

## 1 To Go Green Is Glorious? China, Foreign Investment, and Environmental Regulation

To get rich is glorious. This motto, of uncertain origin but often attributed to the late Deng Xiaoping, succinctly captures the feverish desire for economic development that has gripped China since the launch of the reform and opening era in 1978. No country has moved up the economic ladder as quickly as China. Over the last three decades, China's 9 percent per annum growth is faster than that of any country in history. This growth has lifted 250 million people out of poverty and made China a major producer and consumer of goods that just a generation ago were beyond imagination for most Chinese. From 2002 to 2006, for instance, the number of air conditioners in China tripled (Fergusson 2009). As late as 1990, only 42,000 cars were produced in China (Kelly Gallagher 2006). By 2007, the figure was 8.8 million (Associated Press 2008).

As the name "reform and opening" indicates, a major pillar of Beijing's get-rich strategy has involved opening China to foreign direct investment (FDI). Initially viewed with suspicion, especially by China's more conservative cadres, Beijing began setting up special economic zones to attract FDI in the late 1970s. Although investment was modest through the 1980s, after Deng's southern journey in 1992 FDI skyrocketed. Today China leads all developing countries in attracting foreign investment, and in recent years China has annually attracted more FDI than all of Central and South America combined. Between the years 2000 and 2003, foreign firms built 60,000 manufacturing plants in China (Palmisano 2006). By 2007 China was receiving

almost \$75 billion in FDI per year, which translates into just under 38,000 individual foreign-investment projects.<sup>1</sup> The result of this investment inflow is that today foreign firms account for a considerable portion of economic activity in China. In 1990, foreign-invested enterprises produced 2.3 percent of industrial output. By 2002, the figure had increased to a whopping 33.4 percent. One-third of China's industrial production comes from foreign-invested enterprises (National Bureau of Statistics 1994–2004).

To go green is glorious? To my knowledge no Chinese policymaker has ever uttered these words, but one would hardly be surprised to see this phrase on a billboard in China. The language of environmentalism has unmistakably entered the Chinese vocabulary. In 2008, when the State Environmental Protection Administration (SEPA) was promoted to the Ministry of Environmental Protection (MEP), the announcement indicated that China's central leadership was on a "green drive" to address environmental deterioration (Sun 2008e). Over the last few years Beijing has experimented with a "green GDP" that would employ environmental criteria in assessments of government officials' performance. In 2007, SEPA announced the launching of a "green credit policy" to prevent bank loans to industries in energy- and pollution-intensive sectors. A year later this was followed up with a "green insurance" program intended to compel companies to purchase insurance for industrial accidents and a "green securities" scheme that requires companies raising funds in Chinese capital markets to disclose environmental data.

Driven by concerns over product safety and "green trade barriers" that limit the access of Chinese companies to overseas markets, Beijing has also actively been promoting "green label" and "green food" programs to help domestic companies demonstrate their environmental credentials. In 2006, Beijing announced a "green procurement policy" that obliges government agencies at all jurisdictional levels to select products from a "green purchasing list." Since 2000, Shanghai has maintained a "Green 110" telephone hotline to collect complaints about environmental issues. And perhaps most famously, to deliver on its promise of a "green Olympics" Beijing spent \$15 billion and took drastic steps such as restricting heavy industry in five neighboring provinces, banning construction, limiting driving privileges, and closing factories in the immediate Beijing area. One county government in southern China, in a highly unusual attempt to heed Beijing's calls for greater emphasis on environmental protection, spent \$56,000 to paint the side of a mountain green (Associated Press 2007). Few things, it seems, hold more cachet in "red China" than the color green.

This green push from Beijing is in large part a reaction to the severe environmental strain produced by China's breakneck economic growth. Over the last three decades China has emerged as one of the most polluted nations on earth. It is difficult to overstate the seriousness of China's environmental challenge. Sixteen of the twenty most polluted cities in the world are in China (Economy 2004, 72). China has the world's highest rate of chronic respiratory disease, with a mortality rate five times that of the United States (Dexter Roberts 2003). Air pollution is estimated to contribute to somewhere on the order of 750,000 premature deaths every year (World Bank 2007). Half the population drinks water that is at least partially polluted and more than half of China's cities are affected by acid rain (Shi 2005b). Already environmental degradation is estimated to cost China somewhere between 8 and 12 percent of its GDP each year (Economy 2004, 88).<sup>2</sup>

Much of China's ample pollution is the result of industrial production. In 2000, SEPA estimated that 40 percent of water pollution and 80 percent of air pollution stemmed from industry (Wang Hua et al. 2004). In 2003, it was estimated that industry accounts for 83 percent of China's sulfur dioxide (SO<sub>2</sub>) emissions and more than 80 percent of total particulate emissions (Shi and Zhang 2006, 271). Industry also contributes to pollution problems through environmental accidents, which are all too common in Chinese factories. In December 2005, a chemical company made headlines when it spilled thousands of tons of benzene into the Songhua River, which created an international incident, as it not only affected the drinking supply of millions of Chinese, but also threatened downstream cities in Russia. In the ten months following the benzene incident, China experienced another 130 spills into water supplies, which is the equivalent of one every two to three days (Associated Press 2006; Reuters 2006b).

The strain on the environment contributes to a host of social challenges including increasing internal migration, rising public health costs, and environmental protests, which although scattered are common in China's rural areas (Jing 2000). In 2005, the number of environmental protests increased by 30 percent to more than 50,000, including one in Zhejiang Province that involved more than 30,000 demonstrators protesting against thirteen chemical plants. Two months later residents of another Zhejiang village marched on a foreign-invested battery factory and locked over one thousand workers inside the facility. Again, the issue was pollution, as villagers claimed the factory was contributing to abnormally high levels of lead poisoning (Savadove 2005). In 2007, thousands of citizens protested the construction of a chemical

factory in Xiamen, eventually forcing the suspension of the project (Tatlow and Kwok 2005). Incidents like these led Zhou Shengxian, currently head of the MEP, to refer to China's pollution problem as the "blasting fuse of social instability" (Beck 2006). As Zhou's comment implies, China's current rate of environmental damage is not sustainable and threatens to reverse many of the achievements of the reform period. In that respect it is hardly surprising that China's leaders have attempted to green China and strengthen industrial environmental regulation.<sup>3</sup>

Just as has been the case with China's attempt to "get rich," attracting foreign capital has also been an integral part of China's push to "go green." The National Eleventh Five-year Plan for the Environment (FYP), which lays out environmental targets and broad policy guidelines, declares that in the 2006–2010 period China "will expand the channels for using foreign capital." Part of this "foreign capital" strategy involves sustaining a high level of FDI into the Chinese manufacturing sector, which Chinese leaders have long argued has an environmental protection dividend. For much of the reform and opening period, for example, it has been common to hear Chinese leaders declare that, aside from providing the income growth necessary to strengthen environmental protection, trade and investment liberalization also facilitates access to advanced clean production technology and compels China to adopt more stringent environmental standards as foreign investors demand better environmental protection (*Asian Economic News* 1999; Jahlil 2006, 315). In 1992, for instance, Qu Geping, the former director of China's National Environmental Protection Administration (NEPA)—a forerunner to the current MEP—stated that economic development demands pollution prevention: "Foreign investors would be hesitant to invest in a heavily polluted area because the cost of cleaning up would be much higher than the cost of prevention" (Kent Chen 1992).

This argument was echoed in the period around China's entrance into the World Trade Organization (WTO) in 2002, when government officials and analysts asserted that the increased openness of China's economy would compel stricter environmental regulation to avoid an influx of pollution-intensive products and encourage the adoption of stringent international standards for corporate environmental management. This view that foreign investment brings with it an environmental benefit is often echoed by foreign companies operating in China. According to the Business Roundtable, an association of CEOs of leading U.S. companies that collectively represents \$4.5 trillion in

annual revenues and more than 10 million employees: “China’s liberalization of its trade and investment controls has opened the door for American companies to invest in China. U.S. companies operating in China typically bring environmental ‘best practices’ and habits of good corporate citizenship with them. This sets a good example for Chinese companies to emulate” (2009). The assumption underlying the assertions of both Chinese leaders and the international business community is that foreign investment and environmental protection are positively correlated. Attracting foreign investment leads to better environmental regulation.

This assertion is not without scholarly support. Numerous studies have shown that foreign investors, particularly multinational corporations (MNCs), often use a common set of environmental management standards in their developing-country operations. Because multinational firms have facilities in a large number of countries, they value predictability and stability and prefer to use a single set of environmental standards. This reduces the transaction costs associated with adapting environmental policy to different regulatory settings (Glen et al. 2000; Wheeler 2001). These standards have been developed in the MNC’s home country and so typically surpass the requirements of the developing host country. Along the same lines, several scholars point out that MNCs tend to use the latest technology, which is typically cleaner (Bhagwati 2004). This increases the likelihood that MNCs’ own operations meet environmental regulatory requirements.<sup>4</sup> Several empirical studies have found a positive correlation between foreign ownership and environmental performance standards (Christmann and Taylor 2001; Glen et al. 2000; UNCTAD Secretariat 2002; Wang and Jin 2002). Christmann and Taylor (2001), for example, show that foreign-invested enterprises in China report that they are more likely than domestic companies to comply with environmental regulation and even to go beyond compliance.<sup>5</sup>

Many have presented cases in which MNCs, and foreign investment more broadly, contribute to environmental regulation via an influence on government officials and domestic firms.<sup>6</sup> Already equipped to comply with strict standards, MNCs may have an incentive to press local governments in less stringent nations for tougher regulations in order to achieve reputation gains and possibly disadvantage domestic competitors that are less equipped to meet higher standards. In this case, “desire for a level playing field in time produces a higher-quality field” (Braithwaite and Drahos 2000, 281). Foreign firms may also exert a salutary influence on the environmental policies of

domestic partners. For instance, to the extent that foreign investors transfer clean technology to domestic firms in their host country, they contribute to local environmental regulation (Andonova 2003). Indeed, facilitating local firms' access to advanced foreign technology, which is typically less pollution-intensive, is one of the more common justifications for promoting investment liberalization in developing countries (Drezner 2000, 66). In China the opportunity to acquire new, clean production technology was a highly anticipated and frequently cited benefit of WTO membership prior to China's admission in 2002 (Jahiel 2006, 314; Zhao Yuhong 2007, 81).

Just as important as the transfer of technology is the diffusion of corporate environmentalism norms facilitated by foreign investment. Since the 1980s there has been a marked enhancement in the approach to environmental protection within the business community in the developed world (Hoffman 2000, 2001; Prakash 2000). The result is that leading companies routinely publish environmental data in annual reports, conduct environmental audits of overseas facilities, seek third-party certification of their environmental management systems, and often seek to go "beyond compliance" with regulation. Some have argued that MNCs promote these environmental norms in their operations abroad and "export environmentalism" to developing-country governments and firms (Bailey 1993, 142; Christmann and Taylor 2001; Florida 1996; Garcia-Johnson 2000; Hutson 2004; Rosen 1999, 152). The reasons for exporting environmentalism include: a desire to lessen the cost advantage domestic competitors gain by shirking pollution abatement, an attempt to enhance the company's reputation and minimize legal liability, and a genuine belief in the importance of corporate environmental stewardship. Efforts to promote corporate environmentalism are often part of a multinational's "green supply chain" policy, through which it screens a potential domestic supplier's environmental record and management system prior to the signing of commercial contracts (Christmann and Taylor 2006).

But not everyone agrees that foreign investors help a country go green. A highly contested strand of academic theory argues that the quest for foreign investment can create a downward pressure on environmental regulation. Those arguing in this vein are united by a shared concern that a fundamental characteristic of globalization is a transfer of power from governments to corporations. The logic of this position is straightforward. In today's world of international production, corporations can pick and choose among a number of locations in which to set up operations. IBM, the quintessential American

company, has over 40,000 of its approximately 320,000 employees in India. A typical Dell computer sold in the United States will have each of its critical components—microprocessor, memory, hard drive, battery, keyboard—produced in a different country, and altogether the manufacturing process can involve four hundred companies in North America, Europe, and Asia (Friedman 2006, 515–20). As companies have more choices about where to produce and supply, the fear is that they are becoming footloose and less subject to government control. The diminishment of government authority is not just a result of capital mobility, but also stems from developing countries' increasing reliance on foreign investment. In 1990, inward FDI was approximately 10 percent of the GDP for developing countries. By 2003, that number had increased almost threefold to 28 percent. For countries particularly open to foreign investment, such as Chile, the figure approached 70 percent (UNCTAD 2006). Capital is thus both more desired and more mobile, a situation that logically increases the weight of industry at the expense of government.

In this context of enhanced corporate authority, the fear is that foreign-investor environmental strategy is more often characterized as “exploitative” rather than “responsible.” Child and Tsai provide a useful definition of these ideal types: “A socially responsible strategy would devote substantial resources towards ensuring environmental protection, possibly on the expectation that superior long-term revenues will compensate for the additional costs. An exploitative strategy would be manifest in a policy of short-term profit maximization that minimized environmental protection measures on the grounds of their costs” (2005, 101). There are many examples of foreign investors adopting environmental strategies that tend toward the “exploitative” end of the continuum. Rosenberg and Mischenko (2002) argue that oil MNCs in Russia often ignored local environmental laws. Clapp and Dauvergne describe the poor record of transnational corporations in developing countries, especially those in extractive industries (2005, 169–74). Focusing on the logging industry in the Asia-Pacific region, Dauvergne argues that “both domestic and foreign firms continue to rely on networks of state and local allies to skirt regulations—such as forging export documents or smuggling logs overseas” (2005, 191). Kelly Gallagher provides an overview of foreign investment in China's automobile sectors and finds there has been minimal transfer of environmental technology from foreign to Chinese companies. The net result of China's dependence on foreign direct investment is that China has been “locked in” to outdated, inefficient, and polluting vehicle technologies for many years”

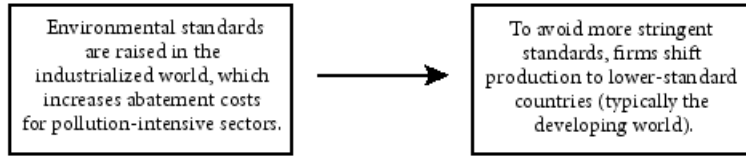
(2006, 125). Several other studies focusing on China have found examples of foreign investors in pollution-intensive industries either shifting production to China in order to take advantage of lax environmental laws or entering into joint ventures with local township and village enterprises, which tend to be beyond the reach of environmental officials (Richardson 2004a). In a similar vein, some have argued that in order to escape the costs of pollution abatement, foreign firms operating in the developing world simply contract out pollution-intensive products to domestic suppliers and then turn a blind eye (Leonard 1988; Mabey et al. 2003).

Not only are there questions about the environmental performance of foreign-invested enterprises (FIEs); a related concern is that the contest to attract foreign investors leads developing-country governments to weaken, avoid tightening, or disregard transgressions of environmental standards. Eager for investment, developing-country governments accede to investors' demands or take unilateral initiatives to lower the cost of business by relaxing the regulatory setting. This phenomenon, in which a combination of pressure from firms and government concerns about investment competitiveness results in weaker environmental regulation, goes by a variety of labels. When fear of capital loss or a desire to enhance attractiveness to mobile capital results in a jurisdiction failing to enhance standards, it is often referred to as a "political drag effect" that results in a "regulatory chill" (Esty 1994, 162–63; Neumayer 2001a). When more than one jurisdiction engages in a competitive weakening of standards in order to enhance their attractiveness to outside investors, it is typically referred to as a "race to the bottom."<sup>7</sup> In the extreme, a global race to the bottom can cause standards to converge at the level of the jurisdiction with the least stringent regulation; in a weaker form, it compels high-standard areas to loosen regulation or keeps low-standard jurisdictions "stuck at the bottom."<sup>8</sup> Whether one uses the term "chill" or "race," the essence of the assertion is that environmental regulation would be stronger if governments were not seeking to enhance their attractiveness to mobile capital.<sup>9</sup>

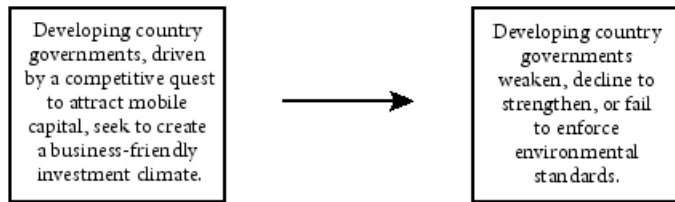
When competition concerns induce a developing country to keep its environmental standards low *and* it experiences an inward flow of investment from companies seeking to enjoy lower pollution-abatement costs, the country can become a "pollution haven." As Clapp and Dauvergne point out (2005, 162), a pollution haven is not simply a country with low environmental standards and/or a large amount of pollution. Otherwise, virtually any industrializing country might be deemed a pollution haven. For a pollution



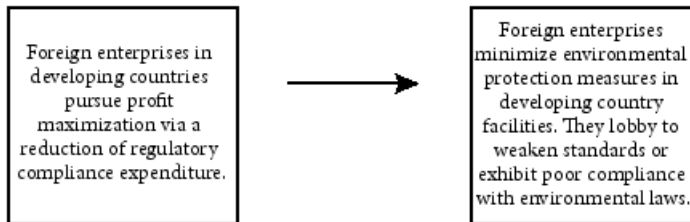
## Industrial flight: Impact of regulation on firms' investment decisions



## Race to the bottom / regulatory chill: Impact of competition for capital on regulation



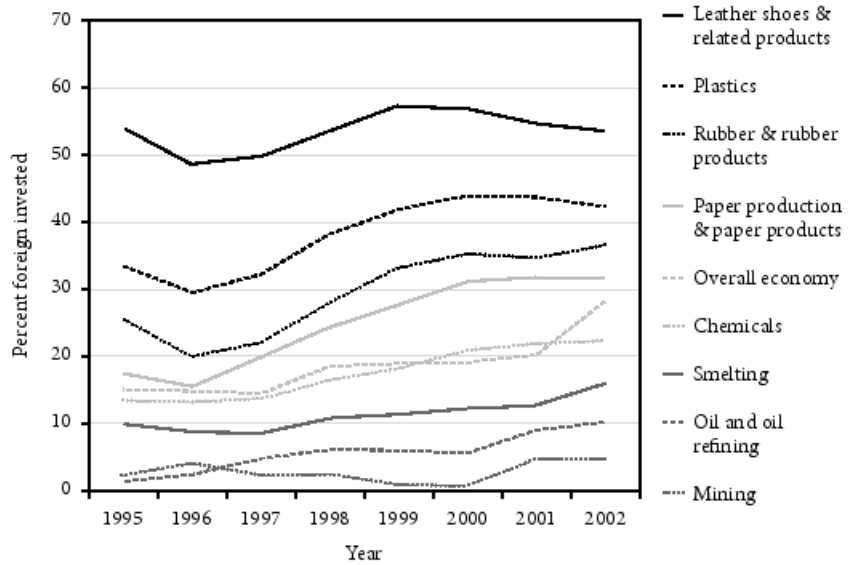
## Environmental exploitation: Impact of foreign firms on environmental regulation



**FIGURE 1.1** Three ways foreign investment can challenge environmental regulation.

haven to exist, one must also see “industrial flight,” which refers to the migration of pollution-intensive industries from strict-standard countries to weak-standard jurisdictions where they enjoy lower pollution-abatement costs. In other words, a pollution haven is conceptualized as the result of a combination of government strategy (captured by the notion of race to the bottom or regulatory chill) and firm strategy (conceptualized strictly as industrial flight).<sup>10</sup> These three concepts—industrial flight, race to the bottom or regulatory chill, and environmental exploitation—are illustrated in Figure 1.1.

In recent years, as China’s pollution problem has become increasingly severe and foreign multinationals more prominent in the Chinese economy,



**FIGURE 1.2** Foreign investment in pollution-intensive sectors.  
SOURCE: Peng and Zhang 2004.

Chinese analysts have started to buy into the pollution-haven argument. For example, a *China Daily* editorial states:

The key reason for the entry of polluting foreign enterprises into China is that local governments are so eager to attract foreign investment, they usually neglect environmental standards. Many multinational companies cherish their reputations as environmental protectors, but in China, this is not the case. These companies consume a great amount of resources and reap huge profits, leaving severe pollution behind. The fundamental reason for China's overheated economy and excessive liquidity is that these multinationals have focused on China's cheap labor force and loose environmental regulations. (*China Daily* 2008)

Accusations and incidents of foreign-firm malfeasance have also become common in China. Articles in the Chinese press in which developed countries' firms are accused of "transferring pollution" (*wuran zhuanyi*) are almost too numerous to count.<sup>11</sup> The "pollution transfer" articles make much of the fact that foreign firms invest in pollution-intensive industries.<sup>12</sup> As seen in Figure 1.2, there is significant foreign involvement in China's heaviest-

polluting sectors. The percent of foreign investment in the chemical sector, for instance, has increased steadily from around 13 percent in 1995 to over 20 percent in 2002 (Peng and Zhang 2004). In Chinese academic work, a commonly cited statistic offered as evidence of pollution transfer is the fact that in 1991 there were approximately 11,000 FIEs in China, of which 29 percent were categorized as pollution-intensive (e.g., Wang Hengjin 2003; Xu and Zhao 2004).<sup>13</sup>

Accompanying these concerns over investment in pollution-intensive sectors are charges that foreign firms are all too willing to breach China's environmental regulation and take advantage of China's thirst for foreign capital. A 2007 editorial in the *China Daily* asserted that MNCs are "taking advantage of China's low environmental standards by doing things they would not dare do in their home countries" (Chen Weihua 2007). In late 2006, the Chinese NGO (non-governmental organization) Institute of Public and Environmental Affairs (IPEA), established by Ma Jun, one of China's most well-known environmentalists, accused thirty-three multinationals of violating China's environmental protection laws. A year later the list of polluting MNCs was up to almost one hundred (of four thousand total companies listed), and by early 2008 Ma claimed that over three hundred MNCs had a record of polluting air or water. This list included well-known companies such as Pepsi, 3M, Nescafé, Yamaha, Samsung, KFC, and Pizza Hut.

It is not only NGOs but also the Chinese government that has accused MNCs of poor environmental practices. Particularly since the start of the Hu-Wen era, Chinese government officials and analysts have frequently urged local governments to avoid a one-sided focus on the quantity of investment and give greater weight to the quality of foreign investment by enhancing supervision of FIEs (e.g., Chen and Zhu 2003; Liu Yuqi 1997). A Carlsberg Brewery was temporarily closed in 2007 for dumping untreated wastewater into a local river in Gansu Province. The company reportedly preferred paying a twice annual fine of roughly \$650 to constructing a wastewater treatment plant. In the same year, two foreign companies, Unilever and Hitachi, were randomly selected for inspection and found to be violating wastewater discharge standards. This led a SEPA official to state: "Environmental pollution caused by foreign-funded companies has come to the attention of SEPA, and we will strengthen our supervision" (Sun 2007). Also in 2007, SEPA black-listed 130 multinationals for excessive pollution stemming from activities dating back to 2004. Although by early 2008 all but 3 of the 130 companies on

SEPA's list were found to have rectified their environmental practices, a SEPA spokesman still indicated that "a series of environmental degradation incidents involving MNCs in recent years shows a lack of fulfillment of corporate social responsibility on their part" (Sun 2008d; *People's Daily* 2006). Charges have also been leveled against local governments deemed to be colluding with foreign investors. A 2008 *China Daily* editorial lamented, "In their hunger for economic growth, many local governments have tried to absorb as much foreign investment as possible, regardless of the energy and environmental costs" (*China Daily* 2007).<sup>14</sup> Clearly, the current Chinese leadership itself is concerned that the ceaseless quest for foreign investment is undermining its attempt to balance getting rich with going green.

To summarize, China is both heavily foreign-invested and polluted. The combination of foreign investors' prominence in the Chinese economy and China's considerable pollution problem makes it critical that we better understand the relationship between FDI and environmental regulation. Because the pollution-haven debate explores the links between the competition for foreign investment and environmental regulation, it can help shed light on environmental protection challenges in China. In this book I use the concepts generated in the pollution-haven debate to provide scholars with a better understanding of the nature of China's environmental challenge. In particular, I offer insight about the extent to which foreign investment contributes to and undermines China's environmental regulation.

In the following chapters, I examine the development of Chinese law that regulates firm activity and controls the environmental impact of FDI (Chapters 2 and 3), describe the manner in which subnational competition for investment has influenced the implementation of environmental standards (Chapter 4), and analyze the environmental practices of both foreign-invested enterprises and Chinese companies with connections to foreign-invested enterprises (Chapters 5 and 6). In developing the book's argument, I employ a variety of original data, gathered during a year of in-country research. I present the results of a quantitative survey of 228 firms and several case studies, including a controversy between Royal Dutch Shell and a major Chinese oil company over the environmental policies for a natural gas pipeline. In addition to the firm survey, I base my analysis on interviews with representatives from sixteen foreign and twenty domestic firms, as well as various local experts, including industry-association representatives, environmental consultants, lawyers, NGO workers, scholars, journalists, and just over a dozen en-

vironmental officials. I also draw heavily on articles in industry journals and the Chinese media and the burgeoning Chinese-language academic literature on the topic of trade and the environment, published principally in university journals and books printed by the China Environmental Sciences Press.

### An Overview of the Argument

The previous section provided a brief overview of the competing assertions about the impact of foreign-firm investment on the process of environmental regulation. To what extent do these claims accurately describe the situation in China? And how can China, which is arguably the most economically and environmentally important of developing countries, inform the academic debate about the empirical saliency of the pollution havens? As elaborated in the subsequent chapters, in the case of China, the influx of foreign firms and capital has not triggered a widespread race to the bottom nor a systemic regulatory chill. There is little evidence that China's integration with the global economy has transformed China into a pollution haven. As China has liberalized its domestic market and allowed entry to a greater number of foreign firms, it has also strengthened its environmental protection regime (Chapter 2). Just as important, Beijing has steadily tightened oversight of the environmental policies of foreign firms. The government's approach toward the environmental aspects of foreign investment has evolved from a tacit acknowledgment that the inflow of FDI brings new challenges in pollution management to a more active attempt to rein in the pollution caused by foreign investors (Chapter 3). Moreover, in several important ways foreign firms have contributed to China's environmental governance. Multinational companies in the chemical and energy industries, for instance, have created upward pressure on environmental regulation both through their own behavior and via the imposition of environmental, health, and safety demands on their domestic commercial partners (Chapter 5). In this sense, multinationals have exerted a private authority that fills in gaps left by the weak capacity of China's environmental protection bureaucracy. In certain instances domestic firms possessing or seeking commercial relations with foreign firms have been driven to implement stronger environmental management systems, although this phenomenon is not particularly widespread (Chapter 6).

But while China's opening to foreign investment has generally contributed constructively to environmental protection, the story is not entirely positive.