

Article

Bureaucratic Control and Strategic Compliance: How Do Subnational Governments Implement Central Guidelines in China?

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Abstract

Bureaucratic control, the constraint that a superior imposes on subordinate agencies' discretion through guidelines, is ubiquitous in administrative organizations. Despite scholarly discussions on the merits and shortcomings of bureaucratic control, we still know little about the impact of the extents of bureaucratic control on subordinates' compliance patterns. In this article, we argue that bureaucratic control might intensify subordinates' burdens and incentivize them to strategically reduce compliance with the central guidelines that impose such control on them. We build a database containing 42 social regulatory guidelines issued by the Chinese State Council (central government) and 848 implementation documents issued by provincial governments between 2003 and 2012. As bureaucratic control in a central guideline increases, provincial governments might postpone the release or withhold the implementation documents and reiterate less content of the corresponding central guideline. Interestingly, when provincial governments lack financial resources, the aforementioned reactions to bureaucratic control is weakened and even reversed to be positive. Moreover, central mobilization alleviates the negative impact of bureaucratic control on the surface but might fail to address subordinates' decrease of compliance in hidden ways. Central monitoring raises the overall level of subordinates' compliance but does not moderate how subordinates circumvent central guidelines with high degree of control.

Introduction

Bureaucratic control, the constraint that a superior imposes on subordinate agencies' discretion through guidelines, is ubiquitous in administrative organizations. Numerous studies have established both theoretical and empirical discussions on the merits and shortcomings of bureaucratic control. One group of literature focuses on the benefits of bureaucratic control by emphasizing that control helps address subordinates' abuse of power (Jia and Nie 2017; Tirole 1994; Wilson 1989) and protect certain important values, such as fairness, accountability, and representation (Lynn 2001; Olsen 2006; Terry 2005). Conversely, another group of literature shows that bureaucratic

control might become the “red tape,” which causes inefficiency in organizations and restricts the ability of talented officials (Bozeman 1993; Duflo et al. 2018; Gore 1993; Mascarenhas 1993) who are likely to pursue societal welfare outcomes (Grandy and Hiatt 2020).

Previous studies are mostly premised on the actual enforcement of formal bureaucratic control system in organizations, as if subordinates would passively accept any extent of control that a higher-level agency unilaterally imposes on them. However, this assumption overlooks the activeness of subordinate agencies (Carpenter and Krause 2015), who may adjust their compliance or noncompliance behaviors, which

significantly influence the real effects of formal institutions (Acemoglu and Robinson 2008; Anderson et al. 2019; Burgess et al. 2012; Correa et al. 2019). The scholarship currently has limited understanding of whether, when, and how the degree of bureaucratic control influences subordinates' compliance patterns. Does increasing the degree of bureaucratic control incentivize subordinates to comply with the guidelines that impose such control on them, or does it turn out to impel subordinates to circumvent the guidelines? What are the organizational and environmental factors that intensify subordinates' compliance with or resistance against highly restrictive guidelines? Answers to these questions are very important because subordinates' behaviors in the implementation process largely affect how effective the reforms in formal control system would be. With cumulated knowledge about how subordinates react to different control levels, researchers and practitioners would be better equipped to design institutional tools and control measures that fit the real situation in organizations.

In this article, we draw on agency theory (i.e., principal-agent model) and empirically explore the strategic compliance behaviors of subordinates who are subject to different extents of bureaucratic control (Eisenhardt 1989; Van Slyke 2006; Westerland et al. 2010). We start our analysis from a three-tier hierarchy of central government/local regulator/regulated (Estache and Wren-Lewis 2009). In this three-tier hierarchy model, the central government issues guidelines, which differ from one another in the degree of bureaucratic control to standardize local regulators' behaviors over regulated. Some central guidelines only set general goals and provide non-mandatory suggestions, leaving local regulators much flexibility during the implementation process, whereas others tend to set rigid constraints on local regulators' discretion. After receiving the guidelines issued by the central government, local regulators, who are self-interest utility maximizers in our analysis, then decide their strategies to implement the central guidelines.

We argue that although bureaucratic control in central guidelines aims to standardize local regulatory practice and prevent local regulators' abuse of power, such control might intensify local regulators' burdens and thus incentivizes them to strategically reduce compliance with the central guidelines. At least three reasons support our argument. First, the central government and local regulators typically have misaligned goals (Burgess et al. 2012; Carpenter et al. 2012; Grandy and Hiatt 2020; Luo, Wang, and Zhang 2017; Van der Kamp 2020), consequently leaving highly restrictive central guidelines with little discretion for local regulators to balance the possibly conflicting central and local interests. Second, a highly uniform

central guideline discourages regulators who work in different regions from customizing regulative politics to fit their specific local contexts (Andersson and Ostrom 2008; Batterbury 2002; McLaughlin 1987; Ostrom, Schroeder, and Wynne 1993). Third, highly restrictive central guidelines might break the long-term interdependent relationships between local regulators and regulatees, incentivizing local regulators to downplay the central guidelines to protect local regulatees (Müller 2019; Wright 2004).

We further propose that local compliance patterns in response to central guidelines with different extents of control are contingent on both local regulators' fiscal resources (Ferner 2000; Ferner and Edwards 1995; Weingast 2009) and information flow between central and local agencies (Beatty and Zajac 1994; Olken and Pande 2012; Paarlberg and Perry 2007; Van Vuuren, de Jong, and Seydel 2007). We propose that local fiscal revenue, central monitoring, and central mobilization all have essential moderating effects on the relationship between bureaucratic control and local regulators' compliance.

To examine the above hypotheses, we build a novel dataset containing 42 social regulatory guidelines released by the Chinese State Council (the central government) between 2003 and 2007. We track whether, when, and how provincial governments issue local implementation documents within 5 years after the release date of each central guideline. Altogether, we collect 848 provincial implemental documents between 2003 and 2012. Leveraging computational text analysis methods, we measure the degree of control in each of the 42 central guidelines and examine how the degree of control in the central guidelines affects provincial governments' compliance patterns. Empirical analysis shows that provincial governments might downplay highly restrictive central guidelines—that is, central guidelines with a high degree of bureaucratic control—by POSTPONING releasing or NOT releasing implementation documents. Moreover, by comparing the detailed content of provincial implementation documents and the corresponding central guidelines, we find that provincial governments may circumvent highly restrictive central guidelines in a hidden way, that is, by releasing implementation documents that reiterate LESS content of the corresponding central guideline. The analysis results also support our hypothesis about the moderating effect of local fiscal revenue. The negative effect of bureaucratic control on local regulators' compliance becomes insignificant and is even reversed in places with scarce fiscal revenue.

We produced nuanced empirical findings about the effects of central mobilization and central monitoring. Serving as a top-down information channel that signals the priorities of central government to

subordinate regulators, central mobilization alleviates the negative effect of bureaucratic control on the surface by increasing provincial governments' likelihood to issue implementation documents. However, we find no evidence that central mobilization encourages provincial governments to reiterate more content of a central guideline in their own implementation documents. Central monitoring, another mechanism to address information asymmetry between central government and provincial governments, increases the overall compliance of provincial governments but has no significant moderating effect on the dynamics between bureaucratic control and provincial governments' compliance.

Bureaucratic Control, Central Guidelines, and Subordinates' Strategic Compliance

Organizations commonly have a superior agency that imposes hard constraint on subordinate agencies' decision-making autonomy through guidelines to standardize the latter's behaviors (Sengul and Gimeno 2013; Zhu and Zhang 2019). In our research, we refer to such constraint as bureaucratic control and emphasize four main characteristics of the concept. (1) Bureaucratic control is designed by a superior agency that enjoys the ultimate formal authority (the right to decide) in organizations (Aghion and Tirole 1997); (2) bureaucratic control decreases the scope of discretion that the superior agency intentionally grants to subordinate agencies, thus changing the assignment of decision rights within organizations (Sengul and Gimeno 2013); (3) bureaucratic control is exerted through written documents, oral commands, graphic signs, or any other means of guidelines that specify the constraint that should be obeyed by subordinate agencies (Bennett and Johnson 1979; Bozeman and Scott 1996; Clegg 1981; March, Schulz, and Zhou 2000); and (4) a variation exists on how much bureaucratic control the guidelines exert over subordinate agencies. Certain guidelines only set vague rules and leave much discretion to subordinates, whereas others can be extremely rigid and restrictive.

Despite the ubiquity of guidelines as well as bureaucratic control in organizations, recurring controversy exists about the merits as well as defects of imposing bureaucratic control on lower-level agencies. Bureaucratic control has continuously been criticized for being too broad and too narrow, too lax and too rigid (Brodkin 2007, 1). Consequently, reformers in history have provided contradictory answers to the same question. In the 1960s–70s, the American government initiated a series of educational reforms to increase students' school performance partly in response to Soviet's launching of Sputnik. The philosophy

behind these reforms was to impose tighter control on teachers and schools through federal and state rules (Darling-Hammond and Berry 1988). However, after the rise of the New Public Management (NPM) movement in the 1980s, bureaucratic control surprisingly became a problem rather than a solution. Proponents of the NPM movement claimed that the burdensome rules in bureaucracy are largely responsible for the poor government performance and that public bureaucrats should be freed from what is condemned as senseless red tape (Bozeman 1993; Gore 1993).

In regulation literature, scholars have found evidence empirically supporting either side of the argument. One group of literature emphasizes the importance of decentralization in regulatory systems. Scholars point out that local regulators usually need adequate discretion to adapt to changing circumstances (Andersson and Ostrom 2008; Ayres and Braithwaite 1992). Evidence also proves that decentralized regulation has better efficiency (Duflo et al. 2018) and involves a pluralist and transparent policy-making process (Thatcher 2002). By contrast, another thread of literature doubts the merit of decentralization. Researchers argue that a decentralized system might fail to coordinate actions between different local regulators (Andersson, Gibson, and Lehoucq 2006), intensify interjurisdictional competition that in turn exacerbates local protectionism and race to the bottom dynamics (Konisky 2008; Li et al. 2016), and increase the probability of collusion between local regulators and local regulatees (Jia and Nie 2017).

This study aims to contribute to the previous discussion by empirically exploring an important question that has not been widely discussed in the literature: the impact of extents of control on subordinates' compliance patterns. Previous literature typically talks about the merits as well as shortcomings of bureaucratic control with the implicit assumption that the formal bureaucratic control system is implemented in the way it is designed, as if subordinates would passively accept any extent of control that a higher-level agency unilaterally imposes on them. However, this assumption overlooks the activeness of subordinate agencies, which may adjust their compliance and resistance patterns in response to the guidelines stipulated by a superior agency (Acemoglu and Robinson 2008; Carpenter and Krause 2015; Lipsky 2010; Zhou, Ai, and Lian 2012). As the degree of bureaucratic control in guidelines increases, such restrictive control possibly stimulates subordinates' strategic behaviors, which might either enhance or mitigate the actual effects of the guidelines.

Therefore, this study attempts to fill the gap by providing real-world evidence regarding how the degree of bureaucratic control in central guidelines affect the compliance patterns of subnational governments.

Specifically, we look into the dynamics between central government and local regulators in the social regulation areas, such as environmental protection, food safety inspection, and drug management. We are interested in how local regulators comply with or evade the central guidelines stipulated by the central government, which exerts various degrees of control over local regulatory practices through these central guidelines.

Agency Theory: How Do Information and Incentives Play a Role?

Agency theory, also known as the principal–agent model, describes mutual contractual arrangements between individuals or organizational entities (Eisenhardt 1989; Kauppi and Van Raaij 2015; Van Slyke 2006; Westerland et al. 2010). Agency problems arise when agents lure the uninformed principal into an unfair contract (adverse selection) or when agents act opportunistically driven by selfish motives and in the process violating the agreed-upon goals in the contracts (moral hazard) (Van Slyke 2006). These agency problems result from two assumed characteristics of principals and agents: (1) both principals and agents are utility maximizers but have incongruent goals and (2) information asymmetry exists between principals and agents (Rutherford, Buchholtz, and Brown 2007).

In policy process research, agency theory has been widely applied to explain how incongruent goals and information asymmetry shape the interactions between various levels of governments. In terms of goal incongruence, previous research show that local governments are less likely to emulate policy innovations whose early adopters have different policy preference or ideology position from theirs (Boushey 2016; Grossback, Nicholson-Crotty, and Peterson 2004; Volden 2006). Incongruent goals might incentivize local jurisdictions to divert federal grants away from targeted policy areas (Nicholson-Crotty 2004) and collude with local business owners to avoid enforcing the central regulations, which potentially harm the local economy (Wright 2004). Researchers also find that information asymmetry between higher- and lower-level governments incentivizes the latter to only implement policies with measurable criteria (O'Brien and Li 1999). Conversely, information mechanisms—such as financial audits and field inspections—help alleviate the selective policy implementation among lower-level governments (Chubb 1985).

The current research applies agency theory to explain how the increasing degree of bureaucratic control in the central guidelines changes the compliance patterns of local regulators. The original purpose of bureaucratic control is to standardize local regulators' policy practice and prevent local regulators

from abusing their power. Therefore, it maintains that local regulatory behaviors are supposed to be highly consistent with what the central government requires. However, as central government continues intensifying bureaucratic control over local regulators, we argue that such control may actually increase local regulators' burdens and thus incentivize local regulators to strategically reduce compliance with the central guidelines, which impose such control on them.

One reason behind the increasing compliance burdens caused by bureaucratic control is that central government and local regulators typically have misaligned goals (Anderson et al. 2019; Burgess et al. 2012; Carpenter et al. 2012; Grandy and Hiatt 2020; Luo, Wang, and Zhang 2017; Nicholson-Crotty 2004; Van der Kamp 2020). By standardizing—to an extreme—the actions that local regulators must take, highly restrictive central guidelines leave little discretion for local regulators to balance the possibly conflicting central and local interests. In other words, when a high degree of central bureaucratic control exists, local regulators would have no leeway during the implementation process to cushion the blow of the central guidelines whose goals conflict with the local ones.

Second, when multiple local regulators working in different regions are subject to uniform central guidelines, highly restrictive central guidelines discourage local regulators from using their local knowledge and customizing regulative policies to fit specific contexts (Andersson and Ostrom 2008; Batterbury 2002; McLaughlin 1987; Ostrom, Schroeder, and Wynne 1993). This phenomenon is especially true for countries with vast territories and remarkable differences between regions, where central agencies consider it difficult to stipulate a uniform guideline that perfectly matches the different environments where local regulators work. Consequently, local regulators have incentives to decrease compliance with the central guideline that imposes a high degree of control on them.

Third, central guidelines with a high degree of control might interfere with the normal operation of local regulatees, with whom local regulators have formed long-term interdependent relationships. Local regulatees rely on local regulators who make proper regulations, which do not exceed regulatees' acceptable level. At the same time, local regulators rely on local regulatees—such as firms, factories, restaurants, pharmacies, etc.—to boost the local economy and provide necessary goods and services to residents in their jurisdictions. Thus, local regulators have incentives to protect local regulatees against interventions from highly restrictive central guidelines, which break the routine interactions between local regulators and regulatees (Müller 2019; Wright 2004).

H1: The higher the degree of bureaucratic control in a central guideline, the less likely local regulators comply with the central guideline.

Despite the common reluctance among local regulators to comply with highly restrictive guidelines crafted by the central government, local regulators differ in their capacity to counterbalance such control. Organization researchers point out that the operation of a bureaucratic control system is largely influenced by subordinates' financial resources (DiMaggio 1988; Ferner 2000; Ferner and Edwards 1995; Palmer, Jennings, and Zhou 1993). On the one hand, local regulators with abundant financial sources can be self-sufficient without additional top-down support and thus maintain an advantageous position in their bargaining with the central government. Therefore, affluent local regulators tend to counterbalance bureaucratic control in the central guidelines (Ferner and Edwards 1995; Weingast 2009). On the other hand, for local regulators with scarce resources and relying heavily on financial transfer from the central government, they may regard the release of highly restrictive central guidelines as an opportunity to please the central government (Zhu and Zhao 2018) by standing out as the most compliant subordinates. Consequently, for local regulators who lack financial resources, they appear to be even more compliant when the central guidelines become increasingly restrictive.

H2: The negative effect of bureaucratic control on local regulators' compliance with central guidelines is weaker and even reversed to be positive in regions with less fiscal revenue.

The impact of bureaucratic control also depends on the information (a)symmetry between central government and local regulators. Although local regulators have many reasons to downplay central guidelines with a high degree of control, they may fear to do so if local regulators UNDERSTAND that the central government is seriously taking the guideline or if the central government could easily KNOW local misconduct. Here we put forward two important information mechanisms—central mobilization and central monitoring—which might have important moderating effects on the relationship between bureaucratic control and subordinates' compliance by changing the information (a)symmetry between central government and local regulators.

On the one hand, central government may intentionally create top-down information channels to communicate their priority goals with subordinate agencies and to motivate the latter in fulfilling the goals (Paarlberg and Perry 2007; Van Vuuren, de Jong, and Seydel 2007; White 1990; Zeng 2020). A common

method for central government to signal priority objectives is by holding mobilization events, such as high-profile national conventions. During such events, leadership gives a speech to keep subordinates up to date on the core missions and tasks, and more importantly, to convey a sense of urgency and compulsion for subordinates to devote themselves to these missions and tasks. Moreover, as the central government openly mobilizes organization-wide efforts to pursue certain goals, subordinates' compliance is no longer triggered by a simple calculation of costs and benefits. Instead, it becomes a political gesture that demonstrates their support to leadership decisions and their loyalty to organizations. Thus, we propose the following hypothesis:

H3: Mobilization events initiated by central government for a central guideline would increase the overall level of compliance among local regulators and would also mitigate the negative impact of bureaucratic control on local regulators' willingness to comply.

On the other hand, central government can reduce information asymmetry by intensifying monitoring on local regulators' compliance behaviors on the ground (Beatty and Zajac 1994; McCubbins and Schwartz 1984; Olken and Pande 2012). We hypothesize that monitoring not only increases the overall level of compliance with central guidelines among local regulators but also alleviates the negative impact of bureaucratic control on local regulators' willingness to comply. This proposition is justified by the fact that the expected benefits from circumventing a highly restrictive guideline depend on both the saved compliance burdens from rigid control and the risk that noncompliance is detected by the central government. As the central government intensifies monitoring and has a tendency to detect local misconduct, local regulators' expected benefits from circumventing highly restrictive guidelines decrease, which in turn alleviates local regulators' incentives to avoid enforcing the guidelines. Thus, we propose that

H4: Central monitoring would increase the overall level of compliance among local regulators and would also mitigate the negative impact of bureaucratic control on local regulators' willingness to comply.

Enforcement of Social Regulatory Guidelines in China

The current study explores the relationship between bureaucratic control in the central guidelines and local regulators' compliance patterns in the context of China. We are especially interested in the enforcement

of social regulatory guidelines, which are issued annually by the Chinese central government to standardize local governments' policy practice in social regulation and which offer a sufficient sample size for our empirical analysis. Social regulation involves activities that aim to protect public interests such as health, safety, the environment, and social cohesion (OECD 1997, 6). Unlike economic regulation that directly focuses on market transactions, social regulation deals with nontransactional behaviors that affect public interests and cause certain consequences to the rest of society (Haider-Markel 1998). We categorize the Chinese social regulatory guidelines into five fields: commerce and product quality, environment protection, safety inspection, land and natural resources use, and healthcare. The five categories are frequently mentioned by the Chinese government and cover most of the social regulatory issues that are controversial in China.

Enforcement of social regulatory guidelines in China merits special attention for two reasons: First, although our theory is not limited to centralized political systems, the highly centralized political structure in China means that China should be one of the least likely cases that endure local reluctant reactions to central control. Second, frequent scandals in the social regulation areas, such as food safety, land management, environmental protection, and so on, have caused much discontent among the public in China. The Chinese central government annually releases tons of rules and guidelines to control local regulatory practices but achieves unsatisfactory outcomes. These facts encourage researchers to place extra attention on the arm-wrestling between the central and local agencies in the social regulation areas in China.

Each year, the Chinese central government frequently releases national social regulatory guidelines to standardize local regulatory practice. These central guidelines differ from one another in terms of the degree of bureaucratic control it imposes on local regulators. For example, in 2004, the State Council issued a guideline aiming to improve the protection of wetlands. In the document, the State Council asks local agencies to STRICTLY RESTRAIN economic activities that occupy or damage wetlands and MUST NOT approve any projects that occupy wetlands in the natural reservation zones. This statement is one of the typical guidelines in which the State Council uses rigid rules to constrain the autonomy of local regulators. In other circumstances, the State Council releases guidelines that do not intend to intervene heavily in local practice. To illustrate, in a guideline called *The Notice of Applying a Scientific Approach to Development and Enhancing Environment Protection* issued in 2005, the State Council emphasizes the importance of wetland protection again. This time, however, the State

Council does not stipulate any mandatory standards or constraints to restrain local governments' autonomy. It leaves much discretion for local governments to decide how to manage and protect wetlands in their jurisdictions.

Literature has offered substantial evidence on the prevalence of local regulators' strategic behaviors to circumvent central guidelines. In a study about coal mine safety in China, Wright (2004) recorded that Chinese central regulations on coal mine safety were poorly enforced. In many regions of China, coal mines were an important source of job opportunities and local government taxes. Local governments thus intentionally neglected the central regulations to protect many unsafe small coal mines from closure. In another example, Müller (2019) found that imposing profit margins for drugs between 60% and 70% had become a norm for township health centers (THC), significantly exceeding the 15% limit officially allowed by the Chinese central government. The author pointed out that local governments who regulate THCs acquiesced THCs' misconduct given that in many places, THCs could not maintain business operation by only charging 15% profit margins for drugs. Local governments that relied on THCs as providers of healthcare services to local residents thus had incentives to protect THCs from unfit central guidelines.

Despite remarkable evidence on local behaviors circumventing central guidelines, few studies have systematically examined how the extents of bureaucratic control in central guidelines affect local regulators' compliance patterns. We believe that this question is important, since it is not rare for people to rush toward the idea that highly centralized control helps address local regulators' abuse of power (Malesky, Viet Nguyen, and Tran 2014; Tirole 1994; Treisman 2007; Yee and Liu 2020) without considering how such control would affect local regulators' compliance patterns. In this study, we propose that the higher the degree of control in the central guidelines, the more likely local regulators decrease compliance with the guidelines. We also hypothesize that local regulators' fiscal revenue, central monitoring, and mobilizing events have moderating effects in the above dynamics. In the next section, we leverage computational text analysis as well as econometric methods to empirically examine our hypotheses.

Data and Methods

To examine how extents of bureaucratic control in central guidelines might affect the compliance patterns of subnational governments (i.e., local regulators) in China, we first constructed a data set of all 42 central social regulatory guidelines issued from 2003 to

2007 in the five social regulatory policy fields (i.e., commerce and product quality, environment protection, safety inspection, land and natural resource use, and healthcare). We further collected 848 provincial implementation documents from 2003 to 2012 corresponding to the 42 central guidelines.¹ The period from 2003 to 2012 is exactly one term of government in China. Thus, we can control for the confounding variables relating to change of leaders in the Chinese government. Implementation documents are the plans that subnational governments make to implement the requirements in a central guideline. Generally, subnational governments would point out in the content of implementation documents that they aim to enforce a specific central guideline. Both the central guidelines and the corresponding implementation documents were identified and collected from pkulaw.cn (*beida fabao*), a comprehensive database for searching the Chinese central and local laws, regulations, and guidelines since 1949.

Moreover, we have carefully considered mutual comparability among the five social regulatory policy fields and the 42 central guidelines in our research design (Carpenter 2020). First, we have fixed the level of the released central guidelines in our database. All the 42 central guidelines, although covering five different social regulatory fields, were promulgated by the same agency, that is, the State Council or its general office, rather than individual functional central ministries. Occasionally, one central guideline released by the State Council concurrently involves multiple social regulatory fields. For instance, when the State Council in 2006 released a central guideline about enhancing the management of farmer's market to prevent the spread of avian influenza, this guideline simultaneously involves food safety, commerce management, and healthcare. To examine subordinates' response to these central guidelines, we also ensure placing our focus on the same subnational enforcement agencies, which are the 31 provincial governments rather than the individual functional provincial bureaus.

Second, the five social regulatory fields are within nearly identical governance structures in China: (1) In all these fields, the Chinese central government normally grants decision right to subnational governments for daily regulatory practice, whereas the central government has the final authority to intervene whenever it deems necessary. (2) Subnational governments, which intermediate between the central government and local regulatees, are faced with two similar conflicting goals

across the five social regulatory fields. They need to satisfy the social regulatory requirements of the central government while protecting local regulatees (who contribute to economic growth and fiscal revenues) from excessive intervention from the above. The similar governance structures create a shared basis on which we are able to examine the impact of central bureaucratic control across different policy fields.

Finally, it is worth noting that the specific administrative routines and practices in each policy field might somewhat moderate the general bureaucratic control dynamics between central and subnational agencies. However, owing to the limited number of central guideline cases in each policy field, our research does not explore the potential causal heterogeneity across the five policy fields.

Measuring the Degree of Compliance of Provincial Governments

To examine the impact of bureaucratic control on subnational compliance, an obvious difficulty is measuring the compliance patterns of provincial governments. Accordingly, we design two dependent variables to address the challenge. First, we recorded whether and how fast provinces issued implementation documents after the promulgation of each central guideline within the 5-year term of observation window after each central guideline policy. We argue that whether or not and how fast provincial governments release implementation documents signal their high or low willingness to comply with central guidelines.

Second, we compared the detailed contents between each central guideline and the corresponding implementation document of provinces to investigate the extent of compliance within each provincial document. We calculated how much content of a central guideline was reiterated by the provincial implementation documents. We assume that by covering additional content of a central guideline in provincial implementation documents, provincial governments present an increased willingness to comply with the central guideline.

To straightly calculate Content Coverage of central guidelines by each provincial implementation document, we leveraged two computational text analysis tools. We first used an automated text segmentation tool in Python to divide each document into sentences and continued cutting each sentence into words/phrases. Then, we utilized the longest common subsequence (LCS) algorithm to compare the detailed content between central guidelines and provincial implementation documents. The LCS aims to determine the maximum common words appearing in the same order (not necessarily contiguous) between two texts

1 The procedure of searching for provincial implementation documents corresponding to central guidelines is described in details in [supplementary table S6](#). The searching process was conducted in June 2019.

and have been widely used in academic antiplagiarism software.

Let M_c denotes the number of words/phrases in the central guideline C , and N_c denotes the number of sentences in C . For the i th sentence in C ($1 \leq i \leq N_c$), let L_{cip} denotes the number of words/phrases in sentence i which are reiterated by provincial implementation document P . Then, the content coverage of the central guideline C by the provincial document P is calculated by the following formula:

$$\text{Content Coverage}_{cp} = \frac{\sum_{i=1}^{N_c} L_{cip}}{M_c} \times 100 \%$$

In this formula, M_c represents the entire content of central guideline C , whereas $\sum_{i=1}^{N_c} L_{cip}$ represents the fraction of content in C which is covered by P . *Content Coverage* is thus a percentage number between 0% and 100% with normal distribution.

Moreover, as a robustness check, we also propose a refined measure with an automated content pinpointing and removing method to identify and remove “formulaic sentences” in the central guidelines before measuring content coverage. In the Chinese central guidelines, there are “formulaic sentences” the most part of which (1) are too general to be issue specific and (2) are repeatedly mentioned by different implementation documents in various issue areas.² This automated content pinpointing and removing method aims to address the potential concern that the sentences in a central guideline might not be of equal importance, and researchers should focus on “key sentences” rather than on “formulaic sentences” when measuring content coverage. In [supplementary table S3](#), we introduce the new method in detail. Altogether the method deletes 21% of the sentences in central guidelines. Then we recalculate the content coverage of each central guideline by each implementation document.

Key Independent Variable: Degree of Control in Each Central Guideline

The degree of control in each central guideline is the key independent variable in this study. As mentioned before, central guidelines differ from one another by the degree of control they impose on local regulators. Some central guidelines simply require local agencies to prioritize certain issue areas in the local guideline agenda and leave much discretion for local regulators, whereas others set rigorous constraints on local regulatory practice with clear and strong tones. We argue that the choice of words in the central guidelines signals their degree of control.

In highly restrictive guidelines, rule-makers are more likely to use the words and phrases that demonstrate strong intention of restriction, such as forbid, must, and so on. We can thus utilize the classic word-count approach (also referred to as dictionary methods) to measure the degree of control in each central guideline ([Grimmer and Stewart 2013](#); [Hollibaugh 2018](#)). To construct the Degree of Control variable, we first generated a list of the top 1,500 words (not Chinese characters) that appear most frequently in the full text of 42 central guidelines. Then, we identified all the words that show strong intention of control from the top 1,500-word list. Altogether, we chose fifteen words into the bureaucratic control category, which are demonstrated in [table 1](#). We estimated the degree of control in each central guideline by calculating the frequency of occurrences of the words from the bureaucratic control category:

$$\text{Degree of Control}_c = \frac{\sum_{\text{word} \in \text{category}} \text{freq}(\text{word}, \text{guideline } C)}{\sum_{\text{word} \in \text{vocab}(\text{guideline } C)} \text{freq}(\text{word}, \text{guideline } C)},$$

where $\text{freq}(\text{word}, \text{guideline } C)$ denotes the number of times a word appears in the central guideline C , whereas $\text{vocab}(\text{guideline } C)$ denotes the set of all words appearing in *guideline C*.

Despite the attractiveness of the simplicity of word-count approach to measure bureaucratic control in the central guidelines, many other ways, such as human coding, are available to construct this variable. To ensure that our core results do not hinge on one particular choice, in the robustness considerations section, we explore alternative ways to construct the key independent variable. One alternative way is expanding the bureaucratic control category in [table 1](#)

Table 1. Words Selected in the Bureaucratic Control Category

| Chinese Words (Pinyin) | Part of Speech | English Translation |
|---------------------------|----------------|---------------------------|
| <i>Yan Ge</i> | Adverb | Strictly |
| <i>Bi Xu</i> | Modal verb | Must |
| <i>Bu De</i> | Modal verb | Must Not |
| <i>Jin Zhi</i> | Verb | Prohibit |
| <i>Yan Ge Zhi Xing</i> | Adverb + verb | Strictly Enforce |
| <i>Qiang Zhi</i> | Verb | Oblige, Force |
| <i>Ze Ling</i> | Verb | Order, Command |
| <i>Yan Ge Kong Zhi</i> | Adverb + verb | Strictly Control |
| <i>Yan Jin</i> | Verb | Forbid |
| <i>Qiang Zhi Xing</i> | Adverb | Mandatorily |
| <i>Bu Yu</i> | Verb | Grant No |
| <i>Bu Neng</i> | Modal verb | Should Not |
| <i>Yi Lv</i> | Modal verb | Must with No Exception |
| <i>Yan Ba</i> | Adverb + verb | Strictly Control |
| <i>Yan Ge Zhi Fa</i> | Adverb + verb | Strictly Enforce |

² Examples of formulaic sentences in central guidelines are shown in [supplementary table S4](#).

with additional keywords that also imply the intention of control but with weaker emotions. Table A4 shows the additional keywords. We also invite two trained human research assistants to manually code the degree of control in each central guideline. The human-coded measure of degree of control is highly correlated with the measure by word-count approach (Pearson's correlation equals 0.80).

Moderating Variables: Provincial Revenue, Central Mobilization, and Central Monitoring

Provincial Revenue

As discussed in previous sections, fiscal revenue strengthens subordinates' capacity to counterbalance formal control from higher-level agencies. We generated a continuous variable Provincial Revenue, which indicates per capita fiscal revenue of provincial governments in each year. Provincial revenue used in this study only includes revenue in the provincial level and excludes tax rebates and transfer payments from the central government. The data were collected from the website of the National Bureau of Statistics of China.

Central Mobilization

Each year, the Chinese central government calls for local enforcement of the central guidelines by periodically holding a Nationwide TV and Telephone Broadcast Conference (NTTC) focusing on specific issue areas. In most cases, at least one high-ranking leader in the central government would attend the NTTC and convey opinions from Beijing. Subnational leaders are required to watch the broadcast and locally enforce Beijing's opinions. We thus created a dummy variable of Central Mobilization, which takes a value of 1 if the State Council held an NTTC covering the same issue area in the same year when a central guideline was released. We identified these NTTCs by searching keywords in pkulaw.cn dataset as well as in Baidu.com (a search engine widely used in China).³

Central Monitoring

We checked whether or not the State Council clearly promises a top–town inspection in the full text of each central guideline. We created a dummy variable of Central Monitoring, which takes a value of 1 if a clear expression exists in a central guideline that promises top–down inspection on local enforcement; otherwise, 0.

3 Many local governments directly mention the NTTC in their implementation documents in response to central guidelines. By searching phrases such as TV/telephone conference in pkulaw.cn, we successfully identified a number of NTTCs. Moreover, we search keywords appearing in the title of each central guideline with the phrase "TV/telephone conference" in Baidu.com (a search engine similar to Google.com) to ensure that we do not miss out on any NTTC broadcasts.

Other Controls

Level of Central Guideline

In this study, all central guidelines were either launched by the State Council (guofa document) or by its General Office (guobanfa document). The central guidelines issued by the State Council are believed to have higher legal validity than those issued by the general office. We created a dummy variable of Level of Central Guideline, which equals 1 if a central guideline was launched directly by the State Council, 0 if launched by the General Office.

Topic Salience represents how important the issue area of a central guideline (e.g. food safety) is to the State Council in each year. We control topic salience of each central guideline in each year because the priority issue areas for the State Council may keep changing along the time. Topic Salience is measured by frequency of the topic of a central guideline mentioned in other central guidelines in each year.

Characteristics of Provincial Leaders

In this study, Age_party_chief and Age_governor are dummy variables indicating whether the party chief (or governor) of a province is older than 60 or not. Sameplace_party_chief and Sameplace_governor are dummy variables, which equal to 1 if the current provincial party chief (or governor) was born in his/her current work location. Provincial leaders' information was collected from the database in Jiang (2018).

Guideline Length is a continuous variable indicating the number of words in each central guideline. Region is a dummy variable indicating whether a province is located in 1) east region, 2) west region, 3) central region, or 4) northeast region of China.

Table A1 shows the descriptions and summary statistics of all variables. Tables A2 and A3 are summary statistics of all variables by policy fields of central guidelines and by different regions.

Pooled Event History Analysis

To estimate the probability of provinces issuing implementation documents in response to each of the 42 central guidelines, we organize the data for pooled event history analysis with logit models (Boushey 2016; Shipan and Volden 2006). The fixed 5-year period of observation started with the year when a central guideline is released. Figure 1 presents the average percentage of provincial governments that have not issued implementation documents 1–5 years after the central guideline release date. Nearly half of the provinces respond to a central guideline in the first year, and the conditional probability of responding keeps decreasing to near zero as time goes by. Our analysis uses guideline–province–year as the research unit. The dependent variable shows whether each province launched an implementation document in response

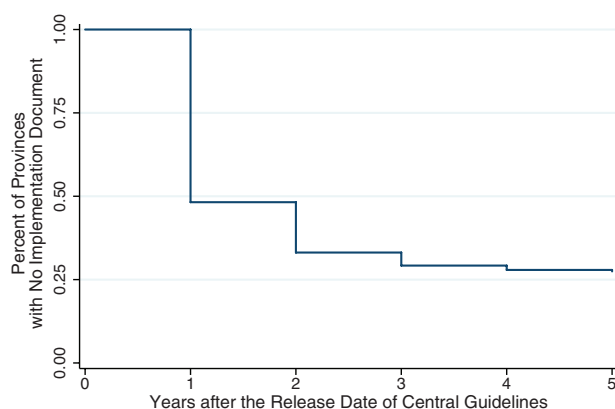


Figure 1. Kaplan-Meier Survival Estimate.

to a central guideline in a specific year. Importantly, when a province launches the implementation document, that province would be removed from all subsequent observation years under that central guideline. By excluding observations that are not in the risk set, we have a total sample size of 2,763 observations. We add time fixed effect dummies, indicating the second, third, fourth, and fifth year after the release of each central guideline (first year omitted). In addition, we cluster standard errors by the 42 central guidelines to account for group-level correlation.

Heckman Selection Model

The current research is not only interested in whether and how fast provincial governments launch implementation documents but also looks into the detailed content of these implementation documents. This process involves a two-stage process. In the first stage, provincial governments decide whether to issue implementation documents. In the second stage, provincial governments decide how much content of a central guideline they should reiterate in the implementation documents. We apply the Heckman selection model here to address the potential selection bias problem that arises since how provincial governments (plan to) reiterate content of a central guideline (outcome equation) would reversely affect the likelihood of provincial governments to issue implementation documents (selection equation). Two exclusion restrictions—age_party_chief and level of central guideline—are used to identify the selection equation of Heckman model.⁴ The dependent variable in the

outcome equation is *Content Coverage*, measuring the percentage of content in a central guideline that is reiterated by each corresponding provincial implementation document. Accordingly, we can test to what extent provincial governments decrease compliance with central guidelines by releasing implementation documents, which reiterate less content of the corresponding central guideline. We use maximum likelihood estimator of Heckman selection model in the next section.

Results

Table 2 presents the results of pooled event history analysis, which shows how the degree of control in central guidelines affects the probability of provincial governments to release local implementation documents. The variable degree of control has been standardized to reduce multicollinearity produced by interaction terms.

In Model 1 of table 2, the coefficient of the degree of control variable is significantly negative, providing evidence that provincial governments are less likely to issue implementation documents in response to the central guidelines with higher degree of control. The coefficient of degree of control is -0.153 in Model 1 and can be transformed into odds ratio, which equals 0.86. This finding shows that for every increase of 1 SD in the degree of control in a central guideline, we expect to see about 14% decrease in the odds of provincial governments releasing implementation documents.⁵

We also find that central mobilization and central monitoring significantly increase the provincial governments' probability to launch implementation documents. Additionally, provincial party chiefs older than 60 are significantly less likely to issue implementation documents in response to central guidelines than those aged below 60. By contrast, provincial governors who are older than 60 are significantly likely to issue implementation documents. These results reflect different

our interviews with local officials, although both types are regarded as important, those directly issued by the State Council (guofa document) are considered more fundamental by conveying the essential principles made by the State Council, thus leading subnational governments to face greater pressure to issue provincial documents to signal their fidelity to central decisions (selection equation). However, except for the differing importance of general principles, the detailed contents in the guofa documents and guobanfa documents are organized and written in similar patterns. Therefore, the methods on how provincial governments reiterate the detailed content are irrelevant with either the guofa documents or guobanfa documents (outcome equation).

4 We exclude age_party_chief (dummy variable indicating party chief older than 60 or not) and level of central guideline in the outcome equation following substantive reasons. Party secretaries, who are the top leaders in provincial governments, are authorized to decide whether or not to issue provincial implementation documents in response to central guidelines (selection equation) but usually do not bother to decide how to draft the detailed content of the documents (outcome equation). In terms of guideline level, the central guidelines selected in our research are issued either by the State Council (guofa document) or by its General Office (guobanfa document). According to

5 There is possibility that the negative impact of the degree of control on the odds of provincial governments releasing implementation documents may not be a constant but may keep changing as the degree of control increases. To explore this possibility, in supplementary table S5, we split the 42 guidelines into two subsamples by the median value of bureaucratic control and rerun the regressions separately in two subsamples. We find evidence hinting that the negative impact of bureaucratic control might intensify as the extents of bureaucratic control keep increasing.

Table 2. Bureaucratic Control and Probability of Launching Provincial Implementation Documents

| | Model 1 | Model 2 | Model 3 | Model 4 |
|-------------------------------------|---------------------|---------------------|---------------------|---------------------|
| Degree of Control (standardized) | −0.153* (.083) | −0.903*** (.000) | −0.261** (.014) | −0.198** (.036) |
| Provincial Revenue × Control | | −0.360*** (.000) | | |
| Mobilization × Control | | | 0.513*** (.008) | |
| Monitoring × Control | | | | 0.342 (.117) |
| Provincial Revenue (log form) | −0.181 (.112) | −0.245** (.013) | −0.140 (.208) | −0.173 (.130) |
| Mobilization | 0.471** (.028) | 0.420** (.041) | 0.532*** (.005) | 0.477** (.020) |
| Monitoring | 0.351** (.040) | 0.328** (.046) | 0.361** (.017) | 0.387** (.040) |
| Guideline Level | 0.949*** (.000) | 0.938*** (.000) | 0.823*** (.000) | 0.865*** (.000) |
| Topic Salience | 6.934* (.058) | 7.099** (.045) | 7.844** (.030) | 6.505* (.073) |
| Guideline Length | 0.002 (.984) | 0.010 (.894) | 0.052 (.489) | 0.053 (.545) |
| Age_Party_Chief | −0.448*** (.000) | −0.449*** (.000) | −0.448*** (.000) | −0.448*** (.000) |
| Age_Governor | 0.291*** (.008) | 0.306*** (.006) | 0.297*** (.007) | 0.294*** (.008) |
| Sameplace_Party_Chief | −0.073 (.720) | −0.080 (.700) | −0.099 (.632) | −0.084 (.686) |
| Sameplace_Governor | −0.060 (.556) | −0.049 (.634) | −0.059 (.563) | −0.059 (.563) |
| Central Region | −0.126 (.492) | −0.142 (.451) | −0.090 (.617) | −0.126 (.491) |
| West Region | −0.176 (.294) | −0.191 (.260) | −0.130 (.430) | −0.170 (.313) |
| Northeast Region | −0.322* (.086) | −0.340* (.074) | −0.306* (.098) | −0.315* (.092) |
| AIC | 2522.418 | 2507.096 | 2512.889 | 2520.405 |
| Pseudo-R ² | 0.2709 | 0.2760 | 0.2743 | 0.2720 |
| Observations | 2,763 | 2,763 | 2,763 | 2,763 |

Note: We did not report the estimates for constant and time dummies in table 2 due to space limit. Observations are clustered by 42 central guidelines. East region is reference group and omitted. *p*-values are enclosed in parentheses.

****p* < .01, ***p* < .05, **p* < .1.

career trajectories of party chiefs and governors. Similar trends are also found in Zhu and Zhang (2016), who offered a detailed explanation.

Models 2–4 in table 2, respectively, examine the moderating effects of provincial government's fiscal revenue, central mobilization, and central monitoring on the relationship between the degree of control in the central guidelines and provincial governments' compliance.

Considering the nonlinearity of the statistical model, we provide a graphic demonstration of the interactive effect in figure 2 within 90% confidence intervals. Figure 2 shows that for impoverished regions (per capital revenue lower than 450 yuan/person, logged form less than −3.1), a higher degree of control will actually stimulate provincial compliance with the central

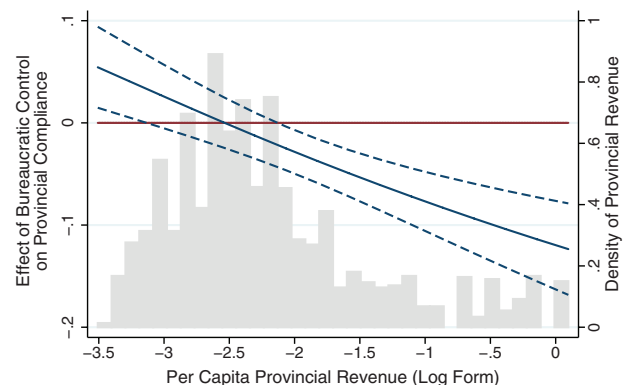


Figure 2. Marginal Effect of Bureaucratic Control on Provincial Governments' Compliance as Provincial Revenue Changes.

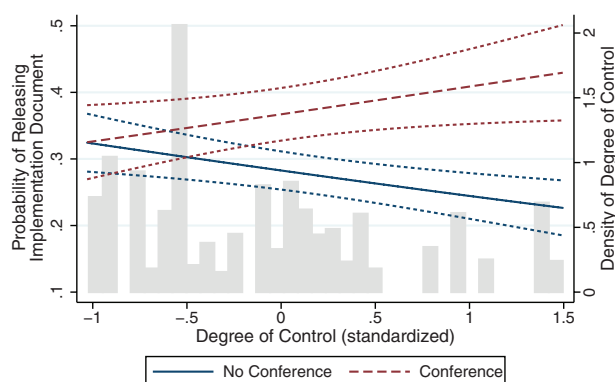


Figure 3. Moderating Effect of National Conference on Provincial Governments' Compliance with Central Guidelines.

guidelines by releasing implementation documents. As per capita provincial revenue keeps increasing, the impact of the degree of control is actually negative on compliance and becomes significantly negative when per capital provincial revenue is greater than 1,225 yuan/person (which means the log form is greater than -2.1).

In Model 3 of [table 2](#), we include the interaction term between central mobilization and degree of control. The coefficient of this interaction term is significantly positive, indicating that mobilizing events held by the State Council actually alleviate (and even reverse) the negative impact of bureaucratic control on provincial governments' willingness to comply. [Figure 3](#) vividly demonstrates how central mobilization reverses provincial governments' noncompliance behaviors with the increasing degree of bureaucratic control.

Similarly, we examined the interaction effect between central monitoring and the degree of control in Model 4 of [table 2](#). The coefficient of the interaction term is positive but insignificant, offering limited support to H4.

[Table 3](#) presents the results of the Heckman selection model, in which we examine how the degree of control in the central guidelines influences the detailed content written in the corresponding provincial implementation documents. We conduct the Wald test to examine whether ρ (i.e., correlation between error terms in selection and outcome equations) is significantly different from zero, and the results of Wald test justify the usage of the Heckman selection model in the research.

In Model 1 of [table 3](#), we observe the negative and significant coefficient of the degree of control variable in the outcome equation. The result shows that with every increase of 1 SD in the degree of control of a central guideline, provincial implementation documents will reiterate 4.8% less content of the central guideline.

In terms of the variable of central mobilization and central monitoring, we find that the main effect of

mobilization in the outcome equation of Model 1 is positive and insignificant, suggesting no evidence that central mobilization has an effect on provincial governments' content coverage of the central guidelines. In the outcome equation of Model 1, the variable central monitoring significantly increases the content coverage of a central guideline by provincial documents.

In Model 2 of [table 3](#), we use the refined measure of content coverage in the calculation, which is based on an automated content pinpointing and removing method to identify and remove "formulaic sentences" in the central guidelines. Model 2 of [table 3](#) shows the regression results, and we find that the findings remain largely unchanged.

Robustness Considerations

This section discusses several additional robustness concerns about the major findings. First, to test the robustness of the word-count method used in our research, we explore two alternative ways to measure the degree of control in each central guideline. One way is to expand the bureaucratic control category with additional words, which also imply the intention of commands and control although with weaker emotions. [Table A4](#) shows the 10 extra words we choose. Panels A and B of appendix figure A1 present the effects of bureaucratic control interacting with provincial revenue and central mobilization by using the expanded version of measurement. Results in Panels A and B confirm our previous findings that the negative effect of bureaucratic control becomes significantly strong in provinces with high fiscal revenue and that central mobilization mitigates the negative effect of bureaucratic control on compliance of provincial governments.

Another way to measure bureaucratic control is to invite trained human coders to evaluate each of the 42 central guidelines.⁶ We found that the original degree of control created by word-count method and the human-coded degree of control is highly correlated, with Pearson's correlation as high as .80. Panels C and D of appendix figure A1 vividly demonstrate the regression results by using human-coded degree of control. We found these results fundamentally similar to those in [figures 2 and 3](#).

Concerns are also raised about the possible bias caused by unobserved characteristics of each policy field of central guidelines, which simultaneously influence the degree of bureaucratic control in the

6 Two research assistants, respectively, code each sentence of a central guideline as 1 if they believe the sentence sets constraints on subnational governments' discretion in local regulatory practice, 0 otherwise. Degree of control in a central guideline equals to the average percent of sentences, which are coded as 1 among two human coders. Krippendorff's α between two coders equals to .67, suggesting acceptable intercoder reliability.

Table 3. Bureaucratic Control and Content Coverage of Central Guidelines in Provincial Implementation Documents

| Variables | Model 1: Straight Measure of Content Coverage | | Model 2: Refined Content Coverage after Removing Formulaic Sentences | |
|----------------------------------|---|--------------------|--|---------------------|
| | Selection | Outcome | Selection | Outcome |
| Degree of control (standardized) | −0.133** (.028) | −0.048** (.010) | −0.129** (.027) | −0.055*** (.009) |
| Mobilization | 0.194 (.214) | 0.053 (.256) | 0.171 (.241) | 0.060 (.254) |
| Monitoring | 0.262* (.056) | 0.077* (.099) | 0.253** (.041) | 0.083* (.093) |
| Provincial Revenue (log form) | −0.102 (.130) | −0.039** (.037) | −0.112* (.080) | −0.054** (.013) |
| Guideline Length | 0.038 (.398) | −0.001 (.965) | 0.039 (.358) | −0.003 (.837) |
| Topic Salience | 4.307** (.011) | 1.268** (.018) | 4.519*** (.007) | 1.437** (.011) |
| Age_Governor | 0.184*** (.001) | 0.067*** (.001) | 0.176*** (.003) | 0.074*** (.001) |
| Sameplace_Party_Chief | −0.063 (.523) | 0.007 (.815) | −0.062 (.535) | 0.010 (.767) |
| Sameplace_Governor | −0.079 (.126) | −0.029** (.040) | −0.068 (.190) | −0.035** (.037) |
| Central Region | 0.065 (.500) | 0.006 (.821) | 0.069 (.475) | 0.004 (.895) |
| West Region | 0.013 (.883) | 0.000 (.997) | −0.004 (.961) | −0.007 (.831) |
| Northeast Region | −0.108 (.300) | −0.037 (.245) | −0.115 (.265) | −0.044 (.246) |
| Age_Party_Chief | −0.044* (.052) | | −0.047* (.055) | |
| Guideline Level | 0.055 (.104) | | 0.076* (.058) | |
| Total Obs. | 2,763 | 2,763 | 2,763 | 2,763 |
| Uncensored Obs. | 2,763 | 848 | 2,763 | 848 |
| Chi2 (Wald test: ρ) | | 115.21*** | | 65.46*** |

Note: We did not report the estimates for constant and time dummies in [table 3](#) due to space limit. Observations are clustered by 42 central guidelines. East region is reference group and omitted. p -values are enclosed in parentheses.

*** $p < .01$, ** $p < .05$, * $p < .1$.

guidelines and how provincial governments issue implementation documents. We address these concerns by controlling for five policy fields (i.e., commerce and product quality, environment protection, safety inspection, land and natural resources use, and healthcare) in the pooled event history analysis and in the Heckman selection model. [Supplementary table S1](#) shows the regression results of pooled event history analysis. Panels E and F of appendix figure A1 graphically demonstrate the regression results. We found no substantial changes in the dynamics among bureaucratic control, provincial fiscal revenue, and central mobilization. [Supplementary table S2](#) presents the regression results of the Heckman selection model. We find the coefficients of the policy field dummies are mostly insignificant. Our finding that bureaucratic control incentivizes subordinates to reiterate less content of the central

guidelines still holds after adding policy field fixed effects in the Heckman selection model. However, the impact of central monitoring becomes insignificant if policy field fixed effects are added to the model.

Discussion and Conclusion

Despite continuing discussions about bureaucratic control in the organizational design literature and bountiful evidence on subordinates' behaviors to circumvent the guidelines stipulated by superior agency, few studies have linked different degrees of bureaucratic control in hierarchical organizations with subordinates' compliance and resistance patterns. In this research, we propose that enforcement of guidelines, through which the superior agency sets constraints over subordinates' discretion, relies on the consent of the

subordinates who are subject to the control. Generally, we argue that a high degree of bureaucratic control might increase the burdens of subordinate agencies, thereby encouraging the subordinates to strategically reduce compliance with or circumvent the guidelines, which impose such control on them.

We examine the above arguments in the context of Chinese social regulation system. We find that, even in countries such as China that enjoy relatively strong state capacity and highly centralized political and personnel management system, provincial regulators might strategically reduce compliance with the central guidelines, which set constraints on local regulatory practices. The negative effect of bureaucratic control on local regulators' compliance weakens or even reverses to be positive in places with scarcer fiscal revenue than those with more abundant fiscal capacity. Moreover, the information (a)symmetry between central government and local regulators also has complex and interesting effects on the compliance patterns of the latter.

This study makes several important contributions. First, this study extends bureaucratic control literature by examining how control measures stimulate subordinates' various compliance patterns. Our study shows that subordinates are not passive rule-takers. Instead, they actively adjust their behaviors in response to changes in formal control systems. Second, this study contributes to the long-existing discussion about the merits of decentralized (and centralized) regulation by showing that a highly centralized regulation structure might cause additional burdens to subordinates and change the compliance patterns of the latter. Moreover, this study informs researchers by showing that subordinates might leverage local fiscal resources or information advantage to maintain their real invariant power, even if superior agency reclaims formal authority over below. In addition, our study contributes to policy diffusion literature by exploring how the degree of bureaucratic control embedded in a policy impacts vertical policy diffusion from the national government to subordinate governments.

Although the main empirical results in our study are based on the Chinese social regulatory system, the

theoretical lessons do not hinge on the characteristics of one specific country or one specific policy domain. This study suggests that in organizations with vertical power structure (Carpenter et al. 2012; Duflo et al. 2018; Nohria and Ghoshal 1994; Sengul and Gimeno 2013) and when certain conditions are met (e.g., fiscal independence of subordinates, incongruent goals, lack of central mobilization, etc.), increasingly restrictive control measures taken by superior agency might incentivize subordinates to accordingly adjust their compliance patterns and lead to unintended outcomes. That said, the generalizability of our result still requires further testing, and future studies may examine the above dynamics in different policy domains and in countries with various political and economic institutions to establish a more general understanding about the relationship between control measures from superior agency and compliance behaviors of subordinates.

Supplementary Material

Supplementary data is available at *Journal of Public Administration Research and Theory* online.

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Data Availability

The data underlying this article are available in the article and in [Supplementary Material](#).

Appendix

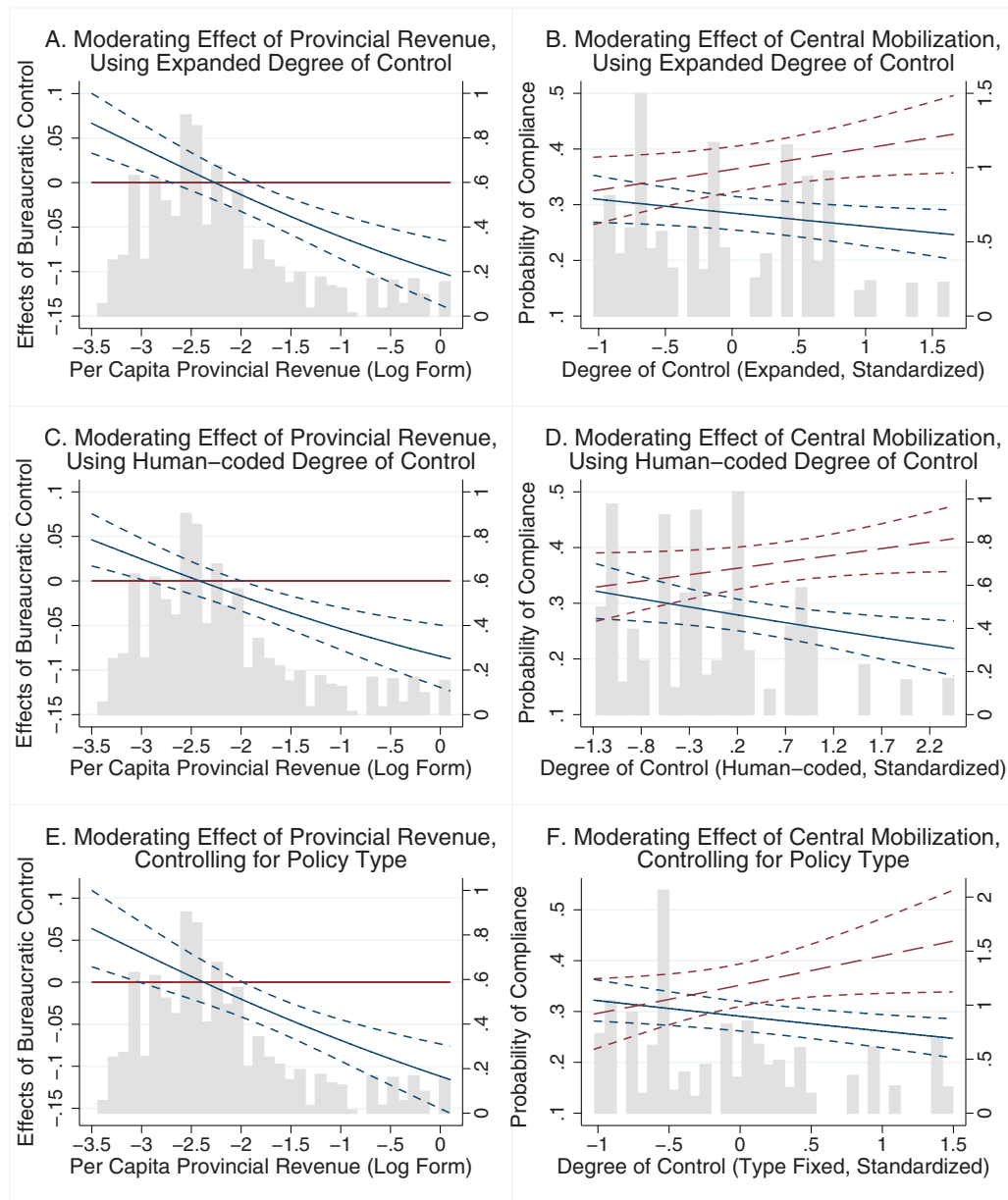


Figure A1. Robustness check using various ways to measure degree of control. Panels A, C, and E show how the effect of bureaucratic control changes as per capital provincial revenue increases. Panels B, D, and F indicate how existence of central mobilization influences the relationship between degree of control and compliance of provincial governments. The solid lines in Panels B, D, and F show the effect of bureaucratic control when no central mobilization exists. The long-dash lines in Panels B, D, and F indicate the effect of bureaucratic control when central mobilization exists. The short-dash lines in all panels show 90% confidence interval of the results.

Table A1. Variable Descriptions and Summary Statistics

| Variable | Description | Mean (%) | SD |
|--------------------------------------|---|-----------|-----------|
| Degree of control | Percentage of the words which are from the bureaucratic control category in each central guideline | 0.007 | 0.006 |
| Degree of control (Expanded Version) | Percentage of the words which are from the expanded version of bureaucratic control category | 0.012 | 0.008 |
| Provincial Revenue | Per capita revenue of a provincial government in a certain year (10k Yuan/Person) | 0.163 | 0.196 |
| Mobilization | Dummy = 1 if an NTTCC with the same topic of a central guideline is held in the same year when the central guideline is launched. | 0.258 | |
| Monitoring | Dummy = 1 if top-down inspection is mentioned in a central guideline | 0.205 | |
| Guideline Level | Dummy = 1 if a central guideline is issued by the Chinese State Council rather than by the General Office of the State Council | 0.247 | |
| Topic Salience | Frequency of the topic of a central guideline mentioned in other central guidelines in this year | 0.028 | 0.034 |
| Guideline Length (Words) | Number of words in a central guideline | 2,421.962 | 1,470.599 |
| Age_Party_Chief | Dummy = 1 if the party chief is older than 60 | 0.469 | |
| Age_Governor | Dummy = 1 if the governor is older than 60 | 0.34 | |
| Sameplace_Party_Chief | Dummy = 1 if the party chief was born in the same place where s/he is working | 0.071 | |
| Sameplace_Governor | Dummy = 1 if the governor was born in the same place where s/he is working | 0.392 | |

Table A2. Summary Statistics of Different Policy Fields of Central Guidelines

| | Safety Inspection | Commerce and Product Quality | Land and Natural Resources | Environment Protection | Health Care |
|-----------------------------|-------------------|------------------------------|----------------------------|------------------------|-------------|
| Num of Guidelines | 8 | 7 | 9 | 13 | 5 |
| Guideline Level (%) | 0.250 | 0.286 | 0.444 | 0.385 | 0.600 |
| Policy Length (average) | 2,436.875 | 2,188.714 | 2,161.667 | 3,462.615 | 3,212.600 |
| Topic Salience (average) | 0.042 | 0.025 | 0.038 | 0.036 | 0.021 |
| Mobilization (%) | 0.375 | 0.571 | 0.333 | 0.308 | 0.200 |
| Monitoring (%) | 0.125 | 0.286 | 0.444 | 0.231 | 0.200 |
| Degree of Control (average) | 0.004 | 0.004 | 0.011 | 0.006 | 0.002 |
| Degree of Control (min) | 0 | 0.002 | 0.004 | 0.001 | 0.001 |
| Degree of Control (max) | 0.009 | 0.008 | 0.029 | 0.015 | 0.008 |

Table A3. Summary Statistics of Provincial Governments in Different Regions of China

| | East Region | Central Region | West Region | Northeast Region |
|---|-------------|----------------|-------------|------------------|
| Num. of Provinces | 10 | 6 | 12 | 3 |
| Probability of Issuing implementing Documents in Five Years (average) | 0.707 | 0.739 | 0.736 | 0.686 |
| Content Coverage of Central Guidelines (average) | 0.230 | 0.295 | 0.279 | 0.261 |
| Provincial Revenue (10k Yuan/Person) (average) | 0.319 | 0.086 | 0.089 | 0.136 |
| Age_Party_Chief>60 (%) | 0.535 | 0.271 | 0.422 | 0.533 |
| Age_Governor>60 (%) | 0.313 | 0.237 | 0.328 | 0.233 |
| Sameplace_Party_Chief (%) | 0.111 | 0.102 | 0.052 | 0.067 |
| Sameplace_Governor (%) | 0.333 | 0.220 | 0.491 | 0.333 |

Table A4. Supplementary Words to Measure Degree of Control

| Chinese Pinyin | Part of Speech | English Translation |
|------------------|--------------------|------------------------------|
| An Zhao | Preposition | Based On, Following |
| Yi Fa | Preposition + noun | According to Law |
| Fa Lv Fa Gui | Noun | Laws and Regulations |
| Fa Lv | Noun | Laws |
| Fa Gui | Noun | Regulations |
| An Gui Ding | Preposition | According to Regulations |
| Yi Ju | Preposition | Based On |
| Yi Fa Xing Zheng | Adverb + verb | Administration Based on Rule |
| Zun Shou | Verb | Abide By |
| Yi Ding | Modal verb | For Sure |

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