Loyalty versus Competence: Internal Conflicts and the Pattern of Bureaucratic Control in China, 1644-1911

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April 2013

Abstract

The quality of state bureaucrats is often key for maintaining social stability. This paper analyzes how Chinese rulers in the Qing dynasty controlled provincial governors and used sanctions and appointments as a mechanism. I argue that the rulers faced a trade-off between competence and loyalty. The ethnicity-based patronage favoring Manchus consolidated the power within the central government, yet the bureaucrats of the majority group, Hans, were important for the stability at the local level. I find that the probability of provincial governors being sanctioned increased, while the probability of promotion decreased significantly following internal conflicts. Moreover, the rulers tended to appoint Hans when the society was exposed to a high risk of conflict. This is consistent with the rise in the ratio of Han governors during the nineteenth century, when the Qing rulers were embroiled in mass rebellions and suffering from the decline in state capacity.

*Contact: tianyang.xi@nyu.edu I am grateful to Bo Zhiyue, Carles Boix, Chen Zhouwang, Georgy Egorov, John Ferejohn, Sanford Gordon, James Hollyer, Franziska Keller, Li Jing, Cheryl Xiaoning Long, Debin Ma, Emerson Niou, Adam Przeworski, David Stasavage, Sun Guangzhen, Wang Cheng, Wang Jinyi, Helen He Yang, Yao Yang, and Zhang Shengxing for comments and discussions.

1 Introduction

The quality of state bureaucrats is essential for all kinds of political systems. Democracies and dictatorships face similar problems of appointing competent officials and replacing those who fail to do their jobs properly. Yet the selection of non-elected officials, the bureaucrats, is vulnerable to political influence. Recent studies suggest that the problem of bureaucracies in dictatorships involves a fundamental trade-off between loyalty and competence. As a consequence of rulers' preferences for loyal officials, the quality of governments is often undermined (Acemoglu, Egorov, and Sonin, 2010; Egorov and Sonin, 2011). But on the other hand, we should not ignore that the establishment of political order at the local level depends also on the competence of bureaucrats: rulers cannot maintain social stability single-handedly. Giving that both loyalty and competence are important, the question is rather how the trade-off from the ruler's perspective may drive the pattern of bureaucratic control differently in different circumstances.

Motivated by this question, I examine the patterns of bureaucratic control under the shadow of internal conflicts, using the transformation of provincial governorship in China during the Qing dynasty as a case in point. The paper demonstrates that the both bureaucratic sanctions and appointments were functions of internal conflicts and the long term decline in state capacity. Just as other authoritarian rulers, the Qing emperors relied on bureaucrats to provide services that help defuse the antagonism within society and maintain social stability. The political system of the Qing dynasty, however, was special in two aspects. First, the majority of public officials entered bureaucracy through a pretty open and meritocratic system known as the Imperial Examination (*Ke Ju*). Secondly, the Qing rulers belonged to a small ethnic group, the Manchus, which had been a northern tribe conquering the country by force in the 17th century. To guarantee the political dominance of the ruling group, the Qing rulers established an ethnicity-based patronage system to appoint and reward Manchus. As a result, Manchus were over-represented in population at the top level of bureaucracy. The co-existence of the Manchu dominance at the top level and the merit-based selection suggests that neither loyalty nor competence was the unique factor in determining the mode of bureaucratic control.

In this paper, I shall not discuss in detail the similarity and difference between the Imperial Examination and the meritocratic systems in other histories. I focus on provincial governors, whose behaviors had a direct influence on the political survival of rulers. I propose a simple model in which candidates differ in the competence to deliver service and their loyalty to the rulers. Bureaucrats of the Han, the majority ethnic group, were normally selected via a competitive process and had extensive experience in local governments. They were more adept in coping with riots and crises at local and provincial levels. By contract, Manchu bureaucrats had relatively limited administrative experience before being promoted to important jurisdictions and were less familiar with governance at the local and provincial levels. This well recognized divergence between Manchu and Han bureaucrats stemmed from the Eight Banners System, which was intended to preserve the economic privileges of

Manchus and prevent them from assimilation into the Han society.

Despite the comparative advantage at governing, the Han bureaucrats might fall short of loyalty to the rulers. Ample evidences show that the distrust of rulers about Hans lasted throughout the entire Qing dynasty. The disloyalty does not necessarily mean a real danger of rebellion or coup d'état by Han governors. Rebellions led by Han officials or generals were extremely rare through the Qing dynasty. I specify the distrust of the rulers as an ex ante disutility when appointing Hans, which might be derived from potential non-compliance of Han bureaucrats. To deal with this, rulers could either institute mechanisms of direct control at some administrative cost, or rely on Manchus to govern. The ability of rulers to exert direct control over governors, by means of administrative oversight or military prowess, however, depended on state capacity. When state capacity was high, the rulers were able to impose their will on the policies implemented by Manchu and Han governors. When state capacity was too low to establish a direct control, presumably due to internal conflicts and the shortage of fiscal revenues, the rulers would prefer to delegate power to governors. The result was a decentralized bureaucracy, in which Han officials were increasingly appointed to jurisdictions of high instability.

The analysis has two implications with respect to the patterns of bureaucratic sanction and appointment. First, the rulers relied on sanctions to replace incompetent officials. When there was an emerging threat from internal conflicts, governors' judgment and experience became more important for maintaining stability. While not primarily responsible for military operations, governors were more likely to be removed for negligence or the degeneration of social order. Historically, the ratio of governors being removed or demoted was most high during the early and late Qing periods, and it peaked during the Taiping Rebellion, the largest civil war in the Qing dynasty.

Secondly, the rulers were more likely to appoint Hans as governors when the threat of internal conflicts was severe under low state capacity. In the history of Qing dynasty, he proportion of Hans as governors was U-shaped over time. The ratio of Han governors was very high in the early Qing period, starting to fall when the rulers consolidated their power. It then followed a century-long declining trend and was only reversed in the mid-19th century when the Taiping Rebellion occurred. The fluctuation of Hans' ratio was synchronized with the time-series trends of internal conflicts and fiscal revenues. The rulers adjusted to the changing circumstances in the approach of controlling bureaucrats.

I use original data about internal conflicts and the Qing governors to further test theoretical implications. The empirical results demonstrate significant effects of internal conflicts on the sanctioning of governors. According to the baseline model, each additional rebellion was associated with an increase in the probability of sanctions by 4 percentage points. The probability of sanction for Han governors was either the same as, or somewhat lower than that of the Manchus in all specifications. The results lend support to the theoretical prediction that the ruler should optimally set a uniform threshold of performance in retaining officials. At the same time, Han governors were severely dis-

advantaged when it comes to promotion: the probability of Han governors being promoted was 30 percent less than for Manchus.

In agreement to the theory, the decisions of appointment to governorship reflected the potential of social disorder. Both rebellions and weather shocks increased the probability of a new appointment being Han officials. There was also a significant increase in the tendency of Han governors in the nineteenth century following the Opium War. An interpret about this is that the problems faced by the Qing rulers in the post Opium War decades combined two features: a sharp decline of fiscal capacity and the inability of the central government to cope with soaring rebellions.

The issue of bureaucratic control examined in this paper adds to the literature on the political economy of non-democratic regimes (for example, Bueno de Mesquita et al., 2003; Gandhi and Przeworski, 2006; Myerson, 2008). Classic authors such as Machiavelli wrote that rulers should prefer "to lose with his own (arms) than to win with others" (*The Prince*, XIII). Resonating to this, Egorov and Sonin (2011) show that the recruitment of competent bureaucrats is often unfeasible due to the concern about coup d'état. As a result of severe punishments for disloyalty, in the Soviet Union and Nazi Germany important bureaucratic positions were often occupied by mediocrities. The Qing dynasty was not an exception in terms of this problem. Moreover, the logic may be applied to bureaucratic organizations in the contemporary China. The "red-vs-expert" (the revolutionary versus professional technocracy) debate emerged in the 1950s and ended up with the principle of "politics takes command" (MacFarquhar, 1958; Baum, 1964; Ray, 1970). In their paper on the Great Leap Forward Famine, Kung and Chen (2011) attribute the adoption of radical measures of food confiscation to officials' incentives to signal political loyalty. Studies on the promotion of Communist Party officials find support for effects of both yardstick competition and factional affiliations, hence leaving the question of competence-vs-loyalty trade-off open (Bo, 2002; Li and Zhou, 2005; Shih, 2008; Shih, Adolph, and Liu, 2012). My paper provides insights from historical evidence in addition to the studies on the contemporary China, examining quite related issues of bureaucracy in a different context of weak state capacity.

We should also notice that the competence-vs-loyalty trade-off for public officials is not an issue limited to authoritarian regimes. In democracies, politicians are often confronted with the choice between meritocratic and partisan appointments. The adoption of civil service reforms in the US and European countries was intended to reduce adverse effects of partisan politics on the quality of public service (Carpenter, 2001; Hollyer, 2010). The literature on Congressional oversight points out a tension between the responsiveness and autonomy of government agencies (Calvert, McCubbins, and Weingast, 1989; McCubbins and Schwartz, 1984; Weingast and Moran, 1983). Iyer and Mani (2012)'s research on Indian bureaucrats shows that high-skilled bureaucrats do not have better chances for the assignment of offices, meanwhile caste affinity to the politician's party base significant increases the probability of holding an important position.

This paper is related to the literature on the relationship between war and state capacity. Tilly

(1990) points out that preparation for war was a driving force in the formation of modern states. Besley and Persson (2010) develop a theory in which the government optimally determines the investment in state capacity, which tends to be negatively correlated with internal conflicts but positively correlated with foreign wars. In their model, the government has the ability to increase its legal and fiscal capacity, and the maintenance of such capacities is not directly impacted by military conflicts. Both assumptions may not hold for the pre-modern history of China. The central government in the Qing dynasty played a very limited role in the national economy. Furthermore, an important constraint on the state capacity in the nineteenth century was that revenues had been dissipated in a series of wars. My paper analyzes the question of how the changes in state capacity may affect political institutions and bureaucracy. The transformation in bureaucracy was part of the Self-strengthening Movement endorsed by the rulers (Wright, 1962). While the reforms failed to restore state capacity, they prevented an immediate collapse of the regime.

The paper is also related to the debates about state and bureaucracy in the Chinese history. The Weberian theories categorize the imperial China as a patrimonial system, which featured arbitrary royal power, low bureaucratic capacity, and the lack of accountability (Weber, 1978; Eisenberg, 1998). Historians contend that a somehow autonomous bureaucracy existed and functioned to provide public goods in an important way (Kuhn, 1970; Hamilton, 1990; Will, 1990; Guy, 2010; Rosenthal and Wong, 2011). Although the mechanisms of bureaucratic control analyzed here are different from electoral accountability (Barro, 1973; Ferejohn, 1986), the empirical evidences suggest that the Qing bureaucrats were responsible for their performance in rationalizable ways. We may conclude that a degree of "bureaucratic accountability" existed despite some patrimonial features of the political system in the pre-modern China.

The rest of this paper proceeds as follows. The next section presents a simple theory of the ruler's preferences concerning bureaucratic accountability and appointment. It is followed by a discussion of the history of the Qing bureaucracy and some important facts about conflicts and state capacity. I then present the econometric evidence of provincial governors. The final section concludes.

2 Theory

2.1 Competence versus Loyalty

In this section, I analyze the ruler's optimal decision with regard to sacntion and appointment. The essential idea involves a trade-off between the competence and loyalty of different groups, i.e. Manchu and Han. The bureaucrats of the majority Han group are associated with a higher expectation of competence in maintaining order within Han Chinese provinces. This assumption is plausible, given the empirical issues we address. First, majority Han officials were more familiar with local affairs in the Han provinces (Oxnam 1970, cited by Guy, 2010, p.49). Governors' competence in terms of building networks and gaining the trust of local elites was crucial for establishing social order.

This does not rule out, however, the possibility that Manchus might be more competent in military operations, which is not a primary concern of this paper.

Second, and more importantly, the divergence in competence also stems from an over-representation of Manchus within the bureaucratic hierarchy. This was caused by state patronage and the relatively high admission rate for Manchus in the Imperial Examinations. When the Imperial Examination was first installed, the court implemented a 4:6 Manchu-to-Han quota for the final pass (Elman, 2000, p.166). Although the quota was canceled afterwards, special examinations for Manchus were preserved. Manchus were allowed, for example, to take "translation examinations". Outside the Imperial Examination system, there were a multitude of other ways for Manchus to enter bureaucracy, such as hereditary privilege, serving as bodyguard or secretary for senior Manchu officials, and purchasing a position (Zhao, 1977, Vol. 108). It is safe to conclude that the selection process for Han candidates was more competitive, given the base population.

At the same time, Han officials might be more likely to fall short in implementing policies congruent to the ruler's ideal position. I construe this as difference in terms of loyalty, modeled as a reduced-form disutility of the ruler when appointing Hans. The ruler's decision then consists of appointing a bureaucrat in the first period, and then retaining him or not in the second period. As the type of bureaucrat is unknown by the ruler, he forms a belief about competence ex post based the performance. The ruler's optimal strategy for retaining involves a threshold of performance. Ceteris paribus, bureaucrats of the majority group are associated with higher average performance and are more likely to be retained. The comparative advantage in administrative competence leads to the appointment of majority bureaucrats in the face of crisis. At the same time, crises also make officials' competence more salient in determining the success of a policy, resulting in a high probability of firing. I also consider a mechanism to directly control the policy implemented by bureaucrats. The mechanism enhances the possibility of appointing majority candidates, yet it might fail when the state suffers from a lack of administrative capacity (high cost of control).

2.2 A Model

I consider an environment of two periods and a risk neutral ruler. In each period, the ruler faces the problem of appointing an official to provide services that help establish order (or generically, public goods). Two types of stability-enhancing policies, $\{L,R\}$, are available for officials to choose. Both types of policies have a similar effect in appeasing local conflicts but they differ in the intrinsic value from the ruler's perspective. The ruler always prefers the R ("royal") type to the L ("local") policy. I model this in a simple reduced-form fashion: when L policy is chosen, the ruler bears an additional disutility, ρ.

Besides the disutility from implementing L, the ruler's one-period utility is derived from the expected level of social stability y, which is shared by both L and R types of policy. The level of commonly observed stability associated with any policy is $y = \theta\eta_j + \epsilon$. It consists of two parts: the

value added by the official j's personal competence η_j, and the random term ϵ that is not controlled by the official. I assume that ϵ is uniformly distributed on $[0,1]$. Parameter $\theta > 0$ measures the exogenous environment concerning the stake of social order, or, the importance of the official's personal competence in producing order. When θ is larger, the level of order is more dependent on official's administrative competence than the systemic risk of conflict within the society. Hence, a high competence η_j results in a larger difference in terms of social stability. We could also interpret θ as a threat to stability or a high demand for competence due to riots. The decline in state capacity may have a similar effect: competence becomes more valuable when the state loses a war or suffers from a lack of fiscal revenue.

The ruler selects officials from two pools of candidates of infinite supply: Manchu (M, the minority) and Han (H, the majority). Candidates differ in competence (η_j) and loyalty. I assume η may take two values: $\overline{\eta}$ and $\underline{\eta}$, with $\overline{\eta} > \underline{\eta}$. A fraction of the group Han, π_H, is featured with high competence, $\overline{\eta}$; the fraction of high capacity is π_M for the Manchu group. As explained, the majority Hans are associated with high competence on average in dealing with local and provincial affairs, I assume that $\frac{1}{2} > \pi_H > \pi_M > 0$[1]. At the same time, the Manchus and Hans differ in their loyalty to the ruler. The Manchus share the same disutility with the ruler with respect to the L type of policy, while the Hans strictly prefer the R type of policy.

The environment has two more features: hidden information and contract incompleteness. By hidden information, the ruler does not observe an official's competence η_j. He can only make an inference about competence upon observing y. Without a direct intervention by the ruler, the choice between L and R is non-contractible and no replacement can be made conditional on the type of policy – a feature I am assuming rather than modeling[2]. This implies that a Han official would have chosen L had the ruler granted them full discretionary power[3]. Yet the ruler may oblige officials to a specific type of policy through direct control. The mechanism can be established with an administrative cost c at the beginning of the first period[4]. Throughout the dynasty, the court used a variety of mechanisms to monitor officials, and they often intervened in provincial administrations directly. For example, the ruler might tighten control via supervision of commissioners, mandate a duty visit of governors to the capital, pay a personal visit, or station a military force nearby. An interpretation of c would be

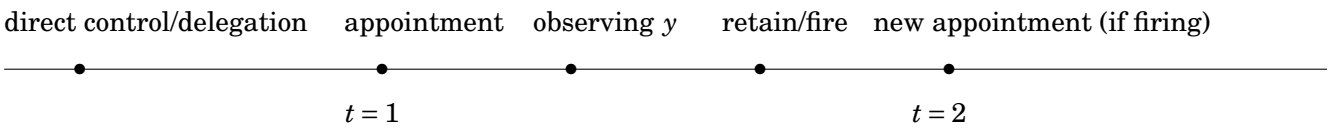
[1]This assumption causes some loss of generality, but it is useful in avoiding cases that are algebraically tedious and distracting from the main theme.

[2]There are many ways to provide a micro-foundation for this assumption. One possibility is that the ruler's preference over policies depends on the state of the world, which is unobserved and unverifiable by the ruler, but could be observed by officials. In this case, it may be optimal for the ruler to rubber-stamp any policy proposed by officials even if the ruler can impose his (ex ante) ideal policy (Aghion and Tirole, 1997). Alternatively, we could think about an environment in which bureaucrats make error in implementing policies. When the expected error is large, the ruler might tolerate non-congruent bureaucrats more to induce the pandering to the ruler's ideal position (Huber and McCarty, 2004).

[3]The intuition is consistent with many examples in Qing history. When the Anglo-French army marched to Beijing in 1860, the court sent a royal edict to Zeng Guofan, the governor general presiding the war against Taiping Rebellions, to ask for a rescue. After discussion with his staff, however, Zeng decided to delay the action by asking for more instructions. The rationale was two-fold: that his troop would not be able to stop the Anglo-French army; and that the war against rebellions should be given a priority over the fate of the court (Xie 2006, p.53).

[4]An interpretation of this is that the choice between L and R is contractible and enforced only at some monitoring cost.

Figure 1: Timing of the Game



the administrative capacity of the state: control is likely with a routinized system. By contrast, with a by and large dysfunctional bureaucracy, monitoring and controlling could be extremely difficult. Notice that no direct control is necessary when the ruler appoints a Manchu candidate: the R type of policy is preferred by the official.

Observing the level of social stability y in the first period, the ruler may fire the official or retain him. In case of firing, a new appointment has to be made. Firing and appointment do not incur cost. The timing is described by Figure 1.

The ruler has three decisions to make, in turn: whether to institute direct control, whether to appoint a Manchu or Han official, and whether to retain the official. Here I shall not delve into the moral hazard problem with respect to effort[5]. To make the analysis interesting, I also assume the difference between high and low competence is not too large: $\overline{\eta} - \underline{\eta} < \frac{1}{\theta}$. To solve the model, I start by noticing that a new appointment must come from the same group as the official being removed. I present the main results in this section and relegate proof to the appendix.

Lemma 1. *If the ruler appoints a candidate from group j ($j \in \{M,H\}$) and fires him at the end of period one, the new appointment must be chosen from the same group j.*

The intuition is simple: if the ruler fires an official in the first period, he would again face the same pool of candidates with the same prior about competence. Since nothing has changed in parameter conditions, the trade-off between competence and loyalty remains as before. This implies that a new appointment is to be drawn from the same group. Also, once the ruler has chosen a group in the first period, he will make the firing decision conditional on y or the belief about competence. The ruler's optimal strategy is summarized as the following.

Proposition 1. *(Sanction) The ruler sets the same threshold value of y for both groups: an official is replaced if and only if $y < \theta\overline{\eta}$. The ex ante probability of an official from group j being fired is $(1-\pi_j)\theta\Delta\eta$, with $j \in \{H,M\}$, and $\Delta\eta = \overline{\eta} - \underline{\eta}$.*

The ruler retains an official from group j only if the posterior belief about high competence is greater than or equal to the prior π_j. Since the threshold for two groups is the same, and the majority group is more likely to be associated with $\overline{\eta}$, the conditional probability of firing is lower for H. Moreover the probability of firing increases in θ, the demand for competence. In this case, officials'

[5] We could imagine scenarios in which effort is induced by a relational incentive contract between the ruler and candidates.

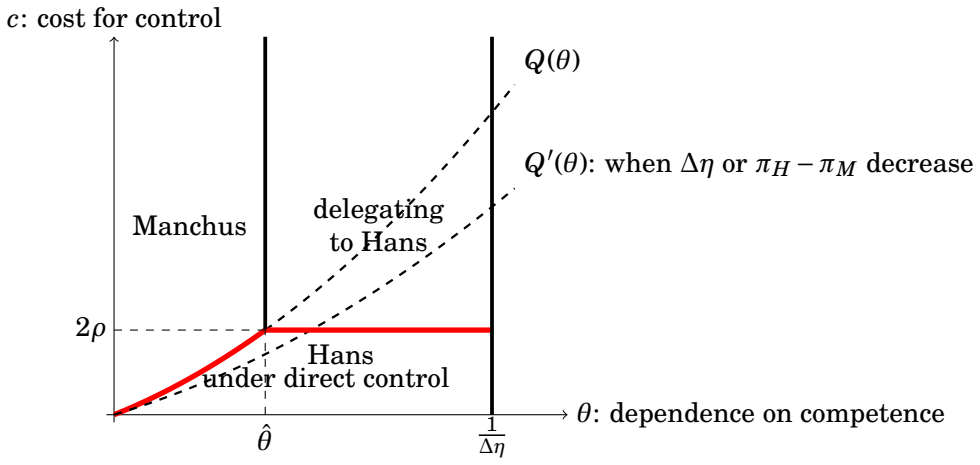


Figure 2: Patterns of bureaucratic control

experience and competence are more important, and the divergence between the high and low types increases. Accordingly, the ruler becomes more sensitive to performance and sets the threshold higher.

Proposition 2. *(Appointment) When ρ is not very large, there exists a threshold value $\hat{\theta} \in (0, \frac{1}{\Delta\eta})$ uniquely determined by ρ, such that: when $\theta < \hat{\theta}$, the ruler uses Hans under direct control if $\theta > Q^{-1}(c)$, otherwise the ruler appoints Manchus; when $\theta > \hat{\theta}$, the ruler uses Hans under direct control if $c < 2\rho$, otherwise he delegates power to Hans. Here $Q(\theta)$ is monotonically increasing function independent of ρ and c.*

The appointment decision is driven by two factors: how crucial bureaucrats' competence is to establishing social order (θ), and how costly it is for the ruler to directly oversee the bureaucrats (c). When the distrust in the majority Han is moderate, the ruler should prefer delegating power to Hans to relying Manchu loyalists, assuming the demand for competence is sufficiently high. This corresponds to the region to the right of the line $\theta = \hat{\theta}$ in Figure 2. The ruler might not delegate power, though, when he could maintain a firm control over Han officials without incurring a large cost: $c < 2\rho$. He would not have used Manchus when the demand for competence is not pressing ($\theta < \hat{\theta}$) and yet controlling is easy: $c < Q(\theta)$. Notice that $Q(\theta)$, which is increasing in θ, is the expected gain in public order achieved from appointing Hans. Thus, when the dependence on competence is not large relative to cost of controlling and the distrust in Hans, $\theta < Q^{-1}(c)$ and $\theta < \hat{\theta}$, the ruler should appoint Manchus.

The theory has a number of implications with respect to the pattern of bureaucratic control. The main driving factor of appointing Hans is the dependence on competence. In the following sections I argue that social conflict was a main cause for this demand. Thus, we would expect to observe more appointments of Hans during rebellions and other time of crisis. Yet the pattern of control

may be optimally adjusted for changes in the administrative capacity of the state. As state capacity to maintain direct control decreases, the ruler would more likely delegate power to majority Han officials. One should also notice that $\hat{\theta}$ is endogenous to ρ, the disutility of appointing Hans. When the distrust in Han officials increases, the line $\theta = \hat{\theta}$ shifts to the right. This would be reflected by a transition in the mode of control from "delegating to Hans" to "using Manchus"[6]. Last, when there are less variance among bureaucrats in terms of competence ($\Delta\eta$ becomes smaller), or when the distribution of competence becomes closer ($\pi_H - \pi_M$ becomes smaller), the ruler tends to appoint more Manchus. In Figure 2, this is reflected by a downward shift of $Q(\theta)$ and a larger range of parameter conditions accommodating the preference for Manchus.

3 Bureaucracy in Qing Dynasty

3.1 Manchu versus Han Officials

Similar to other authoritarian rulers, the Qing rulers attempted to strike a proper balance between competence and loyalty. Right after the ascendance of the first emperor, Shun Zhi, the Qing court declared the resumption of Imperial Examinations as a primary means for selecting bureaucrats (Zhang 2000, p.70). A decade later, the emperor revitalized the old Hanlin Academy, composed primarily of Hans (Zhang 2000, p.399). The rulers realized that with about 250,000 soldiers and 1.5 million total population (2 percent of the Han population), the court could not maintain stability merely by force (Wakeman, 1985, p.415). A number of "twice-serving ministers," the ranking bureaucrats serving the previous Ming dynasty, were instrumental in suppressing riots. The Han Grand Secretariats also played a key role in designing the administration after the model of preceding Ming dynasty.

Yet the distinction between the Manchu and Han identities clearly existed. While the regent Dorgon famously declared "the empire is a single whole," (*Tian Xia Yi Jia*) and the Manchus and Hans were of the same qualifications, Manchus were granted higher ranks in almost all jurisdictions within the central government (Wakeman 1985, p.873). When Emperor Shun Zhi received a memorandum about reform favoring Hans, he warned the Han grand secretariats that: "I am beginning to think that you are all Ming ministers" (Wakeman 1985, p.953). This kind of distrust is reflected by a persistent over-representation of Manchus within the top state bureaucracy. Our data show that for the entire Qing dynasty, Manchus occupied 30.33 percent of 6,719 incumbent governorships[7]. Among top administrative positions in the center, Manchus accounted for 41.79 percent of 4,824 incumbent grand secretariats, the most powerful bureaucratic position, and 47.42 percent of 3276 incumbents in the grand council, the chief consultative body for the court.

[6] An example could be the replacement of Han governors with Manchus right after the defeat of the Revolt of the Three Feudatories under Emperor Kang Xi in 1681. The civil war lasted for a decade and almost toppled the dynasty. The ruler hence had obviously been reminded that the majority Han officials were not so trustworthy.

[7] The coding scheme and sources of data can be found in the codebook (`https://sites.google.com/site/tyxi79/data`).

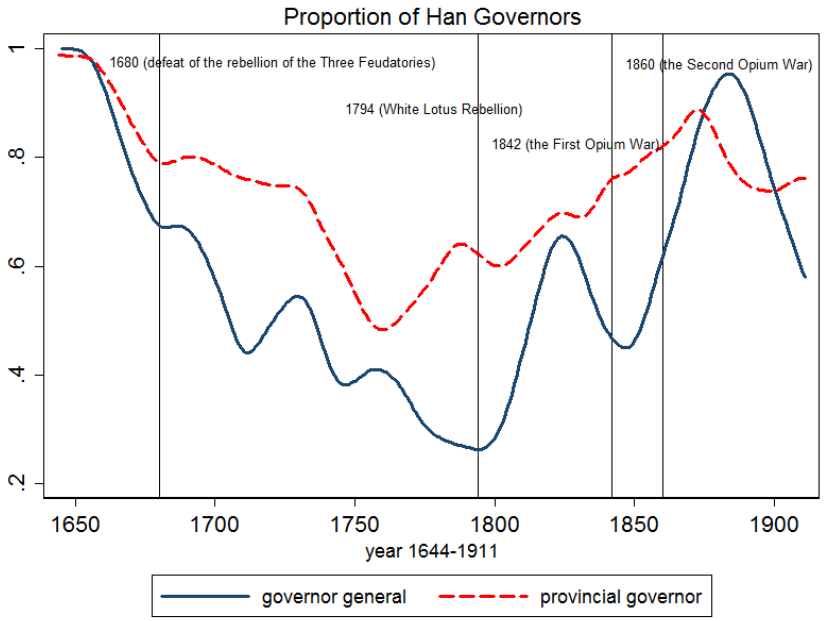


Figure 3: Proportion of Hans Serving as Governor General and Provincial Governor (lowess smoothing)

Figure 3 reports the proportion of Hans among provincial governors and governors general for the eighteen provinces in each year[8]. As we observe, the governorships were predominantly Han during the first two decades. The ratio started declining from 1668, when regent Oboi invested in his patronage network. There was then a substantial contraction of the Han group after Emperor Kang Xi (1662-1722) consolidated his power. During the course of the 18th century, the Han governorships continued to exhibit a long-term downward trend that only reversed during the 19th century, when the state was severely weakened by military setbacks.

To understand the historical trend of the Qing governorship in light of social stability, I plot the temporal trend of internal conflicts[9] Figure 4 shows that the proportion of Han governorships is highly correlated with internal conflicts and to some extent with foreign wars. The two periods of most frequent rebellion are the early Qing years and the second half of the 19th century. The

[8]The provinces correspond to the region of "China proper," the concept used by westerners in the 18th century to describe regions where a majority of residents were Han. They include all the provinces except for Beijing (*Shun Tian Fu*), Manchuria, Mongolia, *Xin Jiang*, and Tibet. A provincial governor (*Xun Fu*) was the provincial chief executive responsible for disciplining local officials, carrying on public works, overseeing revenue collection, and maintaining regional order and security. A governor general's (*Zong Du*) authority covered one or several provinces. Governors general coordinated administrative affairs, and they had power to command troops. The capacities of provincial governors and governors general were independent and both reported directly to the emperor. I count an official as Han if he was either a Han Chinese or Han Banner-man, a Han who was granted a standing title within the Manchu's Eight Banners system.

[9]The conflicts are counted on a provincial-yearly base. If a rebellion took place simultaneously in three provinces, it is counted in each province as one. In contrast, wars against foreign countries are counted on a yearly base.

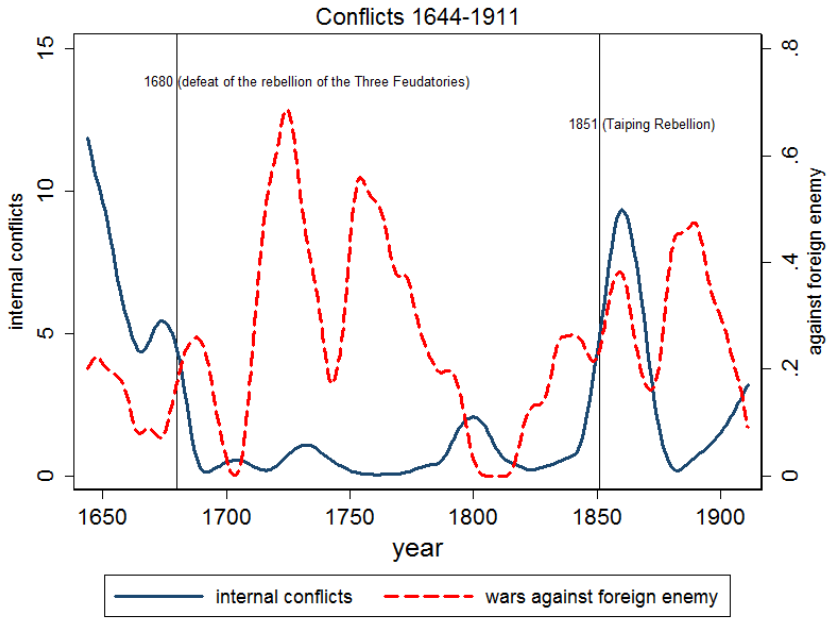


Figure 4: Nationwide Conflicts: Internal and External Wars (lowess smoothing)

timing is consistent with the dominance of Han officials as provincial governors. Almost all large rebellions were followed a increasing trend of Han governorships: the Rebellion of Three Feudatories (1680), the White Lotus Rebellion (1794), the Taiping Rebellion (1851), and the Nien Rebellion (1851). In comparison, foreign wars seem to be positively related to Han governors only in the late Qing dynasty. For the long period in the 18th century, in which China actively engaged in a series of foreign wars, the Han governors were relatively fewer. While China had defeated most enemies in the 18th century, it suffered through military setbacks during the following century. Thus one difference between the environments faced by the rulers in the mid and late Qing periods might be the decline of state capacity, which renders that it was increasingly difficult to maintain stability by using the military force of its own.

Based on the theoretical model, an explanation for the simultaneous occurrence of internal conflicts and appointments of Hans is that the rulers increasingly depended on the Hans in provincial governments when the military capacity became low. An alternative explanation, though, is that the rulers might have been forced to share power with the Han elites in appointing governors. In other words, the increase in Han governors might be due to the influence of powerful Han grand secretariats and grand council members within the central administration. Figure 5 plots the proportion of Han grand secretariats and the grand council members. In contrast with provincial governors and governors general, the share of Hans within the central administration was not closely related to rebellions. During the Taiping Rebellion (1851-1864), the trend for grand secretariats was flat and

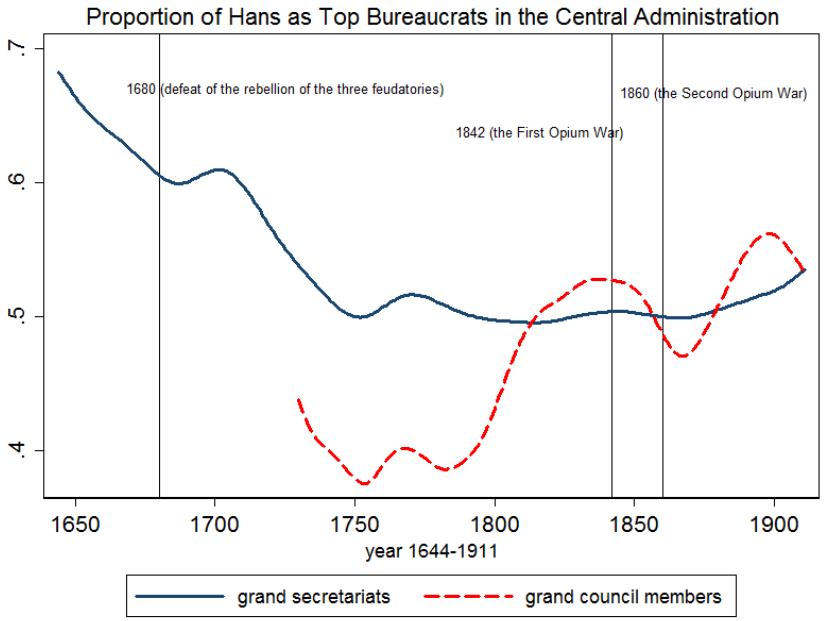


Figure 5: Proportion of Han Officials of Top Administrative Rank (lowess smoothing)

the grand council trend decreased. While we cannot rule out the possibility of power-sharing from this evidence, it suggests that the change in the patterns of bureaucracy was not completely due to loyalty and factional affiliation.

3.2 Bureaucratic Sanction and State Capacity

The theory predicts that the probability of sanction should increase with the demand for competence in maintaining stability, θ. Figure 6 plots the yearly frequency of sanctions and promotions for governors and governors general[10]. Two observations can be made. First, the frequencies sanction and promotion follow a common trend: when the rulers punished governors more, they also promoted more[11]. Secondly, the incidences of sanction concentrated in times of crisis: a governor or governor general was most likely to be sanctioned in the early Qing period or during the Taiping Rebellion.

The patterns of sanction and promotion are consistent with internal conflicts, at the same time they illustrate the change in state capacity. Figure 7 shows a clear declining trend for fiscal revenue available to the state over time. Both per capita tax revenue in taels of silver and the grain tax had been decreasing since the mid-18th century. The stock of grain per individual dropped signif-

[10] A sanction is counted if a governor or governor general was either demoted or removed. An official was promoted when he was either transferred to a position with higher administrative rank, or was retained and granted a higher administrative rank.

[11] A Dickey-Fuller test with 15 lags strongly supports that the two rates are cointegrated (p-value is equal to 0.0011).

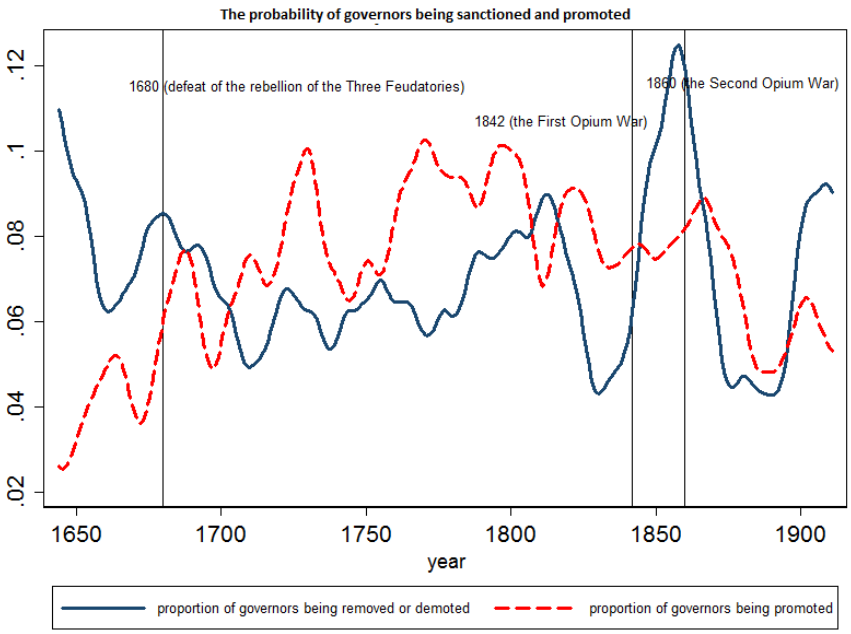


Figure 6: Proportion Governors (Provincial Governor and Governor General) of Being Punished and Promoted (lowess smoothing)

icantly in the 18th century following decades of foreign war and never returned to previous levels. The decline in fiscal capacity explains why the central government was incapable of suppressing rebellions and providing social stability after the mid-19th century. While the amount of tax revenue was endogenous to the decisions by the state[12], the continuous decrease, however, was caused by fundamental problems such as the corruption of tax bureaus (Li and Jiang, 1995; Jones and Kuhn, 1978, pp.120-127). As land tax was a main source of revenue for military expenditure, maintaining a strong military force became infeasible for the central government. As a result of the defeat of state military by the Taiping rebellions in 1860, the emperor had to appoint Zeng Guofan, a Han governor, as the de facto commander-in-chief of the southern provinces. The bulk of military force in wars against the rebellions became local militias, who were recruited and trained by Han elites. To solve the problem of fiscal revenue, the emperor granted to provinces the power of levying duty tax on commodities. The administrative power of governors and governors general also expanded significantly during the time, partially due to the loss of direct control by the state over provinces. For example, governors and governor generals acquired de facto power to make promotions and appointments. In light of the model, such changes are consistent with an increase in the cost of control (c) and the delegation of power to Han bureaucrats.

In line with the theoretical model presented in the preceding section, the historical patterns re-

[12]For example, the state froze the quota of land tax in 1713 (Zhang, 2000). It also was a common practice to deduct tax quotas after natural disasters (Will, 1990, pp.97-125).

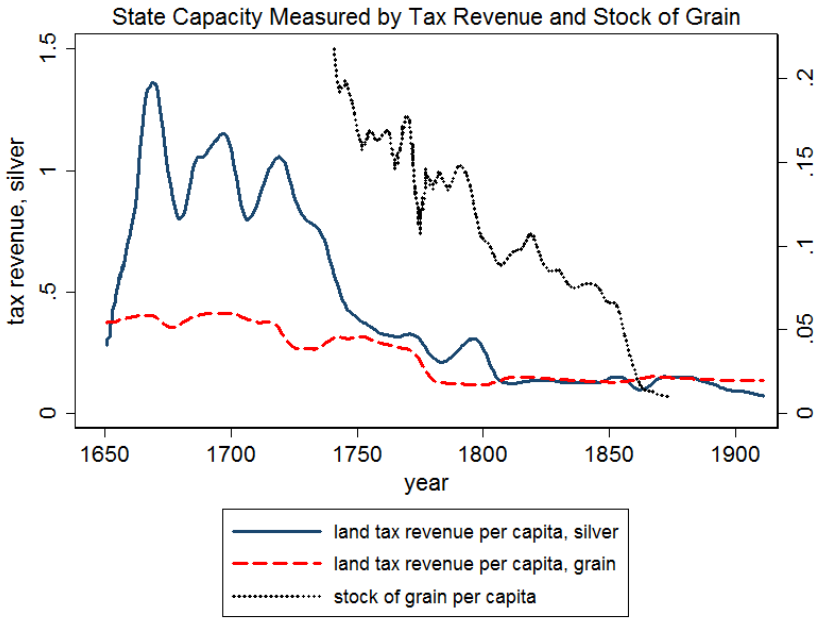


Figure 7: Fiscal Capacity of the State (lowess smoothing)

flect the importance of competent bureaucrats to maintain social stability as well as the fundamental change in state capacity. The Qing rulers relied extensively on the Han governors in the early Qing period. Following the consolidation of power by Emperor Kang Xi, a number of Manchus entered bureaucracy via patronage and replaced Han governors. The demand for competence (θ) decreased, leading to a mix of Manchu and Han governors. Manchus dominated the state bureaucracy at the top level under Emperor Qian Long in the 18th century, but at the same time state capacity started declining following decades of war. Eventually, emerging rebellions pressed for the use of bureaucrats with sufficient experience and competence to govern. The situation suggests comparatively large θ and c, and thus, a transition from Manchu dominance to the delegation of power to Hans.

4 Econometric Evidence

4.1 Data

In this section, I focus on more systematic evidence based on the provincial level data about conflicts and bureaucracy. The main dependent variables are about decisions of sanctions and appointments. Thanks to work by historians (Qian, 1980), I am able to construct a data set of Qing governors[13].

[13]I report the results based on provincial governors. I also document data for governors general based on similar coding criteria. The results for governors general are not reported here but available in the online appendix: `https://sites.google.com/site/tyxi79/research`.

For each incumbent governor occupying an office at the end of a year (December 31 of the Western calendar), I code his ethnicity and any change in terms of administrative rank during the following year. A variety of possibilities may exist with regard to rank, coded as follows: 0, being demoted (transfer to a position of lower administrative rank); 1, being removed and/or prosecuted; 2, lateral transfer (to a different position of equal administrative rank); 3, staying in the same jurisdiction; 4, staying in the same jurisdiction but being granted a higher rank or position in the central administration; 5, being promoted to a position of higher rank in the central administration and leaving the previous position); 6, dying from a natural cause, retiring, or taking a sabbatical due to health or family issues; 7, dying in line of duty (e.g. killed by rebellions or committing suicide after the defeat); 8, the position being canceled (the governor was recalled to wait for a new appointment).

Based on the above information, I construct two variables indicating a governor's move within the bureaucratic hierarchy. *Sanction* is a binary variable coded as 1 if a governor was either demoted or removed by the end of the next year (i.e. either 0 or 1 in the original documentation). *Change* is a categorical variable assuming three values: 1, if a governor was moved downward along the hierarchy: either demoted or removed by the end of the next year (0 or 1 in the previous code); 2, if he stayed in the same position or transferred to a position with equal administrative rank (2 or 3 in the previous code); 3, if he was promoted or granted a higher position in the central administration (4 or 5 in the previous code).

To analyze the ruler's decision about new appointments, I compile the information about governors' ethnicity as a binary variable: *Han governor*. The variable is equal to 1 if a governor is either an ordinary Han Chinese or Han banner man; it is equal to zero if a governor is neither Han nor Han banner man. In this case, the governor is Manchu or Mongol. Mongol officials account for 2.5 percent of the whole sample, much less than Manchus (40%) or Hans. For simplicity I group Mongols together with Manchus for the binary variable about ethnicity.

The main independent variable is *internal conflict*, which documents the number of armed conflicts occurring within a province during each year. Following empirical research on conflicts in Chinese history (Bai and Kung, 2010; Jia, 2011), I use the *Chronology of Warfare in Dynastic China* as a major source of information. I include all types of conflicts involving the state military[14]. In cases where a fight was spread cross several provinces, it is counted for each province separately . A conflict was counted for each year until the rebellion was decisively defeated by the state army, or when the rebellious army completely withdrew from a province according to historical documentations.

I make use of a number of variables reflecting state capacity that may be correlated with the dependent variables. Following the literature on the economic causes of civil wars and particularly those in Chinese history (Miguel, Satyanath, and Sergenti, 2004; Bai and Kung, 2010; Jia, 2012), I

[14]There are predominately three types of conflicts: wars between Qing and a rebelling military force (such as in the Rebellion of Three Feudatories) or the troops of Southern Ming Dynasty in the early years; riots and uprisings by peasants, which were usually contained within a province; mass rebellions spread over multiple provinces, such as the Taiping Rebellion.

control for *weather shock*, a binary variable indicating there was at least one case of extreme weather conditions that might have led to famines (drought, or extreme wetness/flood). The information is acquired from *the Yearly Charts of Dryness/Wetness in China for the Last 500 Years* compiled by the Chinese State Meteorological Society. The original data provides a category scaling from 1 to 5. I take value 1 and 5 to represent a weather shock: a case where flood and drought had occurred. Severe weather shock constitutes one of main sources of instability in agricultural societies. The lack of competence and experience for governors could result in an inadequacy in government aid and tax relief, which might further develop into conflicts between farmers and landlords. This features a circumstance in which the demand for competent bureaucrats to provide social stability (θ) is high.

I also control for the (log) geographic distance (in kilometers) between each provincial capital city and Beijing, the capital of Qing China. The information is available from *The Historical Atlas of China*. The variable *distance* may e correlated to the dependent variables in two ways. First, the farther away a province was from the capital, the more difficult it was for the rulers to control the policies implemented by governors. This represents large c. Second, a province far from the political center might be more vulnerable to ethnic conflicts and peasant rebellions, as it was costly for the central government to gather information and dispatch troops. Again, this implies a high dependence on governor's competence, θ.

Finally, I include the provincial (log) population, (log) land tax in taels of silver, and (log) land tax revenue from the grain tribute system as control variables. We should keep in mind that while the revenues at the provincial level may be correlated to sanctions and appointments, they do not exactly capture the capacity of the central government. The variation in revenues could be due to governors' efforts and local networks. Including them help control the individual effects such as efforts and networks. The following table provides a description of the statistics to be used.

Table 1 About Here

4.2 Model Specification

I first examine the pattern of bureaucratic accountability. As a benchmark, I simply estimate a probit model on the probability of sanction:

$$\Pr(sanction_{it+1} = 1) = \Phi[\alpha + \beta conflict_{it} + \gamma X_{it} + \delta T_t + U_i + e_{it}]$$

The left hand side, as explained above, is a binary variable indicating whether a governor was demoted or removed by the end of year $t+1$. The main explanatory variable is $conflict_{it}$, the number of *internal conflict* in a province during year t. I interpret $conflict_{it}$ as an indication of θ, the value of a governor's personal competence from the ruler's point of view. The specification does not rely on the assumption that governors were retained or sanctioned based on their success in putting down

rebellions per se. Although the Qing governors coordinated with military generals during times of war, as civilian chiefs they were not solely responsible for fighting rebellions. A governor might be fired on various accounts about social instability: charges of corruption, noncompliance with the tax quota, insufficient famine relief, etc. The probability of sanction increases along with the need for competence as ($\Pr(sanction) = (1-\pi_j)\theta\Delta\eta$, $j = M, H$). So we expect to find both β and the partial effect of *internal conflict* to be positive.

X_{it} is a vector of control variables that might confound the probability of sanction. I include a dummy variable measuring whether an incumbent governor was from the majority group. The coefficient of *Han governor* is expected to be negative. I include a time period dummy, *after the Opium War*, to see whether there was a structural change in the pattern of accountability after the Opium War (1839). Similar to the use of *weather shock*, the dummy for the post Opium War period may be correlated to the probability of *sanction* in various ways. On the one hand, the increase in the demand for competence may have increased the probability of sanction. But on the other hand, it is possible that the appointments in the time of crises were based were more on the experience and past records of bureaucrats. Thus the proportions of competent candidates (π_j) for selection may increase for both groups. If this is the case, we should expect an opposite effect for the post Opium War period. In addition to using the log of geographic distance, population, and land tax revenue as control variables, I include T_t, a vector of time dummies for every 30 years. U_i is modeled as the unobserved provincial effect which might be either random or correlated to the disturbance term ϵ_{it}[15].

To account for the mobility within bureaucratic hierarchy, I run a multinomial probit model where the dependent variable is a three-way category: *Change*. I treat $Change = 2$ as the baseline, meaning that the governor stayed in the same position or transferring to another position with equal rank. I then estimate the probabilities of sanction and promotion relative to the baseline category using the same set of variables.

As a third step, the probability of a new appointment being the majority Han is modeled as follows:

$$\Pr(Han_{it+1} = 1 | NewAppointment) = \Phi[\alpha' + \beta' conflict_{it} + \gamma' X_{it} + \delta' T_t + u_i + \sigma_{it}]$$

The key explanatory variable is the number of internal conflicts during the preceding year. Suppose that θ and c are distributed randomly over time and cross region, the result in section 2 suggests that the probability of appointment of Hans is proportional to the area of parameter conditions in which $\theta > \hat{\theta}$ or $c < Q(\theta)$. When θ and c are positively correlated, which was likely the case in the Qing dynasty, the probability of appointing Hans rises when θ and c increase in terms of stochastic dominance. Following the estimate for the probability of sanction, we interpret the number of conflicts as

[15] In this case U_i are estimated as provincial fixed effects.

a proxy of θ, the effect of which should be positive. We also expect the coefficient of *after the Opium War* to be positive. I include a dummy variable indicating whether the predecessor was Han. The theory implies path dependence in terms of the appointee's group: the ruler tends to replace a governor with candidates from the same group. Hence the coefficient for the dummy of Han predecessor should be positive.

4.3 Results

Table 2 About Here

Table 2 reports estimates for the probability of a governor being sanctioned. Column 1 includes *internal conflict*, the dummy variables for *Han governor* and the post Opium War period, *weather shock*, and the distance from the capital as independent variables. Column 2 adds provincial dummies to the model. Column 3 reports the results from eliminating provincial dummies and controlling for population and tax revenues. Lastly, column 4 takes into provincial dummies, population and revenues. The results are similar cross all specifications. In agreement to the theory, *internal conflicts* has a significant and positive effect. A unit increase in the number of rebellions (from the mean) is associated with about an increase of 0.035 in the probability of sanction. This is a large effect compared with the average frequency of sanction during the Qing dynasty: 0.067. The results are not affected by provincial dummies or economic variables, such as population and tax revenue.

The estimates for the other control variables are mixed. Although being a Han official appears to be associated with a smaller probability of sanction, the marginal effect is small and statistically insignificant. The insignificant effect, however, may be due to the endogeneity of *Han governor*. From the model we can tell that Hans were increasingly appointed when there existed a high level of instability. Yet the probability of sanction also goes up in this case. The selection of Hans to unstable jurisdictions make them vulnerable to conflicts, and the overall effect is attenuated. The results nevertheless suggest that the decisions of sanctions were not biased against Hans. The dummy *after the Opium War* has the same sign as *internal conflict*, though the effects are insignificant. In general, the sanctions were induced by rebellions more than any other social and political factors. As table 2 show, neither *weather shock* nor *distance* affect the probability of sanction.

Table 3 About Here

Table 3 presents the results for the probabilities of sanction and promotion estimated by multinomial probit models. It is reasonable to expect that the presence of conflicts reduced the probability of promotion. Governors were likely to be found of negligence during crises. Even when they did well, the rulers might want to retain rather than promote governors for the sake of stability. The results show that a unit increase in *internal conflict* raises the probability of sanction by at least 0.04 and reduces the probability of promotion by at least 0.035. The effects are significant for all models.

Consistent with the binary choice model, Han governors were not discriminated against in terms of sanction. But interestingly, Han governors were in a significantly disadvantaged position when it comes to promotion: being a Han made the probability of promotion drop by 0.03. It is plausible to perceive though, from the ruler's view, that appointees to the higher ranks had less direct impact on social stability. The suggest that a "glass ceiling" for Han Chinese might exist within the bureaucracy: the promotions beyond provincial level were largely based on ethnicity despite the importance of bureaucrats' performance in the decisions of retaining.

Table 4 About Here

Table 4 shows that new appointments were driven by several different factors. First, the ethnicity of new governorships strongly depended on their previous path: when the predecessor was a Han, the probability of the successor being Han in average rose by 0.11- 0.14. Secondly, there was a large increase in the tendency of appointing Hans following the Opium War of 1839. The effect amounts to 23 percentage points. At the same time, the appointments of Hans were strongly associated with the presence of *weather shock*. A drought or flood in the preceding year makes an appointment being Han 7 percent more likely. The marginal effect of *Internal conflict*, however, is small and insignificant. One possible explanation may be that *Internal Conflict* is correlated to the time dummies, T_t, which crowd out the effect of rebellions. The appointment decisions were likely to be based on the assessment of country-wide conflicts, so the emergence of rebellions in one province tended to induce appointments of Hans in others. In fact, when we estimate the model without controlling for time dummies, the effects of internal conflict become significant: with a marginal effect of increase by 0.09 and p-value about 0.02. The results as a whole support the prediction that the demand for competence leads to more appointments of Han. The described patterns of appointment were most salient for the late Qing period and following weather shocks.

4.4 Instrumental Variable Estimation

While we have found significant effects of internal conflicts and other factors that might lead to instability, it is possible that the estimates suffer from various endogeneity problems. For example, the lack of competence and experience in governing tended to cause peasant rebellions, meanwhile the bureaucrats could be found responsible for other negligence, such as corruption or concealing the truth about rebellions. The correlation between idiosyncratic ability and rebellions thus may lead to an upward bias. The direction of bias due to these unobserved effects is not obvious, however. For one thing, the empirical connection between rebellions and bad policies pursued by governors seems weak. The documented rebellions were to a large extent a consequence of extreme weather conditions and famines (Jia, 2012). Even when rebellions could be attributed to predatory policies by local and provincial governments, e.g. heavy burdens of tax quota and corvée labor, the effect might actually lead to a downward bias. The rulers would also reward governors for raising revenue as

long as riots were contained at the local level. Moreover, when the whole bureaucracy was corrupted, officials who were incompetent but had better factional affiliations often stood a better chance of retaining or promotion. This also tends to attenuate the estimates for the effect of internal conflicts.

Table 5 About Here

To correct for the potential endogeneity, I instrument for *internal conflict* with the annual price index of rice at the national level computed by Lu and Peng (2004). Lu and Peng take into account the market prices of rice in all major regions where the data is available and use them to construct the national average. The fluctuation of rice price at the national level is an appropriate indicator for the overall degree of food shortage and thus the increase in the risk of rebellions. Since the index is not specific for one region, the rise of rice price was unlikely to directly affect sanctions and appointments. Table 5 presents the linear panel estimations for the probability of sanction with rice price as an instrumental variable. The first stage estimation shows that there is strong positive correlation between *internal conflict* and the price index. We find that the effects of *internal conflict* remain significant and the scale of marginal effects becomes considerably larger. Using the rice price of an instrumental variable, we find that an unit increase of conflict from zero to one made a governor's probability of being sanctioned increase by 0.27, four times of the average among all Qing governors. The results for other independent variables are similar to those in table 2. This shows that the change in effects of *internal conflict* is from the correction of endogeneity rather than the use of linear models.

Table 6 About Here

The effect of internal conflicts on appointment decisions may also be attenuated by unobserved terms. Both the presence of Han governors and the absence of rebellions were correlated to individual effects such as the strength of local militia and the network of Han bureaucrats in certain regions. When a Han official was appointed to a region where local militia was strong and the rebellions were forced to retreat, the estimates tend to be mitigated. That is, in the data there were a large number of appointments of Han but the rebellions on a provincial-yearly base were less than what would have been. This was particularly the case for the post Opium War years. Table 6 presents the instrumental variable estimations for the probability of a new appointment being Han using rice price. Comparing with the results in table 4, the effects of Han predecessor, weather shock, and the dummy for post Opium War period remain largely unchanged. The effects for *internal conflict* become positive. Although the results are still insignificant (t-statistics about 1.5), perhaps due to temporal variables, the scale of marginal effects is now as large as those of Han predecessors and the dummy for the post Opium War period. The instrumental variable results provide further support for the effects of internal conflicts and state capacity on the patterns of bureaucratic control. The changes in ethnic composition and the rate of sanction for governors can be explained by the dynamics of nation-wide rebellions.

Table 7 About Here

To see the intuition more clearly, we compute the probabilities of governors being sanctioned and a new appointment being Han by period based on the instrumental variable estimates without provincial dummies (column 3 in table 5 and 6). The results are reported in table 7. As we can see, the average probability of sanction was considerably high (0.10) in the first 30 years under Emperor Shun Zhi and the young Kang Xi. The probability of sanction fell to 0.05 during the relatively peaceful years under the old Qian Long, then arose to 0.08 amongst the White Lotus Rebellion and 0.07 in the face of the Taiping Rebellion. In the meantime the probability of a new appointment being Han in the early and late Qing period was significantly larger than that in the mid-Qing. Thus, there was a large turnover during the crises and the replacements were largely Han. These two factors explained why Han governors dominated in the 19th century.

4.5 Robustness

Table 8 About Here

I reestimate the probability of sanctions with several different specifications to test the robustness of the effects. Column 1 in table 8 uses the Probit model with the one-year lag of *internal conflict* as independent variable. It may be that an official was newly appointed to governorship during ongoing rebellions. In that case, he was unlikely to be removed in the short term even when he had failed to do the job. Comparing the result to the column 1 in table 2, we find that the marginal effect of the one-year lag is even larger (0.04 for an unit increase of rebellion) and maintains at the same significance level. The effect of *internal conflict* in the current year continues be positive and significant if controlling for the one-year lag (column 2) at the same time.

The results are robust to the inclusion of the ratio of Manchu governors general, the ratio of Manchu Grand Secretariats, and the number of ongoing foreign wars. Adding these variables provides a possible test for alternative explanations of how the decisions of sanction were determined. For example, when the Manchus were more powerful at the higher level of bureaucracy, the decisions might have more concerns about loyalty than competence, and the probability of sanction might decrease. Column 3 and 4 confirm this hypothesis. The effects associated with the ratios of top Manchu bureaucrats are significant and negative, suggesting that governors were less likely to be punished for bad performance with a dominance of Manchus in the central government. Foreign wars do not have a significant effect on sanctions. As we could learn from the results, the estimates for *internal conflict* and its lagged variable are largely the same. Hence, the influence of Manchu and Han factions was limited and did not undermine the relationship between conflicts and bureaucratic control.

Column 5 makes a distinction between small and large rebellions, and column 6 includes the rations of Manchu governors general , Grand Secretariats, and the number of foreign wars. I consider

as small rebellions the cases of peasant riots that occurred at the local level and were contained within one province. By contrast, large rebellions spread over several provinces and often posed a danger to political stability. As the results show, both types of rebellions significantly increased the probability of governors being removed or demoted. Lastly, column 7 reports the instrumental variable estimates as column 1 in table 5 with *internal conflict* being replaced by the one-year lag. The effect is highly significant and the scale is larger than the results without using rice price as instrumental variable. Controlling for the ratios of top level Manchu bureaucrats does not change the scale and significance level (column 8).

Table 9 About Here

Table 9 presents the estimates for the probability of a new appointment being Han with similar specifications parallel to those in table 8. The hypothesized patterns of appointment are robust to alternative measures of conflict and explanations. The results based on the two-years lag of rebellions remain insignificant in probit models (column 1 and 2), however the effects are positive and significant when using the lagged rice price as an instrument for rebellion (column 7 and 8). The finding demonstrates that social instability might have a lasting effect on the appointment decisions in the future. The ratios of Manchus as top state bureaucrats did not make Hans more or less likely to be appointed. Nor did the occurrence of foreign wars (column 3 and 4). Notably, rebellions at the local level seemed to increase the probability of appointing Hans, and those of nation-wide tended to reduce the probability of new appointments being Han (column 5 and 6). While this suggests the distinction of appointment patterns following different types of conflicts, the results should be interpreted with caution as we cannot completely rule out the endogeneity problem. When the ethnicity of governors were stable over time, the entry of rebellions were endogenous to the strength of local militia as well as the reputation of the group of officials that might be appointed. For all models estimated in table 9, the presence of Han predecessor, the post Opium War dummy, and weather shock have large and significant effect on the appointment of Hans. The results obtained from using alternative control variables continue to support the argument that the appointments of governors were mainly determined by the demand for administrative competence.

5 Concluding Remarks

I have presented two arguments about the transformation of bureaucracy in the late Imperial China. I first argue that the ethnic composition of Qing governors was a function of the trade-off between perceived competence and loyalty of bureaucrats. Constrained by military and fiscal capacity, the rulers had to rely on bureaucrats to restore and maintain social order during the times of crisis. The comparative advantage of Han Chinese in local and provincial governments gave rise to the wide use of Han governors, despite a concern about their loyalty on the part of the Qing rulers. I then

show that the rulers used sanctions and appointments as a mechanism of bureaucratic control, the pattern of which can be explained by the fluctuation of internal conflicts and the long term decline of state capacity in the Qing dynasty. The empirical work comes down to four conclusions: (1) The probability of governors being sanctioned (i.e. removed or demoted) increased significantly in the face of internal conflicts. (2) The probability of sanction for the majority Han officials was no greater than Manchus. (3) Han governors were in a significant disadvantaged position in terms of promotion. (4) The internal crises and threat to the political survival of the rulers led to dramatic increase in the appointments of Han governor.

Both sanctions and appointments were intended by the rulers to optimally protect their interests. It is interesting to ask how successful the mechanisms of bureaucratic control were for the Chinese rulers during the Qing dynasty. The significant effects of internal conflicts on sanctions suggest that the controlling was firm and the governors were arguably "accountable" in regard to their performance. But the efficacy of bureaucracy was limited by the political structure, i.e. the distrust between Manchu and Han groups. The rulers preferred appointing more Manchu bureaucrats, who shared a common Manchu identity and had less difficulty in complying with the policies intended by the rulers. As a result of the concern about political loyalty, the first wave of replacements of Hans occurred right after Emperor Kang Xi's consolidation of power. Emperor Qian Long, who had reigned from 1735 to 1796, was famous for favoring Manchu officials for the sake of protecting Manchu traditions (Elliott, 2009). Thanks to domestic peace and the military strength of Qing in the 18th century, the rulers were able to secure political stability with an expanding size of Manchus as provincial heads. While our theoretical framework assumes state capacity to be exogenous, it is reasonable to speculate that the use of Manchu bureaucrats, who were promoted because of political lineage rather than experience in governments, might to some extent have contributed to corruptions and the decline of state capacity toward the end of the 18th century. This paradoxical choice faced by the Qing rulers between political loyalty and the efficiency of governance can also be found in many contemporary authoritarian states ruled by minority groups. Scholars have understood the use of patronage system by African rulers as an instrument intended to prevent coup d'état (Bratton and Van de Walle, 1994; Arriola, 2009; Roessler, 2011). Appointments and sanctions based on patronage undermine the performance of local governments and increase the risk of social revolutions in the long term. The rulers nonetheless trade off the long term risk against the immediate danger of being overthrown by disloyal subordinates.

In contrast to the 18th century, the dramatic increase of Han governors appeared in times of crisis. State capacity was severely declining in all regards. The rise of Han majority officials is most appropriately understood in the broad context of bureaucratic reform, e.g. measures taken during the Self-Strengthening Movement (1861-1895). The reforms only partially succeeded. They were successful in terms of the effect on maintaining political order: the Qing rulers managed to survive one crisis after another thanks to the bureaucracy. Yet it is clear that the changes in the patterns of

bureaucracy did not lead to a reversal in the decline of state capacity. Many political regimes share a similar experience of the partially successful and partially failed reforms. For example, the measures adopted to establish civil bureaucracy in the Ottoman Empire featured a case of "split-up modernization" in which the reform was often limited by the extant political order (Findley, 1980, pp. 149-150). The government of Napoleon III strategically recruited members from the Legitimists to consolidate political power (Zeldin, 1958, pp.36-38). Guillermo O'Donnell (1973) describes Argentina and Brazil during the 1960s as bureaucratic-authoritarian systems, in which military rulers combined repression with bureaucrats from the middle class. In Indonesia, the former Prime Minister Mahathir Mohamad managed to appoint personal loyalists to ministerial posts in a highly institutionalized system (Slater, 2003).

This paper raises questions that are worth exploring in the future. For example, why did the bureaucratic reforms of the 19th century fail to restore strength of military capacity and pave the way to modern industrialization? The classical thesis on the interaction between war and state formation (e.g. Tilly, 1990) fails to account for the historical experience of China in fighting the foreign wars. A possible answer points to the fiscal and political decentralization along with the rise of Han governors during the Self-Strengthening Movement in the 19th century. The expansion in the power of provinces might further reduce the incentives of provinces to comply with the central government, undermining the latter's ability to take thorough reforms.

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Appendix

Lemma 1

Proof. Let μ be the posterior of high type upon observing y in the end of the first period. Let $EV(i)$ and $EV(j)$ be the ruler's one-period utility of appointing a candidate from group i and j. Suppose it is optimal that the ruler appoints a candidate from group i in the beginning of the first period. If the ruler replaces an official from i with another candidate from j, it must be true that $EV(j) > EV(i)$. Let P be the probability of retaining assessed by the ruler ex ante. The ruler's expected utility is $EV(i) + PEV(i|retain) + (1-P)EV(j)$. Consider an alternative strategy profile: the ruler appoints a candidate from group j in the first period, sets the replace rule such that the assessment of retaining is P; if the ruler removes an official, in the second period he appoints a candidate from group j. The ruler's utility from the alternative strategy profile is $EV(j) + PEV(j|retain) + (1-P)EV(j)$. Since the posterior increases with candidates' type, it follows that $EV(j) > EV(i) \Rightarrow EV(j|retain) > EV(i|retain)$. So $EV(i) + PEV(i|retain) + (1-P)EV(j) < EV(j) + PEV(j|retain) + (1-P)EV(j)$. But this contradicts the optimality of appointing a candidate from group i in the first period. □

Proposition 1

Proof. Suppose the ruler first appoints a candidate from group j. If he fires the official in the end of the first period, the prior of having a high type candidate from the same group in the second period is π^j. Hence the ruler will retain the official as long as $\mu^j \geq \pi^j$. Note that for $j \in \{H, M\}$, it is true that:

$$\mu^j = \begin{cases} 0, & y \in [\theta\underline{\eta}, \theta\overline{\eta}) \\ \pi^j & y \in [\theta\overline{\eta}, \theta\underline{\eta} + 1] \\ 1, & y \in (\theta\underline{\eta} + 1, \theta\overline{\eta} + 1] \end{cases}$$

The ruler will retain the official if $y \geq \theta\overline{\eta}$. The probability of replacement is $(1-\pi^j)\theta(\overline{\eta} - \underline{\eta})$.

□

Proposition 2

Proof. Without direct control, a Han official will choose L type of policy. Let $\hat{\eta}^H = \pi^H\overline{\eta} + (1-\pi^H)\underline{\eta}$, $\Delta\eta = \overline{\eta} - \underline{\eta}$. The expected utility of appointing a Han official is:

$EV(Han|delegate) = \theta\hat{\eta}^H + E(\epsilon) + (1-\pi^H)\theta\Delta\eta[\theta\hat{\eta}^H + E(\epsilon)] + (1-\pi^H)[\theta\underline{\eta} + 1 - \theta\overline{\eta}][\theta\underline{\eta} + E(\epsilon)] + \pi^H[\theta\overline{\eta} + E(\epsilon)] - 2\rho = \pi^H(1-\pi^H)(\Delta\eta)^2\theta^2 + 2\hat{\eta}^H\theta + 1 - 2\rho$. Notice that $(1-\pi^H)\theta\Delta\eta$ is the probability that a low type official being fired. In that case the ruler appoints a new candidate and the expectation of the value in the second period is $\theta\hat{\eta}^H + E(\epsilon)$. ρ is the per period disutility in appointing a Han official.

We can obtain the ruler's expected value of appointing a Manchu official in a similar fashion: $EV(Manchu|delegate) = \pi^M(1-\pi^M)(\Delta\eta)^2\theta^2 + 2\hat{\eta}^M\theta + 1$, where $\hat{\eta}^M = \pi^M\overline{\eta} + (1-\pi^M)\underline{\eta}$. So the ruler will appoint a Han official only if $EV(Han|delegate) - EV(Manchu|delegate) > 0$, or equivalently, $[\pi^H(1-\pi^H) - \pi^M(1-\pi^M)](\Delta\eta)^2\theta^2 + 2(\pi^H - \pi^M)\Delta\eta\theta > 2\rho$. Notice that the function $Q(\theta) = [\pi^H(1-\pi^H) - \pi^M(1-\pi^M)](\Delta\eta)^2\theta^2 + 2(\pi^H - \pi^M)\Delta\eta\theta$ has two roots: $\theta = 0$ and $\theta = -\frac{2(\pi^H - \pi^M)}{\pi^H(1-\pi^H) - \pi^M(1-\pi^M)} < 0$, since $\pi^H(1-\pi^H) - \pi^M(1-\pi^M) > 0$. It follows that $Q(\theta) > 0$ for $\theta > 0$ and it is monotonically increasing in θ. Hence, if $\lim_{\theta \to \frac{1}{\Delta\eta}} Q(\theta) = (\pi^H - \pi^M)(3 - \pi^H - \pi^M) > 2\rho$, there exists a $\hat{\theta} \in (0, \frac{1}{\Delta\eta})$, and $EV(Han|delegate) > EV(Manchu|delegate)$ when $\theta > \hat{\theta}$. Otherwise, if $(\pi^H - \pi^M)(3 - \pi^H - \pi^M) < 2\rho$, the ruler always prefers Manchu to Han.

When the ruler directly monitors and imposes his ideal type of policy, he would prefer a Han official since $\pi_H > \pi_M$. We consider two scenarios. First, when $\theta > \hat{\theta}$, the ruler prefers delegating power to Han officials to Manchus. The value from instituting direct control, on the other hand, is $EV(Han|direct) = \pi^H(1-\pi^H)(\Delta\eta)^2\theta^2 + 2\hat{\eta}^H\theta + 1 - c$. It is straightforward that the ruler will use direct control only if $1 - c > 1 - 2\rho$, or $c < 2\rho$.

When $\theta < \hat{\theta}$, it is optimal for the ruler to use direct control if $EV(Han|direct) > EV(Manchu|delegate)$. Simplifying we can get $Q(\theta) > c$. Notice that in this case, if the cost of direct control is more than the disutility of delegating power to Han officials, $c > 2\rho$, it must be true that $c > Q(\theta)$. So the ruler will always put loyalty the first and appoint Manchus. When $c < 2\rho$, the ruler prefers using Han under direct control if $c < Q(\theta)$, or $\theta > Q^{-1}(c)$. □

Table 1: Summary Statistics: 1644-1911

Variable	Mean	Std.Dev.	Min	Max
sanction	0.067	0.250	0	1
change	1.999	0.404	1	3
internal conflict	0.122	0.396	0	9
Han governor	0.736	0.441	0	1
weather shock	0.238	0.426	0	1
distance	6.886	0.683	4.894	7.628
log population	2.367	0.935	0.066	4.451
log revenue silver	0.814	0.448	0.027	1.554
log revenue grain	0.273	0.277	0.001	1.222

Notes: *sanction* is a binary variable coded as one if the governor was either demoted or removed by the end of the next year. *change* is a categorical variable assuming three values: 1, if a governor was either demoted or removed by the end of the next year; 2, if he stayed in the same position or transferred to another position with equal administrative rank; 3, if he was promoted or granted a higher position in the central administration. *internal conflict* records the number of rebellions by province in each year. *weather shock* is a binary variable assuming one if the province was featured extreme wetness or drought. *distance* is the log of geographic distance between provincial capital cities and Beijing (in kilometers).

Table 2: The Probability of a Governor Being Sanctioned (Probit)

Dependent Variable: Was a Governor Removed or Demoted by the End of Next Year?				
	(1)	(2)	(3)	(4)
internal conflict	0.036	0.035	0.035	0.034
	(0.009)***	(0.009)***	(0.009)***	(0.009)***
Han governor	-0.003	-0.001	-0.004	-0.003
	(0.010)	(0.010)	(0.010)	(0.010)
after the Opium War	0.028	0.027	0.031	0.032
	(0.031)	(0.031)	(0.032)	(0.031)
weather shock	-0.001	-0.001	-0.001	-0.001
	(0.010)	(0.010)	(0.010)	(0.010)
distance	-0.009	0.022	-0.010	0.020
	(0.007)	(0.059)	(0.011)	(0.060)
log population			-0.013	-0.008
			(0.009)	(0.012)
log revenue silver			0.015	0.068
			(0.018)	(0.035)*
log revenue grain			0.016	0.009
			(0.018)	(0.030)
time dummy	Y	Y	Y	Y
provincial dummy	N	Y	N	Y
Constant	Y	Y	Y	Y
N	4206	4206	4206	4206
Model	RE	RE	RE	RE

Notes: * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level. All are estimated by probit model with random effects. Marginal effects evaluated at sample means are reported, assuming that all individual effects u_i is equal to zero. For the variable "Han governor" and "weather shock", the marginal effects are computed for discrete change of dummy variable from 0 to 1. Standard errors for marginal effect are in the parentheses.

Table 3: The Probability of a Governor Being Sanctioned or Promoted (Multinomial Probit)

	(1)	(2)	(3)	(4)
Was a Governor Sanctioned by the End of Next Year?				
internal conflict	0.042	0.041	0.041	0.040
	(0.012)***	(0.012)***	(0.012)***	(0.012)***
Han governor	-0.001	0.001	-0.002	-0.001
	(0.008)	(0.010)	(0.008)	(0.010)
after the Opium War	0.033	0.033	0.036	0.038
	(0.042)	(0.042)	(0.042)	(0.042)
weather shock	0.000	0.000	-0.000	0.000
	(0.012)	(0.012)	(0.012)	(0.012)
distance	-0.010	0.020	-0.012	0.016
	(0.006)*	(0.010)**	(0.012)	(0.013)
log population			-0.014	-0.009
			(0.005)***	(0.008)
log revenue silver			0.015	0.075
			(0.016)	(0.036)**
log revenue grain			0.018	0.015
			(0.021)	(0.027)
Was a Governor Promoted by the End of Next year?				
internal conflict	-0.038	-0.035	-0.038	-0.035
	(0.016)**	(0.016)**	(0.015)**	(0.016)**
Han governor	-0.030	-0.030	-0.032	-0.028
	(0.013)**	(0.011)**	(0.012)***	(0.011)**
after the Opium War	0.036	0.034	0.037	0.033
	(0.031)	(0.030)	(0.030)	(0.030)
weather shock	0.002	-0.001	-0.000	-0.001
	(0.007)	(0.007)	(0.007)	(0.007)
distance	-0.018	0.039	-0.002	0.037
	(0.011)	(0.011)***	(0.016)	(0.014)**
log population			0.002	0.001
			(0.012)	(0.008)
log revenue silver			0.029	-0.016
			(0.024)	(0.034)
log revenue grain			0.010	0.020
			(0.017)	(0.031)
time dummy	Y	Y	Y	Y
provincial dummy	N	Y	N	Y
Constant	Y	Y	Y	Y
N	3901	3901	3901	3901

Notes: All are estimated by multinomial probit model with standard errors clustered at provincial level. The base outcome is that a governor is retained or transferred to another position with the same administrative rank. Marginal effects evaluated at sample means are reported. For the variable "Han governor" and "weather shock", the marginal effects are computed for discrete change of dummy variable from 0 to 1. Standard errors for marginal effect are in the parentheses.

Table 4: How Likely Would a New Appointment of Governor Be Han? (Probit)

Dependent Variable: Was the Appointment a Han?				
	(1)	(2)	(3)	(4)
lagged internal conflict	-0.015	-0.020	-0.020	-0.024
	(0.035)	(0.034)	(0.035)	(0.035)
predecessor being Han	0.147	0.128	0.126	0.110
	(0.030)***	(0.028)***	(0.030)***	(0.028)***
after the Opium War	0.234	0.232	0.244	0.248
	(0.059)***	(0.055)***	(0.057)***	(0.053)***
lagged weather shock	0.073	0.072	0.072	0.073
	(0.028)***	(0.027)***	(0.027)**	(0.027)***
distance	0.086	0.749	0.150	0.869
	(0.044)*	(0.167)***	(0.066)**	(0.172)***
lagged log population			-0.117	-0.151
			(0.034)***	(0.037)***
lagged log revenue silver			0.302	0.369
			(0.085)**	(0.120)***
lagged log revenue grain			-0.074	-0.100
			(0.078)	(0.092)
time dummy	Y	Y	Y	Y
provincial dummy	N	Y	N	Y
Constant	Y	Y	Y	Y
N	1544	1544	1544	1544
Model	RE	RE	RE	RE

Notes: * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level. All are estimated by probit model with random effects. Marginal effects evaluated at sample means are reported, assuming that all individual effects u_i is equal to zero. For the variable "predecessor being Han" and "lagged weather shock", the marginal effects are computed for discrete change of dummy variable from 0 to 1. Standard errors for marginal effect are in the parentheses.

Table 5: The Probability of a Governor Being Sanctioned: Instrumental Variable

Dependent Variable: Was a Governor Sanctioned by the End of Next Year?				
	(1)	(2)	(3)	(4)
internal conflict	0.276	0.273	0.276	0.268
	(0.068)***	(0.068)***	(0.068)***	(0.069)***
Han governor	-0.005	-0.000	-0.005	-0.003
	(0.010)	(0.011)	(0.010)	(0.011)
after the Opium War	-0.003	-0.004	-0.002	0.000
	(0.027)	(0.027)	(0.027)	(0.027)
weather shock	-0.008	-0.007	-0.008	-0.007
	(0.010)	(0.010)	(0.010)	(0.010)
distance	-0.018	0.002	-0.019	0.008
	(0.008)**	(0.064)	(0.012)*	(0.065)
First Stage: Determinants of Internal Conflicts				
price of rice	0.004	0.004	0.004	0.004
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Han governor	0.008	-0.001	0.009	0.001
	(0.013)	(0.013)	(0.013)	(0.014)
after the Opium War	0.133	0.135	0.133	0.134
	(0.033)***	(0.033)***	(0.033)***	(0.033)***
weather shock	0.020	0.015	0.021	0.015
	(0.013)	(0.013)	(0.013)	(0.013)
distance	0.038	0.097	0.034	0.077
	(0.010)***	(0.080)	(0.015)**	(0.081)
log population	N	N	Y	Y
log revenue silver	N	N	Y	Y
log revenue grain	N	N	Y	Y
time dummy	Y	Y	Y	Y
provincial dummy	N	Y	N	Y
Constant	Y	Y	Y	Y
N	4206	4206	4206	4206
Model	linear, RE	linear, RE	linear, RE	linear, RE

Notes: * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level. Results are obtained using the price index of rice (national level) as an instrument. All estimates are based on linear regression with random effects.

Table 6: How Likely Would a New Appointment of Governor Be Han? Instrumental Variable

Dependent Variable: Was a New Appointment Han?				
	(1)	(2)	(3)	(4)
lagged internal conflict	0.225	0.199	0.218	0.226
	(0.149)	(0.149)	(0.150)	(0.154)
predecessor being Han	0.185	0.135	0.184	0.120
	(0.026)***	(0.026)***	(0.026)***	(0.026)***
after the Opium War	0.192	0.203	0.195	0.218
	(0.071)***	(0.070)***	(0.071)***	(0.070)***
lagged weather shock	0.056	0.058	0.053	0.062
	(0.026)**	(0.026)**	(0.026)**	(0.026)**
distance	0.105	0.719	0.160	0.830
	(0.021)***	(0.160)***	(0.032)***	(0.162)**
First Stage: Determinants of Internal Conflicts				
lagged price of rice	0.005	0.005	0.005	0.005
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
predecessor being Han	0.001	-0.012	-0.001	-0.012
	(0.024)	(0.024)	(0.024)	(0.024)
after the Opium War	0.105	0.107	0.104	0.109
	(0.064)	(0.064)*	(0.064)	(0.064)***
lagged weather shock	0.002	-0.002	0.000	-0.004
	(0.024)	(0.024)	(0.024)	(0.024)
distance	0.018	0.162	0.025	0.143
	(0.019)	(0.147)	(0.029)	(0.150)
log population	N	Y	N	Y
log revenue silver	N	Y	N	Y
log revenue grain	N	Y	N	Y
time dummy	Y	Y	Y	Y
provincial dummy	N	Y	N	Y
Constant	Y	Y	Y	Y
N	1544	1544	1544	1544
Model	linear, RE	linear, RE	linear, RE	linear, RE

Notes: * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level. Results are obtained using the price index of rice (national level) as an instrument. All estimates are based on linear regression with random effects.

Table 7: The changing patterns of bureaucratic control

The probability of a governor being sanctioned								
1644-1673	1674-1703	1704-1733	1734-1763	1764-1793	1794-1823	1824-1853	1854-1883	1884-1911
0.10	0.09	0.08	0.08	0.05	0.08	0.06	0.07	0.07
(0.19)	(0.09)	(0.05)	(0.04)	(0.03)	(0.06)	(0.08)	(0.16)	(0.07)
The probability of a new appointment being Han								
1644-1673	1674-1703	1704-1733	1734-1763	1764-1793	1794-1823	1824-1853	1854-1883	1884-1911
0.89	0.79	0.71	0.56	0.51	0.63	0.76	0.87	0.75
(0.17)	(0.14)	(0.12)	(0.11)	(0.10)	(0.10)	(0.11)	(0.14)	(0.10)

The probabilities are computed based on IV estimates using rice price as an instrument variable. We have controlled for weather shocks, distance, population, revenues, and time dummies. Standard errors are in parentheses.

Table 8: Robustness Checks: Bureaucratic Accountability

Dependent Variable: Was the Governor Sanctioned by the End of Next Year?								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
internal conflict		0.020		0.021				
		(0.011)*		(0.011)***				
lagged internal conflict	0.040	0.031	0.039	0.030			0.251	0.206
	(0.009)***	(0.010)***	(0.010)***	(0.010)***			(0.068)***	(0.078)***
ratio of Manchu governors general			-0.083	-0.085		-0.088		-0.106
			(0.026)***	(0.026)***		(0.026)***		(0.029)***
ratio of Manchu Grand Secretariats			-0.089	-0.086		-0.096		-0.034
			(0.041)**	(0.041)**		(0.041)**		(0.055)
N_foreign wars			0.003	0.003		0.003		0.002
			(0.008)	(0.008)		(0.008)		(0.008)
local rebellions					0.061	0.060		
					(0.027)**	(0.027)**		
nation-wide rebellions					0.060	0.066		
					(0.024)**	(0.024)***		
Han	-0.003	-0.003	-0.006	-0.006	-0.004	-0.006	-0.005	-0.007
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
after the Opium War	0.031	0.028	0.075	0.071	0.028	0.075	0.010	0.042
	(0.031)	(0.031)	(0.040)*	(0.039)*	(0.031)	(0.040)*	(0.026)	(0.030)
weather shocks	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.006	-0.005
	(0.010)	(0.010)	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Model	probit	probit	probit	probit	probit	probit	IV	IV

Notes: * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level. All the results are estimated with random effects. For (1)- (6) marginal effects are evaluated at sample means are reported, assuming that all individual effects u_i are equal to zero. (7) and (8) use the index of rice price (national level) as an instrument. Time dummies are included in all columns.

Table 9: Robustness Checks: Appointment

Dependent Variable: Was the newly appointed governor Han?								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
lagged internal conflict		-0.020		-0.020				
		(0.042)		(0.042)				
lagged two-years internal conflict	-0.018	-0.008	-0.016	-0.006			0.154	0.174
	(0.040)	(0.045)	(0.040)	(0.047)			(0.078)**	(0.090)*
ratio of Manchu governors general			-0.103	-0.102		-0.091		-0.036
			(0.075)	(0.075)		(0.075)		(0.032)
ratio of Manchu Grand Secretariats			-0.127	-0.130		-0.134		0.054
			(0.129)	(0.129)		(0.129)		(0.062)
N_foreign wars			0.010	0.011		0.010		0.006
			(0.024)	(0.025)		(0.025)		(0.010)
lagged local rebellions					0.090	0.094		
					(0.065)	(0.065)		
lagged nation-wide rebellions					-0.136	-0.128		
					(0.066)**	(0.066)*		
predecessor being Han	0.147	0.146	0.143	0.143	0.143	0.140	0.687	0.687
	(0.030)***	(0.030)***	(0.030)***	(0.030)***	(0.030)***	(0.030)***	(0.011)***	(0.012)***
after the Opium War	0.234	0.235	0.264	0.265	0.249	0.276	0.078	0.072
	(0.059)***	(0.059)***	(0.060)***	(0.060)***	(0.058)***	(0.058)***	(0.030)***	(0.034)**
lagged weather shock	0.074	0.074	0.074	0.073	0.072	0.071	0.020	0.019
	(0.028)***	(0.028)***	(0.028)***	(0.028)***	(0.028)***	(0.028)***	(0.012)*	(0.012)*
Model	probit	probit	probit	probit	probit	probit	IV	IV

Notes: * significant at the 10% level. ** significant at the 5% level. *** significant at the 1% level. All the results are estimated with random effects. For (1)- (6) marginal effects are evaluated at sample means are reported, assuming that all individual effects u_i are equal to zero. (7) and (8) use the index of rice price (national level) as an instrument. Time dummies are included in all columns.