

Elite Kinship Network and State Strengthening: Theory and Evidence from Imperial China^{*}

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EXISTING theories of state strengthening focus on macro-level factors. We know less about the micro-level incentives for elites to support or oppose state strengthening. I develop an argument in which elites choose the most efficient governance structure (public or private) to provide services for their kin. When elites' kinship networks are geographically dispersed, they prefer to strengthen the state because it is more efficient to “buy” services from the state. When their kinship networks are geographically concentrated, they prefer a weak state because they can “make” low-cost private services and avoid paying taxes to the state. I map politicians' kinship networks using their tomb epitaphs from 11th-century China and show that, even facing severe external threats, politicians exhibited polarization in their attitudes toward state strengthening, which can be explained by the geography of their kinship networks. The findings point to the importance of social structure in understanding state building.

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DECADES of social science research has concluded that a strong state is critical in promoting economic development (North 1981; Dincecco 2017), preventing political violence and civil war (Fearon and Laitin 2003), and delivering basic goods and services (Rothstein 2011). Fukuyama (2004, 17) argues that strengthening state capacity should be at the top of the global agenda. Previous studies on state strengthening have emphasized *macro-level* factors, such as external war (Tilly 1992; Besley and Persson 2008), internal conflict (Slater 2010), international structure (Spruyt 1994), colonial legacy (Kohli 2004; Mattingly 2017), inequality (Boix 2015), religion (Grzymala-Busse 2019), and state-society competition (Migdal 1988; Acemoglu and Robinson 2019). But successful state building also relies on political elites to enact and support state-strengthening policies (Geddes 1994). We still know less about the *micro-level* incentives for elites to support or oppose state strengthening.

To make progress on this front, I develop an argument to explain individual-level variations in state-strengthening preference. My argument starts with the presumption that elites choose the most efficient governance structure to provide a bundle of services for their families. Two governance structures can provide such services, of which public order institutions, such as the state, and private order institutions, such as clans, tribes, or ethnic groups, are the leading alternatives. Elites can “buy” services from the state by paying taxes. They can also “make” services through private order institutions. Make-or-buy is a decision elites make after assessing the production cost consequences of alternative governance structures. If elites need to service a large area, it is cheaper to “buy” services from the state, which exhibits economies of scale and scope. If elites need to service a small area, then “making” services through private order institutions is more efficient. The testable implication is that political elites’ incentives to support state strengthening are an increasing function of the geographic size of their kinship networks.

Systematic, individual-level data on elites during critical state-building moments are difficult to come by. While most empirical evidence on state building comes from medieval or pre-modern Europe, I contribute to this literature by drawing data from imperial China. Imperial China had well-documented historical records, enabling us to analyze politician-level behav-

ior. The Chinese case is also worth studying on its own merits. The European path of political development may have been an accident (Stasavage 2016, 146). Historical China, by contrast, shared many similarities with history's late modernizers and today's developing countries: an agrarian economy, prevalent violence, strong kinship institutions, and a weak state. Although history does not repeat itself, it often rhymes. As I discuss in the conclusion, China's historical development produces important lessons for understanding comparative state building and the developing world more generally.

I compile an original dataset that includes individual-level information on all the major politicians during China's, arguably, most critical state-strengthening reform, which occurred in the Northern Song Dynasty (960–1127). Northern Song faced severe external threats from the nomads, which propelled the emperor to initiate a reform to strengthen the state's fiscal and military capacities. The reform, however, was implemented only temporarily and failed due to strong opposition from politicians. Historians consider the reform and its failure to be one of the key turning points in China's state development, which affected the country's long-term political trajectory and led to its ultimate decline (Hartwell 1982, 421; Huang 1999, 54). Why did politicians oppose a state-strengthening reform, facing severe external threats?

Inspired by recent historical research that exploits archeological sources (e.g., Boix and Rosenbluth 2014), I rely on politicians' tomb epitaphs to map their kinship networks and geocode every kin member's hometown. I then construct an index to measure how geographically concentrated a politician's kinship network was. My statistical tests demonstrate that politicians' support for state-strengthening is positively correlated with the geographic span of their kinship networks.

This correlation should be interpreted cautiously because kinship networks were not randomly assigned. One threat is reverse causality in which politicians build kinship networks knowing the reform outcome. Second, historical and unobservable regional- and individual-level factors affect both the type of networks politicians build and their state-strengthening preferences. This produces omitted variable bias and renders the correlation spurious.

I pursue three approaches to address these threats. First, I measure a politician's kinship network built through their children's marriages before the reform. Marriages in Song elite families were arranged early by grandfathers. For politicians, therefore, their children's marriages were endowed from an earlier generation and occurred before the reform started.

Second, I identify the most important reason why politicians had dispersed versus concentrated networks. I trace these politicians' family history to show that a dual-track political selection in Northern Song produced two types of elite families. The first ("legacy") track selected officials based on their family pedigree, which incentivized elites to build marriage coalitions with capital officials, whose hometowns and kin were scattered across the country. The second (exam) track selected officials based on a civil service exam, which relied on recommendations of local notables and incentivized elites to establish local marriage networks. I collect data on these politicians' family exam history and control for it in the regressions. I also control for a wide range of confounders that I expect to affect policy attitudes, such as hometown characteristics, network centrality, size of kinship group, factional ties, philosophical schools, external and internal threats, and level of commercialization. The correlation is robust to the inclusion of these covariates.

Lastly, although I control for a long list of regional- and individual-level factors that may potentially confound my estimates, I cannot fully account for all variables, especially unobservables. I conduct a sensitivity analysis to show that the influence of unobservables must be at least seven times greater than the influence of observables to invalidate my results.

As a further step in my analysis, I also provide qualitative evidence to suggest that the conflict between reform supporters and opponents served the personal interest of the monarch. Using a divide-and-conquer strategy, the emperor played the two camps against each other by balancing their power in court. The emperor was then able to strengthen his power vis-à-vis the bureaucracy and establish an absolute monarchy. This explains why the ruler *allowed* elite fragmentation to undermine state building: while elite conflict jeopardized state building, it contributed nevertheless to the ruler's personal power.

As Padgett and Ansell (1993, 1310) point out, to understand state building, one needs to “penetrate beneath the veneer of formal institutions and apparently clear goals, down to the relational substratum of people’s actual lives.” Social science research has long emphasized the role of social networks (e.g., Putnam 1993) and “social embeddedness” (Granovetter 1985) in determining elite behavior. The primary contribution of this article is to provide, to the best of my knowledge, the first theoretical argument and quantitative evidence that link the *geography* of kinship network and support for state strengthening.

This article also makes two other contributions. First, my individual-level analysis complements existing research by offering a micro-foundation of state building. Most macro-level, state-centered theories assume “state autonomy” and analyze the state as a unitary actor that acts independently to maximize its interests (e.g., Evans, Rueschemeyer, and Skocpol 1985). Yet throughout much of human history – and in most of today’s developing countries – the state is not autonomous from social forces (Migdal 1988). My approach “brings people back into the state” (Levi 2002, 37) and provides a novel logic to explain why politicians, who represent the interests of various social groups, have different preferences regarding the ideal degree of state strength. Many previous studies take it for granted that if politicians face common threats, they will act together to strengthen the state. My framework indicates that self-interested politicians may not necessarily want to strengthen the state, even when faced with severe external threats, if they have a cheaper alternative. In doing so, I join an emerging elite-centered literature on state building, such as Geddes (1994), Jha (2015), Soifer (2015), Garfias (2018), Beramendi, Dincecco, and Rogers (2019), and Suryanarayan (2019). While most of these studies emphasize elite competition, I focus on elite social relations. I hence offer a nuanced view to the state-society perspective: while it sees state and society as separate, competing entities (Migdal 1988; Acemoglu and Robinson 2019), I show that whether society strengthens the state depends on state-society *linkages*.

Second, I contribute to a nascent interest in studying how elite network affects behavior. Since the seminal work by Padgett and Ansell (1993), an extensive literature has examined the

role of family networks. Recent studies have examined how elite network affects electoral outcomes (Querubin 2016; Cruz, Labonne, and Querubin 2017), public goods provision (Cruz, Labonne, and Querubin, *Forthcoming*), and participation in coups (Naidu, Robinson, and Young 2018). Studies of contemporary China emphasize the role of lineage organizations in affecting local elite behavior (Tsai 2007; Xu and Yao 2015; Mattingly 2016). While these studies focus on elite's position within the network or whether elites are embedded in a network, I examine the geographic span of the network and how it affects elite incentives vis-à-vis the state.

TO BUY OR TO MAKE

Weber (1946 [1918], 78) defines the state in terms of its monopoly over violence. Throughout human history, however, violence has mostly been privately controlled; the “Weberian” state is a modern phenomenon (Bates, Greif, and Singh 2002, 599). I consider state's monopoly to be a choice rather than a given: the state becomes a monopoly when citizens, especially political elites, choose the state as the provider of protection and services.

Elites protect themselves and their kin. Protecting one's kin has been a natural feature in human behavior from traditional societies (Banfield 1967) to modern-era protection rackets, such as the Mafia (Ianni 1972, 34). To protect their kin, elites choose a provider that trades, for revenue, a bundle of services: defense against external and internal violence, insurance against uncertainties, justice in dispute resolution, and social policies that protect people from risks (North 1981, 23).

I assume that elites make the choice according to efficiency concerns.¹ They accomplish this by assessing governance structures, of which public order institutions, such as the state, and private order institutions, such as clans, tribes, or ethnic groups, are the leading alternatives, in terms of their capacity to economize on costs.

¹ I assume that public and private services are, on average, equally effective. While a national army might be more effective in defending against foreign enemies, a private insurance company might be better tailored to local conditions to protect against risks.

Elites can “buy” the bundle of services from the state by paying taxes. They can also “make” the bundle of services through private order institutions.² They make the buy-or-make decision after assessing the production cost consequences of alternative governance structures.

The state exhibits economies of scale and scope for two reasons. First, there are fixed costs associated with establishing a set of facilities, such as warehouses, arsenals, roads, and communication infrastructures. Up to a point, the costs increase less than proportionally to the geographic span. To the extent that public services are non-rival and non-excludable, scale economies are achieved by exploiting these decreasing marginal costs. Second, establishing central institutions may facilitate the specialization of labor and capital. For example, soldiers working in a smaller, regional arsenal must perform many unrelated tasks, such as producing, maintaining, and fixing weaponry. In a central arsenal some soldiers may specialize in producing weapons, which increases efficiency.

Private services have a different production function. Let us first assume that private services are strictly rival and excludable. For example, if protecting one unit of territory (e.g., 100 square kilometers) requires one garrison with one unit of labor and capital, the cost of protecting two units will double to two units of labor and capital. In this case, the private production of services exhibits a constant return to scale, and each unit pays the same price for its own production. If we relax the assumption that private production has a constant return and assume that some local elites can coordinate to provide private services for a relatively large area, e.g., establishing local warlordism, private services become a club good that is non-rival and non-excludable for kin members within a certain territory and rival and excludable for people outside the territory.

The elites think at the margin and choose the most efficient governance structure for their families. If they have a geographically concentrated kinship network, it is more efficient to “make” the bundle of services through private order institutions, because the marginal costs of funding private institutions to service a small area are relatively low compared with the taxes

² Firms must similarly decide whether to make a component in house or buy it from the market. See Coase (1937, 390) and Williamson (1981, 556).

paid to support the central state. But if they have a geographically dispersed kinship network, it is more efficient to “buy” public services because scale economies dramatically reduce the marginal costs of servicing larger areas. This is true even if elites can establish some sort of local warlordism: though the private provision of services can be locally coordinated, its scale is still smaller than the public provision of services, and therefore cannot exploit the full potential of scale economies. With massive efficiency gains, elites prefer to pay taxes to the state in order to take advantage of the national coverage.³

There is, however, a second-order question: how do elites with dispersed kinship networks solve their collective action problem? Although these elites prefer public services, they should rationally free ride and let others pick up the slack. I argue that they choose not to free ride because as an individual’s kin expand geographically, the free-riding of many localities leads to serious under-provision of public services, which jeopardizes the welfare of all kin members. In other words, they must *internalize* the costs of their own free-riding. They then become an “encompassing interest group” that “has an incentive to see that the collective good is provided, even if he has to bear the full burden of providing it himself” (Olson 1965, 50).

The key insight from this simple logic is that elites’ incentives to support state strengthening are an increasing function of the geographic size of their kinship networks. If their kinship networks are geographically concentrated, it is rational to keep the state weak (“making” private services and evading taxes to the state). But as their kinship networks span geographically, they will be able to protect their kin more efficiently with a strong state (“buying” public services by paying taxes). The logic generates a simple testable hypothesis:

Hypothesis 1: A politician’s support for state strengthening is an increasing function of the geographic size of his or her kinship network, ceteris paribus.

One last question is the incentives of the ruler who has the agenda-setting power to influ-

³ The logic runs parallel to the selectorate theory proposed by Bueno de Mesquita et al. (2003), which states that as the winning coalition increases, the ruler’s available resources become more thinly spread if he or she provides private goods, and public goods become a relatively cheap way to reward supporters and, coincidentally, often the rest of society as well.

ence policy outcomes. Why would the ruler allow some elites to keep the state weak? Why did the rulers not promote state-strengthening supporters and demote opponents to make state strengthening successful? We can think of the ruler's utility function including two components. The ruler seeks to maximize tax revenues, which requires a nationally coherent elite to support state-strengthening policies. The ruler, however, also seeks to maximize his personal power and survival, which can be better achieved with a fragmented elite. Wang (2018, 25) shows that about two-thirds of Chinese emperors who exited office through nonnatural death were removed via elite palace coups.⁴ The ruler, therefore, trades off state capacity for personal power. A fragmented elite must overcome insurmountable collective action and coordination problems to revolt against the ruler. Hence a fragmented elite structure undermines state building, contributes nevertheless to monarchical power.

This suggests an ancillary prediction:

Ancillary Prediction: I expect the ruler to use a divide-and-conquer strategy to play supporters and opponents against each other and strengthen his personal power vis-à-vis the bureaucracy.

HISTORICAL BACKGROUND

This section introduces the empirical setting. I show that the political selection mechanisms in 10th-century China produced a nationally-marrying elite and a locally-marrying elite. I then introduce the state-strengthening reform.

SONG ELITE STRUCTURE

A hereditary aristocracy ruled China during the medieval period from the 7th to the 9th centuries. Several hundred clans were located across the country, and their core male members formed a national elite coalition by intermarrying their children. During the Tang Dynasty

⁴ This is consistent with Svobik's (2009, 478) calculation: more than two-thirds of modern authoritarian leaders who lose power via non-constitutional means are removed by government insiders.

(618–904), this national elite was based in the capital cities of Changan and Luoyang and became a self-perpetuating institution (Tackett 2014, 25).

The Huang Chao Rebellion (874–884) captured the capitals and killed most members of the aristocracy.⁵ Local elite gentry families,⁶ which traditionally held many lower bureaucratic offices, filled the power vacuum left by the demise of the aristocracy (187–234).

After the aristocracy was decimated, the Song emperors expanded the civil service examination as an alternate way to identify bureaucratic talent.⁷ To screen out men without reputation, Song emperors asked prominent local elites to vouch for prospective candidates before they could sit the initial exam (Hartwell 1982, 419). The civil service examination system therefore reinforced the gentry's strategy to contract marriage alliances with notable local neighbors.⁸ The civil service examination then brought many locally embedded elites into the central government. These elites became "local advocates" who, in order to influence the government's actions, intervened directly and openly with central officials as a native, with a native's interest in local affairs (Hymes 1986, 127–8). Appendix Table A1-2 provides empirical support for this historical observation: if a politician's father entered officialdom through the civil service examination (rather than inheritance), the politician was more likely to have a localized kinship network.⁹

Parallel to the exam track, the Song emperors kept the "legacy" track used by previous dynasties to grant privileges to men from prestigious families, such as offspring of the founding emperor's core supporters. The "legacy" track reserved bureaucratic slots for men who had patrilineal members (i.e., fathers, uncles, or grandfathers) serving in the government upon their

⁵ The rebellion, led by Huang Chao – a salt merchant – conquered Changan and Luoyang and physically destroyed hundreds of aristocratic families (Tackett 2014, 187–234).

⁶ While the aristocracy was a hereditary elite that nearly monopolized bureaucratic offices, the gentry based their power in local society and viewed a bureaucratic career as one of a variety of occupational choices.

⁷ While a civil service examination was introduced in the 7th century, the pre-Song examination constituted only a small route of bureaucratic entry. Beginning in 977, the Song government began conferring examination degree in large numbers: the annual average of degrees given went from approximately 30 for the preceding three centuries to 192 for the years 977–1272 (Chaffee 1995, 16).

⁸ Studying a sample of successful examiners, Hartwell (1982, 419) shows that passage of the tests was associated with intermarriage with one of the already established elite gentry lineages. Hymes (1986, 103) shows that elite marriage, *as a result of the exam*, had become localized.

⁹ As I elaborate in the next section, I focus on the politician's father because he made decisions on his grandchildren's marriages.

death or retirement. According to Chaffee (1995, 25), while about 54% of Song bureaucrats were recruited via the exam track, 39% were from the “legacy” track.

THE WANG ANSHI REFORM

The Northern Song Dynasty faced existential threats from the Khitan and Tangut nomadic tribes in the north (Appendix Figure A1-1). A war could break out at any moment. In 1065, defense expenditures consumed over 80% of the state’s income, which caused the government to register its first financial deficit (Smith 2009, 349). Aged and inexperienced soldiers were hired from the flotsam of the marketplace and were unfit for combat.

In 1069 Emperor Shenzong started the New Policies, adopting the ideas of the cabinet member Wang Anshi. The New Policies, later known as the Wang Anshi Reform, established the goal of “enriching the nation and strengthening its military power” (Liang 2009 [1908], 165). The philosophy of the New Policies was to expand the scope of state power to intensify its participation in the market economy, which could generate surplus that the state then extracted to fulfill its fiscal and military needs (Deng 1997, 48). The major reform policies included the following.¹⁰

- *Cadastral Surveys and Equitable Tax.* This measure sought to equalize tax burden across localities and landowners by instituting a series of cadastral surveys. Previously, many localities and powerful families underreported their landholdings to avoid taxes (Liu 1959, 39). After the surveys, 34.7 million acres of land – 54% of the national total – had been revealed (Smith 2009, 393). The exposure of these previously untaxed lands allowed some shifting of the tax burden away from politically powerless landowners to official families with large landholdings.
- *Military Conscription.* This policy created a formal military organization (*baojia*) in which every ten households were organized into a small guard, every five small guard units formed a large guard, and every five large guard units formed one superior guard. Participation in this security apparatus was compulsory, close to a conscription system, in the hope of rotating *baojia* troops into the national army (Williamson 1935, 181). Before the reform, the state relied on a highly inefficient and ineffective mercenary army. At

¹⁰ In addition to the major policies I discuss here, the New Policies also included a state trade policy to regulate and tax commercial trades and irrigation and drainage policies to encourage local governments to build water projects to facilitate agricultural development (Deng 1997, 88).

the local level, villages formed into a variety of voluntary defense organizations to foster local security. Over time, some of these private associations turned into private armies controlled by local elites. In 1075, a central bureaucratic agency started to control over *baojia*, and as of 1076 there were 6.9 million men on the *baojia* rosters, which constituted almost half of the empire's households (Smith 2009, 414).

- *Rural Credit*. This policy created a state-run rural credit system to break the private credit monopoly. Previously, rural landlords had a monopoly over agricultural credit and charged high interest rates (Deng 1997, 88). The reformers used state-run granaries to buy grains when prices were cheap and to resale when prices were dear, or in times of natural disaster. They also converted the reserves into a liquid loan fund that were to be made in the spring and repaid in the summer and fall. Rules were established to protect borrowers against unfair official manipulation. By supplanting private landlords and moneylenders as the principal source of rural credit, the state extracted the interests that used to flow into the pockets of local elites and enabled the peasants to gain access to low-interest loans (Williamson 1935, 142-3).
- *Labor Service*. This policy imposed a tax, called a “service assistance fee,” on all households with property who wanted to avoid government labor service (Deng 1997, 88). Before the policy, every household needed to complete their local duties by being drafted into government services, such as office messengers, bookkeepers, granary labors, and local policing. Many families were exempt by law, such as officials and town dwellers, or by practice, such as powerful local families whose influence over government clerks gave them *de facto* immunity (Smith 2009, 400). The reform required all households eligible for drafted service to pay a tax, graduated according to their assessed wealth.

These policies dramatically increased the revenues of the Song government. For Shenzong these hoards were the life's blood of his campaign against the Tanguts. And though the Tangut war of 1081–1083 exacted an enormous toll in money and men, New Policies revenues were so robust that imperial treasures remained full into the next reign period (434). Meanwhile, the entire population had been organized into *baojia* security units, thereby providing the state with a relatively cheap system of conscription. The *baojia* system also reversed the trend toward putting the village-level security in the hands of local elites (Williamson 1935, 197; Smith 2009, 427).

Emperor Shenzong and Wang Anshi were state builders: when faced with external threats, they tried to strengthen the state. Wang Anshi considered strengthening the state to be aligned with his family interests. In a letter written in 1056, Wang Anshi said, “My object in entering

upon official life was to provide the care for my kin” (Wang 2017 [1086], 74: 14). In another letter written to his friend Wang Fengyuan, Wang Anshi said, “The really great man trains himself for the service of the state...I believe that Providence is operative not only in my own personal affairs, but also in the wider matters of empire” (75: 19). Wang’s notion that state and family interests were congruent was best reflected in a letter he wrote to the transportation officer Ma: “It is necessary that an individual who is desirous of increasing his family resources, should be dependent for so doing upon the particular state in which he resides. It is necessary also that he who wishes to increase the financial resources of his state should depend upon the empire in order to achieve his object” (75: 22).¹¹

THE OPPOSITION

Many politicians, however, opposed the reform. They explicitly juxtaposed the state with local elite families as competing alternatives for providing various services. For example, Sima Guang, Su Xun, Su Zhe, and Zheng Xia insisted that the wealthy served as the pillars of local society and as the providers of capital (land and credit) and security to the people, and that the society and economy functioned best when it was least burdened by the state (Qi 1987, 1163-8). As to who should provide security, Wang Yansou argued that the pre-reform system was built on a solid communal foundation, in which “households on duty with propertied roots in the community” were kept afloat during their period of service by local elites who came to their aid with labor and material assistance. Under the new reform measure, however, “well-established local families” were replaced by state employees (Li 1979 [1177], 364: 8703-6). For Wang Yansou, as for Sima Guang, Zhang Fangping, Liu Zhi, and Yang Hui, only local men with property in the region could be trusted (Sima 1937 [1086], 49: 626-8; Li 1979 [1177], 224: 5444-6, 6787-91). In the same vein, the censor Deng Runpu memorialized: “under the old system...the rural compatriots and relatives all acted as the eyes and ears,” and charged that the use of *baojia* guardsmen to replace the private militias had shattered a natural defense and surveillance network built on

¹¹ The Chinese original is as follows: 富其家者资之国，富其国者资之天下，欲富天下，则资之天地。

personal relationships, leaving local communities powerless (Li 1979 [1177], 279: 6834-5). Another critic Feng Jing questioned Wang Anshi's state army: "Under the old regulations governing the private militias, the officers had all been drawn from the residential families of position and influence. In your *baojia* system, who will be the leaders?" (Tuo 1985 [1343], 192(145): 6)

Reform opposition considered kinship institutions to be the most efficient way to protect their family interests. They felt that a stronger state threatened their family interests because state strengthening added extra costs, through taxation, to their families. Sima Guang made the point forcefully in a debate with Wang Anshi before the emperor: "The output of the world in money and goods is of a fixed and definite amount. If it is in the hands of the state then it is not in the hands of the people" (Sima 1937 [1086], 42: 543-5). Fan Zhen argued in a memorial to the emperor: "The policy of creating and maintaining a standing army...involves the people in heavier taxation and an increase of the burden of public services....On the contrary, the policy of raising Private Militia or People's Corps...tends to eliminate these evils...Taxation is lighter, and the loyalty of the people remains staunch and true" (Li 1979 [1177], 179: 48).

Wang Anshi called the elite families that controlled local militias and usury "engrossers" – coercive and predatory magnates who preyed on the people and usurped the fiscal prerogatives of the state (Wang 2017 [1086], 4: 72). The reformer Lü Huiqing pointed out that it was because of this alliance between "the baronial families of officials and engrossers who can easily get others to speak for them" that the policy was so slow to take shape (Li 1979 [1177], 215: 5237, 227: 5522).

Historians share this view. Miyazaki (1992 [1953], 339-75) argues that the Song gentry officials selected through the exams "were torn between their institutional loyalty to the state and their economic loyalty to their families. Ultimately, they tended to follow their economic interests; they became corrupt and self-interested." Hartwell (1982, 421) argues that the core conflict during the Wang Anshi Reform was a power struggle between informal associations based on alliances between local interest groups sharing common concerns and the nationally oriented elites.

REFORM FAILURE AND THE RISE OF ABSOLUTE MONARCHY

A decisive turn occurred in 1074. A prolonged drought occurred in north China. Thousands of refugees fled the parched, famine-ridden north for relief in the capital, where they congregated as a direct reproach to the emperor. Emperor Shenzong was persuaded by the critics that the disaster was Heaven's punishment for the reform. Wang Anshih had no choice but to proffer his resignation (Deng 1997, 238-9). The opposition leaders completely abolished the reform after the emperor's death in 1085, with support from the dowager empress (254).

After the failure of the reform, the Northern Song state was significantly weakened and was defeated by the Jurchen in 1127. The localization of the Song elite, however, contributed to an absolute monarchy. Historians notice that there was a shift to imperial despotism during the Song, as the emperor's position vis-à-vis his chief advisors was strengthened. As Hartwell (1982, 404-5) argues, this tendency derived from the "diminished cohesiveness among the elite lineages." I will provide qualitative evidence later on how elite conflict facilitated the ruler's use of divide-and-conquer, which contributed to the rise of an absolute monarchy. The failure of the Wang Anshi Reform and the resultant weak state therefore might have become an equilibrium because rulers could personally benefit from a fragmented elite structure.

Figure 1 summarizes my arguments.

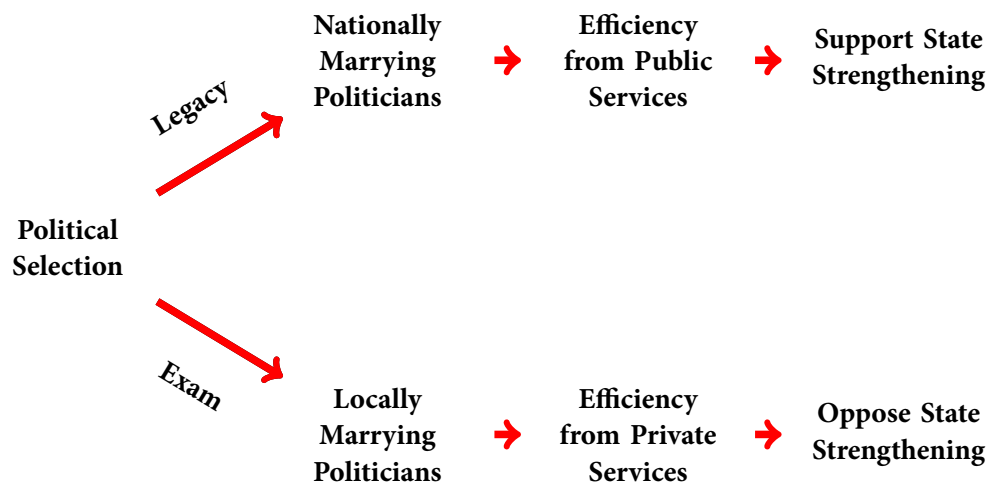


Figure 1: Summary of Arguments

DATA

When drawing a sample of observations, I make the following research design decisions. First, I focus on the major politicians who had a say in the reform process. I define major politicians as officials who held positions in the national government and who were at the vice ministerial level or above. The Northern Song bureaucracy had 30 levels, ranging from the prime minister to the county clerk (Gong 1990, 15). Song emperors designated officials at the vice-ministerial level or above as *major advisory officials* who could wear purple (a symbol of prestige) and appear in court in front of the emperor to discuss policy issues (20). These politicians had the opportunity and power to influence the emperor and the outcome of the reform. Second, I limit my data collection within the reign of Emperor Shenzong (1067–1085) – the period in which the Wang Anshi Reform was proposed, debated, implemented, and abolished. Focusing on one reign enables me to examine a sample of comparable contemporaries and control for “emperor fixed effect.”

Using these standards, I identify 137 major politicians relying on Li’s (2003) list of officials under Shenzong. They included prime ministers, central secretariats, leaders of major ministries, and emperor’s main advisors.¹² They were all male, Han Chinese, and from landowning elite families. They were, on average, 51-years old in 1067. 70% of them obtained their positions by passing the civil service exam, while the rest by inheriting.¹³ On average, they started their political careers in 1047 – 20 years before the Shenzong reign. Their average bureaucratic rank was ministerial.

THE OUTCOME VARIABLE

The key outcome variable – *Support for reform* – is a politician’s attitude toward the reform. I collect this information from three primary sources: *The History of Song* (宋史) edited by Tuo (1985 [1343]), *The Extended Continuation to Comprehensive Mirror in Aid of Governance*

¹² Li (2013, 16-7, 47-8, 62-70) provides a full list of these positions.

¹³ I obtain their biographic information from “China Biographical Database” (2018), a relational database with biographical information about approximately 422,600 individuals, primarily from the 7th through 19th centuries.

(续资治通鉴长编) edited by Li (1979 [1177]), and *The Complete Prose of Song* (全宋文) edited by Zeng and Liu (2006). Tuo (1985 [1343]) is a biographical history of the Song Dynasty compiled by historians in the Yuan Dynasty (1279–1368), while Li (1979 [1177]) is a chronological history of Northern Song compiled by historians in the Southern Song Dynasty (1127–1279). These books are the most authoritative sources of Song history, and both were written by relative contemporaries, based on official court records (Wilkinson 2000, 501). But contemporaries might have their political and personal biases. For example, a Southern Song historian who was the descent of a Northern Song politician might have an incentive to decorate his ancestor's words, depending on how the reform was perceived at the time. By contrast, Zeng and Liu's (2006) *Complete Prose of Song* is a 360-volume, 100-million-word collection of Song writings compiled by Chinese literature researchers using a literary criterion in the 21st century. Instead of summarizing and interpreting what the politicians said, as in Tuo (1985 [1343]) and Li (1979 [1177]), Zeng and Liu (2006) record all the writings, such as memorials to the emperor, in their original form. Triangulating the three sources should bring us closer to historical reality.

My research team read these books and identify every mentioning involving at least one of the 137 major politicians. We then select all their activities related to the Wang Anshi Reform, such as writing to the emperor or participating in public discussion, and manually code every politician according to his attitude toward the reform. For example, a politician who wrote to the emperor to denounce the reform would be considered an opponent, while another who supported the reform in court discussions would be considered a supporter.

The politicians were polarized. As Panel (a) in Figure 2 shows, among the 63 politicians who expressed an attitude, 34 politicians (54%) consistently supported the reform (coded as 1), while 24 (38%) consistently opposed the reform (coded as 0). For 5 politicians, they supported some of the reform policies but opposed others. For these politicians, their score is averaged across all policies in the main analysis.¹⁴ I also try rounding up or down their scores in the robustness

¹⁴ For example, assuming politician A supported equitable tax and military conscription but opposed rural credit and government service, his score will be $(1 + 1 + 0 + 0)/4 = 0.5$

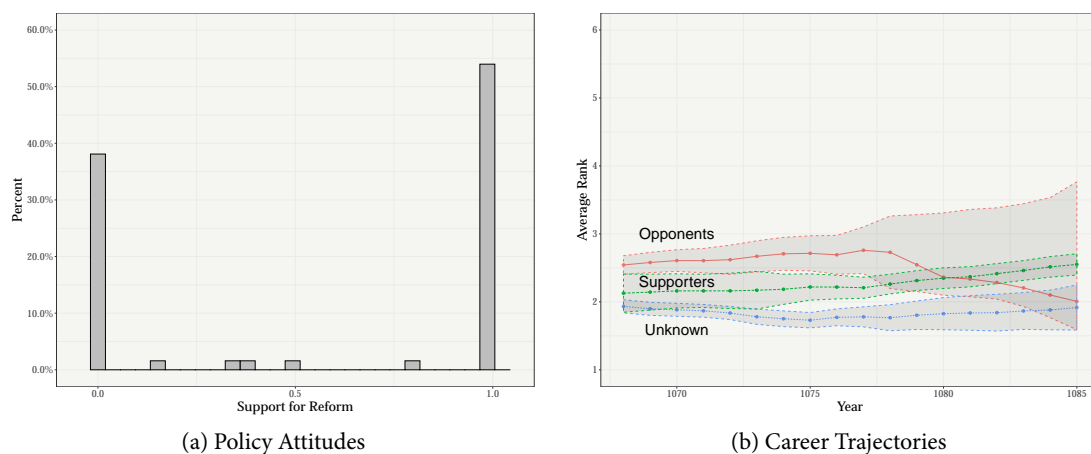


Figure 2: Major Politicians during the Reform

Notes: Panel (a) shows the histogram of politicians' policy attitudes toward the state-strengthening reform with 1 indicating support and 0 oppose. Panel (b) shows the average bureaucratic ranks (with 95% confidence intervals) of politicians, grouped by their attitudes, during the whole reform period. The Y-axis runs from 1 (vice ministerial level) to 6 (equivalent to prime minister).

checks and obtain the same results.¹⁵

74 politicians (54%) did not explicitly express their attitudes toward the reform. Most of them (49) were in ceremonial positions, such as the Ministry of Rites, which was in charge of religious rituals and court ceremonial. So a simple explanation is that these 74 politicians were not in policy-relevant positions and did not have a policy attitude. In the main analysis, I use listwise deletion, without making any assumptions about their implicit attitudes. In the robustness checks, I employ four alternative approaches to handle these politicians. First, I take into consideration their comments on other politicians (not on policies) and use them as an indication of their political preferences. For example, if a politician criticized the reform leader for not being filial, I code this as an anti-reform behavior. Second, I code them as neutral and create a trichotomous dependent variable – support (1), neutral (0), and oppose (-1). Third, I restrict my sample to a subset of politicians who held policy-relevant positions.¹⁶ Fourth, I

¹⁵ Column (1) in Appendix Table A1-4.

¹⁶ I define policy relevant positions as generalist positions, such as the prime minister, and positions in the fiscal or military sectors, following Li (2013, 16-7, 47-8, 62-70).

randomly assign a value to these politicians by flipping a coin (i.e., drawing from the Bernoulli distribution). All four of these approaches produce the same results.¹⁷

Politicians' career trajectories indicate that Emperor Shenzong tried to balance the two camps. The correlation coefficient between *Support for reform* and rank change under Shenzong, calculated by last position's rank minus first position's rank, is quite small (0.13) and not statistically significant. Panel (b) in Figure 2 shows that, for the most part of the Shenzong reign, the average bureaucratic ranks of supporters and opponents were not significantly different. This suggests that the emperor treated supporters and opponents roughly equally in career advancement. As the personnel minister Zeng Gongliang advised the emperor: "it is important to have people of different opinions stirring each other up, so that no one will dare to do wrong" (Li 1979 [1177], 213: 5169). This partly eases the concern of selection bias in the sample, which might be produced if Shenzong overwhelmingly promoted one group over the other.

THE INDEPENDENT VARIABLE

The key independent variable – *Local concentration of kin* – measures how geographically concentrated a politician's kinship network was. Here, a politician's kinship network included two components: the politician's nuclear family and all affines who were connected by marriage with the politician's son(s) or daughter(s). Figure 3 presents an example of a kinship network where a (red) solid line represents a blood relation and a (blue) dashed line a marriage tie.

I focus on marriage ties built via son(s) or daughter(s) for three reasons. First, marriage coalitions built via children made politicians future oriented. Because there was a lag between policy implementation and policy effects, the politicians at time t calculated how their coalition members would benefit from the policies at time $t + 1$, which related more closely to the children's generation. And because coalition members and the politician had "mutual hostages," the politician needed to fulfill his promises to his kin. Second, in imperial China, a grandchild's

¹⁷ Columns (2), (3), and (6) in Appendix Table A1-4 and Figure A1-6 show the estimates. In particular, Figure A1-6 shows the estimates from 100 trials where the politicians whose attitudes are unknown are randomly assigned an attitude by drawing from the Bernoulli distribution.

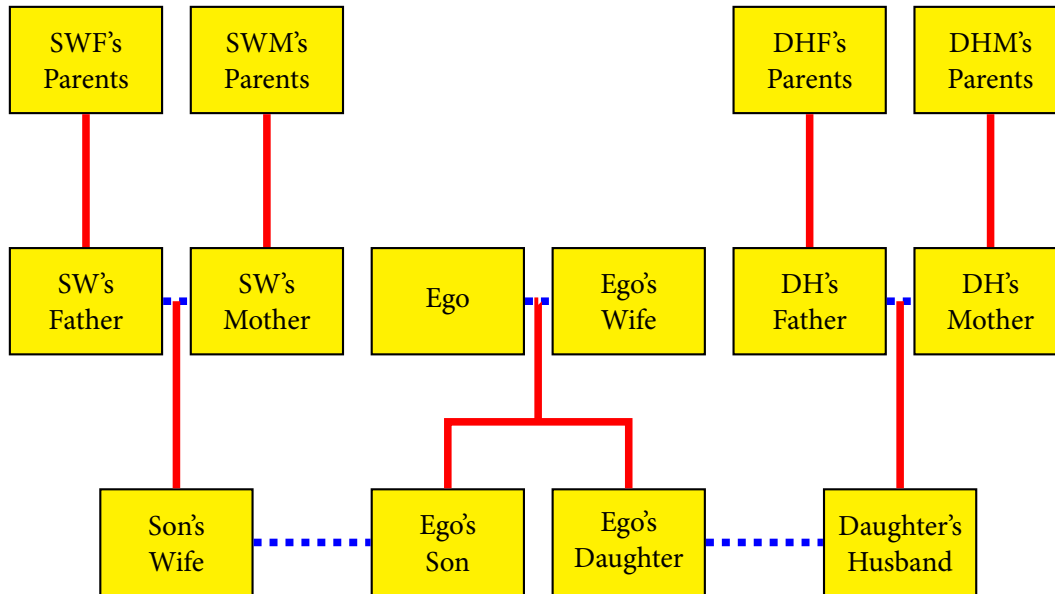
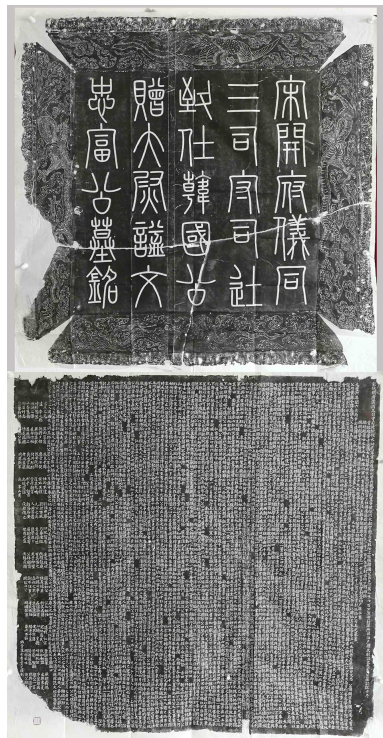


Figure 3: Example of a Kinship Network

marriage was primarily arranged by the grandfather – a senior, patriarchal member of the lineage, so marriage coalitions via children represented what the politician *endowed* from the past generation (Ebrey 1993, 69). For example, the intermarriages between Wang Anshi’s family and his wife Wu Qiong’s family started in Wang Anshi’s grandfather’s generation (Hymes 1986, 90-1). Lastly, given that males typically married and had their first child in their late teens during the Song (Ebrey 1993, 75), when the reform started, most politicians (with an average age of 51) already had their children married. The engagement occurred even earlier, when children were babies or even before they were born (63). This guarantees that the independent variable preceded the outcome variable.

Mapping elite kinship networks presents a formidable challenge, especially from a thousand years ago. I exploit a unique archaeological source: tomb epitaph. Tomb epitaphs in the Song period consisted of square slabs of limestone, on which biographies of the deceased were inscribed. Because the epitaphs were deemed a literary genre, the texts of hundreds of them survive in the collected works of Song writers and are included in *The Complete Prose of Song*. The texts of tomb inscriptions are rich with information of interests to historians (Tackett 2014,



(a) Prime Minister Fu Bi's Tomb Stone (b) Chinese Transcription of Fu Bi's Tomb Epitaph

Figure 4: Tomb Epitaph Example

English Translation: His excellency (Fu Bi) married the daughter of **Yan Shu**. She was virtuous, calm, and restrained. They had three sons: **Fu Shaoting**, Gentleman for Court Service; **Fu Shaojing**, Deputy Commissioner of Storehouse; **Fu Shaolong**, Aid in the Court of Imperial Entertainments. They had four daughters: the first married **Feng Jing**, Scholar in the Institute for the Extension of Literary Arts; after she died, the second daughter married Feng Jing; the third daughter married **Fan Dazong**, Court Gentleman for Instruction; the fourth daughter married **Fan Dagui**, County Magistrate of Huoquiu. They have three grandsons and three granddaughters.

13). They contain lengthy eulogistic passages, which almost always include the surnames of their wives and generally provide the names and, if applicable, the ranks of their sons, and the names and ranks of their daughters' husbands. Because of these conventions – and especially where more than one member of the network is eulogized – it is possible to reconstruct descent lines and affinal connections over several generations (Bossler 1998, 11). Figure 4 shows as an example the tomb epitaph of Fu Bi – a prime minister under Shenzong.

My research team first find all available tomb epitaphs of the major politicians from an electronic version of *The Complete Prose of Song* and manually identify the politician's wife, son(s), daughter(s), and son(s)-in-law. Using these names, we then search in *The Complete Prose of Song*

夫，盡誠以有禮，雖布衣必與之亢。不妄笑語以下賓客。為聲名，嘉善嫉邪，出於天性。居間，猶前問當世人物，以知其賢不肖，尤慎許與。未嘗輕以加人。出入尊寵垂四十年，而服用素約，無聲色之玩。雖高年，未嘗一日廢書不觀，以至釋氏、老莊方外之說，莫不究極精微。有文集八十卷，藏於家。公嘗語人曰：「吾才學非能過人，但有不欺耳。」蓋公之所以自養者如此。故其行己也，外如其中，其事君也，終如其初，久而益見信於天下，雖窮閭遠國，莫不知公之姓與官號。北虜使每至，必候公出處，問其安否。公雖退居，明語之所咨訪，密章之所啓告，蓋不乏矣。至其將沒，猶以遺稿一通付其子之上。然其詳莫得而知也。推公之意，苟可以益君上，厚民人者，蓋忘其身之老且死而言之也。嗚呼，可謂忠已。初，公之將生，秦國太夫人夢幡旗鶴鳴甚衆，降集其家。云天有赦，瘡而生公。其將薨，有大星殞於所居選政堂之後。噫！天之生大賢不數，生則必福其國，澤其民。如公之為相，則首定儲位，以啓神聖，為社稷無疆之休；其奉使，則辨折強虜，攘其奸萌，易干戈為和好；其撫東夏，則安輯流冗，以食以處，續將絕之命者數十萬人。則其兆神靈之應，錫壽龍之享，固其理然。惡足怪哉！公之配曰周國夫人，晏氏元獻公之女也。賢靜有法度，公以為「真吾匹」。男子三人：曰紹庭，朝奉郎；曰紹京，卒；曰紹隆，光祿寺丞，早卒。女子四人：長適觀文殿學士馮京，卒；又以其次繼室，封延安郡夫人，次適宣德郎范太宗，次適霍邱縣令范大珪。孫男女各三人。周國夫人與其孤遂以公薨之年冬十一月庚申，奉公之柩葬於河南府河南縣金谷鄉南張里。公之兆也。謂某辱公之知實厚且久，以銘見屬，義不得辭。銘曰：

全宋文卷二〇七〇 韓 維 一五

三三七

to determine whether their epitaphs exist. Relying on this snowballing approach, and consulting “China Biographical Database” (2018), we are able to collect the information on 68 politicians’ kinship networks. While snowballing, we decide to stop (for cost concerns) once we go beyond three generations – the politician parents’ generation, the politician’s generation, and the politician children’s generation. I will control for the number of recorded kin in the regressions to deal with the possibility that some politicians’ networks were better documented. For the rest of the sample whose kinship information is missing, I use listwise deletion in the main analysis and multiple imputation in the robustness checks.¹⁸

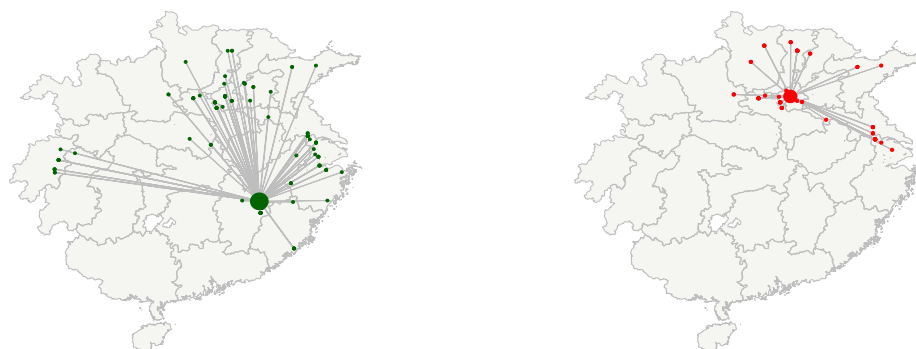
The tomb epitaphs and “China Biographical Database” (2018) also provide each individual’s hometown information. I then geocode each kin member using “China Historical Geographic Information System” (2018), which provides the latitudes and longitudes of Song localities.

Figure 5 illustrates two examples. Panel (a) shows the locations of Wang Anshi’s kin, while Panel (b) the locations of Lü Gongzhu’s kin. Wang Anshi – the reform leader – had a geographically dispersed kinship network: his kin were scattered all over the country. Conversely, Lü Gongzhu – an opposition leader – had his kin mostly from nearby localities.¹⁹

I then construct an index using the “market potential” approach, used in the economic geography literature to measure market localization (Harris 1954; Krugman 1998). *Local concentration of kin* for politician i is defined as $\sum_{k \in K} (1 + distance_{i,k})^{-1}$, where $distance_{i,k}$ is the “as the crow flies” distance (in kilometer) from politician i to his kin k . The set K includes all kin members of i . The underlying logic is that this index of local concentration increases as all kin move closer to the politician. This index exhibits a generic nature that does not rely on administrative units, which are of different sizes and often determined by time-variant, arbitrarily drawn borders. But as I will show in the robustness checks, my results do not depend on this measure. In particular, I also try a weighted Herfindahl index – which relies on adminis-

¹⁸ Appendix Table A1-7 shows the results with 20 imputed datasets.

¹⁹ I choose Lü Gongzhu partly for visualization considerations: although his kinship network was more localized than Wang Anshi’s, it was dispersed enough to show the whole network on a national map.



(a) Wang Anshi (Reform Leader)'s Kinship Network (b) Lü Gongzhu (Opposition Leader)'s Kinship Network

Figure 5: Geography of Two Politicians' Kinship Networks

Notes: Panel (a) shows the kinship network of the reform leader Wang Anshi. Panel (b) shows the kinship network of the opposition leader Lü Gongzhu. The big circles represent the locations of the egos (Wang and Lü), the small dots represent the locations of their kin, and lines represent kinship ties.

trative units – and can obtain the same results.²⁰ I also try weighting the index by the number of children a politician had or giving different weights to different kin members and can obtain the same results.

CONTROL VARIABLES

Several alternative explanations exist. First, politicians' individual characteristics, such as family wealth, might influence their calculation. For example, politicians from wealthier families had more resources to support kinship organizations, and hence were less likely to support the state-strengthening reform. In addition, their hometown characteristics, such as geography, history, culture, and cropping patterns, also affected politicians' attitudes. For example, politicians whose hometowns were located in regions that were prone to nomadic invasions or domestic rebellions might have a stronger incentive to strengthen the state (Tilly 1992; Slater 2010). Moreover, a redistributive logic would predict that politicians from regions with good soil quality and

²⁰ The Herfindahl index is constructed as $\sum_{j \in J} kinpercent_j^2$, where $kinpercent_j$ is the share of kin members in administrative unit j – county, prefecture, or province. The set J includes all the administrative units kin live. This index increases as more kins are concentrated in a few localities. Appendix Table A1-5 presents the estimates.

a high yield of agricultural outputs would be more likely to oppose state strengthening because they must pay disproportionately more taxes because of higher income (Meltzer and Richard 1981). There is, unfortunately, scarce data on politicians' family wealth. Historians, however, have a consensus that Song high-ranking officials were a relatively homogenous group from wealthy landowning families (Liu 1959, 16; Qi 2000, 34). To control for their hometown characteristics, I include prefectural fixed effects, which consider features of the politician's hometown at the prefectural level at which Song governmental apparatuses (such as taxation and security) were clustered (Smith 2009, 407).

Second, recent work using social network analysis shows that the more central an actor is in the network the more impact his or her actions have on the actions of others and the more likely he or she will take actions (Naidu, Robinson, and Young 2018). Appendix Figure A1-2 shows the network of the 137 politicians where an edge means a marriage tie.²¹ I then control for each politician's *Betweenness centrality* – a measure of the amount of influence a node has over the flow of resources in a network (Padgett and Ansell 1993, 1278). In the robustness checks, I also use *Degree centrality* or *Bonacich power* and obtain the same results.²²

Third, one might suggest that it is not the geography but the *number* of kin members that matters. Holding geographic distribution constant, a coordination logic might predict that a large number of kin would increase the transaction costs of coordination at the local level, which induces the politician to buy services from the state – a “focal point” (Schelling 1960, 57). I hence control for *N of kin*, which is the total number of kin. This covariate also deals with the problem that some politicians' networks were better recorded than others'.

Fourth, Song witnessed the rise of factional politics and divergent philosophical schools (Hartwell 1986; Bol 2008).²³ To code each politician's factional ties, I first identify reform and

²¹ Politicians A and B are connected if A is in B's kinship network, or vice versa. Kinship network is defined in Figure 3.

²² *Degree centrality* is the number of ties a politician had in the marriage network. *Bonacich power* takes into account how many ties a politician had and how many ties the politicians in the neighborhood had. See Appendix Table A1-6.

²³ Politicians formed factions in one of three ways: 1) examiner and examinees in the civil service exam, 2) examinees in the same cohort, and 3) politicians who shared similar philosophical views.

opposition leaders.²⁴ I then consider each politician as having a factional tie with a reform or opposition leader if one of the following conditions is met: 1) he was in an examiner-examinee relationship with a reform or opposition leader, 2) he passed the civil service exam in the same year with a reform or opposition leader, and 3) he was in the same philosophical school, as defined by Bol (2008, 61-5), with a reform or opposition leader.²⁵ The two indicators, *Factional tie with reform leader* and *Factional tie with opposition leader*, measure their relationship to the reform or opposition leaders, respectively.

Fifth, politicians whose kin were more exposed to nomadic invasions or domestic rebellions might prefer a stronger state (Tilly 1992; Slater 2010). To measure external threats to kin, I construct an index using the “market potential” approach to measure kin’s exposure to all external war battles fought in the 50-year period prior to the Shenzong reign. *Kin exposure to external wars* is thus $\sum_{w \in W} (1 + distance_{k_c, w})^{-1}$, where $distance_{k_c, w}$ is the “as the crow flies” distance (in kilometer) from the centroid of the kinship network k_c to an external war battle w . The set W includes all external war battles fought between Song and a non-Song regime, such as Xixia and Liao, from 1016 to 1065.²⁶ This index increases as external war battles moved closer to the centroid of the kinship network. Similarly, I construct an index *Kin exposure to mass rebellions*: $\sum_{r \in R} (1 + distance_{k_c, r})^{-1}$, where $distance_{k_c, r}$ is the distance from the centroid of the kinship network k_c to a mass rebellion battle r . The set R includes all mass rebellion battles fought between the Song government and a mass rebel group (e.g., peasants, artisans), from 1016 to 1065.²⁷ This index increases as mass rebellion battles moved closer.

Sixth, Northern Song economy experienced a “commercial revolution” where market and trade significantly expanded (Liu 2015, 57). Commerce could contribute to the rise of a mer-

²⁴ Reform leaders included Wang Anshi, Lü Huiqing, and Cai Que. Opposition leaders included Sima Guang, Wen Yanbo, Lü Gongzhu, Ouyang Xiu, Han Qi, and Fu Bi. See Liang (2009 [1908]), Williamson (1935), Liu (1959), Deng (1997), and Smith (2009).

²⁵ I collect the information on politicians’ exam history from “China Biographical Database” (2018) and philosophical schools from Liu (2006, 62-98) and Zhang (2008, 2-3, 124, 161-5, 414).

²⁶ The locations of external war battles are from Dincecco and Wang (2018), who collect the information on historical conflict from the *Catalog of Historical Wars* produced by the Nanjing Military Academy (2003).

²⁷ The locations of mass rebellion battles are from Dincecco and Wang (2018). Appendix Figure A1-3 shows the locations of all external war and mass rebellion battles in 1016–1065.

chant class who support warfare and state building to protect their business interests (Stasavage 2002). To control for how commercialized a politician's constituency was, I construct *Kin commercial tax index*, calculated as $\sum_{j \in J} kinpercent_j \times per\ capita\ commercial\ tax_j$, where $kinpercent_j$ is the share of kin in prefecture j and $per\ capita\ commercial\ tax_j$ is the per capita commercial tax in prefecture j .²⁸

Lastly, historians often emphasize the importance of family pedigree in Song politics (Hymes 1986, 127-8). As I discuss earlier, the civil service exam created a "localist turn" in elite transformation and incentivized Song elites to marry locally and become representatives of local interests. I control for *Father passing exam* to measure whether the politician's father entered officialdom by taking the exam (as opposed to inheriting), which proxied for the politician's family pedigree. This variable also proxies for the politician's father's political orientation because the Confucian exam should have an effect on the father's political views, which might influence his strategies in constructing his son's (the politician's) kinship network.²⁹

Appendix Table A1-1 displays the summary statistics for all of the variables.

EMPIRICAL ANALYSIS AND RESULTS

In this section, I systematically test the hypothesis that politicians' support for state strengthening is positively correlated with the geographic span of their kinship networks.

I estimate the following benchmark ordinary least squares (OLS) specification:

$$Support\ for\ reform_i = \alpha + \beta Local\ concentration\ of\ kin_i + \mu_j + \mathbf{XB} + \epsilon_j. \quad (1)$$

The dependent variable *Support for reform_i* is a continuous variable that measures politician i 's degree of support for the reform. The variable of interest *Local concentration of kin_i* is an

²⁸ I collect the commercial tax and population data in 1077 from "China Historical Geographic Information System" (2018).

²⁹ For a discussion on the cultural foundation of the exam and its potential impacts on Song officials, see Chaffee (1995, 47-8).

index measuring how geographically concentrated politician i 's kinship network was. β , the quantity of interest, is expected to be negative according to Hypothesis 1.

Figure 6 presents the main estimates of the benchmark model.³⁰ All standard errors are robust, clustered at the prefectural level to account for any within-prefecture correlation in the error term. I start with a bivariate relationship between *Local concentration of kin* and *Support for reform*. I then add prefectural fixed effects to control for any prefectural-level variations in politicians' hometowns. In the rest of the figure, I gradually add more covariates. Some of the covariates might be posttreatment, but they are also important cofounders and, therefore, included to test the robustness of the estimates.³¹ In all specifications, there is a negative correlation between *Local concentration of kin* and *Support for reform*, and the coefficient is statistically significant at the 90% level. The magnitude of the coefficients ranges from -0.015 to -0.029, suggesting that a one standard deviation increase in *Local concentration of kin* is associated with a 10-19% decrease in support for the reform.

These results are highly robust, as shown in a wide range of robustness checks (Appendix Section Robustness Checks). For example, the original measure of the independent variable makes a heroic assumption that every kin member matters equally to the politician. I relax this assumption in three ways. First, in a patriarchal society such as imperial China, the politician might attach more importance to the son side of the kinship network than to the daughter side because the son will inherit the family property (Ebrey 1993, 235). I therefore give each kin member in the daughter side a "matrilineal discount," so they contribute less to the index than kin members in the son side.³² Second, I discount a kin member depending on how distant he or she is from the ego politician, based on the intuition that the politician attaches more importance to immediate family members, such as sons and daughters, than remote relatives.³³

³⁰ Appendix Table A1-3 presents the full results.

³¹ For example, factional ties with a reform leader might be a consequence of kinship ties with the leader. Adding these posttreatment covariates will produce a more conservative estimate of the effect of *Local concentration of kin*.

³² To avoid designating an arbitrary number, I create "discount rates" ranging from 0.1 to 0.9. Appendix Figure A1-4 shows the estimates using different discount rates.

³³ A "relational distance discount" is hence calculated as the inverse of the number of ties from the politician to the kin member. Using Figure 3 as an example, there are three ties between the ego politician and his son's wife's father,

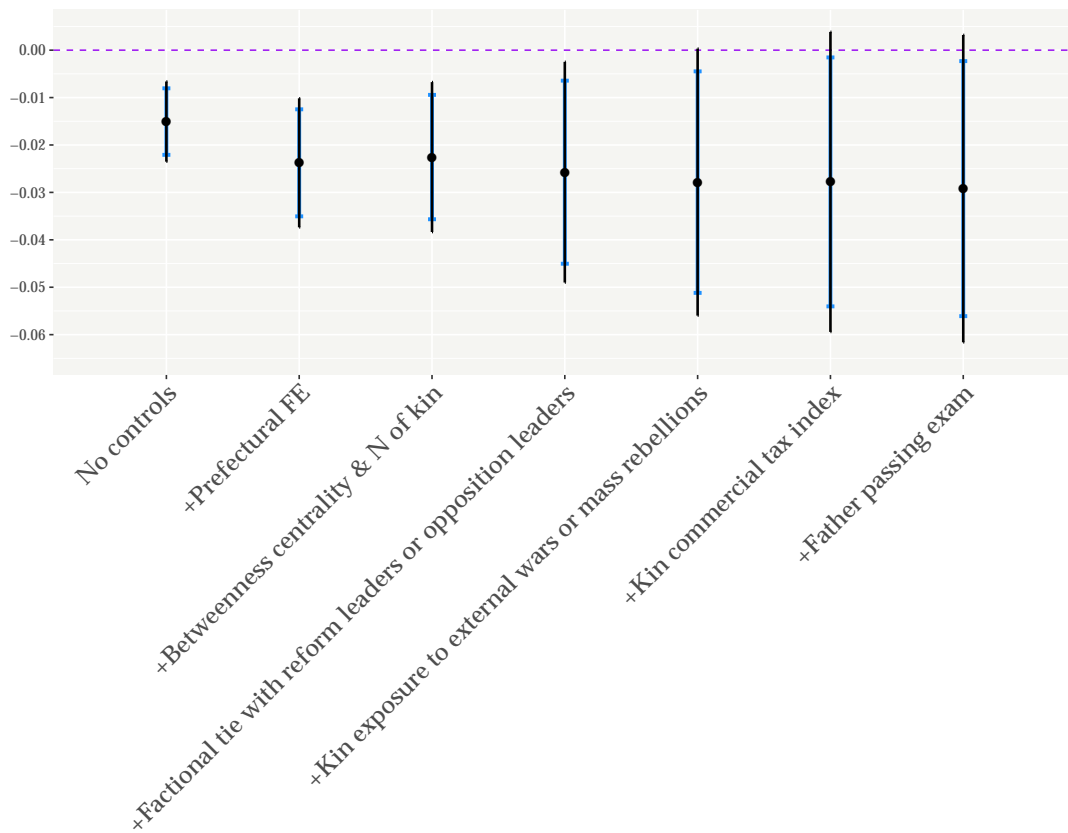


Figure 6: OLS Estimates of the Effects of Local Concentration of Kin on Support for Reform

Notes: Estimation method is OLS. Unit of analysis is politician. Dependent variable is a continuous measure of support for the state-strengthening reform. Variable of interest is an index on local concentration of kin. Dots represent point estimates. Bars represent 90% confidence intervals, and lines represent 95% confidence intervals, both based on robust standard errors clustered at the prefectural level.

Lastly, the politician might care more about blood ties than marriage ties.³⁴ All of these alternative measures produce similar results. In addition, I divide the index by the number of children a politician had and obtain similar results (Column (4) in Appendix Table A1-4). I also try dropping one politician at a time to see if there is one observation driving the results and find the results very stable (Appendix Figure A1-5).

Although I control for a long list of observables, the omission of unobservables might bias

creating a discount rate of $1/3$. Column (5) in Appendix Table A1-4 shows the results.

³⁴ I therefore calculate a “marriage tie discount” to be the inverse of the number of marriage ties between the politician and the kin member. Column (6) in Appendix Table A1-4 shows the results.

my estimates. I conduct a formal sensitivity analysis proposed by Altonji, Elder, and Taber (2005) (AET) to determine how much stronger selection on unobservables would have to be, *relative to selection on observables*, in order to fully explain away my result. Appendix Table A1-8 shows “AET ratios” that range from 7.015 to 15.328. These ratios suggest that the marginal effect of unobservables would have to be at least seven times as large as the marginal effect of observables to invalidate my findings. This far exceeds the benchmark value of 3 used by scholars to identify selection on unobservables (e.g., Nunn and Wantchekon 2011, 3238).

In sum, I find strong support for Hypothesis 1 that politicians’ support for state strengthening is positively correlated with the geographic size of their kinship networks.

FRAGMENTED ELITE AND ABSOLUTE MONARCHY

One ancillary implication of my argument is that the ruler can benefit personally from a fragmented elite because fragmentation makes elites less able to take collective actions against the ruler. Here, I provide qualitative evidence that the emperor strategically played factions of elites against each other and strengthened monarchical power.

As Liu (1959, 60) argues,

“In fact, a tension always existed between the rising power of the ranking officials, to whom the emperor must of necessity delegate some power, and the carefully guarded ultimate power of the emperor himself. The more bitter the power struggle among the bureaucrats became, the greater was the probability of their depending upon the support of the emperor, of their playing into the hands of those around the emperor and in the palace, and of their helping, by design or by force of circumstances, the growth of absolutism.”

To play the bureaucrats against each other, Emperor Shenzong kept both the reformers and opponents in court. “Although the Emperor did not seriously doubt Wang [Anshi]’s loyalty,” Liu (1959, 92) argues, “he was probably afraid that by giving Wang too much power he might

arouse the disloyalty of other leading officials.” For many years during the New Policy era the emperor retained Wen Yanbo, Wang’s firm opponent, as head of the Bureau of Military Affairs, and ignored Wang’s complaints against him (Liu 1959, 92).

Shenzong used the same strategy toward other major opposition leaders, such as Fu Bi and Sima Guang. Shenzong kept Fu Bi in the capital until 1072 despite the old man’s opposition to change, for example, because he felt that Fu Bi’s “prominence helped to hold together all under Heaven” (Smith 2009, 356). And Sima Guang remained Shenzong’s closest confidant – perhaps even closer intellectually than Wang Anshi – despite his intransigent opposition to every facet of the emperor’s reform agenda. For as Shenzong told Lü Gongzhu in the tenth month of 1067, “I want Sima Guang by my side not for his opinions on affairs of state [for as they both agreed Sima, like Wang Anshi, was rather impractical] but because of his moral power and learning” (356-7). The emperor believed that keeping the critics and dissenters by his side would “broaden what he hears and sees” (367).

A fragmented elite structure contributed to the rise of absolute monarchy in the Song era. Historians agree that Northern Song witnessed the strengthening of “the authority of the emperor over his ministers” (461). One way Emperor Shenzong achieved this was to preserve the Bureau of Military Affairs, despite its overlap with the Ministry of War. As Smith (2009, 461) shows, the Song founders had used the Bureau of Military Affairs to maintain imperial control over military matters by segregating military policy making from the civilian bureaucracy. Despite pressure from many officials to transfer all military matters to the Ministry of War, Shenzong refused to abandon the regulations of his dynastic forebears. Consequently, only relatively routine matters were routed to the Ministry of War, while major policymaking authority were reserved for the director and vice-director of the Bureau of Military Affairs.

The second way was to reorganize the top echelon of the bureaucracy to consolidate the emperor’s power over the bureaucracy. As Smith (2009, 462) points out, the three departments – State, the Chancellery, and the Secretariat – had stood as the collective pinnacle of government since the post-Han period of division. By the eighth century, however, functional distinc-

tions among them had become blurred. This led to the formation of a combined Secretariat-Chancellery whose heads normally served as the chief councilors, supported by a structure of staff offices that duplicated and supplanted the six ministries of the Department of State Affairs. By the early Song the Secretariat-Chancellery controlled all civilian affairs except remonstrance, and with the Bureau of Military Affairs comprised the two administrations – civil and military – of government. Shenzong saw the three departments as a way of breaking up the concentrated power of the Secretariat-Chancellery and its chief ministers, by dividing the single unified civil authority into three separate components. In new administrative protocols announced in the fourth and fifth months of 1082, the three departments were revived in a way that diluted their overall authority as much as possible. Rather than making each department responsible for a particular set of issues, all three departments were made to share different aspects of every issue: the Secretariat was to consider and deliberate, the Chancellery was to investigate policy alternatives, and the Department of State Affairs – pinnacle of the six ministries – was to put the final policy decisions into effect. Except in the most unusual circumstances each department was required to perform and memorialize about its own function alone.

As a consequence of strengthened monarchical power, the ruler in China since Song times were less threatened by the elites. This is consistent with systematic empirical evidence. Using Wang's (2018) data, Appendix Figure A1-7 shows that emperors from the Song onward were significantly less likely to be deposed by the elites.³⁵ As a result, elite fragmentation since the Song times might have contributed to a *weak state equilibrium* in which the rulers gained their personal power at the expense of state capacity.

DISCUSSION AND CONCLUSION

China's historical experience suggests important lessons for understanding state building and the developing world more generally. First, the bellicist theory that links war making and state

³⁵ Blaydes and Chaney (2013) pioneer the the study of ruler survival in historical settings.

making, rooted in generalizing histories of Western Europe, is not universal. As Chinese history shows, even facing severe external threats, politicians might not have a strong *personal* incentive to strengthen the state. To understand state building, we therefore need to pay attention to the incentives of the domestic elites. I join a nascent literature that examines state building outside Europe and lend further support to their insight that elite incentives should be front and center in the study of state development (Geddes 1994; Centeno 2002; Slater 2010; Herbst 2014; Soifer 2015; Garfias 2018).

Second, many developing nations face a challenge in state building as China did historically: traditional authorities and powerful local families subvert state power (Migdal 1988). Many of the policy interventions carried out by the international community, such as the World Bank and the International Monetary Fund, focus on strengthening the bureaucracy and building a “Weberian” state (Evans and Rauch 1999). But as the Chinese experience demonstrates, *state weakness is a social problem that cannot be resolved with a bureaucratic solution*. When Chinese emperors began using a civil service examination to recruit bureaucrats, the Chinese elites became more fragmented and opposed to state building. This experience shows that building a strong state requires social changes, which are generally missing from today’s international programs.

The Chinese case points to the importance of social structure in understanding state building. When elites are embedded in local social relations, they are more likely to rely on local, private organizations to provide services and protection and less likely to support a strong central state. This is similar to the challenges many developing countries are facing when striving to build a strong central state. In Boone’s (1992) study of Senegal, chiefs and other local-level authorities exercised a tremendous degree of discretion in local arenas. These local patterns of domination came to be rooted in the state organization, crippling it and making it unable to deal with the pressing problem of eroding national production that left the state with a drastically declining tax base. In the same vein, in Soifer’s (2015) study of state building in Latin America, state-building efforts failed where local elites were tasked with administering them. He argues

that locally based elites were less invested in state building. When state leaders delegated administration to local elites, for example in Peru before 1895, the state-building initiatives emanating from the center bore little fruit.

The take-away from these experiences is that state building should go beyond a narrow focus to reform the bureaucracy and involve a broader project to shape the social structure to make it incentive-compatible with a strong state.

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ONLINE APPENDIX

BACKGROUND AND SUPPLEMENTARY INFORMATION



Figure A1-1: Northern Song Borders, 960–1127 CE

Notes: This figure shows the three regimes in China between 960 and 1127 based on “China Historical Geographic Information System” (2018).

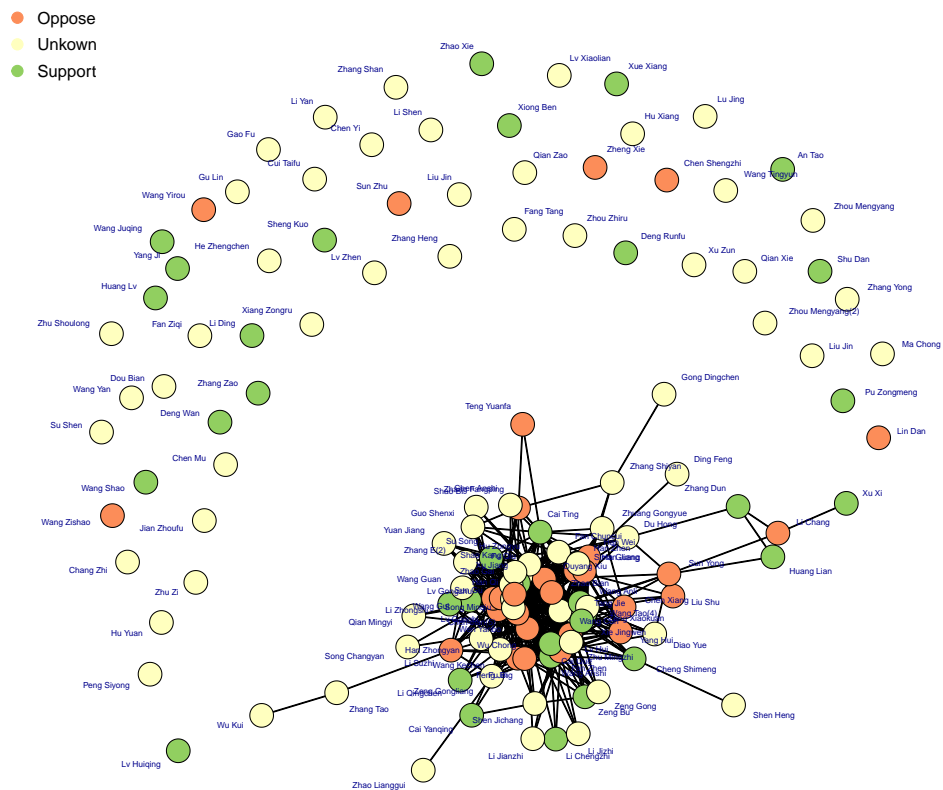


Figure A1-2: Northern Song Politicians Marriage Network, 1167–1185 CE

Notes: This figure shows the social network among the 137 major politicians in the Northern Song Dynasty. Each node is a major politician. Each edge measures whether there is a marriage tie between the two politicians through one's children, as defined in Figure 3. Nodes are color coded to indicate their attitudes toward the reform: support (green), neutral (yellow), and oppose (orange).

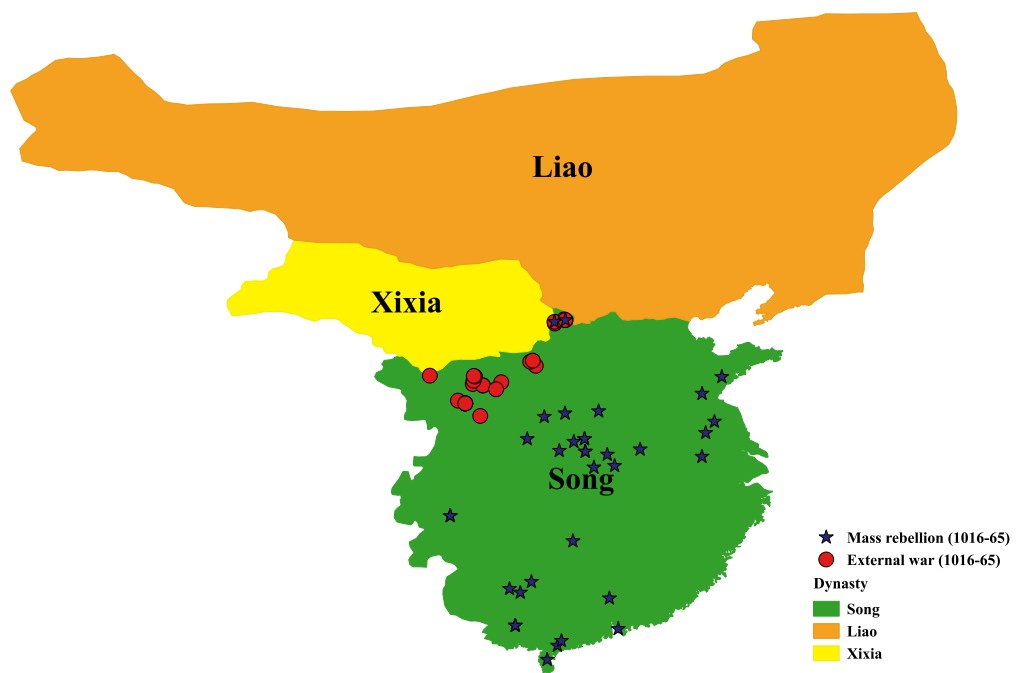


Figure A1-3: Conflicts in Northern Song, 1016–1065 CE

Notes: This figure shows the locations of external war and mass rebellion battles during 1016–1065 in the Northern Song Dynasty.

Table A1-1: Summary Statistics

	N	Mean	Std Dev	Min	Max
Support for state strengthening (continuous)	63	0.574	0.482	0.000	1.000
Support for state strengthening (dichotomous)	63	0.540	0.502	0.000	1.000
Support for state strengthening (trichotomous)	137	0.036	0.680	-1.000	1.000
Reform party	74	0.527	0.503	0.000	1.000
Politician rank change	137	0.255	0.900	-2.000	4.000
Local concentration of kin	68	3.336	6.686	0.001	38.334
Factional tie with reform leader	137	0.204	0.405	0.000	1.000
Factional tie with opposition leader	137	0.343	0.476	0.000	1.000
Betweenness centrality	137	25.664	55.796	0.000	443.731
Bonacich power	137	-0.016	1.004	-4.570	2.780
Degree centrality	137	8.978	11.995	0.000	50.000
N of kin	70	101.957	110.517	1.000	566.000
Kin exposure to external wars	68	0.026	0.008	0.013	0.061
Kin exposure to mass rebellions	68	0.062	0.015	0.033	0.112
Kin commercial tax index	68	0.496	0.288	0.051	1.708
Father passing exam	137	0.190	0.394	0.000	1.000
Any uncle passing exam	137	0.131	0.339	0.000	1.000
Grandfather official status	137	0.496	0.502	0.000	1.000
Herfindahl index of kin concentration (county)	68	0.200	0.222	0.034	1.000
Herfindahl index of kin concentration (prefecture)	68	0.231	0.222	0.059	1.000
Herfindahl index of kin concentration (province)	68	0.298	0.235	0.098	1.000
Local concentration of kin/N of children	68	2.109	4.149	0.001	18.006
Local concentration of kin (matrilineal discount 0.1)	68	1.572	4.699	0.000	35.514
Local concentration of kin (matrilineal discount 0.2)	68	1.768	4.755	0.000	35.827
Local concentration of kin (matrilineal discount 0.3)	68	1.964	4.862	0.001	36.140
Local concentration of kin (matrilineal discount 0.4)	68	2.160	5.017	0.001	36.454
Local concentration of kin (matrilineal discount 0.5)	68	2.356	5.214	0.001	36.767
Local concentration of kin (matrilineal discount 0.6)	68	2.552	5.450	0.001	37.080
Local concentration of kin (matrilineal discount 0.7)	68	2.748	5.719	0.001	37.394
Local concentration of kin (matrilineal discount 0.8)	68	2.944	6.018	0.001	37.707
Local concentration of kin (matrilineal discount 0.9)	68	3.140	6.341	0.001	38.020
Local concentration of kin (relational distance discount)	68	0.607	1.184	0.000	6.252
Local concentration of kin (marriage tie discount)	68	2.174	4.328	0.001	22.264
Average distance to Tang capitals (log)	125	6.395	0.588	5.088	7.183
Aristocratic descent	137	0.299	0.460	0.000	1.000
At least one aristocrat kin	68	0.956	0.207	0.000	1.000

Notes: See text for variable descriptions and data sources.

Table A1-2: Political Selection and Geography of Kinship Network: OLS Estimates

<i>Dependent variable:</i>	Local concentration of kin		
	(1)	(2)	(3)
Father passing exam	4.855* (2.621)	4.798* (2.711)	5.118* (2.864)
Any uncle passing exam		-0.268 (3.474)	-0.231 (3.386)
Grandfather official status			-2.332 (1.665)
Prefectural FE	Yes	Yes	Yes
Outcome mean	3.336	3.336	3.336
Outcome std.dev.	6.686	6.686	6.686
Observations	68	68	68
R2	0.341	0.341	0.356

Notes: Estimation method is OLS. Unit of analysis is politician. Dependent variable is an index on local concentration of kin. Variable of interest is whether the politician's father passed civil service exam. Robust standard errors clustered at the prefectural level in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.

Table A1-3: Geography of Kinship Network and Support for Reform: OLS Estimates

<i>Dependent variable:</i>	Support for reform (continuous)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Local concentration of kin	-0.015 *** (0.004)	-0.024 *** (0.007)	-0.023 *** (0.008)	-0.026 *** (0.011)	-0.028 * (0.014)	-0.028 * (0.015)	-0.029 * (0.016)
Betweenness centrality			-0.003 (0.005)	-0.004 (0.006)	-0.004 (0.007)	-0.003 (0.007)	-0.003 (0.008)
N of kin			0.001 (0.004)	0.003 (0.005)	0.003 (0.006)	0.003 (0.006)	0.004 (0.007)
Factional tie with reform leader				0.015 (0.278)	-0.067 (0.420)	-0.047 (0.453)	0.155 (0.585)
Factional tie with opposition leader				-0.432 (0.655)	-0.501 (0.668)	-0.494 (0.753)	-0.474 (0.647)
Kin exposure to external wars					-16.532 (86.059)	-17.594 (93.927)	-20.254 (95.700)
Kin exposure to mass rebellions					0.069 (13.253)	0.676 (15.769)	4.401 (12.929)
Kin commercial tax index						0.190 (0.552)	0.170 (0.503)
Father passing exam							0.502 (0.424)
Prefectural FE	No	Yes	Yes	Yes	Yes	Yes	Yes
Outcome mean	0.446	0.446	0.446	0.446	0.446	0.446	0.446
Outcome std.dev.	0.483	0.483	0.483	0.483	0.483	0.483	0.483
Observations	40	40	40	40	40	40	40
R2	0.062	0.732	0.784	0.800	0.804	0.806	0.832

Notes: Estimation method is OLS. Unit of analysis is politician. Dependent variable is a continuous measure of support for the state-strengthening reform. Variable of interest is an index on local concentration of kin. Robust standard errors clustered at the prefectural level in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.

ROBUSTNESS CHECKS

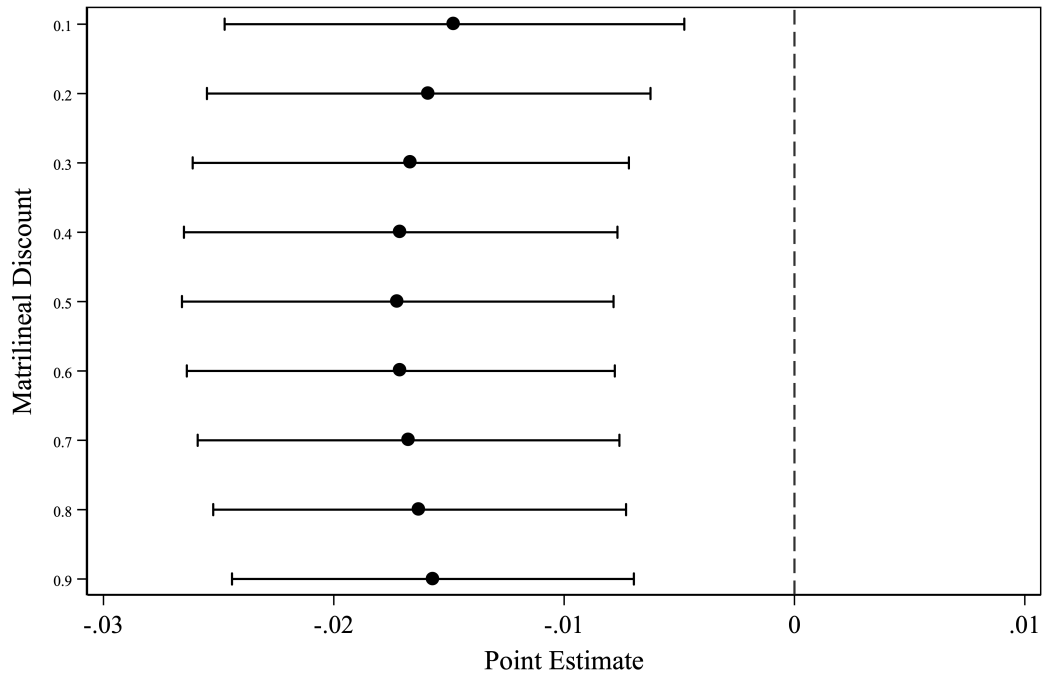


Figure A1-4: OLS Estimates with Different Matrilineal Discount Rates

Notes: This figure shows the OLS estimates of *Local concentration of kin* with various “matrilineal discounts” on *Support for reform*, with 95% confidence intervals. Standard errors are clustered at the prefectural level.

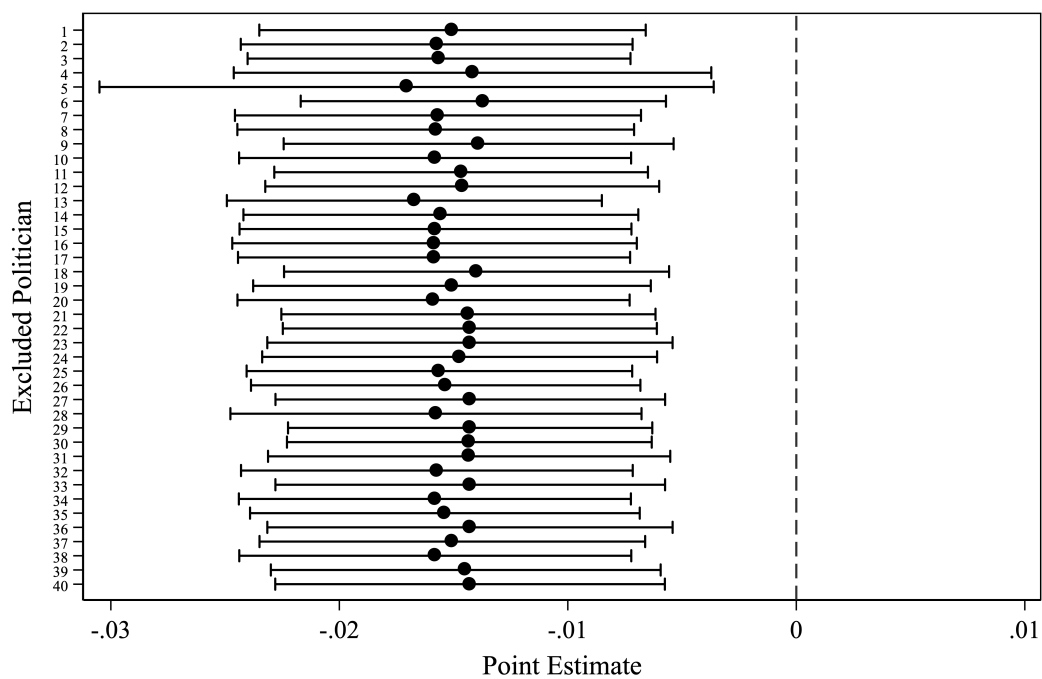


Figure A1-5: OLS Estimates Dropping One Politician at a Time

Notes: This figure shows the OLS estimates of *Local concentration of kin* on *Support for reform*, with 95% confidence intervals, dropping one politician at a time. Standard errors are clustered at the prefectural level.

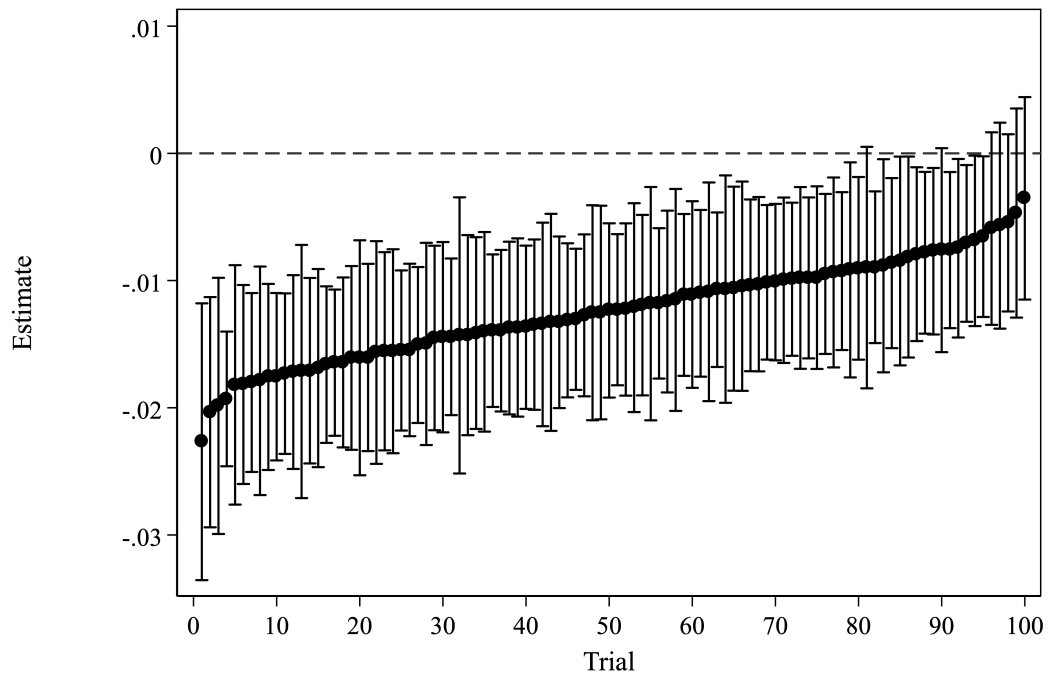


Figure A1-6: OLS Estimates using Randomly Assigned Political Attitudes

Notes: This figure shows the OLS estimates of *Local concentration of kin* on *Support for reform*, with 90% confidence intervals. Politicians with unknown political attitudes are randomly assigned an attitude (0,1) by flipping a coin (i.e., drawing from the Bernoulli distribution). Standard errors are clustered at the prefectural level. Among the 100 trials, less than 5% produce insignificant results.

Table A1-4: Geography of Kinship Network and Support for Reform: OLS Estimates with Alternative Independent and Dependent Variables

<i>Dependent variable:</i>	Support for reform (dichotomous) (1)	Reform party (dichotomous) (2)	Support for reform (trichotomous) (3)	Support for reform (continuous) (5)	Support for reform (continuous) (6)	Support for reform (continuous) (7)
Local concentration of kin	-0.013*** (0.004)	-0.014*** (0.005)	-0.023*** (0.006)			-0.016*** (0.005)
Local concentration of kin/N of children				-0.032*** (0.010)		
Local concentration of kin (relational distance discount)					-0.078*** (0.026)	
Local concentration of kin (marriage tie discount)						-0.022*** (0.007)
Outcome mean	0.400	0.404	-0.118	0.446	0.446	0.459
Outcome std.dev.	0.496	0.496	0.764	0.483	0.483	0.485
Observations	40	47	68	40	40	32
R ²	0.043	0.042	0.041	0.077	0.049	0.081

Notes: Estimation method is OLS. Unit of analysis is politician. Dependent variable in Column (1) is a dichotomous measure of support for the state-strengthening reform. Dependent variable in Column (2) is a dichotomous measure of support for the state-strengthening reform, taking into account politicians' attitudes toward other politicians. Dependent variable in Column (3) is a trichotomous measure of support for the state-strengthening reform. Dependent variable in Columns (4)-(7) is a continuous measure of support for the state-strengthening reform. Variable of interest in Columns (1)-(3) is an index on local concentration of kin. Variable of interest in Column (4) is an index on local concentration of kin divided by the number of children. Variable of interest in Column (5) is an index on local concentration of kin (relational distance discount). Variable of interest in Column (6) is an index on local concentration of kin (marriage tie discount). Sample in Columns (1)-(5) includes all major politicians. Sample in Column (7) includes only policy-relevant politicians. Robust standard errors clustered at the prefectural level in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.

Table A1-5: Geography of Kinship Network and Support for Reform: OLS Estimates with Herfindahl Index of Kin Concentration

<i>Dependent variable:</i>	Support for reform (continuous)		
	(1)	(2)	(3)
Herfindahl index of kin concentration (county)	-0.692** (0.289)		
Herfindahl index of kin concentration (prefecture)		-0.753** (0.306)	
Herfindahl index of kin concentration (province)			-0.733** (0.343)
Outcome mean	0.446	0.446	0.446
Outcome std.dev.	0.483	0.483	0.483
Observations	40	40	40
R ²	0.175	0.188	0.172

Notes: Estimation method is OLS. Unit of analysis is politician. Dependent variable is a continuous measure of support for the state-strengthening reform. Variable of interest is a Herfindahl index on the concentration of kin. The Herfindahl index is constructed as $\sum_{j \in J} kinpercent_j^2$, where $kinpercent_j$ is the share of kin members in administrative unit j – county (Column (1)), prefecture (Column (2)), or province (Column (3)). The set I includes all the administrative units kin live. Robust standard errors clustered at the prefectural level in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.

Table A1-6: Geography of Kinship Network and Support for Reform: OLS Estimates with Alternative Centrality Measures

<i>Dependent variable:</i>	Support for reform (continuous)	
	(1)	(2)
Local concentration of kin	-0.012** (0.006)	-0.015*** (0.004)
Degree centrality	-0.008 (0.007)	
Bonacich power		-0.015 (0.063)
Outcome mean	0.446	0.446
Outcome std.dev.	0.483	0.483
Observations	40	40
R ²	0.101	0.064

Notes: Estimation method is OLS. Unit of analysis is politician. Dependent variable is a continuous measure of support for the state-strengthening reform. Variable of interest is an index on local concentration of kin. Covariate in Column (1) is *Degree centrality* – the number of ties a politician had in the marriage network among 137 politicians. Covariate in Column (2) is *Bonacich power* – a centrality measure that takes into account how many ties a politician had and how many ties the politicians in the neighborhood had. Robust standard errors clustered at the prefectural level in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.

Table A1-7: Geography of Kinship Network and Support for Reform: OLS Estimates with Imputed Datasets

<i>Dependent variable:</i>	Support for reform (continuous)
	(1)
Local concentration of kin	-0.018** (0.008)
Observations	137

Notes: Estimation method is OLS, using 20 imputed datasets. Unit of analysis is politician. Dependent variable is a continuous measure of support for the state-strengthening reform. Variable of interest is an index on local concentration of kin. Robust standard errors clustered at the prefectural level in parentheses. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.

Table A1-8: Using Selection on Observables to Assess the Bias from Unobservables

Observables	AET Ratio
Combination (1): All covariates, including prefectural f.e.	10.275
Combination (2): All covariates, excluding prefectural f.e.	7.015
Combination (3): Only prefectural f.e.	15.328

Notes: This table reports the “AET ratio” based on Altonji, Elder, and Taber (2005) and implemented by Chaudoin, Hays, and Hicks’s (2018) Stata command *poet*. The higher is the ratio, the stronger selection on unobservables needs to be, relative to observables, to explain away the entire effect.

RULER SURVIVAL

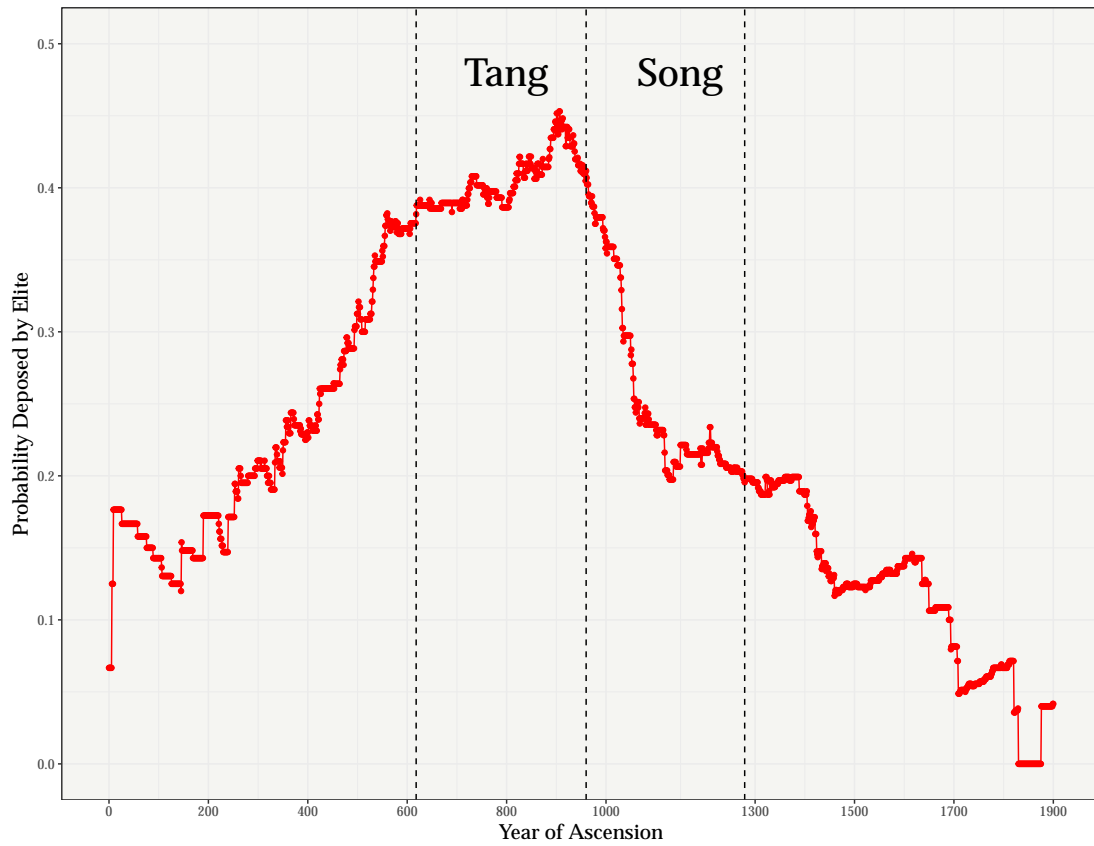


Figure A1-7: Probability of Being Deposed among Chinese Emperors (0–1911 CE)

Notes. This figure shows the moving average of the probability being deposed by elites among Chinese emperors throughout the imperial period. The data on emperors are from Wang (2018).