

# Grounded Globalization: Foreign Capital and Local Bureaucrats in China's Economic Transformation

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**Summary.** — How does a globalized context influence domestic development policies and the allocation of government resources in an authoritarian country like China? This study explores the coalitional politics in China's transition from foreign direct investment (FDI) attraction to domestic technology upgrading, which created winners and losers in the local allocation of government resources. Drawing on comparative case studies, semi-structured interviews and newly compiled data at the city level, the study finds that the varied levels of government support for domestic upgrading are shaped by coalitions for or against the transition. The major obstacle for bureaucrats within a city government to garner resources for domestic technology does not directly depend on the overall level of FDI. Rather, it comes from the vested interest of international commerce bureaucrats. These bureaucrats are more likely to form a cohesive coalition when the export share of foreign firms is large. At the same time, such a coalition is more likely to gain political influence when industrial sales are concentrated in large firms. The direction and magnitude of foreign capital influence, therefore, is channeled and manifested through local bureaucratic coalitions. This study sheds light on the politics of implementing development policies in an era in which globalization has cultivated fragmented interests within the local bureaucracy.

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**Key words** — Asia, China, foreign capital, development policy, technology policy, local bureaucrats

## 1. INTRODUCTION

How does an increasingly globalized context influence the implementation of development policies in an authoritarian country like China? On the one hand, the penetration of foreign direct investment (FDI) into the country changes the dynamics of domestic politics, as some local bureaucrats start to form coalitions with foreign capital. On the other hand, given that China is an unelected but decentralized autocracy, both the formation and strength of such coalitions have been enabled or constrained by its fragmented bureaucratic systems at the local level.

This article brings to the forefront the local manifestation of foreign influence on the government's allocation of support for industrial transformation. It contends that the interplay of China's globalized economic context and its local bureaucratic institutions is essential for explaining policy coalitions and outcomes. It shows that the direction and magnitude of foreign influence is exerted, filtered, and reflected through local bureaucracy. Foreign influence on government support is most significant when it sharpens bureaucratic struggles between winners and losers, and such influence is most powerful when it has political value to local elites.

More specifically, the article examines the local response to the rise of China's new paradigm promoting indigenous technology competitiveness in the mid-2000s, in contrast to the previous paradigm of FDI-attraction and export promotion.<sup>1</sup> The transformation was announced as a crucial step to overcome the potential middle-income trap, and just as other developing countries have attempted, China planned to utilize the earlier stage of FDI-attraction to achieve a smooth transition to the later stage of domestic upgrading. However, local implementation has varied and has been fraught with tension between beneficiaries of the previous and current paradigms. As the central state started providing beneficial policies (such as government funding and tax cuts) to domestic firms and discontinued similar policies for foreign firms, anxiety and

opposition often followed, but the effort to garner local government resources for the new initiative encountered far more obstacles in some cities than others.

This article argues that the new initiatives are most likely to be impeded by a vested interest coalition comprised of city government bureaucrats in charge of international commerce. These bureaucrats are likely to form a cohesive coalition to combat and/or manipulate the new policy when the export share of foreign firms is high in a city. At the same time, such a coalition is likely to gain political influence over top city leaders when industrial sales of foreign firms are concentrated in large firms. Taken together, these two conditions contribute to cohesive and strong vested interests. Such circumstances make it more difficult for agencies advocating for domestic upgrading to push for new policies or to provide government support. Two sets of institutions governing local politics, the rule of fragmented bureaucratic competition and the cadre evaluation system, have enabled and channeled foreign capital's influence. These two institutions have created competitive pressure among peer departments and motivated bureaucrats to fight for resources and beneficial policies. The cadre evaluation system, moreover, grants greater bargaining power to bureaucratic agencies who have the ability to maximize economic indicators benefiting the careers of top city leaders.

\* I wish to thank Deborah Brautigam, Xun Cao, Andrew Cheon, Dan Honig, Kyle Jaros, Xiaojun Li, Eddy Malesky, Melanie Manion, Matthias Matthijs, Jean Oi, Jeff Pugh, Susan Shirk, Dario Sidhu, David Steinberg, Pavithra Suryanarayan, Heiwai Tang, Kellee Tsai, and Andy Walder for commenting on various versions of this article. I also thank participants of my presentation at Duke University, Stanford University, Harvard Kennedy School, the University of California San Diego, and Johns Hopkins School of Advanced International Studies. This research is supported by the Chiang Ching-kuo Foundation Junior Scholar Grant and the Stanford Shorenstein Postdoctoral Fellowship. Final revision accepted: May 6, 2017.

The study generates a theoretical framework based mainly on a research strategy conducting controlled comparisons among different cities on the East coast of China with similar economic conditions. It investigates the in-depth mechanisms of coalition formation and bureaucratic competition through personal interviews with local officials and businesses. The applicability of the theoretical lessons across local China is then discussed based on an analysis of quantitative data across more than 200 prefecture level cities.

The findings uncover the local mechanisms through which foreign firms exert uneven influence, which are often understudied by works focusing on the overall effects of globalization. Meanwhile, the global-local dynamics highlighted here also shed new light on the implementation of development policies, especially during the unsettled time when potential winners and losers tend to fight. As such, the study reveals the political tension between maintaining an open economy, on the one hand, and promoting an ambitious national industrial agenda, on the other hand, which was often assumed away in studies using the FDI-centered or global value chain perspective. In contrast to previous East Asian developmental states that tended to have limited exposure to FDI and relatively coherent bureaucracies, globalization has cultivated local interests within fractured bureaucracies (Amsden, 2001; Chen, 2008; Evans, 1995; Hsueh, 2011; Kohli, 2004).

## 2. THEORETICAL CONTRIBUTIONS

Traditionally, studies of other East Asian countries do not devote attention to the issue of local implementation, as these countries are relatively small in size. In contrast, China's national initiatives are implemented as mandates through a province–prefecture (city)–county–township–village hierarchy. There is, therefore, often wide regional variation when carrying out central policies (Oi, 1999; Ong, 2012; Rithmire, 2015; Shen & Tsai, 2016; Whiting, 2001). In particular, the revision, adaptation, and selective implementation of central policies by local actors have gained much attention in previous studies (O'Brien & Li, 1999; Tsai, 2006). As far as development policies are concerned, studies find that central policies provide important signals but also leave localities with a large amount of leeway for interpretation and implementation (Breznitz & Murphree, 2011; Heilmann, Shih, & Hofem, 2013; Segal, 2002; Thun, 2006).

What still needs to be better understood, however, are the sources of such variation. Existing explanations are inadequate. Studies of industrial, economic, and technology policies typically focus on explaining how such policies influence the performance of certain industries or sectors across several locales (Brandt & Thun, 2016; Breznitz & Murphree, 2011; Steinfeld, 2010; Thun, 2006). The issues of local governments' decision making and implementation, i.e., why they choose to embrace or resist certain policies, are surprisingly underinvestigated. Other works on political economy in China have traced local variation to the collective or private ownership legacies of the Maoist era (Oi, 1999; Whiting, 2001). Yet, as collective enterprises have rapidly declined (if not disappeared), the collective-private relations in rural areas cannot directly explain such variation among the cities we examine today. Even for a pair of cities that both have collective legacies (or both have private-oriented legacies), there are significant differences in performance between the two. Instead, what matters here are the foreign–domestic dynamics in urban areas. The key question is why government officials in cities of

similar levels of economic development and similarly structured bureaucracy respond differently.

This article seeks to address this lacuna by drawing attention to how the intertwined roles of foreign capital and local bureaucracy account for local policy variations. These two features—the penetration of FDI and complicated bureaucracy—also set China apart from other East Asian NICs in their high growth period. I argue that the composition of foreign capital affects the formation and strengths of local coalitions. At the same time, the way in which it exerts its influence is shaped and channeled by bureaucratic politics.

### (a) *Foreign capital and domestic policies*

The penetration of FDI is an important difference between China and its East Asian neighbors, as coordinating foreign-domestic firm relations has become a key challenge for development policies (Hsueh, 2011; Ye, 2014; Yeung, 2009). Among the spate of works that has examined how economic openness has influenced domestic coalitions and policies, a growing body of literature has emphasized inward FDI (Gourevitch, 1978; Hiscox, 2002; Rogowski, 1989). Some have examined the general economic influence of FDI on domestic growth and development. Others have looked at the political influence of foreign investors in facilitating liberal reforms and practices, curbing (or increasing) corruption, or challenging central state authority (Frieden, 1991; Gallagher, 2005; Huang, 2003; Long, Yang, & Zhang, 2015; Malesky, Gueorguiev, & Jensen, 2014; Pearson, 1991; Pinto, 2013; Schneider, 2013; Sheng, 2010; Wang, 2014; Zhu, 2017; Zweig, 2002). Regardless of their explanatory objectives, however, many of these studies make their argument based on observations of an overall structural variable, often the value of FDI as a percentage of GDP in a locale.<sup>2</sup> When it comes to explaining the variation in local responses to the rise of the new paradigm, however, I find that FDI as a general structural factor cannot account for local differences. In fact, I will show that cities with similar levels of FDI dependence (measured by the FDI/GDP ratio) often end up with contrasting degrees of support for new policies.

Studies of global value chains have examined how China, as well as other developing countries, participated in global production by first engaging in labor-intensive, low-value-added activities and then gradually upgraded to higher value-added activities (Gereffi, Humphrey, & Sturgeon, 2005; Herrigel, Wittke, & Voskamp, 2013; Zhu & He, 2016). Ideally, the entrance of FDI can produce technology spillover to local producers and aid them in gradual upgrading. Realities are far more complicated than this smooth picture depicts, however. The roles of foreign firms are highly mixed in their “crowd in” or “crowd out” effects across regions and industries (Amighini & Sanfilippo, 2014; Colen, Persyn, & Guariso, 2016; Demir, 2016; Gui-Diby & Renard, 2015). Even in technologically simple industries, studies show that Chinese firms have continued to encounter difficulties (Dallas, 2014). The most intriguing question, then, is to go beyond merely assessing positive or negative effects of global production and to explore the factors that contribute to such mixed outcomes.

The inadequacy of the FDI literature in general and global value chains literature in particular shows that China is a clear case in which we need to unravel more detailed mechanisms on the ground, especially if we need to understand local governments' provision of support for domestic upgrading. How exactly do foreign firms make local governments more or less willing to support domestic upgrading? Which aspect of foreign capital is exerting influence and through which channels?

In China, the majority of foreign firms do not have direct access to lobby for policies in city decision-making or to use money to buy votes for their favored politicians (Wang, 2014). Rather, I argue that foreign firms exert their influence through local bureaucrats, the real decision makers in local economic policies. Given the relatively weak role of industrial associations in aggregating and representing business interests, businesses tend to form patron–client relations with the bureaucrats who regulate them. The influence of foreign firms is only significant when the rules of bureaucratic competition and evaluation enable them to be. This finding resonates with a recent study by Ban (2016) in Spain and Romania, where the varieties of neoliberalism adopted in different countries depend on external constraints and the networks of actors who serve as the local advocates of neoliberal policies. This article moves one step forward by examining the translation of national policy at the local level.

#### (b) *Bureaucratic evaluation and competition*

Two basic rules of bureaucratic systems, highlighted in several previous studies, are found to shape local coalitional politics and economic policies in China. The first rule is the upward accountability created by the cadre evaluation system that governs millions of bureaucrats in China. Unlike Western democracies, the ruling political elites are motivated by accountability from above rather than from below. The cadre evaluation system has predominantly shaped the incentives of top leaders (party secretaries, mayors, and vice mayors of cities), who are evaluated and promoted by provincial-level officials through a set of policy targets (Ang, 2016; Landry, 2008; Li & Zhou, 2005; Liu & Tao, 2007; Manion, 1985; O'Brien & Li, 1999).<sup>3</sup> As such, city leaders also place downward pressure on rank-and-file bureaucrats within city governments, who maximize policy targets to obtain political promotion and economic bonuses.

The second feature is that instead of having a coherent bureaucracy making economic policies, as in the East Asian developmental states, the Chinese bureaucracy embodies pervasive fragmentation and competition, as captured by the notions of “fragmented authoritarianism” and the “policy enforcement market” (Lampton, 2013; Lieberthal & Oksenberg, 1988; Mertha, 2006, 2009). The pressure of cadre evaluation placed on various bureaus certainly arouses competition among them to establish political achievements and to supersede policy goals (Jing, Cui, & Li, 2015). Moreover, the duplicated bureaucratic structure with overlapping authorities means that multiple department agencies struggle to gain financial resources within one policy area (Lampton, 2013, p. 86; Pearson, 2005). The fact that financial resources are almost always insufficient at the local level—especially after China's 1994 fiscal reform—further intensifies this turf war.

Although the dual rules of cadre evaluation and bureaucratic competition indeed capture the essence of bureaucratic politics, the challenge is to elucidate how exactly they make a difference in policy outcomes and government resource allocation. Toward this end, few have examined the so-what question on concrete policy decisions, and even fewer have investigated the effects of bureaucratic politics on economic and industrial policies.<sup>4</sup>

#### (c) *A theory of coalitional politics on government support*

While the global-oriented perspective often ignores bureaucratic politics when implementing upgrading policies on the ground, studies of bureaucratic politics need to further contex-

tualize their findings to explain policy outcomes. To address these theoretical lacunae, this article advances a theory of coalitional politics regarding the allocation of government support for domestic upgrading. One of the key determinants of government support for upgrading, I argue, lies in the vested interest coalition in the international commerce department. This argument does not mean to deny the growing importance of the domestic technology coalition as advocates for reforms. Rather, it is based on the fact that by the mid-2000s, the domestic technology departments were newly emerging, fledgling agencies across most Chinese cities. Therefore, the characteristics of the vested interests at the moment of policy initiation became crucial for the balance of power within city government. The cohesiveness and strength of vested interest coalitions, however, do vary across different cities, and are affected by the characteristics of their business clients (Figure 1).

More specifically, two coalitions are involved in the transition under study: the international commerce departments who may see themselves as potential losers and the domestic technology departments who are potential winners.

(1) In the process of coalition formation, a cohesive group of bureaucratic competitors from international commerce departments is more likely to be mobilized to challenge domestic technology departments when they consistently perceive threats. This is far more likely to occur when the export share of foreign firms is large (i.e., when foreign firms and exporters overlap in a city), because it unites international commerce bureaucrats. The primary responsibilities of these bureaucrats are (a) attracting foreign investment (which, by default, is done by foreign firms) and (b) promoting exports in the city (which can be done by foreign and/or domestic firms). When foreign firms and exporting firms *de facto* overlap in a city, bureaucrats of international commerce become the primary regulators for foreign firms; hence, these bureaucrats see foreign firms as their long-term business clients. The rise of new policies hurts the interests of international commerce bureaucrats and elicits a cohesive voice of opposition.<sup>5</sup>

By contrast, in a city where foreign firms have a smaller share of exports, international commerce bureaucrats can have clients that are domestic exporters as well as foreign firms. Such a mix of clients mitigates the foreign-domestic struggle and in some cases even drives international commerce to recognize upgrading as an opportunity for their own coalition. To the extent that there is bureaucratic competition, it has been kept mostly within departments in charge of domestic technology and the implementing agencies of the new policy, which can facilitate the speed of policy implementation.

(2) In terms of coalition strength, when foreign firm production in a city is concentrated in a few large global firms, vested-interest groups have more bargaining power and are thus more likely to be strong compared to those cities in which output is

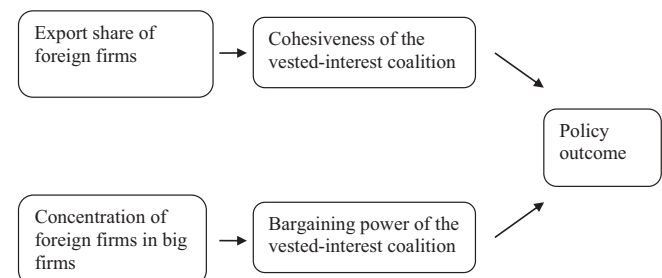


Figure 1. Foreign firms, bureaucratic coalitions, and policy outcome.

shared among small and medium foreign firms. City party secretaries and mayors have tended to favor and develop close relationships with bureaucrats who boost city indicators significantly and rapidly. In economic decisions regarding budget and resource allocation, the vested-interest group can utilize the existence of large foreign firms and wield persuasive power with top city leaders, preventing the domestic technology coalition from increasing its resources.

In sum, the article takes an important step forward to explain the local variation in city officials' allocation of government support for domestic upgrading. In doing so, it unravels the multifaceted influence of foreign firms. It shows how the local configuration of foreign firms can sharpen or soften struggles between the vested interests and the reform coalition. Foreign firms are a valuable resource that vested interest bureaucrats draw on to interpret policies, boost policy targets, and fight for resources favorable to their own coalition. Moreover, the article elucidates the way in which the features of domestic bureaucratic politics internalize and channel the impacts of foreign capital, making the response of international commerce bureaucrats an obstacle to policies in some cities more than others.

### 3. RESEARCH DESIGN

The article explores coalitional dynamics through a controlled comparison research strategy of four cities on China's East Coast.<sup>6</sup> I choose the prefecture city level as the unit of analysis, as local variation of policy implementation is most significantly manifested at this level. The province level is simply too broad to capture the vast variation among cities, as will be shown. The county level, in contrast, often does not possess the decision-making power for many of the industrial policies concerning government funding and tax breaks for domestic technology, as my field research suggests.<sup>7</sup>

I chose four cities—Suzhou, Wuxi, Ningbo, and Shenzhen—as they are important manufacturing cities on China's eastern coast, a region that accounts for more than 60% of China's industrial output and exports most of the manufactured goods in the world. In addition to being the “typical cases,” these cities not only are located within the same national policy context (thus having the usual advantages of sub-national comparison), but also represent the “most similar cases,” allowing us to control for a number of basic economic conditions.<sup>8</sup> In the first half of the 2000s before the transition started, they shared a similar range in terms of population (7–10 million), per capita GDP (40–50 thousand yuan), level of FDI dependence (7–9% of GDP), and the earliest arrival of FDI.<sup>9</sup> They differ, however, in terms of the composition of their foreign firms. Suzhou and Wuxi in Jiangsu Province, Ningbo in Zhejiang Province, and Shenzhen in Guangdong Province each represents a typical type in the two-by-two

matrix found in Table 1, the dimensions of which include export share of foreign-invested enterprises (FIEs) and degree of FIE concentration.<sup>10</sup>

In each city, the author carried out semi-structured and in-depth interviews (averaging 1.5 h) with bureaucratic officials in the city government departments in charge of international commerce and domestic technology. There were 29 officials from Suzhou, 32 from Wuxi, 36 from Ningbo, and 21 from Shenzhen. Interviews were used to both shed light on the implementation process and to act as semi-structured surveys of the four cities. Detailed descriptions of the interviews can be found in Table 7. After generating theoretical lessons based on these cases in terms of how the composition of foreign firms affects resource allocation, the application of these lessons to cities beyond the east coast is discussed, using a newly compiled quantitative dataset based on China's economic census and city statistical year books.

### 4. THE RISE OF THE NEW POLICY PARADIGM AND LOCAL RESPONSES

Post-Mao era industrial development and growth in China has been governed by two national policy paradigms. Starting in the 1980s and culminating in the mid-1990s, a paradigm favoring international investment and trade rose to the top of the national economic agenda. The initiative encouraged attracting FDI into domestic markets and promoting exports by taking advantage of low-cost labor and making China the world's largest manufacturing powerhouse (Naughton & Segal, 2003). In the mid-2000s, however, problems started to emerge. With labor costs rising, China's currency appreciating, environmental conditions degrading, and export markets shrinking, various pressures for change had built up. The central government began to seriously realize the unsustainability of a FDI-driven and export-led growth model and the possible middle income trap. The government came to embrace a new national paradigm involving domestic technology and indigenous innovation using state funding, tax breaks, and credits to incentivize domestic firms to become technologically competitive. The new agenda culminated in 2006 when the Hu-Wen leadership openly endorsed it in a national speech (Hu, 2006; McGregor, 2010; Steinfeld, 2010; Wen, 2006). At the same time,

Although China's contemporary importation of technology and machinery dates back to the 1980s, it was not until 2006 that the central government emphasized the importance of developing indigenous technology capabilities of their own. This effort involved neither waiting for foreign firms to provide technology, which failed in the 1980s, nor the old-style subsidization of inefficient SOEs by simply providing funds to import machinery.<sup>11</sup> Rather, the focus was on granting government support—often at the local level—to domestic

Table 1. *Comparative case study on coalitional formation and competition*

	High concentration of foreign firms	Low concentration of foreign firms
High export share of foreign firms	<b>Suzhou</b> Cohesive vested interests from international commerce, strong bargaining power	<b>Wuxi</b> Cohesive vested interests from international commerce, weak bargaining power
Low export share of foreign firms	<b>Ningbo</b> Noncohesive vested interests from international commerce, a few individually based proposals, which are dispersed, bureaucratic competition is restricted to domestic technology	<b>Shenzhen</b> Noncohesive vested interests from international commerce, weak bargaining power, bureaucratic competition is restricted to domestic technology



firms, many of which were privately owned, and creating incentives for them to invest in technology learning, upgrading, and innovation. Most importantly, the initiative legitimized expenses and funding of technology among prefecture-level cities. As Figure 2 indicates, the end of 2006 and the beginning of 2007 represented a critical juncture at which expenses across Chinese cities began to skyrocket. For

example, the Beijing city government's science and technology expense hovered around 0.24% of GDP during 2001–2006, but in 2007, it immediately quadrupled to 0.96%.<sup>12</sup> This situation, however, varied across cities (Figure 3).

At the same time that spending on science and technology was rising, the beneficial policies in government funding, taxation, land and utilities enjoyed by foreign firms were gradu-

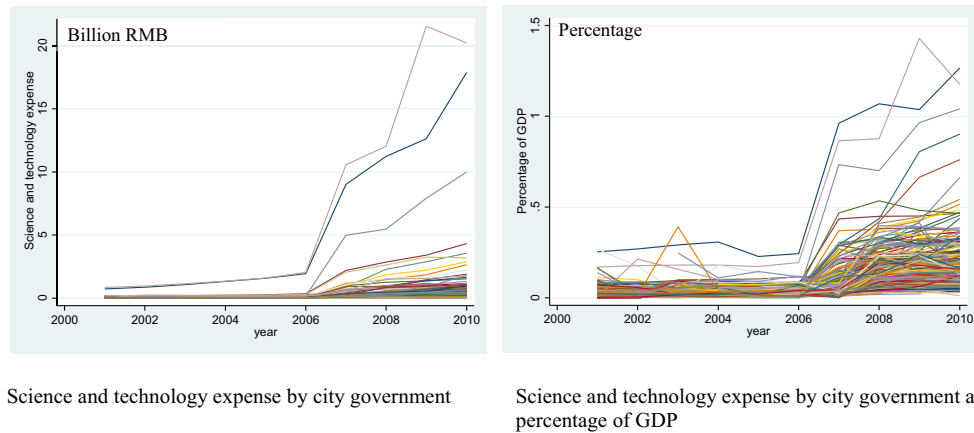


Figure 2. Government support for domestic technology in Chinese prefecture level cities 2000–2010.

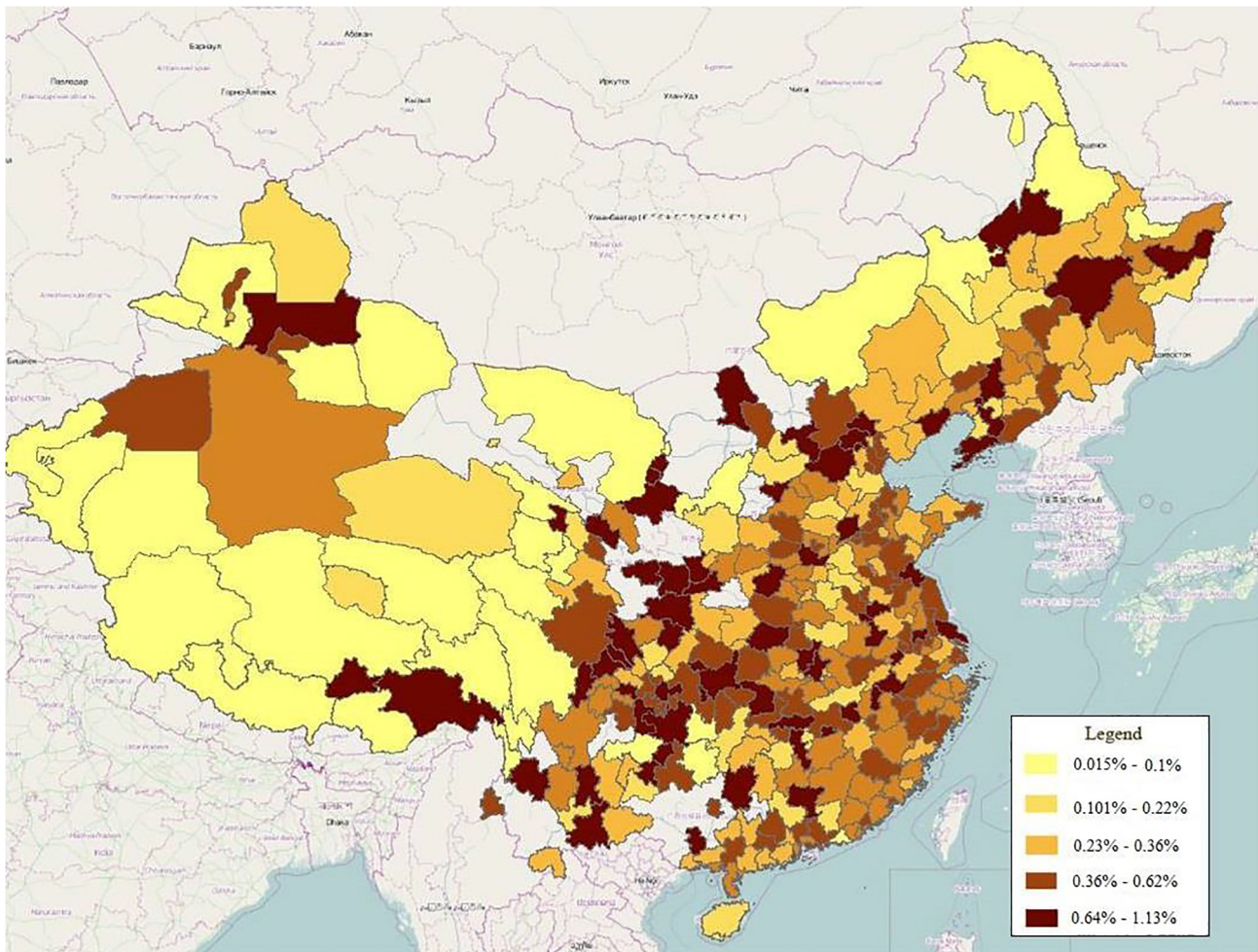


Figure 3. Prefecture city government funding for firm science and technology activities as a percentage of GDP in 2008. Sources: China Economic Census 2008; China City Statistical Yearbook (various years).

ally abolished. Before 2007, income tax rates for foreign firms were only 15%, less than half of the 33% charged to domestic firms, and many foreign firms enjoyed five to ten years of tax breaks with zero to 5% taxes. After 2007, favorable tax policies for FIEs were phased out and both domestic and foreign firms now have an income tax rate of 25%.<sup>13</sup> This means that at the onset of the initiative, the domestic upgrading paradigm was often interpreted as competing with, if not replacing, the FDI paradigm.

The old and the new paradigms were promoted by coalitions of ministries or commissions within the central government, led by the Ministry of Commerce and the Ministry of Science and Technology, respectively. Each paradigm was supported by a matrix of underlying institutions that offered the targeted enterprises preferential policies in state funding, tax breaks, credit allocation, land, and utilities usage discounts. In the meantime, the promoters also established a series of procedures to evaluate whether a firm, a city or a developmental zone was qualified for the beneficial policies (Table 2).

The policy shift in the mid-2000s involved the interests of two groups of agencies within city governments. The *first* group consists of departments of international commerce, such as the Foreign Economic and Trade Bureau (FETB), the Bureau of Investment Promotion (BIP), and the Economic and Technology Development Zone (ETDZ) Committee.<sup>14</sup> These departments were the major beneficiaries of FDI-attraction and export-promotion policies that began in the 1990s; as a result, the resources associated with these departments significantly increased. With the rise of the new paradigm and the loss of some foreign ownership benefits in the mid-2000s, these departments became major (potential) losers. The *second* group consists of newly emerged policy-implementation agencies intended to promote domestic technology, including the Bureau of Science and Technology (BST), the Economic and Information Commission (EIC), and the High Tech Development Zone (HTDZ) Committee. The primary responsibilities of these agencies consist of enhancing and improving the technological competitiveness and innovational capacity of firms to facilitate firm-level learning and to provide high-tech firms with government support and policies. These agencies were (potentially) empowered by the policy shift toward domestic technology upgrading (i.e., indigenous innovation).

During the Hu-Wen regime, China localities became arenas in which departmental interests (*bu men liyi*) became “biggest challenge” for policy implementation, according to China’s now premier Li (2015). These department interests are embodied in the long-entrenched logic of “where you stand is where you sit” in Chinese politics (Shirk, 1993). Bureau heads within the international commerce departments typically rally division heads (who are one-level below the bureau) and fight with

other bureaus or commissions for their departmental interests.<sup>15</sup> Overall, field research suggests that the struggles are found to revolve around three key themes.

First, bureaucratic departments compete for their own political survival. Due to the overlap of government functions, government agencies are frequently reorganized, merged, and even abolished during government restructuring.<sup>16</sup> Within such a context, government agencies compete to survive by showing the “necessity” rather than the “redundancy” of their functions, which is also associated with the bureaucratic ranks officials care so deeply about. When national priority shifted (i.e., when FIEs became less important), bureaucrats associated with FIEs worried about the legitimacy of their existence and sought to demonstrate their continued relevance.<sup>17</sup>

Second, authority and control over key policies (*shiquan*) provided government agencies with the opportunity to establish political achievement and to increase their power over other government bodies by setting local rules. The ascendance of the pro-FDI paradigm in the early 1990s significantly strengthened international commerce departments’ penchant for establishing local economic rules. The paradigm also created numerous opportunities for political achievement and led to promotion at various levels. In contrast, prior to the 21st century, the role of science and technology departments was mainly restricted to guiding research institutions, with a weak role in economic activities.<sup>18</sup> The rise of the domestic competitiveness paradigm substantially enhanced their role in economic and industrial affairs. Ironically, this explains the rise in bribes of domestic technology officials after the policy shift.<sup>19</sup>

Third, the preferential policies legitimized by policy paradigms provided bureaucrats with the resources to build and consolidate patron–client relationships with businesses. A business is identified as the *client* for a government agency if the agency’s function mainly involves regulating the business and the business also relies on that agency for preferential policies.<sup>20</sup> Unlike other policies, such as birth control, tax collection, and pollution reduction, which typically cause implementation headaches, economic and industrial policies are often “resource-bearing” policies that bureaucrats yearn for. Controlling these policies translates into budget increases and new institutions (platforms, zones, and research centers). Moreover, it translates into receiving the authority to approve preferential policies granted to firms, including, but not limited to, tax exemptions, government funding, credit allocation, and land and utility discounts for business clients. For instance, FETB and the ETDZ Committee had the authority to decide and negotiate whether a foreign enterprise would fall within the “encouraged” (instead of “restricted”) industries, thereby determining, essentially unilaterally, the years of tax exemption the enterprise could enjoy. For their part, the Bureau of Science and Technology (BST) and the HTDZ

Table 2. Policy paradigms and supporting government agencies in the mid-2000s

Initiatives	FDI attraction and export promotion (Previous)	Domestic technology (New)
Major Policy Goals	Attracting FDI and promoting exports by using low-cost labor	Promoting the technology competitiveness of domestic enterprises
Central Proponents	Ministry of Commerce (previously Ministry of Foreign Trade and Economic Cooperation)	Ministry of Science and Technology (previously the State Science and Technology Commission)
Local Implementers	Foreign Economic and Trade Bureau, the Bureau of Investment Promotion, and the Economic and Technology Development Zone Committee	Bureau of Science and Technology, the Economic and Information Commission, and the High Technology Development Zone Committee
Supporting Development Zones	Economic and Technology Development Zones*	High Technology Development Zones

\* The Economic and Technology Development Zone does not directly indicate its functions, for it was first created in the 1990s to attract foreign investment and develop export-processing zones different from the High Technology Development Zone.

Committee controlled the authority to evaluate and grant an enterprise the title of “high tech,” with its concomitant funding benefits. In exchange, the patron–client relationship provided government bureaucrats with economic benefits (e.g., bribes) as well as records of political achievements that could be drawn on for future political promotion.

## 5. FOREIGN FIRMS, EXPORTERS, AND THE VESTED-INTEREST GROUP

Although the rise of new policy could make international commerce departments potential losers, it does not necessarily mean that in every city, vested-interest groups emerge and fight against new policies. Rather, their emergence depends on the existence of a consistent and coherent perception among potential losers. It is precisely here that the existence of foreign firms made a difference. As previously discussed, when the export share of foreign firms is high in a city, international commerce bureaucrats interacted mostly with foreign firms because any “international” elements in the city (foreign investment *and* export) are conducted by foreign firms. Therefore, foreign firms are viewed as their long-term business clients. Domestic firms, on the other hand, were regarded as irrelevant to the bureaucrats’ interests as they were neither foreign investors nor major exporters. These bureaus in international commerce quickly gained traction in city governments during the 1990s and early 2000s, for FDI attraction and export promotion occupied China’s attention during this period (Tao, 2006; Zheng, 2014).

Suzhou and Wuxi (which modeled its FDI zone after that of Suzhou) are typical examples of cities in which foreign firms have been the primary exporters. Many of these foreign firms were brand-name multinationals that dominated the major exporting channels, whereas domestic suppliers focused on manufacturing peripheral components instead of final products. During 2001–2005, about 75% of exports in Suzhou and 60% of exports in Wuxi were done by foreign firms. As such, most business clients of bureaucrats working in international commerce departments in charge of foreign investment and trade were foreign firms. There was a sharp division of labor among bureaucrats along the line of ownership of their business clients.

Figure 4 shows the results of the author’s semi-structured interviews with bureaucrats in the two departments. When asked “In your daily work, which types of firms do you often interact with and regulate?” most bureaucrats in the international commerce departments of Suzhou and Wuxi identified foreign firms as the major business clients with which they interacted. In contrast, officials in domestic technology departments mostly viewed domestic firms as their business clients. Taken together, 93% of bureaucrats in Suzhou and 87% of bureaucrats in Wuxi (of officials who responded to the semi-structured interviews in both departments) chose one type of firm or the other as their regular business clients, leaving only 7% and 13% in each city that considered themselves to interact with both types of business. In fact, when a Suzhou official in the ETDZ (the FDI zone) was asked about the development of domestic firms, or when a Wuxi official in the BST was asked about a foreign firm in the city, they both answered that the firm(s) in question “have nothing to do with my job.”

Given this division of labor, it is not surprising that the ascendancy of the domestic technology paradigm evoked intense reactions in Suzhou and Wuxi. Bureaucrats in the international commerce departments—whose clients were almost solely foreign businesses—saw the change as not only a severe threat to their business clients but also their own political careers. The adoption of the 2007 tax reform, which phased out the original half-income tax rate and other beneficial policies for income taxes on foreign firms, also caused widespread worry. As a senior official from the FETB commented:

We summoned an urgent meeting with the BIP and ETDZ, as all our current institutions were built to support these foreign firms. Why did they suddenly abandon foreign firms and want to emphasize the technology capacity of indigenous firms? The entire plan originated from officials in the science and technology system, who apparently were trying to expand their power. But we have come up with our own ways to deal with it.<sup>21</sup>

This type of panic echoes comments from bureaucrats in the international commerce bureaus in Wuxi, who found the new policy “biased,” “threatening,” and “annoying.”<sup>22</sup> They interpreted the new policy as a threat to their interests and, in reaction, mobilized a coherent group of bureaucrats from various international commerce departments, who blocked policies and competed with domestic technology departments.

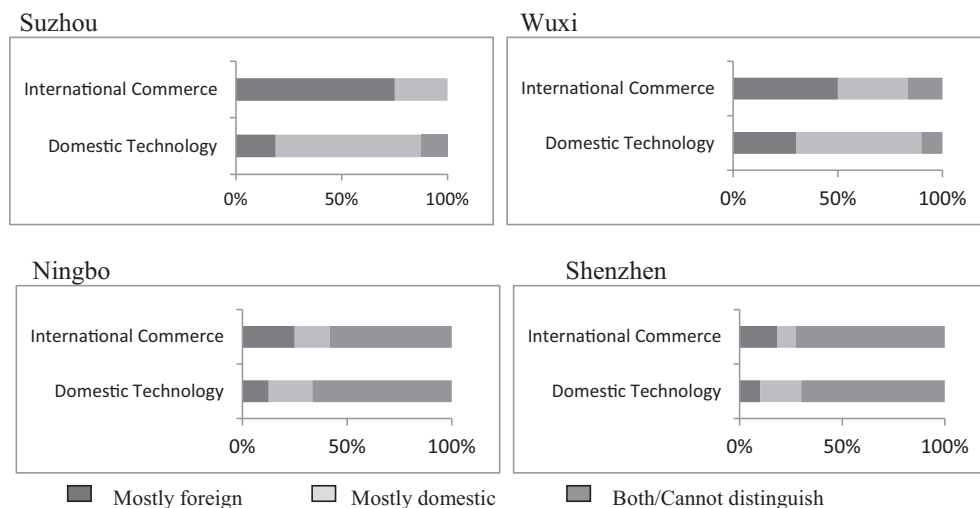


Figure 4. *Business clients of city bureaucrats (scaled to percentage).* These charts depict, in percentages, local officials’ answers to the author’s question: “In your daily work, which types of firms do you often interact with and regulate?” The total numbers of bureaucrats interviewed were Suzhou (29), Wuxi (32), Ningbo (36), and Shenzhen (21).



In both cities, officials disclosed that bureaucratic competitors of the domestic technology group came from the international commerce departments. In Suzhou, for example, one finds a battle between two camps. On one side, there were domestic technology departments (BST and EIC), which applauded the new policy as the coming of a “spring” for science and technology. On the other, there was the Foreign Economic and Trade Bureau, which pushed back against the change.<sup>23</sup> The former reported that they pressed for an increased government budget, tax breaks, and land discount policies for innovative domestic firms in government meetings, though they confessed to little success in reality. The latter, however, actively competed by stressing the importance of foreign firms and the “unfinished” mission of attracting foreign investors in various official meetings and written reports submitted to city leaders. These meetings, per an official working in the city party committee, highlighted the substantial costs and risks to the local economy of losing foreign clients, especially when a city signaled that it would have to allocate too much budget and too many resources to support domestic firm technology.

At the same time, bureaucrats also sought to placate foreign firms by simply blocking the influence of policy changes. A senior official at the ETDZ in Suzhou informed me without hesitation that within the zone and in any media outlet, it was prohibited to mention the concepts of “national brand” or “indigenous technology.” He stated that:

We informally barred those words so that at least foreign firms within the zone would be less worried about the possibility of changing our long-term investment attraction policies and would not cease their investment. It is an open secret among bureaucrats.<sup>24</sup>

In this regard, Wuxi faced a similar situation. The city integrated its ETDZ and HTDZ to mitigate coalition-related fights. Because of land limitations, the former department advocated the expansion of export zones for foreign firms far beyond the original boundaries of ETDZ to the extent that this increase would have encroached on the territory/size of the HTDZ.<sup>25</sup> As a result, the domestic technology departments, a coalition that was newly formed and emerged, had to face the mounting challenges to their push for more resources. Wuxi’s domestic technology upgrading, according to a Wuxi official, can be characterized as “more talking and less doing.” That is, one often saw them in internal government documents, but real changes were slow to manifest. As will be seen in the next section, there were indeed some changes when opportunities opened up, but they were still quite limited.

Ningbo and Shenzhen displayed levels of FDI dependence similar to those of Suzhou and Wuxi, with FDI accounting for about 7% of GDP. However, the share of export by foreign firms was smaller. In these two cities, 28% and 40% of exports, respectively, were from foreign firms by 2005. The perception of international commerce departments regarding policy change was far less threatening because their business clients included a mixture of foreign and domestic businesses. As Figure 4 indicates, in Ningbo and Shenzhen, bureaucrats interviewed in the two departments found it hard to determine if their business clients were foreign or domestic. Including both international commerce and domestic technology departments, 64% of officials in Ningbo and 71% of officials in Shenzhen answered that they could not distinguish ownership of their business clients. In fact, when asked about whether they primarily regulate foreign or domestic businesses, a bureaucrat from the Shenzhen Bureau of Science and Technology remarked:

This question is simply laughable. We stopped making a distinction between foreign and domestic businesses ages ago. We now regulate both types as they are connected anyways. Our major function was to encourage them to embark on technology development. Other departments such as the commerce side deals with domestic and international business environments and rules.<sup>26</sup>

Even if a few bureaucrats or their business clients felt threatened by the policies, it was unlikely to lead to the creation of a coherent vested-interest group to systematically combat the reform. Furthermore, many domestic exporters—by being related to international trade and domestic technology upgrading—are business clients for the two coalitions at the same time. There were cases in Shenzhen in which these domestic businesses helped bring together bureaucrats from different camps to sit and talk. The perception that there was a struggle, in the style of “us versus them,” was missing. Instead, upgrading was perceived as a new opportunity, with various departments focused on different stages of business development, ranging from helping set up businesses to nurturing initial growth and making them stronger.<sup>27</sup>

Note, however, that these cities also experienced bureaucratic competition; nevertheless, the focus of this competition was different in that departments within the issue area of domestic technology competed among themselves, rather than with an external vested-interest group. Figure 5 summarizes officials’ answers to the question on the major source of competition. It suggests that in Suzhou and Wuxi, most officials viewed members of international commerce as their competitors, whereas in Ningbo and Shenzhen (more in Shenzhen), most officials viewed members of domestic technology as their competitors.

In Shenzhen, the battle was mostly fought between the BST and the HTDZ Committee, both of which had their functions within the area of domestic technology. Each established a leadership group under its name to expand its influence by competing to gain support for its own business clients. Although the BST became the promoter and regulator of firms outside of the HTDZ, the HTDZ Committee gained control over resources within the zone.<sup>28</sup> Regardless of the shifting balance of power, however, the competition was kept within the issue area of technology. It led to a race to attract investors, entrepreneurs, and overseas returnees interested in launching research and technology-intensive firms as well as existing businesses that engaged in newer technology. In 2008, the City People’s Congress passed the Shenzhen Act to Facilitate Science and Technology Innovation, which became the first innovation act passed by any Chinese city.

Ningbo experienced similar competition between the BST and the EIC, which were both government agencies concerned with domestic technology. These two departments competed to create a number of supportive rules for innovative enterprises, incubators, and enterprise-related R&D centers. This competition was on full display during a government consultation meeting in which the author directly participated as an observer.<sup>29</sup> The meeting aimed to draft the Ningbo Act to Facilitate Science and Technology Innovation. Despite some quarrelling between the two departments, which both wanted to play the leading role, the meeting eventually led to the passage of the Ningbo Act, an act that increased funding as well as fiscal and financial resources for domestic firms and created detailed measures to help start-ups and incubators. Ningbo became the fourth city to pass this type of legislation in China, following Shenzhen, Zhuhai, and Chongqing. In both cases, the competition did not come from a vested-interest group outside of the area of domestic technology. Instead, the com-



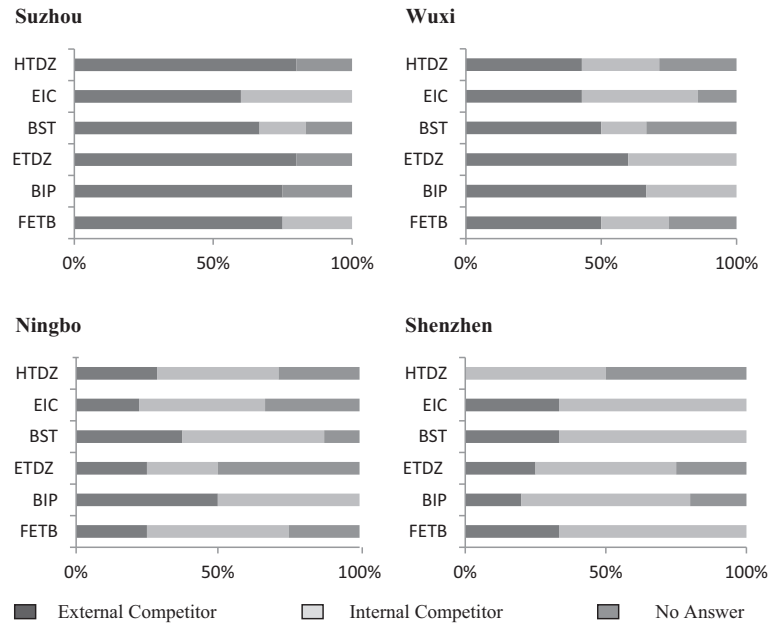


Figure 5. Internal and external competition among bureaucrats in the two departments. The charts illustrate local officials' answers to the question: "Without identifying the specific department, where do you think the major competition for your department comes from? You can choose from **two groups** of departments or choose **not** to answer the question." The "international commerce" group includes Foreign Economic and Trade Bureau (FETB), Bureau of Investment Promotion (BIP), and ETDZ Committee. The "domestic technology" group includes Bureau of Science and Technology (BST), Economic and Information Commission (EIC), and HTDZ Committee. When a bureaucrat identified competition outside of his or her own group, the answer was coded as **external** competition; otherwise, it was coded as **internal** competition. The number of bureaucrats interviewed was: Suzhou (29) Wuxi (32) Ningbo (36), and Shenzhen (21).

petition pushed agents within the issue area to gain traction even aster.

## 6. LARGE FOREIGN FIRMS AND THE WINNING COALITION

The large export share of foreign firms did indeed lay the foundation for the emergence of a coherent vested-interest group that constantly fought new policies, yet it was the concentration of foreign firms in large global firms that made it more likely for the vested-interest groups to win. Arguably, the empowering role of large foreign firms can be both direct and indirect. Large foreign firms often have direct access to bureaucrats and city party secretaries or mayors, and they made use of this access when threatened by the new agenda.<sup>30</sup> Granted, it is hard to deny the direct lobbying effects of large foreign firms, but direct influence has its limitations. Field research suggests that large global firms often negotiate with the city government behind closed doors to attain policy deals that favor these firms rather than the entire industry or all foreign firms in the city. This means that instead of systematically affecting a city's overall pattern of spending resources on domestic technology, the outcomes were highly customized and tailored to specific large foreign firms.<sup>31</sup>

This is why the coalitional effects that these large foreign firms had through city bureaucrats became essential. Large foreign firms often provided the international commerce coalition with more persuasive power toward city leaders. Based on the rule of "delegation by consensus," tensions among bureaucracies are often settled by higher level officials, who are top city leaders.<sup>32</sup> Top city leaders (*lingdao banzi*)—usually comprising the secretary and vice-secretary of the CCP committee, the mayor, and the vice-mayors—have the ultimate authority

to decide the direction of policy and institutional changes. Therefore, they are the "arbitrators" of bureaucratic conflicts. In the language of Chinese politics, rivalry along vertical lines (*tiao*), which divides bureaucrats according to their professional functions, is balanced by the city government, or the horizontal piece (*kuai*), with each coalition seeking to persuade and exert pressure on the leading group.<sup>33</sup>

Why would party secretaries and mayors not simply impose their decisions on bureaucrats instead of opening up policies for bargaining? Not only is it the case that departmental interests and fights are hard to overcome, as many studies on bureaucracy have found, but city leaders themselves have also learned that allowing bargaining may increase the odds of implementing a new policy, for officials are often more willing to accept the result than a decision imposed unilaterally.<sup>34</sup> That said, top leaders do have preferences.

The motivations of top leaders were predominantly driven by the cadre evaluation system, as mentioned (see Table 9 for an example). These leaders headed the Target Inspection Committee to stay on top of target accomplishment. Policy targets that carried the heaviest weights in the cadre evaluation system include traditional performance indicators (such as GDP, revenue, and industrial output) and newly added targets in the wake of the paradigm shift (such as the number of high-tech enterprises, the output and exports of high-tech products, and patents applications). Large foreign firms, such as Samsung, LG, Foxconn, and Intel, have been simultaneously influential in all these crucial indicators, and they are far more visible than smaller foreign firms.

These features have allowed international commerce departments to enhance their position through selective interpretation and extrapolation. In Suzhou, the FETB interpreted the new paradigm as a signal of the center's dissatisfaction with the "low technology" of foreign firms. The priority on technol-

ogy competitiveness was therefore understood as a move from backward, lower end (*diduan*) technology to higher end (*gaoduan*) technology (Zhong & Zhang, 2009, p. 55). Officials from the FETB and the directors of the ETDZ pointed out that most foreign firms, such as LG, Phillips, and Samsung, had mastered advanced technology. In contrast, domestic enterprises were so backward in technology that it would require at least two decades for them to make initial progress or “produce any results.”<sup>35</sup> A further examination of these claims, however, shows that a majority of “high-tech” foreign firms were almost always “lower end” in that they only located labor-intensive sections of the production chain in the city, repeating the past pattern of FDI attraction and processing trade.<sup>36</sup>

But such narratives helped vested interests seize the reform initiative from the domestic technology coalition and push the latter into the backseat (Wang, 2009). At the end of each lunar calendar year, when cities started to set budgetary expenses, bureaucratic contests in front of top city leaders became extremely intense, especially given prefecture-level cities’ budgets were curbed relative to expenses after the fiscal reform (Liu & Tao, 2007). Even though the party secretary and the mayor had the final say on the budget, bureaucrats from each department typically went to vice-mayors in charge of their department to request budget increases.<sup>37</sup> Hence, vice-mayors often rallied the corresponding departments and lobbied on behalf of, or together with, these bureaucrats in front of top city leaders in budget-setting meetings.<sup>38</sup>

When BST, EIC, and the vice-mayor in charge of domestic technology in Suzhou pushed for more city-level funding for enterprise innovation at these meetings, they often encountered a louder voice from international commerce (and the corresponding vice-mayor), as the international commerce pointed to the vital role of large foreign firms in bringing economic and high-tech benefits. Furthermore, the international commerce departments in Suzhou pushed for grafting part of the institutions and funding from domestic technology into their coalition. Although the Target Inspection Committee set increased funding for domestic technology in Suzhou, the international commerce departments bypassed the BST, negotiated with the High Tech Development Zone, and moved newly invested large foreign firms into the zone. They proceeded to co-opt the zone into their coalition and created their own policies of funding and tax exemptions for foreign firms under the rubric of domestic technology.<sup>39</sup> Officials in the zone committee initially resisted but realized that because they did not have many resources, their career paths would probably be improved if they kept quiet and let the international commerce coalition stay in the driver’s seat. Given that the international commerce coalition often backed up its arguments with indicator creation, it tended to have the ear of the mayors and party secretaries.

As a result, the voice of the domestic technology coalition was substantially subdued. In light of budget limitations and an emphasis on revenue creation concerns for revenue, city leaders provided a limited number of firms with funding and tax breaks. A winning vested interest often made it hard for reform advocates to push for the increase of resources for domestic technology, and this was typically ranked as a lower priority than issues such as expanding infrastructure in ETDZ. As an official in the BST complained,

The promotion of domestic technology competitiveness is a crucial function of our bureau, and we saw that as a signal that the central state had begun to take domestic technology seriously. The bureaus in international commerce, to our surprise, were also championing technology and innovation, but in their own ways. They moved ahead of us and seized the initiative from our hands to consolidate their own authority.<sup>40</sup>

Wuxi and Shenzhen provide interesting comparisons with Suzhou and Ningbo. Wuxi has also seen a fairly strong mobilization among its international commerce coalitions. However, foreign firms in Wuxi are more dispersed, i.e., more small firms, which did not allow vested-interest bureaucrats to wield much power. Thus, despite the rise of a relatively coherent vested interest, the opportunity for this vested interest to successfully make its case in Wuxi was more limited than in Suzhou.<sup>41</sup> This was particularly true when Wuxi saw itself lagging, in terms of economic and technology indicators, behind its peer cities: In response, Wuxi provided limited openings for top city leaders to consider offering opportunities to domestic technology. An internally circulated document by the city government urged,

In terms of total industrial growth and output in 2008, the gap between Wuxi and Suzhou has widened. Moreover, there is the pressure to prevent being surpassed by Guangzhou and caught up to by Hangzhou in the next round ... In terms of high-tech industries, Wuxi’s high-tech output accounted for 15.2% of provincial output in 2006, which still lagged behind Suzhou (36.9%) and Nanjing (17.8%) (Wuxi Government, 2009, p. 3).

A government decree to “build Wuxi into a Leading Innovative City” issued by the CCP committee and the municipal government enabled Wuxi to be one of the first cities to attract scientists and engineers to the Wuxi New District, many of whom were educated abroad. At the same time, the district also fomented the development of solar energy, mobile internet devices, and biomedical products. On one hand, this initiative enabled the city to make some progress in these new industries. On the other, due to the presence of a vested interest in international commerce, the BST always had to be careful to ensure that the industries they were supporting did not directly compete with any foreign firms being brought in or likely to attract in the future, many of which were in the areas of IT and electronics.<sup>42</sup>

Ningbo seemed to be the mirror image of Wuxi. It saw less mobilization among the vested-interest coalition due to the city’s smaller export share of foreign firms (see the previous section for more information). Nevertheless, it has several large foreign firms, such as Samsung, ExxonMobile, and Phillips. A few bureaucrats (individual) argued that rather than abandoning foreign firms, more joint ventures between these large foreign firms and state-owned enterprises (SOEs) should be set up to allow foreign firms to take advantage of the new paradigm as well.<sup>43</sup> There was an economic basis for such an argument, as a mixture of foreign firms and domestic exporters were clients of international commerce, yet the argument lacked the support of a cohesive group. This weakness was also noticed by an official in the BST’s Research Office, as he commented sarcastically:

A lot of times, those bureaucrats actively seeking to take advantage of foreign capital end up being taken advantage of by foreign capital (*Liyong waizi hui fan bei waizi liyong*). This is a phrase created by us, and we think they deserve it. They [the bureaucrats] probably need to come to realize their weakening position and let indigenous forces drive the process.<sup>44</sup>

As a result of the lack of coherence, and the discussion of these joint ventures led to tailored policies for individual foreign firms in the ETDZ (the FDI zone) that did not systematically influence the outcomes of budget allocation and government funding for domestic technology upgrades at the city level.

The Ningbo high-tech zone rose quickly compared to the FDI zone. The former not only contributed 10% to 15% of the cost of technology transformation for traditional enterprises, it also used tax and funding tools to increase the amount of new technology in the incubator.<sup>45</sup> In August

2008, the high-tech zone also succeeded in acquiring sufficient budget, and it organized an investigation team of eight local officials in the city government and 180 supporting cadres in the high-tech zone to conduct in-depth interviews of 162 enterprises, gathering information and identifying problems that enterprises may encounter or did encounter (Ningbo Government, 2008). In 2010, the number of authorized invention patents in Ningbo surpassed 10,000, and party secretaries and mayors began praising and rewarding the city's BST with expanded budget allocation.<sup>46</sup> In 2011, the number of authorized patents in Ningbo topped Zhejiang province and the rest of China, which placed Ningbo in the second place (right after Shenzhen) for the number of authorized invention patents (Xia, 2012).

In Shenzhen, to begin with, there was no such mobilization of a strong vested-interest group; moreover, the average size of foreign firms was too small to empower individual international commerce bureaucrats. As mentioned in the previous section, the bureaucrats from domestic technology focused their attention on competing internally to build leadership groups and obtain resources. Shenzhen was the first city to pass a city act known as the Supporting Science and Technology Innovation Act, and the city was the most well-known coastal city to pioneer a number of policies that served as templates for other cities, including the Adjustment and Revitalization Plan for the Electronics and IT Industry and Guidelines for Using Technology Development Funds for Enterprises. Not surprisingly, Shenzhen has been the home of most competitive private firms, such as Huawei, Tencent, Skyworth, in the electronics and IT sectors for domestic and international markets. In fact, Shenzhen's city government, not enterprises, introduced and developed the earliest venture capital model in China (Jin, 2010). The expansion of the high-tech zone to include various incubators and innovation valleys for hatching smaller start-up technology firms showed the success of the domestic technology coalition in pushing for the establishment of new institutions. The most recent development of the initiative was the 345-million-yuan support that the Shenzhen government pledged to 12 R&D teams in microelectronics and biotechnology.

In general, we can view Suzhou and Shenzhen as two extreme of a continuum. Wuxi and Ningbo, which have either a coherent vested-interest coalition or bargaining power, can be seen as mixed or intermediate types. Table 3 summarizes the various support measures—budgetary expense, government funding, and tax breaks—that these four cities provided since the launch of the paradigm. The results support the argument advanced here, with Suzhou and Shenzhen having the overall highest and lowest degrees of support provided, with Wuxi and Ningbo ranked between the two.

## 7. ALTERNATIVE EXPLANATIONS AND APPLICABILITY ACROSS THE COUNTRY

Before proceeding further, it is necessary to make some qualifications. This article focuses primarily on explaining the varied level of support for technology development at the city level. It does not aim to explain the performance of technology capabilities in certain industries.<sup>47</sup> Nor does it engage in the state vs. market debate and discuss whether certain industrial policies should be adopted. Without denying the importance of all these topics, the study examines the politics behind local governments' decision making and implementation, which has been understudied but constitutes the first step toward understanding China's complicated transition to a more sustainable growth.<sup>48</sup>

When explaining the variation of policy outcomes, three alternative explanations were already discussed in the section entitled "theoretical contributions," including the overall level of FDI dependency, the Maoist public-private legacies, and having or lacking a bureaucratic competitor. It is also fair to ask if the backgrounds of bureaucrats and top city leaders affect outcomes. As mentioned, although these backgrounds do play a pivotal role, no systematic evidence has been found to support the notion that the directors of domestic technology departments in Shenzhen and Ningbo or the directors of international commerce departments in Wuxi and Suzhou have a stronger political background. Party secretaries in the four cities also had a variety of previous backgrounds, ranging from agriculture, social science, and natural science to the humanities, and they had been constantly shuffled from one city to the next according to the rule of city leader appointment in China. In fact, Wang Rong, the former party secretary of Shenzhen, served as the party secretary in Wuxi, Suzhou, and Shenzhen during the 2000s, which covered three of the four cities studied here.

The final possible explanation is a region's long-term tradition of implementing or resisting central policies. Yet, here, the opposite seems to be the case, suggesting that one needs to examine the policy area with more detail. Ningbo and Shenzhen are located in Zhejiang and Guangdong, two provinces often perceived as more likely to resist central policies, but they ended up with stronger implementation performance. For their part, Suzhou and Wuxi are in Jiangsu Province, which has a reputation for agreeing with and closely following central policies (Landry, 2008; Shen & Tsai, 2016). Therefore, the crucial aspect is not whether, but how, regions interpret and implement industrial policies which necessarily entail local structural and institutional constraints.

How would the insights generated from the case studies apply across China? The four cities discussed in this article are important cities on China's eastern coast, a region that accounted for 63% of China's industrial output in 2010. Yet,

Table 3. *City government support for domestic technology compared*

Cities	Government S&T expense (% of GDP) 2007–2010 average	Increase in government S&T expense (% of GDP) 2006–2010	Government funding for firm S&T activities (% of city expense) 2008	Tax breaks for S&T firm activities (% of city industrial sales) 2008
Suzhou	0.30	0.31	0.41	0.0073
Wuxi	0.33	0.38	0.49	0.0099
Ningbo	0.43	0.40	0.62	0.018
Shenzhen	0.86	1.01	0.83	0.037

Data Source: *China City Statistical Yearbook* (multiple years); China Economic Census 2008.



Table 4. *Globalization and city government science and technology expense (arranged by the last column)*

City name (Province)	FDI/GDP (%)	Export share of foreign firms (%)	Concentration of large firms (%)	Government science and technology expense as a percentage of total city expense
Songyuan (Jilin)	Medium low	High	High	Low
Lhasa (Tibet)	Low	High	High	Low
Shanwei (Guangdong)	High	High	High	Low
Jixi (Heilongjiang)	Low	Medium	High	Medium low
Maoming (Guangdong)	Low	Medium high	Low	Medium low
Chongqing	High	Medium low	High	Medium low
Deyang (Sichuan)	Medium low	Medium	Medium High	Medium
Guiyang (Guizhou)	Medium low	Low	Medium low	Medium high
Wuhan (Hubei)	Medium high	Medium high	High	Medium high
Changsha (Hunan)	Medium high	Low	Medium high	Medium high
Chengdu (Sichuan)	Medium high	Low	Medium	Medium high
Anyang (Henan)	Medium low	Low	Medium	Medium high
Wenzhou (Zhejiang)	Medium low	Low	Low	Medium high
Tai'an (Shandong)	Low	Low	Medium	Medium High
Huzhou (Zhejiang)	High	Low	Low	High
Taizhou (Zhejiang)	Medium low	Low	Low	High

even when applying the perspective to China's inland regions in the south and west, where there are different levels of economic development, the findings analyzed herein still largely hold. Table 4 provides an example of 16 cities located in various provinces across China, arranged by city government expenditure on science and technology as a percentage of total city expenditure during 2007–2010 (the last column). In general, the export share of foreign firms, and the extent to which foreign firms are dominated by large firms, are negatively associated with the city's willingness to spend on science and technology. In contrast, a city's overall level of dependence on FDI (shown as a percentage of GDP in Table 4), has no strong association with a city's expenditure on science and technology.

Space limitations do not allow for an elaboration on the systematic testing of the argument, but interested readers should refer to Table 6 for an application of the hypotheses across more than 200 prefecture-level cities (where statistical data exist for China's Statistical Bureau and the China National Survey of Industrial Firms).

The dependent variable analyzed here is the support that a city government provides for domestic technology upgrades and innovation. Policies and institutions are notoriously hard to operationalize. The major indicator used in this article is science and technology expense as a percentage of the total budgetary expense of the city government. This ratio variable is transformed by natural log of the odds. This indicator measures the willingness of the city government to spend money on domestic technology upgrading and their perception of its importance. Here, the assumption is that the perception of its importance is directly associated with the strength of the domestic technology coalition (BST, EIC, and HTDZ), with the budgetary expense resulting from bureaucratic competition within the government.<sup>49</sup>

The first independent variable is the export share of FIEs; it is measured by the sale of exports from FIEs divided by the total sale of exports in a city. The second independent variable, the concentration of production by foreign firms, is measured by the proportion of industrial sales from large FIEs among all sales of FIEs. This variable seeks to capture the empowering role of FIEs on the vested-interest group. Lorentzen *et al.* (2014) measured large firm dominance through the relative influence of the biggest firm in a city. But this measure is taken in the absence of a full list of firms in the city and tends to underestimate large firm influence, for a city often has more than one large firm. Given that I have

data for all above-scale firms in each city, I focus on the relative dominance of all large firms, which are defined as firms with annual industrial sales exceeding 300 million yuan.<sup>50</sup>

When other variables are controlled statistically (see table 5 for detailed information), one finds that both the export share of the foreign firms and the degrees of concentration of foreign firms in large firms are significantly and negatively associated with a city's support for domestic technology. It is worth noting, as Table 6 shows, that while the two independent variables that affect coalition cohesiveness and bargaining power have significant negative relations to the dependent variable, the overall level of FDI dependence clearly does not. This confirms the previous argument that one needs to closely examine the detailed mechanisms and channels of the policy influence of foreign capital and global forces, and that the coalitional effects are far more salient than general structural effects. There may be concerns that the three variables related to FIEs might suffer from multicollinearity. As already shown, the sequential addition of the three variables does not change the signs of the effects, which would result if they were highly collinear. I also use variance inflation factor (VIF) to further test for multicollinearity (Table 8).

The influence of SOEs is included in light of the recent state capitalism literature arguing that the government continues to confer favorable benefits to SOEs at the expense of private enterprises (Huang, 2008; Naughton & Tsai, 2015). For some observers, indigenous innovation is often seen as a strategy to strengthen the state sector at the market economy's expense (Lardy, 2014; McGregor, 2010). It is unlikely, however, that this will be the case for this study, given that the new initiative pushed by the domestic technology coalition (especially when headed locally by BST) was quite different from the traditional approaches that used science and technology funds as an excuse for subsidizing SOEs. Instead, the new paradigm and policy implementation emphasized use of the budget to provide support on a competitive basis to private firms and start-ups. Furthermore, SOEs may not need to lobby through bureaucrats to formally increase budgets and/or resources at the city level due to their direct connection with the government either at the local or central level, along with their distinctive channels of financing.

There are concerns that even among cities on the east coast, there may be different stages of foreign investment attraction, so that cities receive qualitatively different types of FDI, which may shape the view of bureaucrats in particular ways.

Table 5. *Measurement and sources of variables*

Variables	Measurement	Sources
City S&T expense/total expense (%), log the odds	City government expense in science and technology as a percentage of total budgetary expense	China City Statistical Yearbook (various years)
Export share of foreign firms	Ratio between the sale of exports from foreign-invested firms and the total value of exports	China City Statistical Yearbook (various years) China National Survey of Industrial Firms
Large FIE concentration	The proportion of industrial sales from large foreign firms to all sales of foreign firms	China National Survey of Industrial Firms
FDI/GDP (%), log	Foreign direct investment as a percentage of GDP	China City Statistical Yearbook (various years)
GDP per capita (log)	GDP per capita in a city	China City Statistical Yearbook (various years)
Budgetary revenue (log)	The budgetary revenue of the city government	China City Statistical Yearbook (various years)
State owned enterprises	The ratio between the amount of assets of state owned enterprises and the amount of total firm assets in a city	China National Survey of Industrial Firms
Joint ventures	The proportion of joint ventures sales to total foreign firm sales	China National Survey of Industrial Firms
Ethnic Chinese	The proportion of output from foreign firms invested by ethnic Chinese investors (Hong Kong, Taiwan, Macao) to output by all foreign firms	China Economic Census China Industrial Economy Statistical Yearbook
East coast	92 cities located in Beijing, Tianjin, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan (1 = yes, 0 = no)	China City Statistical Yearbook
Fiscal capacity (%), log	Budgetary revenue as a percentage of GDP	China City Statistical Yearbook
Export/GDP	Exports as a percentage of GDP	China Economic Census
FDI length	The number of years between the first arrival of FDI in a city and 2007 (note the latest arrival is one city in 2007)	China City Statistical Yearbook Provincial statistical yearbooks News reports

Table 6. *Estimation of prefectural level city government support for science and technology*

DV = Government S&T Expense/ Total City Expense (log the odds)	(1)	(2)	(3)	(4)	(5)	(6)
FIE exporter overlap	-0.414*** (0.136)			-0.277** (0.119)	-0.276** (0.117)	-0.541*** (0.152)
Large FIE concentration	-0.293** (0.142)	-0.367** (0.144)		-0.273** (0.112)	-0.274** (0.113)	-0.233* (0.129)
FDI/GDP (%), log	0.0188 (0.0313)	-0.00558 (0.0312)	0.000853 (0.0323)	0.0244 (0.0415)	0.0238 (0.0426)	0.0752** (0.0370)
GDP per capita (log)	0.400*** (0.0756)	0.409*** (0.0758)	0.355*** (0.0741)	0.399*** (0.0825)	0.398*** (0.0821)	0.338*** (0.0734)
Budgetary revenue (log)	0.277*** (0.0448)	0.274*** (0.0447)	0.230*** (0.0403)	0.257*** (0.0494)	0.256*** (0.0473)	0.232*** (0.0423)
Fiscal capacity (%)	0.0162 (0.0131)	0.0122 (0.0131)	0.0195 (0.0133)	0.0281* (0.0161)	0.0283* (0.0154)	0.0237 (0.0165)
State owned enterprises	-0.263 (0.210)	-0.156 (0.209)	-0.168 (0.181)	-0.299 (0.218)	-0.301 (0.224)	-0.247 (0.181)
Joint ventures	-0.0953 (0.130)	-0.00753 (0.136)	0.0435 (0.135)	-0.00714 (0.133)	-0.00702 (0.133)	-0.0194 (0.138)
Ethnic Chinese firms	0.137 (0.149)	0.0668 (0.147)	-0.0271 (0.136)	0.133 (0.160)	0.133 (0.159)	0.0373 (0.109)
Export/GDP (log)	0.0662** (0.0266)	0.0641** (0.0260)	0.0757*** (0.0244)	0.0628* (0.0350)	0.0624* (0.0360)	0.0659* (0.0384)
East	0.161** (0.0753)	0.110 (0.0745)	0.172** (0.0754)			0.131 (0.0899)
Length of FDI					0.000565 (0.00354)	
Constant	-11.72*** (0.612)	-11.88*** (0.606)	-11.04*** (0.584)	-11.57*** (0.765)	-11.56*** (0.750)	-9.878*** (0.617)
Observations	244	244	275	244	244	243
R-squared	0.689	0.674	0.675	0.603	0.603	0.684
Number of provinces				31	31	

The dependent variable, city government expense on science and technology as a percentage of total city budgetary expense, uses the average value during 2007–2010. Columns (1) (2) (3) (4) (5) use predictors during 2007–2010. Column (6) uses predictors during 2001–2005. All variables are average value across years. Robust standard errors are in parentheses in models (1) (2) (3) (6). In order to control for provincial level effects, provincial fixed effects are used in models (4) and (5) with clustered standard errors in parentheses.

\*  $p < 0.1$ .

\*\*  $p < 0.05$ .

\*\*\*  $p < 0.01$ .

I therefore also include a variable that measures the length of a city's openness to FDI, which is the number of years between the first arrival of FDI in a city and the year 2007, when the reforms started to take place. However, adding the variable length of FDI (from the first year of arrival until 2007) to the model, as column 5 of Table 6 shows, does not produce any significant results.<sup>51</sup>

How likely is it that the two independent variables are influenced, in reverse, by the dependent variable? Does government support make it more likely for foreign firms to have a smaller share of local exports and/or more likely to spread out production among small foreign firms? In order to address this problem, I added another estimation using predictors that are all measured by average values during 2001–2005 and with the dependent variable for 2007–2010. The result (shown in column 6) still supports the hypotheses with significant effects on the independent variables.

Nevertheless, one may still ask whether the promotion of domestic technology can strengthen domestic firms in the international markets, which may shrink the export share of foreign firms. Although theoretically it might be possible, empirically it is unlikely. As already mentioned, governments at the central and local levels only recently started to embrace the new paradigm. Throughout the 1990s and early 2000s, the FDI and export processing zone fever was so widespread and out of control that the State Council of China had to constantly crack down on it (Li, 2008; Tao, 2006). The sequence was clear. The rise of the pro-FDI paradigm preceded the rise of concerns for indigenous technology capacity.<sup>52</sup> Second, the export share and degree of concentration of FIEs vary among cities, but are path dependent within a given city in the decade of 2001–2010. If the export share and the sizes of the foreign firms were caused in reverse by the change in a city's spending on domestic technology that started after 2006 (indicated in Figure 2), we would also see changes accordingly in the features of foreign firms during the same period. Furthermore, China has already moved out of the earlier stage of a pure export-led model that simply encouraged domestic firms to increase the amount of exports, so resources specifically targeted at science and technology expenditures should not expect to influence the export share systematically.<sup>53</sup>

## 8. CONCLUSION: GLOBALIZATION AND THE POLITICAL ORIGINS OF DEVELOPMENT POLICIES

Globalization has challenged the state's ability to carry out national economic policies, and decentralization has further

complicated the process by cultivating interest groups at the local level. More than three decades after China opened its economy to foreign investment and trade, global forces have instilled new dynamics into domestic politics. The policy processes have gone beyond central-level debates and have become manifested in local coalitions, especially among bureaucrats who regulate businesses and rely on such businesses to advance their political careers. Although this study uses the feature of foreign firms as an important indicator, it is worth reiterating that progress or stagnation in policy changes cannot be explained without paying attention to the articulation and manipulation of local bureaucrats, who have varied perceptions of the rise of a new paradigm and uneven levels of political influence. At the same time, foreign capital interacts and conditions local governments' policy choices and development trajectories.

Despite the focus on the sub-national level, the lessons generated from distinctive local economies can also shed light on the current generation of emerging economies, such as India, Indonesia, Malaysia, and Vietnam, which have a developmental context more similar to that of China than developmental states in Northeast Asia.<sup>54</sup> The Northeast Asian countries have been able to design government functions in a way that coordinates bureaucrats in charge of international business and domestic technology at the national level. In Japan, the tension between an international- and domestic-oriented approach was mediated by the Ministry of International Trade and Industry. Taiwan solved the problem by using a single government agent, the Industrial Development Bureau, to manage domestic and international trade at the same time.<sup>55</sup>

In China and the current generation of Asian emerging economies, political fragmentation and bureaucratic interests at the local level have played important roles in channeling state development policies. At the same time, these economies have attracted increasing amounts of FDI, with foreign-invested firms penetrating unevenly into the local development context. Despite the impetus from the national government, uniform local institutions and policies did not necessarily emerge, but had to be carefully crafted and pushed through. The most formidable challenges thus often lay in the policy implementation processes, especially when they were driven by bureaucrats who acted as patrons for business clients and who fought for the allocation of resources among foreign and domestic firms. As such, one should go beyond a focus on the initiation of development policies and delve into long-existing local institutions that shape the incentives and strategies of these newly "globalized" coalitions.

## NOTES

1. Policy paradigm is used here to capture broader, overarching development goals, which are supported by detailed institutions and policies. In short, the rise of domestic technology upgrading, innovation, and competitiveness is referred to in the article as the "domestic technology" paradigm. The emphasis on innovation and competitiveness, avoiding specific sector targeting, has also been a strategy to couch policies in internationally acceptable language that is acceptable to WTO rules.

2. Some of the exceptions and more nuanced studies can be found in Gallagher (2005), Schneider (2013), and Malesky *et al.* (2014).

3. Shih, Adolph, and Liu (2012) find that factional ties rather than cadre performance are the main determinant of political promotion. However, their study uses the database of Central Committee members, which is at a

much higher political level than this article, where the cadre-evaluation system may not matter as much as it does at the local level. See Landry, Lu, and Duan (2015).

4. Mertha (2006) is an exception, who argues that bureaucratic competition can facilitate policy enforcement. As will soon be shown, my finding suggests that whether such competition facilitates or impedes policies depends on whether the competitor resides inside or outside of the policy area being studied.

5. Technically there are two ways to examine the overlap of foreign firms and exporters. First, one can examine the proportion of foreign firms that are exporters as opposed to foreign firms that only sell in domestic markets. Second, one can examine the proportion of exporters that are



foreign firms as opposed to domestic firms. The first method is not relevant to our theoretical concern, however. Whether a foreign-invested enterprise (FIE) exports or not, it will be counted as international commerce because it is invested by a foreign business. This method cannot tell us if clients for the international commerce department are foreign businesses only or also have domestic businesses. The second method, i.e., to investigate the export share of foreign firms, can tell us whether international commerce officials only have foreign firms as clients.

6. For more on structured, focused comparison, see [George and Bennett \(2005\)](#)
7. Interview, GD029. See [Table 7](#) for the list of interviews cited.
8. For subnational comparison, see [Snyder \(2001\)](#); for the case selection strategy of typical cases the most similar cases, see [Gerring \(2007, Chapter 5\)](#).
9. These cities started attracting FDI, respectively, in 1985, 1981, 1980, and 1980. Other indicators are collected from *China City Statistical Yearbook*, 2001–2005.
10. For this reason, I did not include any inland cities in the Midwest or West for the in-depth case-study section, because including them would make it too difficult to control for economic conditions. However, these cities will be briefly discussed in a later section.
11. See [State Planning Commission and State Science and Technology Commission \(1982\)](#) and [Huang \(2008\)](#) for the previous style of subsidizing inefficient SOEs by importing machinery.
12. Although this study focuses on prefecture-level cities, the cities of Beijing, Tianjin, and Chongqing are included in the data as single cities despite that they are municipalities. This choice is due to the lack of data at their district level, but they are too important to be omitted in the study.
13. The tax rate is according to the Act of Income Taxes for Enterprises passed in 2007 by the National People's Congress.
14. Note that the Foreign Economic and Trade Bureau was subsumed by the Bureau of Commerce in 2010 in Chinese localities; this study relies on research that largely covers pre-2010 data.
15. Officials believed that by arguing for the interests of their own department, they could also advance their own careers within the department. For a similar point, see [Shirk \(1993, 101\)](#).
16. For instance, after the decline of township and village enterprises (TVE) in the mid-to-late 1990s, the Bureau of TVE was quickly merged with the Bureau of Small and Medium Enterprises, a government agency subsequently became a subdivision of the Economic and Information Commission (EIC). But this does not mean that the overall size of the Chinese government is shrinking.
17. Interviews BJ002, SD001, ZJ012. See [Table 7](#) for the list of interviews cited.
18. As far as the enterprises are concerned, a 1982 science and technology plan conceded that they should primarily introduce technology “from abroad” and should move away from independent research. See [State Planning Commission and State Science and Technology Commission \(1982\)](#). This is in stark contrast to the direction taken by the Chinese government in the 2000s.
19. Interviews JS089, SD011, ZJ012.
20. Although the rules allowing ministries to directly benefit from the earnings of enterprises were abolished during the 1990s ([Shirk, 1993, pp. 101–102](#)), patron–client relations between government and businesses (especially with private and foreign firms) are still prevalent in an authoritarian state that lacks rule of law and property rights protection.
21. Interview JS043.
22. Interview JS029.
23. Interviews JS038, JS039. See also the [People's Daily \(2006\)](#).
24. Interview JS003.
25. Interview JS067, JS068.
26. Interview ZJ002.
27. Interview GD003.
28. Interview ZJ013; ZJ024.
29. Author's participant observation, March 22 and March 26, 2010.
30. For more on large industrial firms as vested interests, though related to a different topic, see [Lorentzen, Landry, and Yasuda \(2014\)](#).
31. Interview JS045; JS029; ZJ002.
32. In other words, provincial-level bureaucracies—whether in international commerce or domestic technology—usually do not step in under such circumstances, as their relationship with city-level bureaucracies is a professional relationship rather than one of leadership.
33. Since the late 1990s, there have been back-and-forth reform efforts by the central state to strengthen the control of vertical lines or horizontal pieces.
34. Interview JS038; GD044; ZJ033.
35. Interviews JS056, JS057.
36. Interviews JS045; ZJ055.
37. Vice-mayors were put in charge of a particular aspect of the city, such as international business and trade, science and technology, culture, environmental protection, and social organizations.
38. Interviews BJ004; SH001; JS013; GD003.
39. Interviews JS023; ZJ012.
40. Interviews JS013.
41. Interview JS066.
42. Interview JS067.
43. Interviews ZJ013, ZJ033.
44. Interview ZJ033.
45. Interviews ZJ023, ZJ024.

46. Interview ZJ033, which was conducted with a group of officials at Ningbo Bureau of Science and Technology.
47. For an example of sectoral performance, see [Chen \(2014\)](#), [Brandt and Thun \(2016\)](#).
48. What concerns us here is the coalitional influence of government decisions, *given* the explanatory target of government support for domestic technology competitiveness. The article does not engage in the state vs. market debate on whether government support should be used. Throughout the post-Mao period, the government has always used policies to promote certain types of firms—foreign-invested or domestic, depending on the period of development. What is needed is not a normative but a “positive approach” to industrial policies. See [Robinson \(2009\)](#).
49. I examine the average percentage over the four years from 2007 to 2010 because the national policy shift and concomitant push for introducing institutions started in 2006. The model ends in 2010 on account of the fact that after this year, the state adjusted its standard for what counts as above-scale industrial firms. See [Lardy \(2014\)](#) for further detail. The estimation did not consider panel data for fixed effects across cities, because the primary interest of this research is variation among cities.
50. The definition of large firms is based on that used by the People’s Congress (2003).
51. The FDI starting time ranges from 1979 to 2007. By the end of 2007, every city in China that has statistical data available with the National Statistical Bureau has received FDI. The latest of all is one city named Longnan in Gansu province, which started to have FDI in 2007.
52. The historical and political reasons for cities to have had a different composition of foreign firms in the 1980s are beyond the scope of this article, but they are certainly path-dependent in nature.
53. The “Going Global” strategy that China launched recently put more emphasis on outward investment and establishment of Chinese firms in foreign countries rather than on exports by domestic firms. Moreover, the strategy itself is different from domestic upgrading in terms of the emphasis on indigenous science and technology capability.
54. For fragmentation of government agencies with FDI liberalization in Southeast Asia, see [Doner, Ritchie, and Slater \(2005\)](#).
55. See [Johnson \(1982\)](#) and [Wade \(1990\)](#). To be fair, this coordination ability can also be partly traced to relatively low levels of FDI in their high-growth period.

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## APPENDIX

Table 7. *List of interviews cited in the text*<sup>\*</sup>

Code	Location	Year	Interviewees
BJ002	Beijing	2008	Scholar, Peking University
BJ004	Beijing	2013	Official, Ministry of Science and Technology
GD003	Guangdong	2010	Official, Science and Technology Innovation Committee, former official, Economic and Information Committee
GD029	Guangdong	2014	Official, Economic and Information Committee
GD044	Guangdong	2010	Vice Director, Bureau of Science and Technology
JS003	Jiangsu (a)	2010	Director, Administrative Division, Economic and Technology Development Zone
JS013	Jiangsu (b)	2009	Director, Division of High Technology, Bureau of Science and Technology
JS023	Jiangsu (b)	2010	Official, Economic and Information Committee
JS029	Jiangsu (a)	2010	Director, Office of Policy Research, Economic and Technology Development Zone
JS038	Jiangsu (b)	2010	Official, Bureau of Science and Technology
JS039	Jiangsu (a)	2010	Director, Administrative Division, High-Tech Development Zone
JS043	Jiangsu (b)	2008	Vice Director, Division of Foreign Investment, Foreign Economic and Trade Bureau
JS045	Jiangsu (a)	2010	Manager and Chief Representative, A major electronic equipment and foreign-invested company
JS056	Jiangsu (a)	2010	Official, Foreign Economic and Trade Bureau
JS057	Jiangsu (a)	2010	Group of officials and directors, Economic and Technology Development Zone
JS066	Jiangsu (b)	2010	Official, Management Committee, High-tech Development Zone
JS067	Jiangsu (b)	2010	Director, Office of Policy Research, New District Zone
JS068	Jiangsu (b)	2010	Official, Office of Policy Research, New District Zone
JS089	Jiangsu (a)	2010	Director, Administration Office, High-tech Development Zone
SD001	Shandong	2009	Official, Bureau of Science and Technology
SD011	Shandong	2009	Vice Director, Bureau of Science and Technology
SH001	Shanghai	2014	Former official, Development and Reform Commission
ZJ002	Zhejiang	2010	Official, Economic and Information Committee
ZJ012	Zhejiang	2010	Vice Director, Bureau of Science and Technology
ZJ013	Zhejiang	2010	Official, Economic and Information Committee
ZJ024	Zhejiang	2010	Official, Industrial Development Division, High-tech Development Zone
ZJ033	Zhejiang	2010	Group of officials, the Bureau of Science and Technology, Economic and Information Committee, the Bureau of Finance, the Foreign Economic and Trade Bureau
ZJ055	Zhejiang	2010	Vice Director, Coordination Division, Economic and Information Committee

<sup>\*</sup> Given that many of the interviews cited involve directors and vice directors, city names are not given in order to protect the anonymity of the interviewees. Note that two of the cities are in Jiangsu. The listed interviews are the ones cited in the main text, and they only represent part of the 118 interviews that [Figures 4 and 5](#) are based on.

Table 8. *Variance inflation factor (VIF) for the basic model in [Table 6](#).*

Variables	VIF	1/VIF
FIE exporter overlap	1.62	0.618
Large FIE concentration	1.22	0.818
FDI/GDP (%), log)	2.03	0.492
GDP per capita (log)	2.65	0.378
Budgetary revenue (log)	3.32	0.301
Fiscal capacity (%)	1.85	0.539
State owned enterprises	1.42	0.703
Joint ventures	1.32	0.755
Ethnic Chinese firms	1.2	0.833
Export/GDP (log)	2.24	0.447
East	1.89	0.53

Table 9. *Jiangsu Province Cadre Evaluation System (for evaluating prefectural level cities)*

Categories	Number	Targets	Units
Economic Development X1	X1-1	Per capita GDP	—
	X1-2	Budget revenue as percentage of GDP	%
	X1-3	Growth in agriculture	—
	X1-4	Added value of service industry as percentage of GDP	%
	X1-5	High-tech industrial output as percentage of GDP	%
Science and Technology Innovation X2	X1-6	Contribution of consumption to GDP growth	%
	X2-1	R&D expense as percentage of sales income	%
	X2-2	Science and technology progress	%
Social Progress X3	X2-3	Patent authorizations and invention patent applications per million yuan GDP	Number
	X3-1	Public service expense as percentage of total government expense	%
	X3-2	Coverage of social progress	%
	X3-3	Higher education	%
	X3-4	Public facilities area per ten thousand people in the population	Square meters
	X3-5	Number of work-related deaths per 100 million yuan GDP	Number
Ecology X4	X3-6	Social Security Index	—
	X4-1	Percentage of reduction in energy consumption per unit of GDP	%
	X4-2	Occupation of land under construction per unit of GDP and percentage of reduction of such land	—
	X4-3	Percentage of reduction in COD and SO2 emissions	%
	X4-4	Percentage of water that reaches quality standards	%
	X4-5	Percentage of days with air quality that is good or above	%
Improvement of Life X5	X4-6	Percentage of green area in urban and rural areas	%
	X5-1	The increase in per capita income of urban residents	—
	X5-2	Urban unemployment rate	%
	X5-3	Percentage of population with less than 2,500 yuan annual income	%
	X5-4	Health indicators of urban-rural residents	—
	X5-5	Percentage of households with housing difficulty as proportion of low-income urban households	%
Public Participation	X5-6	Degree of access to information technology	—
	X5-7	Level of public transportation available for urban and rural residents	—
		Degree of satisfaction for science and technology progress among the population	—

Cadre score =  $40 \times (X_i - \min(X)) / (\max(X_i) - \min(X)) + 60$ .

Source: Jiangsu Government 2008.

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