Elite School Networks and Working for the Government: Natural Experimental Evidence from China

Hanzhang Liu* Yuhua Wang†

February 7, 2017

Abstract

Why do political networks persist? Scholars have previously focused on the demand side: politicians promote their alumni, protégé, and relatives to keep their grip on power. We provide a supply-side explanation that citizens choose a political career if they believe their network can enhance their career prospects. Specifically, we examine whether elite school networks in the government incentivize students from the same schools to pursue a career in the civil service. Exploiting a natural experiment in China, where universities use an arbitrary cutoff score to enroll students, we show that students attending elite universities, which have strong alumni networks in the government, are more likely to prefer a political career than those attending other universities. An original online survey confirms that alumni networks serve as a causal mechanism. Our study provides a new explanation of the entrenchment of power and establishes a causal relationship between existing political networks and candidates' career preferences.

*Ph.D. Candidate, Department of Political Science, Columbia University (hanzhang.liu@columbia.edu). Authors are listed in alphabetical order, and both authors contributed equally to the research and writing of the article.

†Assistant Professor, Department of Government, Harvard University (yuhuawang@fas.harvard.edu). We would like to thank the Research Center for Contemporary China at Peking University for implementing the online survey, and Professor Feng Shizheng at Renmin University of China for sharing the Beijing Colleges Panel Study data. Our online survey was approved by Harvard University's Institutional Review Board (IRB15-3635). Rory Truex and participants at MPSA have provided helpful comments. All errors remain our own.

Politicians form networks, caucuses, factions, cliques, alliances, and coalitions to dominate politics. They join alliances because they attended the same school, worked together, share a secret, or belong to the same kinship group. In the Soviet Union, "every major political leader...has risen to power under the aegis of a patron and as a member of a clique" (Brzezinski and Huntington 1964, 147). In China, senior Communist Party leaders form factional ties with lower-level officials who share birthplaces, educational institutions, or work units (Lieberthal and Oksenberg 1988, 156). In the Philippines, incumbents use public resources to help their relatives win elections (Querubin 2016). This is "the iron law of oligarchy" (Michels 1911).

Why do these political networks persist? Existing explanations focus on politicians' *demand* for elite dominance. Elites want to keep a tight grip on political office through a network of alumni, familiar colleagues, protégés, or family members to consolidate their power. For example, members of the United States Congress exploit their contacts with party machines to favor candidates with whom they are connected by family or social ties (Dal Bó, Dal Bó and Snyder 2009). Top Chinese officials, likewise, prefer to promote people who are from the same hometowns or universities (Shih, Adolph and Liu 2012), and political parties in India prioritize dynastic politicians because of their name recognition (Chhibber 2013; Chandra 2016). These networks are self-perpetuating. As Dal Bó, Dal Bó and Snyder (2009, 116) explain, "power begets power."

But political networks also persist because of the *supply* of political candidates. Citizens make *occupational choices* in response to their perceived career prospects in different occupations. Children whose parents are in business, academia, or medicine may follow in their parents' occupational footsteps in order to take advantage of the specialized knowledge, goodwill, and brand loyalty family ties can offer (Laband and Lentz 1983; Lentz and Laband 1989). Individuals whose parents have previously run for elective office are more likely to envision a future in politics for themselves (Lawless 2012). Forming a *preference* for a political career – dubbed by Fox and Lawless (2005) as "nascent political ambition" – is a distinct, yet vitally important phase of the development of political ambition that precedes a decision to enter politics. This early stage of

candidate emergence helps us understand the dynamics involved in moving from eligible potential candidate to actual politician (Fox and Lawless 2005, 644). Previous scholarship has alluded to this supply side, but has not systematically examined it (Dal Bó, Dal Bó and Snyder 2009; Querubin 2016; Geys and Smith Forthcoming).

We investigate whether an existing political network attracts individuals in the same network to a political career. Specifically, we examine whether elite school networks in the government incentivize students from the same schools to pursue a government job. School networks, a form of weak ties, are more powerful than strong ties, such as kinship or patron-client relationships, in the diffusion of influence and mobility opportunities (Granovetter 1973). The Oxbridge old boys' club has long dominated Whitehall in London; Washington is filled with lawyers trained in Ivy League schools; and *gukubatsu* (alma mater clique) in Japan is "without question the single most important influence within the Japanese state bureaucracy" (Johnson 1982, 57). Perceiving a strong alumni network in the government, college students pursue a political career to exploit this network to enhance their career prospects.

Estimating the *causal* effect of attending an elite school on occupational preference is challenging. Elite school students prefer to work in the government for various reasons. Their parents might disproportionately have political careers; most of them might be from wealthy families; they might have higher human capital to start with; or they might select into elite universities in order to become politicians. We exploit a natural experiment in China in which 1) elite school graduates predominate in the government and 2) universities use an arbitrary cutoff score to enroll students.

Due to a government personnel reform in the 1980s, graduates from three elite universities overwhelmingly occupy powerful positions in the Chinese government. The Chinese college entrance exam, which relies on a single score to rank students, provides an unusual research opportunity: students whose scores are slightly higher than the cutoff are comparable on every dimension with students whose scores are slightly lower than the cutoff, except that only the former group are eligible to enter elite universities. Attending an elite school, however, makes a difference: it gives

students access to a strong alumni network in the government.

Using a probability sample survey of Chinese college students as well as an online survey, we find that those attending the three most selective elite universities are, on average, 25% more likely to pursue a career in the civil service than those attending other universities. In addition, elite school students perceive their alumni networks to be stronger in the government than in the private sector; students who recognize the strength of their alumni network in politics are then more likely to choose a political career. We also test three other possible mechanisms (political interest, political efficacy, and self-confidence) and find no supportive evidence for any of them.

While scholars have previously focused on *demand-side* explanations for the entrenchment of power (Dal Bó, Dal Bó and Snyder 2009; Shih, Adolph and Liu 2012; Chhibber 2013; Querubin 2016; Chandra 2016), we turn to the *supply side* and show that political networks persist not only because incumbents perpetuate their power, but also because potential candidates select their careers. Self-perpetuating elites undermine the equal access to power. To remedy the inequality, our study points to the importance of institutions that *select* existing politicians (Geys and Smith Forthcoming) as well as those that *recruit* future politicians.

Our study also contributes to a recent literature on political selection (Besley 2005). Asking why some citizens choose a political career, some studies examine personal benefits, including respect (Benabou and Tirole 2003), ambition (Fowler and McClure 1990), salary (Dal Bó, Finan and Rossi 2013), and rents (Eggers and Hainmueller 2009; Truex 2014); others explore social motivations, including pro-social values (Handy and Katz 1998; Callen et al. 2013), intrinsic pleasure from helping others (Broockman 2013; Gulzar and Khan 2016), and altruism (Bénabou and Tirole 2006). Our findings, which are consistent with the focus on personal motivations, indicate that citizens pursue a political career when they believe they can take advantage of existing resources (e.g., network) to advance their career prospects.

Theory and Background

In this section, we review the extant explanations of the entrenchment of power, which focus on the demand side, and introduce our supply-side explanation that focuses on individuals' occupational choice. We then contextualize the framework in China, where an existing elite school network formed in the 1980s affects college students' occupational preferences in the 2000s.

Conceptual Framework

Where there is politics, there is elite dominance (Mosca 1896; Pareto 1901; Michels 1911; Mills 1956). In democracies, and even more so in autocracies, the ruling class perpetuates its power over the masses to keep a tight grip on political office. Elites who went to the same university, worked in the same office, or belong to the same family, help, protect, and promote each other so they can hold onto power as long as possible. They maintain their groups' dominance in power because the private returns to political office are high (Eggers and Hainmueller 2009) and members of their own coalitions are more loyal (Bueno de Mesquita et al. 2003). Promoting a protégé as a successor is also safe. In Kaufman's (1960) study of the American forest service, no matter how successfully a ranger can hide his actions from his superiors, he or she cannot hide them from a successor (155).

These networks therefore persist. Graduates from the University of Tokyo have dominated the Japanese bureaucracy since World War II (Muramatsu and Krauss 1984); princelings – children of either veteran revolutionaries or high-ranking officials – have consistently occupied powerful positions in China (Li 2013); and the Nehru-Gandhi brand has had a member of the family in charge of India for 40 of the 60 years since independence.[1]

Scholars believe that elites' demand for dominance explains the persistence of such networks. Incumbents use their power and resources, such as name recognition, fundraising and campaigning capabilities, and contact networks, to help candidates from their own networks win elections in the United States (Dal Bó, Dal Bó and Snyder 2009), Argentina (Rossi Forthcoming), Brazil (Bra-

[1] https://goo.gl/KqgzBR (Accessed January 26, 2017).

ganca, Ferraz and Rios 2015), the Philippines (Querubin 2016), the United Kingdom (Van Coppenolle 2014), and Norway (Fiva and Smith 2016). In autocracies, such as the Soviet Union and China where no election is held, patrons simply promote their clients to important positions (Brzezinski and Huntington 1964; Stewart et al. 1972; Shih, Adolph and Liu 2012).

Political networks also persist, however, because there is a consistent supply of candidates. Motivated by career concerns (Mattozzi and Merlo 2008), individuals choose the occupations that will maximize their private or social returns (Baumol 1990; Murphy, Shleifer and Vishny 1991; Acemoglu 1995). An existing clique, based on alumni, patronage, or family networks, creates a perception among potential candidates that the clique will improve their career prospects if they are from the same networks. This perception is stronger when factionalism, patron-client ties, and nepotism prevail in the political system.

If individuals *believe* that their network is strong in the government, they will want to exploit that network to pursue a political career. Otherwise, they would prefer to work in the private sector. Cliques also exist in the private sector: Wall Street firms recruit heavily from the most prestigious universities.[2] Job candidates, however, do not have complete information about their network strength in each sector. They, mostly university students, form a belief by talking to their peers, parents, professors, and alumni. This perception, which may or may not be accurate, influences their career choices.

A preference for a political career – nascent political ambition – is an embryonic or potential interest in office seeking that precedes an actual decision to enter politics (Fox and Lawless 2005, 644). Scholars since Lasswell and Schlesinger have studied this early stage of candidate emergence because it serves as a critical precursor to becoming a politician (Lasswell 1948; Schlesinger 1966).

Previous scholarship has alluded to the implications of career preference for elite dominance. For example, Dal Bó, Dal Bó and Snyder (2009) show that the percentage of same-generation successions within political dynasties is less than 30%, indicating that occupational choice may

[2]Please see http://goo.gl/YQ8yDI (Accessed February 24, 2016).

play a role. Querubin (2016) takes the supply side more seriously, but his evidence shows that almost half of all dynastic successions occur between relatives of the same generation (i.e., siblings, cousins, and spouses), suggesting that when an incumbent first enters office, many of his or her relatives will already have chosen an occupation other than politics. He thus rejects occupational choice as a viable mechanism.

Few studies, however, have systematically examined occupational choice in the context of elite dominance, nor has any established a causal relationship between existing networks and candidates' career preference.

We study whether alumni networks in the government encourage students to pursue a government career. Alumni networks, a form of weak ties, are more effective than strong ties, such as patronage and family networks, in information diffusion and career mobility, because networks with weak ties have shorter paths, and therefore bring individuals closer to job opportunities and access to resources (Granovetter 1973). Granovetter (1995) has applied his theory to career mobility and shown that weak ties help people find jobs.

Our framework, however, does not only apply to weak ties. Scholars have shown that strong ties, such as family networks, also affect individuals' occupational choices. Lawless (2012) finds that survey respondents whose parents had previously run for elective office are 10% more likely to envision a future in politics for themselves. In a similar vein, a family tradition in business, academia, or medicine affects children's career choices: for example, children of doctors often become doctors (Laband and Lentz 1983; Lentz and Laband 1989). Spouses also match because of shared occupational preferences (Becker 1973), which explains husband-wife pairs in politics, such as the Clintons and the Peróns.

The Chinese Context

In China, a government personnel reform in the 1980s helped form strong elite school networks, which influenced university students' career choices in the following decades.

The bureaucracy under Mao relied on the principle of "red and expert" (political loyalty and professional excellence) to recruit cadres. Yet the emphasis was more on loyalty than on expertise, especially during the Cultural Revolution in which Maoist radicals replaced professional bureaucrats. As a result, in the wake of the economic reform in the early 1980s, the Chinese bureaucracy as a whole was old, poorly educated, and ill equipped with the skills necessary to respond to challenges in the new economic era.[3]

Table 1: Percentage of Political Elites with a College Education (1978-1998)

	1978	1982	1988	1992	1998
Leadership Level					
Politburo	23	32	67	86	92
Party Central Committee	26	55	73	84	92
Ministries	n/a	38	83	88	95
Military	n/a	4	58	78	n/a
Province	n/a	20	59	96	95
Municipality & County	n/a	31	78	91	n/a

Source: Li (2001).

The post-Mao leadership under Deng Xiaoping introduced a series of measures to reform the bureaucracy in the 1980s. The main goals were to rejuvenate the bureaucracy by retiring old revolutionary cadres and promoting young, better-educated ones (Manion 1993). The most prominent reform effort was to establish a pool of reserve cadres with educational qualifications and professional excellence.[4] Leading cadres' educational attainment increased significantly within a decade. Table 1 shows a rapid increase in college-educated government and party leaders. This increase was particularly significant at the municipal and county levels (from 31% in 1982 to 91% in 1992), where most young cadres were recruited and promoted. A large number of university graduates entered the government during this period.

[3] According to Baum (1986), statistics published by party media in 1984 showed that, among the 42 million Chinese Communist Party (CCP) members nationwide, only 4% were college educated, and less than 18% had attended high school; more than 50% of party members had failed to advance beyond primary school.

[4] The reserve cadres were known as the "Third Echelon." The plan of the Third Echelon consisted of promoting 1,000 young and middle-aged cadres at the provincial and national ministerial levels, recruiting 30,000 educated young people at the prefectural and municipal levels, and an additional 100,000 at the county level. Upon completion, the Third Echelon would form an elite corps that made up less than 2% of the nation's cadre force of 9 million.

A job assignment system (rather than a job market) assisted the recruitment of university graduates. Until the mid-1990s, universities and potential employers unilaterally made hiring decisions. Government organizations at the time overwhelmingly recruited from several elite universities. These universities' alumni networks started to strengthen. Table 2 presents statistics on the distribution of elite university graduates in key government positions in 1989. The three dominant universities are Tsinghua University, Peking University, and Renmin University.[5] These are also the most selective and prestigious universities in Beijing. Together, they account for about 60% of all university graduates occupying high-level leadership positions at the end of the 1980s.[6]

A policy shock – the personnel reform after the Cultural Revolution – led to the rapid increase in elite university alumni in the government. Because the labor market was not yet open, the government did not have to compete for talent with the private sector and could recruit a large number of elite university graduates.

This changed in 1994, when the national government started the National Civil Service Examination (NCSE) to recruit civil servants. Meanwhile, the labor market gradually opened up, and college graduates started to have the freedom to select jobs. Civil service jobs remain popular because of the social prestige, job security, and material benefits associated with them. Once admitted into the civil service, a few of the rank-and-file civil servants have the chance to become powerful leaders in the country. The competition in the NCSE is fierce. In 2014, over 1.5 million college-educated adults took the exam, and only one in every 77 succeeded in securing a government position. The majority of applicants were newly graduated college students.[7] However, private sector jobs are also popular. The development of the private sector and the advent of many multinational corporations attract university graduates who enjoy a higher starting salary

[5] Anti-Japanese University, ranked in third place in Table 2, was dissolved after China's victory in the war against Japan in 1945 and hence had no active alumni network in the 1980s.

[6] This percentage is calculated based on Table 2 by taking the fraction of graduates from these three universities over the total number of graduates from all universities listed. Because we are interested in *active* alumni networks, we include in the denominator only universities that were still open in the 1980s, which means we exclude Anti-Japanese University, Central University, Yenching University, Associated Southwestern University, and St. John's University.

[7] Please see http://guoqing.china.com.cn/2013-11/07/content_30521186.htm (Accessed February 22, 2016).

Table 2: Distribution of Elite University Graduates in High-Level Leadership Positions in 1989

	Year of Graduation					
	Pre-1949	1950s	1960s	1970s	1980s	Total
University (Top 15)						
01. Tsinghua University	41	29	20	3		93
02. Peking University	24	15	5		1	45
03. Anti-Japanese University	45					45
04. Renmin University		27	13			40
05. Central University	32					32
06. Shanghai Jiaotong University	17	11	2			30
07. Yenching University	28					28
08. Fudan University	16	4	3		1	24
09. Central Party University	18		2			20
10. Associated Southwestern University	15					15
11. St. John's University (Shanghai)	13	2				15
12. Sun Yet-Sun University	11	2				13
13. Nankai University	4	5	4			13
14. Zhejiang University	11		1			12
15. Dalian Institute of Engineering		6	4			10

Source: Li (2001).
Notes: Universities are ranked based on the number of alumni that held high-level leadership positions in 1989. Rankings do not neccesarily reflect academic excellence. Additionally, Anti-Japanese University, Central University, Yenching University, Associated Southwestern University, and St. John's University (Shanghai) were either dissolved or merged with other universities by 1949, which means there was no active alumni network maintained by recent graduates.

than government positions, as well as job flexibility and world-class management.

Competing with the private sector, the government is endowed with a powerful asset: a strong elite school network. In a system in which senior leaders like to promote their alumni (Shih, Adolph and Liu 2012), university students calculate their career prospects based on how strong their networks are in each sector. Perceiving the strength of their school networks in the government, students attending the three elite universities (Tsinghua, Peking, and Renmin) believe that more senior alumni in their networks will help them secure a civil service job and advance their careers. So our core hypotheses are as follows:

> **Hypothesis 1**: Students attending the three elite universities in China are more likely to prefer a career in the civil service than those attending other universities, *ceteris*

paribus.

Hypothesis 2.1: Students attending the three elite universities prefer a career in the civil service because they believe they have strong alumni networks in the government, *ceteris paribus*.

Elite school students, however, may prefer a political career for other reasons. First, the peer environment in elite universities – which is characterized by strong intellectual curiosity and vibrant political discussion on campus – inculcates a sense of civic duty in students and helps them forge a strong interest in public affairs. This *political interest* inspires them to join the civil service.

Hypothesis 2.2: Students attending the three elite universities prefer a career in the civil service because they have higher levels of political interest, *ceteris paribus*.

Second, their position in a politically well-connected social network and their academic achievements may lead them to believe that they are able to affect meaningful political change. Their perceived *political efficacy* makes them more optimistic about participating in politics, and hence more likely to consider a career in civil service.

Hypothesis 2.3: Students attending the three elite universities prefer a career in the civil service because they have higher political efficacy, *ceteris paribus*.

Last, due to their success in the college entrance exam, these students have greater *self-confidence* that their learning capabilities and exam-taking skills will help them succeed in the civil service exam.

Hypothesis 2.4: Students attending the three elite universities prefer a career in the civil service because they have more self-confidence, *ceteris paribus*.

Below, we draw on a college survey and our original online survey to test these hypotheses.

Empirics

Testing a supply-side explanation is challenging. For political dynasties, it is difficult to establish a causal relationship between parents' occupations and children's occupational choices, because

children in political families are systematically different from those in other families (in terms of wealth, human capital, and political skills). These confounders bias our estimates. However, China provides a unique opportunity to test the *causal* effect of school network on students' occupational preferences. Chinese college admission relies on a single score, and universities use an arbitrary cutoff to enroll students. We can therefore compare students whose exam scores are just above and just below the cutoff to estimate the causal effect of attending an elite school (and hence getting access to its alumni network) on occupational preference. In this section, we elaborate on the identification strategy and present the empirical results.

Data

We draw on data from the Beijing Colleges Panel Survey (BCPS). The 2010 wave of the BCPS, the only wave that has been released so far, interviewed 4,752 college students enrolled in 15 universities in Beijing. Designed and conducted by a team at Renmin University, the BCPS used a multi-stage, stratified probability proportional to size (PPS) method to draw a random sample of college students based on the Beijing Municipal Government's Students Registration Database.[8] All questionnaires were distributed by universities and self-administered by respondents. The absence of an interviewer during the survey reduced respondents' concerns about political sensitivity. The BCPS interviewed students only from the freshmen class (i.e., first year) and junior class (i.e., third year). Using a sample of students in Beijing serves our study well, because Chinese universities are disproportionately concentrated in Beijing, and college graduates in Beijing are the major source of civil servants for the national government.

Our key outcome variable is college students' career preference. The BCPS includes two relevant questions. The first question asks what type of organization a student most wants to work in after graduation. The options include government organizations (including both government departments and party organs), schools, research institutes, public institutions, state-owned enter-

[8]For more information about the BCPS, please see http://www.uchicago.cn/wp-content/uploads/2011/05/Shizheng-Feng.pdf (Accessed August 25, 2015).

prises, foreign-invested companies, Chinese private companies, and start-ups. Government organizations are the third most popular choice in the sample, after foreign-invested companies and state-owned enterprises. The second question asks what type of job a respondent most wants to have after graduation. The options include civil servant, teacher, researcher, corporate manager, technician, clerk, salesperson, professional (such as engineer, doctor, lawyer, or professor), and journalist. Civil servant is the fourth most popular job, after corporate manager, researcher, and professional. Table A1 in the web appendix shows the sample distribution of these options.

We construct *Government Organization* – an indicator of whether a student prefers to work in a government organization – as one of our dependent variables. An alternative dependent variable is *Civil Service*, which indicates whether a student wants to become a civil servant after graduation. The sample distribution in Table A1 shows that 10.33% of the respondents want to work in a government organization and 12.81% want to become civil servants.

Our key independent variable is whether a respondent is enrolled in one of the three elite universities in Beijing at the time of the survey. We use a dichotomous indicator, *Elite School Entrance*, to identify students who are enrolled in Tsinghua, Peking, and Renmin Universities. As discussed in the previous section, these three universities have traditionally produced political leaders and top-ranking officials in the Chinese government. Respondents enrolled in these three universities constitute 29.19% of the sample.

We consider several covariates. To avoid post-treatment bias (Rosenbaum 1984), we first include variables that occurred before college entrance: *Male* is an indicator for male respondents, *Han* indicates whether a respondent is from the majority Han ethnicity, *Entrance Exam Score* is a student's total score from the college entrance exam, *Parent(s) in Government* indicates those who have at least one parent working in the government, *Family Income* is the natural log-transformed family income as reported by the student, and *Home City Size* indicates the type of place a student comes from (i.e., rural village, county or township, prefectural-level city, or provincial capital/provincial-level municipality).

In an alternative specification, we also include several *post*-treatment covariates to examine general determinants of career choice. *CCP* indicates whether a respondent is a party member. We distinguish students' academic majors by whether they are in *Sciences*, *Economics*, or *Other Social Sciences and Humanities*. We further differentiate *Juniors* from *Freshmen*. *Ranking* measures the relative standing of a student's academic performance in his or her class. *Approval of Collective Action* measures to what extent (1-5) a student approves of using collective action, such as protest, to express one's interest. *Officials' Gain in Reform* measures whether the student thinks that public officials, compared to other groups, have gained the most in China's reform. Last, *Social Status of Public Officials* measures to what extent (0-3) the student thinks that being a public official (as opposed to having a high income or owning a business, etc.) is one of the most important determinants of one's socio-economic status. Table A3 in the web appendix presents the summary statistics.

Identification Strategy

Both selection and omitted variables can bias the estimates. A student may select into a university in order to become a politician (selection bias); students in elite universities are systematically different from students in other universities, and many differences, such as political skills and family network, are not captured by the survey (omitted variable bias). To overcome these challenges, we exploit a unique feature in the Chinese college admission system.

College admission in China is based on a single score on the national college entrance exam (NCEE), which is offered once a year to high school seniors over a two- or three-day period in early June. Because every university can admit only a fixed number of students, which is determined *ex ante* based on its faculty size and financial capacity, each university sets an arbitrary cutoff score determined by its ranking and competitiveness before students choose which universities to apply to.[9] In Beijing, Tsinghua University, Peking University, and Renmin University are the most

[9] In practice, each university sets multiple cutoffs, typically one for the sciences track and another for the humanities track. From the perspective of a high school graduate, however, the cutoff is unique depending on the track he or she

prestigious. If a high school graduate applies to one of these universities, his or her chance of being admitted is almost solely based on his or her NCEE score.[10] Furthermore, the NCEE scores are finely calibrated: each subject test carries a full mark of 150 points, total scores range from 0 to 750 points, and student scores vary by single digits. It is thus common that a student misses a university's cutoff by just one point, so admission *around the cutoff* is almost a random event.

This is similar to the most classic example of a regression discontinuity design (RDD), in which an arbitrary cutoff score determines whether students receive certificates of merit in the study by Thistlethwaite and Campbell (1960). If we can meet mild assumptions that pre-treatment covariates are balanced around the cutoff, and there is full compliance, we can then estimate the local average treatment effect of attending an elite university on career choice.

Figure 1 shows the application of the RDD strategy. In the upper-left corner, the graph shows that once a student's exam score is higher than the elite school cutoff (calculated as the minimum of the three schools' cutoffs), his or her chance of attending an elite school jumps by almost 20%; as a result (as shown in the upper-middle graph), he or she is more likely to choose *Civil Service* as a career. Figure 1 also shows that all pre-treatment covariates are balanced around the cutoff, including *Male*, *Han*, *Home City Size*, *Parent(s) in Government*, and *Family Income*. The lower-middle graph examining *Entrance Exam Score* indicates that the numbers of observations in the sample on either side of the cutoff are balanced.

This natural experiment, however, has non-compliance issues. Some students with a qualifying score did not attend elite schools because they either did not apply[11] or failed to get into one of their choices,[12] while others were able to attend without a qualifying score because they had

is on and the major(s) he or she plans to apply for.

[10] In recent years, some universities have started to allocate small quotas for students with special talents, but the number of students who can enter an elite university without a qualifying score is very small.

[11] These students may not have applied to an elite school for several reasons. First, high school graduates typically make their application decisions before they receive their exam scores or before the score cutoff is announced by each university. This asymmetry of information leads some to underestimate their scores vis-a-vis the cutoff and hence not to apply for an elite university. Second, some students have a strong preference for certain majors that are stronger in other schools. For example, the best school for aeronautical engineering is Beihang University, not one of the three elite universities.

[12] The college application system in China allows high school graduates to apply to only one university in each tier.

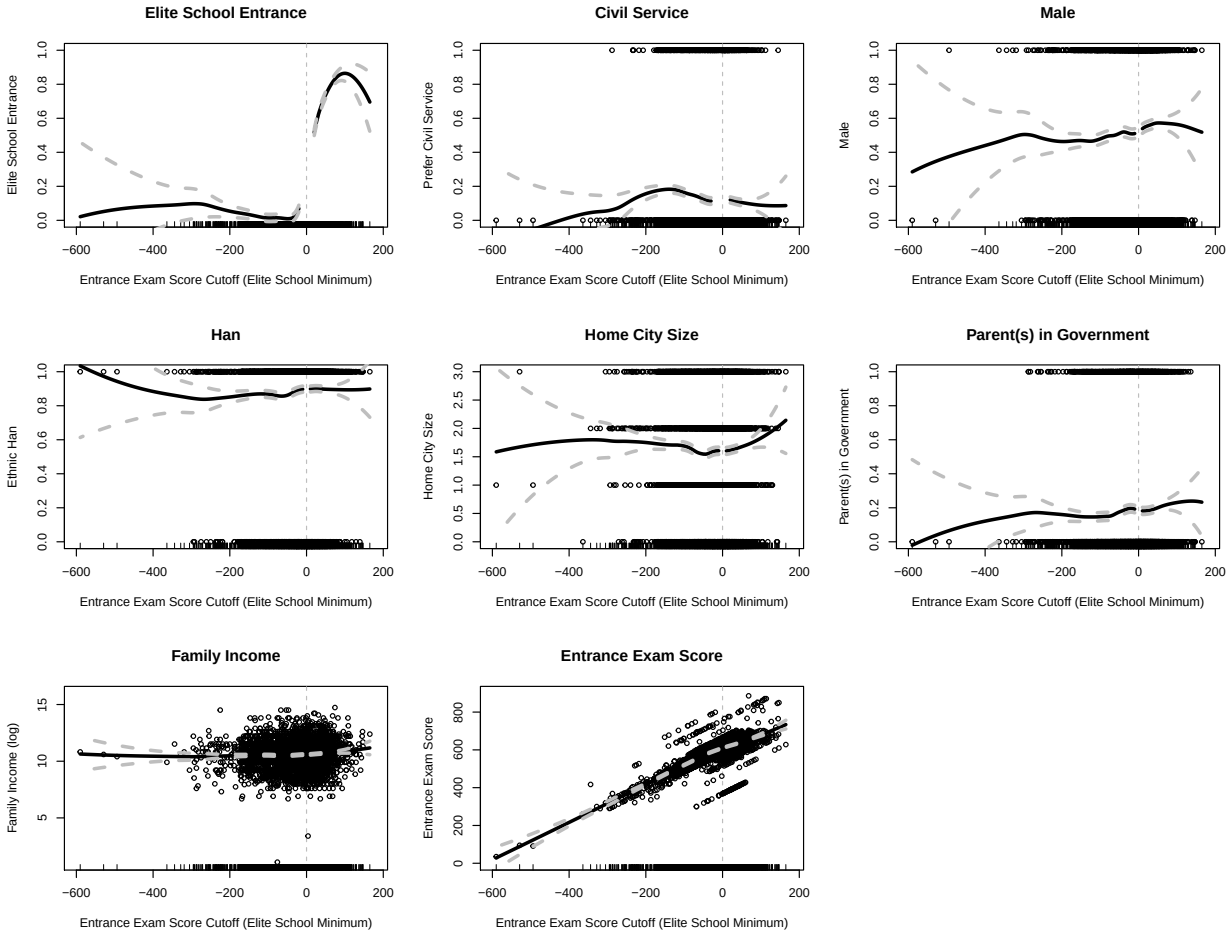

Figure 1: Trends in Key Variables by Entrance Exam Score

Notes: The figure plots the RD graphic analysis of key variables in the analysis. The lines are from local linear regression smoother fits to the individuals (smoothing parameter=0.7). The local linear regression smoothers are fit on either side of the cutoff point, demarcated by the vertical line. Positive values represent national entrance exam scores higher than the elite school cutoff, while negative values represent national entrance exam scores lower than the elite school cutoff. The dots indicate the actual distribution of individuals in the sample. The grey dotted line represents the 95% confidence interval. The jump of *Elite School Entrance* at the cutoff point is estimated to be 0.198 (s.e.=0.094). The jump of *Civil Service* at the cutoff point is estimated to be 0.206 (s.e.=0.101). The jump of *Male* is estimated to be 0.067 (s.e.=0.224), that of *Han* -0.018 (s.e.=0.140), that of *Home City Size* 0.211 (s.e.=0.329), that of *Parent(s) in Government* -0.106 (s.e.=0.152), and that of *Family Income (log)* -0.168 (s.e.=0.357). All are estimated using the "Imbens-Kalyanaraman optimal" bandwidth and a triangle kernel.

special talents.[13] In fact, in our sample, of the 1,704 students who scored above the cutoff, 674 did not attend one of the three elite universities. As a result, there is non-compliance between the assignment of treatment and actual receipt of the treatment.

In the next section, we use an instrumental variable (IV) approach to deal with this issue and show that the results are consistent with the RDD findings.

Instrumental Variable Estimates

In scenarios of non-compliance in which subjects in the treatment group do not always receive the treatment, a typical strategy is to use an indicator to denote whether the subject *should* receive the treatment as an IV to predict whether the subject actually receives the treatment, as used in Card and Krueger (1992), Lemieux and Card (2001), and Duflo (2001).

In this study, a student's NCEE score determines whether he or she should receive the treatment (i.e., attendance of an elite university). We create a dichotomous variable (*Score Above Cutoff*) indicating whether a student's score is above the elite university cutoff and use it as the IV. Employing a two-stage least squares (2SLS) model, we first use this instrument *Score Above Cutoff* to predict *Elite School Entrance*, and then use the predicted value of *Elite School Entrance* to predict career preference. To elaborate, in the first stage, we estimate the effect of *Score Above Cutoff* on *Elite School Entrance*,

$$Elite\ School\ Entrance_i = \delta Score\ Above\ Cutoff_i + \gamma_j + \eta_{ij}. \tag{1}$$

In the second stage, we estimate the following structural equation using 2SLS,

$$Career\ Preference_i = \theta \widehat{Elite\ School\ Entrance}_i + \gamma_j + \zeta_{ij}, \tag{2}$$

Since all elite universities belong to the first tier, a student's decision to apply for an elite university with a higher cutoff may result in a failure of admission despite the fact that his/her score would have qualified for another elite university with a slightly lower cutoff.

[13] Elite universities have small quotas allocated for students with outstanding merits in arts, sports, or writing.

where *Career Preference* is the outcome measure (either *Government Organization* or *Civil Service*), and *Elite School Entrance* is the treatment variable instrumented by *Score Above Cutoff*. We include provincial fixed effects γ_j to account for differences in recruitment policies, exam formats, and enrollment quotas across provinces. Since students' career choices are interdependent, we cluster standard errors at either the university or the home city level.

The IV estimates are consistent if two assumptions are met. First, we need to have a strong IV. Table A4 in the web appendix presents the first-stage results on whether a student's above-cutoff score is a strong predictor of actual elite university attendance using different bandwidths. In addition, as shown in Panel C of Table 3, the first stage yields large F statistics of 83.10 and 23.87, which far exceed the standard critical value of 10 required to avoid weak instrument bias (Staiger and Stock 1997). Second, the exclusion restriction requires that *Score Above Cutoff* affects career preference only through its effect on *Elite School Entrance*. To meet this assumption, we restrict our analysis to a subset of the sample around the adjacent of the cutoff, so that in this sub-sample the assignment to treatment is random or at least as-if random. In our estimation, we include only students whose scores are within 10 or 15 points on either side of the cutoff to make sure that other pre-treatment covariates are balanced around the cutoff. This ensures that the effect of exam score on career choice operates only through elite school attendance.

Following common practice, we first present logistic regression estimates and intention-to-treat (reduced-form) estimates before we conduct the IV analysis. Table 3 presents all results.

Panel A of Table 3 shows the results of the logistic regressions. We regress *Government Organization* and *Civil Service*, respectively, on *Elite School Entrance*, while controlling for a set of pre-treatment covariates: *Male*, *Han*, *Entrance Exam Score*, *Parent(s) in Government*, *Family Income*, and *Home City Size*. Provincial fixed effects are included, and standard errors are clustered at either the university or the home city level.[14]

In Panel B of Table 3, we report reduced-form estimates by regressing *Government Organi-*

[14]Table A5.1 in the web appendix presents the full results of the logistic regressions.

Table 3: The Effects of Elite School Entrance on Career Preference

	(1) **Government Organization**		(2) **Civil Service**	
	Coefficient		Coefficient	
	(School-Clustered S.E.)		(School-Clustered S.E.)	
	(City-Clustered S.E.)		(City-Clustered S.E.)	
Panel A: Logit				
Elite School Entrance	0.713		0.641	
	(0.334)	**	(0.331)	*
	(0.146)	***	(0.143)	***
Observations	4,197		4,137	
Panel B: Reduced Form				
Score Above Cutoff				
Bandwidth=[-15,15]	0.615		0.727	
	(0.126)	***	(0.152)	***
	(0.223)	***	(0.221)	***
Observations	792		790	
Bandwidth=[-10,10]	0.631		0.759	
	(0.251)	**	(0.220)	***
	(0.292)	**	(0.265)	***
Observations	510		520	
Panel C: IV				
Elite School Entrance				
Bandwidth=[-15,15]	0.170		0.246	
	(0.035)	***	(0.063)	***
	(0.060)	***	(0.070)	***
First-stage F statistic	83.10		83.10	
Observations	859		859	
Bandwidth=[-10,10]	0.223		0.356	
	(0.109)	**	(0.146)	**
	(0.098)	**	(0.123)	***
First-stage F statistic	23.87		23.87	
Observations	586		586	

Notes: This table presents the estimated effects of attending an elite university on college students' career preferences. Column (1) uses *Government Organization* as the dependent variable, while Column (2) uses *Civil Service* as the dependent variable.

Panel A shows the logistic regression results; the full results are presented in Table A6.1 in the web appendix. *Elite School Entrance* is a dichotomous variable indicating if a student is enrolled in Peking, Tsinghua or Renmin University. The model also controls for pre-treatment covariates including *Male*, *Han*, *NCEE Score*, *Parent(s) in Government*, *Family Income*, and *Home City Size*. Panel B presents the reduced-form relationship between having an NCEE score above the elite school cutoff and career preference; the model controls for provincial fixed effects. Panel C presents the IV estimates, where *Elite School Entrance* is instrumented by whether a student's NCEE score was above the elite school cutoff. All three models include provincial fixed effects. Standard errors in parentheses are clustered at the university and city levels, respectively.

P-values are based on two-tailed tests: $*p < 0.1$,$** p < 0.05$, $*** p < 0.01$.

zation or *Civil Service* on *Score Above Cutoff*. In two specifications, we restrict our sample to students whose NCEE scores are within the [-10, 10] and [-15, 15] range around the elite university cutoff, respectively. In all specifications, we control for provincial fixed effects and cluster standard errors by university or home city.

Panels A and B both show that students at elite universities or those with scores higher than the elite university cutoff have a stronger preference to join the civil service.

To examine other determinants of students' career choices, we estimate an alternative specification including all pre- and post-treatment covariates. The results are presented in Table A5.2 in the web appendix. We find that CCP members are more likely than non-CCP members to prefer a career in the civil service. The causation is less clear: students who join the CCP might become more interested in government jobs, or they may join the CCP to help themselves get government jobs. Students majoring in the sciences are less likely than students in the humanities and social sciences (excluding economics) to join the civil service, but economics students are not significantly different from those in the humanities and social sciences.[15] We also find that if a student has a parent working in the government, he or she is more likely to pursue the same career. Moreover, students from large cities are less likely to prefer a civil service career than students from small towns.[16] We also find that if a student is more approving of using collective action to articulate one's interests, he or she is less likely to prefer a career in the civil service, indicating that there is self-selection: individuals who agree with the party-state's guiding principles are more likely to work in the government. Also, if the student thinks that public officials as a group have gained the most from the economic reform or have the highest socio-economic status, they are more likely to work in the government, implying that expected economic gains and social esteem may incentivize

[15]This is consistent with the rational choice model which holds that people tend to maximize their private returns in their career choice (Murphy, Shleifer and Vishny 1991); students in the sciences might have higher payoffs in other professions, such as engineers and doctors.

[16]There are different ways to interpret this: students from large cities might believe they have more options because the economies in these cities are more developed and diversified, or students from small towns may be less willing to return home after graduation, and a government job grants them a Beijing residence (*hukou*) while private sector jobs usually do not.

students to join the civil service.

While the results of these control variables are interesting, further exploring their meanings is beyond the scope of this research. We do not find consistent effects of *Male*, *Han*, *Junior*, *Ranking*, *National Exam Score*, or *Family Income*. More importantly, these results are all correlations. This leads to the most stringent test using an IV strategy to test the causal relationship.

Panel C of Table 3 presents the IV estimates using 2SLS. Regardless of the bandwidth chosen or the level of clustering for standard errors, *Elite School Entrance* has a significant, positive effect on both outcome variables of interest, i.e., *Government Organization* and *Civil Service*. The coefficients range from 0.170 to 0.356, which is close to the RD estimate of 0.198. Taking the mean of these coefficients, we conclude that elite university students are, on average, 25% more likely to choose civil service than students who attend other universities.[17]

In summary, the results from various estimation strategies support Hypothesis 1 – that students at elite universities have a stronger preference to join the civil service.

Causal Mechanisms

We have answered the question of *whether* elite university students have a stronger preference to enter the civil service, yet we wonder *why* they choose to do so. Our preferred story is that students entering the three elite universities are granted access to strong alumni networks in the government, which incentivize them to pursue a political career. The unique educational experience in elite universities, however, warrants the testing of alternative explanations. As laid out in Hypotheses

[17] In the analysis above, we include both freshmen and juniors in the sample. If our theory holds (i.e., elite university attendance has an effect on students' career choices), the treatment effect is expected to be stronger among juniors, who have spent more time in their respective universities and are closer to making a career decision. We therefore separate our sample into two subgroups and estimate the heterogeneous treatment effect for freshmen and juniors separately. As shown in Tables A6 in the web appendix, the treatment effect on juniors is stronger and more significant than that on freshmen. Adopting a bandwidth of 10 points around the cutoff, the point estimate of the effect of *Elite School Entrance* on *Civil Service* is 0.515 (s.e.=0.251) for the junior class and only 0.112 (s.e.=0.206) for the freshman class (Column 2). Substantively, it indicates that juniors in elite universities are 51.5% more likely than juniors in other schools to prefer a career in the civil service. This cumulative effect of *Elite School Entrance* gives further support to our theory.

2.2-2.4, elite university students' strong preference to join the civil service could be motivated by their enhanced interest in politics, elevated perception of political efficacy, or boosted self-confidence in their exam-taking skills.

The BCPS, however, does not contain questions to explore these mechanisms. Therefore, from winter 2015 to Spring 2016, we collaborated with the Research Center for Contemporary China (RCCC) at Peking University to design and implement an online survey to test hypotheses 2.1-2.4 among college students enrolled in Chinese universities. The RCCC, considered "the most competent academic survey research agency on the mainland" (Manion 2010, 190), completed 841 questionnaires that covered 15 universities across 12 provinces in China. Like any other online survey, our sample is not representative, so we present our results with caution.

To measure the *perceived* strength of *Alumni Network*, we ask (on a 0-10 scale), "To what extent do you think your university's alumni network is strong in party and government organizations?" Similar questions are also asked about other sectors, such as state-owned enterprises, foreign-invested companies, Chinese private companies, and start-ups. Elite university students report the highest level of perceived alumni network strength in party and government organizations (7.47), followed by state-owned enterprises (6.89), start-ups (6.80), foreign-invested companies (6.14), and Chinese private companies (5.77). This indicates that elite university students think that their alumni are disproportionately concentrated in the government.

To assess students' interest in politics, we ask three questions. The first is on interest in *Domestic News*, measured by asking respondents, "On how many days in the last week did you read news about China's domestic politics in the media?" The second is on interest in *International News*, measured by the question, "How interested are you in news on international politics?" (very interested, somewhat interested, not too interested, not at all interested). The last is *Care about China*, measured by the question, "How much do you care about China's development?" (very much, somewhat, not too much, not at all).

To measure *Political Efficacy*, we use a battery of standard statements and ask the respondents

to report the extent to which they agree or disagree with each of them: 1) I feel I have a pretty good understanding of the important political issues facing China; 2) I think I am better informed about politics and government than most people; 3) I consider myself to be well qualified to participate in politics; 4) I do not think the government cares much what people like me think; 5) My suggestions and proposals to the government are likely to be accepted; and 6) Government officials care what I think about the government. We then combine the scores of these six variables, which are positively correlated with a Cronbach's alpha of 0.69, into a summary index–*Political Efficacy*.

Last, we measure a respondent's *Self-Confidence* in his or her exam-taking skills by asking (on a 0-10 scale), "To what extent do you think your NCEE score is a reflection of your intellectual ability?" The higher respondents' answers are, the more confident they are in their intellect rather than other idiosyncratic factors, such as luck, and are thus more optimistic about doing well in other standardized exams in the future.

We take two steps to explore which of the mechanisms links elite university attendance and civil service preference. In the first step, we test whether any of these mechanisms is a causal effect of attending an elite university. In the second step, we test whether any of these mechanisms is associated with civil service preference. In the following, we report evidence that supports Hypothesis 2.1: elite university attendance *causes* students to think that they have gained access to a strong alumni network in the government, which in turn incentivizes them to join the civil service. Other mechanisms do not receive sufficient empirical support upon examining the results in both steps.[18]

[18]We decide not to use the causal mediation analysis developed by Imai et al. (2011), because it requires strong assumptions, such as sequential ignorability, that are best met in a randomized experiment setting. We do not think our data-generating process satisfies these assumptions.

Table 4: Consequences of Attending Elite Schools

	Dependent Variable					
	(1)	(2)	(3)	(4)	(5)	(6)
	Alumni Network	**Domestic News**	**International News**	**Care about China**	**Political Efficacy**	**Self-Confidence**
Panel A: OLS						
Elite School Entrance	2.107^{***}	-0.637^{***}	-0.261^{***}	-0.079	0.119^{***}	0.957^{***}
	(0.343)	(0.233)	(0.091)	(0.085)	(0.045)	(0.264)
Observations	826	826	826	826	826	826
Panel B: Reduced Form						
Score Above Cutoff	2.115^{**}	0.167	0.179	0.337	-0.067	1.109
Bandwidth=[-15,15]	(0.945)	(0.625)	(0.294)	(0.294)	(0.179)	(0.714)
Observations	60	60	60	60	60	60
Panel C: IV						
Elite School Entrance	4.587^{**}	-0.184	0.149	0.318	0.041	2.074^{**}
Bandwidth=[-15,15]	(1.527)	(1.265)	(0.322)	(0.408)	(0.215)	(0.830)
Observations	60	60	60	60	60	60

Notes: This table presents the estimated effects of attending an elite university. *Alumni Network* is a continuous variable (0-10) measuring the perceived strength of the alumni network of the university attended by the respondent. *Domestic News* is a continuous variable (0-7) measuring how many days in the last week the respondent spent reading news about China's domestic politics in the media. *International News* is an ordinal variable (1-4) measuring how interested the respondent is in news about international affairs. *Care about China* is an ordinal variable (1-4) measuring how much the respondent cares about China's development. *Self-Confidence* is a continuous variable (0-10) measuring the extent to which the respondent thinks that the NCEE score reflects one's intellectual capacity. *Political Efficacy* is an index measuring the extent to which the respondent is confident his personal participation in politics matters.
Panel A shows OLS regression results where the model also controls for pre-treatment covariates including *NCEE Score* and *Academic Track*. Panel B presents the reduced-form relationship between having an NCEE score above the elite school cutoff and each outcome variable. Panel C presents the IV estimates in which *Elite School Entrance* is instrumented according to whether a student's NCEE score was above the elite school cutoff. All three models include provincial fixed effects. Standard errors clustered at the university level are presented in parentheses.
P-values are based on two-tailed tests: $*p < 0.1$,$**p < 0.05$, $***p < 0.01$.

Table 4 presents our first-step results using a variety of estimators. Panel A presents ordinary least squares (OLS) regression estimates using each of the mechanisms as a dependent variable and the dichotomous *Elite School Entrance* as the independent variable. Panel B explores the reduced-form relationship between each of the mechanisms and having an NCEE score above the elite university cutoff. Panel C applies the same IV approach used to test the main hypothesis to estimate the causal effect of *Elite School Entrance* (instrumented by *Score Above Cutoff*) on each of the mechanisms. In the IV specification, we include only students whose NCEE scores are within the [-15,15] range around the cutoff. We cluster standard errors at the university level.

We find that attending an elite school has a significantly positive effect on students' perceived strength of the *Alumni Network* of their home institutions, and this finding is consistent across all three estimators (Column 1). Taking the OLS estimate as an example, elite university students think their alumni network in the government is 2.28 stronger (on a 0-10 scale) than students in other universities. The effect is even larger in reduced-form and IV estimations. The effect of perceived alumni network strength on career choice is examined in the second step.

Meanwhile, we find no consistent evidence supporting Hypothesis 2.2 that elite university students are more interested in politics. There is even weak evidence that these students are *less* interested in both domestic and international political news (Panel A, Columns 2-4). Similarly, evidence for Hypothesis 2.3 (elite university students have higher perceptions of political efficacy) is inconclusive (Column 5). We find some evidence supporting Hypothesis 2.4 (elite university students are more confident in their intellectual capacity and exam-taking skills, Column 6), which is examined in the second step.

Table 5: Causal Mechanisms and Career Preference (DV=Civil Service)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Alumni Network	0.104^{***}	-	-	-	-	-	0.100^{***}
	(.040)						(0.034)
Domestic News	-	0.044	-	-	-	-	-0.009
		(0.039)					(0.034)
International News	-	-	0.160	-	-	-	-1.125
			(0.171)				(0.204)
Care about China	-	-	-	0.264^{*}	-	-	0.034
				(0.137)			(0.135)
Political Efficacy	-	-	-	-	-0.992^{***}	-	-0.995^{***}
					(0.195)		(0.299)
Self-Confidence	-	-	-	-	-	-0.048	-0.089^{***}
						(0.036)	(0.032)
Sciences & Engineering	-0.991^{***}	-0.987^{***}	-0.989^{***}	-1.010^{***}	-0.966^{***}	-1.007^{***}	-0.990^{***}
	(0.313)	(0.312)	(0.310)	(0.309)	(0.299)	(0.309)	(0.299)
Class Year F.E.	YES	YES	YES	YES	YES	YES	YES
Provincial F.E.	YES	YES	YES	YES	YES	YES	YES
INTERCEPT	-2.187^{***}	-1.707^{***}	-1.955^{**}	-2.284^{***}	-0.237	-1.220^{**}	0.386
	(0.577)	(0.515)	(0.802)	(0.687)	(0.515)	(0.579)	(1.026)
N	821	821	821	821	821	821	821
Pseudo R^2	0.098	0.087	0.088	0.089	0.111	0.088	0.126

Notes: This table presents the estimated effects of several possible causal mechanisms on career preference using logistic regressions. The dependent variable is an indicator measuring whether the respondent chooses *Civil Service* as their preferred profession after graduation. *Alumni Network* is a continuous variable (0-10) measuring the perceived strength of the alumni network of the university attended by the respondent. *Domestic News* is a continuous variable (0-7) measuring how many days in the last week the respondent spent reading news about China's domestic politics in the media. *International News* is an ordinal variable (1-4) measuring how interested the respondent is in news about international affairs. *Care about China* is an ordinal variable (1-4) measuring how much the respondent cares about China's development. *Self-Confidence* is a continuous variable (0-10) measuring the extent to which the respondent thinks that the NCEE score reflects one's intellectual capacity. *Political Efficacy* is an index measuring the extent to which the respondent is confident that his/her personal participation in politics matters.
All models control for whether the respondent is a *Science & Engineering* major, and include class-year and provincial fixed effects. Standard errors clustered at the university level are presented in parentheses.
P-values are based on two-tailed tests: $*p < 0.1, ** p < 0.05, *** p < 0.01$.

Table 5 presents the results from the second-step analysis. Here, the dependent variable is an indicator of whether civil service is the preferred career choice. We first test each mechanism separately (Columns 1-6) and then include all of them for a horse race when applicable (Column 7). In all specifications, we control for whether a student is a *Sciences & Engineering* major (as opposed to *Social Sciences and Humanities*) and include both class year and provincial fixed effects. Again, standard errors are clustered at the university level.

Of the two possible mechanisms that survive the first-step analysis, i.e., *Alumni Network* and *Self-Confidence*, only *Alumni Network* survives the second step. The significant and positive coefficient estimates in both Columns 1 and 7 indicate that, if a student believes that he or she has a strong alumni network in the government, he or she is more likely to choose civil service as a future career. Although the first-step analysis shows that elite university students are more confident in their intellectual capacity, this elevated level of confidence does not lead them to choose the civil service (Column 6). On the contrary, the results of the horse race regression (Column 7) indicate that confidence drives students *out* of civil service. In addition, students with higher perceptions of political efficacy are less likely to choose civil service (Column 5), which could suggest disenchantment with their ability to affect political changes from within. Other variables of interest in politics do not have significant effects on students' career preferences. Last, students majoring in the sciences or engineering are less likely to work for the government.[19]

Taking the results from Tables 4 and 5 together, we find strong support for Hypothesis 2.1, that attending an elite university grants students access to a strong alumni network in the government, which in turn motivates them to choose a career in the civil service. We find no systematic support for other causal mechanisms, including political interest, political efficacy, and self-confidence.

[19] Again, this is consistent with the rational choice explanation of career choice that these students get higher returns in other occupations (Murphy, Shleifer and Vishny 1991).

Discussion and Conclusion

Michels (1911) contended more than a century ago that all organizations eventually come to be run by a "leadership class," who, far from being "servants of the masses," will inevitably grow to dominate the organization's power structures. The leadership class perpetuates its power by recruiting, protecting, and promoting people in its own circles. Alumni, protégés, and relatives fill important positions to consolidate a certain network's grip on power, which compromises equal access to power, representation, and the principle of a level playing field.

Scholars have long noted that the concentration of power in the hands of a few is a "natural tendency" (Mosca 1896; Michels 1911). Recent scholarship has explored why this tendency persists. Scholars mostly focus on the demand side – politicians promote their alumni, patrons protect their clients, and parents support their sons and daughters (Shih, Adolph and Liu 2012; Stewart et al. 1972; Dal Bó, Dal Bó and Snyder 2009). Few, however, have examined the supply side. Yet the supply of candidates is important: alumni, clients, and children must first decide to enter politics before they can be promoted, protected, and supported.

We study the supply of politicians. Specifically, we investigate whether gaining access to a strong alumni network in the government changes individuals' occupational preferences. Perceiving a strong school network in politics, we argue, motivates college students to pursue a political career because they believe their fellow alumni will help them advance their careers. Establishing a causal relationship between one's alumni network and one's occupational preference is challenging. We exploit a natural experiment in China, where a personnel reform created an elite school network in the government, and universities use an arbitrary cutoff to enroll students.

We show that a few points on one's college entrance exam, which determine whether one can attend an elite university, make a difference in one's career preference. Compared with students whose scores fall slightly short of the elite university cutoff, students who attend elite universities are 25% more likely to choose a career in the civil service. Employing an original online survey, we demonstrate that elite school students prefer the civil service because they believe their alumni

network is strong in the government, not because they are more interested in politics, have higher perceptions of their political efficacy, or are more confident in their exam-taking skills. It remains an empirical question whether they will actually be recruited as civil servants (demand side), but it is important that they supply themselves to be politicians.

Although elite school students do not prefer to work for the government in every country, our mechanism that an existing network in politics incentivizes more people in the same network to pursue a political career can apply to other contexts and countries. In the United States, Dal Bó, Dal Bó and Snyder (2009) suggest that dynasties in Congress are sustained by the entrance of incumbents' children. Conversely, Fox and Lawless (2005) find that members of historically excluded populations are less likely to run for office. In the United Kingdom, children of senior cabinet members are more likely to choose a political career (Van Coppenolle 2014). In all cases, potential candidates choose their occupations in order to exploit their resources (networks, family brand, political skills, and name recognition). Our study suggests that the iron law of oligarchy exists not only because the elites demand it, but also because rational citizens select careers.

One question we leave for future research is the consequence of the entrenchment of power. If the cause of elite dominance is not only elites' demand but also candidates' supply, the implications are different. When elites promote and protect their alumni, protégé, and relatives, it undermines the equality of representation. Candidates who run against connected candidates need to be of higher quality to win. The competition occurs *within* the political system. But if citizens choose their careers based on their networks, unconnected individuals would not enter politics in the first place. The competition occurs *outside* the political system. To provide a level playing field, our findings point to the importance of not only meritocratic promotion, but also a recruitment process that is open to the broader society.

A constant supply of elite school students might also benefit the state. As Evans, Rueschemeyer and Skocpol (1985, 16) argue, "The best situation for the state may be a regular flow of elite university graduates, including many with sophisticated technical training, into official careers that

are of such high status as to keep the most ambitious and successful from moving on to nonstate positions." The University of Tokyo alumni network in the Japanese bureaucracy facilitates coordination and builds trust among civil servants (Johnson 1982). But when elite school graduates herd into the government, this will also cause a "misallocation of talents," as the economists warn (Murphy, Shleifer and Vishny 1991). When a country's most talented people start firms, they innovate and foster growth; when they become politicians, they only redistribute wealth and reduce growth. The ramifications of elite school cliques in the government are complicated and need careful examination.

References

Acemoglu, Daron. 1995. "Reward Structures and the Allocation of Talent." *European Economic Review* 39(1):17–33.

Baum, Richard. 1986. "China in 1985: The Greening of the Revolution." *Asian Survey* 26(1):30–53.

Baumol, William J. 1990. "Entrepreneurship: Productive, Unproductive, and Destructive." *Journal of Business Venturing* 11(1):3–22.

Becker, Gary S. 1973. "A Theory of Marriage: Part I." *Journal of Political economy* 81(4):813–846.

Benabou, Roland and Jean Tirole. 2003. "Intrinsic and Extrinsic Motivation." *The Review of Economic Studies* 70(3):489–520.

Bénabou, Roland and Jean Tirole. 2006. "Incentives and Prosocial Behavior." *The American Economic Review* 96(5):1652–1678.

Besley, Timothy. 2005. "Political Selection." *The Journal of Economic Perspectives* 19(3):43–60.

Braganca, Arthur, Claudio Ferraz and Juan Rios. 2015. "Political Dynasties and the Quality of Government." *Paper presented at the workshop on Political Dynasties at the Norwegian Business School BI* .
URL: *https://web.stanford.edu/ juanfrr/bragancaferrazrios2015.pdf*

Broockman, David E. 2013. "Black Politicians Are More Intrinsically Motivated to Advance Blacks' Interests: A Field Experiment Manipulating Political Incentives." *American Journal of Political Science* 57(3):521–536.

Brzezinski, Zbigniew and Samuel P Huntington. 1964. *Political Power: USA/USSR*. New York: Viking Press.

Bueno de Mesquita, Bruce, Alastair Smith, Randolph Siverson and James Morrow. 2003. *The Logic of Political Survival*. The MIT Press.

Callen, Michael, Saad Gulzar, Ali Hasinain, Yasir Khan and Arman Rezaee. 2013. "Personalities and Public Sector Performance: Experimental Evidence from Pakistan." *NBER Working Paper* 21180.
URL: *http://www.nber.org/papers/w21180*

Card, David and Alan B. Krueger. 1992. "Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States." *The Journal of Political Economy* 100(1):1–40.

Chandra, Kanchan. 2016. *Democratic Dynasties: State, Party and Family in Contemporary Indian Politics*. Cambridge University Press.

Chhibber, Pradeep. 2013. "Dynastic Parties Organization, Finance and Impact." *Party Politics* 19(2):277–295.

Dal Bó, Ernesto, Frederico Finan and Martín A Rossi. 2013. "Strengthening State Capabilities: The Role of Financial Incentives in the Call to Public Service." *The Quarterly Journal of Economics* 128(3):1169–1218.

Dal Bó, Ernesto, Pedro Dal Bó and Jason Snyder. 2009. "Political Dynasties." *The Review of Economic Studies* 76(1):115–142.

Duflo, Esther. 2001. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment." *American Economic Review* 91(4):795–813.

Eggers, Andrew C. and Jens Hainmueller. 2009. "MPs for Sale? Returns to Office in Postwar British Politics." *American Political Science Review* 103(4):513–533.

Evans, Peter B, Dietrich Rueschemeyer and Theda Skocpol. 1985. *Bringing the State Back In*. Cambridge University Press.

Fiva, Jon H and Daniel M Smith. 2016. "Political Dynasties and the Incumbency Advantage in Party-Centered Environments." *CESifo Working Paper Series No. 5757* .
URL: *http://dx.doi.org/*

Fowler, Linda L and Robert D McClure. 1990. *Political Ambition: Who Decides to Run for Congress*. Yale University Press.

Fox, Richard L and Jennifer L Lawless. 2005. "To Run or Not to Run for Office: Explaining Nascent Political Ambition." *American Journal of Political Science* 49(3):642–659.

Geys, Benny and Daniel M Smith. Forthcoming. "Political Dynasties in Democracies: Causes, Consequences, and Remaining Puzzles." *Economic Journal* .

Granovetter, Mark. 1995. *Getting a Job: A Study of Contacts and Careers*. University of Chicago Press.

Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78(6):1360–1380.

Gulzar, Saad and Muhammad Yasir Khan. 2016. "Why Do Citizens Become Politicians? Experimental Evidence on the Social Dimensions of Candidacy." *Paper presented at the American Political Science Association Annual Meeting, September 2016* .
URL: *https://goo.gl/HPwpi6*

Handy, Femida and Eliakim Katz. 1998. "The Wage Differential Between Nonprofit Institutions and Corporations: Getting More by Paying Less?" *Journal of Comparative Economics* 26(2):246–261.

Imai, Kosuke, Luke Keele, Dustin Tingley and Teppei Yamamoto. 2011. "Unpacking the Black Box of Causality: Learning About Causal Mechanisms From Experimental and Observational Studies." *American Political Science Review* 105(04):765–789.

Johnson, Chalmers. 1982. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*. Stanford University Press.

Kaufman, Herbert. 1960. *The Forest Ranger: A Study in Administrative Behavior*. Resources for the Future.

Laband, David N and Bernard F Lentz. 1983. "Like Father, Like Son: Toward an Economic Theory of Occupational Following." *Southern Economic Journal* pp. 474–493.

Lasswell, Harold Dwight. 1948. *Power and Personality*. Transaction Publishers.

Lawless, Jennifer L. 2012. *Becoming a Candidate: Political Ambition and the Decision to Run for Office*. Cambridge University Press.

Lemieux, Thomas and David Card. 2001. "Education, Earnings, and the 'Canadian GI Bill'." *Canadian Journal of Economics/Revue canadienne d'économique* 34(2):313–344.

Lentz, Bernard F and David N Laband. 1989. "Why So Many Children of Doctors Become Doctors: Nepotism vs. Human Capital Transfers." *Journal of Human Resources* pp. 396–413.

Li, Cheng. 2001. *China's Leaders: The New Generation*. Rowman & Littlefield Publishers.

Li, Cheng. 2013. "Rule of the Princelings." *The Cairo Review of Global Affairs* 10.

Lieberthal, Kenneth and Michel Oksenberg. 1988. *Policy Making in China: Leaders, Structures, and Processes*. Princeton University Press.

Manion, Melanie. 1993. *Retirement of Revolutionaries in China: Public Policies, Social Norms, Private Interests*. Princeton University Press.

Manion, Melanie. 2010. A Survey of Survey Research on Chinese Politics: What Have We Learned? In *Contemporary Chinese Politics: New Sources, Methods, and Field Strategies*, ed. Carlson, Allen and Gallagher, Mary E. and Lieberthal, Lieberthal and Manion, Melanie. Cambridge University Press pp. 181–199.

Mattozzi, Andrea and Antonio Merlo. 2008. "Political Careers or Career Politicians?" *Journal of Public Economics* 92(3):597–608.

Michels, Robert. 1911. *Political Parties: A Sociological Study of the Oligarchical Tendencies of Modern Democracy*. Hearst's International Library Company.

Mills, C Wright. 1956. *The Power Elite*. Oxford University Press.

Mosca, Gaetano. 1896. *Elementi di Scienza Politica*. Fratelli Bocca.

Muramatsu, Michio and Ellis Krauss. 1984. "Bureaucrats and Politicians in Policymaking: The Case of Japan." *American Political Science Review* 78(1):126–146.

Murphy, Kevin, Andrei Shleifer and Robert Vishny. 1991. "The Allocation of Talent: Implications for Growth." *The Quarterly Journal of Economics* 106(2):503–530.

Pareto, Vilfredo. 1901. *The Rise and Fall of Elites: An Application of Theoretical Sociology*. Transaction Publishers.

Querubin, Pablo. 2016. "Family and Politics: Dynastic Persistence in the Philippines." *Quarterly Journal of Political Science* 11(2):151–181.

Rosenbaum, Paul R. 1984. "The Consequences of Adjustment for a Concomitant Variable That Has Been Affected by the Treatment." *Journal of the Royal Statistical Society. Series A (General)* 147(5):656–666.

Rossi, Martín A. Forthcoming. "Self-Perpetuation of Political Power: Evidence from a Natural Experiment in Argentina." *Economic Journal* .

Schlesinger, Joseph A. 1966. *Ambition and Politics: Political Careers in the United States*. Rand McNally.

Shih, Victor, Christopher Adolph and Mingxing Liu. 2012. "Getting Ahead in the Communist Party: Explaining the Advancement of Central Committee Members in China." *American Political Science Review* 106(01):166–187.

Staiger, Douglas and James H Stock. 1997. "Instrumental Variables Regression with Weak Instruments." *Econometrica* 65(3):557–586.

Stewart, Philip D, Robert L Arnett, William T Ebert, Raymond E McPhail, Terrence L Rich and Craig E Schopmeyer. 1972. "Political Mobility and the Soviet Political Process: A Partial Test of Two Models." *American Political Science Review* 66(04):1269–1290.

Thistlethwaite, Donald L and Donald T Campbell. 1960. "Regression-Discontinuity Analysis: An Alternative to the Ex Post Facto Experiment." *Journal of Educational Psychology* 51(6):309–317.

Truex, Rory. 2014. "The Returns to Office in a "Rubber Stamp" Parliament." *American Political Science Review* 108(02):235–251.

Van Coppenolle, Brenda. 2014. Political Dynasties and Elections PhD thesis The London School of Economics and Political Science (LSE).