REGIONAL QUOTAS AND THE RISE OF NATIVE PLACE TIES: EVIDENCE FROM CHINESE CIVIL SERVICE EXAMINIATIONS, 1368-1580

ABSTRACT

With a growing interest in the effect of the native place ties on political elites, we turn to the historical contingencies that transformed the seemingly natural hometown attachment into a salient social group boundary and a political currency. Extending historical scholarship, we argue that although the emergent local identities in the Southern Song dynasty (1127-1279) following the demise of the aristocratic families functioned as a macrostructural precondition, it was the enforcement of a regional quota system on the long-standing civil service examinations (605-1904) in the early Ming dynasty (1368-1644) that made native place ties matter. In line with the state making social groups thesis, the quota system consolidated a place-based group boundary, crystalizing informal local identities into an administrative and social classification regulating the access to resources (i.e., education, examination quotas, and likelihood of becoming political elites). Additionally, the concurrent rise of native place associations founded by and serving people from the same place provided an organizational basis to further develop and enrich native place ties. We corroborate this argument using the regional origin information on the students who passed the examinations in Southern Song dynasty, the pre-quota Ming dynasty, and the post-quota Ming dynasty. We further contend that once native place ties assumed priority in patterned social interaction, they began to affect the civil service examination process and outcomes. Our analysis of micro level information on students and examiners' places of origin, literary specialty, and family members shows that an examiner tended to favor the students from the same province by moving up their places in a ranking order, and this effect was negatively related to the state capacity but positively related to the political stake an examiner had in his hometown.

KEY WORDS: Native place ties; unintended consequences; quota system; group boundary

INTRODUCTION

Many regard China as a network prevalent society with its idiosyncratic features. The term *guanxi*, as a Chinese synonym of networks, has entered academic and business lexicon (Bian 2018). Of particular importance is the native place ties (NPTs), a type of *guanxi* built on the same place of origin. Although similar networks among rural to factory town or international migrant workers were observed in the industrializing West and beyond (Fantasia, 1988; Portes and Sensenbrenner 1993), NPTs took shape and assumed priority among political elites and at a much earlier time, in the early Ming China (1368-1664), and continue to affect political elites today (Opper, Nee, and Brehm 2015; Shih, Adolph, and Liu 2012). Given their seemingly natural and ahistorical characteristics and continued significance, it is important to address the less visible yet fundamental question: what macrostructural factors made the NPTs salient during that period rather than some time earlier?

Native place attachment itself goes hand in hand with civilization, for which China has a written record back to more than 3,000 years. If anything, the early Ming dynasty represented a historical continuity rather than critical juncture.[1] For example, China had long developed one of the earliest bureaucracies with some modern features, which in principle constrained particularism such as network-based favoritism. Since the Qin dynasty (221-206 BCE), unification had become a *de facto* political thought despite periodic fragmentations (Zhao 2015), which stifled a ground for institutionalizing local interest. Its agrarian economy discouraged geographic mobility, attenuating the lived experience of sojourners and hence a weaker need to cultivate the NPTs as a coping mechanism (Honig 1992). Even for the civil service examinations (CSEs) whose evolution accompanied by the rise and fall of different origins of political elites, the first took place in 605, and some fundamental changes such as anonymous evaluation were developed earlier. If we take Simmel's (1955) dialectical thinking of social interaction seriously, then why would the political elites socialize with each other mainly through the NPTs rather than

[1] It is beyond the scope of our study to enumerate categorical shifts throughout China's history. Among others, Zhao (2015) convincingly argues that the Eastern Zhou period (771-256 BCE) was a defining stage for the Chinese civilization we are familiar with. Hymes (1987) summarizes a consensus on the rise and decline of the great or aristocratic families between the third and tenth centuries, replaced by the political elites risen via the CSEs. Furthermore, a multidisciplinary scholarship examines the Tang-Song transition (750-1250) thesis and generally agrees upon fundamental economic, demographic, taxation, and ideological changes during this period, more than a century earlier than the founding of the Ming dynasty.

other types of networks in the absence of categorical shifts in a broader society? All these crystalize the puzzle of why the NPTs became salient and consequential for political elites then, not earlier.

We offer a novel answer by arguing that the Ming state effort of enforcing a regional quota system on the long-standing CSEs turned a natural feeling of native place attachment into a salient group boundary for forging alliances among political elites. This change may seem trivial for an institutionalized CSE system (605-1904) that recruited political elites through exam-based open competition regardless of pedigree.[2] Addressing regional inequality in the number of students who passed the CSEs—a pathway to bureaucracy, this quota system categorized prospective political elites by their place of origin and passed them by a pre-determined quota. By making idiosyncratic native places commensurate with their relative success in the CSEs, the quota system made a place-based group boundary real and consequential, in line with "the state making social groups" thesis (Loveman 1999; Bailey 2008; Grodsky 2007; Tilly 1998; De Zwart 2005; Skrentny 2006). The NPTs became a significant manifestation of network homophily, making the same native place an effective predictor of friendship or political alliance membership. This was further substantiated and scaled up by a contemporaneous rise of the native place associations (landsmannschaften; Ho 1966), an organizational basis that fostered trust and enriched interpersonal connections among people from the same place. As the NPTs assumed priority in patterned social interaction, political elites developed and acted on such connections by favoring those from the same place at the CSE stage and beyond.

In the following, we first explain the rising salience of the NPTs amidst macrostructural changes, administrative technicality, and organizational basis and then illustrate the effects the NPTs on CSE outcomes. Drawing on sinology on corresponding periods (Bol 2001, 2003; Hymes 1987; Tackett 2014; Ho 1964, 1966; Elman 2013; Brook 2010; Kracke 1947; Chaffee 1985), we document the rise of local identities following a decline of the great families in the Southern Song dynasty (1127-1279), who usually resided in the capital city, passed down important

[2] This quota system is mentioned by historians, but mainly as an administrative technicality or as a change in the CSE itself, which partly explains why prior research passes over its profound implications and lingering consequences.

bureaucratic positions for generations, and intermarried.[3] This change itself did not lead to the rising salience of the NPTs, though. It was the Ming state's regional quota enforced on the CSEs in the early fifteenth century that crystallized a place-based group boundary. Employing a triggering event in 1397 that led to the regional quota system, we present the stylized facts of a more spread regional distribution of passing students after that. In addition, the pre-1397 pattern was consistent with that of the Southern Song dynasty, again suggesting a root cause in the introduction of the quota system rather than any dynasty specific feature. We then proceed to the effects of the NPTs on the CSE outcomes. Using a newly digitalized historical database of 12,752 students who passed 46 CSEs between 1400 and 1580, we find that coming from the same province as an examiner moved up a student's relative ranking about five places, more likely to put him on the fast track to bureaucracy. Next, we explore the potential mechanism of expanding one's political influence and find that the NPT effect was stronger for the examiners with more brothers presumably living in his native place. We do not find support for alternative arguments such as knowledge diffusion and homophily in literary taste. Finally, using dynasty age as a proxy of the reversed state capacity, we demonstrate its positive relationship with the NPT effect (i.e., negative relationship between state capacity and NPT effect).

Our findings contribute to existing knowledge of the NPT effect by probing into its historical origin. While some have examined the relationship between formal institutions and informal ties (Greif 2006), little attention has been paid to the changes in informal ties themselves. Informal ties indeed constitute a prism of the hidden social structure, which shapes interest and agency. By situating the rise of native place ties as an important basis for patterned social interaction, we address the dynamic significance of different types social ties amidst changing structural conditions (e.g., from intermarriage ties to NPTs among political elites). Additionally, our research bridges the work of sinologists specializing in different periods and/or subjects, connecting their arguments and data gathering efforts through a causal explanation. It is

[3] A large body of literature by sinologists has examined many aspects pertinent to our research. Limited by space, we could only focus on the closely related research here. The China Biographical Database Project at Harvard University is a useful link to a variety of sources covering different aspects and periods of Chinese civilization. Temporally, there existed the short-lived Yuan dynasty (1271-1368) between the Southern Song and Ming dynasties, founded by the Mongolian nomads. During their reign, the CSEs were suspended for most of time until 1315. They also categorized people by caste with the majority of Han population at the bottom. If anything, identity issues in the Yuan dynasty revolved around ethnic tension.

imperative to analyze a longer temporal span to detect the shifting antecedents and consequences that made social constructs such as the NPTs with a seemingly natural and taken-for-granted assume priority. We also add to the broader streams of research on the CSEs as a meritocratic institution and its unfulfilled ideal, with particular attention paid to the unintended consequence of affirmative action (e.g., a quota system). This is because the enforcement of this quota system in fact enabled ingroup favoritism toward students from certain regions. Historically, we ask and address the question of *when* and *under what circumstances* the primordial NPTs became a salient and recognizable political currency among elites. We provide that the demise of the great families, the enforcement of a regional quota system, and the rise of native place associations mattered as *macrostructural preconditions*, *administrative technicality*, and *organizational basis*, respectively. Once the NPTs assumed priority in patterned social interaction, the CSE examiners took the opportunity to favor the students from the same place, undermining a meritocratic institution. The lingering effects of the NPTs as documented by empirical research on contemporary China (Opper, Nee, and Brehm 2015; Fisman et al. 2020) suggests that our study is not only simply a historical question, but also one of modern relevance.

Additionally, we provide an example of the historical process through which a primary homophilous basis of social networking shifted from status (i.e., intermarriage ties between the aristocratic families, see Tackett 2020) to place of origin. Although extant research has explored a number of ascriptive or achieved factors that bring "people like us" together through baseline and inbreeding homophily (McPherson, Smith-Lovin, and Cook 2001; Popielarz and McPherson 1995; Fisher 1982; Burt 1998), inadequate attention has been paid to why a particular factor instead of others is more predictive of homophilous networks. Using detailed historical data, we highlight that changes in macrostructural preconditions featured one characteristic over others in patterning homophily process. Other societies at one time or another may experience their idiosyncratic transformations that reshape the social group boundaries and thus change the basis of homophily. Understanding this would help better address the resulting segregations and propose effective integration policies.

THEORIZING THE QUESTION

Our research question regarding the timing when the NPTs became salient and our argument on macrostructural preconditions, administrative technicality, and organizational basis makes a literature review both handy and challenging. It is handy because of the scant interest that treats a specific type of networks gaining priority in patterned social interaction against counterfactuals as a dependent variable.[4] It is challenging due to pertinence to several large and growing literatures. For example, as an empirical question with historical significance, many historians and historical sociologists have delved with political, social, and cultural aspects of the corresponding periods as abovementioned. In addition, the NPTs constitute a type of social networks with a homophilous basis on place, making our study relevant to the homophily literature mainly built on gender, racial, and education differences (i.e., all three being the same for the CSE students). Furthermore, the argument itself speaks to research on affirmative action and its unintended consequences of accentuating rather than mitigating group antagonism. Acknowledging these challenges, in what follows, we briefly discuss the most relevant research, and return to others as we proceed to the empirical context.

Regarding the macrostructural preconditions of patterned social interaction, Gould's (1995) study of insurgent identities in the nineteenth century France provides a fascinating example. Challenging the class consciousness argument, he argued that a collective identity as workers only emerged when "the social networks in which they are embedded are patterned in such a way that the people in them can plausibly be partitioned into 'workers' and 'nonworkers'" (Gould 1995:15). Thus, insurgents in 1848 responded to a working-class identity, but identified themselves as urban inhabitants in the Commune of 1871. The massive rebuilding of Paris inbetween accounted for this change, as it relocated some workers from the urban craft enclaves to outlying residential neighborhoods. There they mingled with people from different trades and with different socioeconomic backgrounds, making their community identity more salient. This line of reasoning unpacks the causal link between macrostructural preconditions, the type of social networks that assumed priority, and their effect on important matters. A point of departure

[4] Putnam (1993) takes social networks as a stock of social capital that differs across regions. We differ by pinpointing the specific type of social networks that mattered the most across temporary dimensions.

we take is that identity and social networks reinforce each other in patterned social interaction, and leave for future research to tackle their nuanced relationship.[5]

Readers familiar with the "state making social categories" thesis (Bailey 2008; De Zwart 2005; Paschel 2010; Tilly 1998; Goodman 1978; Merton 1940) may find our research relevant. Although this literature is largely built on how race or ethnicity is constructed for group inclusion or exclusion, the regional quota system speaks to the similar kind of administrative technicality, perhaps with greater strength. If we take that inequality is unavoidable, then an accommodation policy for inclusion become a handy choice because of prevailing political philosophy of promoting equal opportunity, pragmatic consideration of conflict prevention, and organizational efficiency for immediately visible effects (De Zwart 2005: 142). This involves defining groups, in which people much register to qualify for access to resources. It often stimulates group consciousness, accentuates the root cause of inequality, creates invested interests in group distinctions, and leads to social fragmentation. Despite this universal tendency, prior research leaves the choice of specific boundary understudied (but see Skrentny 2006; Karabel 2006 for race versus socioeconomic status based affirmative action). Salient boundaries are often shaped by a heightened experience of existing ones, which inscribe names, meanings, and relational routines attached to these groups. Underneath a relatively uniform racial, cultural, gender, religious, and even linguistic homogeneity for the CSE students, place-based social grouping represented a state response to an increasing regional inequality.[6] Our research reveals a strong group-making effect by the state: classifying people with all sorts of similar attributes into seemingly natural groups generated a long-lasting impact on elite recruitment and political representation.[7] Additionally we emphasize ingroup favoritism rather than outgroup

[5] Gould (1995) himself did not specify a causal link between participation identity and network configuration, but instead implicitly treated the latter as a proxy of the former.

[6] Although different dialects existed across regions, all the CSE students mastered the same written language, and to a large extent could communicate with each other in a standard tone prevalent in a time. To be sure, regional inequality in CSE success loomed in the Song dynasty, but it lacked the state capacity (Faure 1996) to conceive and/or enforce a regional quota system.

[7] Gieryn (2000) summarizes the explicit and implicit references to place in sociological research. In the Chinese context, Zhao (1998) highlights the role of spacial layout of universities in affecting social movement participation and trajectory. Our study does not engage in the specific meanings attached to a particular place, but rather treat place as a social grouping marker.

discrimination, echoing DiTomaso's (2013: 6) insightful reminder in the US context: “it is the acts of favoritism that whites show to each other (through opportunity hoarding and the exchange of social capital) that contribute most to the continued racial inequality.” Understanding the nuanced difference between favoritism and discrimination is important to unpack the micro process of persistent inequality (Fershtman, Gneezy, and Verboven 2005).

With respect to organizational basis in context, we draw on the seminal study by the Historian Ho Ping-ti (1966) on the rise of native place associations in the early Ming dynasty (see also Rowe 1992; Honig 1992; Goodman 1995; Perry 1993; Belsky 2005). He briefly discussed three NPTs-related practices: a) a filial piety norm that demanded an official to return to his hometown upon his parent’s death and to sweep tomb for 27 months; b) a bureaucratic rule of avoidance that prohibited an official from administering his hometown; and c) the required registration information for taking the CSEs such as place of origin. We agree with Ho’s summary, but turn to what he passed over—the timing issue. All three practices had long been established, but why did not native place associations emerge until the early Ming dynasty? We contend that those associations loomed as an organizational basis for the increasingly important NPTs among political elites, providing them social and physical space for interactions. In this regard, the native place associations in Ming China functioned similarly to Gould’s (1995:22) discussion of popular clubs in the nineteenth century Paris, which “encourage the recognition of commonalities on a scale considerably broader than would be expected on the basis of informal social networks alone.” With time, native place associations proliferated in other major cities, further amplifying the NPTs through these organizational nodes.

THE RISING SIGNIFICANCE OF NATIVE PLACE TIES

Macrostructural Preconditions

In our research setting, the specific macrostructural preconditions were the decline of the great families and their replacement by the CSEs-conferred political elites (Tackett 2014; Bol 2001, 2003; Zhao 2015; Hartwell 1982, 1986; Bossier 1998; Faure 1996). Zhao (2015: 297) suggests that the practice of recommending talents to fill in bureaucracy in the Han dynasty (202 BC – 220 AD) gave rise to great families. Members of these families took important positions in government across generations, mainly through referrals. Although they practiced a choronym

system that prefixed a surname with a place of the ancestor's origin, they usually did not reside, nor did they identify with ordinary people there (Hymes 1987: 66). Instead, they clustered in the capital, enjoyed national recognition, and intermarried. Their millennium-old prominence came to an end partly due to the increasingly categorical rigor of the CSEs and partly because of the changing demographic and economic landscapes since the Song dynasty, and many withered and moved to local areas (Chaffee 1985: 11).

These changes warranted a strategy of investing in local welfare. On one hand, given the increasing importance of the CSEs in gaining political power, the local affluent started to found community schools to provide education for their family members, which were usually open to other community members too. Across socioeconomic status, a desire to receive education and gain political power through passing the CSEs became a societal consensus. A gentry class with an emphasis of mastering Confucianism and passing the CSEs came into existence. Although the specific families whose members passed the CSEs and became political elites changed more frequently than before (Kracke 1953), the gentry class itself became more stable with its legitimacy resting on meritocracy. On the other hand, people with dispensable financial and cultural resources began to compile local gazetteers, "a rather standardized compendium of information about an administrative unit" that traces both the natural and cultural history of a place (Bol, 2001: 37). Among others, a local gazetteer included vivid stories of those who overcame barriers to be successful through the CSEs. The circulation of these cultural artifacts gave a place content, distinction, and recitable history that outlived dynastic turnovers, transforming a seemingly primordial notion of place into a shared identity. In many respects, this growing interest in local gazetteers was driven by informal coordination of the local gentry. Instead, the state did not participate in this process enthusiastically (Bol 2001), which corroborates the timing issue we raise and explore. Many places had long been recognized as a local center for economic transactions and/or a local government seat, but it was not until the introduction of a regional quota system in the early Ming dynasty that made distinct local identities commensurate with their success in the CSEs. As such, this quota system consolidated emergent local identities and made the NPTs salient for developing trust and identifying common interest, all being conducive to political alliances.

Administrative Technicality and the Regional Quota System

The CSE system reached its zenith in the Ming dynasty, and many rules such as anonymous evaluation were enforced strictly to ensure transparence and equality. Nevertheless, a regional quota system was enforced to make sure a percentage of passing students from underrepresented regions. A triggering event in 1397 crystalized an increasing regional inequality, when the founding emperor Zhu Yuanzhang discovered all the passing students were from the southern provinces and commanded to reevaluate all the exam essays. In response, the chief examiner Liu Sanwu made no changes and insisted that the initial grading was based on merit only. The emperor executed Liu and read all the exam essays himself, organized a second examination, passing all the students from northern provinces as an extreme countermeasure. Since then, a regional quota system was formulated, and applied routinely and rigorously since 1421 (Elman 2013: 27).[8] This is perhaps the earliest affirmative action policy in human history that affected a large population who themselves would become policy makers.

This quota system instituted a group boundary by province, which was ascriptive under the Ming China's household registration system. A student was born into a province, and even if he passed the CSE and administered another place, most of his extended family would remain in his hometown, to which he was also required to return upon retirement. This natural feeling toward one's hometown, however, became substantiated only when one migrated (Portes and Sensenbrenner 1993; Honig 1992). In an agrarian society without advanced transportation technologies, political elites were among the first to experience migration. The bureaucratic rule of avoidance had been practiced since the Qin dynasty unified China (221 to 206 BC), under

[8] Zhu Yuanzhang died in 1398 and his heirs fought for the crown for some years. After a brief period of trails and errors, the quotas were stabilized and apportioned as follows: 55 percent of passing students should come from Southern provinces (Zhejiang, Jiangxi, Fujian, Yingtian, Guangdong, and Huguang provinces), 35 percent from Northern provinces (Shuntian, Shandong, Shanxi, Henan, and Shaanxi provinces), and 10 percent from Central provinces (Guangxi, Sichuan, and Yungui). Written records and correspondence with experts provide no specific clarity regarding exactly how the information of place was operationalized during the grading process. But a consensus is that there should be something about it when all the graded exam essays were presented to the chief examiners. It is likely that a student's province was revealed so examiners could add up passing students from several provinces of a region. Alternatively, if it was regional rather than the more specific provincial information was marked, it was not difficult for examiners to infer the province of origin because students from a given province tended to specialize in one the *Five Classics* (shown in the essays). After selecting the passing students upon fulfilling the quota requirement, the chief examiners would make relative rankings. To make it simple, we use the terms of province of origin throughout the article, but conduct additional tests using the same region that generate similar results.

which an official must govern a place he probably has never set foot in. Despite this long tradition of job-related migration, it was the group making process induced by the quota system that made an official more likely to identify with NPTs.

Amidst this background, favoring fellow provincials became a savvy strategy during the CSEs and beyond. Although there existed a strict anonymous evaluation procedure that concealed a student's personal information (to be elaborated), his province of origin was known due to the quota system. This enabled an examiner to play favorites by increasing rankings for students from the same province, which mattered for entering the fast track to bureaucracy. Despite this overall tendency of ingroup favoritism, the pre-quota stage accumulative advantages of several provinces had produced not only many bureaucrats, but also more high-profile ones who constituted the pool of potential examiners. Because of these implications, the Ming state mobilized considerable administrative resources to uphold the place-based social grouping boundary. For example, to claim his native place, a student was required to submit an affidavit from his local governor, his dynasty school classmates, and/or neighbors. If he violated these rules and was caught, all the involved may face death penalty. As such, a student could hardly have discretion for his place of origin, which made the place-based group boundary less permeable.[9]

The Organizational Basis

Simply coming from the same place does not necessarily lead to the actual social network contacts we are familiar with, but represents an opportunity to develop interpersonal ties. The NPTs are like latent connections to be activated by individuals in actual interactions. The native place associations, founded in Beijing by and served the officials from the same place, functioned as an organizational basis for generating daily interactions. According to Ho (1966), the first association was established in the 1410s (the latest) by an official from today's Wuhu prefecture of Anhui province. The officials from this place attended gatherings frequently, circulating information, and fostering interpersonal friendship. Officials from other places

[9] By less permeable, we referred to the province level at the CSE settings, consistent with the strictly enforced quota system. As a concept in a broader context, the boundary of NPTs is indeed flexible. For example, two people from the same village, town, county, city, or province could regard having the NPTs, when they meet each other outside of their hometown.

followed suit and founded their own native place associations. Ho (1966) compiled approximately 400 such Beijing-based associations, but the received text did not contain specific founding dates. Their geographic distribution, however, is informative, correlated with regional CSE success. For example, Jiangxi province had the highest number of 47 associations, in line with its phenomenal CSE glory in the Ming dynasty (contributing more than 10 percent of passing students and 20 percent of first-place holders). Furthermore, since all officials reported to the Ministry of Personnel in Beijing, they went there every several years. As such, the native place associations in Beijing functioned as a hub that linked an official to colleagues from the same province serving bureaucracy across the country, thus making the NPTs a political currency with national circulation.

Under such circumstances, the NPTs did not need to be conceptualized as dyadic connections, but rather represented "the web of social networks of the entire community" (Portes and Sensenbrenner, 1993: 1325). This feature of sameness generated trust and implemented enforceable sanction. Building networks around NPTs proved necessary even for the most powerful, as Zhang Juzheng's experience suggests (see Huang 1981 for a background reading of Zhang). He let a reform on the taxation and performance appraisal for bureaucrats in his capacity as the chief grand secretary. Among a task force of 70 members, eleven came from the same province, and 21 had work experience in his home province whom her promoted on an accelerating pace (Feng 2011: 62-66). With their support, his reform achieved partial success. While challenge to his policy legacies mainly came from the so-called Donglin faction, consisting of scholars and officials from today's Jiangsu province.

Stylized Facts

Figure 1 presents the stylized facts of provincial distribution of the students who passed the CSEs (called as *jinshi*) before and after enforcing the regional quota system. As we briefly mentioned, the quota system became a policy in 1397, the last CSE organized under the reign of the founding emperor, Zhu Yuanzhang. The ensuing civil war for the crown between his offspring upon his death in 1398 delayed the policy enforcement until 1421. We use the cutoff point of 1397 to calculate the before- versus after-quota spatial distribution of *jinshi*, because the policy formulated that year would change how examiners perceived the importance of the NPTs

when evaluating students. Furthermore, we utilize the principle of elasticity to calculate *jinshi* density by province. For each province against the national total, it is the ratio of its percent of *jinshi* to its percent of population. For each period, we calculate the Williamson index (Williamson 1965), a population-weighted coefficient of variation across provinces. In general, a higher number indicates a more unequal spatial distribution. This index is sensitive to a few places with a much higher percent of the resources we are interested in.

[Insert Figure 1 about here]

Panel A in Figure 1 captures the provincial distribution of *jinshi* between 1368 and 1397, and Panel B presents the situation between 1400 and 1580 (we only have detailed information up to 1580). On the surface, the average *jinshi* density was lower in Panel A, which was not unexpected for a newly founded dynasty with multiple priorities. For our interest in the effect of the quota system, Panel B had a lower Williamson index than Panel B (0.69 versus 0.85), suggesting a more equally provincial distribution of *jinshi*, in line with the policy agenda of affirmative action. Panel C presents the spatial distribution of *jinshi* in the Southern Song dynasty, which had a Williamson index of 2.07. This number was mainly caused by two outlier circuits (equivalent to provinces): Fujian and Liangzhe each contributing 30.7 percent of *jinshi*. Taken together, the overall pattern suggests the effect of the quota system enforced during the Ming dynasty rather than any categorical change associated with the Ming dynasty itself.

[Insert Figure 2 about here]

Figure 2 breaks down the *jinshi* percent by province. Panel A captures the first nine CSEs before the quota system, of which Zhejiang, Jiangxi, and Fujian provinces constituted a dominant group and contributed to 46.9 percent of passing students (with a combined population percent of 43.4). Without a large-scale migration or population change, these three provinces only generated 31.2 percent of *jinshi* since the regional quota system was enforced, as shown in Panel B. Their loss was captured by some targeted provinces. Take Shuntian (also called Beizhili) as example. It roughly included today's Beijing, Tianjin, and Hebei province, with Beijing as the Ming dynasty's capital since 1421. Its population was only 41 percent of Zhejiang province, but its

jinshi was 109 percent of Zhejiang province since the quota system was enforced. This means that a student in Yingtian (also called Nanzhili) was nearly two times more likely to pass the CSE than a counterpart from Zhejiang.

A general comparison between the southern and northern provinces is illustrative. Prior to the quota enforcement, 30.9 percent of the *jinshi* came from several northern provinces, while major southern provinces accounted for 64.8 percent of *jinshi*, with a few periphery provinces (Guangxi, Sichuan, Yunnan, and Guizhou) contributing the remaining small share. This pattern changed after 1397, with the southern provinces contributed 55.8 percent of *jinshi*, the northern provinces had 35.7, and the remaining spread to other provinces, which was in line with the quota specification. Furthermore, as we briefly mentioned, because the quota was designed at the regional level with each of the three regions (North, Central, and South) having several provinces, some provinces contributed a disproportionate *jinshi* within the same region. For example, Yingtian outperformed other southern provinces and Sichuan outperformed other central provinces in generating *jinshi*.

[Insert Figure 3 about here]

In contrast to the declining provincial concentration of *jinshi*, the top 20 performers—those ranked roughly about top 7 percent of an average *jinshi* cohort of 288—continued to cluster in several provinces. Moreover, they usually started their career in the Hanlin Academy, the fast track to high-profile bureaucracy. Figure 3 presents the percent of top 20 students of a province's total *jinshi* between 1400 and 1580. Unfortunately, due to the lack of systematic data on CSE rankings prior to the quota system, we could not generate a contrast figure. Nevertheless, the three provinces of the dominant group continued to outperform others in producing top 20 performers. For example, Zhejiang provide led others with 11.3 percent of their jinshi being on the top 20 list, followed by 9.9 percent for Yingtian, and 9.5 percent for Jiangxi, and 9.2 percent for Fujian (but Nanzhili as today's Yangtze river areas rose to 9.9 percent). In a nutshell, although the quota system largely constrained the sheer number of *jinshi* from the dominant group, they continued to produce top performers who would be more likely to affect policy making than others.

To illustrate the possible mechanism leading to this observation, we turn to the micro evidence of how the NPTs affected the CSE outcomes. We argue that an examiner tended to play favorites by ranking the students from his home province higher, even though the quota system set a limit on how many fellow provincials he could choose to pass.

NATIVE PLACE TIES AND EXAMINATION RANKINGS

The CSEs in the Ming Dynasty

The first CSE was held in 605, and reached its zenith in the Ming dynasty, during which "the examination life like death and taxes, became one of the fixtures of elite society and popular culture" (Ho, 1964: 128). This unprecedent status was upholstered by several institutional rules. Regarding education, an edict in 1369 mandated that each administration unit would establish a state school and admit students through open competition only. According to Guo (2014), there were 1,318 state schools in 1,435 administrative units. The state provided students with scholarships and other benefits, and only allowed state school students who passed annual qualifying exams to take the triennial CSEs. If they passed, they would receive the highest academic degree and the promise of a political career. It was difficult for the incumbent elites to reproduce their status directly or systematically in terms of improved opportunity equality. Admittedly, family background may have mattered for preparing for the state school admission tests, but flourishing local community schools as mentioned above partly mitigated this type of innate inequality.

The Ming CSEs rested on a narrowing connotation of merit, exclusively testing knowledge of the Confucian classics (i.e., the Four Books and the Five Classics) and officially compiled histories of preceding dynasties. Information on exam format, procedures, location, scheduling, and evaluation criteria was transparent, and preparation materials were largely available and affordable. For example, the exam questions consisted of phrases drawn from these materials that the students, in confined cells, recited to elaborate on in their essays following a strict word

limit, a standard format, and an appropriate citation to the Confucian classics, all conducive to clarification and commensuration between the essays.[10]

The Ming dynasty also instituted a sequential and hierarchical examination system. Held triennially, each CSE consisted of three sequential exams. The first was the provincial exams that took place simultaneously across 14 provincial capitals[11] in August (proctored by *ad hoc* examiners dispatched from the state), each with an assigned quota to pass some students. Those who passed took the subsequent national level metropolitan exams (MEs) in Beijing the following February. Passing students then proceeded to take the non-eliminating Palace exams (PEs) in March, after which they received the *jinshi* degree and became eligible for a bureaucratic appointment. Despite non-elimination, PE rankings mattered greatly by determining who could enter the fast track to bureaucracy. For instance, an approximately top 10 percent of them usually started off at the prestigious Hanlin Academy, an imperial advisory institution that consulted the emperor daily. Figure 4 plots the ME selection rates.

[Insert Figure 4 about Here]

Crucial for our argument was the simultaneous enforcement of an anonymous evaluation procedure and a regional quota system during the MEs, the *de facto* gating step to entering bureaucracy. In terms of anonymity, Elman (2013: 227) summarizes that "the process inside the examination compound temporarily stripped examinees of their names, family, and social rank. Each was presumed to be unknown and thus equal in the eyes of the examiners." Before entering an examination compound, students were subject to a body search to prevent them from bringing in any materials. Each was assigned an identification number to conceal his name and any other information that could reveal his identity. To prevent examiners from identifying a student

[10] Questions regarding why political elites consented to this system that did not systematically favor their children is beyond the scope of our study. We contend that a plausible explanation must consider the historical context. The CSE system promoted a gentry class that replaced the great families, which legitimated their own success (Elman, 2013: 98). Once they rose a new dominant class, their children still had some advantages through direct political influence or tacit knowledge in comparison with commoners.

[11] For the CSEs, Guizhou and Yunan provinces were combined and only organized one provincial examination. Later, Guizhou officials lobbied the state and were approved to organize their own sperate provincial examination. In the absence of precise information on each of the combined provinces, we use their combined information throughout the article and treat these two provinces as one.

through his handwriting, 200-300 copyists served at an ME to transcribe all the exam essays. If a student left a page blank or wrote some suspicious phrases, it would be interpreted as irregularity and trigger an automatic disqualification. All these measures constrained examiners' ability to favoring a particular student. Despite this, the regional quota system made it imperative to signal a student's province of origin, which made favoring students from an examiner's native province feasible, and many did take this opportunity.

Microlevel Data

We use the recently digitalized data from the China Biographical Database (CBDB) at Harvard University. For the Ming dynasty CSE dataset, it provides the relevant information on: a) a student's name, age, native place usually specified at the county or prefecture level, the dynasty school he attended, one of the five *Classics* he had to claim as a literary specialty, and the year he passed the CSE; b) name, CSE status, bureaucratic experience of his father, grandfather, and great grandfather; c) names of his brothers, and their CSE status and bureaucratic experiences; d) one of four household categories he belonged to (military, commoner, scholar, and craft); and e) maiden names of his wife and concubines. In total, this dataset includes 14,116 students who passed 51 CSEs between 1371 and 1610, but five CSEs miss important information on age and exam rankings for many students. We study the remaining 12,752 students who passed 46 CSEs between 1400 and 1580. We gather additional information on the examiners to construct the NPTs. Additionally, we draw the population from Cao (2000) and Wu (2000).

***Dependent variables*:** Consistent with theoretical reasoning, our primary interest is the ME rankings, which were originally recorded numerically with "1" indicating the best scorer. To provide a straightforward interpretation, we reverse-code and standardize the ME rankings across different CSEs, generating a dependent variable *ME score.* In the same vein, we also generate *PE score* as a secondary dependent variable. Since the PEs did not eliminate students, it means that those who passed were in fact tested twice within one month apart: the ME in February and the PE in March. For an average student who passed the CSE at age of 32, it was unlikely that his academic ability changed dramatically during such a short period. But the two examinations

were evaluated differently with the former being strictly anonymous while the latter not.[12] This difference may affect the relative effect of the NPTs on the two examinations.

Independent variables: Our key independent variable is the *NPTs* between a student and his examiner. Each ME usually had two chief examiners from different provinces who selected the passing students and made ranking decisions. Our NPT measurement is thus a dummy variable indicating whether a student came from the same province as at least one chief examiners (only a few cases in which both examiners came from the same province). We use this measure to explore the effect of the NPTs on PE score too, and corroborate the results using the same provincial origin between a student and PE examiners.[13] To understand how the NPTs unfolded against the backdrop of varying state capacity, we use *dynasty age*, which is negatively correlated to the state capacity in the context of imperial China.

As we further explore the competing mechanisms for the NPT effect, we construct several other independent variables. For example, we count the *number of brothers* an examiner had as a proxy of his political stake in home province. For knowledge diffusion mechanism, we generate the geographic distance of *within 20 kilometers* between a student's hometown and that of his examiner's. For homophily in literary taste argument, we construct the *same specialty* measure, wherein a student and his examiner claimed the same specialty out of the Five Classics (*Classic of Poetry*, *Book of Documents*, *Book of Rites*, *Book of Changes*, *and Spring and Autumn Annals)*.

Control variables: Among others, we control for *merit*, proxied by the reverse coding of age. Much of the CSE content revolves around rote memorization and mechanical regurgitation of the 400,000 Chinese characters and phrases in the Confucian classics (Elman 2000), for which older

[12] For the provincial exams, the students who passed but failed the subsequent ME could retake MEs triennially without starting all over. Unfortunately, we do not know whether a student repeatedly took MEs, neither do we have the information on year he passed his provincial exam.

[13] The PE situation is rather complicated. On the one hand, an emperor was a symbolic decision maker, and a maximum number of seven coordinators functioned as *de facto* chief examiners in charge of the process. Measuring ties with them would in fact give the NPTs undue influence since a considerable percentage of students from the same province as at least an examiner. On the other hand, the ME examiners could also affect the PE outcomes by coaching some students after the ME scores were announced. Taking this complexity into consideration, we use the NPTs with the ME examiners in the main regressions and conduct a series of robustness checks using the NPTs with the PE coordinators.

students were presumed to have an advantage over equally intelligent younger peers. In addition, age was also correlated positively with the number of times a student had previously failed the MEs. Therefore, if two students passed the ME together, the younger would likely be academically more competent to compensate for his lack of accumulated experience in memorization and in exam taking. Age range in our sample was between 13 and 59. We reserve-code and standardize age ((59-age when passing MEs)/ (59-13)) to provide a straightforward merit interpretation. We also control for a student's family background such as his father's bureaucratic rank, household registration status, the dynasty school he attended, and the number of wife and concubines, etc. Table A1 in Appendix provides a complete list of variables, their sources, and operations.

Models: Since historical records contain information only on those who passed the CSEs, we treat the transformed exam rankings (ME and PE scores) as a continuous variable and use ordinary least square (OLS) models. We corroborate the OLS results with the rank-ordered logit (ROL) models designed for discretely ranked preferences such as preferred colors or ice cream flavors (Beggs, Cardell, and Hausman 1981). In our setting, it is the relative ranking of an average cohort of 288 students who passed the CSEs.

How the NPTs Affected the CSE Scores

Figure 5 presents the stylized fact of the relationship between merit and CSE scores. As we briefly mentioned above, merit is a standardized reverse coding of merit. For both MEs and PEs, merit was positively correlated with the scores, suggesting an overall trend of meritocracy. Despite this, coming from the same province as a chief examiner enjoyed unearned advantages in comparison with the peers from other provinces. Table 1 reports the specific effect of the NPTs on the CSE scores with a variety of control variables, confirming our argument. For example, the NPT coefficient is 1.704 and is statistically significant for ME score ($p<0.05$, model 1), after controlling for unobservable provincial characteristics. This seemingly small magnitude, however, is consequential. It means that coming from the same province as a chief examiner moved a student's ranking up 1.7 places in the cohort of 100. Since an average CSE passed 288 students, it in fact would move a student's ranking up nearly 5 places ($1.7 \times 2.88 = 4.896$). In zero-sum ranking scenario, the aggregate effect for some students from the same province as an

examiner is considerable. Unless the state appointed the examiners by rotating their provinces of origin for each ME, this ingroup favoritism tendency would favor the provinces with more high-profile officials. Throughout these models, the effects of control variables are comparable and consistent, especially the effect of merit proxied by the reverse coding of age (coef. = 14.711 in model 1). Additionally, anonymous evaluation partly leveled the playing field, as the bureaucratic experience of a student's father had no effect on the ME score, but improved the PE score (not anonymously graded).

[Insert Figure 5 about here]

[Insert Table 1 about here]

Since the state policy agenda to combat regional inequality generated the province-based social groups through a quota system and made NPTs a salient political currency, did the state capacity matter for the NPT effect? Model 2 adds a crude measure of state capacity (i.e., dynasty age) and finds a negative relationship between the NPT effect and the state capacity, echoing Elman's (2013: 7) remark that the usefulness of the CSE system was short-lived for each dynasty as "court factions quickly developed around the patron-client relationships between civil examiners and graduates eligible for office." To understand the magnitude of the NPTs effect against the backdrop of state capacity, let us take two observations for example. The year 1505 was at the midpoint the Ming dynasty, and the marginal effect of the NPTs on the ME score is 1.328 ($0.022 \times 3.103 + 1.260 = 1.328$). This means that an examiner moved a student from the same province up about four places in that year ($1.328 \times 288/100 = 3.825$). By 1547, this favor means an unearned advantage of five places ($(0.1 \times 3.103 + 1.260) \times 288/100 = 4.522$). These effects are mainly because the weakening state lacked effective legal and political means to hold examiners accountable. In other words, the strong state of the early Ming dynasty enforced a quota system effectively, and unintendedly generated place-based social boundary, and gave rise to the significance of the NPTs. Once assuming priority in patterned social interaction, the NPTs gained their own rationale, and had a stronger effect when the state capacity withered.

[Insert Table 2 about here]

To explore what underscored the NPT effect, we test a political influence mechanism along with several alternative arguments. For the pollical influence mechanism we discussed above, we turn to the number of brothers an examiner had, which signalized varying political stake in his home province. This is because his extended families presumably lived in his hometown due to strict household registration system, and favoring fellow provincials during the CSEs would bring more capable colleagues to lobby for resources for their province. As shown in Table 2, the interaction term of the NPTs and number of brothers is positive and statistically significant (coef. = 3.047, $p < 0.05$ in model 5), confirming the political influence mechanism. For example, comparing an examiner with six brothers versus another with only five, the marginal effect is $0.16 \times 3.047 = 0.488$ (putting 6 and 5 into the convex function separately and calculating the difference, 0.16). This means the former would move up a student from the same province one additional place compared with the latter ($0.488 \times 2.88 = 1.405$). Adding this to the main effect equals to 1.932 (1.444 + 0.488), which suggests that an examiner with six brothers would move up a student from the same province five place ($1.932 \times 288/100 = 5.564$) compared with equally performing students from different provinces (NPTs=0).

An alternative mechanism could be that the NPTs might capture homophily in literary taste common to students and examiners from the same province, as any student had to claim one of the *Five Classics* as his specialty and made citations accordingly in the CSEs. Model 6 and model 9 test this argument by adding the same specialty between them, which does not affect the exam scores. Another competing explanation is knowledge diffusion, as being from the same province usually means a shorter geographic distance, which itself is conducive to diffusing tacit knowledge of the CSEs. For this, we add a more precise measure of whether a student's came from the same county as an examiner's. Although this means a closer distance than the same province, the examiners did not know it due to the anonymous evaluation procedure. If knowledge diffusion were the root cause, we would expect it to have similar effects on both the ME and PE scores, regardless of being evaluated anonymously or not, but the evidence shows otherwise. Taken together, the findings in Table 2 suggest that the NPT effect was related to the examiners' desire to enlarge their political influence.

[Insert Figure 6 about here]

We also conduct preliminary analysis on student background from the dominant group (Zhejiang, Jiangxi, and Fujian) versus other quota protected provinces. Panel A in Figure 6 presents the merit (e.g., reverse-coded age) distribution of students from both the protected and dominant provinces, and there was no noticeable difference. Panel B suggests that within the protected provinces, it was the student whose father was already a political elite that benefited the most (father's rank>=1). While in the dominant provinces, the quota system made within-province competition more intense, and coming from a political elite family did not help as much as in the protected provinces. Taken together, Figure 6 provide suggestive evidence that in the quota protected provinces, the CSEs' effect on facilitating social mobility was smaller than that of dominant provinces. It was the students from the elite families within the protected provinces that benefited the most from the quota system.

CONCLUSION

Extending the increasing interest in the effect of the NPTs, our article explores its historical origin that gave rise to the NPTs as a salient basis of patterned social interaction among political elites. Admittedly, emotional attachment to and familiarity with one's hometown is a natural feeling, and goes hand in hand with civilization. As such, the related NPTs were usually subsumed in invisible or unnoticeable private realm rather than assuming priority in bonding political elites. Understanding *when* and *under what circumstances* this shift took place reveals the hidden structure surrounded by political elites and their intersection with the state. We argue that although the early Ming dynasty represented the historical continuity rather than a critical juncture along several key dimensions, the regional quota system enforced on the long-standing CSEs made a place as an administrative unit a salient social group boundary. Among multiple potential identity markers, a native place identity was enforced and commensurate throughout the pathway to becoming political elites via the CSEs. The Ming state weaved this into administrative technicality, whereby a student had to constantly claim, prove, and make sense of where he came from and belonged to at every single step of the prolonged CSE preparation: to be admitted into a local dynasty school at his native place, to register his native place information to take the CSEs, and to be repeatedly scrutinized on that matter when he passed the CSEs and entered bureaucracy. The concurrent rise of native place associations in Beijing

provided an organizational basis to develop the NPTs. Moreover, as such associations later spread to other major cities (e.g., Hangzhou), they facilitated a seamless transition from localism to the national arena, as political elites from a given place would find fellow officials from the same place wherever he was assigned to govern.

Once the NPTs assumed priority in patterned social interaction among political elites, they inhabited in and undermined the CSEs' meritocratic ideal. Regardless of the numerous strict rules, an examiner as a natural person and a political elite had to come from a province, and indeed often favored the students from the same province by assigning a higher-ranking mark, which put them on the fast track to bureaucracy. Furthermore, the extent of favorites was strengthened when an examiner had a higher stake in his home province (e.g., with more brothers generating a large extended family) and when the state capacity was too weak to hold him accountable. This well-perceived and widely-practiced ingroup favoritism further consolidated the group boundary by place, echoing Olson's (1982) argument that self-serving interest groups consisting of powerful elites rig formal rules and become attentive to their own interests largely at the expense of the many (Haselmann, Schoenherr, and Vig 2018; Grindle 2013). Furthermore, without fundamental changes in the relationship between the state and political elites, the NPTs still matter greatly for bureaucrats in a modernizing China.

Our research contributes to the growing interest in the effect of the NPTs or regional favoritism on pollical careers in China and elsewhere (Opper, Nee, and Brehm 2015; Fisman et al. 2020; Shih, Adolph, and Liu 2012; Hodler and Raschky 2014) by probing their historical origin. Following a Simmel (1955) and Gould's (1995) perception of society, we contend that the fabric of the way political elites connect up with other tells what "the social" is all about. So many aspects have changed profoundly between the imperial China in the fifteenth century and today, but Chinese political elites still struggle to develop a legitimate and formal means to organize themselves vis-à-vis the state, which partly accounts for the continued significance of the NPTs. This continuity is particularly puzzling with accelerating modernization, which enables one to belong to multiple intersecting groups that consist of numerous, diverse, sometimes far-flung others. Such group affiliation experiences should have made a political elite "assert himself energetically" (Simmel 1955: 142) rather than being fettered to primordial NPTs. Extending this

line of inquiry, future research may explore the political elites' networking rationale and strategies with interview and experiment data gathered from different societies or different cohorts within a society.

Our study also extends the "state making social groups" thesis by providing an additional insight into a different group boundary and on the state's administrative technicality in substantiating it. While extant research focuses on race and racial lines the state draws (historically for exclusion but more recently for inclusion) redistributive policies, we investigate the group boundary by place in a racially homogeneous setting. Our analysis reveals that the Ming state weaved the place-based boundary into the heightened experience of a bureaucrat, starting from allocating education resources he competed to receive (i.e., taking local examination to enter the dynasty school in his residence), passing the sequential CSE examinations under the purview of a place-based quota, and to being appointed to govern a place he was not linked to. The thoroughness and completeness it generated not only affected the CSEs since the Ming dynasty, but has also left a long-lasting imprint on today's national college admissions policy. Under the guidance of the Ministry of education, elite universities and other higher education institutes still admit students following a province-based quota. It generates ongoing debates on the deservedness of different protected provinces. For example, students in Beijing (a provincial level administrative unit) are often singled out to receive unearned advantages of having more admission slots, while others in some underdeveloped provinces such as Guizhou are regarded as legitimate beneficiaries. But even for the latter category, it is often the students from higher socioeconomic status that benefit, a process identified in other settings too.

Another related contribution is to the literature on homophily. Our research exposes the overlooked contextual factors that made a particular homophilous basis more predictive of patterned social interaction than others. Homophily maybe a universal tendency, but what constitutes a specific homophilous basis largely reflects the intersection of primary social and political issues at a given time in each society. As homophily is often related to dense within-group networks and sparse cross-group connections, understanding its broader institutional context would help address social integration issues more effectively.

Additionally, our research also extends the growing interest in the CSEs (Bai and Jia 2016; Chen, Kung, and Ma 2020) by specifying the micro foundations of meritocracy, embedded in multiple layers of contingencies. We show that as the apparent winners of this institution, examiners bent formal rules by activating informal NPTs to favor the student from the same province. By doing so, they expanded their political alliance with the trustworthy fellow provincials, with whom they could lobby for preferential treatments for their home province (also benefiting their extended families there). Nevertheless, this process undermined the very institution that empowered themselves, as it became less meritocratic and more dependent on counter-merit factors such as the NPTs. This reliance on social ties also generates a paradox: a public outcry for a more individualized and purified merit connotation when matching people to important positions such as in bureaucracy and higher universities. As such, a clear moral boundary is drawn between social ties and merit. For example, most Chinese use social ties to get ahead to varying degrees of effectiveness and artistry, but few would admit to doing so publicly (Yang, 2002: 461). This cultural norm to some extent echoes Sharone's (2014) findings that the use of strong ties to get a job is interpreted as a deviation from the legitimate path to employment in Israel, while getting personal referrals are generally viewed as an important interpersonal skill and almost deemed as a sign of merit in the US. Future research could tap into the relationship between merit and social ties amidst different social structures and institutional contexts.

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TABLES AND FIGURES

Table 1: OLS Regression Results for the CSE Scores, 1400-1580

	ME scores		PE scores	
Variables	1	2	3	4
NPTs	1.704**	1.260*	1.660**	1.207*
	(0.708)	(0.758)	(0.698)	(0.747)
NPTs × dynasty age [a]		3.103*		3.180*
		(1.892)		(1.871)
Merit	14.711***	14.726***	16.401***	16.417***
	(2.332)	(2.332)	(2.301)	(2.300)
Father in bureaucracy	0.622	0.624	4.533***	4.536***
	(0.615)	(0.615)	(0.607)	(0.607)
Provincial exam scores	13.524***	13.518***	11.654***	11.648***
	(1.226)	(1.226)	(1.209)	(1.209)
Dynasty school	0.838***	0.841***	0.988***	0.991***
	(0.214)	(0.214)	(0.211)	(0.211)
First son	0.984*	0.967*	1.264**	1.247**
	(0.544)	(0.544)	(0.537)	(0.537)
Wealth	-0.443	-0.431	-1.674***	-1.652***
	(0.617)	(0.617)	(0.609)	(0.609)
Exam specialty control	Yes	Yes	Yes	Yes
Household category control	Yes	Yes	Yes	Yes
Province fixed effect	Yes	Yes	Yes	Yes
Exam year fixed effect	Yes	Yes	Yes	Yes
Constant	29.098***	29.278***	32.442***	32.588***
	(5.455)	(5.455)	(3.673)	(3.674)
Observations	12,351	12,351	12,422	12,422
R^2	0.042	0.042	0.051	0.051

*** p<0.01, ** p<0.05, * p<0.1; Standard errors in parentheses.

a. We control for the years the CSEs were organized throughout the models, and do not include a separate variable of dynasty age here for the consideration of collinearity. Because the interaction term between the NPTs and dynasty age is highly correlated with the NPTs, it is difficult to separate out the interaction effect from the main effect. We deal with this collinearity matter following a conventional approach—convexifying the dynasty age (i.e., 0-1) to increase variation for the interaction term. Because each ME usually had two chief examiners, we assign a higher weight to the chief examiner with a higher bureaucratic rank and a lower weight to the other examiner. The convex function is as the follows: NPTs × dynasty age = (NPT with higher ranked examiner + (lower rank/higher rank) × NPT with lower ranked examiner) × 0.05 × dynasty age^3 / (0.78-dynasty age). The value 0.78 corresponded to the year 1583 when a reform on bureaucratic personnel failed. This function has the advantage of facilitating the calculation of the marginal effect and preserving a monotonicity relationship.

Table 2: OLS Regression Results for Testing the Different Mechanisms

	ME scores			PE scores		
Variables	5 Political influence	6 Literary homophily	7 Knowledge diffusion	8 Political influence	9 Literary homophily	10 Knowledge diffusion
NPTs	1.444*	1.706**	1.704**	1.745**	1.668**	1.504**
	(0.846)	(0.708)	(0.713)	(0.834)	(0.698)	(0.703)
NPTs × # brothers [a]	3.047**			3.360***		
	(1.318)			(1.306)		
The same specialty		0.151			0.986	
		(0.681)			(0.672)	
The same county			-0.029			5.193*
			(2.924)			(2.865)
Merit	14.058***	14.714***	14.710***	17.695***	16.417***	16.489***
	(2.689)	(2.332)	(2.332)	(2.656)	(2.301)	(2.303)
Father in bureaucracy	0.688	0.624	0.622	3.882***	4.548***	4.537***
	(0.686)	(0.615)	(0.615)	(0.678)	(0.607)	(0.607)
Provincial exam scores	13.752***	13.525***	13.524***	11.436***	11.659***	11.636***
	(1.363)	(1.226)	(1.226)	(1.345)	(1.209)	(1.209)
Dynasty school	0.784***	0.838***	0.838***	0.915***	0.987***	0.987***
	(0.245)	(0.214)	(0.214)	(0.242)	(0.211)	(0.211)
First son	1.144*	0.984*	0.984*	1.319**	1.265**	1.258**
	(0.621)	(0.544)	(0.544)	(0.613)	(0.537)	(0.537)
Wealth	-0.698	-0.441	-0.443	-1.419**	-1.657***	-1.665***
	(0.691)	(0.617)	(0.617)	(0.683)	(0.609)	(0.609)
Exam specialty control	Yes	Yes	Yes	Yes	Yes	Yes
Household type control	Yes	Yes	Yes	Yes	Yes	Yes
Province fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Exam year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Constant	33.892***	28.966***	29.100***	28.351***	31.596***	32.234***
	(3.665)	(5.487)	(5.456)	(3.423)	(3.718)	(3.675)
Observations	9,490	12,351	12,351	9,556	12,422	12,422
R^2	0.045	0.042	0.042	0.048	0.051	0.051

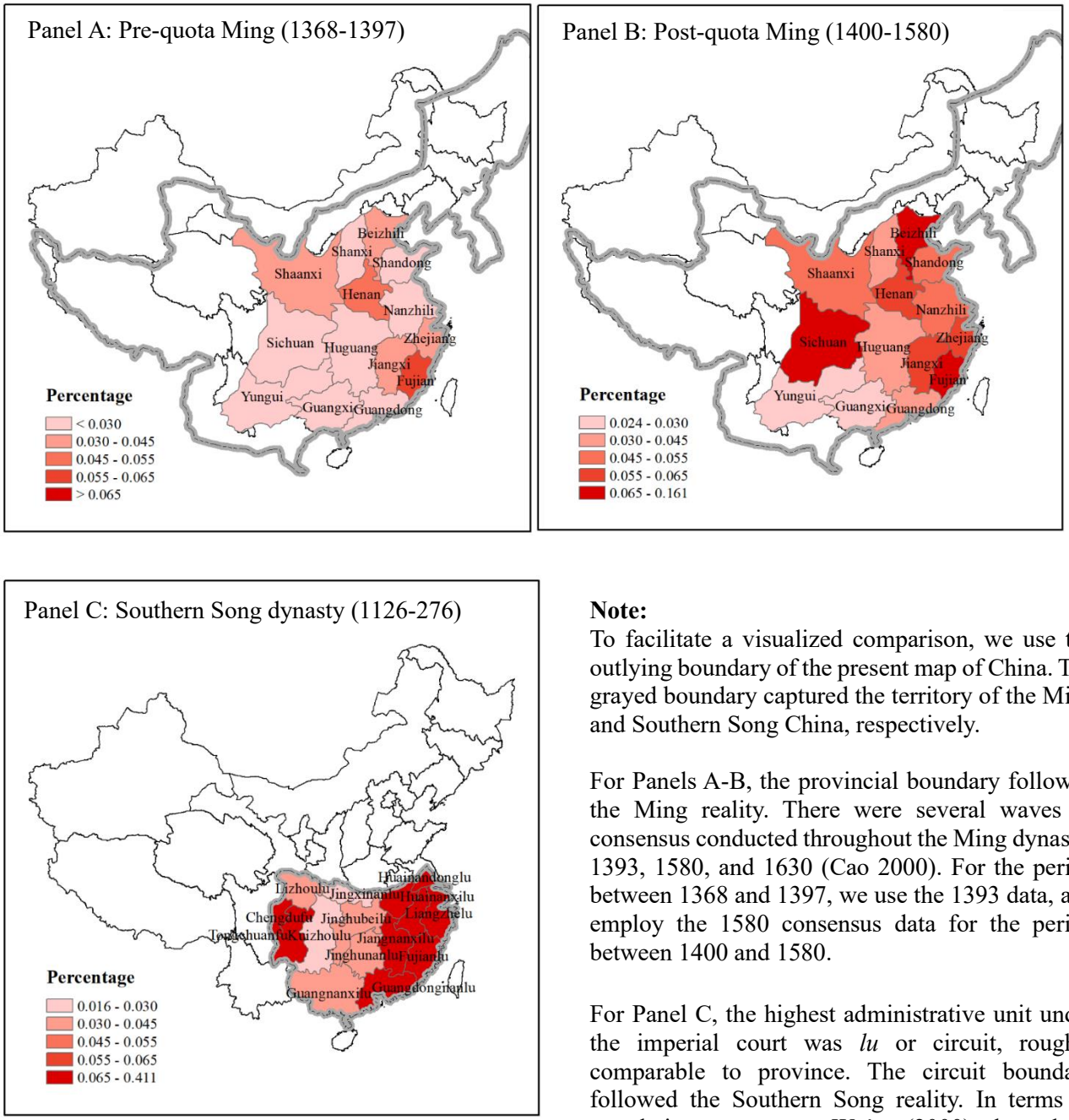
*** p<0.01, ** p<0.05, * p<0.1; standard errors in parentheses.

a: The number of brothers an examiner had does not have a conceptual relationship with a student's CSE score. We do not include its main effect but enter it in the interaction term with the NPTs. As a count variable, dropping its main effect does not change how STATA deals with degrees of freedom and R^2.

Because the interaction term between the NPTs and number of brothers is highly correlated with the NPTs, it is difficult to separate out the interaction effect from the main effect. We deal with this collinearity matter following a conventional approach—convexifying the count/continuous variable (i.e., the number of brothers, 0-12) to increase variation for the interaction term. Because each ME usually had two chief examiners, we assign a higher weight to the chief examiner with a higher bureaucratic rank and a lower weight to the other examiner. The convex function is as the follows: NPTs × the number of brothers = NPTs × (1/ (12+1/5-the number of brothers of the chief examiner with a higher bureaucratic rank)) + NPTs × ((the lower rank/the higher rank)/ (12+1/5-the number of brothers of the chief examiner with a lower bureaucratic rank)). This function has the advantage of facilitating the calculation of the marginal effect and preserving a monotonicity relationship.

To explore this function's legitimacy, we resort to another conventional approach to addressing collinearity issues by treating the number of brothers (0-12) as 13 dummy variables. With these dummy variables, we create 13 interaction terms with the NPTs and use them in regressions. The results are consistent with the convex function approach in terms of R^2 and F-test.

Figure 1: Provincial Distribution of Students Who Passed the CSEs (*Jinshi*)



Note:
To facilitate a visualized comparison, we use the outlying boundary of the present map of China. The grayed boundary captured the territory of the Ming and Southern Song China, respectively.

For Panels A-B, the provincial boundary followed the Ming reality. There were several waves of consensus conducted throughout the Ming dynasty: 1393, 1580, and 1630 (Cao 2000). For the period between 1368 and 1397, we use the 1393 data, and employ the 1580 consensus data for the period between 1400 and 1580.

For Panel C, the highest administrative unit under the imperial court was *lu* or circuit, roughly comparable to province. The circuit boundary followed the Southern Song reality. In terms of population, we use Wu's (2000) household estimates, multiplied by the average household size.

Figure 2: Percent of Students Who Passed the CSEs (*Jinshi*) by Province

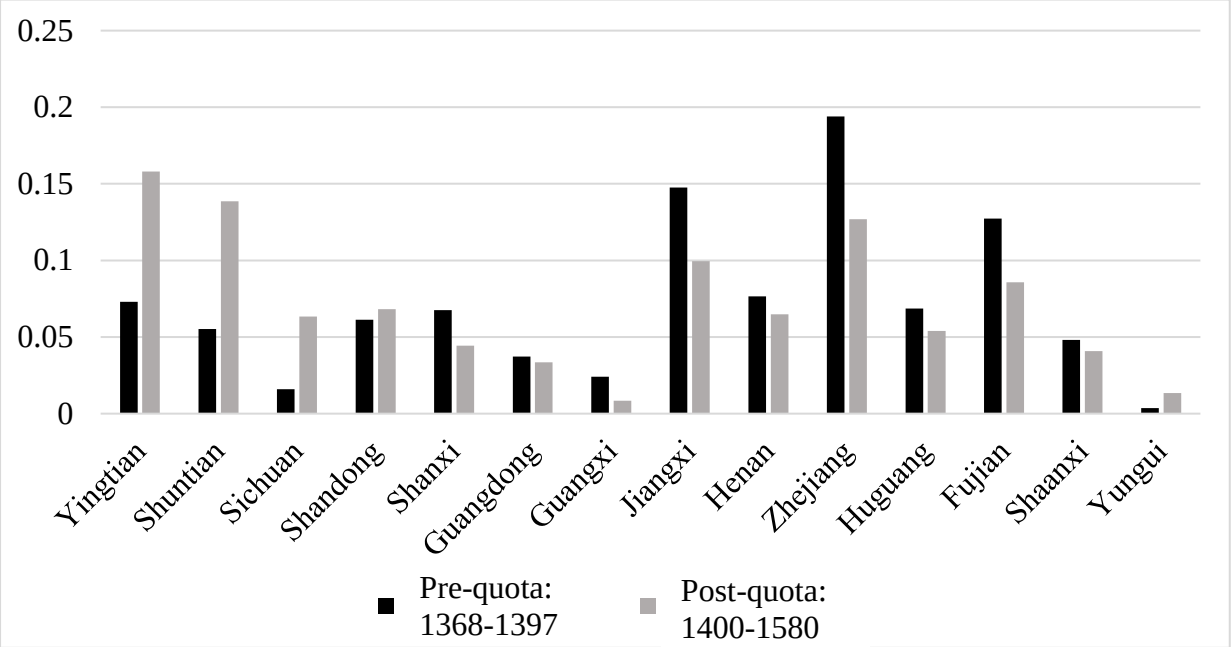


Figure 3: Provincial Distribution of Top 20 Students Who Passed CSEs

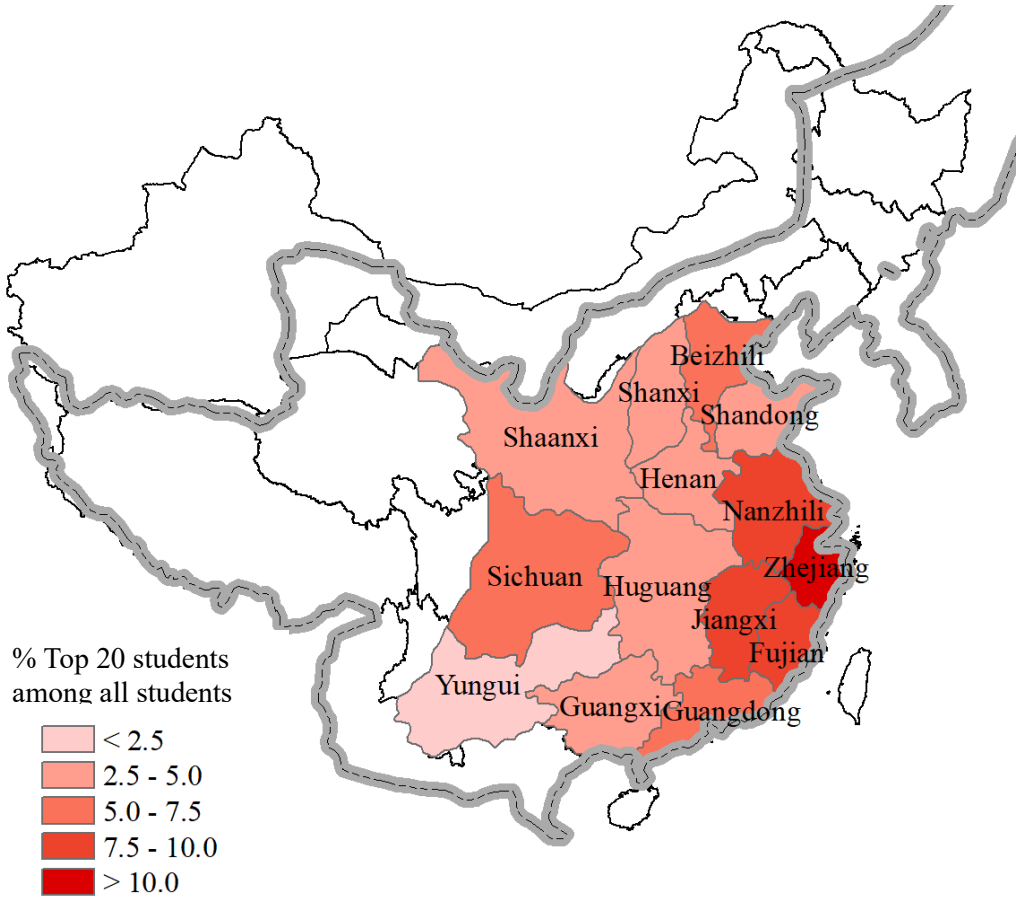


Figure 4: Population and CSE Success Rate, 1400-1580

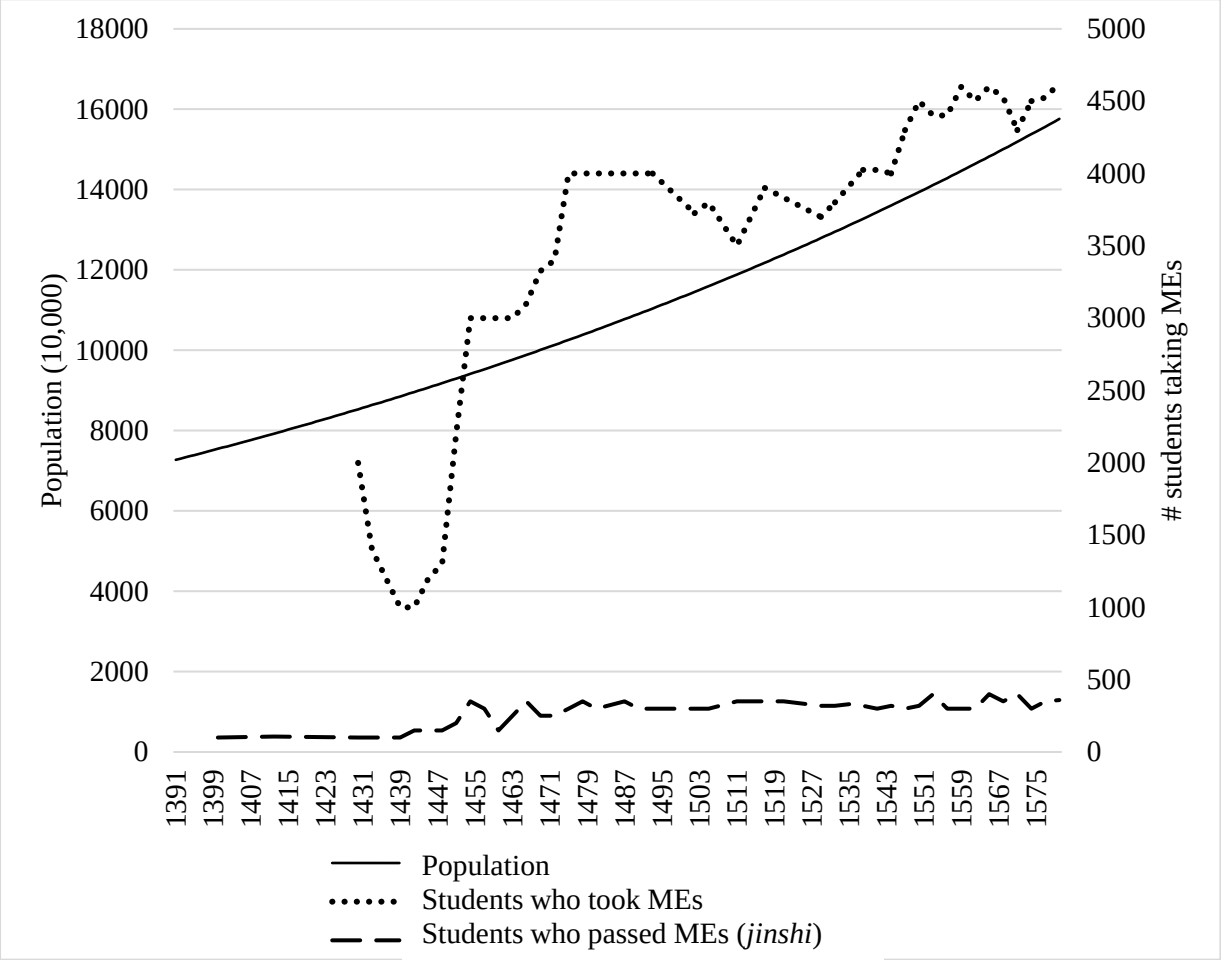
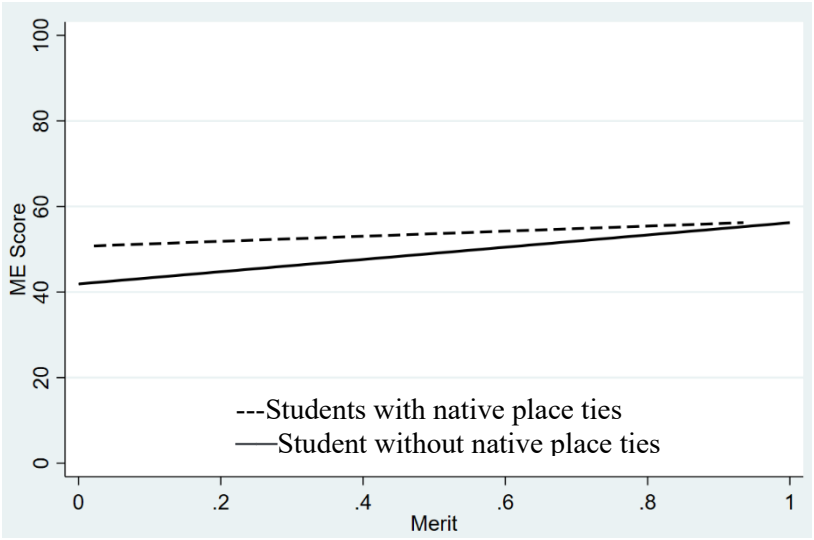


Figure 5: Merit and CSE Scores by Native Place Ties

Panel A: ME Scores



Panel B: PE Scores

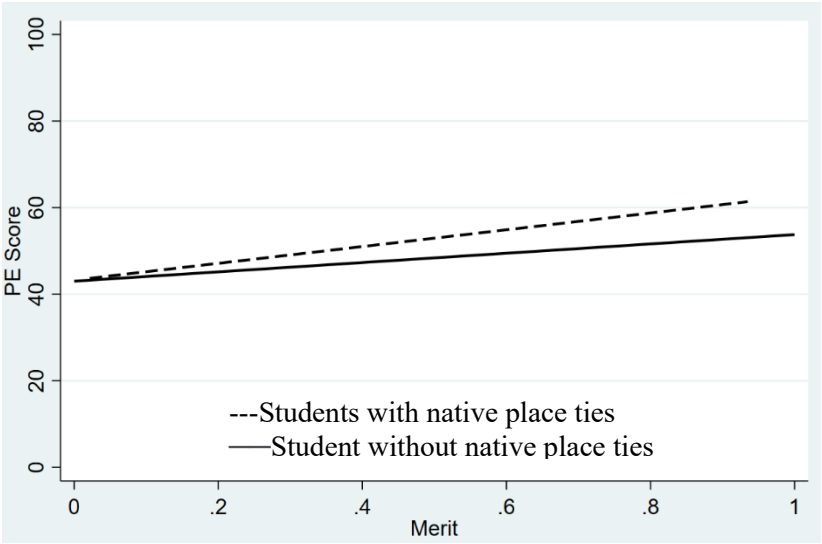
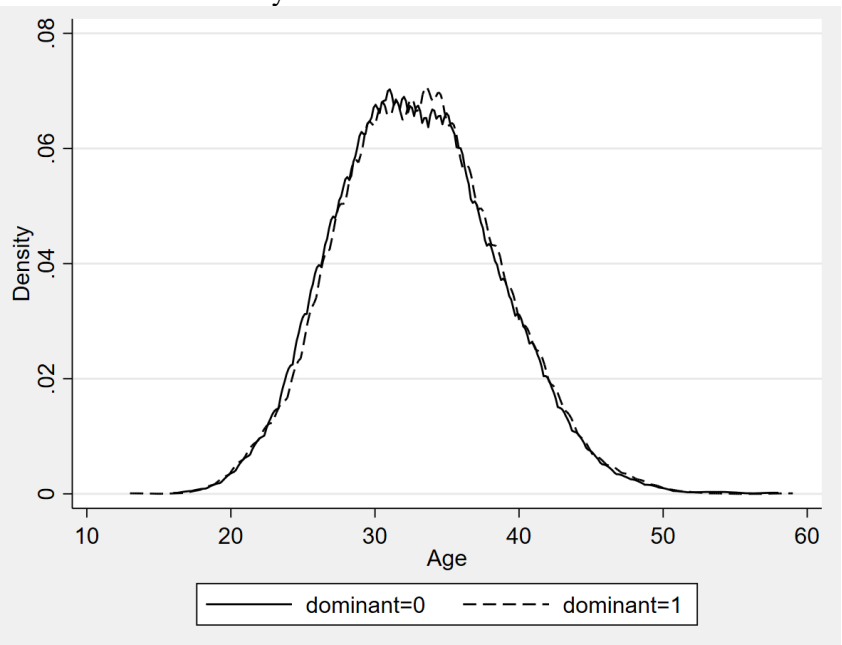


Figure 6: Merit and Elite Family Distribution of *Jinshi* by Protected versus Dominant Provinces

Panel A: Kernel Density of Merit



Panel B: Kernel Density of Elite Family (father's rank>=1)

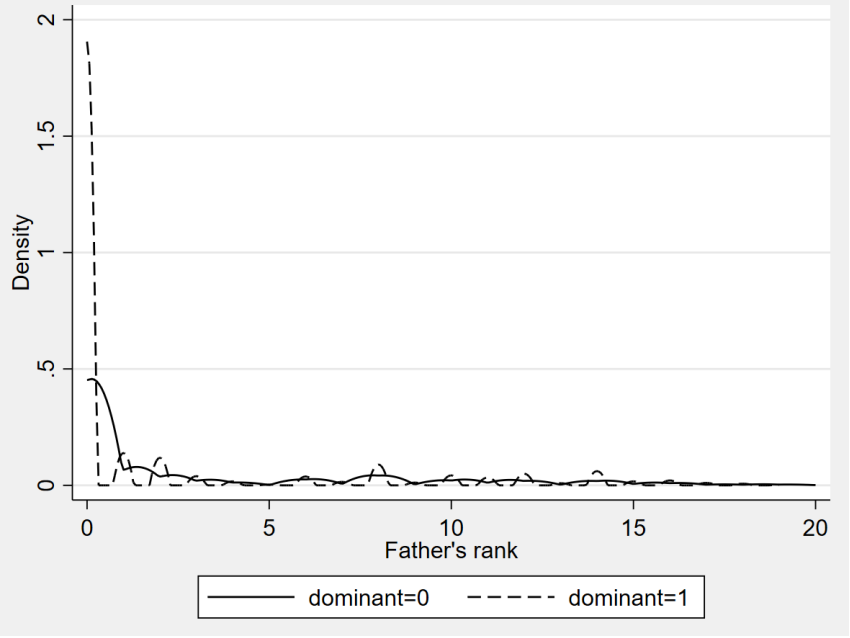


Table A1: Variable Definition

Variable	Definition	Mean	S.D.	Min	Max
1.ME scores	Reverse code and standardize the original ME rankings (1-403)	49.588	0.298	1	100
2.PE scores	Reverse code and standardize the original PE rankings (1-403)	49.760	0.296	1	100
3.NPTs	Whether a student came from the same province as a chief examiner	0.214	0.004	0	1
4.Same county	Whether a student came from the same county as a chief examiner	0.008	0.001	0	1
5.Same specialty	Whether a student and an examiner claimed the same specialty out of five Confucian Classics: *Classic of Poetry*, *Book of Documents*, *Book of Rites*, *Book of Changes*, or *Spring and Autumn Annals*	0.526	0.005	0	1
6.Dynasty age	Standardized a given exam year based on the entire dynasty span between 1368 and 1644	0.554	0.001	0	1
7.# brothers	The number of brothers a chief examiner had (average for a few cases wherein both chief examiners came from the same province)	6.745	0.039	0	12
8.Father in bureaucracy	Whether a student's father ever held a post in bureaucracy	0.264	0.005	0	1
9.Provincial exam scores	Reverse code and standardize the original provincial examination rankings	0.694	0.002	1	100
10.Dynasty school	The resources a student could receive through the dynasty school system (1-5)	4.004	0.014	1	5
11.Merit	Reverse code and standardize actual age (13-59) when a student passed the CSE: (59-age when passing CSEs)/ (59-13))	0.566	0.001	0	1
12.First son	Whether a student was the first son	0.372	0.005	0	1
13.Wealth	The number of wife and concubines a student had; they did not engage in income generating and most did not bring dowries; having a higher number means a student or his family could provide material support	1.180	0.004	0	5

Table A2: Correlations between the Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	1.000											
2	0.149**	1.000										
3	0.055**	0.067**	1.000									
4	0.010	0.025**	0.135**	1.000								
5	-0.004	0.007	-0.013	0.012	1.000							
6	0.003	0.002	-0.042**	-0.042**	-0.181**	1.000						
7	-0.001	0.000	-0.024*	-0.001	-0.015	0.084**	1.000					
8	-0.007	0.045**	-0.038**	-0.016	-0.043**	0.090**	0.008	1.000				
9	0.068**	0.051**	-0.114**	-0.002	0.035**	-0.123**	-0.001	0.033**	1.000			
10	0.004	0.007	-0.020*	0.002	0.009	-0.063**	-0.014	0.051**	-0.029**	1.000		
11	0.042**	0.048**	-0.057**	-0.027**	0.004	0.015	0.012	0.026**	0.060**	-0.291**	1.000	
12	-0.007	-0.012	-0.035**	-0.006	-0.006	0.039**	0.021*	-0.067**	-0.018*	0.009	0.007	1.000
13	-0.019*	-0.034**	-0.009	-0.003	-0.030**	0.105**	-0.005	0.026**	-0.027**	0.063**	-0.160**	0.032**

** p<0.01, * p<0.05,