

The Balancing Act of Indirect and Direct Rule: Evidence from the Qing Empire

*

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Abstract

Prevailing theories suggest that state rulers opt for indirect rule when they want to mitigate administrative costs. But when the benefits of direct rule outweigh those of indirect rule, they shift to direct rule. We offer a revised interpretation of this dynamic based on a case study of dynastic China at a time of rapid territorial expansion: central leaders employ direct rule to achieve economic gains while controlling for carefully calculated military costs. Premised on Qing China's bimetallic monetary system of using both silver and copper as media of exchange, we leverage on a natural experiment that saw a surge in international copper prices as potential trigger. By analyzing a panel dataset uniquely constructed for this period (c. 1661-1735), we find that rulers favored direct rule over locales favorably endowed with copper at a time when the exogenous price shocks increased the potential benefits of extracting this metal enormously. Our heterogeneous analysis further finds that the conquest was carried out discriminately. To reduce the costs of military conflict, the central rulers targeted especially the militarily weak native chiefdoms, leaving the militarily stronger ones unscathed. Similarly, native authorities with stronger military power and copper deposits were more likely to resist centralization. Our results are robust to a test of using silver (a placebo) and lead (a complement) in place of copper, and confirm that, while the former is insignificantly related to the transition to direct rule, the latter is marginally significant. Alternative functional forms of using *logit* and *probit* models yield similar results.

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1 INTRODUCTION

When a territory is acquired, political leaders have to decide on the choice of governance between using indirect versus direct rule. Throughout history, indirect rule, which necessitates political rulers to delegate power to local authorities, has been a favored strategy for many expanding empires, for the simple reason that doing so reduces the burden of administrative costs. Examples of indirect rule include the British, Ottoman, and Spanish empires. Although indirect rule prohibits the ruler from maximally extracting revenue (Weber 1946), it avoids provoking resistance from local authorities, which potentially pose risks to the ruler (Garfias and Sellars 2022).¹ Failed conversions to establish direct rule carries significant political and economic consequences for societies, as it can result in political unrest (Garfias and Sellars 2022), weak states (Acemoglu et al. 2014, 2016), and obstacles to development (Iyer 2010; Lange 2005; Lowes and Montero 2021; Paik and Vechbanyongratana 2019). The potential costs of establishing direct rule in “occupied territory” helps to explain why indirect rule is typically the status quo in many instances, although history is replete with examples of state rulers willing to take risks. In this paper, using Qing China as an example, we explore the conditions under which the Qing empire became predisposed to make the transition from indirect to direct rule in anticipation to local resistance, and, second, what enabled them to succeed in doing so.

The economic benefits of direct rule are obvious, at least in theory. By directly controlling the territories or localities, the political ruler can maximize revenue more effectively; this alone provides a strong motivating force for making the transition.² For example, Garfias and Sellars (n.d.) argue that enhancements in silver mining provided strong incentives for the Spanish colonizers to adopt direct rule in today’s Mexico. A key assumption implicit in these predatory state-building theories is that it is invariably more efficacious to extract revenue under direct rule than indirect rule (Thies 2005; Schenoni 2021; Kivanç Karaman and Pamuk 2013; Levi 1989). What has not been taken into account is the cost entailed in the process, which may explain why we see a considerable number of territories are governed under indirect rule both historically and presently.

By contrast, alternative perspectives see the deterrent effect of local resistance as the implicit costs prohibiting the expansion of direct rule. To be sure state rulers’ greed for

1. Afghanistan provides a good case in point. Attempt of the United States to support Ashraf Ghani to establish direct rule ended up with a takeover by the Taliban.

2. According to (Tilly 1985), state-building entails power-holders decreasing dependence on indirect rule, opting instead to widen state roles within local communities and strengthen police forces under central government control. The ensuing expansion of bureaucracy is primarily due to escalated warfare and resource extraction. A government’s substantial investment in standing armies naturally drives bureaucracy’s growth to sustain this. Hence, significant military expenditure results in the rise of auxiliary bureaucratic entities such as tax agencies and police departments, among others.

increased revenue has always tempted them to transit to direct rule, but they must be equally haunted by the costs of potential resistance from local administrations. In this regard, Gerring et al. (2011), Harris Hariri (2012), and Müller-Crepon (2020) all argue that the European colonial powers had always weighed the expected benefits of direct rule against the costs that might be inflicted by the military strength of their colonies. Despite growing evidence, answer to the overriding question of when will direct rule occur remains mixed. For instance, while Garfias (2018) and Garfias and Sellars (2021) argue that state rulers can succeed in replacing local authorities with directly controlled bureaucrats when the power of local authorities is undermined by exogenous shocks, Pierskalla, De Juan, and Montgomery (2019) find that only areas with a history of intense resistance to the colonial rule tended to be more likely to experience direct state presence, whereas (Broman 2023) provides mixed evidence that the extension of direct rule by state rulers depends primarily on the strength of local elites.

To add to this growing literature, we aim to provide robust empirical evidence to show that the transition from indirect to direct rule is likely triggered by the exogenous shock that led the rulers to expect a rise in the associated economic benefits of a magnitude larger than the expected costs (e.g., of containing resistance as a consequence of the transition). We substantiate these arguments with empirical evidence drawn from the Qing Empire in dynastic China. We have constructed a unique dataset at the native chiefdom level, covering the location, institutional characteristics (indirect or direct rule), and military strength. When the Manchu expanded its territory in the southwestern frontier (Figure 1), they opted for indirect rule for the reasons rehearsed, leaving the native chiefs to control these regions. However, this trend was broken by a sudden spike in international – specifically Japanese – copper prices. The Chinese needed copper to maintain a stable production and supply of copper coins under a bimetallic monetary system that relied on both silver (completely imported) for large transactions and copper coins it partially produced domestically (for small transactions). Using the copper price fluctuations resulting from the Japanese government’s 1715 reforms as a natural experiment, we use the temporal variation in the yearly price of Japanese copper with the cross-sectional variation in Chinese copper deposits ($\beta \text{Copper}_c \times \text{Ln}(\text{Price})_t$) to identify the causal effects of the exogenous price shock economic value on the Qing government’s shift from indirect to direct rule. Our baseline estimate shows that native chiefdoms favorably endowed with copper deposits were more likely to come under direct Chinese governance in response to rising Japanese copper prices, as higher prices of this metal heightened the economic value of these territories. An additional interesting finding is the significance of sweet potato – a New World crop that is rich in caloric value and much easier to grow. Its statistical significance underlies an important prerequisite of direct rule, namely the stationing

of soldiers, officials, workers and their families in territories with full-fledged establishment of the Chinese cadastral system (*junxian*).

We then test the heterogeneous effect of this exogenous shock with respect to which native chiefdoms were more likely to resist direct rule, by using a triple interaction term that includes copper deposits, prices, and variation in military strengths. Our finding confirms the intuition that the significantly positive effect of rising Japanese copper prices on the change in governance is primarily driven by the militarily weaker native authorities, suggesting that state rulers consciously targeted revenue extraction at the militarily weaker localities in order to minimize the costs of military conflict. To check the robustness of this result, we change the dependent variable from transition to native authorities' responses to the central power's centralization attempts, and confirm a significantly positive association between the copper-rich and militarily strong native chiefs and resistance. As a placebo test, we employ silver and lead in place of copper, and confirm that the former is insignificantly related to transition to direct rule while lead is marginally significant at the 10% level, as lead was a complementary material for minting copper coins. Finally, we address the concern that there is a substantial number of zeroes in the dependent variable. We employ the alternative functional forms of *logit* and *probit* models but the results are similar to our baseline estimate.

Our research extends the existing literature on the pros and cons of direct versus indirect rule in several ways. First, by providing in-depth, micro-level insights from a largely under-researched empire outside of Europe, Africa, and Latin America - the Qing Empire – our work contributes to recent scholarships on China's state-building (Chen, Wang, and Zhang 2022; Dincecco and Wang 2018; Wang 2022a, 2022b). Second, it compliments studies on the response of native populations to colonial rule (Carter 2023; Franco-Vivanco 2021), by incorporating perspectives from the strategic behavior of both central and native authorities. Third, and from a theoretical stance, we decompose the state-building quandary into two aspects; by investigating the circumstances under which central powers become "switched on" to implement direct rule and the strategies they employ to minimize the associated costs.

2 HISTORICAL BACKGROUND AND STYLED FACTS

2.1 STATUS QUO INDIRECT RULE

"Nearly every inch of land in Guizhou is mountain land, and so-called fertile plains are really barren and unproductive... These natives are violent and difficult to tame,... If one wants to control the barbarian frontier areas, one must judge

*the profitability of the land and investigate the nature of its people.”*³

Figure 1: The Southwestern Frontier with Native Chiefdoms in the Qing Empire



Historically, indirect rule had been a default choice of imperialists for governing territories annexed from conquest – a strategy well known for its efficiency in administration and its ability to limit resistance by co-opting local customs and power structures (Naseemullah and Staniland 2016). Examples of this abound - from the Holy Roman Emperor integrating regional counts with the oversight of vast territories, the French king delegating authority to local dukes to govern provinces, to the British Raj enlisting local princes as regional administrators. Each of these central powers had the similar goal of consolidating control over the annexed territories while minimizing possible rebellion.

Much like their Western counterparts, China’s imperial rulers also favored indirect rule to govern their peripheral territories. Take the Qing Empire (1644–1911) as an example. The Manchu came into power in China proper in the early 17th century, subsequently expanding their empire towards the southwestern frontier, which

3. Cited in Herman (2018)

encompasses today's provinces of Yunnan, Guizhou, Guangxi, and parts of others (Figure 1). In these ethnically diverse, mountainous regions, financial and logistical limitations made direct bureaucratic control costly. Another difficulty was crop cultivation as native staple crops such as rice and wheat struggled to grow on the difficult terrain of this newly seceded territory. Unfamiliar with the land and its peoples, the Manchu thus found extracting resources thereon challenging, forcing them to maintain the status quo, which was to govern indirectly through the existing native chiefs ("tusi") - a successful strategy previously employed by both the Yuan (1279–1368) and the Ming (1368–1644) dynasties.

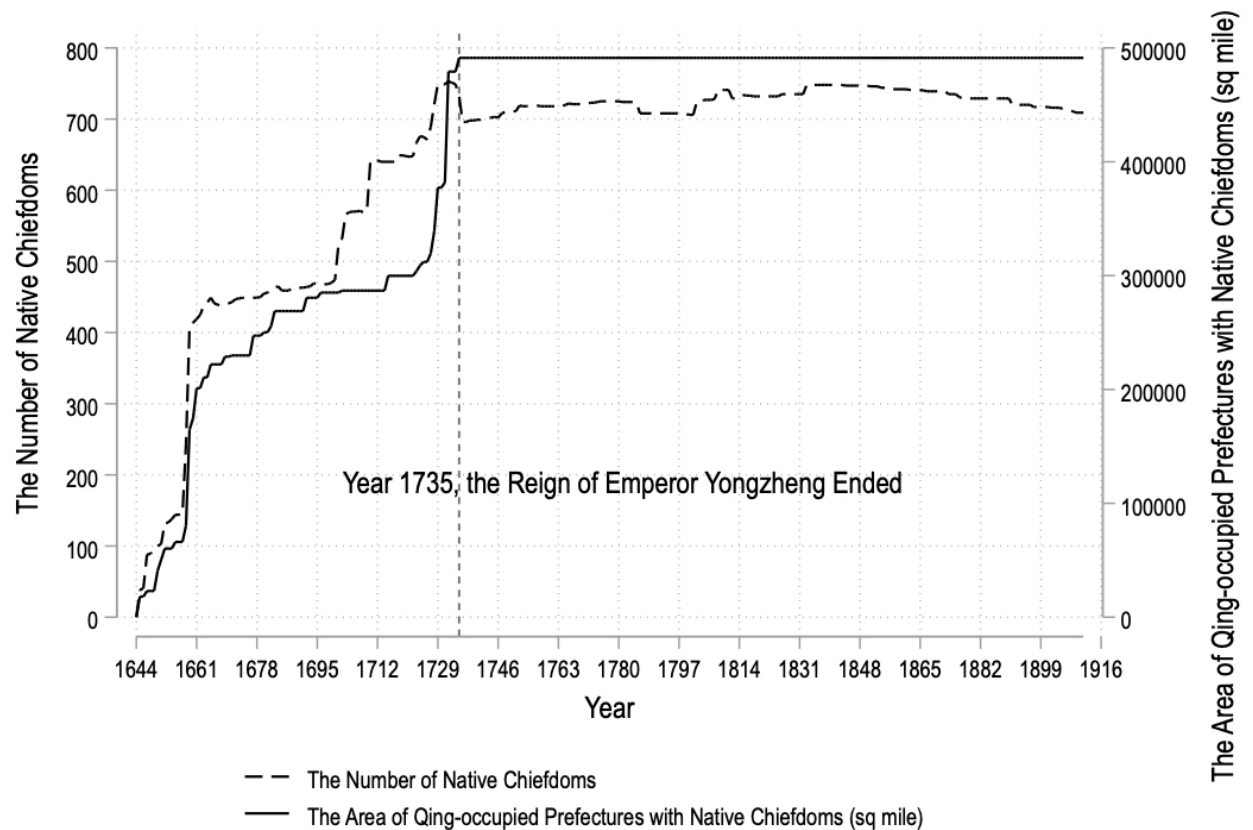
Despite its convenience, indirect rule was far from ideal. Delegating autonomy to the native chiefs meant sacrificing a significant share of the potential revenue and losing control over the local subjects. This situation concerned the governor of the Southwest, Cai Yurong, who wanted to extract more revenue from the local populace. However, despite his repeated attempts to obtain approval from the central government to replace the native authorities with direct Chinese rule, they fell on deaf ears, as can be evidenced from the following correspondence from Emperor Kangxi in 1686:

"Recently the governor-general of Yunnan and Guizhou [Cai Yurong] as well as the governors of Sichuan and Guangxi submitted memorials requesting approval to conduct military operations against native chiefs. I have long considered using kindness to soothe and control the barbarians and refrained from irritating them... Even though the [native] people are worthless, there is much wealth and many exotic goods in native chiefdoms. Aren't these Chinese officials making excuses to seize this wealth?... Native chiefs are alarmed by our actions [of removing the native authorities], and such ambition [on the part of our officials] brings a chill to my heart." ⁴

Instead of granting Cai his request, Emperor Kangxi dismissed him, allegedly of charges of corruption. To be sure, this was not an isolated incidence; throughout the entire Qing dynasty, history was replete with the emperor's preference for indirect rule over territories populated by ethnic minorities. Figure 2 clearly shows that, for nearly a century since its dynastic establishment the Manchus governed the newly acquired territories by indirect rule, as reflected in the increase in native chiefs from 1644 to 1735 paralleling with the Empire's expansion to this frontier. After 1735, the total number of native chiefdoms stabilized at around 750.

4. Cited in Herman (2018)

Figure 2: The Overall Trend of Indirect Rule in the Qing Empire's Southwest Frontier, 1644 - 1911



2.2 THE TRANSITION FROM INDIRECT TO DIRECT RULE

*"In one shockingly candid moment during Ortai [Governor-general of Yunnan and Guizhou]'s tenure in the southwest, Yongzheng [Emperor] confided to Ortai: "When I can't trust myself, I can trust you." Why such praise for an official whose reputation was now tarnished by the brutal campaigns against the Luoluo [to adopt direct Chinese rule]? The answer can be summed up in one word: copper."*⁵

It was Emperor Yongzheng (r. 1722-35) who reversed the choice of governance in disfavor of indirect rule, by replacing the native chieftoms with the tripartite Chinese administrative units – prefectures ("fu"), departments ("zhou"), and counties ("xian").⁶ To make this happen, however, the emperor had to put in place a Chinese bureaucratic structure and to engage in military confrontation (Herman 2006), both of which entailed the substantial governance costs of tax collection and maintenance of the social order. And while Emperor Yongzheng's successor, Qianlong, removed the disobedient native chiefs of the Dzungar Khanate, he did not replace indirect rule

5. Cited in Herman (2014)

6. The initial transition occurred during the Shunzhi reign, as the Qing Empire expanded into the Southwest. Although Emperor Shunzhi removed some native chiefs, they were merely replaced; the Manchu continued with governing by indirect rule.

by the tripartite bureaucratic institution that was already adopted everywhere in the China Proper, the northwest continued to be governed by indirect rule.

The transition from indirect to direct rule in the dynasty's expanded territories coincided with an appreciable surge in the price of Japanese copper. Historical studies suggest that this was the main driving force of the shift in governance (Fang 2018; Herman 2014). Copper was important because of the Qing Empire's bimetallic monetary system. Under this system, China used two forms of metallic exchange media: silver bullion for government finances, tax payments, and large-scale transactions, and copper coins for smaller daily transactions and wages. While silver supply was largely in merchants' hands, the Chinese government exercised strict control over copper coin casting, as its primary goal was to maintain a stable exchange rate between the two metals at the ratio of 1:1000, which required a substantial reserve of the metal to regulate copper coin supply (Ma 2012; Vogel 1987). During the early Qing dynasty, recycling scrap brass and old Ming Dynasty coins sufficed for new Qing coin production, supplemented by imported copper from Japan. However, this was no longer the case after 1715, as Japan's Shotoku New Regulation ("shotoku shinrei") restricted copper exports to China (Hall 1949). As depicted in Figure 3, this restriction led to a significant rise in the price of Japanese copper after 1715, triggering a copper shortage in China. Not unexpectedly, the escalation in copper prices was followed by a shortage in the copper supply, forcing the Qing rulers to explore alternative sources of domestic copper supply. Given that copper sources in the China Proper had already depleted, the Qing rulers turned their attention to Southwest China, especially Yunnan, which was known for its copper abundance. Soon it was revealed that the value of copper deposits increased dramatically, followed by the Qing rulers' attempt to centralize control over the Southwest, marking a shift in governance toward direct rule.

It has been documented by historians that since its increase copper production had been under strict control by the Qing bureaucrats soon after direct rule was adopted in regions richly endowed with copper. Our data indeed shows that copper production jumped from nearly zero to around 10,000 tons after the adoption of direct Chinese rule.

In addition to the surge in international copper prices, historical research has also suggested other plausible reasons to account for this institutional shift. For instance, in their study of Weiyuan, Yunnan, Pat Giersch (2001) and Ma (2007) proposed that the influx of Han Chinese immigrants had led to conflicts between the Han and the native population, forcing the Qing government to enforce direct rule in order to maintain social stability. In his analysis of Yunnan, Bello (2005) suggests that the Qing rulers were more likely to adopt direct rule only in regions free of malaria, as the migrants were ill fit to adapt to local disease environments. Focusing on Guizhou, Herman (2018) explores how increases in land productivity influenced the Qing rulers to extend

direct Chinese governance. Additionally, by highlighting the geopolitical nuances of frontier territories bordering with other countries, Li (2015) and Herman (2006) posit that the Qing rulers implemented direct rule only in regions with a high likelihood of border threats. To account for these factors emphasized by historians, we have included them as control variables in our empirical analysis.

Figure 3: The Price of Japanese Copper and Removal of Native Chieftoms

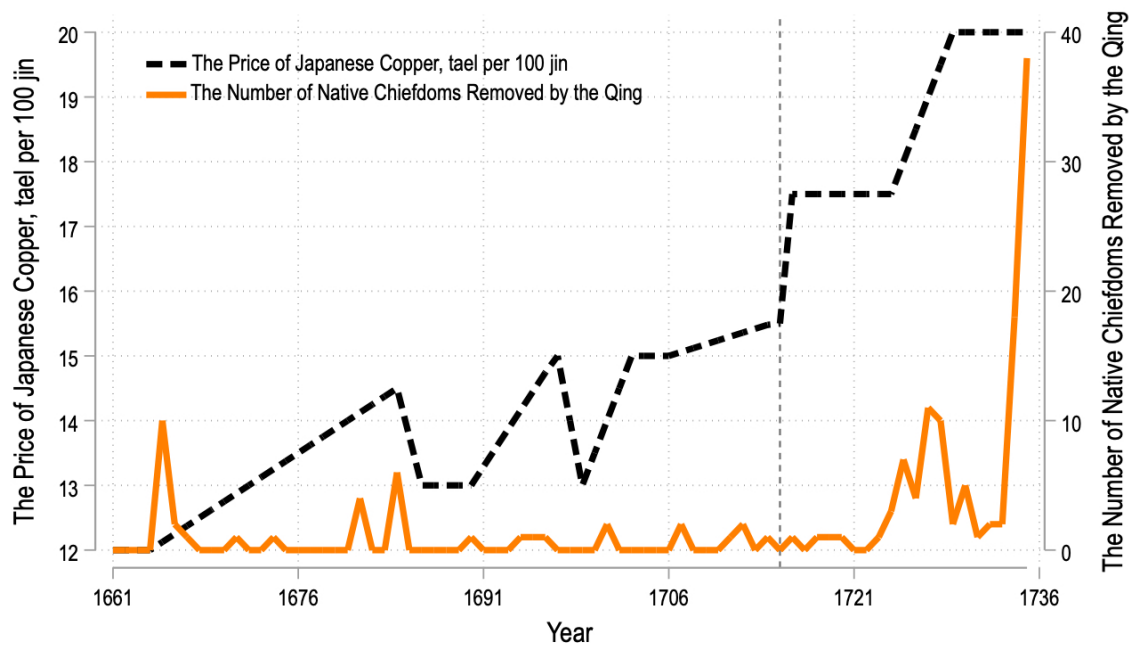
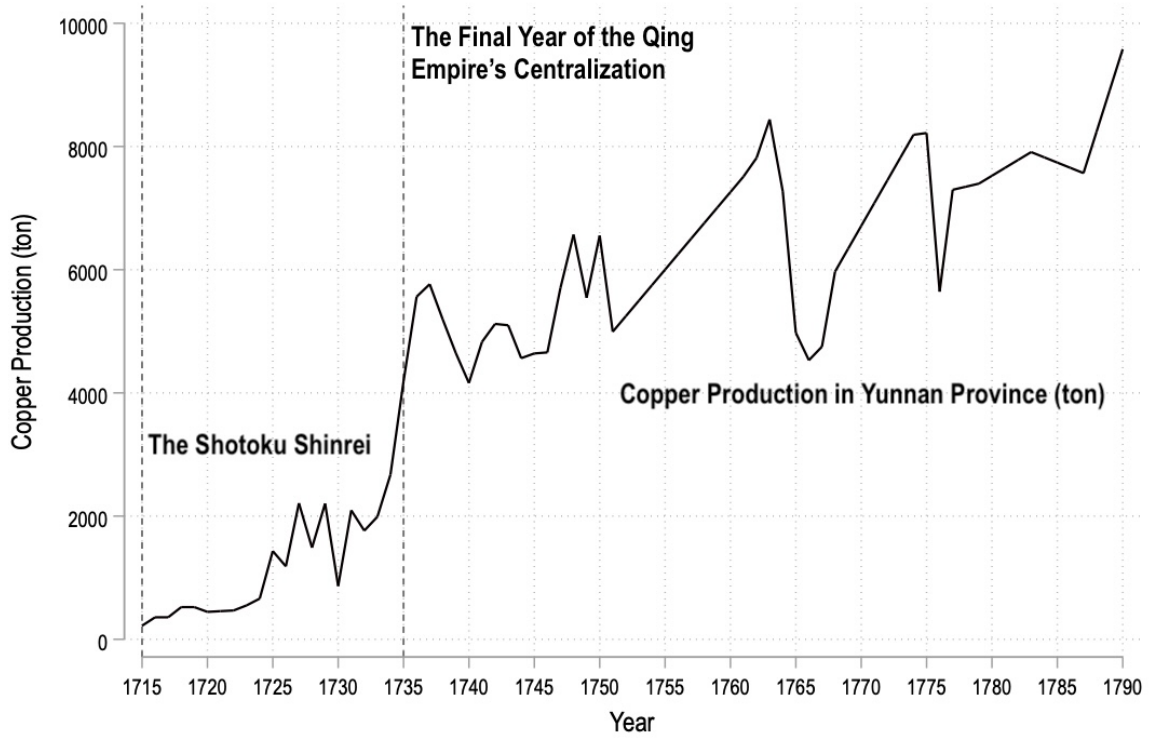


Figure 4: The Copper Production after the Adoption of Direct Chinese Rule



3 DATA CONSTRUCTION

We undertake a large-scale digitization exercise to construct a chiefdom-level dataset. Our analysis combines unique data from various sources: *The Native Chiefstain System in China* (Gong 1992), local chronicles and government gazettes, and the administrative unit lists. The sample period is 1661-1735, the reigns of Emperors Kangxi (1661-1723) and Yongzheng (1723-35), tracing the entire period from the Qing's conquest of the southwest frontier to the end of centralization.

The Native Chiefstain System in China The first sources of data on the institutional forms (categorized as indirect rule by native chiefs or direct rule by state bureaucrats), titles, and locations of the native chiefdoms is derived from the book *The Native Chiefstain System in China* ("zhongguo tusi zhidu") (Gong 1992). This book includes information on the universe of native chiefdoms throughout Ming (1368-1644) and Qing (1644-1912) dynasties. Because the Ming government removed some native chiefdoms, which were not reintroduced at the transition to the Qing, we first examine which native chiefdoms existed during the Qing Dynasty, and only including those in our sample. In our empirical analysis, we exclude the chiefdoms located in Tibet and Qinghai, the northwest frontier, for two reasons. First, the northwestern frontier was not yet incorporated into Qing Empire during our sample period. In addition,

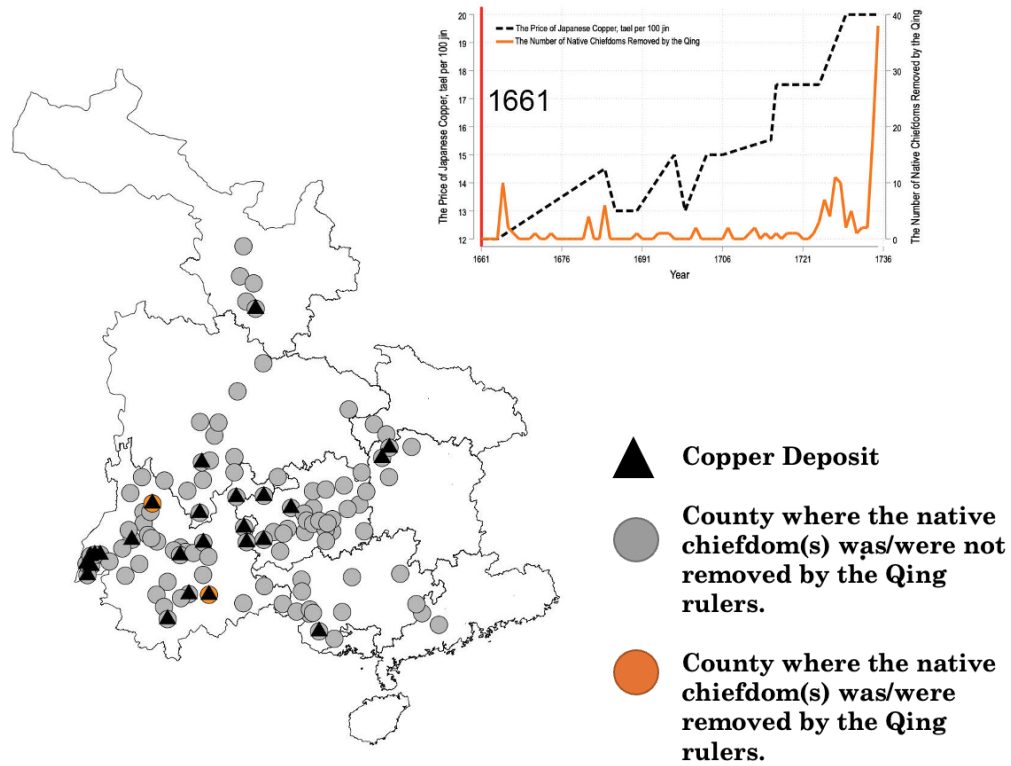
the Qing treated the southwestern and northwestern frontiers differently. The native chiefdoms on the southwestern frontier were supervised by the Ministry of Personnel ("libu") and Ministry of War ("binbu"), while those in the northwestern frontier were supervised by the Barbarian Control Office ("lifan yuan"). The dependent variable of interest is whether the chiefdoms transitioned to direct rule. For each native chiefdom in the sample that we select, we collect information on whether the emperor removed the local government and placed the chiefdom under the imperial bureaucracy during the target 75-year period, and (if so) the year in which the institutional transition occurred was coded as 1. Also, the following years until the end of the period were also coded as 1, 0 otherwise. Our unit of analysis is the chiefdom-year.

Local Chronicles and Government Gazettes The main source for socio-economic statistics and the price of Japanese copper was drawn from the local chronicles ("difang zhi") of related counties, prefectures, and provinces and government gazettes. The variables of interest include the prices of Japanese copper, copper endowment, lead endowment, silver endowment, sweet potato adoption, maize adoption, frequency of rebellion, frequency of plague, population density, and size of Qing garrison. The original data of the yearly prices of copper purchased from Japan are drawn from government gazettes, including Secret Palace Memorials during the Reign of Kangxi ("gongzhong dang kangxi chao zouze"), Secret Palace Memorials during the Reign of Yongzheng ("gongzhong dang yongzheng chao zouze"), Financial Issues of Imperially Endorsed Memorials ("zhuipi zouze caizheng lei"), and Encyclopedia of the Historical Records of the Qing Dynasty ("qingchao wenxian biankao"). During the reigns of Kangxi and Yongzheng, the price of imported Japanese copper rose from 12 *taels* per 100 *jin* to over 20 *taels* per 100 *jin*. We take the log of the price (*tael* per 100 *jin*) at year t . The historical deposits of copper, lead, and silver are derived from local chronicles, and they are all coded as a time-invariant dummy for each county. The variables for new world crop adoption (sweet potato and maize, respectively), frequency of rebellion, and the frequency of plague are code as county-year level. For instance, if maize or sweet potato was adopted in county A in 1700, then the county A is coded as 1 from 1700 to 1735, and 0 from 1661 to 1734. If there was a rebellion or plague in county B in 1700, then the county B is coded as 1 in 1700 and as 0 in other years. We use the prefecture-level population density data in our analysis, taken from *The History of China's Population* (Cao 2017) which provides comparable prefecture-level population data from all over China. Finally, we use data for the number of Qing troops (the size of Qing garrison) stationed in each province to measure the military power of the Qing state in the localities because soldiers in that province could be ordered by the provincial Governor-General ("zongdu") to move between counties within a province. The military data are taken from Imperially Endorsed Supplement to the Collected Institutes of the Qing Dynasty ("qingding daqing huidian").

Administrative Unit List. We obtain the information on official administrative units from the book, *The General History of Administrative Divisions in China, Qing Dynasty* (*zhongguo xingzheng quhua shi qingdai juan*) (Fu et al. 2013), which also includes the lists of native chiefdoms in each county. We match each native chiefdom with the official administrative units, including county (*xian*), prefecture (*fu*), and province (*sheng*). Finally, we construct a chiefdom-level panel dataset with information of county-, prefecture-, and province-level characteristics.

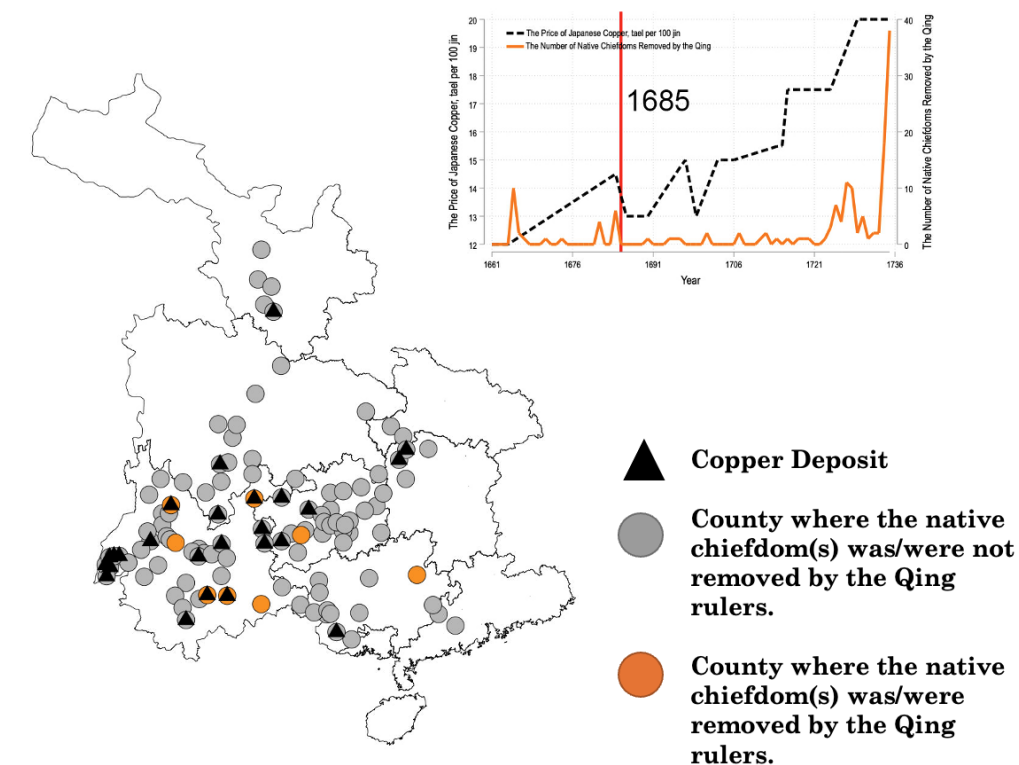
A mass of zeroes are shown for our dependent variable, which poses a threat to the approximation of the marginal effects when using a linear probability model. This issue will be discussed in the discussion of the results (Section 4). Figure 5 maps the spatial distribution of historical copper deposits and native chiefdoms, overlaid with the 1820 county points and the 1820 prefecture borders. The circles indicate the counties with at least one native chiefdom, the triangles indicate the copper deposits, and the orange circles denote the adoption of direct rule. In 1661, where the price of Japanese copper was very low, direct rule was ultimately only adopted in one county. As the copper price increased over time, we can see the adoption of direct rule overlapped with counties with copper and nearby counties.

Figure 5: The Spatial Correlation between Copper Deposit and the Adoption of Direct Chinese Rule

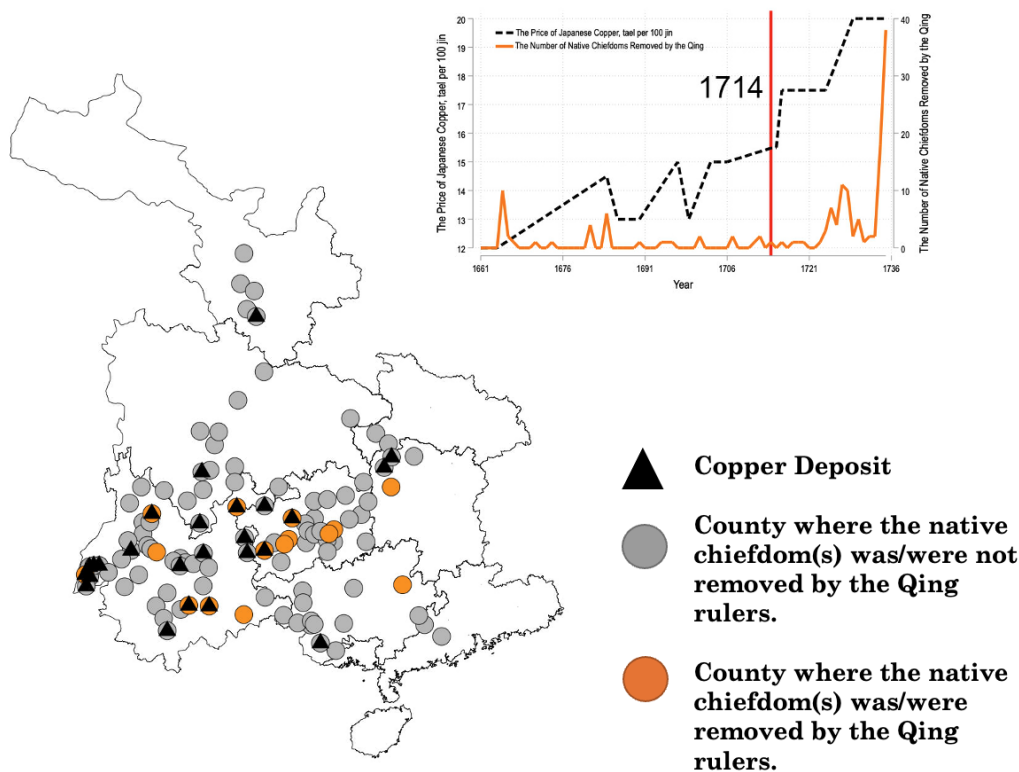


5A. Year 1661

Figure 5: The Spatial Correlation between Copper Deposit and the Adoption of Direct Chinese Rule

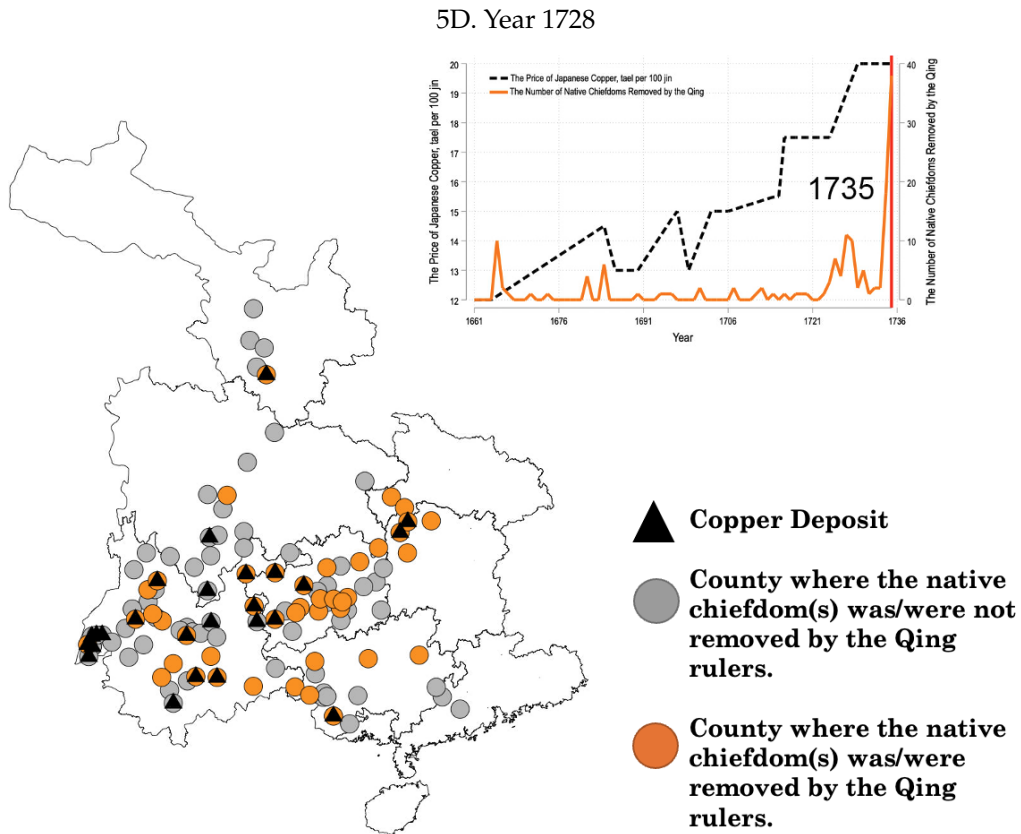
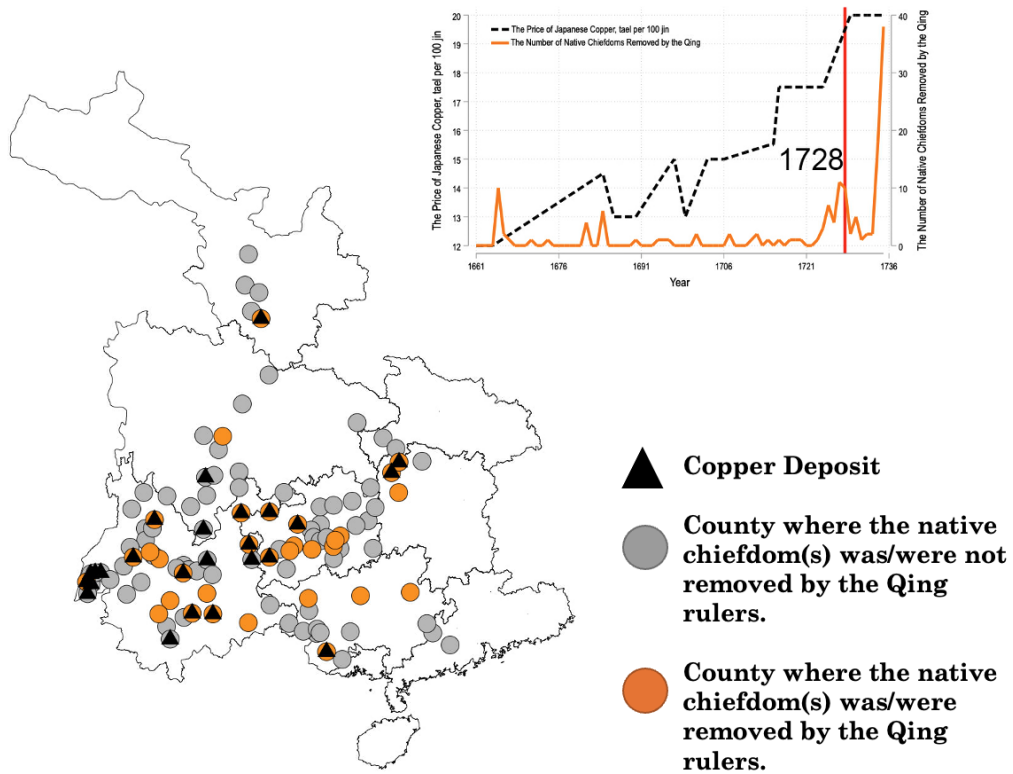


5B. Year 1685



5C. Year 1714

Figure 5: The Spatial Correlation between Copper Deposit and the Adoption of Direct Chinese Rule



4 IDENTIFICATION STRATEGY

To test if native chiefdoms with copper deposits were more likely to come under direct rule when the price of Japanese copper went up, we adopt a *generalized difference-*

in-differences estimator. In this approach, time variation stems from movements in annual prices of Japanese copper. To estimate the impact of copper shock, which was driven by the unpredictable trade policy of the Japanese government, we employ cross-sectional variation based on copper deposits across counties. The copper variable is a dummy, indicating whether the county where the native chiefdom located was endowed with copper. The treatment, namely, the price shock of Japanese copper, was exogenous because it was only determined by Japan's Tokugawa regime (1600-1868) and the Qing state could not predict and affect it. What's more, copper deposits were quasi-randomly distributed across chiefdoms, meaning that chiefdoms were quasi-randomly assigned into the treatment group with copper and the control group without copper. This resulting double-differences identify the extent to which the price of Japanese copper affected the transition from indirect rule to direct rule. For native chiefdom i in county c ⁷ in province p at year t , we estimate the following specification:

$$\text{DirectRule}_{icpt} = \alpha + \beta \text{Copper}_c \times \text{Ln}(\text{Price})_t + \gamma X_{icpt} + \delta_c + \theta_t + \lambda_{pt} + \epsilon_{icpt} \quad (1)$$

where the independent variable, DirectRule_{icpt} captures the event of an institutional change from indirect rule to the centralized rule: it is equal to 1 if the native chiefdom i in county c was removed and replaced by a state-appointed civilian bureaucracy by year t and 0 otherwise. Copper_c is a dummy variable which is equal to 1 if the county or prefecture the native chiefdom i located endowed with copper and 0 otherwise. $\text{Ln}(\text{Price})_t$ denotes the price of Japanese copper at year t , taking the logarithm forms. The β -coefficients are the estimates of interest, capturing the differential effect between native chiefdoms with and without copper deposits, namely, the treatment effect of the Japanese copper price shock on the transition probability. X_{icpt} are time-variant controls, including population density, frequency of rebellion, adoption of new world crops (maize and sweet potato), size of Qing garrison, and frequency of plague. δ_c , θ_t , λ_{pt} are, respectively, the county fixed effects, the year fixed effects, and the province-by-year fixed effects. Finally, ϵ_{icpt} is the error term.

In our specification, the county fixed effects absorb all time-invariant confounders, which are likely correlated with the probability of transition to direct rule, such as the distance to Beijing, the distance to the nearest garrison station, grain suitability, altitude, terrain ruggedness, and so on.⁸ Then, the remaining identification threat is that

7. In some cases where the native chiefdoms overlap with the whole prefecture, c denotes the prefecture where the native chiefdom located. Otherwise, c stands for the county where the native chiefdom located.

8. In our specification, we exclude the county endowment of copper because it is time-invariant and

“within-county” shocks in copper production are correlated with other time-varying chiefdom-specific characteristics. For example, the increasing population, the adoption of new world crops, and the growth of military power can promote the copper production by providing the Qing government labor, food, and security. Furthermore, they can also directly motive the Qing state to extend the direct rule because of the potential benefits of doing so. On the other hand, the frequencies of rebellions and plagues can hinder both the copper production and the transition to direct rule. These observed omitted variables, however, are captured by the inclusion of time-variant controls. Year fixed effects take account of the fact that any potential event coetaneous with the copper shock for all native chiefdoms (e.g., a new emperor’s accession) which might affect the probability to remove native chiefdoms, and it ensures that my identification is conditional on shocks universal to chiefdoms with and without copper in each year.⁹ Finally, the province-by-year fixed effects absorb all time-varying province-specific heterogeneity. For example, copper was concentrated in Yunnan Province, and copper exploitation in Yunnan may be trending upward within that province in the following years, and also promote the adoption of the direct rule. To give thought to heteroscedasticity and within-county correlation across chiefdoms over time, we also cluster the standard errors in the county level.

Model (1) is estimated employing a linear probability model (LPM). As mentioned, the values of our dependent variable are zero in many instances, such that linear probability estimation is not able to approximate the marginal effects precisely. We address potential concern with using linear probability estimations by using non-linear models, including *probit* and *logit*. Both models in Table 5 yield qualitatively similar results to those given in Table 1. We use a linear probability model as our main specifications because non-linear models suffer from bigger problems in our identification, given that enormous amounts of fixed effects included. For example, all the information from the native chiefdoms which never transited to direct rule is discarded in the non-linear models. This is problematic, because native chiefdoms that never transited to direct rule contribute to the identification of our effects of interest as long as they were endowed with copper.

absorbed by the county fixed effects.

9. In our specification, we exclude the yearly price of Japanese copper because it is absorbed by the year fixed effects.

5 EMPIRICAL RESULTS

5.1 BASELINE RESULTS: COPPER SHOCK AND TRANSITION FROM INDIRECT TO DIRECT RULE

Table 1 shows the estimated possibility of conversion from indirect to direct rule for copper-endowed native chiefdoms, relative to non-copper-endowed chiefdoms, following Estimation (1). Column 1 includes, the lower order terms for Price and Copper without controls (e.g., frequency of rebellion, sweet potato adoption, maize adoption, frequency of plague, population density, and the size of Qing garrison), and omits the county, year, and province by year fixed effects. Column 2 adds the county, year, and province by year fixed effects. Column (3) includes all the controls and county and year fixed effects but without province-by-year fixed effects so that the province-level variable of Size of Qing Garrison is not absorbed. Column (4) includes the full set of controls and fixed effects. All the standard errors are clustered at the county level.

The coefficients in Columns (1)-(4) show that the copper price shocks have a positive relationship with the transition to direct rule: when the price of Japanese copper increased, the probability of transition from indirect to direct rule in native chiefdoms with copper deposits increased differentially, relate to those without copper deposits. These estimates are of statistical and substantive significance across specifications, including or excluding time-variant controls and adding all kinds of fixed effects.

Turning to Column (4), we find the introduction of new world crops, that could provide a stable local supply of food to standing armies or bureaucrats, was positively correlated with direct rule. Consistent with Callen et al. (2019), we find that the state extended direct rule in those areas with greater agricultural output. The frequency of civil conflicts is not correlated with the adoption of direct rule, which bears an interesting relationship with the recent finding that greater resistance in its African colonies led to less penetration of the German colonial state (Pierskalla, De Juan, and Montgomery 2019). In our context, the history of violence was not a consideration for the Qing state when it advocated for direct governance. The frequency of plague is also not correlated with direct rule. Our finding is different from the case of Spanish colonization of Mexico (Garfias and Sellars 2017).

5.2 HETEROGENEOUS EFFECTS: INTERPLAY BETWEEN CENTRAL AND NATIVE AUTHORITIES

Our second analysis is expanded further to test the hypothesis that state rulers must strategically strike a balance: implementing direct rule in less powerful regions while

Table 1: Baseline Results: Explaining the Transition to Direct Rule

	(1)	(2)	(3)	(4)
	Direct Rule	Direct Rule	Direct Rule	Direct Rule
Ln (Price) $\times$ Copper	0.038** (0.018)	0.316** (0.121)	0.034** (0.014)	0.328*** (0.116)
Ln (Population Density)			0.009 (0.006)	0.013 (0.015)
Plague			0.166 (0.135)	0.129 (0.081)
Maize Adoption			-0.026 (0.026)	0.066 (0.046)
Sweet Potato Adoption			0.169** (0.072)	0.328*** (0.072)
Ln (Size of Qing Garrison)			0.001 (0.015)	
Civil Conflict			0.023 (0.020)	0.007 (0.011)
Constant	0.024** (0.010)	-0.112* (0.059)	-0.014 (0.177)	-0.179** (0.072)
Observations	53625	53550	53625	53550
# Native Chiefdoms	715	714	715	714
Year Fixed Effects	No	Yes	Yes	Yes
County Fixed Effects	No	Yes	Yes	Yes
Province by Year Fixed Effects	No	Yes	Yes	Yes
R-squared	0.038	0.414	0.084	0.418

Notes: Estimation by linear probability models. Ln(Population Density), Sweet Potato Adoption, Maize Adoption are at the prefecture level, Civil Conflict and Plague are at the county level, and the Ln (Size of Qing Garrison) is at the province level. Standard errors clustered at county level are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

simultaneously upholding indirect rule in areas showcasing stronger local power. To this end, we investigate heterogeneity in the effects in terms of military strength. As discussed in the background section, two types of governance in native chiefdoms are found in our sample. The first type is civilian native chiefdoms, governed by civilian chiefs without the backing of military forces. The second is military native chiefdoms, ruled by native chiefs backed by military forces. In the case of the latter, the military chiefs were enlisted into the Qing's defense forces and exploited by the empire to safeguard the nation's boundary and maintain internal social order. By interacting $\text{Copper}_c \times \text{Ln}(\text{Price})_t$ with Military_i , a dummy variable indicating whether a native chiefdom i in county c was military, we find that military native chiefdoms (with armies) were indeed less likely to be absorbed in direct rule by the Qing state, as shown in Table 2. This supports the notion that military chiefs had the capacity to rebel against the Qing state. When the Qing state had extended direct rule to military chiefdoms, it would have faced more military confrontation than in the civilian chiefdoms. Our archival research supports this finding. Fulehun, the Governor-General of Sichuan Province, described the benefits of remaining indirect rule of military chiefdoms. He wrote the following to the Emperor that "There were lots of bandits around the arterial roads...After we requested the military chiefs to send indigenous soldiers, the road became safe" (Chen 1810).

Table 2: Heterogeneous Effects Analysis on Central Power's Centralization Efforts

	(1) Direct Rule
Ln (Price) $\times$ Copper	0.371*** (0.120)
Military	0.010 (0.047)
Ln (Price) $\times$ Copper $\times$ Military	-0.120** (0.053)
Constant	-0.174* (0.089)
Observations	53550
R-squared	0.452

Notes: Estimation by linear probability models. Frequency of Rebellion, Sweet Potato Adoption, Maize Adoption are at the county level, Ln (Population Density) is at the prefecture, and the Ln (Size of Qing Garrison) is at the province level. Standard errors clustered at county level are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To fully examine the interaction between central and local powers, we analyze native authorities' responses to the central power's centralization attempts. As shown in Table 3, we find that local authorities that are endowed with copper and have strong military power tend to resist centralization. This resistance is a consideration taken into account by the central power to promote direct rule strategically.

5.3 PLACEBO TEST: THE EFFECT OF OTHER METAL SHOCKS

It is plausible to argue the Qing extended direct rule into this copper-rich region for the sake of obtaining resources, other than copper to mint coins. That is to say, other shocks unrelated to copper minting could have affected the transition from indirect to direct rule. To rule out this possibility, we interact silver endowment with copper price. We include silver in our analysis because, along with copper, it was the metallic medium of exchange. Another reason is that Qing China had abundant silver in both its treasury and the market during our sample period. We anticipate that when the price of copper increased, i.e., copper was more valuable in the market and silver was less valuable, the government would have been less likely to extend direct control in chiefdoms with silver deposits. As shown in Column (1) in Table 4, the coefficient of the interaction between silver and price is not significant, which support our expectation.

Table 3: Heterogeneous Effects Analysis on Native Chiefs' Reaction to Centralization

	(1) Resistance
Copper	-0.286 (0.172)
Military	-0.8*** (0.100)
Copper $\times$ Military	0.443** (0.162)
Constant	1*** (0.000)
Observations	91
R-squared	0.302

Notes: Estimation by linear probability model. Standard errors clustered at county level are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Because lead was the complementary material for minting copper coin, we add lead endowments and interacted them with copper prices. The rationale behind this test is that when the Qing needed copper to mint coins, it also needed lead. Column (2) in Table 3 reports the result of this test. As can be seen, the lead interaction significantly increased the conversion from indirect rule to direct rule in periods when the price of copper was rising sharply. Taken together, our results demonstrate a positive relationship between mint-related resources and direct rule.

6 CONCLUSION

For millennia, rulers have moved from various forms of indirect rule to directly exerting state authority over territories. For example, Louis XI eliminated his rebellious vassals and extended his direct rule into the rural periphery in medieval France. In another recent example, in India, Prime Minister Narendra Modi has imposed direct rule in Kashmir. The extent to which this occurs greatly varies. Indirect rule remains widespread today, and territories that are not directly governed by state authorities tend to experience underdevelopment and disorder. Under what conditions political rulers shift the governance of such areas from indirect rule to direct rule remains a critical question for our understanding of obstacles to development.

Our paper contributes to an answer to this question. We digitize a large-scale historical archive to construct a novel dataset that matches information on native chiefdoms with county- prefecture-, and province-level characteristics from 1661 to 1735. Two

Table 4: Placebo Test: Other Metal Shocks

	(1) <i>Direct Rule</i>	(2) <i>Direct Rule</i>
Ln (Price) $\times$ Silver	-0.054 (0.036)	
Ln (Price) $\times$ Lead		0.275* (0.154)
Constant	0.040 (0.031)	-0.089 (0.064)
Observations	53550	53550
# Native Chiefdoms	714	714
Controls	Yes	Yes
County fixed effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Province by Year Fixed Effects	Yes	Yes
R-squared	0.413	0.415

Notes: Estimation by linear probability models. Controls include Ln(Population Density), Sweet Potato Adoption, Maize Adoption, Civil Conflict, Plague, and the Ln (Size of Qing Garrison). Standard errors clustered at county level are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

sources of variation are critical for our analysis. The first source of variation is the yearly price of Japanese copper, which was affected by the unpredictable policies of the Japanese government. The second source of variation is the random distribution of copper deposits across the chiefdoms of China's southwestern frontier. Combining these sources of variation allows us to identify how the price of copper causally motivated rulers to shift from indirect rule to direct rule.

Our study extends the literature of state building by adding the interplay of two determinants into an analysis, including the ambition for *rent seeking* and the concern for *detering rebellions*. Conditional on several time-variant controls and fixed effects, our results show that when the price of Japanese copper went up, the Qing emperors were more likely to extend direct rule into chiefdoms with copper deposits. However, the extension of direct rule due to the rulers' ambition to extract rents was not inevitable. To sustain their governance, political rulers needed to bear in mind the threat of local rebellions. We found that the Qing state would only prey upon civilian chiefdoms with copper deposits, leaving the military ones untouched, as the latter were appointed to defend the national boundary and to provide internal social order. Additionally, the probability of conversion from indirect to direct rule was further enhanced among those civilian chiefdoms located nearer to the paved roads along which the copper was transferred to Beijing.

Table 5: Robustness Check: Alternative Functional Forms

	(1) <i>Probit</i> <i>Direct Rule</i>	(2) <i>Logit</i> <i>Direct Rule</i>
Ln (Price) $\times$ Copper	0.306*** (0.078)	0.629*** (0.160)
Ln (Population Density)	0.332** (0.132)	0.721** (0.290)
Plague	0.973* (0.531)	1.695* (0.928)
Maize Adoption	-0.090 (0.265)	-0.142 (0.540)
Sweet Potato Adoption	0.961*** (0.307)	1.854*** (0.583)
Ln (Size of Qing Garrison)	0.021 (0.176)	0.003 (0.334)
Civil Conflict	0.347 (0.225)	0.775 (0.496)
Constant	-3.265 (2.157)	-6.021 (4.129)
Observations	53625	53625
# Native Chiefdoms	715	715
Controls	Yes	Yes
County fixed effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Province by Year Fixed Effects	Yes	Yes
R-squared	0.413	0.415

Notes: Standard errors clustered at county level are reported in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Our findings go beyond the case of historical China to shed light on other historical and contemporary cases where central power balanced their need to extract rents and deter rebellion. Instead of taking historical institutional choices as given, our research argues that historical institutions may themselves be endogenous to resource booms, which can shape the incentives of state rulers to sustain indirect rule or change from indirect rule to direct rule.

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