Origins of power actors in historical China:

How war made some regions produce more political elites than others

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Abstract

Political elites have a significant impact on the trajectory of socioeconomic development. However, the reasons behind the geographical clustering of political elites have not been rigorously explored. In our study, we focused on historical China and utilized a unique dataset covering senior officials from 618 to 1911 CE. Our findings indicate that the regional disparity in producing political elites can be attributed to past war exposure. Specifically, wars with external regimes have been more likely to provide officials with military experiences. To establish causality, we employed regional distances to the strongholds of short-lived or external regimes as an instrumental variable. War has played a crucial role in the rise of political elites, operating through three main channels. Firstly, the state's investment in administrative and defensive capacity has created opportunities for individuals to attain public offices. Secondly, war has facilitated access to the bureaucratic system, allowing individuals with military experiences to become officials. Lastly, the formation of clans has also played a significant role in the elevation of political elites. Our study contributes to the ongoing discussions regarding the concept of "war made the states" by examining the impacts of wars on the bureaucracy. Furthermore, it presents a paradigm of "war-and-power redistribution" within a strong autocratic state that lacks a modern parliamentary system.

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1. Introduction

Political elites, manifested by bureaucrats, could shape the trajectory of state's development and economic growth (Weber, 1978; Amsden, 1989; Evans and Rauch, 1999; Besley et al., 2022). Recent research has aimed to uncover the mechanisms through which the most powerful political elites influence socioeconomic outcomes including exerting personal networks (Bai, Jia, and Yang, 2023), directly affecting policy-making (Olken and Jones, 2005), and serving as role models to change social norms (Acemoglu and Jackson, 2015; Dippel and Heblich, 2021; Cagé et al., 2023). It is evident that regions that produce more elite leaders enjoy greater power in shaping historical events. However, it remains unclear whether all regions within a country contribute an equal share of power actors and, consequently, have the same impact. If not, what factors determine why some regions cultivate more political elites than others?

In our study, conducted within the historical context of China, we provide evidence that past war experience is a crucial factor in determining the distribution of power across regions and the formation of political human capital, following the logic of Weber (1978) and Tilly (1975) that military conflicts could stimulate state-building, particularly through the emergence of professional bureaucracy. A motivating case is Chinese Hunan province that had been playing marginal roles in national politics for most of late imperial China. However, the Taiping Rebellion (1850−1864), the deadliest civil war in human history, reversed Hunan's fortune as the war launched several prominent Hunanese political elites, including Zeng Guofan (1811−1872) and his fellow Zuo Zongtang (1812−1885) onto the national stage. Starting with Zeng and including Chairman Mao (1893−1976), Hunanese patriots led almost every major reform and revolutionary movement, from the launching of the Self-Strengthening Movement in the 1860's to the reconquest of northwestern China, from the revolution of 1911 to the rise and success of the Communist Revolution of the twentieth century (Platt, 2007). In a recent insightful study, Bai, Jia, and Yang (2023) elucidate how the Taiping war recreated Zeng and his long-lasting legacy in modern China's power distribution. After the Taiping Rebellion began in Guangxi in 1850, the war quickly spread to Hunan, forcing localities across the province to form local militias (Kuhn, 1970), which provided the critical foundation for Zeng to be given charge in 1853 to re-organize the militias into the Hunan Army and take on the Taiping rebels. Relying on his network of close friends, Zeng was able to recruit soldiers widely in the province, making his Hunan Army reach some 132,000 warriors at its peak during 1853−1864. The Hunan Army and Taipings fought more than 600 battles across southeastern China, to eventually suppress the Rebellion by 1864. According to Bai, Jia, and Yang (2023), while Zeng was not the only one with a strong social network and there were also militia groups in other provinces at the time, it is the combination of his being Hu-nanese, Hunan's suffering from the Taiping war, his deep social network and his success in ending the Rebellion that enabled him and his Hunanese comrades to win high praise in the empire, giving them, as well as their descendants and provincial patriots, unquestioned power to change Chinese history over the subsequent one and a half centuries. In this case, war presented opportunities for an affected region to obtain disproportionally more power at the national level.

Even in contemporary China, years of fighting between the Chinese Communist Party (CCP) and the KMT (*Kuomingtang*) troops ended with the CCP winning to found the People's Republic of China (PRC) in 1949. Afterward, CCP figures who contributed dearly to the preceding Revolutionary War, such as Chairman Mao and Deng Xiaoping, naturally held the power to rule, which has been intergenerationally transmitted to this day (Lee, 1991; Brown, 2014; Zhang, 2019). In particular, regions where major battles took place during the CCP Revolutionary War contributed more warriors, resulting in these places being rewarded with disproportionally more power in the PRC era, as illustrated in the "southbound cadres" of the 1950's (Lee, 1991).

In both examples given above, war played a key role in selecting who would subsequently possess elite power to reshape and govern the society. But, are these cases historical aberrations, or manifestations of a general historical pattern? We choose historical China as the setting to empirically prove the general validity of the claim that war made power elites in each region, based on two considerations. First, we need a country setting where the positions of power in its bureaucracy are clearly identified and specified. After founding the first unified empire, the Qin dynasty (221−206 BCE) abolished the pre-existing feudal system that delegated independent governance power to the head of each fiefdom and replaced it with a centrally controlled bureaucracy in which counties were at the bottom of the hierarchy whose chief administrators were appointed by the emperor at the top. Kuhn (1990) calls

China's post-221 BCE autocratic system a "bureaucratic monarchy". Political elites in autocratic states are known to have more influence on policy and society (Jones and Olken, 2005). Second, equally importantly, China began its tradition of systematic record-keeping soon after launching its centralized bureaucracy, making it possible for us to obtain data for senior officials (political elites), war and other explanatory variables. Among biographical data, information on each political elite's birthplace is crucial to our analysis.

Specifically, since administrative zoning changed multiple times in historical China, we divide China Proper's landmass into 100 km × 100 km grid-cells and treat each cell as the basic unit of analysis.[2] To investigate the impact of military-political shocks on the distribution of political elites in historical China, we focus on four major dynasties: the Tang (618−907), the Northern Song (960−1127), the Ming (1368−1644), and the Qing (1645−1911). Birthplace data for political elites are systematically available from the Tang dynasty onwards, so we limit our analysis to these four dynasties. To construct a panel dataset with sufficient inter-temporal variations, we further employ the major military-political shock in each dynasty as the breakpoint, to divide the 1.5 millennia period from 618 to 1911 CE into shorter periods, with each period covering approximately 150 to 180 years. We also include the last half-century of the Qing dynasty from 1861 to 1911 as the final period of interest, which saw the Taiping Rebellion and various modernization-related changes.

In our analysis, we geo-match each political elite, specifically senior officials at rank five or above, to the corresponding grid-cell for each given period. By summing the number of political elites within each cell, we calculate the senior official density, which represents the concentration of political elites in that region. Since each grid-cell has the same area size, this approach allows us to compare the distribution of political elites across different regions. To capture the historical war exposure of each region, we use the wars that occurred in the last century as a proxy. We introduce this time lag to address potential issues of reverse causality. Controlling for various confounding factors and fixed effects, our panel regressions demonstrate that regions with a higher number of past wars produced more political elites. This finding

[2] "China Proper" refers to territories governed under the centralized province-county bureaucracy as of 1820 CE, excluding frontier areas that had alternative forms of administration.

suggests that past war experience played a crucial role in determining a region's ability to cultivate local power actors and shape national as well as subnational policies.

To address concerns about omitted variables and measurement error, we conduct an instrumental variable (IV) analysis using a two-stage least squares (2SLS) approach. In this analysis, we use the shortest distance from each grid-cell to the strongholds of either short-lived regimes or external forces that invaded the Sinic states one period before as the instrumental variable. The rationale behind this IV approach is that the location choice of the strongholds for short-lived regimes and external forces is likely driven by idiosyncratic factors that are orthogonal to the unobservables. Therefore, this IV captures the exogenous determinants of each region's exposure to both civil and foreign wars. Additionally, regions that are closer to the strongholds are more likely to be war prone. Utilizing this IV, we establish a causal relationship between past war experience and the rise of political elites, while mitigating potential endogeneity issues.

Building on the rich information in our dataset, we delve into the relationship between different types of wars and the emergence of officials with differentiated backgrounds. We find that regions with a higher historical exposure to foreign wars are more likely to produce officials with military backgrounds. This finding prompts us to explore the potential channels through which past war experience leads to an increased ability to cultivate native political elites.

In line with Tilly's (1975) proposition that war played a crucial role in the formation of the state, we explore the potential channels through which past war experience led to an increased ability to produce political elites in different regions. One possible channel is the development of stronger administrative institutions in regions with higher war exposure. As the state emerged or expanded during periods of war, there was a need for administrative institutions to enhance state capacity and maintain social order. Regions with more war experiences may have responded by establishing additional counties to intensify the government's control over rebellious areas. This increase in county density would create more positions of power within the region, providing more opportunities for local individuals to be promoted and increasing their share in the national power distribution. This pattern can be observed in historical examples such as the Qin state (770−221 BCE), which structured its network of prefectures and counties to match the importance of each region (Kiser and Cai, 2003; Sanft, 2013).

To capture the state's administrative capacity in each region, we follow Sng (2014) and employ the number of counties at the grid-cell level as a proxy. Consistent with our hypothesis, we find that regions with a higher number of past wars tend to have higher county densities. These results hold even when we use the areas of walled cities as an alternative proxy for administrative capacity. Furthermore, we examine the presence of military garrisons as a proxy for defensive capacity, which also indicates a heavier presence of state institutions. We find that regions with more past wars had a greater number of military garrisons stationed, suggesting that the development of state institutions provided more opportunities for locals to acquire positions of power (Dincecco and Wang, 2018). Overall, our findings suggest that the establishment and strengthening of administrative and defensive institutions in regions with higher civil and foreign war exposure played a significant role in increasing their ability to produce political elites.

The second channel we examine is the provision of access to the bureaucratic system. We focus on two types of official-selection measures that were prevalent during our observation period. The first measure is aristocracy membership, which refers to the membership of the ruling class. Entry into the aristocracy was often linked to recent war achievements, creating a system of "military meritocracy" that was particularly prominent before the Song dynasty (Ebrey, 2010). Elite families with military success were almost guaranteed powerful positions in the bureaucracy for generations. The aristocracy channel directly links a region's past war exposure to its representation in the power actor club, as regions with more frequent wars would have a higher likelihood of yielding successful warriors. Using data from the Dunhuang Manuscript, we demonstrate that regions with more past wars indeed had a higher number of aristocratic families by the mid-Tang dynasty. The second measure we examine is the number of quotas that determined the success rate of passing the Civil Examination (keju). The Civil Examination had become the dominant institution that replaced the military meritocracy for admitting individuals into the scholar-official class since the Northern Song dynasty (Kracke, 1947; Chaffee, 1995). The number of quotas determined the level of competition and the chances of individuals from a particular region being admitted into the bureaucracy. By examining this measure, we aim to understand how past war experience may have influenced the success rates of individuals from different regions in entering the scholar-official class. Again, we find a significant and positive association between each region's past war exposure and the number of quotas assigned, indicating that war threat has been a significant determinant for power redistribution, regardless of the changes of official-selection institutions.

Finally, it is possible that frequent wars prompted locals to become more organized and form joint defense against future threats. For example, locals in war-torn regions might desire to solidify their kinship networks and structure their clans more cohesively by constructing ancestral halls and compiling clan genealogy, which efforts would enhance intra-clan resource-pooling (Chen, Ma and Sinclair, 2022), thus allowing more descendants to enter the bureaucracy and ruling class via the civil service examinations, or *keju* (Kracke, 1947; Hartwell, 1982; Chaffee, 1995; Chen et al, 2020). Regions with more past wars are indeed found to have formed more clans, and achieved more *jinshi* (the highest degree awarded in the *keju* exams) supporting the clan-building channel through which war led to political elites.

Our work contributes to the discussions related to the relationship between war and state-building (e.g., Tilly, 1975; Dincecco and Prado, 2012; Gennaioli and Voth, 2015). Tilly (1975) shows that war made the state; but it is not clear where state actors come from and why some regions have more natives in the ruling circle. We offer strong evidence that a region's extent of past war exposure has a significant bearing on its ability to place natives in the nation's governance circle. The effect of past wars on political human capital formation is manifested through multiple channels.

Our paper also adds to the literature on state capacity (e.g., Sng, 2014; Besley and Persson, 2008 and 2010; Hendrix, 2010). It is still not well understood why a country's spatial distribution of government institutions is what it is, what determined the regional allocations of government resources, and why state capacity was weak in some regions but not in others. We offer war experience as a driver of such outcomes. Finally, our research provides new insights on the long-term impact of war on socioeconomic and political development (Angrist and Johnson, 2000; Bellows and Miguel, 2009; Blattman and Miguel, 2010; Turchin *et al*, 2013; Cesur and Sabia, 2016). War brings death, suffering and horror to human societies, which is precisely why our ancestors had innovated hard to both prevent war from happening and be prepared to fight it when it occurred, thus leading to various ramifications and effects. Our exploration demonstrates that war not only affected a nation's distribution of power, but also impacted the character of local human capital as well as socioeconomic development opportunities for centuries to come.

The remainder of the paper is organized as follows. Section 2 highlights the historical background for this work and presents the spatial distributions of each cell's cumulative wars and senior official density for each historical period, respectively. Section 3 describes the data sources and the construction of the variables. The cross-sectional and panel regression analyses are conducted in Section 4, including both the baseline and robustness results. The instrumental variable exercise is performed in Section 5. Investigation into the various channels and mechanisms is the focus of Section 6. The last section offers concluding remarks.

2. Historical Background

2.1. War Patterns in Historical China

Sedentary agriculture was independently invented in China some 9,000 years ago, but the written language developed much later, around 1500 BCE. As a result, historical war records are not available for periods prior to 770 BCE, making it hard to have an exact estimate of both prehistoric war frequency and its spatial distribution. Nonetheless, Chen, Turchin, and Wang (2023) use each region's number of archaeologically excavated military grave goods from the Neolithic (8000–1700 BCE) as a proxy for the region's prehistoric war exposure, assuming that local residents would not have cared to take weapons into their graves unless war was an important part of their livelihood. They find that due to both the flatter terrains and more volatile rainfall conditions in northern China (defined as the Yangtze River valley and the land north of it), most of the Neolithic military grain goods, and hence most wars, were located in northern China, which was the major reason why the early Chinese civilization originated there rather than in the south. Their exercise further demonstrates a concentration of military conflicts in northern China even during the Spring and Autumn as well as the Warring States period (475-221 BCE).

These patterns are understandable. First, geographically, the flatter terrains in the north made the sedentary communities easier targets to attack militarily but more difficult to defend, resulting in more wars there than in the more mountainous south (Chen, Turchin, and Wang, 2023). Second, the Yellow River made the flat North China Plain prone to frequent flooding, causing many domestic wars in the north. Third, there have long been higher weather volatility in the north, leading to substantially more drought and flood occurrences and, consequently, more civil rebellions there (Lattimore, 1940; Bai and Kung, 2011; McGuirk and Nunn, 2020). Lastly, since the Warring States period, the steppe nomads in Central Asia had posted a constant threat to the settled farmers in the Central Plains, further increasing the number of wars in northern China (Bai and Kung, 2011; Ko et al., 2014).

Figure 1 displays the frequency of wars from 468 AD to 1911 AD. Our war data is sourced from China's Military History Editorial Committee (2003). We utilize kernel density to showcase the war frequency, rather than absolute values, to address the issue of less detailed records for early wars compared to later ones. From Figure 1, it is evident that the occurrence of wars exhibits clear periodicity. Generally, there is a peak of war outbreaks every 150 to 180 years. We identify seven significant time points of war peaks, namely 617 AD, 762 AD, 959 AD, 1367 AD, 1522 AD, 1680 AD, and 1860 AD. These seven time points correspond to seven representative wars: the founding war of the Tang Dynasty, the An Lushan-Shi Siming Rebellion, the founding war of the Northern Song Dynasty, the founding war of the Ming Dynasty, the mid-Ming period peasant uprisings and Japanese pirate activities, the early Qing Dynasty wars (the "Three Feudatories' Revolt"), and the Taiping Rebellion. Hence, in the subsequent regression analysis, we choose these seven years as breakpoints to construct the panel dataset.

2.2. Evolution of the Official-Selection Logic

Imperial China is known to have a long tradition of centrally directed bureaucratic governance, in which officials, or bureaucrats, appointed by the emperor, rather than feudal lords or priests, were the main power actors making policies and deciding on civilian as well as military matters. Although the administrative system underwent constant changes over time, one unchanging aspect is that almost all official positions were held by bureaucrats, which is why Philip Kuhn calls this system of governance a "bureaucratic monarchy" (Kuhn, 1990). Today, China is still governed under such a structure (Zhou, 2022).

The intense inter-state military competition during the Warring States is regarded as the main cause for the rise of China's bureaucratic system (Hui, 2005; Zhao, 2015). Prior to this period, the hereditary feudal system held sway over the territory. However, the endless warfare forced the competing states, numbered over one hundred at times, to implement reforms, with the reforms by Shang Yang (390−338 BCE) in the Qin state being the most prominent example (Kiser and Cai, 2003; Sanft, 2013). Specifically, as proposed by Shang Yang, the Qin state established a military meritocratic system that allowed commoners to be promoted as officials based on their military achievements, linking one's power to his performance in war (Sadao, 1961). For local governance, the reforms introduced a system of counties ("*xian*") each headed by bureaucrats, appointed for their military merits, rather than by feudal lords (Yan, 1961). These warfare-driven reforms were fundamentally important for Qin's ability to mobilize resources and successfully conquer all the other competing states, to unify China in 221 BCE, after which the first emperor of the Qin dynasty (221-206 BCE), Qin Shihuang, formally structured the country's administrative system into three tiers, with the central government at the top, 36 territorial prefectures ("*jun*") in the middle, and about 1,000 counties at the bottom (Zhou, 2005), of which the heads were all directly appointed by the emperor. Since then, China has maintained a bureaucratic monarchy for state governance at least until the twentieth century.

Although the Qin dynasty was short-lived because of its tyrannic rule that led to widespread peasant uprisings, its successor, the Western Han dynasty (206 BCE−9 CE), initially inherited the military meritocratic system, still linking senior official assignments to war performance. Nonetheless, as the Han dynasty experienced enduring peace with lower frequencies of war (Chen, Hu and Lin, 2022), its central government adopted alternative methods to select officials. For example, to recruit power actors, it later implemented the Commandery Quota System (allocating a quota to each local government for proposing bureaucratic candidates to the central government) and the Internal Recommendation System (enabling bureaucrats in the central government to directly admit talented commoners and local elites into the bureaucratic system) (Yan, 1992).

The Western Han's transition in state governance from a military merits-based to a professional merits-based system did not sustain for long. Emperor Guang Wu, the founding emperor of the Eastern Han dynasty (25−220 CE), reverted back to the familiar military meritocracy by putting his collaborators in powerful positions based on their war achievements, thus creating aristocratic families that retained power through generations. After the collapse of the Han in 220 CE, its succeeding dynasties during the 220-589 CE switched back again to versions of professional meritocracy by implementing the Nine-Rank System, a highly-institutionalized system in which local governments ranked candidates into nine grades and the emperor granted official positions accordingly (Ichisada, 1958). Although their positions were not inheritable, their esteemed status and the associated land granted by the emperor were often passed down through generations, thus creating *de facto* hereditary aristocratic families with their members effortlessly enjoying high rank positions.

The period of division came to an end in 589 CE when the Sui dynasty (581-618 CE) was founded, reunifying the country. While those warriors who contributed significantly to the wars leading up to the reunification were awarded with senior positions, the new government introduced a civil service exams-based system for selecting officials, which has been referred to as the *keju* system. This system was subsequently continued and revised during the Tang dynasty (618-907 CE). But, during both dynasties, only descendants of aristocratic families were qualified to take the exams, with sons of commoner and business families excluded. The Song dynasty (960−1279) modified the *keju* system substantially by opening it to commoner candidates, institutionalizing it as a three-level examination process, and increasing the number of official positions to be filled by degree winners from the *keju*. These changes gave commoners a chance to become state officials through examinations, breaking the monopoly of aristocratic clans on power (Kracke, 1947; Hartwell, 1982; Chaffee, 1995). Typically, *keju* degree winners had to wait in a queue for assignments to positions of power, with most initial appointments being relatively junior posts in the central, prefectural or county-level government. Official positions in the hierarchical bureaucracy were classified into nine ranks according to importance, ranging from the grand chancellor down to county-level officials, with a delicate system for performance assessment that was used for promotion and dismissal decisions. The *keju* system stayed in place for all subsequent dynasties until it was abolished in 1905.

Figure 2 demonstrates the development of China’s official selection system. Noted that most senior officials have *keju* experience since the Tang dynasty (618−907).

During the Tang dynasty, more than 80% of chancellors held the *jinshi* title. This percentage increased to around 90% during the Song dynasty (960−1279) and the Ming dynasty (1368−1644) (Cho, 1987; Zhang, 1993). It is notable that an increasing number of jinshi were born in commoners' families. According to Ho (1962), about 53% of jinshi were from commoner families in the Song, 47.5% in the Ming, and 37.2% in the Qing.

Though the official selection institutions changed from one dynasty to another, it did not alter the general trend of expanding the elite selection pool to include more regions and more social classes, hence providing upward mobility for commoners. Thus, the switch from military merits-based aristocracy to professional meritocracy at least partly explains why the south has become increasingly more important in shaping China's history since the Song (Kracke, 1947; Hartwell, 1982; Chaffee, 1995). This gradual switch may also be why the Chinese society has been less rigid in class structure than Europe (Fairbank and Goldman, 2006). Even given the said transition, we will show that war still matters in the sense that a region's past war exposure remains a significant determinant of its ability to put more sons in powerful places, not just in history but also today.

The red bubbles in Figure 3 demonstrate the spatial distribution of senior officials in different historical periods (with data sources and construction method to be detailed in Section 3.1), while the green color denotes the frequency of wars taking place from around one century before. These maps show a clear positive correlation between a region's number of senior officials by birth and its historical war exposure, which motivates us to conduct the rigorous tests in Section 4.

3. Data

Given that the administrative zonings in ancient China have been constantly changing, we divide its present-day landmass within China proper into 100 km×100 km grid cells (487 in total) as our basic unit of analysis. To maintain geographic consistency in our analysis, we convert all datasets to cell level.

3.1. Outcome Variables

Our outcome variable is the number of senior officials employed at the fifth rank or above within each cell, normalized by the population scale. Our sample only includes the relatively stable and unified periods of dynastic China, including the Tang

(618−907), the Northern Song (960−1127), the Ming (1368−1644), and the Qing (1645−1911), excluding the divided periods and short-lived dynasties. We employ the breakpoints mentioned in Section 2.1 to divide our period of interest into seven shorter periods, including 618 to 762, 763 to 907, 960 to 1127, 1368 to 1522, 1523 to 1680, 1681 to 1860, and 1861 to 1911.

Our data on the senior officials are hand-collected from the China Biographical Database (CBDB) maintained by Harvard University, Academia Sinica, and Peking University (2021). Specifically, we only record officials who served in the national bureaucratic system, excluding other titleholders such as hereditary nobles and harem eunuchs. Each official is counted only once for a given period, regardless of the length and number of his or her appointments. In this case, our dataset includes 3,278 officials from the Tang, 1,032 officials from the Song, 2,226 officials from the Ming, and 1,490 officials from the Qing.

3.2. Explanatory Variables

War acts as a driving force for the development of state-building in China while simultaneously leading to disparities in the number of officials across different regions. Our war data comes from the records of China's Military History Editorial Committee (2003), covering every war from 468, which is 150 years before the establishment of the Tang dynasty, to the collapse of Qing in 1911. Based on these records, we identified the location of each war and matched them to each cell.

3.3. Controls

We control for a vector of covariates that could also affect both our explanatory and outcome variables. We have considered two types of control variables with respect to regional development and natural geography.

Population Density. Population density is a commonly adopted proxy for economic prosperity ahead of industrialization, which could fundamentally affect both the frequency of conflicts and the number of political elites produced. We obtain population records from various sources: Dong (2002) for 754 of the Tang; Wu (2000) for 976 and 1102 of the Song; Cao (2001) for 1393 and 1580 of the Ming, and 1820 and 1910 of the Qing.

Agricultural Productivity. In ancient China, agricultural productivity was crucial in determining local development. Hence, we follow Galor and Ozak (2016) and construct a respective Caloric Suitability Index for rice, foxtail millet, and wheat as our control variables. The introduction of American crops such as maize and sweet potatoes significantly impacted China's agricultural structure during the Qing dynasty (Jia, 2014). Therefore, in our analysis of the Qing and contemporary China, the suitability of these two crops has also been included.

River Distance. As in Egypt and Mesopotamia, the early Chinese state emerged along the two largest rivers, the Yellow and Yangtze Rivers, and their main branches (Xu, 2017). The long-standing status of the Yangtze River and the Yellow River as the centers of governance in ancient China necessitates the consideration of their influence on our outcome variables. We adopt the shortest distance from each cell's centroid to these two rivers to capture the effect because proximity to significant rivers provided more water resources, possibly more fertile soil, and convenient transportation and logistics routes crucial for military operations and interregional commerce.

Steppe Distance. Proximity to the Eurasian steppe is associated with warfare, with security threats from the nomads (Currie et al., 2020). Thus, regions adjacent to the steppe may not always be within China's jurisdiction, and the ethnic composition of these regions is relatively diverse. This could have impacted our outcome variables. We adopt the steppe data from the Plant Data Center of the Chinese Academy of Sciences (2021) and calculated the shortest distance from each cell's centroid to the steppe as a control variable.

Coast Distance. The proximity to the coast may significantly impact the potential for commercial development, particularly after the emergence of the Maritime Silk Road. Commercial development may promote the accumulation of human capital and potentially reduce locals' willingness to serve as bureaucrats. Hence, we calculated the distance from the centroid of each cell to the ancient coastline using data from the Harvard Worldmap ChinaX project as our control variable.

Longitude and Latitude. China has a vast territory with significant differences in climate and precipitation between the east and west, as well as north and south. However, it is not easy to directly measure the climate and precipitation during different periods. Therefore, we controlled for the longitude and latitude of each cell's centroid as a proxy variable for climate, precipitation, and other locational fundamentals. We report the summary statistics of all these variables in Appendix Table A1.

4. War and the Rise of Political Elites

4.1. OLS Estimates

To assess the impact of war on the emergence of political elites within our observation period (618–1911), we begin our baseline estimate with the following ordinary least squares (OLS) regression:

$$Officials_{i,t} = \beta \times War_{i,t-1} + Pop_{i,t} + \boldsymbol{X}_i \times \gamma_t + \pi_m \times \gamma_t + \gamma_t + \alpha_i + \varepsilon_{i,t},$$

Where i denotes the grid cell, which is the basic unit of our analysis, aimed at alleviating the concern of frequent changes of administrative boundaries during observation periods (Zhou, 2005). t denotes each historical period. $Officials_{i,t}$ is our outcome variable, which is proxied by the number of senior officials (with rank five or above) produced in each cell i in each period t. This value is normalized by the population scale in each corresponding period from 618 to 1911.

$War_{i,t-1}$ is our key explanatory variable, calculated as the frequency of wars taking place in each cell by one period prior to each period of interest. We take natural logarithms (1 plus) for both these two variables to mitigate the impact of outliers. Therefore, the coefficient β captures the weighted average marginal impact of past war exposure (proxied by the log frequency of wars taking place in the past 150 years) on the emergence of political elites across the seven historical periods. For robustness, we will adopt the inverse hyperbolic sine transformation, the absolute values for both war frequency and the number of senior officials, and alternative specifications such as Tobit regression. The results are reported in Appendix Tables 2 and 3.

We also include a series of covariates in the regression to partial out the impacts of the confounders. For instance, $Pop_{i,t}$ indicates the time-varying log number of population scale in seven points across the seven periods, including the years 754, 976, 1102, 1393, 1580, 1820, and 1910. $\boldsymbol{X}_i$ refers to a vector of time-invariant geographic controls, including latitude, longitude, the natural logarithms of caloric suitability indices for the major crops (rice, wheat, and foxtail millet), distance to the major rivers, the coast, and the steppe. π_m indicates the dummies for the nine physiographic macroregions defined by Skinner (1977), including the North China plain; Northwest China; the Lower, Middle, and Upper Yangtze Plains; the southeast coast; Lingnan; Yun-Gui; and Manchuria. We control these macroregions' dummies to enhance the comparability of the cells. To make the effects of these characteristics vary across time, we interact them with the indicators for each period. Finally, grid-cell fixed effects (α_i) are included to capture the additional unobserved and time-invariant factors, and dynasty fixed effects (γ_t) are controlled to capture the common shocks faced by all grids. We clustered the standard errors at the cell level.

The baseline results are presented in Table 2. Specifically, column 1 shows the results of regressing cell-level official density on the frequency of wars taking place one period before, after controlling for period fixed effects and grid-cell fixed effects. In column 2, population scale and geographic factors are added as additional controls. In column 3, Skinner microregions' fixed effects are also included and interacted with the period dummies. Intuitively, the coefficients in all the three columns are statistically significant at the 1% level, and the magnitude of these them is very similar (around 0.1). These results suggest that a doubling of historical war frequency is associated with a 10% increase in the density of senior officials in the next period.

As the coefficients from the panel regressions represent the weighted average of treatment effects across the seven periods, it is essential for us to investigate the size of the effect in each period respectively. Therefore, we utilize the following cross-sectional specification and conduct regressions for each of the seven periods to provide some suggestive evidence:

$$Officials_i = \alpha + \beta \times Lagged\ War_i + Pop_i + \boldsymbol{X}_i + \pi_m + \varepsilon_i,$$

In particular, $Lagged\ War_i$ denotes the frequency of wars that occurred in each grid one period prior. We still include Skinner's macroregions dummies in the cross-sectional regressions. We present the cross-sectional estimates for each of the seven periods in Table 3, from column 1 to 7. It is noteworthy that all estimates are statistically significant at the 1% level. However, the magnitude of the coefficients decreases from approximately 0.33 (in period 2) to 0.007 in the last period. This phenomenon can be attributed to the increasingly detailed records of wars and the more widespread distribution of the origins of officials over time.

We present one solution to address potential measurement errors that may arise due to differences in the criteria of records across different periods. The first solution involves constructing alternative proxies for our outcome and explanatory variables. Specifically, we assign quantile labels to the grid-level values of political elites and historical war. This approach enables the coefficient β to capture the marginal change in the quantile of senior official density in response to the change in the quantile of historical war frequency. We then rerun the regressions in Table 3 using these alternative proxies and plot the evolution of the coefficients in Figure 4. It is evident that the magnitude of coefficients obtained from the quantile-based regressions is less volatile and remains close to 0.1 for most periods, which is consistent with the estimates in Table 2.

In addition to using the alternative transformation for the key variables and other specifications (see Appendix Tables A2 and A3), we conduct further tests to verify the robustness of our baseline results. For example, to address concerns about the robustness of our results when changing the beginning and ending years of each period, we perform cross-sectional analyses by directly regressing the density of senior officials, calculated over the entire dynasty, on the lagged frequency of wars spanning one dynasty. In Appendix Table A4, we present the cross-sectional estimates for the Tang (618–907), Northern Song (960–1127), Ming (1368–1644), and Qing dynasties (1645–1911) in the first four columns. These results also reveal a decreasing trend in the magnitude of coefficients over time. Finally, we pool the four periods together and conduct a panel regression with dynasty fixed effects included. The results, reported in column 5, remain statistically significant, with a magnitude still close to 0.1. These results further confirm the robustness of our baseline estimates, regardless of the selection of breakpoints or length of each period.

Furthermore, to address concerns about potential confounding factors related to historical factors and regional disparities, we consider the work of Fernández-Villaverde et al. (2023) and Zhou (2005). According to Fernández-Villaverde et al. (2023), the southern regions, including the southeastern coastal regions and areas south of the Nanling Mountains in China, were influenced by different cultures and were not conquered by the Sinic states until the Qin-Han period (221 BCE−220 CE).

Similarly, the southwestern mountainous regions were not significantly governed until the Ming-Qing period (1368-1911) (Zhou, 2005). To mitigate concerns regarding the potential confounding effects of these historical factors on the relationship between historical war experience and the rise of political elites, we exclude the physiographic macroregions in Southern and Southwestern China as defined by Skinner (1977). In Appendix Table A5, we present the results obtained after excluding the cells in the Southeastern Coastal and Lingnan regions. Despite this exclusion, the coefficients remain statistically significant at the 1% level, and their magnitude (around 0.1) remains largely consistent with the baseline results. These results provide additional evidence of the robustness of our findings, addressing concerns that our results may be influenced by changes in the territories of the states.

4.2. Instrumented Evidence

Although we have included various covariates and fixed effects in both the panel and cross-sectional regressions, the impact of past war exposure on the rise of political elites we observed in Section 4 may still be biased due to other unobserved factors. Hence, to identify the causality, we utilize an instrumental variable (IV) approach by exploiting the exogenous determinants of each cell's war exposure. Our instrumental variable is the 1-period lagged term of the minimum distance from each cell's centroid to the strongholds of the short-lived regimes established by the rebellion, which lasted for fewer than 10 years, as well as to the capitals of the external invaders who were outside the central government's territory. We obtain the data for these strongholds from Chen (1999).

We constructed our IV following the logic of Dell (2015), who examined the impact of changes in conflict-related transportation routes on levels of violence by altering linguistic costs. This logic is applicable to the historical context of China. On one hand, the short-lived regimes typically had small territories that only contained a few strongholds. Therefore, regions close to these strongholds could become hotspots of conflict because they could easily be affected by territorial disputes between short-lived regimes or the tug-of-war between these regimes and the central government that eventually unifies the state. Additionally, the establishment of these short-lived regimes and their strongholds was likely due to idiosyncratic reasons, making each grid cell's distances to these strongholds randomly assigned.

On the other hand, the invasions launched by external powers outside the territory of the Sinic states often occurred due to their idiosyncratic reasons, such as nomadic regimes facing natural disasters leading to southern invasions. This ensures the exogeneity of these external invasions. Considering the long-lasting impact of early wars on subsequent war risks (Cesur and Sabia, 2016), we believe that the instrumental variable we have constructed can measure the exposure of each grid to the wars in the next period. In Figure 5, we depict the spatial distribution of the strongholds and the frequency of wars. This example is based on the first historical period (468–618) covered by our study. Intuitively, cells that are closer to the strongholds or the external capitals experienced a higher frequency of war.

We then employ the Two-Stage Least Squares (2SLS) regressions to estimate the instrumented effects of historical wars on the rise of political elites. We first use our IV to predict the occurrence of wars in the first stage, and then repeat our panel regression using the fitted value of wars to predict the density of senior officials. The 2SLS specifications are presented below.

$$Officials_{i,t} = \beta_1 \times \widehat{War}_{i,t-1} + Pop_{i,t} + \boldsymbol{X}_i \times \gamma_t + \pi_m \times \gamma_t + \gamma_t + \alpha_i + \varepsilon_{i,t}$$

$$War_{i,t-1} = \beta_2 \times IV_{i,t-1} + Pop_{i,t} + \boldsymbol{X}_i \times \gamma_t + \pi_m \times \gamma_t + \gamma_t + \alpha_i + \varepsilon_{i,t}$$

We report the results of our 2SLS estimates in Table 4. Specifically, the first two columns show the second-stage relationship between the fitted past war frequency and senior official density. Column 1 includes period fixed effects, grid fixed effects, time-varying population scale, and the interaction terms between geographic factors and period dummies. Column 2, in addition to these variables, includes the interaction terms between macroregions' dummies and period indicators. Both regression coefficients are highly significant at the 1% level.

When compared with the OLS results in Table 2, the instrumented effect of war increases from around 0.1 to 0.18. This implies that the OLS regressions may underestimate the effect of war on the rise of political elites. However, the magnitude of the coefficients has not increased too much, indicating that our instrumental variable is strong. This is consistent with the Kleibergen Paap F-statistics, which are higher than 100. In Column 3, we report the significantly negative first-stage results by regressing the 1-period lagged war frequency on the instrumental variable. All this evidence proves that our instrumental variable is statistically not weak.

To ensure that our instrumental variable satisfies the requirement of exclusion restriction, which means that the IV only affects the rise of political elites through its impact on war frequency, we conducted additional tests. First, we provided additional evidence that our IV is generally orthogonal to economic prosperity, which could simultaneously determine both war frequency and the emergence of political elites. We directly regressed population scale on our IV while controlling for only the geographic factors and fixed effects. As shown in column 5 of Table 3, the coefficient is statistically insignificant, indicating that regions closer or farther away from the strongholds have generally been balanced in terms of economic foundations.

Next, we conduct a reduced-form regression by directly regressing senior official density on the IV, including the log frequency of wars in the reduced-form regression as an additional control and reporting the results in column 3. Consequently, the coefficients of our IV became statistically insignificant, while the coefficients of wars were positive and statistically significant at the 1% level. These changes suggest that our IV fundamentally affects the regional-level density of senior officials by shaping the exposure to wars. However, it is important to note that these results are still suggestive rather than conclusive.

5. Heterogeneous Impacts of Different Types of Wars

In Section 4, we demonstrate the causal relationship between past war experiences and the emergence of political elites within the historical context of China. In a recent study, Chen (2023) found that different types of wars before the formation of imperial China (770 BCE–221 BCE) could have different state-building effects. Hence, utilizing the rich information in our unique database on wars and senior officials, we proceed to the heterogeneous impacts of different types of wars on the origins of different types of officials in this section.

We differentiated the types of senior officials by enumerating their personal experiences within our observation period in the CBDB database. We defined two categories of officials: those with military experience and those without military experience. The former accounted for approximately 29.8% of the total number of officials, while the latter accounted for 70.2%, consistent with the historical narrative that civilian or scholar officials had gradually dominated China's bureaucratic system since the Tang-Song period (Chang, 1955; Bol, 2008). We also classified wars into two major categories. The first category consists of internal conflicts occurring within the territory, such as peasant uprisings or conflicts between local forces (civil wars). The second category includes conflicts between the Sinic regime and external forces whose national capitals were located outside the territory (foreign wars). In our data, civil wars accounted for approximately 78.4% of the total number of wars, while foreign wars accounted for approximately 21.6%.

Next, we proceed to evaluate the impact of war type differences at the grid level on the differences by type. Specifically, we first calculate the relative strength of foreign wars for each grid, which is the difference in the frequency between the number of foreign wars and civil wars in that grid. We then calculate the relative strength of officials with military experiences at the grid-cell level, which is the difference between the number of officials with military experience and officials without military experience. To provide some intuition, we plot the spatial distribution of these two variables in period 5 (1523–1681) in Figure 6, from which it can be observed that officials with military experience tend to emerge in border areas with a higher frequency of foreign wars, while officials without military experiences concentrate in inland areas with a higher frequency of civil wars.

Motivated by this evidence, we proceed to rigorously examine the impact of different types of wars on different types of officials through regression analysis. Specifically, we regress the relative strength of officials with military experience on the 1-period lagged term of the relative strength of foreign wars and present the results in Table 5. As what we have done in Section 4, in column 1, we report the results after controlling for grid-cell fixed effects and period fixed effects. In column 2, we include additional covariates, and in column 3, we also include interaction terms between macroregions and period dummies.

Consistent with the pattern shown in Figure 6, throughout our observation period, regions that experienced more foreign wars were more likely to have officials with military experiences. Numerically, doubling the relative strength of foreign wars would lead to a 46.2% increase in the relative strength of officials with military experiences (column 3). This finding aligns with the historical narrative of China since the Tang and Song dynasties, which prioritized preventing internal rebellions rather than defending the border areas. Specifically, in regions with a higher frequency of internal rebellions, it is essential to enhance local governance capacity through scholar officials to maintain stability through non-military or administrative measures. On the other hand, in regions that are more exposed to battles with external regimes, it is crucial for the local population to participate in war mobilization to enhance defensive capabilities (Deng, 2006). Hence, these differences in the effects of different types of wars motivate us to discuss in the next section the channels through which wars influence the emergence of political elites.

6. Mechanisms

We have documented the causal impact of wars on the emergence of political elites so far. However, what channels through which war could generate such robust and long-lasting influences still need to be explored. Thus, in this section, we propose that war could contribute to the rise of political elites through three channels, including stimulating the states to build administrative and defensive capacities, providing access to enter the bureaucracy, and catalysing the emergence of lineage organization like clans that are prone to the cultivation of political elites.

6.1. Building Administrative Capacity

The first channel we propose is that war could necessitate the strengthening of administrative capacity within states, following the Tilly's (1975) discussions on "wars made the states." We hypothesize that the state would invest in constructing administrative capacity for local governance in war-prone regions to maintain social order and beef up the state's control.

Empirically, we follow Sng (2014) by employing the cell-level number of counties, the bottom unit of the imperial administrative divisions in China since the Qin dynasty, as a proxy for administrative capacity. Using the county number has three advantages: First, despite the frequent changes in the administrative hierarchy under different regimes, counties have persistently been at the most grassroot level of state governance (Zhou, 2005).[3] In addition, the functions of counties are also highly consistent across different periods, including local-level tax collection and

[3] For instance, during the Qin dynasty (221 BCE–206 BCE) and most of the time of the Han dynasty (206 BCE–220 CE), the local governance system had only two tiers, including prefecture ("*Jun*") and county ("*Xian*"). Starting from the Tang dynasty (618 CE−907 CE), the governing system with three tiers, Province-Prefecture-County, was gradually established and legitimized (Zhou, 2005).

administration of justice (Sng, 2014). Both these characteristics make counties across different dynasties highly comparable.

Moreover, rich historical narratives have documented the relationship between the war-driven demand for local governance and the establishment of counties. For instance, after suppressing the uprising by bandits in northeastern Guangdong in 1563, the Ming government established Chenghai County and Puning County to ensure local security (Zhou, 2005). The founding of counties is usually accompanied by the establishment and expansion of public offices, which could provide the locals with exposure to bureaucrats and access to acquire positions of power (Sng, 2014; Bai and Jia, 2021). Hence, regions with higher county density are arguably more prone to the emergence of political elites.

To empirically test the hypothesis that regions with more war experience could have more counties established, we obtained records on the spatial distribution of county seats from CHGIS Time Series County Points (Version 6), compiled by Berman (2017b), as a proxy for administrative capacity. For each historical period of interest, we selected the slice of counties in the year that marked the beginning of each period, including 618, 763, 960, 1368, 1523, 1681, and 1860. We then georeference the county seats into each grid cell (Figure 7) and regressed the cell-level density of counties on the frequency of wars under each regime. The regression results are reported in the first column of Table 5. As expected, the coefficient of the 1-period lagged wars is positive and statistically significant at the 1% level, even after including covariates and macroregions' dummies. Numerically, a 1% increase in historical war frequency would drive a 0.348% increase in the number of counties established on average within the period from 618 to 1911.

We also explore alternative measures of administrative capacity apart from county number. Specifically, we follow Xue et al. (2021) and employ the built-up urban area within the city walls ("walled cities") from 1368 to 1911 as an alternative proxy. The rationale is that cities contributed to the rise of civilizations in prehistoric China and could facilitate the cultivation of political and managerial human capital because of their high population density that pushed the governance challenge to a new level, demanding sophisticated interpersonal skills and thus providing training grounds for future political elites (Mumford, 1961). We thus regress the log area of walled cities on lagged war frequency and report the results in column 2 of Table 5. Again, the coefficient is at the 1% level of significance, indicating that a 1% higher war frequency is positively associated with a 0.075% increase in the areas of the walled cities on average from 1368 to 1911, proving the relationship between war threats and the investment in administrative state capacity.

6.2. Building Defensive Capacity

In addition to establishing administrative units in war-prone regions for state governance, wars are also conducive to the construction of military strongholds, which could eventually evolve into the cradles of complex societies and political hierarchy, thus creating more positions of power and alert the shares within national power distribution (Mumford, 1961; Hendrix, 2010; Bai and Jia, 2023).

To test the relationship between historical war experiences and the state's construction of defensive capacity, we used the cell-level number of military garrisons ("weisuo") established during the early Ming Dynasty (1368–1523) as a proxy. The Ming garrisons were the most representative military institution with systematic records in dynastic China, established for national defense and rebellion suppression. Additionally, the garrisons took the form of a military-agricultural colony and provided paths for entering official careers for hereditary military households (Dincecco and Wang, 2018). In peripheral regions where uprisings by minority groups frequently took place throughout the Ming, such as the Guizhou province in Southwestern China, garrisons even became the de facto local administrative units, playing the same functions as counties in local governance and official selection (Guo and Jin, 2007).

In column 3 of Table 5, we conducted an OLS analysis by regressing the log number of military garrisons established from 1368 to 1523 on the frequency of wars one period before. We used the detailed locations of the 350 garrisons from Berman (2017a) and plotted the spatial distribution of these garrisons in Figure 8. Since we only have records for garrisons in one period, we could only run a cross-sectional regression. As expected, regions that historically experienced more wars were more likely to construct garrisons in the Ming dynasty. This positive relationship was statistically significant at the 1% level after including the covariates and the macroregions' fixed effects. This indicates that a 1% higher historical war frequency is associated with a 0.3% higher density of military garrisons in period 4.

6.3. Provision of Access to the Bureaucracy

We have demonstrated that war can contribute to the construction of national capabilities, particularly administrative and defensive capabilities. These efforts could help create public offices and provide job opportunities for individuals to be absorbed into the bureaucratic system. However, can war impact individuals' access to these public offices? To answer this question, we will explore the two pathways to the bureaucratic system mentioned in Section 2.2 that existed from 618 to 1911: hereditary aristocratic titles based on ancestors' military achievements and the allocation of quotas for the civil examination system ("keju").

We first explore the impact of the provision of aristocratic title, or ruling-class membership, which was often associated with individuals' war achievements (Bai, Jia, and Yang, 2023). Specifically, the individuals or families receiving powers because of their wartime contribution could usually be guaranteed powerful seats in the bureaucracy through generations. This phenomenon had been prevalent for centuries before the Song dynasty (960–1279), among which one of the most prominent examples is the rise of the Lu family of Fanyang that remained active and provided a bunch of senior officials and even imperial government's chancellors by the Tang dynasty (618–907) (Hartman, 2014). Specifically, Lu Zhi, one of the ancestors of the Lu family who was born in the late Eastern Han Dynasty (25−220), obtained fame and prominence for his family because of his contribution in repressing the Yellow Turban Rebellion (184−205), a large-scale peasant revolt that led to rampant warlord dominance in the subsequential centuries (Hartman, 2014).

Inspired by the anecdotal evidence of Lu's family, we proceed to explore whether regions historically experiencing more wars were more likely to produce aristocratic families that rose because of their wartime contributions. Specifically, we digitize the 790 aristocratic families existing before the year 763 based on the information, including the surnames and birthplaces of these families recorded in the New Collection on the Genealogies of Aristocratic Families (*Xinji tianxia xingwangshi zupu*) from Dunhuang Manuscript, which was compiled under the reign of the Dezong

Emperor of Tang (779−805). The spatial distribution of these families is depicted in Figure 9, coinciding with the distribution of war frequency taking place from 468 to 618.

We then regress the cell-level log number of aristocratic families on war frequency and report the result in the first column of Table 6. As expected, aristocratic families were more likely to appear in cells with more past war exposure, and the results remain significant at the 1% level. Numerically, a 1% higher war frequency was associated with 0.59% more aristocratic families on average.

Next, we proceed to explore how war impacted the evolution of civil service examinations, or keju, which became China's primary official selection system since the Song dynasty (960-1279) (Kracke, 1947; Hartwell, 1982; Chaffee, 1995). Specifically, the number of successful candidates passing the different levels of examination was controlled by the quota system, with quotas allocated according to the administrative hierarchy (Elman, 2000). The quota-based examination system has been proved to be closely related to social stability because of a provision of social mobility for the commoners to enter the gentry class (Bai and Jia, 2016). Hence, using data obtained from the gazetteers about the prefectural-level number of quotas (matched to grid-cell level) determined by 1724, we rigorously study whether the assignment of quotas is associated with each region's past war exposure.

We conduct a regression of each grid-cell's density of quotas on the frequency of wars taking place one period before and reported the results in the second column of Table 6. The result was highly significant, indicating that a 1% higher historical war frequency would lead to a 0.29% increase in the examination quota assigned. The results using both aristocratic titles and quotas as outcome variables demonstrate that war frequency has been a significant determinant of regional power redistribution, consistent with Chen et al. (2021), which emphasizes the central government's efforts to compensate regions with higher rebellion frequency historically in exchange for their support.

6.4. Formation of Clans

So far, we have demonstrated that war could affect regional power distribution through channels from a top-down perspective, including the disproportionate offer of aristocracy membership and investment in state capacity. However, from the bottom-up perspective, frequent wars also prompt the localities to be more organized and cohesive to defend against future war threats jointly. For example, war-torn areas could appear more clans constructed based on kinship networks (Wang, 2022). The clans typically owned charitable estates to provide relief during times of natural disaster or war since the Song dynasty (960−1279) (Twitchett, 1959). In addition, clans could construct ancestral halls and compile clan genealogy books, which could also enhance intra-clan resource pooling (Chen, Ma, and Sinclair, 2021). These risk-sharing and resources-pooling characteristics could enable the quality of within-clan education of descendants, providing them competitive advantages to enter the bureaucracy and ruling class via the civil service examinations (Kracke, 1947; Hartwell, 1982; Chaffee, 1995).

Therefore, we first employ the cell-level log value of genealogy books compiled from 960 to 1911 as a proxy for the strength of clans, following Chen, Ma, and Sinclair (2021). We obtain the genealogy book data with respect to 44,238 clans and more than 700 surnames from Shanghai Library's (2009) Comprehensive Catalogue on Chinese Genealogy (*Zhongguo Jiapu Zongmu*) and plot their spatial distribution in Figure 9 (denoted by the green color). We then regress the proxy for clan strength on past war frequency, and report the OLS result in the first column of Table 7. Numerically, a 1% increase in war frequency has been associated with a 0.56% increase in genealogy book density, consistent with our hypothesis that war exposure could contribute to the formation of lineage groups such as clans.

We then proceed to explore whether regions more prone to war produced more *jinshi* degree holders, the highest attainable qualification under the *keju* exam since the Song dynasty (Chen, Kung, and Ma, 2020). We obtained birthplace and other details for 41,988 *jinshi* in the Song dynasty (960−1279) from the Official Directory of Song Civil Exam Graduates (*Songdai dengke zonglu*) compiled by Gong and Zu (2014), and 51,624 *jinshi* holders of the Ming and Qing dynasties (1368−1911) from Official Directory of Ming-Qing Imperial Exam Graduates (*Ming-Qing Jinshi Timing Beilu Suoyin*) compiled by Zhu and Xie (1980). We then regress the log number of *jinshi* on clan density and report the results in columns 2 of Table 7. Once again, the effect of clan is positive and statistically significant at the 1% level, proving the logic that war threat contributes to the formation of clans that facilitated human capital investment.

7. Conclusion

Based on a unique dataset covering longer than one millennia, our study shows that war persistently shaped the landscape of political elites across different historical periods in China. Specifically, regions exposed to more frequent wars have been more likely to be the cradles of political elites, the backbone of China's "bureaucratic monarchy" (Kuhn, 1990). Investment in state capacity, provision of access to bureaucracy , and the formation of clans are the channels that facilitate the long-withstanding relationship between war and the rise of political elites in historical China.

Our study extends the existing discussions on the impact of wars and, particularly, the "war made the states" literature by proving that war-driven state-building efforts could affect the cross-sectional disparity in the strengths of political elites. These findings could shed light on understanding the development of contemporary countries whose power of local governance is shared with political elites that rose because of military merits. Additionally, apart from understanding the importance of military merits in the early stage of each regime, further work is still needed to explore the transition from military aristocracy to meritocracy in constructing professional bureaucratic systems that provide social mobility to civilians.

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Figures

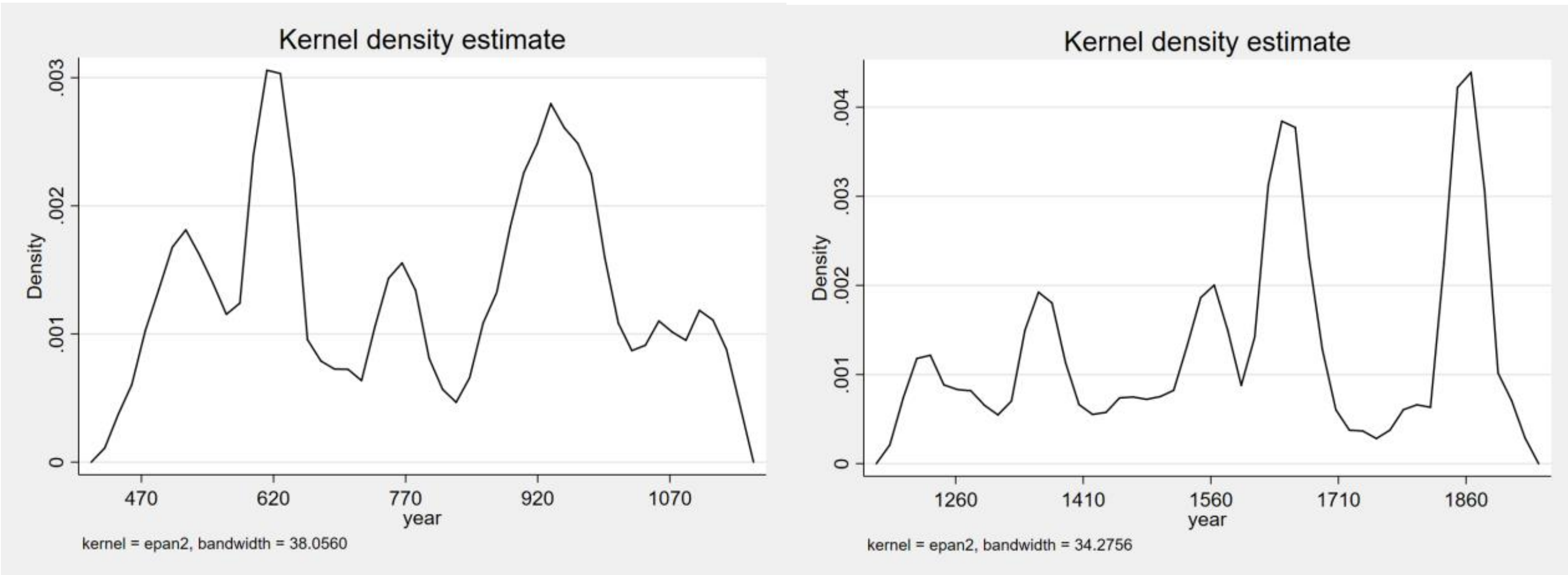

Figure 1. Wars Frequency in China: Kernel Density Distribution

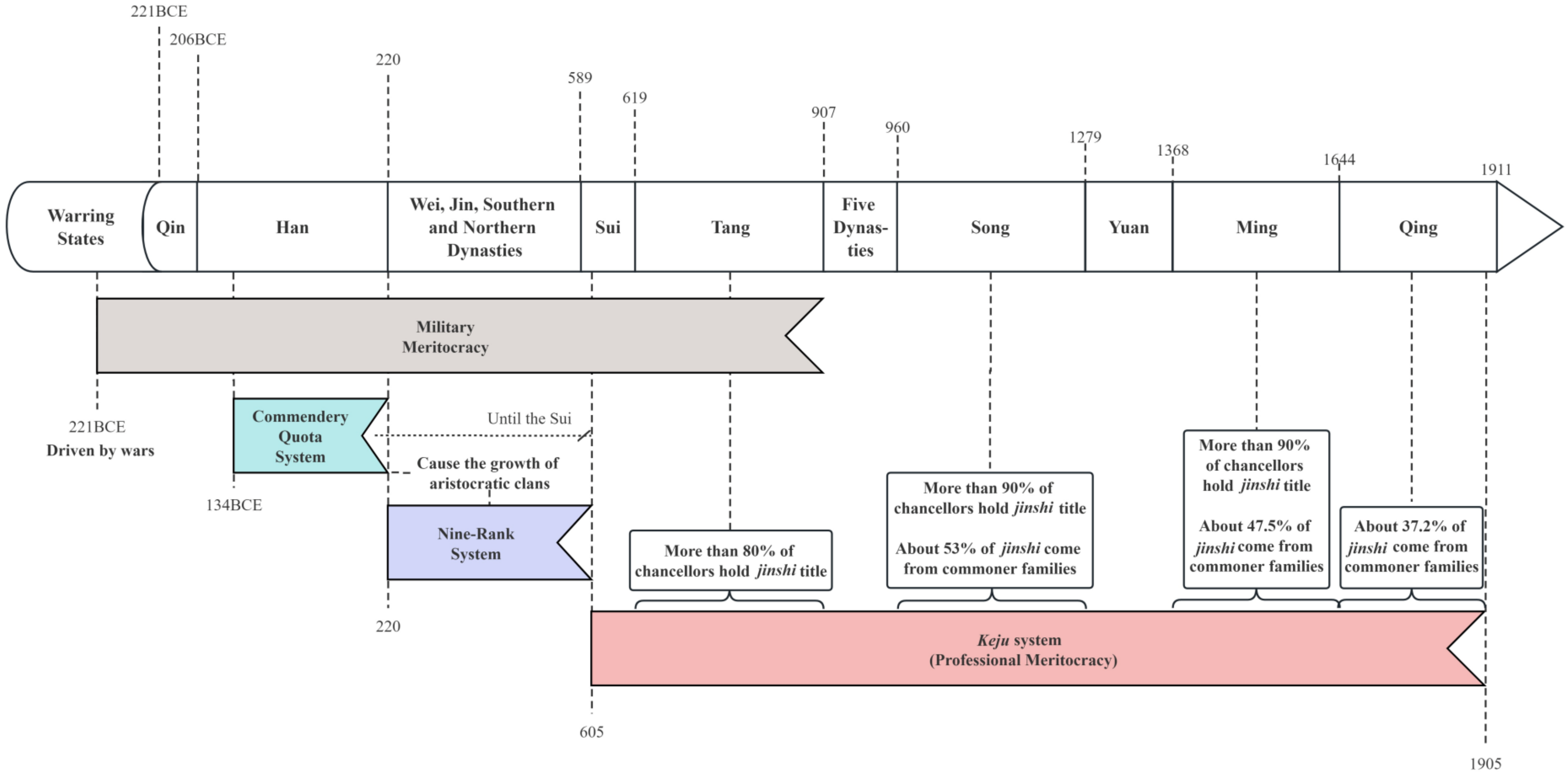

Figure 2. Evolution of China's official selection system **(221 BCE−1911)**

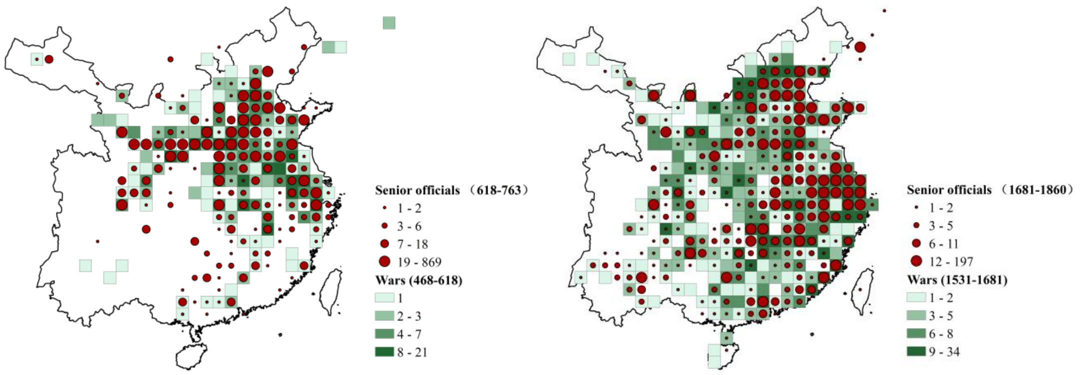

Figure 3. Spatial Distribution of Political Elites and Wars (Period 1 versus Period 6)

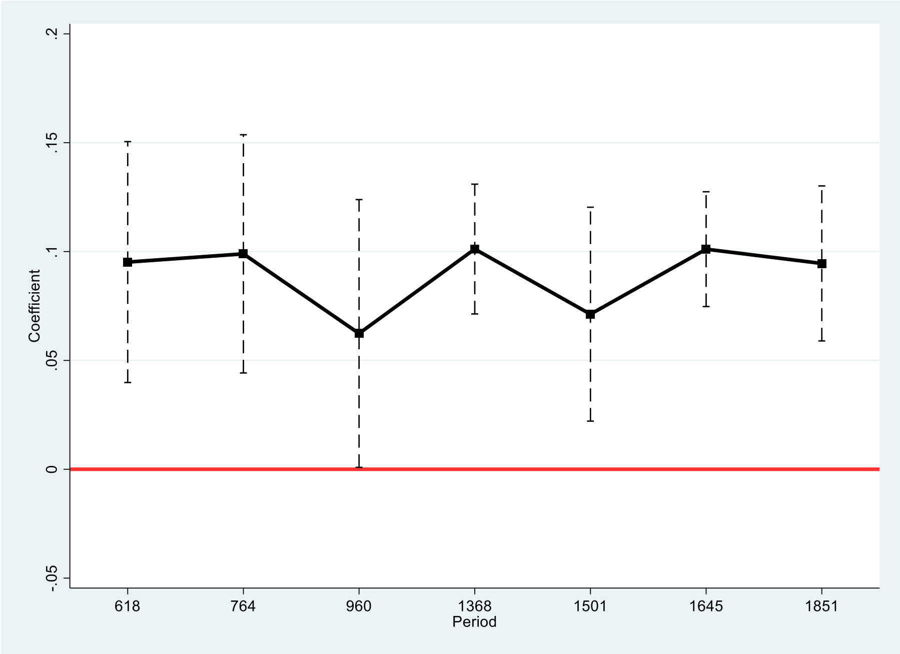

Figure 4. The Impact of Wars on Political Elites' Emergence: Coefficient Plot (quantile)

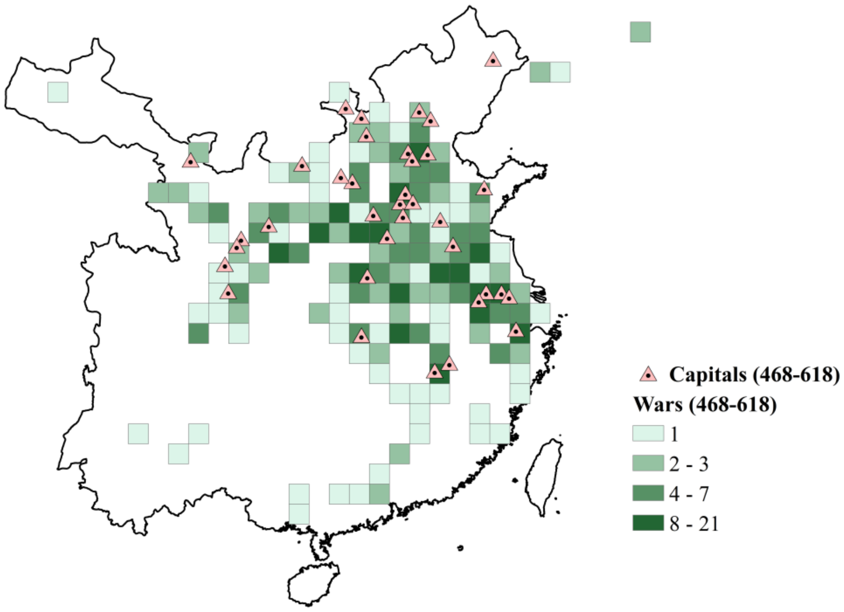

Figure 5. Spatial Distribution of strongholds and Wars (Period 1)

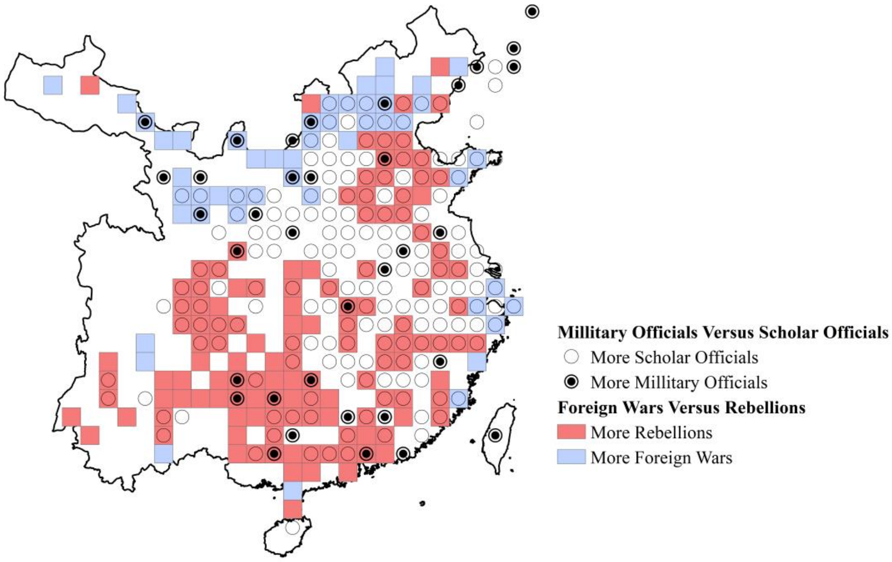

Figure 6. Types of Wars and Officials' Military Experience (period 5)

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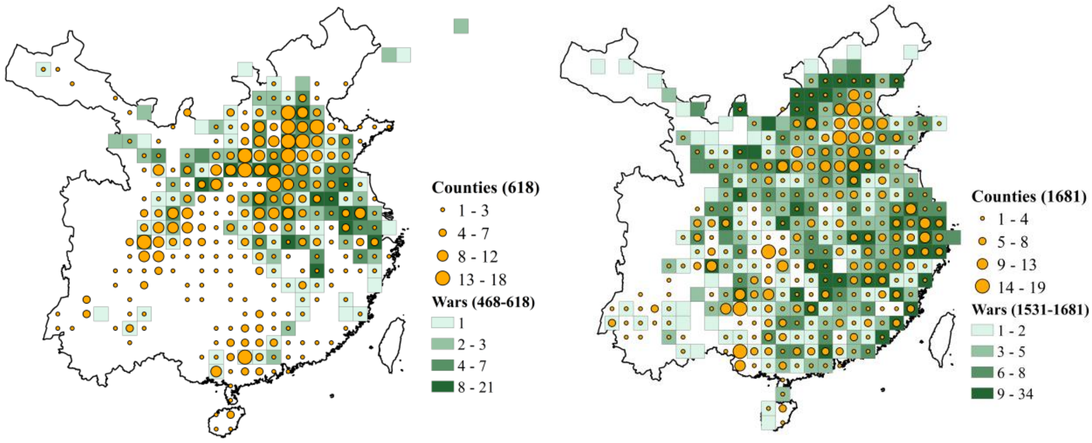

Figure 7. Spatial Distribution of Counties and Wars (Period 1 versus Period 6)

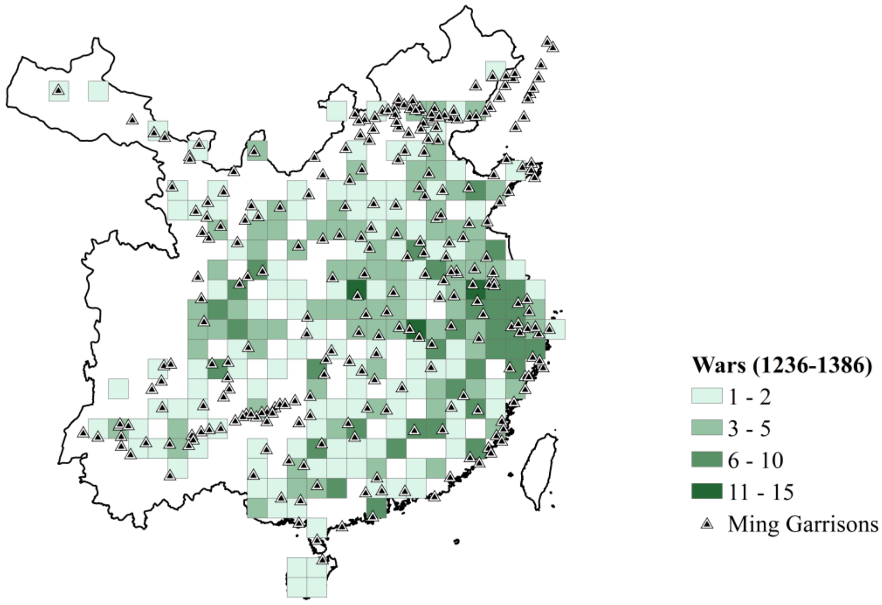

Figure 8. Spatial distribution of military garrisons (1368-1644)

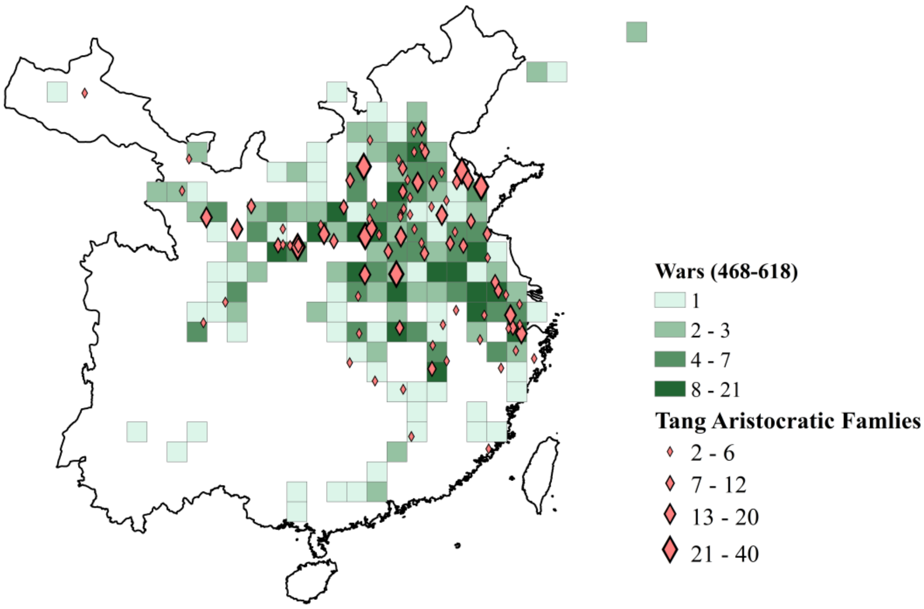

Figure 9. Aristocratic families accredited by 762

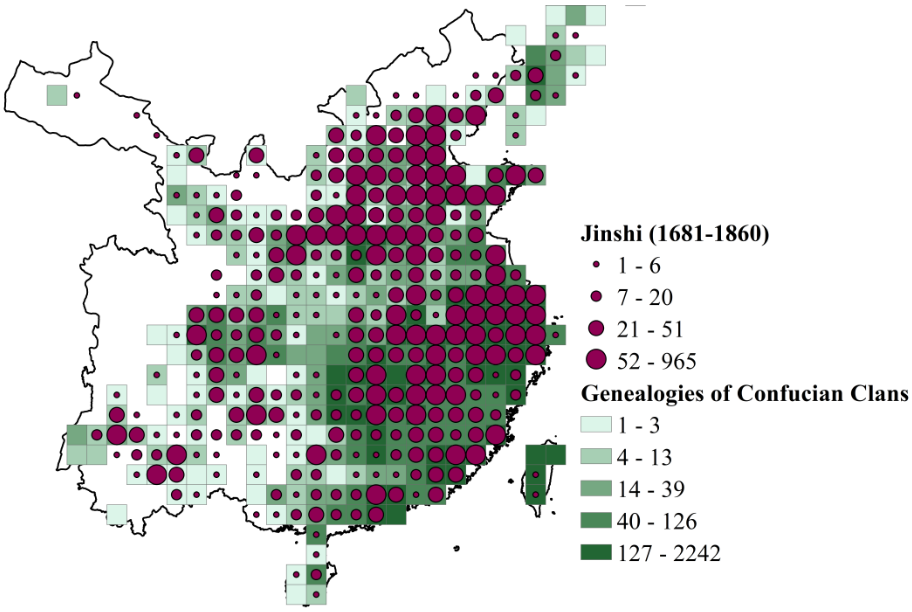

Figure 10. Spatial distribution of confucian clans and *jinshi* (1681-1860)

Tables

Table 1. The impact of wars on political elites' emergence: Panel Regression

	Senior Officials per 10,000 people (log)		
	(1)	(2)	(3)
Lagged Wars (log)	0.111***	0.096***	0.104***
	(0.011)	(0.014)	(0.012)
Period FE	Y	Y	Y
Grid-Cell FE	Y	Y	Y
Controls × Period Dummies	N	Y	Y
Macroregions' FE × Period Dummies	N	N	Y
Observations	3,176	3,176	3,176
R-squared	0.077	0.126	0.188

Notes: This table reports the panel estimates by regressing the log number of senior officials on the log value of wars occurred within 150 years before each period. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 2. The impact of wars on political elites' emergence: Cross-sectional estimates

	Senior Officials per 10,000 people (log)						
	618–763	763–907	960–1127	1368–1523	1523–1681	1681–1860	1860–1911
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged Wars (log)	0.242***	0.326***	0.093***	0.074***	0.047**	0.039***	0.007***
	(0.045)	(0.069)	(0.029)	(0.023)	(0.019)	(0.009)	(0.002)
Controls	Y	Y	Y	Y	Y	Y	Y
Macroregions'FE	Y	Y	Y	Y	Y	Y	Y
Observations	454	399	415	477	477	477	477
R-squared	0.174	0.258	0.268	0.131	0.174	0.080	0.114

Notes: This table reports the cross-sectional regression results by regressing the log number of senior officials on the log value of wars occurred within 150 years before each period. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3. 2SLS Estimates: Using distance to the strongholds of short-lived and external regimes as an instrument variable

	Second-stage		First-stage	Reduce-form	Exclusion test
	Senior Officials per 10,000 people (log)		Lagged Wars (log)	Senior Officials per 10,000 people (log)	Population (log)
	(2)	(3)	(4)	(4)	(5)
Lagged Wars (log)	0.184***	0.184***		0.101***	
	(0.060)	(0.061)		(0.012)	
Stronghold Distance (log)			-0.249***	-0.022	-0.073
			(0.025)	(0.015)	(0.064)
K-P F statistic	124.564	101.736			
Period FE	Y	Y	Y	Y	Y
Grid-Cell FE	Y	Y	Y	Y	Y
Controls × Period Dummies	Y	Y	Y	Y	Y
Macroregions' FE × Period Dummies	N	Y	Y	Y	Y
Observations	3,176	3,176	3,176	3,176	3,176
R-squared	0.104	0.172	0.413	0.164	0.731

Notes: This table reports the IV estimates by using distance from capitals as an instrument variable. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4. Types of Wars and Officials' Military Experience

	Difference between Military and Non-Military Officials		
	(1)	(2)	(3)
Lagged Difference between Foreign and Civil Wars	0.603***	0.468***	0.462***
	(0.157)	(0.156)	(0.151)
Period FE	Y	Y	Y
Grid-Cell FE	Y	Y	Y
Controls × Period Dummies	N	Y	Y
Macroregions' FE × Period Dummies	N	N	Y
Observations	3,176	3,176	3,176
R-squared	0.030	0.107	0.152

Notes: This table reports the panel estimates by regressing the number of military officials minus the number of scholar officials on the number of foreign wars minus the number of rebellions. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5. Mechanism: Wars and the Construction of State Capacity

	Administrative Capacity		Defensive Capacity
	Counties (log)	Walled Cities (log)	Garrisons (log)
	Period 1-7 (618-1911)	Period 4-7 (1368-1911)	Period 4 (1368-1523)
	(1)	(2)	(3)
Lagged Wars (log)	0.348***	0.075***	0.300***
	(0.016)	(0.018)	(0.043)
Period FE	Y	Y	N
Grid-Cell FE	Y	Y	N
Controls × Period Dummies	Y	Y	N
Macroregions' FE × Period Dummies	Y	Y	N
Controls	N	N	Y
Macroregions' FE	N	N	Y
Observations	3,176	1,908	477
R-squared	0.626	0.419	0.260

Notes: This table reports the panel estimates by regressing the log number of counties, walled cities and garrisons on the log value of wars occurred within 150 years before each period. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6. Mechanism: Wars and Access to the Bureaucracy

	Aristocratic Families (log)	*Keju* Quotas (log)
	Period 1 (618-763)	Period 7 (1681-1860)
	(1)	(2)
Lagged Wars (log)	0.588***	0.286***
	(0.099)	(0.045)
Controls	Y	Y
Macroregions' FE	Y	Y
Observations	477	467
R-squared	0.445	0.857

Notes: This table reports the panel estimates by regressing the log number of aristocratic families and *keju* quotas on the log value of wars occurred within 150 years before each period. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7. Mechanism: Wars and local human capital investment

	Confucian Clans (log)	*Jinshi* (log)
	Period 7 (1681-1860)	
	(1)	(2)
Lagged Wars (log)	0.559***	
	(0.076)	
Confucian Clans (log)		0.548***
		(0.046)
Controls	Y	Y
Macroregions' FE	Y	Y
Observations	477	477
R-squared	0.747	0.711

Notes: This table reports the panel estimates by regressing the log number of Confucian clans on the log value of wars occurred within 150 years before each period and the log number of *jinshi* on the log number of Confucian clans. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Appendix

Table A1. Summary Statistics

Variable	Obs	Mean	SD	Min	Max
Outcome Var.					
Senior Officials (period 1-7)	3,409	1.83	16.272	0	0
Scholar Officials (period 1-7)	3,409	1.65	13.041	0	612
Military Officials (period 1-7)	3,409	0.70	5.974	0	245
Explanatory Var.					
Wars (period 1-7)	3,409	0.73	2.325	0	34
Foreign Wars (period 1-7)	3,409	0.16	1.055	0	25
Rebellions (period 1-7)	3,409	0.49	1.702	0	28
Controls					
Coast distance	451	1372.02	991.428	.110851	3712.348
River distance	451	532.05	437.566	.0163372	1747.688
Rice suitability	451	3633.64	7454.067	0	23167.04
Millet suitability	451	4129.55	5248.349	0	16244.7
Wheat suitability	451	10487.56	6932.195	0	23232.99
Steppe distance	451	826.335	635.6494	0	2448.128
Terrain ruggedness	451	658.47	541.868	4.677326	2762.322
Longitude	451	35.83	7.068	18.68684	53.22701
Latitude	451	102.95	14.318	74.23411	133.8618
Other Vars.					
Capital distance	3,409	270.54	407.270	.007468	1735.494
Aristocratic families	451	0.77	3.808	0	51
Garrisons	451	0.36	1.112	0	13
Genealogy books	451	43.14	191.544	0	2242
Keju quota	451	60.15	60.444	0	402.1047
Counties (period 1-7)	3,409	1.32	2.773	0	21
Walled cities (period 4-7)	1,948	0.47	1.266	0	18
Jinshi (period 6-7)	974	10.41	43.465	0	965
Population (period 1-7)	4,026	59.68	118.783	1.17e-07	1664.928

Notes: This table provides the summary statistics. See Section 3 for data sources and details of variable construction. Time-varying variables cover seven periods from 618 to 1911, including 618 to 762, 763 to 907, 960 to 1127, 1368 to 1522, 1523 to 1680, 1681 to 1860, and 1861 to 1911 based on a rough benchmark of 150 years, with specific dividing points marked by major military-political events. In particular, the periods of wars and capital distance are 150 years before the main periods (468 to 617, 618 to 763, 810 to 960, 1218 to 1368, 1373 to 1523, 1531 to 1681, and 1761 to 1860).

Table A2. Robustness Check: The impact of wars on political elites' emergence: Tobit regression

	Senior Officials per 10,000 people (log)		
	(1)	(2)	(3)
Lagged Wars (log)	0.111***	0.099***	0.105***
	(0.009)	(0.010)	(0.010)
Period FE	Y	Y	Y
Grid-Cell FE	Y	Y	Y
Controls × Period Dummies	N	Y	Y
Macroregions' FE × Period Dummies	N	N	Y
Observations	3,176	3,176	3,176
Var (e. Senior Officials per 10000 people (log))	0.141***	0.133***	0.124***
	(0.004)	(0.003)	(0.003)

Notes: This table reports the tobit panel estimates by regressing the log number of senior officials on the log value of wars occurred within 150 years before each period. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A3. Robustness Check: Using inverse hyperbolic or quantile transformation of key variables

Panel A: Senior Officials per 10,000 people (inverse hyperbolic transformed)			
	(1)	(2)	(3)
Lagged Wars (inverse hyperbolic transformed)	0.107***	0.096***	0.102***
	(0.011)	(0.013)	(0.011)
Period FE	Y	Y	Y
Grid-Cell FE	Y	Y	Y
Controls × Period Dummies	N	Y	Y
Macroregions' FE × Period Dummies	N	N	Y
Observations	3,176	3,176	3,176
R-squared	0.083	0.134	0.195
Panel B: Senior Officials per 10,000 people (quantile)			
	(1)	(2)	(3)
Lagged Wars (quantile)	0.456***	0.312***	0.281***
	(0.015)	(0.018)	(0.018)
Period FE	Y	Y	Y
Grid-Cell FE	Y	Y	Y
Controls × Period Dummies	N	Y	Y
Macroregions' FE × Period Dummies	N	N	Y
Observations	3,176	3,176	3,176
R-squared	0.260	0.411	0.451

Notes: Panel A reports the regression results after taking the inverse hyperbolic transformation of both senior officials and wars. Panel B reports the regression results after taking the quantile value of both senior officials and wars. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A4. Robustness Check: Alternative Periods of Wars and Officials: Divide by dynasties

	Cross-sectional estimation				Panel
	Senior Officials per 10,000 people (log)				
	Tang (618−907)	Song (960−1127)	Ming (1368−1644)	Qing (1645−1911)	618−1911
	(1)	(2)	(3)	(4)	(7)
Lagged Wars (log)	0.297***	0.092***	0.137***	0.037**	0.137***
	(0.051)	(0.020)	(0.027)	(0.016)	(0.016)
Macroregions'FE	Y	Y	Y	Y	N
Period FE	N	N	N	N	Y
Grid-Cell FE	N	N	N	N	Y
Controls × Period Dummies	N	N	N	N	Y
Macroregions' FE × Period Dummies	N	N	N	N	Y
Observations	454	415	477	477	1,823
R-squared	0.244	0.284	0.213	0.170	0.228

Notes: This table reports the regression results obtained from using dynasty to divide the periods of wars. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A5. Robustness Check: Excluding regions in Southern and Southwestern China

	Senior Officials per 10,000 people (log)		
	(1)	(2)	(3)
Lagged Wars (log)	0.119***	0.110***	0.121***
	(0.013)	(0.017)	(0.015)
Period FE	Y	Y	Y
Grid-Cell FE	Y	Y	Y
Controls × Period Dummies	N	Y	Y
Macroregions' FE × Period Dummies	N	N	Y
Observations	2,363	2,363	2,363
R-squared	0.082	0.135	0.193

Note: This table repeats the exercises in Table 1 while excluding different subsamples in Southern and Southweastern China. Senior officials are the ones who were appointed at the fifth rank and above, and wars include all types of military conflicts occurred within 150 years before each period. Controls include agricultural suitability indices for rice, wheat, and millet, distances to major rivers, coast, steppe, longitude, and latitude. Robust standard errors are given in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.