INTRODUCTION

Clean Air at What Cost?

In February 2015, officials at China's central Ministry of Environmental Protection[1] summoned the mayor of Linyi, in Shandong Province, to discuss his city's pollution crisis. Environmental inspectors had recently uncovered major pollution violations in 13 of its 15 largest companies.[2] Five days after the summons, city leaders ordered 57 of Linyi's largest factories to stop production. At the stroke of midnight, authorities cut off electricity to an entire industrial park without notice, even though some factories were in the midst of production; even companies that regulators had verified as compliant were forced to cease operations indefinitely.

In the ensuing weeks, local authorities ordered 412 more factories in Linyi to reduce their output and dismantled several smaller, older factories whose chances of cleaning up their operations had been deemed "hopeless." These orders to stop production lasted for several months, until a looming debt crisis forced local authorities to lift the ban. A high-ranking official in Linyi later estimated that these measures had cost the city 60,000 jobs and led to the default of 100 billion RMB in business loans (approximately 15 billion USD).[3] Yet the city's air quality did improve: Between January and May 2015, the level of harmful airborne micro-particles ($PM_{2.5}$) dropped by 25%.[4]

In this book, I argue that the measures undertaken in Linyi characterize what I call a "blunt force" approach to regulation. This approach has three distinct features. First, the state applies crude, one-size-fits-all restrictions to regulated entities – even those that are complying with the law. Second, the state authorizes bureaucrats to use highly coercive means – such as forcibly destroying regulated entities – to ensure that

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regulatory action produces immediate change. Third, the state acts arbitrarily, suddenly imposing restrictions on companies without explaining why they are targeted.

Blunt force regulation has allowed the Chinese government to achieve noticeable improvements in pollution levels. According to the data I gathered for this study, between 2010 and 2015, thousands of factories in 11 highly polluting Chinese industries were forced to halt or reduce their production in 269 of the country's 287 prefecture-level cities (地级市) – the highest-level city administrative unit in China, ranking above a county. Further analysis demonstrates that these measures improved air quality across the country, and reduced pollution to a greater degree than conventional regulatory measures. These findings suggest that blunt force regulation allows governments to deliver policy outcomes that might otherwise take years to achieve if implemented through more conventional approaches.

However, blunt force regulation is an enormously costly strategy: It reduces pollution by interrupting production, violating property rights, and indiscriminately punishing both compliant and noncompliant firms. It is an inefficient strategy, because it deprives polluters of the chance to adapt to new regulatory standards while continuing to contribute to growth. It is also counterproductive because it devalues compliance, discourages firms from investing in abatement, and fosters adversarial relations between the regulators and the regulated.

Blunt force regulation is also politically risky: Widespread factory closures decimate local government revenue and increase the risk of unrest from workers who have lost their jobs, and from entrepreneurs who have lost their businesses. The state's outright disregard for property rights can also dissuade foreign companies from investing in local businesses and discourage local companies from expanding their ventures. In short, the rise of blunt force regulation raises three questions:

1) Why would governments choose such a costly solution to reduce pollution? Why destroy businesses, decimate jobs, and depress an area's economy just to clean up the air?
2) If a government can coerce polluters – even compliant ones – to shut down, why not force them to comply with legally enforceable pollution standards? Why shut down the economy if a more reasonable, sustainable alternative is available?
3) What are some realistic alternatives to blunt force regulation? Will China use them?

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This book addresses each question in turn. With each answer, I explain why China – a state with the necessary will, resources, and political authority to develop more efficient regulatory solutions – nevertheless resorts to a costly, clumsy blunt force solution. This book also offers answers to some broader questions, such as, can governments enforce complex regulations even when lacking in resources and institutional capacity? Can states enforce regulations arbitrarily and still evade the consequences of heightened market uncertainty?

1.1 THE ARGUMENT IN BRIEF

I argue that blunt force regulation is, at its core, a response to principal–agent problems within the state apparatus. It emerges when political leaders (the principal) want to regulate, but lack sufficient control over local authorities or bureaucrats (the agents) to ensure the regulation will be enforced.

Blunt force regulation solves this problem by standardizing – to an extreme – the actions that local authorities are ordered to take against regulated entities. This makes it easier for central leaders to identify and punish local authorities who deviate from higher-level governments' implementation orders. For instance, central leaders who order local officials to enforce blanket production bans will find it easier to confirm that total bans have been imposed than to check whether local regulators are correctly policing emissions from a variety of factories in different regions.

Blunt force regulation also reduces the number of stages between enforcement action and outcomes. A citywide forced reduction in industrial capacity, for instance, will improve air quality much faster than introducing stricter pollution standards over time. This one-shot approach to delivering outcomes increases the chances that local officials will be discovered – and punished – for disobeying central orders, as central leaders only need to check once to see if a city's air quality has improved. In short, blunt force regulation improves implementation outcomes by temporarily increasing central leaders' ability to monitor, motivate, and sanction local state actors.

This argument – that blunt force regulation is a response to weak bureaucratic control – challenges a longstanding perception that the Chinese state has immense enforcement powers and coercive capacity. After all, this is a state that has managed to control birth rates, censor the Internet, defuse collective action, and deliver decades of economic

growth – all of which would have been impossible without bureaucrats who respected and responded to central orders.

In the following sections, I reexamine China's reputation as a strong state. Through investigating the three research questions outlined earlier, I show how blunt force regulation reveals that, in the sphere of environmental governance, the Chinese leadership faces a new set of challenges that is weakening its fabled bureaucratic control. Thus, blunt force regulation represents much more than a leadership's attempts to bring pollution under control.

1.2 WHY SUCH A COSTLY SOLUTION?

When I describe the scale of blunt force regulation in China, people often ask "But what about the risk of social unrest?" and "What about the risk of economic slowdown?" or "Why would the state choose to disrupt the economy on such a large scale?"

These questions are amplified in China's case because authoritarian regimes are more vulnerable to social unrest. Without regular elections to create the appearance of political responsiveness, authoritarian leaders are much less likely to withstand sustained, concerted challenges to their authority (Gandhi and Przeworksi 2006; Haber 2006; Huntington 1991; Nathan 2003). This is why China puts so much effort into repressing or segregating contentious actors, making it impossible for them to organize and breach the collective action barrier (Cai 2010; Deng and O'Brien 2013; Lee 2007; O'Brien and Li 2006; Walker 2008). Why, then, would the regime allow thousands of workers with shared identities, locations, and grievances to be laid off without compensation, over a short period of time, effectively creating the conditions for coordinated labor unrest? Further, why would the state disregard property rights and shut down businesses, sowing resentment and distrust in the business class on which it depends to maintain economic stability?

One possible explanation is that the Chinese government is driven to blunt force regulation out of a sense of urgency. Widespread contamination of the groundwater has made drinking water a serious public health concern (Han et al. 2016). Air pollution is contributing to a decline in life expectancy (Ebenstein et al. 2015; Rohde and Miller 2015). This scarcity of clean air and water will increase the public health burden, overwhelming an already overstretched health system.

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Moreover, China's environmental degradation has galvanized protests among wealthy, well-connected urban elites (van Rooij et al. 2016; Wang 2016; Wang and Jin 2007), on whom top leaders depend for regime support, and are therefore reluctant to repress or silence. Thus, for all the talk of authoritarian long-term horizons (Beeson 2010; Wright 2010), China's leaders are finding that – like their democratic counterparts – they must take immediate action to appease popular demands to control pollution.

However, unlike their democratic counterparts – and in contrast to the vast majority of states – China's leaders wield enormous coercive power. The regime is adept at discouraging or demobilizing labor unrest, and can use its concentrated political authority to control even the most powerful industries (Dickson 2003; Friedman 2014; Fu 2017; Gallagher 2006; Lee 2007; Pearson 2011; Tsai 2011; Naughton and Tsai 2015). In one northern Chinese county I visited, blunt force measures against the local cement industry led to the loss of 90% of the township's tax revenue and more than 50% of local employment. However, instead of uniting in protest against the government, laid-off workers despondently drifted home to wait for new jobs to appear or sought jobs in other cities.[5] Business owners accepted small sums of compensation from the government and took on the Herculean task of turning hollowed-out cement factories into more acceptable green businesses, such as agrotourism ventures.[6] News reports[7] and my interviews with factory owners around China[8] suggest that acquiescence to blunt force regulation is the norm.

A regime that can bring about this level of acquiescence is unlikely to be deterred by the social costs of blunt force regulation. Thus, previous research suggests that China's leaders accept concentrated short-term risks because the problem is urgent, brutal implementation efforts will yield immediate results, and the regime commands tried and tested tools for neutralizing social resistance (Josephson 2004; Shearman and Smith 2007).

This is why some outside observers perceive China's blunt force pollution regulation as a lesson in authoritarian efficiency, and praise the government for its "authoritarian environmentalism" (Gilley 2012). In a short space of time, the Chinese state reduced pollution, contained dissent, and drove entrepreneurs to invest in cleaner industries. In Japan, the same process took a decade, and required protracted negotiations with businesses and expensive compensation schemes for workers (Peck et al. 1987; Tilton 1996). Not so in China.

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China's success in reducing pollution through blunt force regulation could lend credence to theories that the regime's centralized, top-down governance model makes it more resilient. A group of scholars led by Heilmann and Perry (2011a) argue that the leadership's concentrated authority enables an ad hoc governance style characterized by a lack of binding rules, stable norms, or clearly specified policies. This institutionalized ambiguity allows the regime to respond quickly and inventively to urgent policy issues such as pollution. It also enables it to implement policies decisively, even when formal enforcement institutions are lacking (Ang 2016; Heilmann and Melton 2013; Heilmann and Perry 2011a; Strauss 2009; Zhi and Pearson 2017).

To an extent, blunt force regulation illustrates the advantages of this flexible mode of governance. When stock markets go into free fall, Beijing can suspend trading and ban securities houses from short selling to prevent shares from bottoming out, as occurred in an infamous case in 2015.[9] When air quality soars to dangerous levels, local officials can order factories to cease production and force cars off the roads.[10] And if the state cannot enforce complex regulatory measures, it can simply apply punitive sanctions to all possible violators. Elsewhere in the world, governing bodies – out of respect for property rights or the legislative process – must work within the law, and apply compromise solutions until more drastic regulatory measures are approved. Not so in China.

1.3 THE LONG-TERM CONSEQUENCES

However, a deeper look at the aftermath of blunt force regulation reveals at least three long-term consequences that may be harder for the regime to overcome.

First, the extralegal nature of this type of regulation has contributed to a highly unstable business environment. Constant uncertainty over when governments will stop production or seize factory assets has increased businesses' fear of state interference. Business owners are also reluctant to make new investments or expand their ventures due to fears of arbitrary closures in the next anti-pollution campaign.

Second, by applying sanctions so indiscriminately, blunt force regulation discourages businesses from complying with the law. Instead of incentivizing polluters to adhere to environmental standards, the state imposes compliance via production bans. Rather than reward firms that reduce pollution *and* generate local revenue, the state closes them down

and then tries (during an economic slowdown, no less) to rebuild the economy anew. Why would any company comply with emissions standards amid this level of uncertainty?

This risk became apparent during my interviews with factory owners in a southern Chinese county after blunt force regulation decimated a 40-year-old waste recycling industry. Months after the crackdown, local officials were urging a few remaining factories to move into the "cleaner" industrial parks. Some factory owners stoically resisted government orders, choosing instead to risk a further crackdown. As one surviving factory owner retorted, "why should I move into that industrial park? Why should I pay higher rent to go to that place? Even if I do move into that industrial park, will that really make me clean enough? I don't trust these people [the government]!"[11] His concerns were justified. When I later interviewed the owner of one of these designated industrial parks, he revealed that at that point, only the most basic infrastructure was available.[12]

The third long-term consequence is that blunt force regulation fails to address the deeper problem of regulatory capture because it simply sidesteps the issue of corrupt bureaucrats. High-profile, one-off campaigns may reduce pollution, but they do not improve the regulatory apparatus or make the threat of punishment more credible in the long term. Instead, bureaucrats and regulators can easily revert to their old habits of shielding firms from environmental regulation once blunt force measures have ended. As a result, months after local officials obey Beijing's edicts to curb production, polluting industries revive their production, and industrial output recovers (and surges).[13] Or months after Beijing sends in teams of inspectors to uncover violations, provincial officials revert to protecting noncompliant cadres (Tian and Tsai 2020), and pollution returns to prior levels (van der Kamp 2021). Moreover, it is these old habits – regulatory capture, shirking policy implementation, and protecting noncompliant firms – that give rise to China's frequent regulatory crises. Time and time again, when chemical spills poison rivers,[14] schools collapse in earthquakes,[15] or chemical explosions rip apart city districts,[16] reports reveal it is because bureaucrats have turned a blind eye to ongoing regulatory violations.

These problems suggest that China's coercive powers may be misapplied. If the state can force companies to stop production indefinitely, why not use this power to make them obey pollution laws? If leaders can order local officials to shut down their economies, why not order them to enforce existing pollution regulations,

which could address China's pollution crisis more effectively and sustainably in the long term?

1.4 WHY NOT REGULATE THROUGH THE LAW?

One possible explanation for states choosing blunt force regulation over standard enforcement procedures is the need to overcome resource limitations. According to this explanation, the state *intends* to act through the law; it even builds the institutions and enforcement mechanisms to do so. However, local agencies lack the necessary personnel and funds to adequately implement the law, which leads to prolonged lapses in enforcement. To prevent further lapses, the state initiates concentrated waves of enforcement – known in the literature as "campaigns" – in the hope that one "big push" implementation effort can scare actors into compliance and quickly close the gap between the leadership's ambitious goals and their inadequate implementation resources (Biddulph et al. 2012; Dutton 2005; Liu et al. 2015; Manion 2004; Tanner 2000; Strauss 2006; Zhu, Zhang, and Liu 2017). The problem is that this idea of a resource-poor Chinese state with limited monitoring powers is increasingly at odds with the reality of China's modern, data-driven governance.

The Chinese state is wealthy. Its control over key sources of revenue (including land and state-owned industrial sectors) has given it a share of revenue that constitutes over 20% of the country's GDP – comparable to that of the Organization for Economic Co-operation and Development countries (Naughton 2017, 56). Local governments may have limited resources, but this is because Beijing uses fiscal policy to keep local authorities on a short leash by controlling decisions on how much revenue can be collected and disbursed (Wang and Herd 2013, 9–14; Wu and Wang 2013, 179; Ong 2006; Huang 2008; Kennedy 2013, 1010–11; Tsui 2005; Zhang 1999). When the central government is committed to a policy issue – such as pollution control – the leadership can (and does) disburse money to local governments to fund its implementation.

For instance, Figure 1.1 tracks the resources that Beijing has invested in the country's formal environmental enforcement apparatus over the past two decades. It illustrates a steady increase in the number of environmental personnel and enforcement organizations, which has vastly enhanced local governments' monitoring and enforcement capabilities.

The Chinese state is also becoming known (or even notorious) for its information-gathering capacities. Its sophisticated surveillance
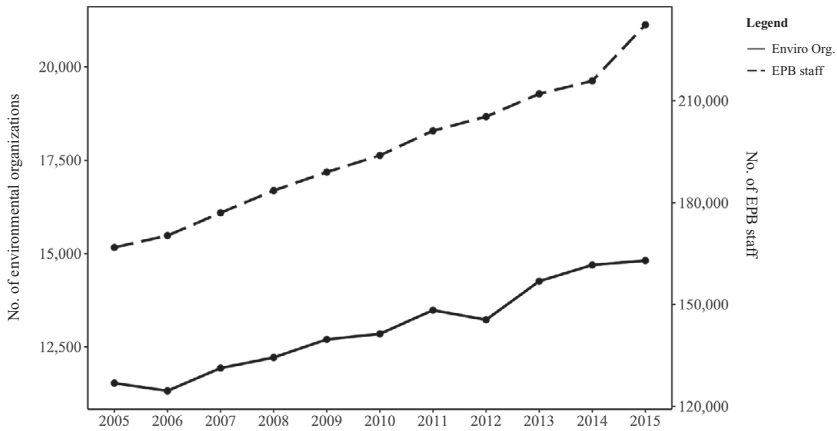
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Figure 1.1 Growth in institutional resources for conventional regulation, 2005–16. *Data Source:* China Environment Yearbooks, MEP

technology, use of citizen feedback though protest, and online posts to preempt unrest all demonstrate the regime's rapidly expanding ability to monitor society (Distelhorst and Hou 2017; King, Pan, and Roberts 2013; Kostka 2019; Lorentzen 2014; Truex 2017). These information-gathering efforts extend deep into the environmental sphere. Figure 1.2 illustrates that there has been a major spike in spending on environmental inspections since 2012. This increase can be attributed to the widespread installation of continuous emissions monitoring systems, automated devices that measure, in real time, the level and type of pollutants that factories emit – a technology on par with what is used in the United States. They have been installed in all major industrial sources of pollution, including power plants, wastewater treatment plants, and large industrial factories, making it easier for regulators to quickly identify key culprits.

In certain respects, China's use of technology to enforce regulation even outpaces America's. For instance, a US Environmental Protection Agency (EPA) regulator who had recently returned from an official visit to China in 2018 was struck by the ubiquity of mobile app usage in everyday life there. He noted that "China is so far ahead of the US in some systems," and pondered:

> If everyone is on this platform for sharing information [WeChat], why can't the regulatory agencies use it to share data quickly from local to
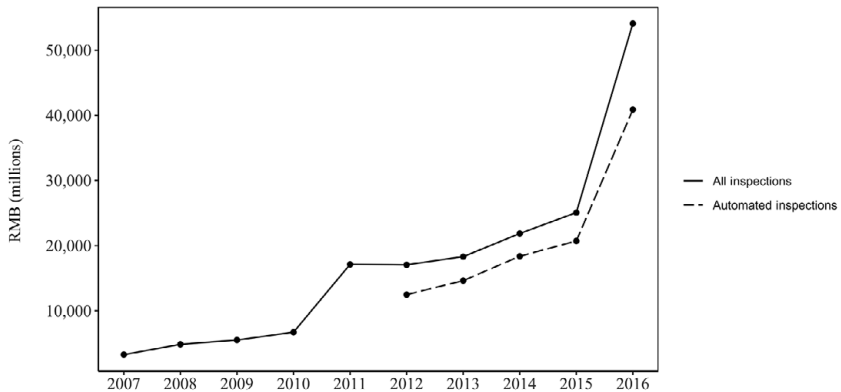
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Figure 1.2 Growth in expenditure for conventional regulation – inspections, 2007–16.
Data Source: China Environment Yearbook, MEP

national levels? They could use a barcode to scan a company's emissions
data and upload it directly to a national system... Then central agencies
could crosscheck the uploaded data with business registration data to see
if all sources had been reported.[17]

Once upon a time, China's environmental agencies were derided as
"retirement bureaus" – irrelevant, underresourced agencies where aging
cadres were put out to pasture. Thus, blunt force regulation (a regular
occurrence throughout the 1980s and 1990s) did seem like a necessary
corrective to the ineffectual actions of weak, poorly trained local
enforcement agencies.

But today's environmental agencies are increasingly well staffed and
sophisticated. In my fieldwork I came across municipal regulators who
use complex quantitative models to identify and target specific sources
of pollutants,[18] as well as county regulators who use high-tech moni-
toring techniques to catch secret sources of emissions.[19] Some of
China's most prestigious universities are also consulting with regulators,
sending teams of graduate students to assist them in their monitoring
efforts.[20]

Since 2015, Beijing has armed regulators with a strict new environ-
mental law that gives polluters clearer rules to follow and provides
bureaucrats with a stronger toolkit of formal, legal mechanisms with
which to sanction rule breakers. For the first time, these sanctions
include a provision to criminally prosecute company owners and local

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officials – an added deterrence against falsifying emissions data. Punitive sanctions have doubled in some localities,[21] and powerful firms that previously defied standards now face crippling fines. An industry insider in Jiangsu Province half-jokingly explained to me in an interview in 2019:

> I have come across factory owners who say that nowadays, if you want to put your competitor out of business, you just stand outside his factory and call in pollution complaints one after another. This will force environmental regulators to investigate, which is guaranteed to shut [that factory] down at least for some period of time... Beijing is serious about these enforcing pollution standards now![22]

Thus, while China's environmental enforcement apparatus may not be on par with those of advanced industrialized countries, its resources and supervisory capacity would be the envy of many developing countries.

But these improvements in China's conventional enforcement apparatus only bring the puzzle into sharper relief. Here is a state with considerable coercive power, administrative capacity, and an increasingly sophisticated monitoring apparatus. Surely a state this strong should be able to enforce existing pollution regulations once it sets its mind to the task?

I argue the opposite. In this book, I show that blunt force regulation is a response to *weak* state capacity. It emerges when states lack "infrastructural power" – that is, when state leaders cannot enforce binding rules across a territory (Mann 1984, 188; Berwick and Christia 2018, 79). Studies of weak infrastructural power often concentrate on a state's limited information-gathering or administrative capacity. They analyze how more resources or better monitoring can help leaders identify when subjects or state officials subvert their rules (Duflo et al. 2013; Goldstone 2006; Lee and Zhang 2017; Slater 2008). I argue that China's core problem is not its ability to *gather* information, but its struggle to *use* the information it gathers to credibly punish local officials.

1.5 ENVIRONMENTAL POLICIES AND CREDIBLE PUNISHMENT

China's problems with credible punishment are most noticeable in the environmental sphere, where the leadership struggles to align national goals with local government interests. In the past, when economic

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growth was the country's main priority, this divergence between central and local interests was less apparent. Bureaucrats implemented national economic policies not just out of loyalty to central leaders, but because Beijing set up a performance-based system in which local officials were awarded cash bonuses based on the amount of revenue generated in their area (Landry 2008; Li and Zhou 2005; Xu 2011). The system also worked because it was compatible with corrupt officials' interests. Local authorities who preyed on businesses for kickbacks knew that under-the-table earnings would be higher if the economy was thriving (Naughton 2016).

Yet as Beijing's focus switches to environmental protection, there are signs that local officials are increasingly disregarding central orders (Cao, Kostka, and Xu 2019; van Rooij et al. 2017; Ward, Cao, and Mukherjee 2014). Beijing may issue forceful instructions to control pollution, but implementing these orders depresses growth, which eats into local officials' revenue streams and diminishes the rents they collect from protecting polluting industries. This discourages local officials from implementing such policies, especially when they can exploit the regime's information failures to misreport performance.

As the gap widens between leaders' goals and local authorities' interests, Beijing has resorted to punitive instruments to force compliance. These include formal, institutional mechanisms (such as criminal punishment through the courts) as well as more informal, party-based mechanisms (including ideological and normative appeals or threats of disciplinary action) (Mertha 2017; Mei and Pearson 2014; Pei 2017; Strauss 2009). Yet, as I show throughout this book, the institutions for enacting such punishments are porous and subject to leaders' discretion. Thus, bureaucrats can seek protection through high-level connections, which weakens the threat of punishment, even for persistent rule breakers.

Political scientists argue that this lack of credible punishment is why even in systems in which political leaders enjoy absolute power, they will eventually delegate bureaucratic oversight to "referees" or independent third parties – such as the courts – which have interests that are separate from (and may conflict with) those of leading politicians or political parties (Levistky and Ziblatt 2018; McCubbins and Schwartz 1984, 166, 172; North and Weingast 1989). But in single-party regimes, how many leaders are willing to delegate punitive powers to an independent judiciary, knowing that they might be personally implicated in enforcement failures? How many leaders are willing to

put party members before independent courts, knowing that they depend on their loyalty to stay in power? On the other hand, how many leaders, lacking credible threats of punishment, can convince their subordinates to act against their material interests based on ideological and normative appeals alone? This is the age-old dilemma that China's authoritarian leaders face when implementing policies that go against powerful local interests (Minzner 2015; Stern 2013; Wallace 2016; Wang 2015).

Blunt force regulation offers a temporary solution to this dilemma in two ways. First, the visible, verifiable nature of enforcement actions – such as using industry-wide shutdowns to control pollution – makes it easier for central authorities to quickly detect noncompliance, even in far-flung localities that normally evade close observation. Second, the one-off nature of blunt enforcement actions makes it easier for central authorities to check and punish local implementation failures than to monitor performance based on complex, incremental enforcement actions over many years. Thus, blunt force regulation drastically simplifies the enforcement process by allowing central authorities to directly punish local officials for noncompliance. Central leaders can thus avoid delegating the job of punishment to independent powers, and minimize the degree to which political discretion corrupts the enforcement process.

1.6   OBSERVABLE IMPLICATIONS AND SCOPE CONDITIONS

This theory has three observable implications. First, it suggests that blunt force regulation is most likely to occur in places with weak infrastructural power, or in policy areas in which bureaucrats have a long history of disobeying central orders. It will therefore be most intensively employed in areas and sectors where political leaders have lost control over local implementation. Indeed, as I show in Chapter 4, blunt force regulation in China is directed *not* at the most polluted localities, but at those in which local officials have consistently under-implemented environmental policies.

Second and more broadly, this suggests that blunt force regulation is most likely to be used in developing countries because they are more vulnerable to the institutional problems described earlier. While leaders of developed countries also encounter shirking in enforcement, this is largely due to regulatory complexity: In some issue areas, the risks

are highly variable, and require expert knowledge and complex procedures to enforce the standards (Black 2010; Paoli and Wiles 2015, 5–8). Pollution regulation is a classic example of such an issue area, because the standards vary widely depending on the type of pollutant or the process a factory uses. This makes it easier for corrupt regulators to elude scrutiny by the average layperson or politician who lacks expertise on these topics (Carrigan and Coglianese 2011, 120–1; Downs 1967, 145; Niskanen 1971; Wilson 1980).

But for developing countries, compliance problems stem from weak institutions in addition to regulatory complexity (Blackman 2009). Leaders lack strong courts and independent accountability structures that can credibly oversee and punish noncompliant officials and companies. Instead, they resort to cruder monitoring and punishment tools that are more easily corruptible. This leads to compliance problems even for less complex, less controversial regulatory issues (as I explain in Chapter 3).

Finally, my theory proposes that blunt force regulation *does* achieve noticeable improvements in regulatory outcomes, even in countries or regions with a long history of weak enforcement. This is because its indiscriminate, one-shot nature allows political leaders to temporarily sidestep principal–agent problems in the bureaucracy, regardless of how underdeveloped the regulatory apparatus might be. Thus, as I show in Chapter 5, cities in China with notoriously poor compliance records experienced clear reductions in pollution levels following blunt force regulation. This finding suggests that this method is effective at overcoming Chinese leaders' problems with credible punishment.

I focus on evidence of blunt force regulation in China, but examples can be found from across the world. In India, central authorities imposed a blanket closure of Delhi's heavy polluting industries to halt rising pollution levels (Dasgupta 2000). In the Philippines, the president imposed a 6-month lockdown on a popular tourist region, using blunt force regulation to fix festering sewage problems.[23] In Chapter 8, I show how in all of these cases leaders turned to blunt force regulation following prolonged compliance failures, and did succeed in improving regulatory outcomes. However, China's unusual combination of high coercive power (leading to more severe measures) and weak infrastructural power (which necessitates more frequent interventions) means that China may be distinctive in the severity, breadth, and length of its blunt force campaigns.

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1.7 WHAT ARE THE ALTERNATIVES, AND WILL CHINA USE THEM?

This book demonstrates that blunt force regulation is effective at temporarily overcoming China's weak bureaucratic compliance, yet the strategy's long-term effectiveness is uncertain. I concentrate on China's war on pollution (approximately 2010–18), but examples of blunt force pollution regulation date back to the 1980s. Time and time again, swift, brutal campaigns have eliminated vast swathes of China's polluting industries, only for them to crop back up again a few years later (van Rooij 2002). Meanwhile, local officials continue to shirk emissions reduction orders, or resort to absurd, one-off measures such as closing factories or switching off heating in schools, offices, shopping malls, and residential homes to meet looming reduction targets.[24] Even the successes of the recent war on pollution seem to be eroding: Smog levels have risen in some years,[25] and industrial output has rebounded.[26] Meanwhile, Beijing has rolled back binding pollution targets to accommodate the vicissitudes of the trade war[27] and the COVID-19 pandemic; it has revived investments in coal-fired power plants and reopened closed coal mines,[28] taking a backward step in its policy to reduce coal and meet its pledge to become carbon neutral by 2060. Li Ganjie, the Minister of the Environment, acknowledged in 2019 that "the importance of environmental protection has weakened in some regions, and momentum has slowed."[29] This suggests that the achievements of blunt force regulation are fleeting, and are unlikely to provide a lasting solution to China's pollution problems.

As I have presented this story about China's war on pollution over the years, people have often asked: But what is the alternative? If China lacks the institutional means to punish bureaucratic noncompliance, then perhaps this is the best solution? If regulatory capture is so pervasive, how else can you get polluters to reduce pollution levels?

The experience of other developing countries has demonstrated that there *is* an alternative – one that leverages civil society's ability to punish noncompliers. Studies from Southeast Asia and Latin America (Blackman et al. 2004; García et al. 2007; Neaera Abers and Keck 2009; O'Rourke 2004; Pargal and Wheeler 1996) find that even when courts are weak and regulatory agencies lack teeth, social norms and the fear of public activism can drive polluting firms to go "beyond compliance" (Gunningham et al. 2004).

I call this approach "bottom-up enforcement" – what van Rooij, Stern, and Furst (2016) refer to as "regulatory pluralism" and O'Rourke (2004) labels "community-driven regulation." According to this approach, the state turns to communities, activists, nongovernmental organizations (NGOs), and the media to boost its monitoring capacity. Citizens are encouraged to use institutional channels such as lawsuits, petitions, investigative reporting, and even protests to report noncompliance, acting as a "fire alarm" for regulatory capture (McCubbins and Schwartz 1984). It is precisely because traditional regulators are so weak that non-state actors have begun to play such an important role in enforcing regulation in the Global South (Braithwaite 2006, 891; Dubash and Morgan 2012; Hochstetler 2013; Tilt 2007).

Michael Mann – the original theorist on state infrastructural power – also argues that strong infrastructural power can evolve through a strong civil society (Mann 2008, 356). If citizens proactively gather information to put pressure on local companies, or if they consistently demand improvements from political leaders, these interactions slowly build up into semi-institutionalized means of monitoring bureaucrats. Effective institutions do not have to be developed entirely by the state; they can also coevolve from repeated feedback between the state and society (Ang 2016; Migdal, Kohli, and Shue 1994; Wang 1997).

In sum, these theories suggest that in states with weak infrastructural power, governments can use bottom-up enforcement mechanisms to overcome bureaucratic noncompliance. Rather than resort to costly blunt force measures, the state can deploy collaborative, citizen-driven approaches that are less damaging to the economy, and that outsource monitoring costs to civil society. Crucially, bottom-up enforcement operates within the law, buttressing the power of conventional regulatory institutions. This approach is therefore more effective at improving compliance in the long term, because it follows pre-agreed rules and incentives, giving polluters a sense of certainty.

China has demonstrated that it recognizes the advantages of enforcing through the law and using public participation to strengthen regulatory institutions. In addition to enhancing its environmental laws, Beijing passed new laws on public interest litigation in 2015 that allowed NGOs to file lawsuits against polluters on behalf of the public. The Ministry of Environmental Protection (MEP) has also established a central hotline that encourages citizens to report polluters.

A central government official from the MEP interviewed for this study in 2016 cited the two most important issues in environmental

governance in China as: 1) improving public trust in the government and 2) using public activism to strengthen enforcement. He argued that trust is needed to stop the trend in environmental protests, in which fearful citizens obstruct environmentally sound infrastructure projects due to fears that it might poison their localities. But activism, he noted, was essential in helping the central government police polluters.[30]

Yet the regime maintains an ambivalent attitude towards bottom-up enforcement. It wants citizens to raise the alert, but only through supervised, predictable channels. It wants NGOs to assist in public interest litigation, but then stops them from suing government agencies that violate the law.[31] And it wants lawyers and journalists to do their part, but then arrests or threatens those who push the boundaries (Pils 2014; Repnikova 2017; Stern and Hassid 2012; Stern and Liu 2020; Stern and O'Brien 2012). Thus, as I show in Chapter 6, which discusses a case of citizen protest, the regime's ambivalence to public participation – and its insistence on controlled, supervised citizen input – is weakening the potential for bottom-up enforcement. What explains this ambivalence? Why support citizen enforcement, only to constrain it? And why revert to blunt force regulation after investing in more sustainable, rules-based alternatives?

1.7.1 Force of Habit

One possible explanation is that China reverts to blunt force regulation out of habit. Studies of comparative regulation show how states that struggle to shake off institutional legacies (such as socialist planning) can fall into suboptimal patterns of regulation. They start off intending to regulate at arm's length, but then find that the "state-as-regulator" model requires strong courts capable of enforcing contracts and a sophisticated bureaucracy that can extract information in order to monitor market actors (Levi-Faur 2009; Polanyi 1957; Pearson 2015, 36–7; Vogel 1996). Governments that lack these capabilities sometimes find it easier to nationalize or control businesses directly (Sappington and Stiglitz 1987; van de Walle 1989, 607; Chaudhry 1993; Wengle 2015, 123–30).[32] In sum, state ownership provides an attractive short-term solution to crises because it reduces the information and coordination costs of direct ownership.

A similar logic seems to be at work in regulating China's polluters. While the state cannot nationalize all polluting companies in order to better regulate them, Beijing's blunt force pollution reduction demonstrates two characteristic features of this response: 1) direct state control

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of market actors and 2) administrative shortcuts that minimize the state's reliance on dysfunctional bureaucracies and weak judicial institutions.

To some, then, China's repeated use of blunt force regulation reflects a broader pattern of "pervasive short-termism" in economic governance (Naughton and Tsai 2015, 28). The state employs an available, immediate solution to a problem that subsequently undermines the steps it is taking to create more lasting, effective institutions. In the sphere of market regulation, for example, the Chinese state often turns to old management bodies (such as former economic ministries) to control firms when newly minted regulators have failed. While this might force China's financial institutions or airline industries to meet necessary global standards (Naughton and Tsai, 2015; Pearson 2015), it also prevents regulatory bodies from ever building up the authority to control these sectors.

These theories suggest that China returns to blunt force regulation again and again because the state cannot shed its role as a planner, or its habit of solving problems through direct control. This instinct is amplified in times of crisis when, instead of acting as an independent regulator and allowing the markets to resolve the crisis naturally, the leadership responds by intervening and fixing problems directly. However, this perspective also holds out hope that blunt force regulation is just a transition phase, and that the state will shake off these bad habits and acquire new, more efficient ones as markets and regulatory institutions continue to evolve.

1.7.2 Authoritarian Compromise

The examples and evidence in this book point to another perspective. They suggest that blunt force regulation is undertaken not just out of habit, or out of urgency, but by *choice*. This choice stems from the authoritarian leadership's preference for governing loosely by the rules and for evading direct accountability to citizens.

The regime prefers to avoid clearly stated rules not only because this increases its flexibility, but because clearly specified rules could be turned against the leaders themselves. As O'Brien and Li (2006) show, the more a regime uses the law to legitimate its rule, the more easily citizens can use these laws and institutions to challenge discretionary authority and expose abuses of power.

The regime's reluctance to institute binding rules has led to a unique "adaptive governance" and "guerilla policy style" (Heilmann and Perry

2011a) in which policies are implemented with a high level of discretion, the rules governing society and the bureaucracy are fluid, and the leadership controls bureaucrats by constantly catching them off guard. In other words, the regime replaces the rule of law with rule by discretion, and trades credible commitments for ad hoc implementation (Birney 2014; Zhi and Pearson 2017, Zhu et al. 2019). However, the absence of binding rules also makes it harder to force everyone in the ruling apparatus – from leaders down to local cadres – to follow through on their commitments (North and Weingast 1989; Olson 1993; Ostrom 1990). This trade-off between offering subjects certainty through rules and allowing leaders to be constrained by rules captures a compromise at the heart of Chinese governance.

Blunt force regulation encapsulates this authoritarian compromise. The Chinese leadership wants to fix pollution through institutionalized channels. It is using every tool in its arsenal to strengthen sanctions and construct binding terms that could improve regulatory enforcement. It has introduced high-priority bureaucratic targets for reducing pollution and passed stricter laws – backed by criminal sanctions – to punish violations of these pollution regulations. It has also centralized the administration of environmental regulators so that agents on the ground report directly to ministries in Beijing.

However, the analysis in this book shows that enforcement through institutionalized mechanisms is weak. Case studies demonstrate how high-level officials use their discretionary power to shield polluters, thwarting even the "most likely" cases of institutionalized enforcement. Quantitative tests show that conventional regulatory measures have only a fraction of the effect of blunt force regulation on reducing pollution.

As long as the regime preserves the option to govern loosely by the rules, then the rules are unlikely to be respected. Instead, it must use forceful, extralegal blunt force regulation to overcome systemic noncompliance in order to reduce pollution. From this perspective, blunt force regulation is likely to persist; it is not just a transition phase.

1.8   COMPARATIVE IMPLICATIONS

Studies of regulation in weak institutional environments typically focus on how to control the state's coercive power. They examine how state leaders can reassure investors that their assets will be protected from arbitrary seizure, even in the absence of independent courts or effective

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legislatures that can constrain executive power (Badran 2013; Helmke and Rosenbluth 2009; Hou 2019; Jensen 2008; Jensen et al. 2014; North and Weingast 1989; Staats and Biglaiser 2012; Wang 2015). Alternatively, when a state's coercive powers are weak and firms are powerful, past research investigates how to force firms to comply with laws issued by an ineffectual state (Cao et al. 2021; Chaudhry 1993; Lee 2017; O'Rourke 2004). But what happens when a state has strong authority over firms, and *does* want to enforce regulation? Would compliance be automatic under such conditions?

This book examines what happens in such a scenario. It focuses on a state (China) that is known for its coercive power, and on an issue (the environment) on which leaders *do* want to uphold regulatory laws and *do* have the authority and resources to implement these regulations. Nevertheless, leaders fail to make polluters comply with these laws. China's case therefore illustrates that obstacles to enforcement stem not just from a lack of will, resources, or coercive power, but from the deeper challenge of weak infrastructural power. Before leaders can rectify noncompliance in polluters, they must first address noncompliance within the state itself. Moreover, China's struggle to sustain outcomes through blunt force regulation shows that imposing compliance through coercion alone is suboptimal. Coercive powers can only temporarily make up for gaps in infrastructural power. In sum, this book offers a more complex conception of China as a powerful state with a porous, highly fractious policy implementation process. In so doing, it forces us to rethink what it means to be a "high-capacity" state.

By highlighting the arbitrary nature of blunt force regulation, this study also offers an insight into how governments and polluters manage situations of high regulatory uncertainty. In developing countries, businesses are accustomed to operating in markets without credible commitments. However, prior studies have shown that such an environment can be intensely frustrating for market actors, who find it difficult to plan amidst the chaos of corruption or irregular enforcement (Dasgupta 2000; de Soto 2001; Dubash and Morgan 2012; Wang 2015). These studies document how states and businesses develop informal cooperative mechanisms to mitigate institutional weakness and build resilience against constant uncertainty (Amengual 2016; Chen and Hollenbach 2022; Post 2014). By contrast, I describe an alternate, much more adversarial pathway in which the state abandons all pretense of cooperation, subjecting firms to the full force of that uncertainty. Moreover, I show that even governments with long-term

horizons that expect to pay the costs of such adversity in the future will engage in this kind of scorched earth response. This study investigates the causes of such deliberately suboptimal actions to expand our understanding of why states or market actors act "irrationally" in conditions of high uncertainty.

1.9 METHOD OF INQUIRY

This book applies a mixed-methods research design that uses both quantitative and qualitative data (which I collected over 20 months of field research) to generate theories, test hypotheses, and develop my argument. The origins of this study of blunt force regulation can be traced back to my site visits to Hebei Province (in the North) and Guangdong Province (in the South), where I heard rumors of extreme government campaigns to address pollution problems.

I started out by collecting qualitative data to investigate these phenomena. I conducted a total of 98 interviews in Guangdong, Hebei, and Jiangsu provinces and covered a range of administrative levels including municipalities (直辖市), urban districts, and rural counties. I interviewed state officials, factory owners, industry experts, citizen activists, and local academics to gain a range of perspectives on what was happening. I use this data in Chapters 2–4 to illustrate the logic of blunt force regulation.

However, as this research advanced, I began to ask myself: Why does the state use such an extreme form of regulation? While my qualitative data suggested several hypotheses, I decided to use quantitative data to test these hypotheses, and to see if I could identify a regime-level logic that was independent of the idiosyncratic characteristics of specific cases or political groups. I compiled an original dataset on the environmental enforcement measures undertaken in each of China's prefectural-level cities, taking care to distinguish between conventional measures (such as inspections and fines) and extralegal, blunt force measures (such as shuttering factories and forcibly reducing production). I also employed NASA satellite data to develop city-level measures of pollution. Using these three datasets, I exploit within-country variation across China's cities to assess whether blunt force regulation is essentially a method of bureaucratic control, and whether it reduces pollution levels.

Finally, I gathered qualitative data to examine the social and economic costs of blunt force regulation in more depth. These case studies

allow me to delve into the complex, long-term effects on different groups and actors that might be obscured by large-n, cross-sectional data. To capture the diversity of affected groups in China, I selected cases from different regions with contrasting political economies: some cases involved blunt force regulation of export industries, where small and medium enterprises are engaged in cutthroat competition, and are prepared to sacrifice the environment for marginal returns. Other cases focus on blunt force regulation of large, established firms, including state-owned enterprises that were accustomed to being insulated from the effects of market competition. In addition to interviewing key stakeholders, I gathered details from local, provincial, and national news reports to clarify the timing of events, and to map out local officials' tactics in their interactions with firms and citizens.

1.10   PLAN OF THE BOOK

This book was conceived during my fieldwork, where in multiple towns and suburbs I stumbled across a drastic approach to pollution enforcement that simply did not fit existing categories of regulatory enforcement. This drove me to: 1) clarify why blunt force regulation looked so different from other types of regulation; 2) explain why the Chinese state would pursue such a scorched earth solution; and 3) assess why this approach was so ubiquitous, despite the consolidation of new laws and institutions to support more stable, conventional regulation. In the ensuing chapters I elaborate my findings on these three points.

In Chapter 2, I begin by clarifying exactly why blunt force regulation is so distinctive. I compare this approach to two established conceptions of how regulation should operate ("rules-based" and "risk-based" regulation) to illustrate how it fits into neither category. Instead, blunt force regulation represents an unusual combination of ambiguous but inflexible regulation, which makes it unusually costly (by increasing business uncertainty and regulatory distrust) and counterproductive (by discouraging companies from complying with future regulation). This raises the question: Why blunt force regulation?

In Chapter 3, I propose that governments choose this suboptimal approach because they seek, first and foremost, to overcome principal–agent problems in the enforcement process. Drawing on case research and interviews with government officials around China, I illustrate how blunt force regulation creates shortcuts that allow political leaders to

increase the credible threat of punishment, temporarily scaring bureaucrats into compliance. Finally, I offer some observable implications of my theory, which I test in the ensuing chapters.

The next section of the book (Chapters 4 and 5) tests the observable implications of my theory. In Chapter 4, I use process tracing on a case of blunt force regulation from southern China to show that two common explanations for such measures – deterring excess pollution and reducing industrial overcapacity – fail to fully account for their occurrence. Instead, I show how blunt force regulation represents local officials' response to sudden scrutiny from higher-level officials. I then use quantitative methods to test this theory on a national scale. I demonstrate that cities in which local officials were underenforcing pollution regulations were more likely to be subjected to high levels of blunt force pollution regulation than those with high levels of pollution or industrial overcapacity. These findings reveal that blunt force regulation is a form of bureaucratic control.

In Chapter 5, I conduct further quantitative analysis to determine how blunt force regulation affects pollution levels. By regressing pollution levels on blunt force measures, I show that this type of regulation *is* effective at overcoming enforcement failures; indeed, it is associated with much greater reductions in pollution than conventional regulation. These findings challenge a common conception that blunt force regulation is mere political theater, in which the government uses highly publicized spectacles to convince the public it is doing something about pollution. Drawing on interviews with national and local regulators, I show that, far from mere performance, blunt force measures are the result of high-level government planning, enlist the efforts of several government agencies, and constitute part of a concerted, multi-year strategy to reduce pollution levels across the country.

Some might interpret the findings from Chapters 4 and 5 as evidence that China has devised a creative and innovative solution to its pollution problem. Others, dismayed by the costs, might suggest that blunt force regulation is merely a transition phase, and that more stable forms of regulation will appear as the country's markets and institutions mature. In the final part of the book (Chapters 6 and 7) I assess these interpretations, examining what blunt force regulation reveals about China's governance structures.

In Chapter 6, I explore whether blunt force regulation is merely a transition phase. I provide evidence that the Chinese government has invested heavily in conventional regulatory institutions and recognizes

that they offer more lasting solutions. I also show how the Chinese government has promoted bottom-up enforcement to strengthen these institutions. Using a case study of anti-pollution protests in a wealthy Chinese city – a case that, at the outset, appeared likely to succeed at improving government enforcement – I then examine how the state's ambivalence to civil society activism closes off channels for effective bottom-up enforcement. I draw on further interview evidence to show that as an authoritarian state, Chinese officials fear the accountability mechanisms (such as a free press, independent judiciary, and community activism) that make bottom-up enforcement so effective in other countries. These limitations have pushed the leadership to repeatedly return to blunt force solutions, suggesting that it is not just a transition phase.

In Chapter 7, I probe the short- and long-term costs of blunt force regulation, which are seldom documented in local media reports. Through case studies and local news reports, I illustrate that workers do protest, businesses do resist, and local bureaucrats do publicly criticize the short-term nature of these solutions. How does the state guard against the political risks of blunt force regulation? Using two cities as case studies – one wealthy and developed, and the other poor and industrial – I show how the state concentrates the costs of blunt force pollution reduction on the groups that are the least able to push back. It targets smaller, private firms or industries that rely on temporary, transient labor. I provide further evidence to support this theory by showing that of the approximately 6,000 firms targeted by blunt force regulation in the last 5 years, a disproportionate number were privately owned and employed informal workers. These strategies are effective at preventing unrest, but they exacerbate inefficiencies in the economy and may complicate efforts to reduce pollution in the future.

In Chapter 8, I broaden the scope of the analysis to assess whether blunt force regulation is unique to China. The findings reveal that it is a widespread political phenomenon found in both advanced industrial environments (like the UK) and weak institutional environments (like India and the Philippines). When political leaders confront urgent or overwhelming enforcement problems, they sometimes resort to unreasonable, one-size-fits-all measures to ensure that enforcement actions are effective. Blunt force regulation is one of a set of potential responses to principal–agent problems that inevitably emerge during regulation. However, the character of blunt force regulation – including how forceful or indiscriminate it is – is shaped by institutional features such as a state's enforcement and coercive capacity.

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Blunt force regulation is neither ideal nor just. It relies on the naked authority of the state and can be painful for groups and individuals that are powerless to resist outright coercion. Amid the developing world's struggle to mitigate governance crises, are such solutions worthwhile? This book examines the negotiations, trade-offs, and everyday violence of local pollution enforcement in China to unpack how states approach the problem of enforcement. It sheds light on the political compromises that underpin China's choices, as well as the logic that drives governments around the world to settle for suboptimal approaches to regulation.

NOTES

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6 For more details on this case, see Economic Daily (经济日报), "Farewell to the 'Cement Corridor'" (告别"水泥走廊"), December 17, 2014, www.ce.cn/xwzx/gnsz/gdxw/201412/17/t20141217_4138023.shtml.
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12 Interview X7b200416 with industrial park manager (April 2016).

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16 *South China Morning Post*, "Has China failed to learn the lessons of deadly Tianjin explosions?" August 12, 2016, www.scmp.com/week-asia/politics/article/2002987/has-china-failed-learn-lessons-deadly-tianjin-explosions; *South China Morning Post*, "Devastation at blast site after China chemical plant explosion leaves at least 64 dead, 640 injured," March 22, 2019, www.scmp.com/news/china/society/article/3002772/jiangsu-chemical-plant-explosion-death-toll-reaches-44-32.

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18 Interview X2110815a with provincial environmental official in Hebei province (August 2015) and X6210116 with municipal environmental officials in Guangdong province (January 2016).

19 Interview X4a270116a with district environmental official in "District X" (January 2016).

20 Interviews X2110815b in Hebei province and X6210116 in Guangdong province with city- and provincial-level environmental regulators (August 2015 and January 2016).

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31 An amendment in 2017 clarified that only People's Procuratorates are allowed to use administrative public interest litigation (Article 25 of China's modified Administrative Procedure Law). *China Dialogue*, "Yunnan chemical factory becomes testing ground for citizen lawsuits," August 23, 2017, https://chinadialogue.net/en/pollution/9983-yunnan-chemical-factory-becomes-testing-ground-for-citizen-lawsuits/.

32 For instance, Chaudhry (1993) argues that foreign and domestic assets in the Middle East were nationalized in the 1950s and 1960s because states lacked the necessary bureaucratic coherence to construct financial institutions or prevent monopolies as an independent regulator. Similarly, Wengle (2015) finds that the Russian state defaulted to nationalizing the energy industry in the East of the country because it could not figure out how to dissuade strikes, resolve payment disputes, or prevent blackouts while regulating at arm's length (Wengle 2015, 123–30).