

The Longevity of Chinese Absolutism

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Abstract

One of the most well-known features of Chinese political system is its endurance. The imperial system—autocracy, hereditary rule, and a powerful bureaucracy—was founded in 221 BCE and ended in 1911 AD, the longest imperial system in the world. China’s political system today, minus the hereditary rule, continues to retain many of the features from its imperial past. In this paper, we propose that an imperial institution, the civil service examination (CSE), played an important role in the longevity of Chinese absolutism. We posit the following: CSE solved a fundamental dilemma faced by a Chinese emperor—to recruit talents from the widest human capital pool as possible and to curb dilution of his power to independent power groups. We show how the anonymized and non-anonymized stages of CSE performed these two functions. We also show that an increase of regime stability matched in timing with the establishment and formalization of CSE around 7th and 8th centuries. We used individual data on CSE performance, supplemented by other data on intra-elite conflicts over time, regional tax and population density, in our empirical analysis.

I. Introduction

“China’s history is enormously long; indeed no other society has maintained its vitality or kept so meticulous a record of its own doings over such a long span—close to four thousand years—as has China. One can plunge into that record at any point and find events, personalities, moods that appear to echo the present in haunting ways” --Jonathan Spence (1990, p. XX)

We open this paper with a quote by the eminent Yale historian Jonathan Spence about the immutability of China. One of its immutable features is its political system. In his book *Autocratic Tradition and Chinese Politics*, Professor Zhengyuan Fu (1993, p. 2) characterizes the Chinese political system as possessing these five features: “(1) state imposition of an official ideology; (2) concentration of political power in the hands of a few persons, often an individual, without institutional constraints on the exercise of that power; (3) wide-ranging scope of state power over all aspects of social life, including the economy; (4) law as a tool of governance wielded by the ruler, who acts above legal constraints; (5) state domination over all social organization, with private individuals as subjects and possessions of the state.”

One could easily conclude that the characterization above must be a fitting description of President Xi Jinping’s China today. In March 2018, President Xi moved to abolish the only formal limit on his power—the two term limit—and made himself, in effect, president for life. He has imposed further ideological controls, not just on government officials but also on private firms and universities. Purely private firms are required to establish branches of the Communist Party of China (CCP) and curriculums at universities are increasingly scrutinized for their ideological adherence to the Party.¹ Foreign NGOs, never substantial in China, have been scaled back considerably by the new NGO law enacted in January 2017. President Xi’s anti-corruption campaign is widely viewed as a paralegal act to target his political rivals. His government has detained a large number of legal

¹ See <https://www.theguardian.com/world/2016/dec/09/china-universities-must-become-communist-party-strongholds-says-xi-jinping>

professionals. China has moved further away from rule of law, according to an open letter by leading lawyers and judges in the United States and China.²

The focus of Professor Fu's book is actually on imperial China, commonly dated as starting in 221 BCE and ending in AD 1911. That a description of a system founded in 221 BCE is still a reasonable approximation of Chinese politics today is a testimony of the longevity of Chinese absolutism. Our paper is an attempt to explain this longevity.

We start with a following basic premise: Any political system that managed to enjoy this degree of longevity must have relied on more than coercion to maintain its viability. The best evidence of this statement is the fate of China's founding dynasty, the Qin Dynasty. Chinese historians are unanimous that Qin Dynasty was the most tyrannical and oppressive dynasty of all Chinese dynasties. (The Qin Dynasty is widely known for a myriad of brutalities, such as "burning books and burying of scholars," and as the inventor or a frequent practitioner of such torture and execution techniques as dismemberment at waist by four horses.) Yet Qin had the shortest life expectancy of all the Chinese dynasties. It was established in 221 BCE and it collapsed in 207 BCE soon after the death of its founding emperor and in the aftermath of a rebellion by a few hundred peasants, armed with no more than wooden sticks. The political longevity of Chinese absolutism is rooted in deeper institutional and political causes. Brutality alone does not explain longevity.

In this paper, we propose the following conjecture: The longevity of the Chinese absolutism stems from its exceptional ability to perform two vital functions of governance, recruitment and political control. The recruitment function has a well-documented meritocratic component which means recruiting talents into bureaucracy in ways unencumbered by genetics, backgrounds and connections. It may also have an incentive component: By making existing members of bureaucracy easily substitutable with potential new recruits, it is more costly for the incumbents to defect from the system. The control function means, conditional on performing the first function, preserving the monopoly of the throne without dilution to independent power groups such as wealthy aristocracy and landed gentry. We postulate and provide evidence for the following: These two political functions—recruitment and control—were successfully performed by a vital institution in

² See <https://www.theguardian.com/world/2017/jan/24/china-abandoning-rule-of-law-human-rights-lawyers-say>.

imperial China: The civil service examination (CSE) system, established around 7th century and abolished in 1905.

Our hypothesis on the political functions of CSE is informed by the following stylized facts. Worldwide, power transitions—changes from one ruler to another—in authoritarian societies were frequently triggered by intra-elite conflicts (such as coups). But this pattern does not hold in imperial China, especially after 8th century following the establishment, expansion and formalization of CSE. In our dataset we compiled on 233 cases of power transitions from 221 BCE to 1912 AD, only 38 percent were triggered by intra-elite conflicts. This compares with 68 percent in a sample of 303 leaders in modern authoritarian regimes collected by Svoblik (2009). Blaydes and Chaney (2013) also noted that in the history of Europe and Islamic countries, rulers were also quite frequently deposed by coups.

Power transitions in imperial China were mainly triggered by the natural deaths of emperors, at 52 percent. (In addition to deaths and intra-elite conflicts, the other triggers of power transitions are foreign invasions, 8.6 percent, and popular uprisings, 1.3 percent.) The fact that a majority of Chinese emperors could expect to reign up to and to live out to the natural expiration of their biological life is another corroborating evidence of Chinese political longevity.

The question why Chinese political system was so durable has a very long pedigree. Going as far back as 19th century, a number of enlightened Chinese intellectuals, such as Kang Yuwei, Liang Qichao, and Tan Sitong, posed and paid a dear price for their search for an answer to this profound question.³ More recently, prominent China historians such as Ping-Ti Ho, Yuri Pines and Dingxin Zhao have all explored this question. A dominant perspective in this genre of vast academic literature emphasizes the role of ideological monopoly of Confucianism. According to this perspective, Confucianism, as the statist ruling ideology, stifled political competition and emergence of a dynamic economic class such as merchants.

³ These intellectual reformers launched what is known as “One Hundred Day Reforms” that were brutally suppressed by the reactionary faction led by Empress Dowager. Kang Yuwei and Liang Qichao fled to Japan and Tan Sitong was executed at the age of 33.

Our paper is by no means a first attempt to answer this question. However, several features of our paper may differentiate our paper from previous research efforts. First, our empirics are data-driven and are, within the severe limitations of historical data, precise enough to pinpoint the focal mechanism in question and to generate regression estimates. The dominant perspective in history and political science, the political culture perspective mentioned above, is often formulated in the form of qualitative ruminations. As such, this perspective is not amenable to falsifications and conventional empirical examinations.

There is also some identification uncertainty. It is arguable that the dominance of Confucian ideology itself was endogenous. That a monarchical or an imperial government adopted and enforced ideological monopoly is not uniquely confined to China. Many European states embraced Christianity as their ruling ideology but over time the monopolistic grip of Christianity loosened and gave way to other competing ideas and values (such as secularism and liberalism). The institutional entrenchment that blocked new ideas from emerging over such a long span of history requires an explanation.

Second, our research focuses on specific mechanisms and institutions of the Chinese imperial system and this mechanism-based approach allowed us to identify and attribute our outcome variables to specific institutions of the Chinese imperial system. For example, this approach allowed us to pinpoint a transitional milestone—the establishment of CSE—in Chinese imperial politics more precisely than a prevailing perspective in Chinese historiography known as the great “Tang-Song transition” perspective. The great “Tang-Song transition” spans some 600 years in Chinese history. By contrast, our transitional milestone is only 200 to 300 years in duration.

Third, our research also breaks some substantive new grounds. We provide what we believe to be a relatively novel interpretation of CSE. The political functions of CSE have been noted before by historians such as Ping-ti Ho but the claims are general and vague. Our claim is more precise, both in terms of empirical methodology and in terms of specifying the relevant underlying mechanisms, such as through the recruitment and control functions of CSE, of political longevity.

Our research joins in an emerging quantitative literature on CSE. Social scientists such as Bai and Jia (2016) Jiang and Kung (2017) pioneered this line of work and they also postulated CSE as a mechanism to enhance the stability of the imperial regime. But the focus of that literature is on social mobility. The reasoning is that the social mobility

instituted by CSE minimized the incentive to resort to violence to strive for socioeconomic gains. Bai and Jia (2016) reasoned that ending CSE in 1905 deprived the masses of opportunities of social mobility and contributed to the collapse of the entire imperial system in 1911.

Our paper both builds on and extends this line of research. We accept as an established fact that social mobility contributed to regime stability and our empirics corroborate this line of reasoning by demonstrating the meritocratic functions of CSE. But we also recognize that social mobility played only a partial role in the overall stability of the Chinese imperial system. Worldwide, the far bigger triggering factor is the intra-elite conflicts. Hypothesizing and empirically demonstrating the political control function by CSE of pacifying intra-elite conflicts is arguably a fourth innovation of our paper.

Finally, we developed a measure of household wealth based on historians' accounts of a pervasive practice during imperial period—concubinage. As far as we know, this is the first time an estimation of household wealth was attempted for data from pre-modern China.

Arguably, the political development of China over the past two millennia was subject to numerous factors, including geography and culture. We do not claim our mechanism to be the only one at work. On the contrary, we believe that the successful initialization of the CSE system in imperial China, as well as in Korea (958-1910) and Vietnam (1075 – 1913), and its relative failure and quick abolition in Japan (Heian period, 794-1185) suggest that there were differences in initial political conditions in these countries.⁴ In the extreme long run, initial seemingly minor differences could be magnified through installation of specific institutions. It is plausible to argue that in the case of China CSE is one of those institutions.

Our paper proceeds as follows. First, we review areas of academic literature our paper appeals to. Second, we give a quick tour of historical background relevant to our empirical estimation and to the construction of our hypotheses. Third, we provide explanations of our dataset and of the variables we used in our regression analysis. In particular, we will provide details on and historical basis of a critical variable we constructed—a proxy for household wealth. Fourth, we present our regression estimates. Fifth, the paper concludes.

⁴ For historical facts about CSE in other East Asian countries, see Liu (2007).

II. Literature Review

Our paper appeals to literature in three broad areas. The most relevant literature is the one on what one may term as the political side of the “Great Divergence” literature (Pomeranz, 2009; Blaydes and Chaney, 2013; Dincecco and Wang, 2018; Ko, Koyama, and Sng, 2018; Rosenthal and Wong, 2011; Wang, 2017). The political divergence can be stated as follows: Asia led the rest of the world for many centuries (Maddison, 2007) and pioneered in building of effective state bureaucracies (Fukuyama, 2011), democracy emerged in the West, not in Asia. China, in particular, became more absolutist as the West moved down on a path of Constitutional monarchy, democracy and liberalism.

One recent empirical paper in this genre is Blaydes and Chaney (2013). They documented a divergence in political stability and ruler duration between Western Europe and the Muslim world before the Industrial Revolution. According to their data, Western Europe experienced a far higher degree of political stability—as measured by duration of rule—as compared with Muslim countries. They focus on presence or absence of executive constraints in explaining this divergence. In Western Europe, executive constraints emerged under feudal institutions whereas the hierarchical political order in Muslim countries did not lead to the formation of these executive constraints. By this logic, imperial China would constitute an anomaly. Executive constraints were absent in the Chinese authoritarian system but regime stability put China closer to Western Europe than to the Muslim world. This anomaly requires an identification of an alternative mechanism for preserving regime stability.

A common theme in the literature is a recognition of the importance of aristocracy in the political transition of the West. For example, North and Weingast (1989) argue that the conflict between the aristocracy and a confiscatory crown led to the Glorious Revolution (England, 1688) and subsequent institutional designs that were committed to property right protection and market preservation. Acemoglu and Robinson (2000) argue that inequality between the aristocracy and the poor incentivized the latter to make threats of revolution, which in turn forced the aristocracy to extend the franchise and hence the birth of democracy in the West.

One crucial detail is that Chinese aristocracy was successfully broken by the throne. According to Elman (1991), before 750, China was similar to Europe, with a strong landed aristocracy. The conflicts between the aristocracy and the emperor as well as among the

aristocracies led to numerous civil wars and several dynasty transitions.⁵ Starting from the 10th century, we witnessed a diminution of aristocracy and the rise of centralized absolutism. Our paper proposes CSE as an important mechanism in that historical transition.

A second literature that our paper relates to is the workings and mechanisms of authoritarian systems. Here the literature is vast; the methodological approaches vary, and country/period foci are heterogeneous. By necessity, the selection of our review is somewhat arbitrary and subjective.

We chose to feature academic work on the *mechanisms* of authoritarian systems. An early view in the literature, forcefully put forward by Gordon Tullock (1987), is that authoritarian regimes tend to be short-lived. The argument is that authoritarian regimes contain a congenital flaw: They lack well-regulated and institutionalized successions. As a result, authoritarian regimes tend to decay and degenerate into personal rule and chaos. But this flaw may or may not be endemic. Some of the authoritarian regimes have successfully solved this succession problem. Imperial regimes relied on agnatic lineage and while this is not fault proof, as indicated by the power transitions triggered by intra-elite conflicts, they induced stability. Also some of the modern authoritarian regimes have survived non-inheritable successions (such as Mao Zedong in 1976 and Joseph Stalin in 1953) by devising a range of coping mechanisms. Modern game theorists, most notably Acemoglu, Egorov, and Sonin (2008 and 2012), Svoboda (2009), and De Mesquita (2005) posit an “optimal” power sharing among a coalition of ruling elites such that the survival odds are maximized. Our paper takes insights from this large literature on power dynamics in authoritarian regimes (e.g. Acemoglu, Egorov, and Sonin, 2009 and 2012; Svoboda, 2009; and De Mesquita et al., 2005, among others) and argue that emperors in imperial China designed CSE as such a coalition-formation mechanism.

A third area of literature we appeal to is China-specific. Two sub-genres of this literature are relevant. One is related to the literature of political development in historical China. This literature was traditionally dominated by a cultural and philosophical discourse

⁵ Conflicts among the aristocracy led to the transition from the Northern Zhou to the Sui (581 AD), the transition from the Sui to the Tang (618 AD), and several dynasty transitions during the decentralized Jin-period and Northern and Southern Dynasties.

(such as Qian, 1982). However, partially inspired by the *Great Divergence* debate,⁶ modern researchers are increasingly interested in the potential impact of China's historical political institutions on its developmental trajectory (for example, see Brandt, Ma, and Rawski, 2014). A distinctive feature of Chinese political history is the early rise of a centralized and bureaucratic state ruled by an absolutist ruler, and a burgeoning branch of the literature aims to understand the implication of this feature with specific emphasis on centralization (Ko, Koyama, and Sng, 2018; Rosenthal and Wong, 2011), bureaucracy (Fukuyama, 2011), state capacity (Ma, 2013; Sng and Moriguchi, 2014; Sng, 2014), and conflicts and political stability (Dincecco and Wang, 2018; Bai and Kung, 2011; Wang, 2017). We contribute to this literature by focusing on a specific mechanism. We joined the recent historical scholarship by employing a data-driven approach (sometimes known as the “Cliometric Revolution” in quantitative economic history.)^{7 8}

Our paper is also related to one of the most famous claims in Chinese history, the great “Tang-Song transition,” first proposed by the Japanese historian, Naitō Konan. The hypothesis considered the great “Tang-Song transition” as a period that heralded the complete decimation of patrimonial feudalism and the rise of bureaucratic meritocracy and generalized social mobility in historical China. In this paper, we make a contribution to the literature by providing quantitative evidence for the hypothesis as well as proposing the CSE as a mechanism through which this transition took place.⁹

⁶ Being one of the classic question in the field of economic history, the literature on the Great Divergence is vast and includes many classical texts such as Landes (1998), Jones (2003), Pomeranz, (2009), among others.

⁷ For a survey on quantitative studies of Chinese economic history, see Mitchener and Ma (2016).

⁸ Much of previous research on the longevity of the Chinese absolutism can be described as “speculative hypotheses,” such as ones about the roles of political culture, geography, idiosyncratic decisions of particular emperors (such as banning of overseas voyage), or the weaknesses of the bourgeoisie. For a literature survey, see Zhao (2015).

⁹ Over the past several decades, several prominent historians have made enormous strides in elaborating on the differences between Tang and Song elites. David Johnson, Patricia Ebrey, Hanguang Mao, Nicolas Tackett, and others argued that an important feature of the medieval aristocracy dominating the pre-Song period was the definition of political and social status on the basis of blood and clan relationship. On the other hand, Robert Hartwell, Robert Hymes, Peter Bol, and Beverly Bossler described the new elite who first emerged in the early Song Dynasty as bureaucratic literati who justified their dominance of society and politics on the basis of talent and education.

The second sub-genre is the research on CSE itself (Ho 1962, Elman 2013, Bai and Jia 2015; Jiang and Kung 2015, among others). Starting from Ho (1962), researchers have been using social science methodologies to study CSE and our paper builds and expands on this body of research. For example, Bai and Jia (2015) showed that the abolition of CSE in 1905 had an impact on political instability and revolutionary uprising throughout the country, and Jiang and Kung (2017) re-examined the social mobility aspect of CSE. Our focal topic, however, is different. Much of the existing research on CSE is about meritocratic and social mobility aspects of CSE and their political effects on the masses. We view CSE as producing additional political effects—on intra-elite conflicts.

III. Historical Background

1. *A brief history of imperial China*

Qin Dynasty (211 BCE-206 BCE) is credited for creating the Chinese imperial system. Although Qin dynasty itself was short in duration, the basic features of the Qin system of government survived coups, episodic disunity, peasant rebellions, invasions and takeovers by nomadic tribes, until 1911 when it collapsed under the combined force of the military and intellectual power of Western imperialism and domestic uprisings.

Qin Dynasty achieved political and territorial unification over multiple semi-sovereign fiefdoms. A unitary state prevailed over most of the Chinese history, accounting for about 70 percent of China's imperial period according to one estimate (Fu 1994). Qin Dynasty also unified and standardized the road system, legal code, currency, and metric system. It vastly reduced the power of local lords and centralized the appointments and management of officials at the local level. It created an autocracy—the rule by an emperor with unlimited power and with undifferentiated authority over politics, economy and society.

Not all of these features of the imperial system were put into place overnight. Historians believe that Qin Dynasty set China on a trajectory of absolute autocracy, political centralization, top-down bureaucracy, and unitary government but the consolidation of this absolutist system took a millennium or so to complete.¹⁰ Our findings—corroborating the

¹⁰ CSE, a vitally important complement to this system, was not formally instituted until 7th century.

great “Tang-Song transition” theme—show that Chinese imperial system reached its transitional milestone by 8th or 9th century.

2. Political stability in imperial China: Some empirical evidence

One methodology to measure historical political stability is to compare the odds of different channels of rulers exiting power, similar to the approach taken by Blaydes and Chaney (2013). One sign of political instability is that a large number of rulers were deposed from power as compared with exiting power upon expiration of their biological lives. There are several ways a ruler or an emperor can be deposed from power and in this paper we call this manner of exit as a deposed exit. A ruler or an emperor can be deposed due to power struggles at court or to rebellions by his generals. In this paper, we classify all these cases as intra-elite conflicts as long as the opposing party involved members of the ruling system, be it aristocrats, government officials, or military generals. Other forms of deposed exits include peasant uprising and foreign invasions. The political instability is presumed to have risen when the deposed exits rise relative to natural exits of rulers or emperors (i.e., natural deaths).

The various measures are broadly consistent with each other in highlighting the following pattern: Around 8th century or so, roughly coinciding with mid-Tang dynasty, China experienced a milestone of political development. Before 8th century, the frequencies of variously measured deposed exits were high relative to natural exits. After 8th century, deposed exits declined substantially in magnitude. Deposited exits moved in opposite directions from duration of the emperor rule and 8th century again was a milestone. Before 8th century, the duration of emperor rule was short and after 8th century the duration lengthened significantly. The timing of this change in the pattern of political stability coincided closely with the focal institution we study in this paper—the establishment, the formalization and the expansion of CSE.

In the following paragraphs, we show the patterns of political stability in a number of ways. First, we compiled data on the exits of all Chinese emperors from 221 BCE to 1911 AD. For all the exit events we have unambiguous information on, we classified them into four mutually exclusive categories of exit triggers: natural deaths, foreign invasions, intra-elite conflicts (such as military coups or power struggle at court), and peasant uprisings (i.e., a form of extra-elite conflicts). An average ratio of rulers being deposed is calculated for every

50-year window, and the data is shown in Figure 1. (For more details on the data sources and our coding methodology, see the appendix.)

[Figure 1 about here.]

Figure 1 has two lines. The solid line plots the percentage of ruler being deposed due to forced exits such as intra-elite conflicts, peasant uprisings, or foreign invasions, as compared to natural death. The dashed line, on the other hand, plots percentage of ruler being deposed due to intra-elite conflicts only.

Both lines demonstrate a similar pattern. Before the 8th century, the line was trending upward. More and more emperors were deposed as compared with exiting from power due to natural death. This pattern began to change after the 8th century. The ratio of emperors being deposed dropped significantly and remained low until the very end of the imperial era. The closeness of the solid and the dashed lines in Figure 1 further shows that the decline in political instability in imperial China is mainly due to a decline in the occurrence of intra-elite conflicts.

We also performed robustness checks to ensure that our findings hold using alternative measures of political stability. We provided two additional measures. In one, we calculated the annual probability of an emperor being deposed as well as ruler duration. The findings are presented in the appendix to this paper. Both variables demonstrate a similar pattern of declining instability. In another, we look beyond emperor exit events and examine the changing patterns of warfare over China's imperial history. For the warfare data, we examine the nature of any military conflicts that happened between 581 AD and 1911 AD. Warfare can be triggered by intra-elite conflicts (such as a coup), foreign invasions, revolt by minority groups, and peasant uprisings. Figure 2 shows a declining trend of warfare triggered by intra-elite conflicts relative to the total level of warfare. The turning point centered around 960 AD. (The details on the coding of the warfare data and the methodology are presented in the appendix.)

[Figures 2 about here.]

IV. The political functions of civil service examination system (CSE)

The turning point pinpointed by our findings presented above coincided with a milestone in Chinese history, coined by a Japanese historian, Naitō Konan, as the great

“Tang-Song transition.” During the Tang and Song dynasties, there was a near complete decimation of aristocratic rule. China transitioned from patrimonial and fragmented feudalism to rule by autocracy and imperial bureaucracy. The power of emperor was strengthened and bureaucracy became more entrenched.

This historical milestone can be traced to one specific institutional development—the establishment and expansion of civil service examination (CSE) system. The CSE was inaugurated during the Sui dynasty (580-618) but according to historians the CSE expanded and became formalized under the reign of Empress Wu Zetian (690-705). Our data suggest that Chinese political system became more stable—mainly through curbing intra-elite conflicts—during this period. We ask and probe the following question, “Did CSE contribute to curbing and managing intra-elite conflicts?”

Our argument is that CSE not only promoted meritocracy, one of the direct and well-documented functions of CSE, but also successfully curbed the power of those political and economic groups who were in the best position to dilute and compete with the power of the emperor, i.e., wealth owners such as aristocrats and landed gentry. CSE provided two vital functions critical to the longevity of the Chinese system. It recruited talents into the system and it curbed political competition. We will use the CSE data from the Ming dynasty to illustrate these two functions of the CSE. First, a brief overview of the history of CSE.

1. Historical background of CSE

The dating of the establishment of CSE may not be precise. (More details on CSE are presented in the appendix.) As early as Western Han dynasty (206 BCE-9 BCE) a version of CSE already existed but it was small in scale and informal in operation. It was not until the Sui Dynasty (580-618) that CSE became systematic and was greatly expanded. Prior to Sui, candidates were recommended first and then tested. By necessity, recommendations relied on personal knowledge and relationships.

The consensus among historians is that CSE was formally inaugurated in the Sui Dynasty, around 605. At the time of its establishment, most of the candidates were drawn from the capital city and from its nearby regions, such as Changan and Luoyang and from elite aristocratic families. The person who broke the aristocratic hold of the CSE (and of bureaucracy as a whole), according to Elman (1991), was Wu Zetian. Wu was an extraordinary individual: She was the only female emperor in the entire history of China.

Empress Wu (690-705), having come from an ultimate outsider status, needed an instrument to break the power of the entrenched interests who were hostile to her. That instrument was CSE.

Empress Wu expanded both the scale and the scope of CSE in order to decimate Chinese aristocracy. The method by which she accomplished this task is both nuanced and direct. She moved the capital from Changan in the northwest to Luoyang in the north, moving the center of political gravity from the aristocratically strong Northwest to the North populated by the commoners. She recruited actively people from northern China to participate in CSE at the expense of the aristocratic incumbents from the northwestern part of the country. One of the lasting contributions of Sui dynasty was replacing the recommendation system with an application-based CSE, but Sui had also instituted many restrictions. For example, members from merchant households were not allowed to participate in CSE. Empress Wu turned CSE from a conditional open access system to one that was nearly universally open. Members of merchant households were allowed to take CSE.

The nuance in her method was her elevation of one type of examination—known as Jinshi—over another type of examination (known as Mingjing). At the time of Tang, the Jinshi examination focused heavily on essay compositions and poetry writing. The Mingjing examination focused heavily on memorizing classical texts. Thus these two categories of examinations sorted on different types of capabilities. The Jinshi examination—not to be confused with its rote memorization namesake during the Ming dynasty—selected on the basis of innate talents and creativity. The Mingjing examination selected on the basis of sheer memorization. By elevating the Jinshi examination, Empress Wu was biasing the selection in favor of creative talents. This sorting mechanism led to another difference, a difference of socioeconomic nature. The Mingjing examinations implicitly favored those households that possessed books and classical texts, the rich, privileged incumbent aristocratic households. By downplaying the Mingjing examinations, Empress Wu broadened the participation by drawing candidates from lower socioeconomic commoner classes (Paludan, 1998).

She considerably scaled up the CSE. She elevated the visibility and the prestige of CSE—by becoming an examiner herself. The practice of an emperor acting as a chief examiner started under Tang, but prior to Wu Zetian, it happened rarely. Empress Wu made it a regular practice to preside over CSE and by conferring her imperial imprimatur on the

examination the CSE now attracted tens of thousands of examinees compared with the previous rounds numbering in 2,000 or so under Tang. This is the origin of the palace examination. But unlike its Ming namesake successor, the palace examination under Empress Wu ran parallel with other parts of CSE rather than as a final stage in a sequential hierarchy. Anyone could show up and take the examination. The improvising nature of the reformed CSE helped broaden the pool of CSE candidates and democratized the bureaucratic recruitment.

2. CSE and political longevity: Hypotheses

Our hypothesis is that the institution of CSE contributed to the declining incidence of intra-elite conflicts in imperial China and thereby to its longevity. CSE did so in two ways. One is through recruiting talents regardless of genetics, backgrounds and political connections. The quality of governance was improved by recruiting the best and the brightest into the imperial bureaucracy. This is a well-documented meritocratic and social mobility effect of CSE (Bai and Jia 2016). Social mobility enhanced political stability also as an incentive device to the masses to climb up the social ladder through study rather than through violence. This is the famous meritocratic effect of the recruitment function of CSE.

There is another way CSE enhanced political stability, by channeling incentives of the political elites and by curbing intra-elite conflicts. This political function of CSE complements the previously-documented social mobility function in jointly enhancing the regime stability. One way to conceptualize CSE's recruitment function is that it broadened what de Mesquita et al. (2003) calls the size of the "selectorate." The selectorate theory argues that a rational authoritarian ruler is motivated to increase the size of the selectorate—basically the pipeline to the political elites. The easier the entry to the selectorate, the more costly for existing members of the selectorate to challenge the authoritarian ruler. In the terminology of economics, the low entry barriers to bureaucracy lead to perfect competition among bureaucrats and make each bureaucrat perfectly substitutable. The result is an enhanced loyalty to the ruler.

CSE in effect lowered the entry barriers to imperial bureaucracy and it might lead to this discipline effect on the part of the incumbent members of imperial bureaucracy. Thus the recruitment function not only altered the incentives of the masses away from violence but also altered the incentives of the political elites away from challenging and defecting

from the emperor. The political incentive and social mobility effects reinforced with each other.

There is also a compositional effect. CSE under Empress Wu widened and democratized the pool of CSE candidates. The ratio of commoners to aristocrats in the imperial bureaucracy changed in favor of commoners. But CSE reduced but did not eliminate aristocratic privileges. Contemporary research shows that family backgrounds such as wealth and educational attainment of the parents explain a substantial portion of test performance (see e.g. Björklund and Salvanes, 2011 for a survey). There is no reason to believe that this socioeconomical effect was different in imperial China.

The meritocratic competition presented to the emperor a dilemma: The selectorate was widened but it was equally or more than equally accessible to the aristocrats and other power groups. We know from our data on intra-elite conflicts and from history of European countries (for example, the “Glorious Revolution”) the threat to the political monopoly of the throne came from those with an independent power base, such as wealth holders. There was a tradeoff between recruitment and political control under a purely meritocratic system.

The genius of the solution to this dilemma is that the successive imperial systems designed or gravitated toward a tiered system of CSE. Beginning in Song dynasty, the first two rounds of CSE, provincial examination (PRE) and metropolitan examination (ME), were anonymized, meaning that the names and regional origins of the CSE candidates were withheld from examiners. It was a double-blind procedure. Neither the candidate nor the examiner had access to identifying information of each other. (It should be noted that anonymization in the CSE was far more strict than that in contemporary double-blind reviews. Violators were subject to caning and even death sentences).

The third and the final round of CSE, palace examination (PLE), was not anonymized. Examiners directly graded the examination papers submitted by examinees. Calligraphy was taken into account during the PLE evaluations (Elman 2013: 51). Also the number of PLE examinees was much smaller, 400 persons on average during the Ming dynasty compared with thousands or tens of thousands in the previous two rounds of CSE. The emperor, sometimes nominally and sometimes actually, presided over PLE himself. Anonymization did not apply to the emperors.

This tiered system resolved the tradeoffs between meritocratic recruitment and political control. The first two stages of CSE selected candidates for entry and lower-level positions in the imperial bureaucracy. This is equivalent to the political function posited by de Mesquita et al. (2013). Meritocracy was the dominant operating principle during this entrance stage and anonymization procedure enhanced meritocracy. The third stage, PLE, assigned candidates to the highest offices of the imperial system according to the rankings on PLE. During this assignment stage, the emperor had a preference on the composition of the ruling elites. All else being equal, he wanted to curb the representation of the wealth holders rather than completely relying on meritocratic selections. The non-anonymization was designed for this purpose.

The discriminating evidence we are looking for concerns how family backgrounds and wealth status of candidates affected performances during the anonymized and non-anonymized stages of CSE. Consistent with the meritocratic—and the political—function of CSE, we hypothesize that family backgrounds and wealth status should not affect the examination rankings during the PRE/ME and anonymized stages of CSE. Consistent with the political control hypothesis, we conjecture that these variables should have an effect on examination rankings during the PLE and non-anonymized stage of CSE. We will present our regression findings in the empirical section of the paper.

3. CSE and political longevity: Empirics

We have demonstrated in the previous section that a turning point in China's political longevity occurred sometime around 7th or 8th century. Figures 1 to 3 demonstrated this point descriptively without any controls. In this section, we use a simple regression model to quantify the correlation between the establishment of CSE and the structural change in the pattern of political stability. In the regression model, we examine two events. One was the set of reforms introduced by Empress Wu in 693 which extended the candidacy to non-elite individuals. The other event window occurred in 960 when the newly established Song Dynasty officially institutionalized the CSE system as the major channel of bureaucratic recruitment, anonymized the first two stages of CSE, and extended CSE candidacy to the majority of citizens, except for a few special professions such as religious clerks. In the regressions, we created two dummy variables marking these two important event windows in the establishment of CSE. $D.CSE_t^{693}$ represents the period from 693 to 960, while

$D.CSE_t^{960}$ represents the period from 960 till the end of the imperial period. The control group is the period before 693.

$$\Pr(Depose)_t = \beta_0 + \beta_1 D.CSE_t^{693} + \beta_2 D.CSE_t^{960} \quad (1)$$

The estimation results for the above equation is shown in Table 1. Column 1 and 2 show that the two important event windows of the CSE institution were associated with an increase in the duration of rulers’ reign. In particular, the formalization of the CSE at the beginning of the Song Dynasty is associated with an increase of 9.6 years in ruler duration compared with an average ruler duration of 13.6-year averages. This is a huge effect. Column 3 and 4 show that these event windows are associated with a declining probability of a ruler being deposed. To ensure that the pattern is indeed associated with the establishment of CSE and not with other political features of different dynasties, we further controlled for dynasty fixed effect in Column 5. The results show that the impact of CSE on political stability remains even after controlling for dynasty fixed effect. Notice the precision we gained from pinpointing the CSE as a potential mechanism for China’s political transition compared with the great “Tang-Song transition” hypothesis. Our two event windows were 287 years in duration as compared with more than 600 years from the beginning of Tang dynasty to the end of Song dynasty.

[Table 1 about here.]

V. Data and Variables

Overall, the macro-level evidence above is supportive of the hypothesis that a transition from high to low political volatility occurred around the time of CSE establishment and expansion. To get at the mechanism of this transition requires us to look beyond a timing match between CSE and political volatility. In order to causally explore the connection between CSE and regime stability, we need to examine micro data of CSE and show how CSE performed the recruitment and control functions hypothesized in the previous section. We used a comprehensive dataset on individual CSE performances from the Ming dynasty. Next, we provide details on this dataset and explain our variable construction.

1. *Data*

Our data come from China Biographical Database (CBDB) maintained at Harvard University. According to its website, the CBDB is “an online relational database with biographical information on approximately 360,000 individuals as of April 2015, primarily from the 7th through 19th centuries.” We used the part of the CBDB dataset that covers the Ming Dynasty in our analysis.¹¹

The CBDB dataset is extremely rich. The dataset has information on the names of the CSE examinees, their birth years, their birth places, their examination years, and their rankings during the three stages of the CSE (i.e., the PREs, MEs, and PLEs). The dataset also contains relatively complete information on the families of the CSE examinees, such as the names of their fathers and ancestors, whether a father of a CSE candidate was an official, and the number of spouses of the CSE candidate.¹² The Harvard researchers compiled the CBDB dataset from two official archival Ming-dynasty sources. An indication of the richness of the information contained in one such comprises 22 volumes.

The CBDB dataset has information on 14,116 CSE examinees and on 51 rounds of the CSE. However, five of the rounds of the CSE are missing important information, such as the age and exam rankings of the examinees, their provinces of residence, or their CSE rankings. Hence, we removed these five CSE rounds from the dataset, leaving us with 46 CSE rounds and 12,752 CSE examinees. These CSE rounds took place from 1400 to 1580.

We supplemented the CBDB dataset with a variety of other sources to capture the characteristics of candidates’ hometown, including county-level tax revenue around 1460 during the reign of Emperor Tian-shun of Ming Dynasty, and prefecture-level number of households around 1565 during the reign of Emperor Jia-jing of Ming Dynast). The data are from Liang (2008).

¹¹ This is Ming Jingshilu_52y_release.xlsx.

¹² The dataset provides the surnames of the spouses from which the number of spouses can be calculated.

2. Variable explanation

Dependent variable: Our dependent variable is a numeric performance ranking of CSE candidates on the three rounds of CSE. There are three CSE rankings: Rankings for provincial examination (*Ranking_PRE*), rankings for metropolitan examination (*Ranking_ME*), and rankings for palace examination (*Ranking_PLE*). We reversed the original order in CBDB so that higher values of *Ranking* represent superior CSE performance.

Wealth variable: A difficult challenge in a quantitative analysis of pre-modern economy is the lack of data on important economic variables, such as income and wealth. To empirically explore the nexus between power and wealth requires data on wealth status of CSE candidates. Wealth is also an important control variable. CSE candidates invested a significant amount of time, energy and financial resources in preparations for the examination. To account for the CSE placements, it is important to control for household wealth. Wealthy households should enjoy an advantage in CSE (Eberhard 1962; Miyazaki 1976).

We developed a proxy variable for household wealth. We used one variable in the CBDB—a variable indicated by Harvard researchers as representing “multiple spouses”—as the basis to construct a wealth proxy. We interpret this variable as representing a widely-practiced tradition among wealthy Chinese families of keeping concubines. (For more details of historical research, see Appendix.) On the basis of historical research, we judged that concubinage is a reasonable proxy for wealth. Our variable, *Wealth*, is a count of the number of wives recorded in the CBDB database. For robustness checks, we have also created an alternative proxy, *Wealth1*, a dummy variable whether a candidate keeps concubines.

Household variables: CSE households differed in terms of their political backgrounds. Fortunately, CBDB contains some political background information on the CSE candidates, such as whether or not the father of a CSE candidate served in the bureaucracy and in what positions. In the Ming dynasty, the imperial bureaucracy had nine tiers. The top three tiers were the most senior bureaucrats. They could, for example, communicate directly with the emperor (Hucker 1958). We constructed a household political rank variable, *Father_Rank*. We assigned a value of 5 to the top officials (Tiers 1-3), a value of 4 to the mid-level officials between Tiers 4 and 7, and a value of 3 to those between

Tiers 8 and 9. We assigned a value of 2 to those officials deemed “minor,” i.e., officials without a tier and we assigned a value of 1 to commoners and other non-governmental categories.

Control variables: We include a number of controls in our regressions. For individual characteristics, we control for candidates’ age at the time of the examination and the level of their preparatory schools (imperial academy, prefecture schools, or county schools). We control for four categories of household registration status: officials, military, artisan and commoner.¹³ This is the professional status classifications Ming court assigned to households, for tax collection and for enlistment of corvée labor. We also control for the CSE subject domains. These subject domains were drawn from different texts of Confucian classics, such as Four Books (Si Shu), Five Classics (Wu Jing), Classics of Poetry (Shi Jing), Book of Documents (Shang Shu), Book of Rites (Li Ji), Book of Change (Yi Jing), and Spring and Autumn Annals (Chun Qiu). To the extent these subject domains might vary in difficulty and to the extent there might be some self-selection biases, we included dummy variables for these domain subjects in all regressions. We also include county-level tax revenue (in *shi* of wheat or rice) or number of households in the prefecture to control for levels of regional development. To account for other regional factors, we include county fixed effects in all regressions unless noted otherwise.

We present summary statistics on all these variables in Table 2. We have a total of 11,706 individuals from 1,622 counties who took CSE during the period between 1400 and 1580. The average age of candidates is 33 and the average father’s ranking is 1.8, equivalent to a low-level government official.

[Table 2 about here.]

¹³ CBDB contains more detailed information than these categories of household status. For example, commoners can be further divided into physician or fisherman, and artisans can be further divided into cook, tailor, armorer, or stonemason. We aggregated these subcategories into four major categories.

VI. Empirical Results

1. Main results

As discussed in the earlier section, the CSE consisted of three stages of examinations. The examination performance during the first two stages, PRE and ME, determines the entrance into the bureaucracy, whereas ranking in the third stage, PLE, determines the political and bureaucratic assignments at the highest level of the imperial system. Those assignments reflect the explicit preferences of the emperor.

Our empirical strategy exploits this institutional setting. We hypothesize that CSE advances two goals of the imperial system. One is to recruit talents into the bureaucracy regardless of the socioeconomic and political backgrounds of the CSE candidates. This is the meritocratic and political purpose of CSE. A specific implication of this idea is that during the entrance stage of bureaucratic recruitment the socioeconomic and political backgrounds of the CSE candidates should not affect their rankings on PRE and ME. We examine this hypothesis using the following regression model:

$$Ranking_{it}^s = \theta_1 FatherRank_i + \theta_2 Wealth_i + \alpha_t + \alpha_j \quad (2)$$

Where i indicates the individual, t indicates the examination year, j indicates the county that the individual came from, and s indicates the examination stage, $s \in \{PRE, ME\}$.

The other goal is to restrict the potentials of power sharing. Recruiting wealth holders into the bureaucracy comes with a downside. Because they have access to sources of power outside and at least partially independent of the throne, they may challenge the emperor once they are incorporated into the inner sanctum of the political system. This downside is absent in recruiting commoners. This logic suggests that during PLE, the final stage of CSE that determined the assignments at the pyramid of the imperial system, the emperor is motivated to keep wealth holders at some arm's length distance from the throne. PLE rankings thus should correlate negatively with household wealth of the CSE candidates (all else held constant). This is the political control goal of CSE. We examine this political control goal using the following regression:

$$Ranking_{it}^{PAE} = \gamma_1 FatherRank_i + \gamma_2 Wealth_i + \omega_t + \omega_j \quad (3)$$

Where i indicates the individual, t indicates the exam year, j indicates the county that the individual came from, and PLE indicates that this is the ranking in the final stage.

Table 3 presents regression results for the first two stages of examinations, with *Ranking_PRE* and *Ranking_ME* as the dependent variables. Throughout the various specifications, none of the *Wealth* variables is statistically significant. The effect of *Father_Rank* is somewhat mixed. It is positive and statistically significant in the first PRE stage but not in the second stage ME of the CSE. However, the effect of *Father_Rank* on PRE rankings is modest. *Father_Rank* is an ordinal scale, from 1 to 5. As shown in Column (4) and (5), a one-level increase in father's rank out of five potential levels only leads to a one-unit increase in candidates' ranking out of nearly 300 candidates. As a whole the regressions in Table 3 show that during the anonymized entrance-level of the CSE stages, the socioeconomic and political backgrounds of the candidates had no or limited impact on CSE rankings.

[Table 3 about here.]

Table 4 presents regression results for Equation (3), and the dependent variable is *Ranking_PLE*. Two noticeable changes from Table 3. One is, as shown in Column (1) through (6), the variable measuring the political background of CSE candidates, *Father_Rank*, is consistently positive and statistically significant throughout all the specifications. The other is that *Wealth* is consistently negative and statistically significant in four out of five specifications. Column (3) shows the results for our preferred specification. On average, every one-level increase (out of five levels) in father's rank is associated with an increase by 5.1 positions in the candidate's exam ranking (usually out of 300 to 400 candidates), whereas a one-unit increase in the number of spouses, our wealth measure, is associated a decrease by 6.2 positions in the candidate's exam ranking on PLE. (In one specification, *Wealth* and *Father_Rank* interaction term is significant.) The socioeconomic and political backgrounds of the candidates are shown to have an impact on their rankings on PLE.

[Table 4 about here.]

In all our regressions, we include a series of controls, including candidate's age, family registration type, examination subjects, the level of candidates' preparatory schools, and year-province (or year-county) two way fixed effect. (Regressions results with a full list of controls are presented in the appendix.)

The comparison of coefficients for *Wealth* (as measured by the number of spouses) in Table 3 and 4 stand out as most surprising and counterintuitive. There is a large literature documenting a positive effect of family wealth on educational attainment and examination

performance in various settings and countries (see e.g. Björklund and Salvanes, 2011 for a survey). But this confounding factor operates in the opposite direction from the one shown in Table 4 (for a further discussion on the sign of *Wealth* effect, see Discussion). The telltale sign of the political, suppressive effect of *Wealth* is the change of the statistical significance levels from Table 3 to Table 4. During the entrance stages of CSE, *Wealth* exerts no influence on the rankings on PRE and ME; during the final assignment stage of CSE, *Wealth*, holding other factors constant, has a negative effect on the CSE rankings.

We next look at the interactions between the replication effect through *Father_Rank* and the wealth effect through *Wealth*. The usual assumption is that power and wealth should reinforce each other. Wealth begets power and power begets wealth. This logic predicts that wealthy political insiders (i.e. those with high values of *Father_Rank*), should command an advantage over those less well-off candidates but endowed with a similar status as political insiders. The regression results invalidate this prior. The interaction term between *Father_Rank* and *Wealth* under Column (2) in Table 4 is negative and statistically significant. *Father_Rank* itself retains its statistical significance. *Wealth* is no longer significant. What these results suggest, collectively, is that CSE was especially biased against candidates endowed with both a political insider status and wealth.

One possible explanation is that CSE was designed to disadvantage candidates from wealthy regions rather than candidates from wealthy households. The founding emperor of Ming dynasty, Zhu Yuanzhang, famously executed the head examiner of the CSE when an overwhelming number of successful PLE candidates were selected from the wealthy southern provinces of China. He ordered another ME and to have more candidates from the north. (This episode is known as “South-North List” event in Chinese history.) While this aversion toward candidates from the wealthier South is not inconsistent with our hypothesis, it is still meaningful to distinguish between an anti-wealth effect at the regional level and a one at the household level.

We utilized historical data on prefecture-level tax revenue and county-level household density as a proxy measure of regional wealth. There is some evidence in Table 3 that PRE rankings show an advantage on the part of wealthy prefectures. We repeat these variables in some of the specifications in Table 4. Regional wealth again favors those candidates in the PLE rankings, in striking contrast to the estimates we generated for *Wealth* (i.e., wealth proxy at the household level). Most importantly, the negative coefficients for

Wealth remain stable throughout various permutations. Controlling for regional wealth or county fixed effect does not change the sign of the coefficient nor its statistical significance level.

In summary, a battery of household socioeconomic and political variables (such as *Wealth* and *Father_Rank*) do not statistically explain the rankings on PRE and ME, the anonymized, entrance stages of CSE. This lends support to the widely-held idea that CSE promoted social mobility in imperial China and recruited talents into imperial bureaucracy without regard to background factors. However, these household variables are found to have a statistically significant effect on rankings during PLE, the non-anonymized and assignment stage of CSE. *Father_Rank* has a positive effect and most interestingly *Wealth* is found to have a negative effect on a candidate's ranking on PLE.

2. Robustness checks

In this section, we explore a number of robustness checks of the main results.

First, we provide descriptive statistics for each of the three grades of candidates (*Jia-Ci*). As shown in Table 5, the first-grade candidates on average had a father's rank of 2.22, while the second-grade candidates only 1.89 and third-grade 1.80. In other words, higher family political rankings are associated with better examination performances. As for family wealth, the first-grade candidates on average had wealth measure (*Num_Spouse*) of 1.13, while the second-grade candidates 1.14 and third-grade 1.18. In other words, the wealthier the family, the worse the exam ranking. Both of these patterns are consistent with our regression results in the previous section.

[Table 5 about here.]

Second, to allow for the possibility of non-linear impact that father's rank or candidates' age could have on a candidate's performance, we tried a modified regression model with fixed effect of each level of the *Father_Rank* variable and candidate's age. Table 6 shows that the coefficients of *Father_Rank* and *Wealth* remain largely unchanged for all three stages of CSE.

[Table 6 about here.]

Thirdly, instead of using the number of spouses/concubines as a wealth proxy, we developed an alternative proxy for wealth based on the marriage status information. Our

Wealth variable does not differentiate between the marriage status per se and the concubinage status. It is conceivable that marriage status itself conveyed information about the conditions of a CSE candidate that is different from what is being conveyed by concubinage. Controlling for age, marriage may alter efforts and the economics of a candidate preparing for CSE compared with an unmarried CSE candidate. Our *Wealth* variable, however, lumps the effect of marriage and the effect of wealth together.

To estimate separately the effect of marriage from the effect of wealth, we created two variables. *Marriage* takes on the value of one if CBDB indicates whether a candidate is married and zero otherwise. The second variable, *Wealth1*, takes on the value of one if the multiple-spouse variable in CBDB is greater than one and the value of zero otherwise.

Table 7 presents the regression estimates using alternative wealth proxy, *Wealth1*, and *Marriage* dummy. Controlling for the *Marriage* dummy does not change our results. Even among married individuals, *Wealth1* (having more than one spouse) significantly decreased the candidate's performance in the third stage PLE, and PLE only. *Wealth1* variable has no impact on the first two stages of examinations.

[Table 7 about here.]

Finally, we also tried including examination rankings in the previous stage as a control. The results are given in Table 8, and it shows that the coefficient on family political background (*Father_Rank*) and wealth (*Wealth*) are largely unchanged.

[Table 8 about here.]

3. Discussions

The effects of *Wealth* and *Father_Rank* warrant some further discussions. The negative effect of *Wealth* is counter-intuitive. A consensus in the educational literature is that children from richer families on average have better educational outcomes than those from less well-off families.¹⁴ One would expect this positive wealth effect to hold especially true in

¹⁴ After an extensive survey of the literature, Björklund and Salvanes (2011) concluded that, for all the countries that they have data, more than 50% of the variation in

the CSE setting. Preparing for CSE was a life-long affair and was costly in terms of time, attention, and financial resources (both expended and foregone). All else being equal, wealthy families should command a substantial advantage in CSE. The fact that wealth effect found in our paper counteracted against this well-documented boosting effect of wealth is unlikely to happen by accident. It would have to be by design.

Our argument is strengthened in light of this finding in the vast educational literature. The negative effect of wealth on PLE ranking is net of an effect of unobserved individual capabilities attributed to family wealth. The *Wealth* variable contains a negative political control effect and a positive economic effect. The political countervailing effect of wealth has to be large enough to more than offset against the economic effect of wealth on individual capabilities. If anything, our *Wealth* coefficient is an underestimate of the political effect of wealth.

The results on *Father_Rank* are less consistent. It shows up positive and statistically significant in regressions for PRE. One potential explanation for this result is, as some historians claimed, that PRE was not as strictly anonymized as ME. One simple reason is that the scale of PRE was massive. Also PRE was held in provincial capitals unlike ME and PLE which were held in the national capital. It is conceivable that the administration of PRE was inconsistent across different locations.

Father_Rank shows up consistently in regression results on *Ranking_PLE*. This is evidence of a replication effect, i.e., the Chinese imperial system replicated itself by recruiting heavily from the same genetic pool that had populated the system before. *Father_Rank* incorporates two effects. One can be described as political knowhow—growing up in a political household probably enables one to acquire knowledge about politics, public affairs and policy issues. That knowledge may lead to strong CSE performances. The other effect is political capital. Since a candidate with a history of service in the imperial system can be judged to be more trustworthy—in the sense of being unwilling to challenge the imperial throne, such a background should favor a candidate with high *Father_Rank* values. In our empirical implementation we cannot distinguish between these two separate effects of *Father_Rank*.

years of schooling could be attributed to family background factors, among which family income is among the most important.

So far we have presented findings that highlight these differential effects of wealth conditional on the stage of bureaucratic recruitment: No effect during the entrance stage but a negative effect during the final assignment stage. Another complementary interpretation is that the effect of wealth depends on the mechanisms of CSE. As noted before, PRE and ME were anonymized whereas PLE was not. This difference in the anonymized procedures of CSE dovetails well with the two hypothesized functions of CSE. The anonymization was designed to advance meritocracy—recruiting talents regardless of backgrounds. The non-anonymization was designed to function as a political screening tool—to suppress candidates who were wealth holders while promoting candidates from households with a history of service in the imperial system. Our findings on *Wealth* and *Father_Rank* are supportive of these hypothesized functions of anonymization and non-anonymization procedures of CSE.

VII. Conclusion

We join in the emerging quantitative literature on CSE and on the studies of Chinese history. Our central hypothesis is that the remarkable longevity enjoyed by China’s absolutist system owed in part to a Chinese institutional innovation widely hailed by some of the most luminous Western enlightenment thinkers (such as Montesquieu, Rousseau and others)—the Chinese civil service examination (CSE). Most probably, an important effect of CSE was completely unanticipated by these Western enlightenment thinkers—it prolonged the longevity of Chinese absolutism.

CSE did so by excelling at two functions—increasing the talent supply to the imperial bureaucracy by abolishing the common barriers in a pre-modern society (such as family backgrounds, wealth and political connections) and optimizing the composition at the highest level of bureaucracy in ways that preserved the political monopoly of the throne. Our empirical analysis shows that the establishment of CSE coincided with the regime stability and that the workings of the CSE conformed with our two hypothesized functions of the CSE—to recruit talents to widen the selectorate and to optimally configure the composition of the imperial system to curb the power of wealth holders.

We believe that CSE was an unheralded factor in explaining the longevity of Chinese absolutism. Compared with some of the stock explanations (such as political culture), our explanation is more grounded on micro data and on explicit hypothesis testing. We hope

that our research will contribute to historical research on China and to theoretical and empirical studies of regime stability and duration.

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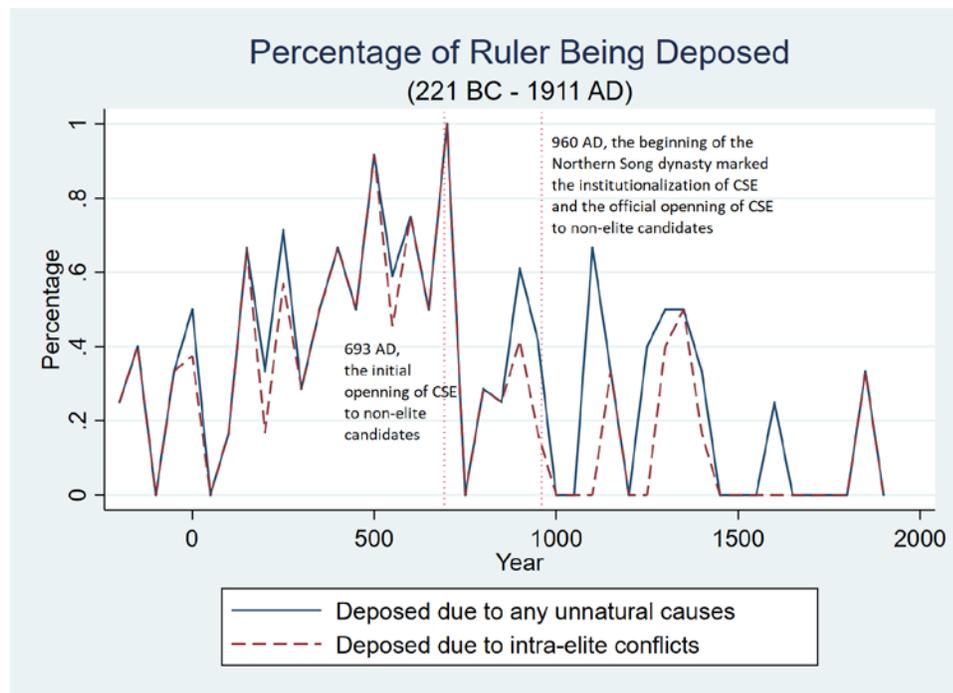
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IX. Tables and Figures

Figure 1: Percentage of Ruler Being Deposed

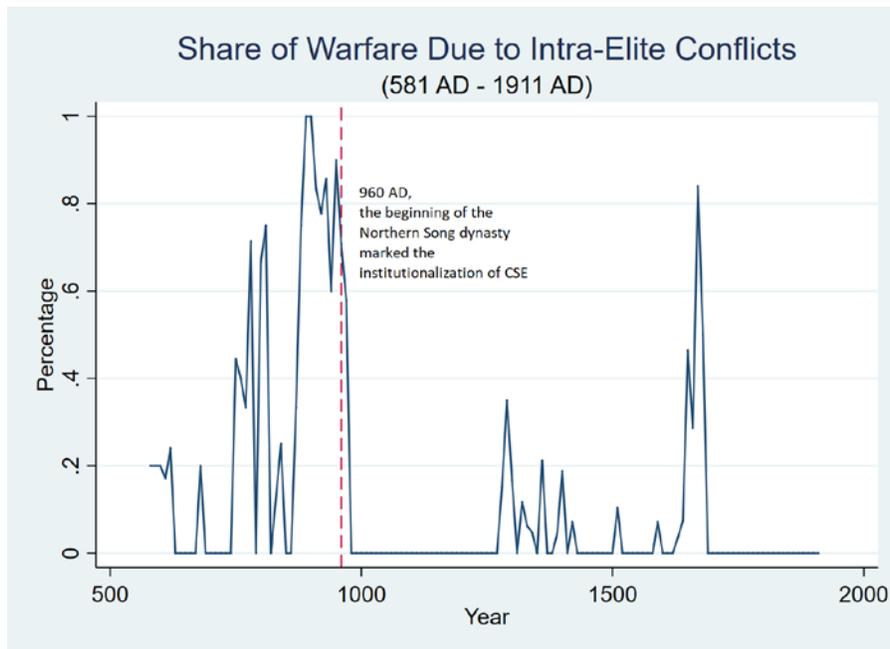


Note: The authors collected data on 241 cases of power transitions, defined as the crown passed from one individual to another, during the imperial China period from 221 BC to 1911 AD. Of all the 241 cases, 223 can be classified with sufficient confidence into four mutually exclusive categories: natural death (121), intra-elite conflict (89), peasant uprising (3), and foreign invasions (20).

The above picture has two lines. For every 50-year window, the solid line plots the percentage of ruler being deposed due to any unnatural causes, including intra-elite conflicts, peasant uprising, or foreign invasion, as compared to natural death. The dashed line plots percentage of ruler being deposed due to intra-elite conflicts only. The above picture shows that the decline in political instability in imperial China is mainly due to a decline in the occurrence of intra-elite conflicts.

The picture covers the period from year 221 BC to 1912, spanning the whole period of Imperial China. The two dashed lines marked the two important years for the establishment of CSE, which will be discussed in the next section. More details on the coding of the data, please see Appendix.

Figure 2: The Declining Trend of Intra-Elite Warfare



Note: The above picture plots the percentage of warfare due to intra-elite conflicts as compared to other causes such as foreign invasion or peasant uprising, for every 10-year window. The plotted ratio equals to “number of elite warfare” divided by the number of total warfare”.

The authors collected data on 1975 cases of military combats during the imperial China period. Of all the 1975 cases, 229 can be categorized as intra-elite conflicts (e.g. with at least of the participating group led by an aristocrat or a military general). Other common causes of warfare include foreign invasions (746), revolt of minority groups (295), or peasant revolts (645). The above picture plots the percentage of warfare due to intra-elite conflicts.

The picture covers the period from the beginning of the Sui Dynasty (581 AD) to the end of Imperial China (1912 AD). The dashed line marked the beginning of the Northern Song Dynasty (960 AD), which marked the institutionalization of CSE and the formal opening of CSE to non-elite candidates. The two peaks in the graph after 960 AD coincided with the only two dynastic transitions during this period (the Yuan to the Ming around 1368, and the Ming to the Qing around 1644).

Table 1: CSE and Political Stability

| VARIABLES | (1) Ruler Duration | (2) Ruler Duration _50-Year MA | (3) Pct. of Ruler Deposed _50-year window | (4) Prob of Deposition _50-Year MA | (5) Prob of Deposition _50-Year MA |
|---|--------------------------|--------------------------------------|---|--|--|
| <i>Control group (Before 693 AD)</i> | | | | | |
| <i>D. CSE_t⁶⁹³ (693-960)</i> | 0.925 (4.121) | -0.369 (0.666) | -0.118 (0.0843) | -0.00821*** (0.00115) | -0.00905*** (0.00171) |
| <i>D. CSE_t⁹⁶⁰ (After 960)</i> | 9.697*** (3.086) | 10.17*** (0.443) | -0.340*** (0.0632) | -0.0206*** (0.000767) | -0.0397*** (0.0129) |
| Constant | 13.60*** (1.598) | 22.24*** (0.316) | 0.446*** (0.0346) | 0.0261*** (0.000548) | 0.0494*** (0.00244) |
| Dynasty FE | N | N | N | N | Y |
| Observations | 57 | 2,134 | 57 | 2,134 | 2,134 |
| R-squared | 0.165 | 0.221 | 0.351 | 0.253 | 0.564 |

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. The dependent variable in Column 2 and 4 are 50-year moving average of, respectively, duration of rulers' reign and probability of ruler being deposed.

Table 2: Summary statistics of Ming Dynasty CSE candidates

| Variable | Var Explanation | Obs | Mean | Std. Dev. | Min | Max |
|---------------------------------|--|--------|----------|-----------|----------|----------|
| Number of Individuals | | 11,706 | | | | |
| Number of Ming Dynasty Counties | | 1,622 | | | | |
| Examyear | Year of the 3rd stage exam | 11,706 | 1514.03 | 44.921 | 1400 | 1580 |
| Ranking_PLE | Exam ranking in the 3rd stage | 11,706 | 151.094 | 96.237 | 1 | 403 |
| Ranking_ME | Exam ranking in the 2nd stage | 11,605 | 152.649 | 96.817 | 1 | 400 |
| Ranking_PRE | Exam ranking in the 1st stage | 11,526 | 109.946 | 49.499 | 1 | 295 |
| Age | Age of the candidate at the time of exam | 11,658 | 32.9991 | 5.530 | 13 | 59 |
| Father_Rank | Candidates' fathers' position ranking in the government. 1 if commoner. | 11,706 | 1.82915 | 1.240 | 1 | 5 |
| Wealth (Num_Spouse) | Number of wives or concubines that a candidate has. | 11,706 | 1.16786 | 0.425 | 0 | 5 |
| Tax_1460s | Tax revenue for the county in year 1460 (wheat or rice, measured by <i>shi</i>) | 11,706 | 372213 | 409216 | 0 | 1730950 |
| Household_1565s | Number of households in the county around year 1565 | 9,007 | 27344 | 38043 | 220 | 189860 |
| House_dense_1565 | Number of households per km^2 in year 1565 | 9,007 | 30.15923 | 103.8649 | .0476505 | 789.6252 |

Table 3: Examination rankings on provincial and metropolitan examinations

| VARIABLES | Stage 1: Provincial Examination | | Stage 2: Metropolitan Examination | |
|------------------------------------|---------------------------------------|---------------------|---|-------------------|
| | (1) Ranking_PRE | (2) Ranking_PRE | (3) Ranking_ME | (4) Ranking_ME |
| Family political background | | | | |
| Father_Rank | 1.092** (0.363) | 0.943*** (0.280) | 1.632 (0.974) | 1.493 (1.053) |
| Family economic background | | | | |
| Wealth (Num_Spouse) | 0.0911 (0.956) | 0.334 (0.765) | -3.333 (2.451) | 0.234 (3.081) |
| Regional Controls | | | | |
| Tax_1460s | 1.099*** (0.351) | | 1.292 (1.066) | |
| Household_1565s | 0.921 (0.701) | | -0.640 (1.889) | |
| Other Controls | | | | |
| FE | Y Prov-Yr | Y County-Yr | Y Prov-Yr | Y County-Yr |
| Error | Clu Prov | Clu Prov | Clu Prov | Clu Prov |
| Observations | 7,335 | 9,534 | 7,381 | 9,604 |
| R-squared | 0.592 | 0.627 | 0.167 | 0.249 |

Note: for the regression results with a full list of controls, see Appendix 5. Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. Other controls include: age, family registration types (official, military, artisan, and commoner), dummy for imperial academy, dummy for prefecture schools, and four exam subjects (rites, poetry, Classic of Document, Classic of Changes). For the full regression table, see Appendix.

Table 4: Examination ranking in the palace examination

| Stage 3: Palace Examination | | | | | |
|------------------------------------|---------------------|---------------------|---------------------|--------------------|------------------------|
| VARIABLES | (1) Ranking | (2) Ranking | (3) Ranking | (4) Ranking | (5) Ranking_Jia |
| Family political background | | | | | |
| Father_Rank | 4.565*** (1.182) | 7.453*** (2.250) | 5.099*** (1.017) | 8.841** (3.087) | 0.0240*** (0.00510) |
| Family economic background | | | | | |
| Wealth (Num_Spouse) | -6.199* (3.239) | -1.524 (3.129) | -6.213** (2.464) | -0.248 (3.165) | -0.0329* (0.0157) |
| Interactions | | | | | |
| Father_Rank * Wealth | | -2.428* (1.296) | | -3.160 (2.013) | |
| Regional Controls | | | | | |
| Tax_1460s | 2.377 (1.605) | 2.371 (1.610) | | | 0.0110 (0.00654) |
| Household_1565s | 2.110 (1.644) | 2.140 (1.637) | | | 0.0135** (0.00593) |
| Other Controls | | | | | |
| FE | Y | Y | Y | Y | Y |
| Error | Prov-Yr | Prov-Yr | County-Yr | County-Yr | Prov-Yr |
| Observations | Clu Prov | Clu Prov | Clu Prov | Clu Prov | Clu Prov |
| Observations | 7,440 | 7,440 | 9,676 | 9,676 | 7,440 |
| R-squared | 0.171 | 0.171 | 0.250 | 0.250 | 0.057 |

Note: for the regression results with a full list of controls, see Appendix 5. Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. The list of controls includes: candidate age, family registration types (official, military, artisan, and commoner), dummy for imperial academy, dummy for prefecture schools, and four exam subjects (rites, poetry, Classic of Document, Classic of Changes). For the full regression table, see Appendix.

Table 5: Robustness - Summary statistics of three grades of CSE

| Ranking (<i>Jia</i>) | Father's rank | Wealth (Number of spouses) | Hometown tax revenue in 1460 * | #obs |
|------------------------|--------------------------|-------------------------------|-----------------------------------|-------|
| First-Grade | 2.2222222 (1.4934958) | 1.1296296 (0.33746146) | 429925.76 (474896.77) | 108 |
| Second-Grade | 1.8870305 (1.3008663) | 1.1440728 (0.40768242) | 402154.47 (447842.48) | 3,408 |
| Third-Grade | 1.7998779 (1.2086613) | 1.1782662 (0.4324898) | 358992.86 (390352.14) | 8,190 |

Notes: Hometown county tax revenue were measured in rice or wheat (*shi*).

**Table 6: Robustness check – Nonlinearity
(Fixed Effect of Age and Father’s Rank)**

| | Stage 1: Provincial Examination | | Stage 2: Metropolitan Examination | | Stage 3: Palace Examination | |
|--------------------------------------|---------------------------------------|---------------------|---|------------------|-----------------------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | Ranking_PRE | Ranking_PRE | Ranking_ME | Ranking_ME | Ranking_PLE | Ranking_PLE |
| Wealth (Num_Spouse) | 0.325 (0.773) | 0.385 (0.717) | 0.278 (3.065) | 0.499 (3.020) | -6.247** (2.494) | -5.985** (2.389) |
| Father_Rank | FE | 0.904*** (0.266) | FE | 1.568 (1.031) | FE | 5.096*** (1.086) |
| Age | -0.0625 (0.0801) | FE | -0.927*** (0.156) | FE | -0.959*** (0.230) | FE |
| <i>Fixed Effect of Father’s Rank</i> | | | | | | |
| Father_Rank=2 | 2.554* (1.266) | | 3.700 (2.348) | | 8.758*** (1.742) | |
| Father_Rank=3 | -0.566 (1.064) | | -2.429 (3.678) | | 13.91*** (3.123) | |
| Father_Rank=4 | 2.859*** (0.741) | | 6.864** (3.019) | | 12.12*** (3.352) | |
| Father_Rank=5 | 5.465** (2.298) | | 1.878 (8.110) | | 28.03*** (5.206) | |
| Controls | Y | Y | Y | Y | Y | Y |
| FE | County-Yr | County-Yr | County-Yr | County-Yr | County-Yr | County-Yr |
| Error | Clu Prov | Clu Prov | Clu Prov | Clu Prov | Clu Prov | Clu Prov |
| Observations | 9,534 | 9,534 | 9,604 | 9,604 | 9,676 | 9,676 |
| R-squared | 0.627 | 0.630 | 0.249 | 0.252 | 0.250 | 0.253 |

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. The above regressions include the full set of controls as shown in Table 3 and 4, including candidate age, family registration types, educational background, and exam subjects.

Table 7: Robustness check – Controlling for marital status

| | Stage 1: Provincial Examination | Stage 2: Metropolitan Examination | Stage 3: Palace Examination |
|-------------------------|---------------------------------------|---|-----------------------------------|
| | (1) | (2) | (3) |
| VARIABLES | Ranking_PRE | Ranking_ME | Ranking_PLE |
| Marriage (Num_Spouse>0) | 0.570 (5.452) | 20.64** (9.350) | 6.431 (9.684) |
| Wealth1 (Num_Spouse>1) | 0.542 (0.893) | -0.0188 (3.682) | -8.752*** (2.801) |
| Father_Rank | 0.942*** (0.280) | 1.491 (1.052) | 5.095*** (1.021) |
| Other Controls | Y | Y | Y |
| FE | County-Yr | County-Yr | County-Yr |
| Error | Clu Prov | Clu Prov | Clu Prov |
| Observations | 9,534 | 9,604 | 9,676 |
| R-squared | 0.627 | 0.249 | 0.250 |

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. The above regressions include the full set of controls as shown in Table 3 and 4, including candidate age, family registration types, educational background, and exam subjects. For the full regression table, see Appendix.

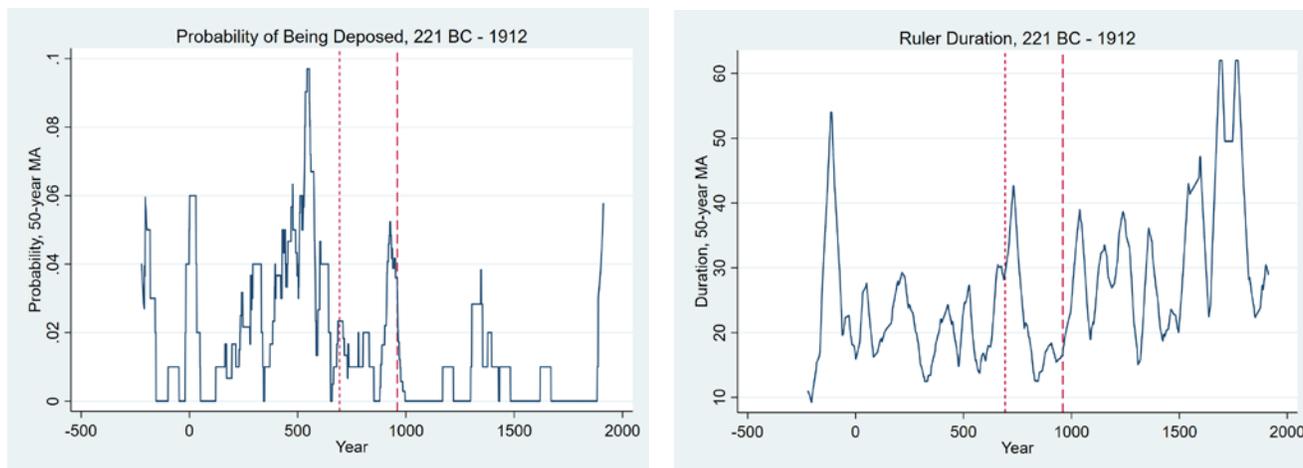
Table 8: Robustness Check – Controlling for examination rankings of previous CSE rounds

| | Stage 2: Metropolitan Examination | Stage 3: Palace Examination |
|---------------------|---|-----------------------------------|
| | (1) | (2) |
| VARIABLES | Ranking_ME | Ranking_PLE |
| Wealth (Num_Spouse) | 0.179 (3.128) | -6.537** (2.183) |
| Father_Rank | 1.410 (1.070) | 4.887*** (0.981) |
| Ranking_PRE | 0.246*** (0.0278) | |
| Ranking_ME | | 0.113*** (0.00703) |
| Other Controls | Y | Y |
| FE | County-Yr | County-Yr |
| Error | Clu Prov | Clu Prov |
| Observations | 9,676 | 9,604 |
| R-squared | 0.250 | 0.249 |

Note: Robust standard errors in parentheses. *** indicates $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. The above regressions include the full set of controls as shown in Table 3 and 4, including candidate age, family registration types, educational background, and exam subjects. For the full regression table, see Appendix.

X. Appendix

1. *Additional Evidence for Political Stability in Imperial China*



Note: the above picture (a) plots the 50-year moving average of the probability of ruler being deposed in Imperial China, while picture (b) plots the 50-year moving average of duration of rulers' reign. A ruler being deposed is defined as being forced out of power due to internal conflicts (either coup d'état or popular uprising) as compared to other natural or external causes such as natural death or foreign invasions. Both of the two pictures cover the same period from year 221 BC to 1912, spanning the whole period of Imperial China. The two dashed lines marked the two important years for the establishment of CSE.

As supportive evidence, we also use the pattern of warfare to demonstrate the importance of intra-elite conflict as opposed to other sources of political instability. The data on historical warfare comes from *The Chronology of Warfare in Dynastic China*, published by the Editing Committee of Chinese Military History and compiled from dynastic records. The chronology lists 3,756 military campaigns from 770 BCE to the end of the Qing dynasty in 1911. In this paper, we classify the wars into three categories: intra-elite conflicts, popular uprising, and war with foreign powers¹⁵. During the 1331-year period from 581 (the

¹⁵ In terms of coding the wars, (1) for each dynasty, if a war involves the government and an opposing branch led by an elite member, or two opposing branches led by elite members, it's coded as intra-elite conflict; (2) if a war involves the government and a foreign country (northern nomads, pirates in the northeast (Wo-Kou), or autonomous minority groups in the southwest), it's coded as foreign wars; (3) if a war

beginning of the Sui Dynasty) to 1911, there are 295 intro-elite conflicts, 645 popular uprising, 1101 wars with foreign powers. Figure 2 plots the average ratio of warfare due to intra-elite conflicts for every 10-year observation window from 581 to 1911. Similar to Figure 1, Figure 2 shows a clear and sharp declining trend of intra-elite warfare following the establishment of the Song dynasty.

2. Coding of the Power Transition Dataset

In this paper, we compiled data on the exits of all Chinese emperors from 221 BCE to 1911 AD. For all the exit events we have unambiguous information on, we classified them into four mutually exclusive categories of exit triggers: natural deaths, foreign invasions, intra-elite conflicts (such as military coups or power struggle at court), and peasant uprisings (i.e., a form of extra-elite conflicts).

The intra-elite conflicts could take many forms, such as power struggles at court (which sometimes ended with assassination) or military actions among different branches of the elite. A ruler is defined as “deposed due to intra-elite conflicts” if he was forced to exit power due to either one of the causes.

Our primary source is *Chronologies of Chinese Emperors and Their Families* edited by Du (1995), the most reliable and systematic source we can find on Chinese emperors. We have also cross-checked it with information on Paludan (1998), Wikipedia and the Chinese version of Wikipedia, and found various sources to be largely consistent.

Out of 242 cases of power transition during this period, 233 cases could be assigned to one of the four mutually exclusive categories with no ambiguities: 121 cases of natural deaths, 89 due to intra-elite conflicts, 20 foreign invasions, and 3 peasant uprisings. There are 9 cases that are still being debated by historians and they are classified as “unknown.”

For the purpose of this paper, we calculate two variables as proxies for political instability; the average percentage of rulers being deposed, and the average percentage of rulers being deposed due to intra-elite conflicts. Svobick (2009) and Blaydes and Chaney

involves popular uprising led by peasants or commoners, it is coded as popular uprising. For more details on the coding of the warfare, see Appendix.

(2015) have used similar measure as indicators of power struggles and systemic instability in historical or modern autocracies.

3. *Coding of the Warfare Dataset*

The data on historical warfare comes from *The Chronology of Warfare in Dynastic China*, published by the Editing Committee of Chinese Military History and compiled from dynastic records. The chronology lists 3,756 military campaigns from 770 BCE to the end of the Qing dynasty in 1911. In this paper, we classify the wars into three categories: intra-elite conflicts, popular uprising, and war with foreign groups¹⁶. During the 1331-year period from 581 (the beginning of the Sui Dynasty) to 1911, there are 295 intra-elite conflicts, 645 popular uprising, 1101 wars with foreign powers.

In terms of coding the wars, (1) for each dynasty, if a war involves the government and an opposing branch led by an elite member, or two opposing branches led by elite members, it's coded as intra-elite conflict; (2) if a war involves the government and a foreign country (northern nomads, pirates in the northeast (Wo-Kou), or autonomous minority groups in the southwest), it's coded as foreign wars; (3) if a war involves popular uprising led by peasants or commoners, it is coded as popular uprising. The following Table 8 provides the summary statistics for the Warfare dataset.

¹⁶ In terms of coding the wars, (1) for each dynasty, if a war involves the government and an opposing branch led by an elite member, or two opposing branches led by elite members, it's coded as intra-elite conflict; (2) if a war involves the government and a foreign country (northern nomads, pirates in the northeast (Wo-Kou), or autonomous minority groups in the southwest), it's coded as foreign wars; (3) if a war involves popular uprising led by peasants or commoners, it is coded as popular uprising. For more details on the coding of the warfare, see Appendix.

4. *CSE structure*

CSE acquired its widely known format—held every three years and comprising of three tournament tiers—starting with the Northern Song Dynasty (Ho, 1962). This format prevailed during Ming Dynasty and Qing Dynasty until CSE itself was abolished in 1905. In the following account, we will describe the workings of CSE during our data period in the mid- and late-Ming Dynasty.

During the Ming Dynasty, a CSE event consisted of three separate examinations held between August of the exam year and March of the following year. The first stage of CSE is known as provincial examinations (PRE), which took place in the provincial capitals. Those who succeeded at PRE then continued onto the next stage of examination, known as metropolitan examination (ME). ME was held in the national capital, typically during February of the next year. An important operative detail is that both PRE and ME were anonymized, i.e., the candidates and examiners had no identifying information of each other.

Those candidates who successfully passed the ME then proceeded to the third stage of CSE and to take the palace examination (PLE), usually in March, i.e., one month after the ME. Like the ME, the PLE was held in the national capital. A typical PLE lasted one day and was administered in the palace court (hence, the name the “Palace Examination”). An important detail is that PLE was often presided over by an emperor (a practice that Empress Wu Zetian institutionalized) and PLE was not anonymized. Unlike the ME, the PLE did not eliminate any of the examinees and they were all conferred the highest imperial academic honor, called the Jinshi (i.e., PLE degree-holders or graduates; sometimes also translated as “Presented Scholars”). All candidates taking part in the PLE were numerical rankings based on their performance. The PLE candidates were also three classes of honors (similar to Summa, Magna, Cum at some American universities). In the empirical section, we will use the examination numerical rankings as well as their levels of honors as measures of exam performances.

PRE and ME functioned as the entrance stage of bureaucratic recruitment. They were the pipelines to lower tiers of imperial bureaucracy. The anonymized procedure was intended to ensure recruiting talents without regard to the incidental factors such as genetics, family backgrounds and political connections. One way to interpret the third stage, PLE, is that the political assignment for the highest tier of the imperial system required some

identifying information about the candidates. That information came forth in two ways. One is that PLE was not anonymized; the other was that PLE was presided over by the emperor. Thus the PLE rankings were revealed preferences of the emperor (and of the imperial system at large) about the composition at the highest level of the imperial bureaucracy. We will use the PLE rankings as a measure of the political assignment effect of CSE.

Our empirical strategy exploits this institutional setting. We hypothesize that, when determining the entrance into the bureaucracy, the primary goal of the CSE was to promote political mobility and attract talents. Recruiting talented commoners into bureaucracy improved the overall quality of bureaucracy. But there was a political imperative as well. Recruiting talented commoners into bureaucracy also deprived the talents from potential opposition to the imperial regime. The potential opposition could come from disgruntled commoners, for example, potentially rebellious peasants, but also from wealth holders not subject to perfect controls by the emperor. Incorporating them into the imperial system rather than leaving them in a state of “roving bandits” enhanced the stability of the system. This is the basic insight provided in the paper by Kung (2015), an insight we largely concur with.

5. *Variable Explanation*

1) Wealth variable: number of spouses

Historians have long agreed that concubines are indicative of wealth. The best research on this topic is by Patricia Ebrey. Her book, *Women and the Family in Chinese History*, documents and details the legal, social and economic dimensions of family issues in imperial China. Although her focus was on the Song Dynasty (960-1279), Ebrey made it clear that the norms and practices that she documented in the book, including the transactional nature of concubinage, persisted throughout the imperial China.

A fundamental insight provided by Ebrey is based on a distinction between polygyny—a marriage with multiple but equal-status wives—and polycoity—a marriage involving multiple women of unequal status. It is this insight that allowed us to construct a proxy measure for wealth based on information on concubines.

These legal and social distinctions between a wife and a concubine is of vital importance for our purpose. The reason is that a marriage between a man and woman as social equals obliged the family of the wife to provide dowries. There was “an exchange of gifts” between the family of the man and the family of the woman. Thus marriage status itself provides no meaningful information on the wealth of a man’s household. Concubinage is another affair altogether. Ebrey’s observation that acquiring concubines was a function of affordability suggests that the resource transfer was unidirectional. Ebrey observed:

In most cases the families of the husband and wife were social equals. By contrast, concubines entered families through a market for female labor, one that seems to bear many similarities to the market in existence in China during the past century. Reflecting the ambiguity of their social and familial position, the acquisition of concubines was referred to as "taking them in marriage" (qu), "taking them in" (na), and, most commonly, as "buying" them (mai). Usually these arrangements were for an indefinite term (lifetime), but sometimes only for specified periods of a few years.

Ebrey also cites evidence that concubinage was sometimes used as a way for the family of a concubine to accumulate a particular form of assets, dowries, so that the woman could be married as a legitimate wife to another man. This may explain the practice of putting a concubine on a fixed-term contract to facilitate resource transfers from a wealthy man’s household to a poor woman’s household. Another piece of evidence is a Chinese version of Veblenian conspicuous consumption—acquiring concubines to showcase a man’s wealth. Ebrey stated:

Affines could be of great value in political careers, and men with wealth were willing to use some of it to build up useful networks. At the same time, the increase in the circulation of money, the growing prosperity of merchants, and the growth in the size of the shidafu stratum all seem to have led to an increase in the demand for luxury items, prominent among which were the sorts of women who could be bought (courtesans, concubines, maids).

Ebrey’s research shows that concubinage was likely to be correlated with a measure that unambiguously denotes wealth—the number of maids in a household. Ebrey explained some of the similarities and differences between concubines and maids. Both were acquired through commercial channels and both had a similar social status in the household. The male master often renamed his concubines and maids, but never his wife. Records of names of concubines often show that their names contained “nu,” i.e., slave. “This is indicative of the proprietary power of the master,” Ebrey concluded.¹⁷

The CBDB dataset contains information on the marital status of the CSE examinees. One variable is denoted as the “name (family name) of the wife” (Q_i), while a second variable as “the name(s) of any additional wife” ($Xu-Q_i$). In this paper, we use those two variables to construct a count of “number of spouses.” Then, we constructed two wealth proxy variables based on the *Num_Spouse* measure. For the main section, we use “the number of wife or concubines” as a measure of family wealth (variable *Wealth*). This is likely to underestimate the magnitude of family impact, since the wealth level of an unmarried candidate may not be significantly different from a candidate with one wife. In robustness checks, to further distinguish the difference between the effect of marital status and the effect of wealth (as proxied by number of concubines), we segmented all the CSE candidates into three groups: 1) Single (zero count in the CBDB), 2) Married (a count of one in the CBDB), and 3) Multiple partners (a count of multiple wives in the CBDB). The wealth differential is the sharpest between Group (1) and Group (2).

6. *The Full Regression Tables*

1) Main Results

This section provides the full regression tables for the tables in the main empirical section.

¹⁷ The difference between a concubine and a maid, of course, has to do with the presence and the absence of a sexual relationship between the male master and the woman.

Full Table for Table 3

| VARIABLES | (1) Ranking_ME | (2) Ranking_ME | (3) Ranking_PRE | (4) Ranking_PRE |
|---------------------------------|-------------------------|----------------------|---------------------------|----------------------|
| Political Background | | | | |
| Father_Rank | 1.652 (0.986) | 1.493 (1.053) | 1.089** (0.366) | 0.943*** (0.280) |
| Economic Background | | | | |
| Wealth (Num_Wife) | -3.397 (2.447) | 0.234 (3.081) | 0.102 (0.974) | 0.334 (0.765) |
| Regional Controls | | | | |
| Tax_1460s | 1.88e-06 (2.78e-06) | | 3.88e-06*** (7.44e-07) | |
| Household_1565s | -2.78e-05 (4.81e-05) | | 2.34e-05 (1.40e-05) | |
| Family Registration Type | | | | |
| Official | 7.576 (6.299) | -4.064 (6.079) | 3.742 (2.549) | 2.186 (3.190) |
| Military | 2.931 (2.506) | 0.547 (2.629) | 0.131 (0.940) | 0.221 (1.019) |
| Artisan | 7.895 (8.606) | 7.841** (3.317) | 3.915*** (1.252) | 0.364 (1.595) |
| Other Controls | | | | |
| Age | -0.987*** (0.200) | -0.943*** (0.154) | -0.0893 (0.0923) | -0.0717 (0.0816) |
| D.Imperial Academy | 8.375*** (1.603) | 3.814 (2.167) | -1.533 (0.872) | -1.734 (1.167) |
| D.Prefectural School | -0.382 (2.303) | -3.037 (2.624) | 2.044 (1.200) | 2.123* (1.164) |
| Exam Subjects | | | | |
| D.Rites | 3.040 (5.444) | -0.309 (3.266) | 2.251* (1.230) | 3.317*** (1.030) |
| D.Poetry | 2.979 (3.957) | 2.213 (3.853) | -4.912*** (0.974) | -4.733*** (1.032) |
| D.Document | 6.337 (4.067) | 5.384 (4.095) | -2.633** (1.149) | -2.084* (1.129) |
| D.Change | 0.348 (3.791) | -1.826 (3.824) | -4.372*** (1.276) | -3.173*** (0.702) |
| Constant | 82.97*** (7.136) | 28.25*** (7.579) | 211.0*** (6.170) | 198.9*** (5.080) |
| FE | Prov-Yr | County-Yr | Prov-Yr | County-Yr |
| Error | Clu Prov | Clu Prov | Clu Prov | Clu Prov |
| Observations | 7,400 | 9,604 | 7,354 | 9,534 |
| R-squared | 0.168 | 0.249 | 0.591 | 0.627 |

Full Table for Table 4

| VARIABLES | (1) Ranking_PLE | (2) Ranking_PLE | (3) Ranking_PLE | (4) Ranking_PLE | (5) Ranking_PLE |
|---------------------------------|---------------------------|---------------------------|----------------------|----------------------|----------------------|
| Political Background | | | | | |
| Father_Rank | 4.629*** (1.132) | 7.553*** (2.238) | 5.099*** (1.017) | FE | FE |
| Economic Background | | | | | |
| Wealth (Num_Wife) | -6.108* (3.198) | -1.376 (3.120) | -6.213** (2.464) | -6.418** (2.256) | -6.247** (2.494) |
| Interactions | | | | | |
| Father_Rank * Wealth | | -2.459* (1.318) | | | |
| Regional Controls | | | | | |
| Tax_1460s | 8.80e-06*** (2.34e-06) | 8.80e-06*** (2.34e-06) | | | |
| Household_1565s | 4.15e-05 (4.03e-05) | 4.26e-05 (4.03e-05) | | | |
| Family Registration Type | | | | | |
| Official | 4.245 (6.347) | 4.295 (6.330) | -2.873 (6.151) | 1.951 (6.103) | -3.183 (5.978) |
| Millitary | 1.067 (1.835) | 1.071 (1.812) | -1.060 (2.160) | 0.0518 (1.696) | -1.065 (2.191) |
| Artisan | 6.916 (5.871) | 6.951 (5.931) | -2.111 (3.620) | 4.121 (4.910) | -2.028 (3.671) |
| Other Controls | | | | | |
| Age | -0.945*** (0.234) | -0.939*** (0.234) | -0.961*** (0.229) | -0.940*** (0.164) | -0.959*** (0.230) |
| D.Imperial Academy | 8.448*** (2.242) | 8.423*** (2.247) | 6.337** (2.506) | 8.793*** (2.462) | 6.279** (2.490) |
| D.Prefectural School | 4.191 (4.221) | 4.127 (4.214) | 1.289 (4.612) | 4.703 (3.707) | 1.299 (4.617) |
| Exam Subjects | | | | | |
| D.Rites | 1.419 (6.623) | 1.513 (6.673) | -6.094 (4.324) | -1.407 (5.254) | -6.096 (4.302) |
| D.Poetry | -0.221 (4.349) | -0.229 (4.357) | -3.908 (5.111) | -0.246 (3.706) | -3.755 (5.110) |
| D.Document | 5.441 (4.776) | 5.450 (4.809) | 2.539 (4.431) | 5.470 (4.226) | 2.650 (4.387) |
| D.Change | -1.326 (5.145) | -1.406 (5.157) | -6.024 (5.093) | -1.139 (4.483) | -5.753 (5.125) |
| Father's Rank FE | | | | | |
| Father_Rank=2 | | | | 5.729*** (1.571) | 8.758*** (1.742) |
| Father_Rank=3 | | | | 12.34*** (3.216) | 13.91*** (3.123) |
| Father_Rank=4 | | | | 12.27*** (3.067) | 12.12*** (3.352) |
| Father_Rank=5 | | | | 29.77*** (6.166) | 28.03*** (5.206) |
| Constant | 77.25*** (8.810) | 72.18*** (8.949) | 105.5*** (8.654) | 84.31*** (8.601) | 110.6*** (8.654) |
| FE | Prov-Yr | Prov-Yr | County-Yr | Prov-Yr | County-Yr |
| Error | Clu Prov | Clu Prov | Clu Prov | Clu Prov | Clu Prov |
| Observations | 7,459 | 7,459 | 9,676 | 9,676 | 9,676 |
| R-squared | 0.171 | 0.172 | 0.250 | 0.170 | 0.250 |

2) Robustness checks

This section provides the full regression tables for results in robustness checks.

Full Table for Table 7

| VARIABLES | (1) Ranking_PRE | (2) Ranking_ME | (3) Ranking_PLE |
|-------------------------|----------------------|----------------------|----------------------|
| Marriage (Num_Spouse>0) | 0.570 (5.452) | 20.64** (9.350) | 6.431 (9.684) |
| Wealth1 (Num_Spouse>1) | 0.542 (0.893) | -0.0188 (3.682) | -8.752*** (2.801) |
| Father_Rank | 0.942*** (0.280) | 1.491 (1.052) | 5.095*** (1.021) |
| Other Controls | | | |
| Official | 2.177 (3.287) | -3.525 (5.921) | -2.437 (5.925) |
| Military | 0.379 (1.092) | 0.522 (2.560) | -0.836 (2.111) |
| Artisan | 0.356 (1.593) | 7.850** (3.305) | -2.085 (3.571) |
| Age | -0.0803 (0.0784) | -0.971*** (0.151) | -0.974*** (0.228) |
| D.Imperial Academy | -1.667 (1.168) | 3.826* (2.150) | 6.485** (2.460) |
| D.Prefectural School | 2.278* (1.127) | -2.977 (2.680) | 1.575 (4.668) |
| D.Rites | 3.304*** (1.008) | -0.130 (3.340) | -5.934 (4.233) |
| D.Poetry | -4.756*** (1.047) | 2.047 (3.789) | -3.790 (5.103) |
| D.Document | -1.996* (1.062) | 5.408 (4.040) | 2.657 (4.392) |
| D.Change | -3.192*** (0.660) | -1.955 (3.790) | -6.333 (5.165) |
| Constant | 198.6*** (5.921) | 29.26*** (6.822) | 101.3*** (7.487) |
| FE | County-Yr | County-Yr | County-Yr |
| Error | Clu Prov | Clu Prov | Clu Prov |
| Observations | 9,493 | 9,564 | 9,633 |
| R-squared | 0.626 | 0.248 | 0.249 |