning, and function has changed over time. In the pre-revolutionary era, people's identities were defined by their positions within familial and social hierarchies; social relations, not individuals, were central to social life, and the social role defined the individual (Lo and Otis 2003). During the Maoist era, when resources were scarce, people used social ties to get favors from bureaucrats and to circumvent bureaucratic constraints (Vogel 1965; Yang 1994). In the post-Maoist reform era, *guanxi* remained important, but the social relationships that are central to the economy shifted from hierarchical interactions between members of the state bureaucracy (cadres) to more horizontal interactions between cadres and businesspeople (Choo 2014). At the same time, the purpose of *guanxi* shifted from favor-seeking to rent-seeking (Gold 1985; Yang 1994; N. Lin 2001; Qi 2013). An "accessing" form of *guanxi*, which is used to acquire something desirable, declined due to the increasing abundance of producer goods, consumer goods, and services that market development created; in its place, an "embedding" form, which emphasizes cultivation of trust and understanding in mutually beneficial connections, arose (Chang 2011). Thus, as with many other social practices, *guanxi* became entrenched through long use, but as circumstances changed, it was not abandoned, but rather reconstituted and repurposed.

Research Design

Sample

Our analysis focuses on Chinese firms listed on the domestic stock exchanges. These are among the largest firms in China and they dominate most industrial sectors, so understanding the interplay between these economic actors and political actors like state bureaucrats matters substantively. In addition, much more (and more reliable) information is available on listed firms than on non-listed firms, which makes them a strategic site for research on China's economic transition (Walder 2011).

We study all firms that are listed on the Shanghai and Shenzhen Stock Exchanges. Our analysis begins in 1992, the year after the Chinese stock markets opened. It ends in 2007, the year when China finally adopted laws to fully proclaim the rights to private property in business. Using this endpoint avoids having the analysis confounded by the global financial crisis that erupted in 2008. The number of firms in the sample increased over time, from 26 in 1992 to 801 in 1999 and 1,368 in 2007. After lagging explanatory variables by one year, the dataset we analyzed contains 11,145 firm-year records.

Recent research has shown that selection into the sample of listed firms involved political embeddedness (Zheng 2013). Firms had to receive state approval to list in the first place. The state set strict quotas for listing on the domestic stock exchanges, and firms competed vigorously for those quotas. Firms that got permission to list on the domestic exchanges tended to be supervised directly by the central or provincial bureaus (rather than lower-level state bureaus). The upshot is that all firms in our sample were politically embedded to some extent, whether or not they had executives or directors who were former cadres. This should reduce our ability to find any impact of the specific form of political embeddedness we study.

How well results on listed firms apply to other kinds of firms in China is debatable. On the one hand, Chinese enterprises vary greatly in terms of industry, scale and scope of operations, ownership structure, and access to state authorities, so what we find here may not generalize to other types of Chinese firms. China's economy consists of three tiers (Pearson 2011). At the top

are the "commanding heights" or "lifeline" [*ming-mai*] industries, which contain the largest firms in infrastructure industries (*e.g.*, telecommunications and aviation) and financial services (*e.g.*, commercial banking, securities). These firms are of great strategic to the central state's economic development plans, and high-level state bureaus (central, province-level city, and provincial) own stakes in them. In the middle are firms that are considered important by the state and so are governed by explicit industrial policies, but are subject to less state control than the top tier, including firms in the automotive, pharmaceuticals, and chemicals industries. These firms may be owned by the central state, municipal governments or provinces, or private investors. The bottom tier consists of almost all privately and collectively owned firms, plus many smaller state-owned or state-controlled firms, which are concentrated in medium-sized and small manufacturing enterprises, personal services firms, and retail outlets, and owned by lower-level state authorities (county, township, and village). Perhaps most germane to this analysis is that firms that are owned or administered by higher-tier state authorities have inherently closer relations to those authorities than those that are owned or administered by lower-level state authorities. For example, ties to higher-level state bureaus facilitated the initial public offerings of state-owned enterprises, which were rationed and which required approval by central state agencies (Zheng 2013).

On the other hand, what we find here may indeed generalize well because we base our analysis on a combination of general sociological theories of economic activity (*e.g.*, Polanyi 1944; Granovetter 1985; DiMaggio 1990), theories that are specific to China (*e.g.*, Parish and Michelson 1996; Lo and Otis 2003), and empirical evidence that includes not just the large Chinese firms we study, but also small and medium-sized ones (*e.g.*, Y. Lin 2001; Tsai 2002). Owners and managers of small and medium-sized enterprises in China cultivate a diverse array of ties to state bureaucrats to cope with uncertainty, learn about expected policy changes and loopholes, gain protection from excessive fines and fees, ensure that state agencies would honor contracts, and gain access to state-controlled resources (*e.g.*, Wank 1999, 2002; Tsai 2007; Yang 2007). Business-state ties became more important over time, as market development proceeded, for many types firms. For example, a survey of owners and managers of medium and large firms in four provinces showed that the

fraction stating that Party members had advantages in business over non-members rose from 43.8% in 1999 to 49.6% in 2007 (Dickson 2008).

Ties to bureaucrats may be even more important for small and medium-sized firms than for the large listed firms we study, for three reasons. First, listed firms have external sources of funding, such as the domestic stock market and foreign investors, so they are less dependent on the state than other firms (Walder 1994; Keister 2004). Second, business-state ties have in the past been stronger for the smaller firms owned by bureaus at lower levels of the state administrative unit hierarchy (county, township, or village) than for the larger firms owned by bureaus at higher levels (nation, province, or province-level city) (Walder 1995). This prediction accords with the idea that *guanxi* is a "weapon of the weak" (Yang 1994: 126), and that smaller enterprises must work harder to secure the benefits that accrue easily to larger ones. Third, smaller firms are more exposed more than their larger counterparts to regulation, taxes, fees, by fines imposed by state authorities (*e.g.*, Gold 1990; Tsai 2002); good relations with those authorities is a coping strategy that can lighten these burdens. For all these reasons, analyzing listed firms may provide a conservative test of the argument that business-state ties have become increasingly important determinants of firm performance.

To assess the concern that what we learn from the firms we study, which are in the top and middle tiers of the Chinese economy, may not apply to other types of firms, we conduct a supplementary analysis of data on a nationally representative sample of small and medium-sized enterprises. These data come from a series of surveys done by a group of scholars from a wide array of governmental and nongovernmental organizations, including the Chinese Academy of Social Science and the All-China Federation of Industry and Commerce. In each survey year (1995, 1997, 2000, 2002, 2004, and 2006), the research team used stratified random sampling to generate lists of privately-owned firms across all Chinese provinces and all industries. Across all years, the average sample size was 1,385 firms. (We exclude from our analysis the rare firms that were listed on the stock markets, which accounted for approximately 0.2% of this sample.) These data have three limitations. First, they consist of repeated cross-sections, rather than panels, so our ability to pinpoint causation is limited. Second, they measure industry coarsely as 15 economic sectors (*e.g.*,

agriculture, manufacturing, real estate), so we could not assess that contingency. Third, they contain

no data on bank borrowing and or related-party transactions, so we cannot test these causal

mechanisms. Still, this auxiliary analysis allows us to assess how the overall impact of political

embeddedness on firm performance changed as market development proceeded, and whether

smaller firms in this sample benefitted more than larger ones.

Data Sources and Measures

Political embeddedness. We hand-collected the resumes of each listed firm's Chief Executive

Officer (CEO), all other top executives (all those with "Chief" in their titles, including the Chief

Operating Officer, Chief Financial Officer, and Chief Information Officer), the Chairman of the

Board of Directors, and all other board members. Our source was the website of Sina

(finance.sina.com.cn), which publishes comprehensive information on Chinese listed firms. Because

listed firms' executives and directors changed over time, we collected these data for every year each

firm was listed on a domestic stock exchange.

We scrutinized each person's résumé to determine whether he or she had served as a

bureaucrat (a cadre) and if so, at what rank (chief officer, deputy, *etc.*) and at what level in the official

cadre hierarchy. This hierarchy has six main levels: ministry [*bu*], department [*ju*]), division [*chu*],

section [*ke*], staff member [*keyuan*], and clerk [*banshiyuan*]. We coded a firm's *political embeddedness* as a

binary indicator variable set equal to one in years when the focal firm's CEO, at least one other top

manager, or at least one member of the board of directors had served as the chief officer or deputy

chief officer at the division [*chu*] level of the cadre hierarchy or above, and zero otherwise. We chose

this threshold because it is a distinct cutoff point in the Chinese state bureaucracy and a commonly

used distinction in studies of Chinese cadres (*e.g.*, Zhou 2000; Walder 2004). Lower-level officials

(*e.g.*, those at the section [*ke*] level) are not funded through the central fiscal system, so the division

level indicates membership in the inner circle of political elites, which in 1998 included roughly

500,000 individuals (Walder 2004: 195), out of a total population of 1.25 billion that year. Because

the vast majority of these high-level bureaucrats are Chinese Communist Party members, this measure also captures a second important aspect of political embeddedness.

For robustness checks, we constructed two other continuous measures of political embeddedness, the number and the proportion of executives and directors who had served as the chief officer or deputy chief officer at the division [*chu*] level in the cadre hierarchy or above.

Market development. We measured the proportions of labor and capital that were allocated through markets rather than by the state. We based these measures on how labor and capital were divided between state-owned and non-state-owned firms. We followed the National Bureau of Statistic's definition of state-owned firm as those in which the state owns more than 50% of shares *plus* those in which the state owns less than 50% of shares but the state is the largest shareholder *or* the state is the controlling shareholder (Holz and Lin 2001). The first measure, *market development* (*employment*), is the percentage of the labor force working in non-state-owned firms each year. The second measure, *market development* (*investment*), is the percentage of all fixed-asset investments in non-state-owned firms each year. Both variables were based data in the *China Statistical Yearbook* (various years).[9] Because both variables were skewed, we logged them to normalize them.

For a robustness check, we created a third measure of market development, a time-period indicator. Although China's economic reforms unfolded over time, some years witnessed more dramatic policy changes than others (Brandt and Rawski 2008). Many local observers viewed 2003 as a milestone for economic reform because that year saw a new stage of economic reform unleashed (*e.g.*, Yang 2005).[10] As a condition of China's accession into the World Trade

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[9] Starting in 1998, the definition of the share of labor and investment in state-owned firms was changed to include part of the labor and investment in non-state-controlled firms, proportionate to state ownership stakes in those firms (Holz and Lin 2001). Because the share of labor and investment in state-owned firms that could be apportioned to non-state shareholders, based on their ownership stakes, was *not* deducted, measures of market development starting in 1998 were deflated relative to measures for the years 1992 to 1997. This artificial reduction should make it more difficult for us to find support for our hypotheses.

[10] See also media accounts: "The year of 2003: A first step to improve China's economic reforms," Xinhua News Agency, November 28, 2011 (http://news.xinhuanet.com/newscenter/2003-11/28/content_1202985.htm); "Experts' explanations of the *'Decision of the Central Committee of the Communist Party of China on some issues concerning the improvement of the socialist market economy'*," Sina News, October 21, 2003 (http://news.sina.com.cn/c/2003-10-21/2122962787s.shtml); "Administrative reforms of government structure in the reform and opening era," Xinhua News Agency, January 15, 2008,

Organization at the end of 2001, over 7,000 tariffs, quotas, and trade barriers were relaxed in 2003 (Bhattisali, Li, and Martin 2004). The resulting changes to China's economic institutions affected many sectors of its economy, including banking, investment systems, state-owned enterprises, regulated industries, and many factor markets. (We provide more details of the reforms of 2003 in the Appendix.) To capture this discontinuity in the development of market-supporting institutions, we created a dummy variable set equal to zero up to and including 2003, and one after 2003. We labelled this dummy *milestone year*.

Firm and industry variables. We obtained most data on firms from the Guo Tai An Information Technology Company (GTA, also called also called China Securities Market and Accounting Research, CSMAR), a for-profit firm in Hong Kong that has developed databases on the Chinese banking industry, stock market, and economy for international academic and industry researchers. We used GTA's China Stock Market Trading Database. We also obtained data from Wind Information Co., a leading financial data firm in China.

To measure *firm performance*, we used net return on net assets (ROA), a measure that is comparable across industries and across firms operating on different scales. For robustness checks, we also calculated net return on equity (ROE), which reveals how much profit the company generates with the money shareholders invested. Given the rise of the shareholder value theory of orientation in the United States (Lazonick and O'Sullivan 2000; Fligstein and Shin 2007) and the number of American economic advisors working in China, this measure may be highly salient to Chinese executives and directors. But in China, accounting for assets is less ambiguous than accounting for equity (Peng and Luo 2000), so we focus more on ROA and less on ROE.

Intermediate outcomes. We first assessed each firm's access to bank loans by calculating its *borrowing ratio*, defined as the ratio of its bank borrowing to total assets. Scaling by assets makes this variable comparable across firms of different sizes. We then examined related-party transactions by

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(http://news.xinhuanet.com/legal/2008-01/15/content_7425177.htm); "Milestones of reform: 30 years of 3rd Plenums," China.org.cn, October 8, 2008 (http://www.china.org.cn/china/reform-opening-up/2008-10/08/content_16645095_2.htm).

calculating for each year the total value of loans and loan guarantees provided by the listed firm to the controlling shareholder or to other firms controlled by that shareholder, minus the value of loans repaid to those entities and loans or loan guarantees provided to the listed firm by those entities. We this scaled this variable by the listed firm's total assets, to make it comparable across firms of different sizes, and so created the *related-party transaction ratio*. Data on related-party transactions became available only in 1998, when a new reporting requirement was put in place, so our analysis of this intermediate outcome is limited to 1998 onward.

To measure the *level of competition* in each industry, we aggregated data on firms to the industry level. We used the Herfindahl-Hirschman index of concentration, which we calculated using the market share, based on sales, of all listed firms in each industry each year. Higher values on this index indicate lower levels of competition. We defined industry using two-digit Chinese Standard Industrial Classification codes.

Control variables. We controlled for other variables that may affect firm performance, access to bank loans, and financial related-party transactions. First we constructed an indicator of *state ownership*, coded one if the firm was controlled by a state agency and zero otherwise. In China, listed firms' controlling shareholders exercise considerable control over operations, even if those shareholders have significantly less than majority stakes, through their power to make appointments to boards of directors (Clarke 2003; Fisman and Wang 2010). Different types of controlling shareholders not only influence firm performance, they also affect what firms have to gain from their political embeddedness (Walder 1996; Walder and Nguyen 2008). State-owned firms can use political ties to maneuver for more advantageous positions in their markets (*e.g.*, Calomiris, Fisman, and Wang 2010). Non-state-owned firms can use political ties to get protection from competition and access to financing and industry information (*e.g.*, Luo 2003; Li and Zhang 2007). As economic reforms intensified competition, increased uncertainty, and expanded business opportunities, such politically based advantages might have been especially rewarding for non-state-owned firms.

Second, we controlled for *firm size* using assets, logged to normalize the distribution, because larger firms are more likely to have political ties, although smaller ones may be more likely to actively

use them (Guthrie 1999, 2002). (In a robustness check, we used an alternative measure of size, based on sales, again logged to normalize the distribution.) Third, in models of firm performance, we controlled for the *borrowing ratio* because access to debt financing facilitates expansion, which allows firms to achieve economies of scale and so enhances performance.

Model Specification and Estimation

We used two strategies to increase our confidence that the statistical analyses we conducted reflect the causal relationships predicted by theory. First, we conducted propensity-score matching to generate a subset of politically unembedded firms that were highly comparable, in important observable dimensions, to the set of politically embedded firms in our sample. We then tested our hypotheses using linear regression models containing the two continuous measures of market development. Second, we estimated fixed-effects models that compare within-firm, over-time changes in the benefits arising from political embeddedness and so eliminate concerns about time-invariant unobservable differences between firms that may yield spurious results (Halaby 2004). These models offer conservative tests of our hypotheses because they model only within-firm variation over time and eliminate across-firm variation.

We checked the robustness of our results to this estimation strategy by using the binary measure of market development, the milestone year of 2003 and the differences-in-differences technique, which can be used to mimic experimental conditions if there is a discrete change in an explanatory variable – here, market development.

Propensity-Score Matching

Politically embedded firms may differ considerably from politically unembedded firms in terms of many factors that affect the outcomes of interest. For example, large firms may be more likely to have as executives or directors people who previously worked as state bureaucrats *and* more likely to perform well *independent of* their political embeddedness. If so, regression analyses will be biased by selection into the "treatment condition" (being politically embedded) rather than the

"control condition" (not being politically embedded). To put it simply, firm size may explain any observed association between the treatment and the dependent variable.

Propensity-score matching helps alleviate such concerns, although it cannot completely eliminate them, by matching firms in the treatment and control conditions on observable confounds, thus eliminating spurious results due to those confounds (Rosenbaum and Rubin 1983).[11] To implement this technique, researchers predict selection of cases into the "treatment" condition using a set of variables that not affected by the dependent variable, calculate each case's predicted probability of being selected into the treatment condition – its "propensity score" for experiencing the treatment – and match cases in the treatment and control conditions on the basis of their propensity scores. For our study, we first estimated a logistic regression predicting political embeddedness, using firm size, borrowing ratio, state ownership, industry, and year. We then calculated the propensity score for each firm each year – its predicted probability of being politically embedded.

Next, we constructed a subset of politically unembedded firms with sufficiently high propensity scores (the "matching sample") that they resembled the set of politically embedded firms in all observable respects, except for receiving the treatment. To determine which propensity scores were high enough for inclusion in the matching sample, we used nearest-neighbor matching, without replacement. We began by sorting the firms in the treatment condition randomly and then matched each with the closest firm in the control condition. To match, we used a caliper of 0.25 standard deviations. All matches not within this caliper were dropped (317 firms – 201 politically embedded and 116 politically unembedded), so the sample analyzed included 1,054 firms.

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[11] Propensity-score matching cannot completely eliminate concerns about causality because matching can only be done on *observables*. If important causes of both the explanatory and the outcome variables are *unobservable*, then hidden bias may remain even after matching on observables. Still, matching reduces bias due to observables, and it may reduce bias due to unobservables if those are correlated with observables. Analysis of unmatched data on these listed firms generated stronger results, in terms of both effect magnitudes and significance levels, than those generated by analyzing matched data, which indicates that the latter yields more conservative estimates.

To test the quality of the matching process, we assessed whether the two groups of firms were statistically similar in terms of the observables. All these covariates are well balanced: for state ownership, firm size (the natural logarithm of assets), and borrowing ratio, the percentage "bias" between the firms in two groups is smaller than commonly accepted threshold of 5% (Rosenbaum and Rubin 1983); moreover, the t test of differences between the two groups is not significant for the borrowing ratio, and it is only weakly significant for state ownership and firm size. For all industry and year indicator variables, the percentage of bias between the two groups is smaller than 5%. Differences between the two groups are not significantly different for the overwhelming majority of indicator variables: t tests yield $p > 0.05$ for 92% of industry indicators and 97% of year indicators. These results suggest that the overall match is good: after pooling the two groups, political embeddedness can be regarded as exogenous to the extent that we have ruled out selection on observables.

Figure 1 shows the distributions of the propensity score for being politically embedded for the two groups. The distributions are relatively normal for both groups. Although politically embedded firms tend to have slightly higher propensity scores than politically unembedded firms, the propensity-score distributions overlap greatly, which indicates that any "hidden" bias from unobservables is small.

[Figure 1 about here]

All of our dependent variables are continuous, so we estimated ordinary least-squares (OLS) regressions on the matched samples. Because we have multiple observations on each firm and year, our data points are not independent. To deal with this, our models included year fixed effects and firm fixed effects, and we clustered standard errors at the firm level.

To test hypothesis 1, we interacted market development with political embeddedness. To test hypotheses 2 and 3, we conducted subsample analyses. We tested hypothesis 2 by comparing regressions across subsamples of firms split by the level of competition they faced in their primary industry. To test hypothesis 2, an industry was coded as being more competitive if concentration was below the median across all industries in the focal year and less competitive if concentration was

above the median. We tested hypothesis 3 by comparing regressions across subsamples split based on firm size. To test hypothesis 3, we defined a firm as large if its total assets were above the median for size in the focal year and small if its total assets were below the median.[12] We used subsample analysis instead of estimating models containing three-way interactions between market development, political embeddedness, and industry competition (or firm size) for three reasons. First, because of multicollinearity among the components of the three-way interactions, coefficient estimates do not yield valid results about any individual predictor that is highly correlated with others, which makes it difficult to estimate interaction effects. Second, subsample analysis is flexible, as it allows other covariates to differ between firms in more- and less-competitive industries, and between large and small firms. By contrast, estimating a single model constrains the coefficients of these covariates to be the same for all firms, which may not be justifiable. Third, it is more straightforward to interpret the results of subsample analyses than to interpret three-way interactions.

Robustness Check: Differences in Differences Analysis

We estimated differences-in-differences models (Card and Krueger 1994; Meyer 1995), using the binary indicator variable for the milestone year, 2003, in place of the continuous measures of market development. The goal here is to mimic experiments' random assignment of observations (at the firm-year level) to the treatment and control conditions, to clarify causation. The outcome of interest (ROA, borrowing ratio, or related-party transactions) is observed for two groups of "subjects" (firms) for two time periods (up to and including 2003 versus after 2003). One of the groups (the treatment condition) receives a treatment (*i.e.*, it is politically embedded), while the other (the control condition; *i.e.*, it is politically unembedded) does not. When the same units (firms) within a group are observed in each time period, the average change in the outcome of interest within the second group is subtracted from the average change within the first group. This technique removes biases from comparisons during the second (post-market-development) period between the two groups that could be due to persistent differences between those groups; it also

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[12] Using sales to measure firm size, instead of assets, yielded similar results.

removes biases from comparisons over time in the first (treatment) group that could be the result of temporal trends.

To deploy this technique, we compared the impact of market development on the three dependent variables for firms that are politically embedded to the impact of market development on those variables for firms that are not politically embedded. Assuming that the two types of firms followed parallel trajectories, this technique allowed us to estimate the *joint* effect of market development *and* political embeddedness. These models take the following general form:

$$Y_{it} = \beta_1 + \beta_2 X_{1i} + \beta_3 X_{2t} + \beta_4 X_{1i} \times X_{2t} + \gamma' \mathbf{Z} + \varepsilon,$$

where Y_{it} is the outcome of interest (ROA, borrowing ratio, or related-party transactions), X_{1i} equals one when firm i is politically embedded, X_{2t} equals one after the milestone year of 2003, and $\mathbf{Z}$ is a vector of controls. Net of controls, the outcome of firms that are not politically embedded up to and including 2003 is β_1, that of firms that are politically embedded after 2003 is $\beta_1 + \beta_3$, that of firms that are not politically embedded up to and including 2003 is $\beta_1 + \beta_2$, and that of firms that are politically embedded after 2003 is $\beta_1 + \beta_2 + \beta_3 + \beta_4$. Therefore, net of controls, the difference in the dependent variable due to the *joint* effect of being politically embedded *and* the occurrence of market reform (the period after 2003) is β_4.

The differences-in-differences models we estimated included fixed year and firm effects, which further bolster our claims about causation.[13] We clustered standard errors at the firm level to alleviate the concerns that conventional differences-in-differences standard errors may be understated (Bertrand, Duflo, and Mullainathan 2004).[14] Again, to test hypotheses 2 and 3, we conducted subsample analyses, comparing results on more- and less competitive industries (hypothesis 2) and larger and smaller firms (hypothesis 3).

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[13] Including year fixed effects does not confound inference about the effects of the period after the milestone year. Compared with models that do not included year fixed effects, models that include year fixed effects are more flexible and thus preferable (Wooldridge 2001).

[14] Two-way clustering of the standard errors at both the firm level and the year level, following Petersen (2009), yielded qualitatively similar results.

Results

Trends over Time and across Space

Figure 2 plots the number of listed firms each year and the number each year that have executives or directors who worked as bureaucrats at the division [*chu*] level or above in the cadre hierarchy. It shows a striking pattern: over time, listed firms were increasingly likely to have former bureaucrats as executives and directors. In 1992, only seven of the 26 listed firms (27%) were politically embedded; the number rose to 378 out of 704 in 1998 (54%), then to 721 out of 1,051 in 2002 (69%), before declining very slightly to 908 out of 1,368 in 2007 (66%). This pattern suggests (although it certainly does not prove) that listed firms in China have discovered great value in these kinds of ties to political actors.

[Figure 2 about here]

Both continuous measures of market development increased steadily during our study period. In 1992, non-state-owned firms accounted for 16% of employment and 1.9% of assets invested. By 2007, non-state-owned firms accounted for 68% of employment and 41% of assets invested. At all points in time, market concentration also varied tremendously across industries. Among the most competitive (least concentrated) industries were machinery and industrial equipment, metal and non-metal products, and textiles and clothing, with Herfindahl-Hirschman indexes of 0.026, 0.054, and 0.056, respectively, on average across our study period. Social services and finance were the least competitive (most concentrated) industries, with indexes of 0.842 and 0.933, respectively.

Testing Hypotheses

Table 1 presents univariate statistics and correlations for all variables. None of the correlations are high enough to raise concerns about multicollinearity, except among the measures of market concentration, but these are not included in the same regression models.

[Table 1 about here]

Firm performance. Table 2 presents the first set of results on firm performance (ROA), using the (logged) percentage of employment in non-state-owned firms. Model 1 reports the main effects

of the variables of theoretical interest, political embeddedness and market development, conditional on all control variables, while model 2 adds their interaction. Model 1 shows a positive but nonsignificant effect of political embeddedness and a negative and statistically significant effect of market development. Model 2 shows that, as predicted, the interaction between political embeddedness and the employment-based measure of market development was positive and statistically significant. This indicates that over our study period, political embeddedness increasingly enhanced firm performance, which provides strong support for hypothesis 1. This effect is quite large. Based on the estimates in model 2, when the employment-based measure of market development was at its mean, the predicted ROA of politically embedded firms was larger, on average, than that of unembedded firms by 0.002. This is equivalent to an increase of 8.2% from the average value of ROA. When market development was one standard deviation above the mean, the predicted ROA of politically embedded firms exceeded that of unembedded firms by 0.007, which amounts to an 27.3% increase from the average value of ROA.

[Table 2 about here]

To test hypothesis 2, models 3 and 4 compare more competitive and less competitive industries, based on a median split of our sample. The interaction between political embeddedness and market development is positive and statistically significant in model 3, and positive but nonsignificant in model 4. Comparing the subsamples, a Chow test shows that the coefficients on the interaction terms are significantly different ($p < 0.01$). This pattern of results indicates that market development made political embeddedness more beneficial *only* to firms in highly competitive markets, which supports hypothesis 2.

To test hypothesis 3, models 5 and 6 compare small and large firms, again based on a median split of our sample. While the interaction between political embeddedness and market development is positive and statistically significant in both models, the magnitude of the interaction effect is greater in model 5 than in model 6. Comparing the subsamples, a Chow test shows that the coefficients on the interaction terms are significantly different ($p < 0.01$). This pattern of results

indicates that as market development proceeded, political embeddedness became far beneficial for smaller listed firms than for larger ones, which supports hypothesis 3.

Table 3 replicates Table 2, substituting the measure of market development based on the (logged) percentage of capital investments in non-state owned firms in the focal year. The results in Table 3 are largely consistent with those in Table 2. In model 1, the main effect of political embeddedness is positive but nonsignificant, while that of market development is negative and statistically significant. In model 2, the interaction between political embeddedness and market development is again positive and statistically significant, indicating that political embeddedness became more beneficial as market development proceeded. This provides further support for hypothesis 1. Based on the estimates in model 2, when this measure of market development was at its mean, the predicted ROA of a politically embedded firm was larger by 0.003, which is equivalent to 9.7% of the average ROA across the sample) than that of a similar unembedded firm. When this measure of market development was one standard deviation above the mean, the gap in ROA due to political embeddedness increased to 0.007, on average, which is equivalent to 24.5% increase from the average value of ROA.

[Table 3 about here]

Models 3 and 4 compare more competitive and less competitive industries, based on a median split of our sample, to test hypothesis 2 again. As before, the interaction between political embeddedness and market development is positive and statistically significant in model 3, and positive but nonsignificant in model 4, which indicates that market development made political embeddedness more beneficial *only* for listed firms in highly competitive markets. A Chow test shows that the coefficients on the interaction terms are significantly different (p<0.01). Models 5 and 6 compare smaller and larger firms, based on a median split of our sample, to test hypothesis 3 again. The interaction between political embeddedness and market development is positive and statistically significant in model 5, and positive but nonsignificant in model 6, which indicates that market development made political embeddedness more beneficial *only* for smaller listed firms. A Chow test shows the coefficients on the interactions terms are significantly different (p<0.02).

Taken together, the results in Table 3 strengthen the conclusions drawn from Table 2, as they indicate that our results are not sensitive to the basis for measuring market reform, whether capital or labor.

Robustness check: Differences-in-differences analysis. Table 4 presents results using the differences-in-differences technique, to check the robustness of our estimates to our modelling assumptions. It replaces the continuous measures of market development with an indicator variable set equal to one in the years after 2003.[15] Model 1 shows that the interaction between political embeddedness and this measure of market development is positive and statistically significant, which indicates that market development increased the value of political embeddedness for firms. Before and during the milestone economic reform year, the predicted ROA of politically embedded firms was smaller than that of unembedded firms by 0.002, which is equivalent to 7.4% of the average ROA. This negative effect was offset by the large positive interaction between political embeddedness and the post-reform milestone year. After the milestone year, the predicted ROA of politically embedded firm was larger than that of a similar unembedded firm by 0.009, which is equivalent to 33.3% increase from the average level of ROA.

[Table 4 about here]

Models 2 and 3 compare more-competitive and less-competitive industries, based on a median split of our sample, to test hypothesis 2 again. As before, the interaction between political embeddedness and market development is positive and statistically significant in model 2, and positive but nonsignificant in model 3, which indicates that market development made political embeddedness increasingly valuable *only* for firms in highly competitive markets. A Chow test shows that the coefficients of the interactions terms in the two subsamples are different ($p < 0.01$). Models 4 and 5 compare small and large firms, based on a median split of our sample, to test hypothesis 3 again. The interaction between political embeddedness and market development is

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[15] We assessed the sensitivity of our analysis to the choice of date by substituting 2002 for 2003. We found much weaker (marginally significant) effects using 2002, which indicates that the empirical pattern we are interested in was not manifest much before 2003 and supports our use of 2003 as the milestone year.

positive and statistically significant in model 4, and positive but nonsignificant in model 5, which indicates that market development made political embeddedness increasingly valuable *only* for smaller listed firms. A Chow test shows that the coefficients on the interactions terms in the two subsamples are significantly different ($p<0.03$). Taken together, this set of results further strengthens the conclusions drawn from Tables 2 and 3: they indicate that our results are not sensitive to choice of market-reform measure, whether continuous or discrete, whether based on the volume of market transactions or a regulatory regime shift.

Other robustness checks. To assess the sensitivity of our results to the way we measured the dependent variable, we re-estimated all models using another commonly used measure of firm performance, return on equity. The results of this analysis, which are not shown to save space, are largely consistent with the results shown here. The coefficients on interactions between political embeddedness and market development (defined in terms of employment, fixed-asset investment, and the milestone year of 2003) are uniformly positive, as predicted. The coefficients on the full sample are all statistically significant. The coefficients on the subsample analyses (more *versus* less competitive industries, larger *versus* smaller firms) are larger for more competitive industries and smaller firms, and the differences in coefficients between the subsamples are generally statistically significant, with two exceptions. The difference in coefficients between larger and smaller firms is not statistically significant when the measure of market development is fixed-asset investment or the milestone year. Taken together, these results increase our confidence in the results we show here.

In results not shown here, we also estimated models with random (latent) firm effects, instead of fixed effects. These models are less conservative than fixed-effects models because they make a strong assumption that firm-level heterogeneity does not persist for more than a single year (Wooldridge 2001). The results of these random-effects models are not only highly consistent with those generated by the fixed effect models, they are also stronger, with greater substantive and statistical significance in the effects of political embeddedness as markets developed.

We replaced the binary measure for political embeddedness with two alternatives: first the number of executives and directors who had served as the chief officer or deputy chief officer at the

division [*chu*] level in the cadre hierarchy or above, second the proportion. Results using these alternative measures, which are not shown here to save space, are almost identical to the results using the binary measure. Finally, we tried a different measure of firm size – based on sales instead of assets. Again, results using this alternative measure, which are not shown here to save space, are almost identical to the results using the asset-based measure.

Probing mechanisms: Access to bank loans. Table 5 shows the results of our analysis of bank borrowing. It contains three models, each using a different measure of market development. Models 1 and 2 use OLS regression; model 1 uses the continuous measures based on the percentage of the labor force employed in non-state-owned firms, while model 2 uses the percentage of fixed asset investments in non-state-owned firms. Model 3 uses the differences-in-differences technique and the dummy variable for the milestone year, 2003. In all three models, the interactions between political embeddedness and market development are positive. In models 2 and 3, the interactions are statistically significant, but in model 1, the interaction is only marginally significant (p=0.061). Taken together, these results indicate that, as markets developed in China, bank borrowing increased more among politically embedded firms than among unembedded firms. Limited access to credit is an obstacle that confronts many Chinese firms; therefore, these results suggest that one important mechanism through which political embeddedness helps firms is to facilitate their access to debt financing.

[Table 5 about here]

When employment-based market development was at its mean, the predicted borrowing ratio of politically embedded firms was lower than that of unembedded firms by 0.001; in contrast, when it was one standard deviation above the mean, the predicted borrowing ratio of politically embedded firms exceeded that of unembedded firms by 0.009. That is, as employment-based market development increased from the mean value to one standard deviation above the mean, the difference in the borrowing ratio between politically embedded and un-embedded firms increased by 0.01, which amounts to a 2.26% increase from the sample-average borrowing ratio. Similarly, when investment-based market development was at its mean, the predicted borrowing ratio of politically

embedded firms was lower than that of unembedded firms by 0.002; in contrast, when it was one standard deviation above the mean, the predicted borrowing ratio of politically embedded firms exceeded that of unembedded firms by 0.008. In other words, as capital-investment-based market development increased from the mean to one standard deviation above the mean, the difference of the borrowing ratio between politically embedded and unembedded firm increased by approximately 0.01, which amounts to a 2.14% increase from the sample-average borrowing ratio .

Probing mechanisms: Related-party transactions. Table 6 shows our analysis of related-party financial transactions. It contains three models, each using a different measure of market development. Models 1 and 2 use OLS regression; model 1 uses the continuous measures based on the percentage of the labor force employed in non-state-owned firms, while model 2 uses the percentage of fixed asset investments in non-state-owned firms. Model 3 uses the differences-in-differences technique and the dummy variable for years after the milestone year, 2003. In all three models, the interactions between political embeddedness and market development are negative and statistically significant. These results indicate that when markets were more developed, political embeddedness helped listed firms defend themselves from pressures exerted by their controlling shareholders to engage in value-destroying related-party transactions – loans and loan guarantees for members of their business group. This demonstrates that political embeddedness buffers listed firms from exploitative shareholders.

[Table 6 about here]

These effects are substantial. When market development, based on employment, was at the mean, the predicted related-party transaction ratio of embedded firms exceeded that of unembedded firms by 0.017, but when it was one standard deviation above the mean, the related-party transaction ratio for embedded firms was less than that of embedded firms by 0.001. In other words, as employment-based market development increased from the mean to one standard deviation above the mean, the difference in the related-party transaction ratio between embedded and unembedded firms decreased by 0.018, which amounts to 30.6% of the sample-average related-party transaction ratio. Similarly, when market development, based on capital investment, was at the mean, the

predicted related-party transaction ratio of embedded firms exceeded that of unembedded firms by 0.013 but when it was one standard deviation above the mean, the related-party transaction ratio for embedded firms was less than that of embedded firms by 0.002. That is, as investment-based market development increased from the mean to one standard deviation above the mean, the difference in the predicted related-party transaction ratio between embedded and unembedded firms decreased by 0.015, which amounts to 26.0% of the sample-average related-party transaction ratio.

Alternative explanations. One alternative explanation for the results we observe is that causality is reversed: state authorities might have appointed former bureaucrats to better-performing firms as a reward for their service, and might have been more inclined to do so as market development proceeded. If this were true, we would expect to observe stronger interactions between political embeddedness and market development among state-owned firms than among non-state-owned firms, because state authorities have more power over the appointment of executives and directors in the former than in the latter. To assess this possibility, we conducted separate analyses of state-owned and non-state-owned firms. Using the continuous measures of market development, we found no statistically significant difference in these interaction effects between state-owned and non-state-owned firms. Moreover, the analysis using the milestone year of 2003 and the differences-in-differences technique showed *stronger*, not weaker, effects for non-state-owned firms than for state-owned firms. Taken together, these results indicate that reverse causality is unlikely.

A second alternative explanation is that our results are driven by some factor that is not included in our analysis and that causes both the observed pattern of political embeddedness and the observed pattern of firm performance, such as a common environmental shock. As long as such omitted factors are uncorrelated with how the sample is split, the suspected spurious relationship should persist in all subsamples. But our split-sample analyses indicate that the interaction between political embeddedness and market development varies across subsamples: it is stronger in more-competitive industries and in smaller firms. These patterns of results obviate concerns about spuriousness due to omitted variables.

Generalizability check: Small and medium-sized firms. For small and medium-sized firms, we defined a firm as politically embedded if its owner was a deputy of the People's Congress or the People's Conference. This is a more appropriate for measure for these types of firms, as very few of these firms (less than 2%) had connections to the state bureaucracy through owners who had worked as cadres at the division [*chu*] level or above, compared with 61% of listed firms, probably because there were so many of these types of firms but only a limited number of high-level cadres. In contrast, just over 40% of these firms had owners who were members in the People's Congress or People's Conference. We used propensity-score matching to balance politically embedded and unembedded firms on observables. We then analyzed the balanced samples, regressing return on equity (data on assets were not available) on political embeddedness, market development, their interaction, firm size, and province, year, and industry fixed effects. Because these data are repeated cross-sections, not a panel, it is difficult to assess the direction of causal effects; therefore, we discuss these results but do not show them. In these analyses, interactions between political embeddedness and both measures of market development had positive and statistically significant effects. These results indicate that our findings on listed firms generalize quite well to much smaller firms.

Because we had data on firm size, we were able to test hypothesis 3, which predicted a smaller effect on large firms than small ones, with these data. As we did with the data on listed firms, we split the data on small and medium-sized firms by size, defining a firm as large if its total assets were above the median for size in the focal year and small if its total assets were below the median. In these analyses, interactions between political embeddedness and both measures of market development were positive and statistically significant for both large and small firms, but the magnitudes of the interactions effects were smaller for large firms than for small ones. Comparing the subsamples, Chow tests show that the coefficients on the interaction terms were significantly different for both sets of interactions ($p<0.01$). This analysis bolsters the conclusion that our findings on listed firms generalize quite well to much smaller firms.

Conclusion

Our analyses provide strong support for our theory of political embeddedness. As market development proceeded, having former bureaucrats serve as executives and directors in Chinese listed firms had increasingly positive effects on firm performance. Importantly, these effects were contingent: they were stronger in some contexts (more competitive industries) and for some firms (smaller ones). Analysis of a random sample of small and medium-sized firms showed parallel results, suggesting that the lessons we learned from studying large listed firms can be applied to many other kinds of firms in China. These findings demonstrate that China's and political institutions were imbricated in the market-development project. The state, especially local (province-level and below) state bureaus, became focused on economic development and was deeply involved in private-sector activities (Johnson 1982; Evans 1995; Duckett 1998). These findings also demonstrate that state-economy relations in China are not universal, but instead vary greatly across economic contexts and types of firms (Y. Lin 2001; Nee and Opper 2010, 2012).

Our analyses probed two causal mechanisms, two intermediate activities through which the effects of political embeddedness operated. First, political embeddedness facilitated listed firms' access to bank loans, which were largely state-controlled and which fuelled growth by allowing firms to seize the many opportunities that economic reform created. Second, it protected firms from pressure by controlling shareholders to make loans to other firms in their business groups, which funnelled financial resources out of listed firms and thus impaired their performance (Fisman and Wang 2010; Jiang *et al.* 2010). These analyses made our arguments more plausible, but more could be done in the future to probe other likely mechanisms, using other sources of data. Finally, because we had panel data on market development, political embeddedness, firm performance, and both intermediate factors, we were able to use statistical techniques to pinpoint causality more clearly than previous research, most of which was cross-sectional or did not link longitudinal data on market development to data on firms.

Our analyses have provided strong evidence that will help settle the debate about relations between political and economic actors in China. We detailed not just whether or not business-state

relationships matter – they do – but also their contingent effects – in what contexts these relationships matter, and for what types of firms. Even more importantly, we provided evidence about the specific causal mechanisms through which these effects operate. Basically, ties to state authorities improved these firms' funding situation, by facilitating access to bank loans and protect firms from pressure to make unprofitable loans to other members of their business groups.

Our analyses reveal that China in the reform era resembled other countries making the transition from state socialism to market capitalism, in that state agents continued to be powerful actors in the economy (Stark 1990, 1996; Róna-Tas 1994; Hanley *et al.* 1995; Boycko *et al.* 1995). In China, as in other transition economies, economic development was path-dependent: a new economic order was built using the remains of the old one (Stark 1996; Stark and Bruszt 1998). Indeed, as our analyses of industry differences showed, multiple new economic orders developed, some much more competitive than others. Economic development in China was path-dependent in another way: because social relations have long been central to Chinese social and economic life (Fei 1948 [1992]; Hwang 1987; King 1991; Lo and Otis 2003), it is not surprising that social relationships had such strong effects on firms. The centrality of social relationships in China may mean that political embeddedness is more important there than in other transition economies. That empirical question merits careful cross-national comparison.

Future research. In this analysis, we did not distinguish among the positions former bureaucrats held in listed firms, although there was considerable variation, both cross-sectionally and longitudinally. This is a topic for future research. We might expect, for example, that having a former bureaucrat serve as Chief Executive Officer or Chairman of the Board of Directors would matter more than having one as a lower-level executive or other director because the former positions are more powerful, more prestigious, and more visible. We might also expect that having former bureaucrats serve as independent (non-executive) directors would matter less than having them serve as executives because executives are responsible for daily management of the firm but independent directors are not. And we might expect that having executives and directors who had

served at higher ranks in the cadre hierarchy would have stronger effects because they would have ties to higher-ranking, and thus more powerful, current cadres.

Our analysis ends in 2007, the year before the global financial crisis erupted. Will what we find here persist after that event? There are two divergent possibilities. First, the fallout from the financial crisis slowed China's economic growth considerably, from 14.2% in 2007 to 9.6% in 2008 and 7.8% in 2012 (World Bank 2014), which intensified pressure on local officials to spur economic growth and raise extra-budgetary revenues. They could accomplish both objectives by developing even closer relationships with local businesses. Second, the deeply entwined development of the state (especially the local state) and the market has created one problem that is already serious and that may erupt into a full-blown crisis in the future: rampant corruption through predatory state action (Sun 2004; Manion 2004; Pei 2006). If a serious anti-corruption crack-down is mounted, it may force local bureaucrats and businesspeople to become less interdependent – to erect the sort of arms-length relationships that standard economic analysis assumes (Granovetter 1985). Such a crackdown has not really begun yet, so we expect that the benefits derived from business-state ties increased after 2007 – but that trend may reverse yet itself (Y. Lin 2001).

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Figure 1: Propensity Score Distribution by Treatment Status

■ Politically Unembedded   ▨ Politically Embedded
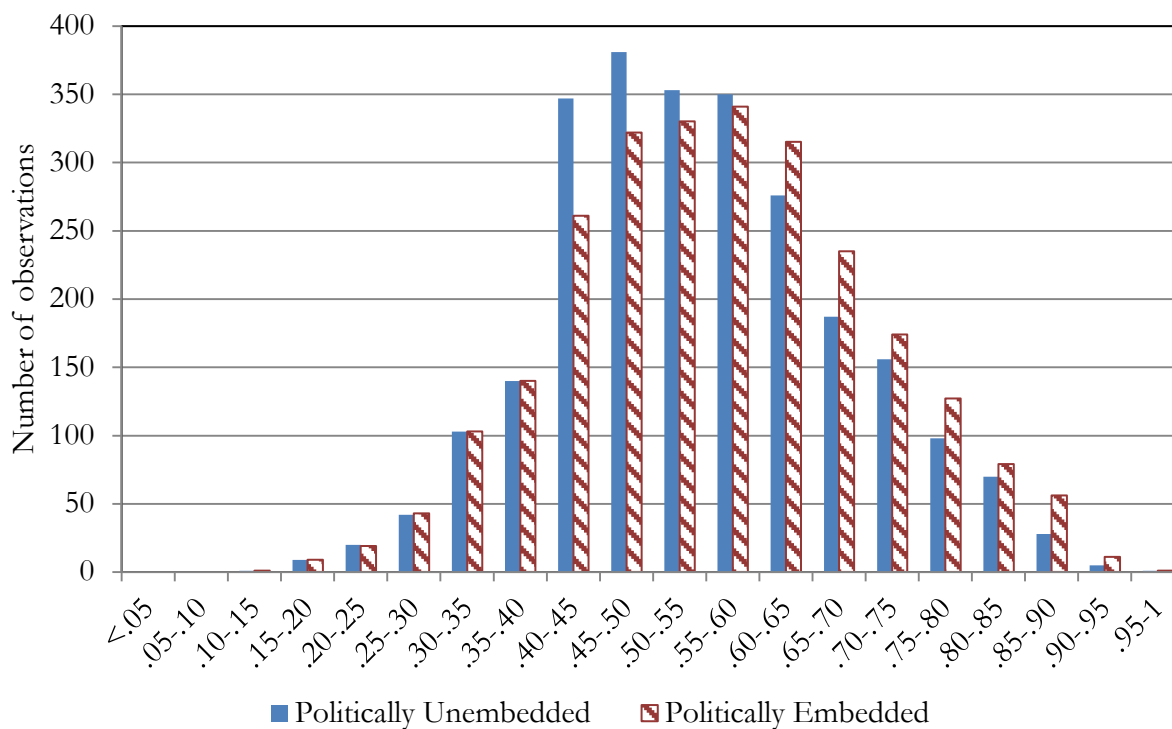
Source: Authors' calculations.

Figure 2: Number of Listed Firms and Number Politically Embedded List Firms
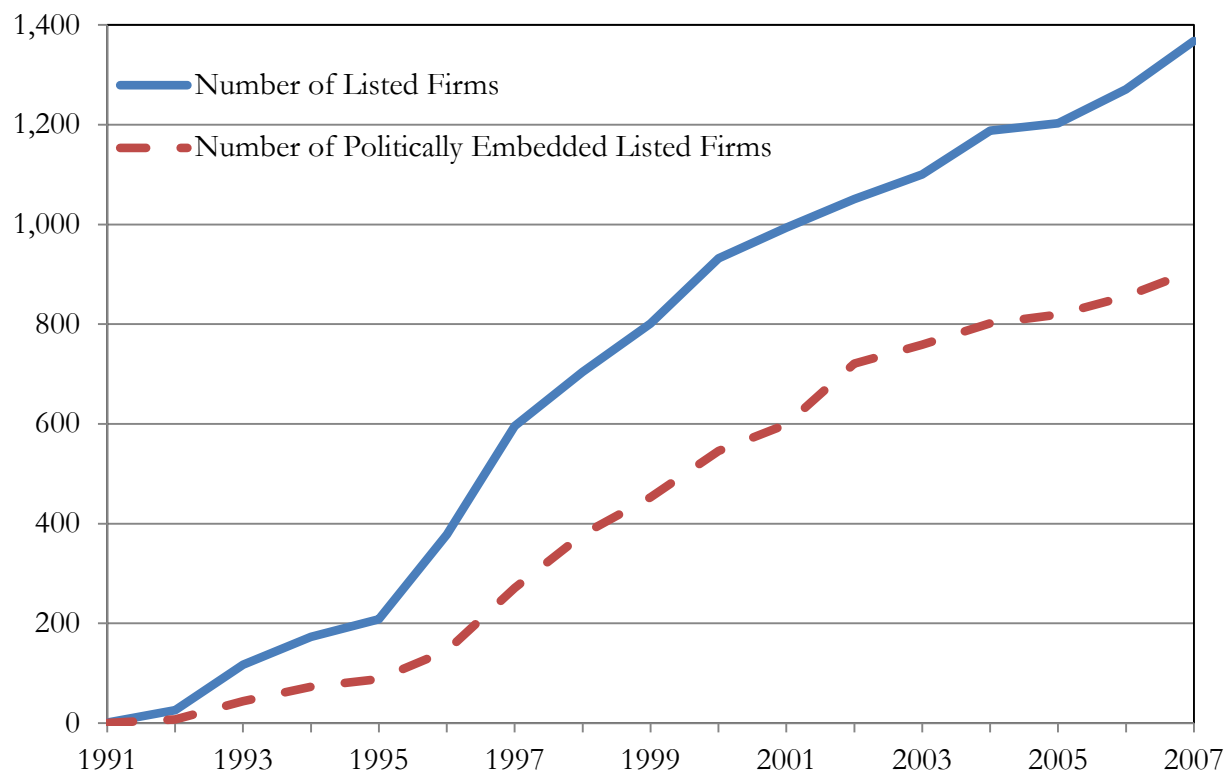
Table 1: Univariate Statistics and Bivariate Correlations

Variable	1	2	3	4	5	6	7	8	9	10
Mean	0.027	0.447	0.059	0.609	0.778	0.089	20.986	0.244	0.454	0.378
Standard deviation	0.076	1.007	0.116	0.488	0.415	0.114	1.021	0.112	0.131	0.485
Minimum	-0.366	-60.334	0	0	0	0.020	14.937	0.019	0.156	0
Maximum	0.182	1	0.974	1	1	0.932	27.301	0.414	0.684	1
# observations	11,140	10,982	9381	11,145	11,145	11,092	11,140	11,244	11,244	11,145
1 Return on assets										
2 Borrowing ratio	0.194									
3 Related-party transaction ratio	-0.162	-0.306								
4 Political embeddedness (yes = 1)	-0.014	-0.024	0.006							
5 State-controlled firm (yes = 1)	0.084	0.085	-0.096	0.088						
6 Industry competition	0.058	0.002	-0.033	0.054	0.062					
7 Firm size (log assets, RMB)	0.135	0.092	0.105	0.146	0.150	0.042				
8 Market development (employment) (logged % employees in non-state-owned firms)	-0.183	-0.104	0.272	0.159	-0.178	-0.068	0.297			
9 Market development (investment) (logged % fixed asset investments by non-state owned firms)	-0.138	-0.105	0.273	0.132	-0.178	-0.041	0.274	0.954		
10 Milestone year (>2003 = 1)	-0.132	-0.100	0.255	0.103	-0.164	-0.014	0.228	0.835	0.851	

Note: This table presents statistics on the combined treatment and control samples that were created by propensity-score matching.

Table 2
The Impact of Political Embeddedness on <u>Firm Performance</u> (ROA), Contingent on Market Development (<u>Employment</u>)

Sample	(1) Full Sample	(2) Full Sample	(3) More competitive Industries	(4) Less competitive Industries	(5) Small Firms	(6) Large Firms
Constant	0.307***	0.302***	0.529***	0.110	0.379***	-0.186**
	(0.041)	(0.041)	(0.114)	(0.084)	(0.086)	(0.079)
Political embeddedness	0.002	-0.009**	-0.010	-0.009	-0.009	-0.011*
	(0.002)	(0.004)	(0.008)	(0.005)	(0.007)	(0.006)
Market development	-3.852***	-3.516***	-3.179*	-4.509***	-3.802***	-3.753***
	(0.865)	(0.893)	(1.738)	(1.012)	(1.173)	(0.651)
Political embeddedness × Market development		0.046***	0.059**	0.024	0.060**	0.043**
		(0.016)	(0.028)	(0.020)	(0.026)	(0.021)
State-controlled firm (yes = 1)	-0.013***	-0.014***	-0.019***	-0.010*	-0.016***	-0.014**
	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)
Firm size (logged assets)	-0.003	-0.003	-0.014***	0.005	-0.007	0.017***
	(0.002)	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)
Borrowing ratio	0.021***	0.021***	0.013**	0.087***	0.016**	0.160***
	(0.007)	(0.007)	(0.006)	(0.019)	(0.007)	(0.015)
Firm fixed effects	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y
Number of observations	10,703	10,703	5,340	5,363	5,287	5,416
Adjusted R-squared	0.285	0.286	0.253	0.417	0.253	0.423

Notes: Robust standard errors (clustered on firms) are shown in parentheses. *** indicates $p<0.01$, ** $p<0.05$, and * $p<0.10$. Market development is the (logged) percentage of the labor force employed in non-state-owned firms each year.

Table 3
The Impact of Political Embeddedness on <u>Firm Performance</u> (ROA), Contingent on Market Development (<u>Investment</u>)

Sample	(1) Full Sample	(2) Full Sample	(3) More competitive Industries	(4) Less competitive Industries	(5) Small Firms	(6) Large Firms
Constant	0.282***	0.282***	0.675***	0.082	0.359***	-0.207**
	(0.041)	(0.040)	(0.179)	(0.084)	(0.086)	(0.081)
Political embeddedness	0.002	-0.011*	-0.014	-0.008	-0.012	-0.012
	(0.002)	(0.006)	(0.010)	(0.008)	(0.010)	(0.008)
Market development	-0.311***	-0.306***	-1.151*	-0.372***	-0.344***	-0.313***
	(0.070)	(0.070)	(0.620)	(0.081)	(0.092)	(0.046)
Political embeddedness × Market development		0.030**	0.041**	0.010	0.039*	0.025
		(0.013)	(0.020)	(0.016)	(0.021)	(0.016)
State-controlled firm (yes = 1)	-0.013***	-0.014***	-0.019***	-0.009*	-0.015***	-0.013**
	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)
Firm size (logged assets)	-0.003	-0.003	-0.014***	0.005	-0.007	0.017***
	(0.002)	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)
Borrowing ratio	0.021***	0.021***	0.013**	0.087***	0.016**	0.159***
	(0.007)	(0.007)	(0.006)	(0.018)	(0.007)	(0.015)
Firm fixed effects	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y
Number of observations	10,703	10,703	5,340	5,363	5,287	5,416
Adjusted R-squared	0.285	0.286	0.417	0.417	0.252	0.423

Notes: Robust standard errors (clustered on firms) are shown in parentheses. *** indicates $p<0.01$, ** $p<0.05$, and * $p<0.10$. Market development is the (logged) percentage of all fixed-asset investments made by non-state-owned firms each year.

Table 4
The Impact of Political Embeddedness on <u>Firm Performance</u> (ROA) before vs. after the Milestone Year (<u>2003</u>)

Sample	(1) Full Sample	(2) More Competitive Industries	(3) Less- Competitive Industries	(4) Small Firms	(5) Large Firms
Constant	0.095**	0.338***	-0.097	0.233**	-0.362***
	(0.042)	(0.079)	(0.090)	(0.093)	(0.088)
Political embeddedness	-0.002	-0.001	-0.005	0.000	-0.003
	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
Milestone year (>2003 = 1)	0.005	-0.034**	-0.018*	-0.090***	-0.051***
	(0.005)	(0.014)	(0.009)	(0.019)	(0.008)
Political embeddedness ×	0.011***	0.014***	0.003	0.015***	0.006
Milestone year	(0.003)	(0.005)	(0.004)	(0.005)	(0.004)
State-controlled firm (yes = 1)	-0.014***	-0.019***	-0.010*	-0.015***	-0.013**
	(0.004)	(0.005)	(0.006)	(0.005)	(0.006)
Firm size (logged assets)	-0.003	-0.014***	0.005	-0.007	0.017***
	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)
Borrowing ratio	0.021***	0.013**	0.087***	0.016**	0.159***
	(0.007)	(0.006)	(0.018)	(0.007)	(0.015)
Firm fixed effects	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y
Number of observations	10,704	5,340	5,364	5,287	5,417
Adjusted R-squared	0.286	0.254	0.417	0.253	0.422

Notes: Robust standard errors (clustered on firms) are shown in parentheses. *** indicates p<0.01, ** p<0.05, and * p<0.10.

Table 5
The Impact of Political Embeddedness on <u>Access to Bank Loans (the Borrowing Ratio)</u>, Contingent on Market Development

	(1)	(2)	(3)
Constant	1.265***	1.292***	1.054***
	(0.195)	(0.166)	(0.087)
Political embeddedness	-0.023*	-0.035**	-0.010
	(0.013)	(0.017)	(0.006)
Market development	3.362	0.232	0.182***
	(5.199)	(0.418)	(0.013)
Political embeddedness × Market development	0.090*	0.073**	0.023***
	(0.048)	(0.037)	(0.009)
State-controlled firms (yes=1)	0.020**	0.020**	0.020**
	(0.008)	(0.008)	(0.008)
Firm size (logged assets)	-0.040***	-0.040***	-0.040***
	(0.005)	(0.005)	(0.005)
Firm fixed effects	Y	Y	Y
Year fixed effects	Y	Y	Y
Measure of market development	Employment	Investment	Milestone year
Number of observations	9,983	9,983	9,984
Adjusted R-squared	0.630	0.630	0.630

Notes: Robust standard errors (clustered on firms) are shown in parentheses. *** indicates $p<0.01$, ** $p<0.05$, and * $p<0.10$.

Table 6
The Impact of Political Embeddedness on <u>Related Party Transactions</u>, Contingent on Market Development

	(1)	(2)	(3)
Constant	-0.328***	-0.327***	-0.324***
	(0.092)	(0.092)	(0.092)
Political embeddedness	0.056***	0.066***	0.006
	(0.021)	(0.024)	(0.005)
Market development	0.000	0.000	0.076***
	(0.000)	(0.000)	(0.009)
Political embeddedness ×	-0.161***	-0.117***	-0.019**
Market development	(0.060)	(0.042)	(0.007)
State-controlled firm (yes = 1)	-0.002	-0.001	-0.002
	(0.007)	(0.007)	(0.007)
Firm size (logged assets)	0.017***	0.017***	0.017***
	(0.004)	(0.004)	(0.004)
Borrowing ratio	-0.024**	-0.024**	-0.024**
	(0.011)	(0.011)	(0.011)
Firm fixed effects	Y	Y	Y
Year fixed effects	Y	Y	Y
Measure of market development	Employment	Investment	Milestone year
Number of observations	9,131	9,131	9,131
Adjusted R-squared	0.370	0.370	0.369

Notes: Robust standard errors (clustered on firms) are shown in parentheses. *** indicates $p<0.01$, ** $p<0.05$, and * $p<0.10$. Because listed firms did not have to report related-party transactions until 1998, this table covers only the years 1998 to 2007, inclusive.

Appendix: The Milestone Year of 2003

The year 2003 marks a milestone in China's economic reforms for several reasons. The foremost is the country's accession into the World Trade Organization (WTO) on December 11, 2001. This event represented a dramatic shift in the rules of the economic game as it was played in China; it also represented a recognition on the part of China's political elite that the game was increasingly being played on a global stage (Bhattisali, Li, and Martin 2004). Most basically, accession into the WTO offered China the opportunity to participate in global production networks and improved the country's ability to carve out higher-value-added niches in those networks. The increased competition that would result from joining the WTO was expected to spur China's economic development.[16]

Economic reforms did not start automatically upon accession into the WTO. At the start of 2002, the Communist Party developed a strategic plan to guide the country's economic development over the next decade, with the explicit goal of building a "well-off society."[17] The state spent the next two years drawing up and implementing specific reforms, many of which were rolled out at two important meetings in that occurred 2003: the 1st Plenary Session of the 10th National People's Congress (March 5-18, 2003) and the 3rd Plenary Session of the 16th Chinese Communist Party Central Committee (CCPCC, Oct. 11-14, 2003). Both are traditional venues for the central government and the Party to pass and announce key policies; for example, in each National People's Congress, the government reports its work in the past five years and lays out the next five-year plan, while in CCPCC Plenaries, high-ranking authorities engage in serious debates and make strategic decisions about policy.

Headed by Hu Jintao and Wen Jiabao, the fourth generation of Chinese leadership, which came to power in 2002, was under considerable political pressure to undertake consequential

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[16] "Joint press conference of the President and Premier Zhu Rongji of the People's Republic of China," Office of the Press Secretary, The White House, April 8, 1999.

[17] For more details, see Jiang Zemin's report at the Sixteenth National Congress of the Communist Party of China in 2002, which was published by the Xinhua News Agency and is available online at http://news.xinhuanet.com/newscenter/2005-01/16/content_2467718.htm.

economic reforms to demonstrate their ability to lead the country. The public calls for substantial

economic reform in 2003 were the first major political undertaking of the fourth-generation Chinese

leadership (Portiakov 2004). In addition, the 16th Communist Party of China 3rd Plenary Session,

which issued the strategic plan, coincided with the anniversaries of historic political conventions that

have become monumental in contemporary China's history of economic reforms; this temporal

coincidence strengthened political pressure for reform.[18]

To implement its strategic plan, the Party issued a landmark policy document in 2003 titled

"Decision of the Central Committee of the Communist Party of China on Some Issues Concerning

the Improvement of the Socialist Market Economy," which mapped out major economic reforms

and economic development plans for China over the next decade.[19] Following this plan, the Party

and state bureaus at all levels implemented substantial reforms in 2003 in many sectors of the

economy, including commercial banking, capital investment, state-owned enterprises, and regulated

industries. Table A1 summarizes these reforms.

[Table A1 about here]

In banking, the Chinese Banking Regulatory Commission was established as a ministerial-

level authority, and quickly became active; for example, it issued thousands of penalties for illegal

and irregular operations, and demanded stricter accounting by the large state-owned banks (Yang

2005: 90-91). Plans were put in place to list the major state-owned commercial banks to on the

domestic and foreign stock exchanges. In December 2003, the central State Council approved and

established the Central Huijin Investment Company to represent the state as the controlling

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[18] Specifically: "25 years ago in December 1978, the Third Plenary Session of the 11th CPC Central Committee launched the policy of economic reform and opening up, and ten years ago in October 1993, the Third Plenary Session of the 14th CPC Central Committee declared the final transition of the reforms in the PRC to the market and designated a program for laying the foundations of a socialist market economy in the country" (Portiakov, 2004: 1).

[19] For more details, this document, which was released by the Xinhua News Agency, is available online at http://news.xinhuanet.com/newscenter/2003-10/21/content_1135402.htm. See also interpretations of this document in the Chinese press: "Milestones of reform: 30 years of 3rd Plenums," China.org.cn, October 8, 2008 (http://www.china.org.cn/china/reform-opening-up/2008-10/08/content_16645095_2.htm); "CPC plenary session set to push reform: Experts," *China Daily*, October 13, 2003 (http://english.peopledaily.com.cn/200310/13/eng20031013_125921.shtml).

shareholder in state-owned banks and to infuse state funding into the banks before they went public. Over the next four years, six of the seven largest state-owned banks (the Bank of Communications, the China Construction Bank, the Bank of China, the Industrial and Commercial Bank of China, the China Merchants Bank, the China CITIC Corporation) were restructured and listed on the stock exchanges in mainland China and Hong Kong (McGuinness and Keasey 2010).[20] This effort was motivated by the prospect that, under the WTO agreement, the banking sector would be opened to foreign banks at the end of 2006 and thus competition would intensify (Podpiera 2006; McGuinness and Keasey 2010).

The system of capital investment in China also experienced major regulatory changes in 2003. For example, most non-state investment projects no longer required state approval, and the process of issuing corporate bonds was simplified while the rules became stricter.[21] Major reforms in other sectors of the economy included further restructuring of the management of state assets in state-owned firms, reforms of some regulated industries such as the domestic airline industry, and the restructuring and consolidation of the administrative system at a number of central government ministries and agencies into the central State-owned Assets Supervision and Administration Commission (SASAC) (Wang, Guthrie, and Xiao 2011). This development was emulated by local state authorities, which established their own SASACs to administer their ownership stakes in listed firms and other productive enterprises. Finally, all listed firms were required to have at least one-third of their members be independent directors (that is, not also executives of the firm) and to include at least one accounting professional.[22]

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[20] "Report of the State Council on Promoting the Shareholding System Reform of State-owned Commercial Banks and Deepening the Financial System Reform," December 26, 2006, issued by the State Council (http://www.lawinfochina.com/display.aspx?lib=law&id=5938#).

[21] "China to reform investment system next year," *People's Daily*, December 2, 2003, (http://english.peopledaily.com.cn/200312/02/eng20031202_129479.shtml).

[22] But these "independent" directors may not be so independent in reality, as Chairmen can invite their friends, who are beholden to the Chairmen for their lucrative positions and who therefore do the Chairmen's bidding (Zheng and Kim 2011).

The evolution of state-business relations in the tobacco industry provides an excellent example of the timing of reform efforts (Wang 2009). From 1978 to 2003, this industry was fully state-owned. It was governed by the State Tobacco Monopoly Administration (STMA) and the Chinese National Tobacco Corporation, both of which were under the central government, and their local agencies, which oversaw state-owned tobacco plants throughout the country. In 2003, the authority of local STMA offices was drastically reduced, and independent tobacco trade and manufacturing companies were established.

The reforms of 2003 were milestones because they clearly specified new general guidelines that were usually implicit in previous economic reforms – if they were included at all. These guidelines included an emphasis on the social consequences, in addition to the economic consequences, of economic reform. For example, explicit goals were set for reducing the gap in economic development between coastal and inland regions (and within regions between urban and rural areas), for balancing economic development and environmental protection, and for balancing the development of the domestic economy and opening up the economy to competition from foreign firms.[23] These guidelines were critical shifts in policy focus compared with the previous courses of reforms; they also influenced many reforms that unfolded in subsequent years.

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[23] "Milestones of reform: 30 years of 3rd Plenums," China.org.cn, October 8, 2008 (http://www.china.org.cn/china/reform-opening-up/2008-10/08/content_16645095_2.htm).

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Table A1: Economic Reforms Following China's Accession to the WTO

Category	Date(s)	Reform Details	Documentation
General	Nov. 8, 2002	The Communist Party releases a strategic plan to guide the country's economic development over the next decade.	Jiang Zemin's report at the 16th National Congress of the Communist Party of China.
General	Mar. 5-18, 2003	The 1st annual Meeting of 10th National People's Congress passes guidelines for government work in the next five years and announces new leaders, including members of the State Council.	Report on the Work of the Government.
State-owned enterprises	May 27, 2003	The 8th executive meeting of the State Council passes new policies for managing state-owned assets and establishes the State-owned Assets Supervision and Administration Commission (SASAC) of the State Council.	Interim Regulations on Supervision and Management of State-owned Assets of Enterprises.
General	Aug. 27, 2003	The National People's Congress passes the Administrative License Law. It limits the scope of administrative approval or licensing of business, sets standards and norms, and seeks to promote bureaucratic transparency.	Yang (2005: 161-164).
State-owned enterprises	Sept.-Dec., 2003	The State Council passes new policies to manage state-owned firms.	Opinions of the State Council on Further Implementing the Strategy of Revitalizing the Old Industrial Bases Including Northeast China.
General	Oct. 14-21, 2003	The 3rd Plenary Session of the 16th Central Committee of the Chinese Communist Party passes a landmark policy to implement the reform guideline described above.	Decision of the Central Committee of the Communist Party of China on Some Issues Concerning the Improvement of the Socialist Market Economy.
Exports	Nov. 13, 2003	Export tax refund policies are fully implemented.	Circular of the State Administration of Taxation on Carrying through the "Decision of the State Council on Reform of the Existing Export Tax Refund Mechanism."
Capital investment	Dec. 1, 2003	The National Development and Reform Commission passes its draft reform plan to the State Council for approval. It frees most non-state investment projects from the need to obtain state approval, simplifies the process of issuing corporate bonds, and makes rules on bond issuing stricter.	"Opinions of the National Development and Reform Commission on Furthering Economic Reform in 2004 to Implement the Decisions of the 3rd Plenary Session of the 16th Central Committee of the Chinese Communist Party"
Banking	Dec. 26, 2003	Ownership reform of Chinese banks begins, to prepare for IPOs on the domestic and Hong Kong stock exchanges. The Central Huijin Investment Company is established to represent the state's ownership stake in banks and infuse capital into them.	"Report of the State Council on Promoting the Shareholding System Reform of State-owned Commercial Banks and Deepening the Financial System Reform." McGuinness and Keasey (2010).