

**Social Mobility in Pre-Industrial China:
Reconsidering the “Ladder of Success” Hypothesis**

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Abstract

We test with data whether social mobility existed in late imperial China (1796-1905 AD) through its civil examination system. We find that measures of ability consistently predict the highest level of exam—*jinsbi*—success, while direct measures of wealth do not. However, in addition to the significance of the father’s education, the official rank of one’s father and ancestors, which we use to proxy for family-specific tacit knowledge (or “cultural capital”), also strongly predicts actual exam performance. Thus, while unwittingly facilitated mobility, the civil examination system still transmitted hidden advantages among those possessed with endowments beyond that of human capital.

Keywords: Social mobility; civil exam; ability; wealth; tacit knowledge (cultural capital); human capital, China.

JEL Classification Nos.: I24, J62, N35

As an elite social class, the gentry stood head and shoulders above the rest of the Chinese society and thus commanded the respect of the common people. The gentry were actually officials, which for well over a thousand years and under the lasting influence of Confucianism were a class of professionals at the top of the pecking order in China.¹ But they were more than just officials, for this highly regarded social status was attained only after they passed the grueling civil exam, which by and large was steeped in the tradition of Confucian classics and ethos (Benjamin Elman, 2000; Ichisada Miyazaki, 1976). So, the gentry in China were in fact learned or scholar-officials. And while they may be regarded as having the same social status as the

¹ The social hierarchy which existed back then consisted of the *shi* [officials] at the very top, followed by the *nong* [farmers], the *gong* [artisans], and the *shang* [merchants] in that order.

aristocrats in Europe, unlike the aristocrats they could not bestow their distinctly privileged social status on their heirs. In order to “retain” the social status descendants of the Chinese gentry had to sit for and pass the civil exam themselves. It is this particular feature of the civil exam system that rendered social mobility in imperial China feasible, as the exam was open to all (males).

That was precisely what the late Ping-ti Ho (1967)—an eminent historian of China—contended. Ho found that more than half of those who successfully passed the *juren* exam—the second highest degree in China’s exam pyramid—actually came from families where none of the ancestors had achieved the same level of exam success as they had or held the same official titles as they did. Ho’s finding is thus a strong proof that the Chinese society in late imperial times was indeed highly socially mobile.²

Of course not everyone agrees with this optimistic assessment. Given that passing all three levels of the civil exam required tremendous financial and other types of support (e.g., many had to sit for the exam repeatedly), it was essentially an institution that favored the more resourceful families, clans, and lineages. As such the exam served no more than a “social reproduction of the status quo” in the words of Robert Hymes (1986, p. 42; see also Benjamin Elman, 2013; John Fairbank, 1983).

While the hypotheses implicit in these arguments are straightforward, the debate has not gone very far, as neither camp has constructed specific measures to test their respective claims. To rigorously test these competing claims, we draw upon a number of valuable historical sources from which to construct a unique data set and specifically a number of variables to proxy for ability on the one hand, and family background on the other. Based on these measures, we test the determinants of *jinsbi* exam success—the highest achievement under the civil exam system whereby entry into officialdom was guaranteed. Using one’s age upon passing the provincial or *juren* exam and one’s ranking in it as proxies of “initial” ability, we find that they are consistently significant throughout the estimations, regardless of whether our dependent variable is simply

² In fact, E. A. Kracke (1947) contends that mobility was already high back in the Song dynasty.

measuring pass/fail in the *jinsbi* exam or how well one actually performed in terms of ranking and class of honors. This latter dependent variable is important because it affected the odds of entering the Hanlin Academy, which admitted only the best *jinsbi* for preparation of a future career in the government. In any case, these results lend strong support to Ho's (1967) mobility claim.

However, family background, which we measure by exam and career achievements of one's ancestors including one's father, also matters. Specifically, the "upper gentry" families enjoyed a significant advantage over not just the "commoner" families, but also the other two intermediate social classes, viz. the "scholar-commoner" and "lower to middle gentry" families. This result thus powerfully suggests that family background also matters.

What then were the *mechanisms* through which family background affected civil exam success? To look into this, we classify family background into two types: the attainment of one's father, grandfather and great grandfather in civil exams and official careers. In addition, we also construct measures of family wealth by the average number of wives and concubines that one's father and grandfather had, and by whether a family had purchased a lower level degree to enable their son an earlier start. We find that wealth as measured by the above metrics has *no* significant effect on exam success. What bore significantly on *jinsbi* exam success was the father's education, whereas the official ranks of the father, the grandfather, and great grandfather significantly predict ranking and class of honor at the *jinsbi* exam.

While official rank may well be correlated with both education and wealth, it differed from the other two in that it affected one's exam performance through the channel of *tacit knowledge* of statecraft transmitted across generations within the family.³ Unlike the metropolitan exam, which

³ Tacit knowledge is knowledge that is "difficult to transfer to another person by means of writing it down or verbalizing it" (Wikipedia). The idea that some knowledge is "tacit" is originated from Michael Polanyi (1966). In *The Gifts of Athena*, Joel Mokyr (2002) advances the provocative hypothesis that the rise of the

still emphasized the Confucian classics, the palace exam tested only one's knowledge pertaining to statecraft. And unlike the Confucian classics, which could be studied on a systematic basis (and from a relatively tender age), knowledge pertaining to statecraft, particularly military affairs as the late Qing found itself increasingly caught in military conflicts both with the West and also domestically, could only be acquired tacitly within the family. Specifically, those families having members (father, grandfather, and so forth) who worked in the government were more likely to be able to share such knowledge with the younger generations. Hence, while wealth has no direct effect on exam success, family background or specifically “cultural capital”,⁴ as a primary source of statecraft knowledge, exerts a significant effect on just how well one did in the palace exam, a stage that importantly determined the entry point of one's official career.

In addition to clarifying an issue of epic proportions in China's social history, our study also contributes more generally to an emerging literature delving into the subtle but lingering importance of ancestry in shaping economic and social outcomes (Gregory Clark, 2014; Xi Song et al., 2015). For instance, we confirm and offer solid evidence for the importance of ancestry in transmitting certain competitive advantages across generations, regardless of whether that was achieved through the outright transfer of wealth as in the case of Gregory Clark and Neil Cummins (2015) or via a father's human capital like Lars Lefgren et al. (2012). In our case, we have uncovered an additional mechanism—one that helped to transmit the tacit knowledge that could only be acquired from working in the (high-level) government, primarily if not exclusively from within the context of the family. Additionally, our study also bears upon the importance of multigenerational analysis such as that propounded by Robert Mare (2011) and richly analyzed in Carol Shiue's (2016) study of social mobility during the Ming-Qing period based on data constructed from Chinese genealogies.

factory during the Industrial Revolution arose out of the need to coordinate what he calls “novel tacit knowledge” that was transmittable at that time only by face-to-face communication.

⁴ See Pierre Bourdieu and Jean Claude Passeron (1990) for the concept of cultural capital.

The remainder of this paper proceeds as follows. We begin by briefly reviewing the relevant literature, outlining the respective arguments and evidence presented by the proponents of the mobility thesis and their critics. We then introduce the data sources, explain how the variables are constructed and account for the rationale behind the choice of empirical models. Before discussing the results of our empirical analysis, our next topic, we first present a mobility table based on our data to illustrate both the importance of family background for exam mobility and the possibility of a downward mobility. Finally we conclude our paper.

CHINA'S IMPERIAL EXAM AND SOCIAL MOBILITY

The Civil Examination System: Origins and Goals

China's civil examination system or *keju* was designed to recruit learned talents into the government, in a society where government service was considered the most honorable and worthwhile occupation of all. The civil exam system to which we refer throughout the paper pertains to the one in place during the Ming (1368-1644 AD) and Qing (1644-1911 AD) dynasties, as it was during these times that the system was consolidated and had since become stabilized. The county examination (*xianshi*) was the starting point, the success in which led to the qualification of a licentiate or *shengyuan*, followed by entry into county or prefectural school as "secondary students" (*fusheng*). As with all prestigious exam systems where the demand for qualifications outstrips the supply of the rewards, a quota was imposed on the number of *shengyuan* that the county (and prefectural) schools were able to admit. But it was at the provincial exam (*xiangshi*) where competition flared up. As each province was assigned also a quota for the *juren*, a *shengyuan* had to perform well at the qualifying exam held at the county school before he was allowed to take the provincial exam. Those who passed it became the *juren*. But competition was extremely fierce; for each given exam only 1 out of every 50 to 80 candidates on average managed to pass it. In short, as many as 98% of the candidates were destined to fail (Yanliu

Shang, 2004; Elman, 2000).

Nevertheless, the extraordinarily low passing rate for the *juren* exam means that the bottleneck would always remain. A separate status of “tribute students” or *gongsheng* was created; these tribute students would, after receiving training at the imperial college (*guozhijian*) and subjected to some further selection, become qualified for entry into officialdom and earned them the respectable status of a “lower gentry” (Ho, 1967). But still it was possible for some—presumably the wealthy families—to take a short cut, for the system also allowed them to purchase an imperial college degree for approximately 100 taels of silver for their children as young as 10, who then became a “state student” or *jiansheng*—a status that equally qualified them to take the *juren* exam later on (Ta-ling Hsu, 1950). This way, the *jiansheng* could skip the tormenting experience of being a *shengyuan* at the county or prefectural school.

Upon passing the provincial exam, one now became qualified to prepare for the ultimate national exam leading to the highest degree of the *jinsbi*. The *jinsbi* exam consisted of two parts: first the metropolitan exam and, upon passing it, the palace exam, which took place before the emperor. While no one failed in the palace exam, they would be *ranked* according to their performance and classified into a distinct *class of honors*. Only the top three candidates of each palace exam were given first-class honors (*yijia*), the next 80-100 would obtain second-class honors (*erjia*), and the rest third-class honors (*sanjia*). Figure 1 summarizes the various levels of civil exam and their corresponding degrees in Qing China.

[Figure 1 about here]

A question of overriding importance is how competitive the *jinsbi* exam really was. Depending on the number of *juren* taking the *jinsbi* exam each time, which fell between 4,000 (Peigui Guo, 2006) and 6,000 (Tonghe Weng, 1989) depending on the year, the passing rate ranged from a low of 3.5% to a high of 5.4%, assuming that each national exam produced approximately an average of 250 *jinsbi*. Miyazaki’s (1976) estimate that only one out of 30

candidates could pass this exam is thus consistent with the lower bound of this estimate.

While passing the *jinsbi* (metropolitan) exam was clearly something of first-order importance to the candidates, once they overcame this hurdle their concern turned immediately to their performance in the palace exam, as it was the ranking achieved in this exam and the class of honors conferred on them that determined admission into the Hanlin Academy—an academy for grooming high-rank officials (Adam Lui, 1981; Elman, 2000). For instance, one may be appointed as an official in the capital of Beijing (*jingguan*), with further opportunities to serve as prefect in a prefecture. Even the worst performing ones would be dispatched to counties as magistrates immediately without having to wait for a vacancy. In other words it was a real job offer, whereas the third-class *jinsbi* had to wait in line until a position actually became available (Shang, 2004, p. 164). It is because of this crucial difference that ranking and class of honors in the palace exam mattered importantly.

Beyond Confucianism: the Tacit Knowledge of Public Affairs in the Palace Exam

Given that China's civil examination system was steeped in the Confucian classics based on the *Four Books* and the *Five Classics* and their attendant ethos and style of expression,⁵ at least two-thirds of the contents of both the provincial [*juren*] and metropolitan [*jinsbi*] exams were “codified knowledge” and were thus readily transferrable through writing or verbalizing. In this regard, family background conferred little additional advantage.

But things took on an about turn in the palace exam: a point had been reached where administrative competence and political leadership were now being called for if one were to be given a senior appointment in the government. The disproportionate significance of *cewen* or policy questions in determining a *jinsbi*'s performance in the palace exam can be gleaned from the

⁵ Typically, an eight-legged essay has a uniform structure in regard to the organization of sentences, in that there is only limited space for one to express one's opinions (Shang, 2004).

fact that it was now the *only* subject matter to be examined, involving as they did thorny issues with which the emperors were confronted. Moreover, as the Qing emperors found themselves increasingly immersed in conflicts with both foreigners (especially the British) and rebels, *cewen* took on disproportionate importance. In the 50 or so palace exams that took place within our period of analysis, for instance, approximately half of the questions concerned military strategies and tactics (48%), a magnitude more than double than that found during the early Qing period (Xiaoyang Wang, 2013). A prominent example is the Opium War, which had troubled Emperor Daoguang (1821-1850) the most.⁶ The same was the case with Emperor Xianfeng (1850-1861). Tormented by the Taiping rebels, he was desperate to find out what the *jinsbi* candidates saw was the most efficacious way of defeating them. The answer that the emperor found most persuasive was provided by Optimus (*zhuangyuan*) Sun Rujin, whose knowledge of both military tactics and geography was so thorough and specific the emperor considered an instantaneous application feasible (Hongbo Deng and Kangyun Gong, 2006).

At this point, one cannot resist asking the question of how exactly one became distinctly more knowledgeable than others in this realm, given that there were literally no institutions or market from which one could acquire such knowledge, and that such knowledge assumed almost no importance prior to the palace exam (suggesting a tendency for one to invest most of his time in the Confucian classics). In the historical context of China, the family was the primary mechanism through which such tacit knowledge could be transmitted. The reason is straightforward, because knowledge of this nature is essentially distilled from experiences deeply grounded in officialdom. As such knowledge is difficult to transfer via writing down the explicit codes, it could only be transmitted—in the majority of circumstances anyway—within the

⁶ Emperor Daoguang's questions were: "How could we enliven the spirits of our soldiers and generals? How could we find out what our enemies are up to? How could we make our firearms more lethal? How could we identify the traitors?" (Deng and Gong, 2006, p. 1846).

context of the family from one generation to another. For example, Zhidong Zhang's excellent performance in the palace exam (he came third) must have been inspired by his father's experience of defeating the Taiping rebels as a prefect in Guizhou Province in southwest China (Jianjie Wu, 2009, p.17). Qirui Long, the Optimus of 1841, offers another example. The son of a *juren* who not only possessed a wealth of experience in suppressing the pirates on China's southeastern coastal seaboard but also displayed unquestionable competence in local governance (Long, 2002; Deng and Gong, 2006), Long was unwittingly given the question in the palace exam of how to deal with naval intrusion (Deng and Gong, 2006, p. 1844).

THE MAKING OF THE UPPER GENTRY

Data and Variables

The data that we employ for analysis are obtained from two separate historical data sources. The first is *A Compilation of Civil Examination Essays in Qing China* (*Qingdai zhujuan jicheng* [*Exam Essays* hereafter]), edited by Tinglong Gu (1992). This source contains a list of 4,035 *juren* having passed the provincial exam during the period of our analysis, accounting for about 8% of the total *juren* population (of 50,000). The second source is a compilation by Baojiong Zhu and Peilin Xie (1980) titled *An Index Guide to the Ming-Qing List of Jinshi Degree Holders* (*Mingqing Jinshi Timing Beilu Suoyin* [*Guide* in short]), which provides a list of all the *jinsbi* who eventually passed the metropolitan and palace exams. Merging the two lists provides us with the useful information of who among the *juren* had passed the *jinsbi* exam and specifically also their performance. In matching the two lists of names we rely also on the additional information pertaining to one's hometown (*jiguan*) for accuracy (which is available from both *Exam Essays* and *Guide*). On the whole about 18% of the *juren* attained the *jinsbi* degree during this period.

In the compilation of exam scripts a total of 4,035 essays by *juren* from all 18 provinces of Qing China who passed the provincial exam during the 1796-1895 period were included. In Qing

China the probability that a *juren* would become a *jinsbi* was about 18%.⁷ In addition, *Exam Essays* also contained the detailed vitae of all the *jurens*' fathers, grandfathers, and even great grandfathers, including the level of their exam success (if any) and official rank (if any). This detailed information thus allows us to construct a list of independent variables pertaining to one's ancestors' exam achievements and official rank. These variables together make up the analytical construct of "family type or background"—a variable to which Ho (1967) and others have resorted in the debate regarding the extent of social mobility in late imperial China. In addition, we can employ exam achievements to proxy for family education and official rank for family-specific tacit knowledge. As *Exam Essays* contains virtually the same information on the *juren*'s maternal relatives, it thus also allows us to construct the variable "family type" on the mother's side as well. Finally, as *Exam Essays* also enumerated one's age when they passed the *juren* exam as well as the ranking thus attained, we are further able to construct two separate measures to proxy for ability.

We choose 1796 as the starting point of our analysis for the simple reason that the sample before 1796 (e.g., 1705-1795) is grossly underrepresented in the *Exam Essays*. With only 67 *juren* enumerated during this period, it amounts to a mere 1.63% of the overall sample spanning nearly two centuries. We use passing rate as a guide (the number of *juren* who passed the *jinsbi* exam) to gauge sample representativeness. The passing rate is estimated to have hovered around 18% on average throughout the Qing dynasty.⁸ Prior to 1796 the passing rate was only 10%—well below

⁷ To ensure validity, we consulted reliable sources such as various provincial gazetteers, which recorded the names of all the *juren* and *jinsbi* in Qing China on a provincial basis. The results show that the various passing rates are indeed within a close range of the one in our sample. Space limitations prevent us from presenting the pertinent data here but they are available upon request.

⁸ As noted earlier the entire quota of *juren* during the Qing dynasty was 152,100 (Jiang Chu, 2012), out of which 26,747 became *jinsbi* (Ho, 1967; Zhu and Xie, 1980). This yields an average passing rate of 17.6%.

the average passing rate. In contrast, at around 18% the passing rate after 1796 is nearly identical with the average, reassuring us of the credibility of the sample we employ (Figure 2). In other words, the significantly larger number of *juren* enumerated after 1795 is not a case of “*jinsbi* inflation”; for that reason it is more prudent to exclude them from our analysis.

[Figure 2 about here]

We end our analysis in 1895 because the civil exam was abolished in 1905 and assuming that it would take up to 10 years if not longer for a *juren* to attempt the *jinsbi* exam again. Ending our analysis before the abolition of the civil exam should allow the last batch of candidates a more or less equal chance of passing the *jinsbi* exam.

Dependent Variables: Passing the Metropolitan Exam and Performance in the Palace Exam

We have three dependent variables altogether. The first is whether a *juren* passed the metropolitan exam—a binary variable for which we simply assign the value of 1 to those who passed the metropolitan exam, and 0 otherwise, whereas the second and third pertain to respectively the ranking and class of honors attained at the palace exam. In the palace exam, each *jinsbi* candidate received a ranking and was sorted into a particular class of honors. For instance, in the 1822 palace exam a total of 222 candidates passed the exam. The top three were classified as having attained first-class honors (*yijia*), the next 100 second-class honors, and the remaining 119 third-class honors. To enable the comparison of *jinsbi* ranking across time and region we employ the following formula (equation (1)) to calculate a standardized score for each *jinsbi*, where the score ranges from 0 to 100:

$$std.\ ranking = \frac{total\ no.\ of\ jinshi\ in\ a\ given\ exam - actual\ ranking}{total\ no.\ of\ jinshi\ in\ a\ given\ exam} * 100 \quad (1)$$

For someone who was tenth in the second-class category (#13 in actual ranking since the three first class *jinsbi* also rank ahead of him), for example, the standardized score is 94.14 ($[222 - 13] \times 100 / 222$).

For the class of honor variable, we assign 1 to first and second class of honor, and 0 to those

with third class of honor.

Independent variables

(a) Family Background/Type

The late Ping-ti Ho (1967) classified families in late imperial China into four distinct categories based on the exam achievements of a candidate's paternal ancestors for up to three generations. First, the “commoner” families are those whose ancestors had never attained any—not even *shengyuan*—academic status, and, thus never held a position in the government. Next are the “scholar-commoner” families, which are those whose ancestors had attained the qualification of a *shengyuan* or equivalent only, but still held no office. Then there are the “gentry” families, which include all those who had either produced one or more degree holders higher than *shengyuan*—typically the *juren*, or held offices/with official titles. Finally, Ho singles out those families with at least one ancestor who had attained an office in the government at the province level and above as the “upper gentry” class. To further differentiate the “upper gentry” family from its lesser counterparts in the empirical analysis, we redefine the “upper gentry” class as those with one or more family members having attained the *jinsbi* degree or held an official position at the province level or above, and the “lower to middle gentry” class as those who had attained a *juren* degree or held a government position below the province level.

(b) Ability

Ho's (1967) mobility thesis implies that ability rather than family background was the key to civil exam success. To test this hypothesis, we construct two variables to proxy for ability.

Following Robert Marsh (1961), we use a candidate's *age* upon passing the provincial exam to proxy for ability, presumably because the younger one passed the *juren* exam the more competent he should be. Indeed, our *juren* sample does reveal that the candidates who subsequently passed the national exam were nearly three years younger than those who failed to advance further (28.88 years vs. 31.23 years) at the time of passing the provincial exam. The mean age of

obtaining the *juren* degree is 31.24 (Table 1)—strikingly close to what others have found (e.g., Chung-li Chang, 1955; Elman, 2000).

[Table 1 about here]

The biggest threat of using age as a partial indicator of ability is that it may potentially capture the effect of wealth, as a wealthy family could simply purchase a studentship from the imperial college—a qualification that enabled one to sit for the *juren* exam much earlier than did the *shengyuan*. However, only 9% of the 4,035 *juren* in our sample belonged to this particular category, plus we control for this possible effect in our analysis.

The second pertains to a candidate's *ranking* in the provincial exam. But since the *juren* exam took place in different provinces, with multiple candidates across these provinces attaining essentially the same rank (in their own province), to allow for comparisons both across provinces and over time we need to standardize their ranking using a formula similar to equation (1). According to this formula, a *juren* ranked first in a province with a quota of 120 would obtain a standardized score of 99.16 $([120-1] \times 100/120)$, whereas the one who came last obtained a score of zero. The average standardized score based on our sample is 56.

(c) Decomposing Family Background

Useful as it is, family background is likely a noisy measure because it lumps together the various advantages conferred by different types of resources across generations. For instance, while parental education may have a direct effect on the son's ability, it may also have an indirect effect on his educational success by, for instance, allocating more time to nurturing him (e.g., Gary Becker, 1962). Moreover, while parental educational achievements are clearly related to official rank, the two may affect exam performance of the succeeding generation(s) via different mechanisms. Families with a history of distinguished career in state bureaucracy may confer certain unique advantages such as knowledge of statecraft on their descendants. Owing to these reasons, we construct four separate measures to proxy for the combined effects of family

background, including the exam achievements and official rank of one's ancestors, as well as two direct proxies for wealth or family economic resources, using the average number of wives and concubines that one's father and grandfather had, and whether one held a *jiansheng* degree as proxies.

Family Human Capital (Father's/ Grandfather's and Great Grandfather's Examination Achievements).

To proxy for a family's human capital the father's educational attainment is coded as an ordinal variable ranging from no degree at all (0), a *jiansheng* (purchased) degree (1), a *shengyuan* degree of various ranks attained through the series of examinations in the county school (2 to secondary students or *fusheng*, 3 to extra students or *zengsheng*, 4 to stipend students or *linsheng*, and 5 to tribute students or *gongsheng*), all the way up to a *juren* degree (6) and a *jinsbi* degree (7). In the case of the grandfather and great grandfather we compute the mean of their educational attainment instead.

The mean of the father's education level is 2.02 (Table 1), equivalent to a low-level *shengyuan*. At 1.38 the average education level of the grandfather and great grandfather is noticeably lower than that of the father, suggestive of mobility.

Tacit Knowledge (Father's/ Grandfather's and Great Grandfather's Official Rank). To proxy for the possible effect of tacit knowledge (under the format of policy questions) we construct a variable based on the official rank of a candidate's father and the average official rank of the grandfather and great grandfather. Intuitively, the higher the official rank the more valuable such knowledge and experiences tended to be.

There were altogether nine official grades. But since corresponding to each of these grades there was a deputy assisting the chief, we code official rank on a 20-point scale from 0 to 19, with a 0 assigned to those whose father held no official rank at all, and a 1 to those whose rank was too low for classification (*weirulin*). Next in the pecking order is the lower ninth rank [9b] corresponding to a score of 2 in our coding scheme, all the way up to the highest grade of upper first rank having a score of 19 [1a]. Based on this coding scheme the mean father's official rank is

1.68, which is close to the lower ninth rank [9a]—very low in status indeed. At 1.09 the average official rank of the grandfather and great grandfather is lower than that of the father, albeit not by much.

Wives and Concubines. We also control for any indirect effect that family wealth may have on exam success. As data on landholdings are not available, we employ the number of wives and concubines of a *juren*'s father and grandfather as proxy, on grounds that in a pre-modern society wealth and the number of wives and children are usually highly correlated (e.g., Ts'ui-jung Liu, 1992). The mean of this variable is 1.52 (Table 1).

Pre-juren Qualifications. To mitigate the effect of wealth through the purchase of the *jiansheng* degree, we control for the pre-*juren* degree type. The usual binary (0, 1) classification applies.

(d) Control Variables

In addition, we control for the variations in sibling size, birth order, type of residence (urban versus rural), and regions and periods.

Siblings and Birth Order. For reasons pertaining to resource dilution we control for the number of brothers a *jinshi* candidate had and his own birth order in the family in the analysis. The mean number of male siblings in our sample is 2.16, with close to half of them (0.46) being the first-born.

Urban versus Rural Residence. We also control for this dimension just in case an urbanite enjoyed advantages over his rural counterpart in civil exams.

Region Fixed Effects. To rule out the possibility that variations in our dependent variables may be due to the varying spatial impact of the regional characteristics, particularly differences in the *jinshi* quota, we include regional fixed effects in the regression analysis.⁹

Period Fixed Effects. To control for the possible effect of the different time periods in which a

⁹ These broader regions include north China, south China, western China, central China, and the two special regions of Jiangsu/Anhui provinces, and Zhejiang Province.

candidate took the *jinsbi* exam on exam performance, we separate the candidates according to the decade in which they took the exam. The first decade was from 1796 to 1805 and the last decade was from 1886 to 1895, with eight decades in between. As too few *jinsbi* passed the exam during the two decades of 1796-1815, we combine them into one period accordingly (1796-1815), resulting in a total of just nine periods.

Empirical Strategy

In our analysis where the dependent variable is whether one passed the *jinsbi* exam, we employ a logit regression model, with specifications designed to test the competing hypotheses regarding the roles of ability and family background in determining China's civil exam success:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = X_{family}\beta_1 + X_{ability}\beta_2 + X_{wealth}\beta_3 + Z\lambda \quad (2)$$

where p is the probability of passing the metropolitan exam. In Equation (2), our baseline model, the key independent variable is family resources, which initially is measured by family type but is later measured by family education, official rank, and wealth. Ability measures enter into the analysis in both settings, and Z represents a number of control variables.

In estimations in which we employ a *jinsbi*'s ranking attained in the palace exam as the second dependent variable, we employ the Ordinary Least Squares method (OLS, Equation 3) in estimating ranking on a smaller sample that is conditional upon only those who passed the metropolitan exam.

$$ranking = X_{fam_edu}\beta_1 + X_{fam_off}\beta_2 + X_{ability}\beta_3 + X_{wealth}\beta_4 + Z\lambda \quad (3)$$

Finally, to check the robustness of our results based on palace exam ranking we apply the sequential logit model to the determinants of passing the metropolitan exam first, and conditional upon passing it, to the determinants of attaining a certain class of honors in the palace exam (Mare, 1980; Buis, 2007). The sequential logit model can be written with notations similar to the ones in (3), as follows:

$$\ln\left(\frac{p_{ij}}{1 - p_{ij}}\right) = X_{fam_edu} \beta_{1j} + X_{fam_off} \beta_{2j} + X_{ability} \beta_{3j} + X_{wealth} \beta_{4j} + Z\lambda_j \quad (4)$$

EMPIRICAL RESULTS

Did Keju Really Provide Social Mobility? Descriptive Evidence

Ho's (1967) argument that the Chinese society was highly mobile is premised on his observation that in the 19th century as many as 45.1% of *juren* and tribute students came from the commoner and scholar-commoner families. While the figure for the *jinsbi* was slightly lower, it still accounted for a substantial 37.6%. These corroborating evidences lead Ho to conclude that “during the Ming-Qing period there were various institutionalized and non-institutionalized channels which promoted the upward mobility of the humble and obscure...” (Ho, 1967, p. 257).

Not everyone accepts Ho's (1967) optimistic assessment of the civil examination system in facilitating social mobility in Qing China, however, because the civil exam was such a long-drawn process it took an average of 20 years to complete (Chang, 1955). During this lengthy process, continuous financial support from the family and/or lineage was absolutely crucial. Moreover, the fact that no limits were imposed on age or number of attempts in taking the exam only prolonged the duration of financial support required, thereby putting the wealthy in an advantageous position (Elman, 2013; Fairbank, 1983). Thus, all things considered, the civil exam system is still considered by some as merely facilitating the transmission of social status between generations of the privileged class.

To address this question we first construct a mobility table in the context of four generations using the *Exam Essays* data set. Multigenerational analysis is especially pertinent in our context because it allows us to examine whether the alleged advantages of family background

can go beyond one generation.¹⁰ To do that we first tabulate the exam outcomes involving four generations based on the *juren* sample, with each conditional upon the father's exam achievements. Panel A of Table 2 shows the distribution of four generations across the four levels of exam achievements, including those who failed to achieve even the lowest degree—the commoners. Panels B through D represent essentially an “outflow table” constructed for up to four generations (e.g., the grandfather's exam achievement conditional upon the great grandfather's, and so forth).

[Table 2 about here]

Two results stand out. Foremost is that family background indeed matters. Specifically, chances that the next generation ended up being a *juren* or *jinsbi* were far greater among those whose fathers were also a *juren* or *jinsbi* (e.g., Panels B and C). For example, while 21% of the sons of *jinsbi* managed to retain the *jinsbi* status, only 2.78% of those with a commoner father became a *jinsbi* themselves (Panel C). As for the *juren* in our sample, those with a father who was also a *juren* or *jinsbi* respectively enjoyed a 6.75% (23.84% - 17.09%) or 9.53% (26.62% - 17.09%) higher passing rate in the *jinsbi* exam than those whose father was a mere commoner (Panel D). There is thus an element of truth in the “status reproduction” thesis. However, there was also substantial *downward* mobility in the process. Using the same two panels for illustration, only slightly more than 30% of the *juren* families were able to retain the same status (or higher) in the next generation (e.g., 25.71% + 7.43% in Panel B, 21.64% + 10.07% in Panel C), suggesting that fathers who were a *jinsbi* themselves had a harder time ensuring their children performed equally well in the exam (about 16% in Panel B and 21% in Panel C). On the whole, in our sample more than 60% of those with a *juren* or *jinsbi* father failed to attain the same or higher status, i.e. they

¹⁰ Using genealogical records of the Ming and the Qing dynasty (circa 1300-1900 AD), Shiue (2016) finds that the transmission effect was weak for the grandfather but strong for the father and the uncle.

experienced downward mobility. These results suggest that upward mobility—achieved presumably via one’s ability—was clearly also a feasible option. Since our period of analysis covers more or less the last one hundred years of China’s last dynasty, our observation that mobility did exist augurs well with Shiue’s (2016) finding of an increase in social mobility over time.

Family Type versus Ability

We now turn to regression analysis to examine the determinants of exam success in the metropolitan examination. Table 3 reports the results from the estimation of a logit model that regresses the probability of passing the *jinsshi* exam—specifically the metropolitan exam—on family background or type, the latter constructed based on family members both on the paternal (three immediate ancestors) side and the maternal side (but only the grandfather and the uncle) with the highest academic-cum-official career achievements, and on the candidate’s measurable ability, using the “commoner” family as the reference group. Columns 1 and 2 report the baseline model results using only family type from one side as the explanatory variable, whereas column 3 combines both paternal and maternal sides. In column 4 we report the results of respectively the two ability measures and the wealth measures. Column 5 is the full model, which includes a number of control variables outlined in the previous section.

[Table 3 about here]

A foremost finding is that, while neither the “scholar-commoner” nor “lower to middle gentry” families exhibit significant advantage over the “commoner” families (the reference group) in passing the metropolitan exam, the “upper gentry” families clearly do (column 1). Specifically, *juren* from the “upper gentry” families enjoys a 61.1% advantage ($\exp^{0.477}-1$, model 5) over the commoners in the net odds of passing the metropolitan exam—a finding that opposes the mobility thesis.

But the same does not apply to family type based on the maternal side (column 2). This may suggest that influence from the mother's side is not significant—a finding that seemingly augurs well for the patriarchal nature of the Chinese society. However, the insignificance may have been due to the coarseness of data on the maternal side. The Qing government required a candidate to report the educational level and official position of his three immediate paternal ancestors but not those of his maternal ancestors. Besides, as the mother (rather than her brothers and/or father) was more likely the provider of her son's education, the academic and career credentials of a candidate's maternal relatives would be a poor proxy for measuring influences on the maternal side. These findings do not change in Model 3; the “upper gentry” families classified based on the father's side remain just as significant (in fact with a slightly larger coefficient), whereas the same social class on the mother side continues to be insignificant.

But Ho's (1967) thesis that the Chinese society in late imperial times was upwardly mobile receives support from the finding that the two proxies for ability both bear significantly upon exam success (columns 4 and 5). In terms of magnitude, a 10% increase in ranking in the provincial exam has the effect of increasing one's chance of passing the *jinsbi* exam by 8.3 percentage points ($\exp^{0.008*10}-1$, calculated based on the full model, column 5). Likewise, a one-year increase in the age upon passing the *juren* exam has the effect of decreasing the odds of passing the *jinsbi* exam by 4.5% ($\exp^{-0.046}-1$, column 5).

Does wealth improve the exam success rate? Using the number of wives and concubines that one's father and grandfather had and whether a candidate had purchased his *jiansheng* degree as proxies our finding is decidedly in the negative (columns 4 and 5, Table 3). Consistently, these results suggest that, at the highest level of competition material support from a family weigh much less than sheer intellect and determination. A possible alternative explanation is that, once one achieved the status of a *juren* chances were great that his relatives and friends would be eager to invest in his future exam and career—the so-called *bingxing* ceremony, thereby leveling the playing field (Xiaoyang Mao, 2007).

Finally, in the full model (column 5), where a number of important controls are included, the upper gentry variable remains significant, although the level of significance is now reduced from 1% to 5% and with a smaller coefficient. So too are the two ability measures, which remain significant in the full model. To check whether the “upper gentry” families enjoyed an advantage over only the “commoner” families we changed the reference group from the “commoner” to the “upper gentry” and found that the latter continued to enjoy a significant edge over all the other three social groups (and hence we do not separately report the results), reaffirming our previous result.

Summing up, regression analysis based on the analytical construct of family type and ability does lend partial support to Ho’s (1967) thesis that the Chinese society in late imperial times was mobile. However, inequality in social origins does have an important bearing on *jinsbi* exam success. Specifically, and consistent with the findings of Table 2, the *jinsbi* from an upper gentry background does enjoy a distinct advantage over his counterparts of a much humbler origin. We now turn to examine the possible mechanisms through which these “upper gentry” families enjoyed their advantages by decomposing family type into two distinct dimensions—human (educational) and cultural (official rank) capital.

Identifying the Advantages of the “Upper Gentry” Families

Table 4 regresses the same dependent variable regarding the odds of passing the metropolitan exam on the exam achievements and official rank of both a candidate’s father and his grandfather and great grandfather, the various measures constructed to proxy for the effect of family wealth, and the same control variables.

Given that the father’s education level is likely correlated with those of the grandfather and great grandfather, we first enter them separately in columns 1 and 2, before putting them together in column 3. We do the same for official rank. The results reveal that, while the father’s education and official rank are both significant in the baseline model (column 1), only the former

remains significant in the full model; moreover, the level of significance in the full model is reduced from 1% to 5% (column 4). In terms of magnitude, a one-level increase in the father's education has the effect of raising the odds of passing the metropolitan exam by 5.5% ($\exp^{0.054}-1$, column 4). While completely different in context, the finding that the father's exam achievements have a significant impact on the son's achievements nonetheless is consistent with conventional wisdom (e.g., Helena Holmlund et al., 2011).

[Table 4 about here]

For the grandfather and great grandfather, neither their exam achievements nor official rank is significant in the full model (column 4). This result concurs with the finding that the grandfather's education has no additional effect on the grandson's education. In column 4 in which all controls are included, the two ability measures still dominate over the two wealth measures, a result consistent with those in Table 3.

Success in the Palace Exam

We now examine the more specific outcome of how a *jinsbi* fared in the palace exam, using his exam ranking first and then class of honors to check robustness. Table 5 reports the OLS results on ranking. First, the father's education is no longer significant in determining a *jinsbi*'s ranking in the palace exam (columns 1 and 2), but the father's official rank now has a distinctly significant effect (1%) on a *jinsbi*'s ranking in the OLS estimates (columns 1 and 2). This new result suggests that the father's official rank can predict how well a candidate performs at the final stage of the *jinsbi* exam rather than simply predicting pass or fail. The result is consistently similar in the case of the grandfather and great grandfather (columns 2). Unlike human capital, which does not have a multigenerational effect, tacit knowledge or cultural capital has had a cumulative effect across generations.

[Table 5 about here]

What then is driving these results? Is what we have observed due to the differences in characteristics between those *jinsbi* families with and without a government job, or is it driven by differences in the level of official appointment? To find out, we divide the nine official ranks into three categories: low (i.e., lower seventh rank and below [7b], equivalent to county school instructors at the most), middle (upper seventh to upper fourth rank [7a-4a], equivalent to county- and prefecture-level officials), and high (lower third rank [3b] and above, equivalent to officials at the province level and above). Reported in column 3 of Table 5, the results show that the differences in the palace exam ranking are driven not merely by whether a *jinsbi* had an official father (> 0), but also whether his father was at least a mid-level official (county and above, $\cong 7a$). In particular, the coefficients in column 5 suggest that this advantage is more than doubled when a *jinsbi*'s father was a high-level official (15.634 versus 7.301 and 6.752). In any case, these results suggest that a family's resources attained and accumulated beyond human capital (exam achievements) is a better predictor of how well a *jinsbi* candidate performed in the palace exam than they are determinants of whether or not he passed the metropolitan exam.

Turning to the sequential logit model to check robustness (columns 4 and 5 of Table 5), we confirm that the father's education fails to significantly predict a candidate's odds of obtaining first- or second-class honors in the palace exam (columns 4 and 5); only official rank determines the class of honor (albeit only at the 10% level of significance). Also consistent with the earlier result, the grandfather's and great grandfather's education has no effect beyond that of the father in predicting *jinsbi* exam success but official rank significantly (1%) predicts class of honor (column 5).

CONCLUSION

We have set out in this paper to shed light on an old but unresolved question of whether the civil exam system actually facilitated social mobility in late imperial times. By drawing upon

various valuable historical sources and constructing a unique data set to test this much debated but empirically unresolved hypothesis, we found that there was downward as well as upward mobility in late imperial China, thus testifying to the fluidity of social mobility in this period. Then there is the finding that a candidate's measurable ability is always a significant predictor of his passing and of how well he performed in the *jinsbi* exam, supporting Ho's (1967) thesis that the imperial Chinese society was highly mobile by virtue of the civil exam. Moreover, his argument receives further boost from the finding that some crude proxies of wealth have no significant effect on exam success.

Ho's (1967) assessment needs qualifications, however, in light of the finding that family background also significantly determined exam success. In particular, the "upper gentry" families enjoyed a distinct advantage over not just their "commoner" counterparts but also families that belonged to the other two higher social classes. By the same token, we arrive at the same conclusion when we break down family type into the more refined aspects of human and cultural capital using respectively education and official career as proxies. While the finding concerning the significance of human capital may not be all that surprising, we would not have easily predicted the channel pertaining to tacit knowledge transmitted within the family. It does make huge intelligible sense, however, considering that the palace exam assessed one's knowledge of statecraft, which was most likely transmitted tacitly from a father or grandfather who enjoyed an official career to his son or grandson. This unexpected finding also sheds light on the studies of social mobility from a multigenerational perspective, as our finding directly suggests that this particular dimension has a far stronger enduring effect than human capital.

We hope that our study has illuminated a major historical puzzle of the Chinese society in late imperial times, and will inspire similar studies pertaining to the multigenerational effects of ancestry in the historical Chinese context.

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TABLES

Table 1. Descriptive Statistics of Key Variables

	Mean	S.D.	Min	Max
<i>Achievements in national exams</i>				
<i>Passing metropolitan exam (fail = 0)</i>	0.18	-	0.0	1.0
<i>Ranking in palace exam^a</i>	60.39	28.84	0.0	99.7
<i>1st & 2nd class jinshi in palace exam (3rd class = 0)^a</i>	0.58	-	0.0	1.0
<i>Family background</i>				
<i>Paternal family types^b</i>				
<i>Commoner</i>	0.12	-	0.0	1.0
<i>Scholar-commoner</i>	0.47	-	0.0	1.0
<i>Lower & middle gentry</i>	0.32	-	0.0	1.0
<i>Upper gentry</i>	0.09	-	0.0	1.0
<i>Maternal family types^b</i>				
<i>Commoner</i>	0.36	-	0.0	1.0
<i>Scholar-commoner</i>	0.37	-	0.0	1.0
<i>Lower & middle gentry</i>	0.21	-	0.0	1.0
<i>Upper gentry</i>	0.06	-	0.0	1.0
<i>Father's education</i>	2.02	2.15	0.0	7.0
<i>Father's official rank</i>	1.68	3.78	0.0	19.0
<i>Average education of grandfather and great grandfather</i>	1.38	1.52	0.0	7.0
<i>Average official rank of grandfather and great grandfather</i>	1.09	2.67	0.0	18.5
<i>Average number of wives and concubines of father and grandfather</i>	1.52	0.63	1.0	8.0
<i>State student as pre-juren qualification</i>	0.09	-	0.0	1.0
<i>Achievements at provincial exam</i>				
<i>Age upon obtaining juren degree</i>	31.24	8.24	14.0	64.0
<i>Ranking^c</i>	55.96	27.62	0.0	99.7
Observations	4035			

Source: *Exam Essays* (Gu, 1992)

Notes: ^a The number of observations for which information is available for these two measures is 728. ^b Paternal family type is constructed based on the highest educational level and official rank of a *jinshi's* father, grandfather, and great-grandfather (Ho, 1967, p. 107), whereas maternal family type is constructed based on the highest educational level and official rank of a *jinshi's* grandfather and one other important maternal relative—typically the maternal great grandfather or the maternal uncle. ^c A candidate's standardized ranking in the provincial exam is calculated based on his original ranking in the provincial exam and quota of that year.

Table 2. Distribution and Mobility of *Juren* and Their Ancestors' Educational Achievement

	No degree	Below <i>juren</i>	<i>Juren</i>	<i>Jinsbi</i>	Total	
					%	N
A. Distribution of exam achievements, by generation						
Great Grandfather (GGF)	45.48	48.50	4.34	1.69	100	4035
Grandfather (GF)	39.23	51.67	6.64	2.45	100	4035
Father (F)	30.16	56.98	9.05	3.82	100	4035
Son (S) ^a			81.91	18.09	100	4035
B. Outflow table of the grandfather's education conditional on the great grandfather's education						
GF GGF = No degree	58.91	35.86	3.54	1.69	100	1835
GF GGF = <i>Below-juren</i> ^b	23.15	67.19	7.41	2.25	100	1957
GF GGF = <i>Juren</i>	22.29	44.57	25.71	7.43	100	175
GF GGF = <i>Jinsbi</i>	14.71	50.00	19.12	16.18	100	68
					Pearson chi2(9) = 729.8184 Pr = 0.000	
C. Outflow table of the father's education conditional on the grandfather's education						
F GF = No degree	46.56	45.17	5.50	2.78	100	1583
F GF = <i>Below-juren</i> ^b	20.05	67.24	9.74	2.97	100	2085
F GF = <i>Juren</i>	16.42	51.87	21.64	10.07	100	268
F GF = <i>Jinsbi</i>	18.18	43.43	17.17	21.21	100	99
					Pearson chi2(9) = 506.7355 Pr = 0.000	
D. Outflow table of the son's (<i>juren</i>) education conditional on the father's education						
S F = No degree			82.91	17.09	100	1217
S F = <i>Below-juren</i> ^b			82.86	17.14	100	2299
S F = <i>Juren</i>			76.16	23.84	100	365
S F = <i>Jinsbi</i>			73.38	26.62	100	154
					Pearson chi2(3) = 17.9245 Pr = 0.000	

Note: Source: *Exam Essays* (Gu, 1992). ^a Of the 4,035 *juren*, about 18% passed the metropolitan (*jinsbi*) exam. In these "Essays", the exam achievements of their father, grandfather and great grandfather were reported. ^b The "*below-juren*" degree holders refer to the licentiates, tribute students and state students (refer to Figure 1 for details).

Table 3. Social Class and Metropolitan Exam Performance (Logit)

DV=Whether one passed the metropolitan exam	(1)	(2)	(3)	(4)	(5)
<i>Paternal family type^a</i>					
<i>Scholar-commoner</i>	-0.092 (0.136)		-0.100 (0.140)		-0.082 (0.144)
<i>Lower & middle gentry</i>	0.093 (0.140)		0.088 (0.146)		0.009 (0.152)
<i>Upper gentry</i>	0.587*** (0.168)		0.586*** (0.176)		0.477** (0.189)
<i>Maternal family type^a</i>					
<i>Scholar-commoner</i>		0.018 (0.097)	0.034 (0.100)		0.010 (0.104)
<i>Lower & middle gentry</i>		0.068 (0.111)	-0.002 (0.116)		-0.065 (0.120)
<i>Upper gentry</i>		0.198 (0.170)	0.009 (0.178)		-0.026 (0.183)
<i>Age upon obtaining juren degree</i>				-0.046*** (0.006)	-0.046*** (0.006)
<i>Ranking in provincial Exam</i>				0.008*** (0.002)	0.008*** (0.002)
<i>Average number of wives and concubines</i>				-0.025 (0.067)	-0.056 (0.072)
<i>Pre-juren qualification (State students =1, else=0)</i>				-0.038 (0.142)	-0.154 (0.149)
Controls	No	No	No	No	Yes
Constant	-1.563*** (0.121)	-1.545*** (0.069)	-1.570*** (0.124)	-0.543** (0.226)	-0.597 (0.428)
Observations	4035	4035	4035	4035	4035
Pseudo R ²	0.007	0.000	0.007	0.028	0.039
Log likelihood	-1895.08	-1906.92	-1895.00	-1854.72	-1832.32

Notes: Standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

Control variables include number of brothers, birth order, residence type (urban vs. rural), period and region dummies. ^a Commoner is the reference group.

Table 4. Paternal Education and Office and Metropolitan Exam Performance (Logit)

DV= Whether one passed the metropolitan exam	(1)	(2)	(3)	(4)
<i>Father's education</i>	0.062*** (0.021)		0.062*** (0.021)	0.054** (0.022)
<i>Father's official rank</i>	0.024** (0.011)		0.018 (0.012)	0.015 (0.012)
<i>Average education level of GF and GGF^a</i>		0.019 (0.031)	-0.014 (0.033)	-0.028 (0.033)
<i>Average official rank of GF and GGF^a</i>		0.038** (0.017)	0.033* (0.017)	0.029 (0.018)
<i>Average number of wives and concubines</i>				-0.060 (0.072)
<i>Pre-juren qualification (State students =1, else=0)</i>				-0.149 (0.149)
<i>Age upon obtaining juren degree</i>				-0.045*** (0.006)
<i>Ranking in provincial exam</i>				0.008*** (0.002)
Controls	No	No	No	Yes
Constant	-1.687*** (0.058)	-1.583*** (0.056)	-1.696*** (0.064)	-0.583 (0.419)
Observations	4035	4035	4035	4035
Pseudo R ²	0.006	0.003	0.007	0.040

Notes: Standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

Control variables include number of brothers, birth order, residence type (urban vs. rural), period and region dummies.

^a GF= Grandfather, GGF= Great Grandfather.

Table 5. Determinants of Ranking and Class of Honors in the Palace Exam

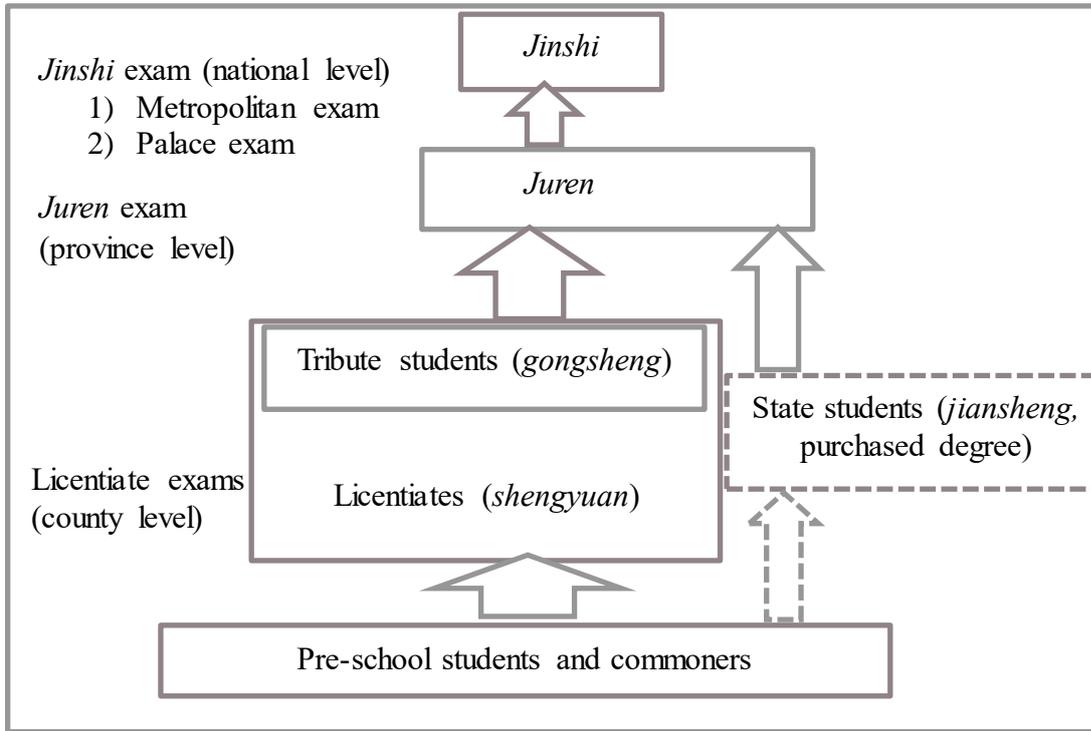
	OLS			Sequential Logit	
	Ranking (1)	Ranking (2)	Ranking (3)	<i>Jinsbi</i> vs. <i>Juren</i> (4)	1 st & 2 nd vs. 3 rd class (5)
<i>Father's education</i>	0.541 (0.505)	0.589 (0.508)	0.589 (0.508)	0.051** (0.022)	0.057 (0.043)
<i>Father's official rank</i>	0.877*** (0.276)	0.876*** (0.278)		0.016 (0.012)	0.042* (0.025)
<i>Average education level of GF and GGF^a</i>	-0.391 (0.806)	-1.046 (0.816)	-1.055 (0.821)	-0.027 (0.033)	-0.087 (0.070)
<i>Average official rank of GF and GGF^a</i>	0.976** (0.429)	1.272*** (0.433)	1.310*** (0.437)	0.030 (0.018)	0.112*** (0.040)
<i>Father's office level (no office =0)</i>					
<i>Lower (>0, <7a)</i>			6.752* (3.797)		
<i>Middle ($\geq 7a$, <3b)</i>			7.301** (3.304)		
<i>Higher ($\geq 3b$)</i>			15.634** (6.054)		
<i>Average number of wives and concubines</i>	0.718 (1.769)	0.375 (1.796)	0.327 (1.814)	-0.044 (0.071)	-0.053 (0.153)
<i>Pre-juren qualification (State students =1)</i>	1.479 (3.487)	1.056 (3.499)	0.854 (3.517)	-0.135 (0.149)	0.292 (0.317)
<i>Age upon obtaining juren degree</i>	-1.241*** (0.140)	-1.284*** (0.144)	-1.277*** (0.144)	-0.045*** (0.006)	-0.093*** (0.013)
<i>Ranking in provincial exam</i>	0.090** (0.037)	0.077** (0.037)	0.074** (0.037)	0.008*** (0.002)	0.007** (0.003)
Controls	No	Yes	Yes		Yes
Constant	85.545*** (5.542)	75.770*** (9.916)	75.692*** (9.938)	-0.577 (0.419)	1.304 (0.852)
Observations	728	728	728		4035
R ²	0.163	0.203	0.204		-2270.42

Notes: Standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1 (two-tailed tests).

Control variables include number of brothers, birth order, residence type (urban vs. rural), period and region dummies. ^a GF= Grandfather, GGF= Great Grandfather.

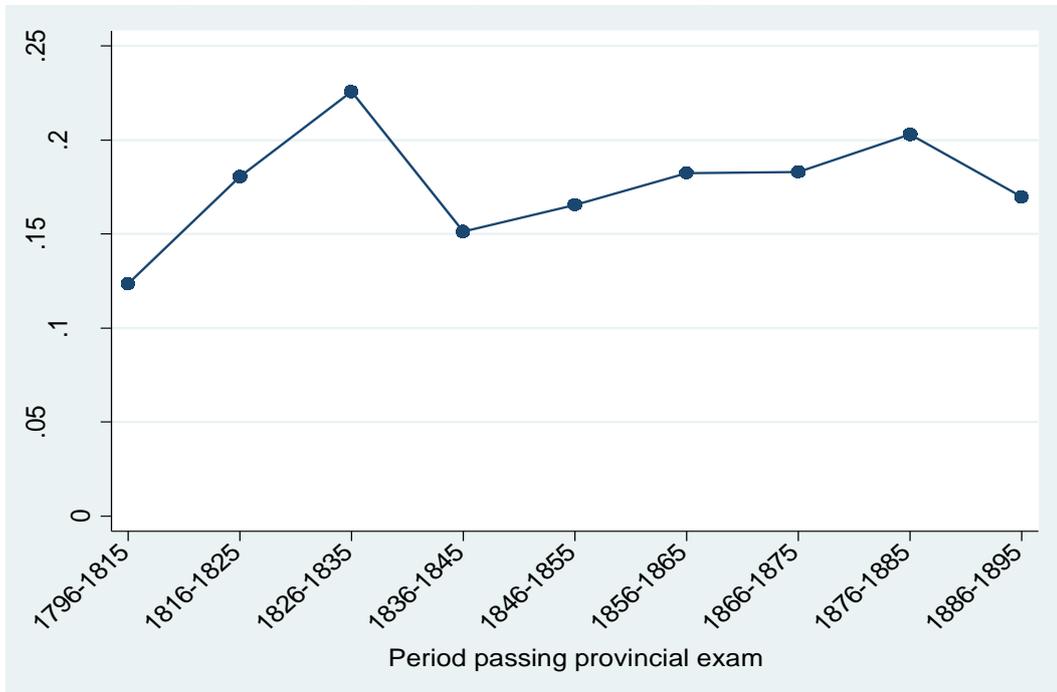
FIGURES

Figure 1: The Civil Exam Structure in Qing China



Source: Adapted from Chang (1955, p. 9)

Figure 2: Passing Rate of *Jinshi* in the Metropolitan Exams



Note: Calculation based on the performance of 4,035 *juren* in the metropolitan exams.