

RESEARCH ARTICLE

Job Preferences and Outcomes for China's College Graduates

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Abstract

Despite private enterprises dominating China's labour market, college-educated workers are still highly concentrated in the state sector. Using data from the Chinese College Student Survey, we find that 64 per cent of students in the sample expressed a strong preference for state sector employment. We also identify several factors associated with receiving job offers from the state sector, including being male, holding urban *hukou* status, being a member of the CCP, performing well on standardized tests, attending elite universities and having higher household income or high-status parental backgrounds. These findings suggest that despite China's economic transition, the private sector may still struggle to attract highly educated workers.

摘要

尽管私营企业在中国的劳动力市场上占主导地位，但受过大学教育的工作者仍然高度集中在国有部门。利用中国大学生就业追踪调查数据，我们发现样本中64%的学生非常倾向于在国有部门就业。研究还发现了与获得国有部门工作机会相关的几个因素，包括男性、拥有城市户口、中共党员、标准化考试成绩好、就读于精英大学，以及拥有较高的家庭收入或高地位的父母背景。这些发现表明，尽管中国经历了经济转型，私营部门可能仍然难以吸引高学历的工作者。

Keywords: state sector; college graduates; job preference; job outcomes; China

关键词: 国有部门; 大学毕业生; 工作偏好; 工作结果; 中国

Over the past 40 years, China's labour market has undergone significant reforms that have led to a shift in employment from the state sector, i.e. the government and state-owned enterprises (SOEs), to the non-state sector. Prior to the reforms, the majority of urban workers were employed in the state sector.¹ However, since the 1980s, workers have been increasingly reallocated to the non-state sector. In 2017, non-state enterprises accounted for 95 per cent of all industrial firms and employed 85 per cent of urban workers.²

The allocation of labour across sectors has been a crucial factor in the Chinese economy. However, owing to the lack of appropriate data, there has been little systematic investigation into which sectors highly educated workers such as college graduates prefer and eventually work in.³ Our exhaustive search of the literature reveals that no previous research has used systematic data

1 Li, Hongbin, et al. 2017.

2 NBSC 2018.

3 Previous research has examined the link between state sector employment and the observable characteristics of workers in a variety of contexts. See Lewis and Frank 2002; Pfeifer 2010; Christofides and Pashardes 2002.



to document the preferences of college-educated workers for state sector jobs and the factors that influence their chances of obtaining such employment. Additionally, no previous studies have been able to distinguish between the factors that shape people's preferences for state sector jobs and those that affect their likelihood of securing a position in the state sector.⁴

This paper examines the preferences of new college graduates in China for state sector jobs and identifies who ends up securing such employment. In this context, state sector jobs refer to positions in government offices, SOEs and public institutions such as hospitals, schools, research institutes and social welfare organizations.⁵ By focusing on new college graduates, we aim to capture the trends of the current Chinese labour market. Our empirical analysis is primarily descriptive, which means that most of the statistical relationships we present are associational rather than causal.

We analyse a distinctive dataset, the Chinese College Student Survey (CCSS), which provides us with first-hand survey data to investigate recent college graduates' job preferences and outcomes. The CCSS was conducted by the authors annually from 2010 to 2015 and involved 40,911 graduating students from 90 colleges. The survey collected information on students' desired jobs, job search behaviour and best job offers, as well as demographic data such as standardized test scores, activities in college and family background. Additionally, the data permitted us to distinguish between individuals seeking work and those who received job offers.

We consistently find that the state sector remains highly desirable to new college graduates in China, as evidenced by the fact that, on average, 63.8 per cent of students in our sample hoped to secure employment in this sector. This preference remains constant across various survey years and individual characteristics, including the impact of the 2012 anti-corruption campaign and the decline in formal posts in administrative and public institutions. Our results further indicate that female students, Chinese Communist Party (CCP) members and those with social connections to the state sector are more likely to express a desire to work in the state sector, while students with higher English proficiency and household income are more likely to prefer private sector employment. However, even among these subgroups, over 60 per cent expressed a preference for state sector jobs.

We also demonstrate that the competition for state sector employment is fierce for students seeking such work. Despite the fact that the majority of students preferred state sector jobs, only 41.8 per cent of students in our sample received job offers from state sector institutions. Furthermore, of the students who desired employment in the state sector, only half (51 per cent) received job offers from state sector employers. Our analysis indicates that male students, those with pre-college urban *hukou* 户口, graduates of elite universities, CCP members, students with strong standardized test scores, those from higher-income households and students with college-educated or Party cadre parents, as well as those with social connections to the state sector, had a greater likelihood of securing employment in the state sector.

Our study carries significant implications for China's future economic development. The persistent preference for state sector jobs among college-educated individuals, despite the growth of the private sector and the decline of state-owned enterprises (SOEs), raises concerns about the private sector's ability to attract top talent. This talent shortage could hinder the future growth and competitiveness of the private sector. Conversely, the government and SOEs may have an advantage in attracting and retaining high-quality human capital, which could contribute to improving their management and organizational capabilities, further strengthening their dominant position in the labour market and the overall economy. Our findings highlight a potential brain drain towards the state sector in China, and given the evidence of lower efficiency in state enterprises compared to

4 Gregory and Borland 1999.

5 Formally defined by the National Bureau of Statistics as "institutions of various types established with the approval by organization and staffing departments of the government, but exclude institutions where enterprise management system is introduced." See http://www.stats.gov.cn/english/ClassificationsMethods/Definitions/200204/t20020419_72393.html.

private firms,⁶ there is a risk of diminished economic efficiency when the best human capital is concentrated in the state sector.

Our findings suggest that the state sector may perpetuate intergenerational and within-generation inequality. Males and well-connected students had an advantage in landing state sector jobs over females and less privileged students. Children of cadres and those with relatives in the state sector also had greater success in job placement. However, surprisingly, family income levels did not significantly affect state job placement. Additionally, a smaller proportion of female students received state jobs, suggesting a potential hiring bias against them. Eliminating identity, social status and gender biases in state sector recruitment may reduce inequality.

The rest of this paper is organized as follows. The next section provides a brief review of the relevant literature. The paper then offers background information on China's state sector and college education before going on to describe our data and methods. Next, it explores student preferences for work in the state sector and their relation to individual characteristics. In the section following that, we examine the student characteristics associated with receiving a state sector job, before finishing with concluding points.

Literature Review

Previous research has investigated the personal characteristics that prompt individuals to pursue careers in the public sector rather than the private sector. Some studies suggest that women, older individuals, members of a certain political party and risk-averse individuals are more inclined to opt for public sector jobs.⁷ The influence of education on this preference appears to be inconclusive.⁸ Additionally, the occupation of one's parents in the government does not seem to have a significant impact on an individual's job preferences.⁹

Employment in the public sector typically offers higher wages, improved benefits and greater job stability compared to employment in the private sector.¹⁰ The majority of public sector employees express satisfaction with their job security.¹¹ Moreover, public sector jobs may provide superior working conditions and other long-term career advantages.¹² In certain industries critical to the economy, such as telecommunications, energy and banking, large and profitable SOEs dominate the market in China.¹³ Working in these areas of the public sector can provide individuals with a prestigious status in line with the employer's market power.

Research shows that an individual's educational background plays a significant role in securing employment in the public sector. Those with college degrees or humanities and social science majors are more likely to obtain public sector jobs.¹⁴ Demographic factors also play a part, with men, older age groups and Party members being more likely to secure public sector employment.¹⁵ Economic models and sociological theories emphasize the importance of social networks in this context.¹⁶ Additionally, individuals whose parents hold college degrees, work in management positions, serve as cadres or are employed in government positions are more likely to obtain jobs in the public sector.¹⁷

6 Li, Hongbin, and Rozelle 2000; 2003; 2004; Li, Hongbin 2003a; 2003b; Brant, Li and Roberts 2005.

7 Lewis and Frank 2002; Pfeifer 2010.

8 Lewis and Frank 2002.

9 Ibid.

10 Dickson, Postel-Vinay and Turon 2014.

11 Pfeifer 2010; Wang and Xie 2015.

12 Cai, Fang and Xu 2011.

13 Lin, Yongjia, Fu and Fu 2021.

14 Gregory and Borland 1999.

15 Lewis and Frank 2002; Gao, Kong and Kong 2017.

16 Bian 1997; Granovetter 2005.

17 Lewis and Frank 2002; Scoppa 2009; Gao, Kong and Kong 2017.

Background

The evolution of China's state sector

Since the 1990s, the Chinese public sector has shrunk considerably. In 1992, during his southern tour, Deng Xiaoping 邓小平 justified the development of a private sector in China, paving the way for the emergence of private enterprises. Private enterprises developed mainly in two ways: when individuals from the public sector started their own businesses (known as *xiaohai* 下海, or “jumping into the sea”), or when entire state or collectively owned units were privatized. In 1997, the 15th National People's Congress officially proposed the privatization of SOEs, hastening the shift towards private enterprise. From 1998 to 2016, the number of state-owned and state-controlled industrial enterprises declined at a rate of 6.6 per cent per year, while the number of non-state industrial enterprises increased by 7.3 per cent per year.¹⁸ By 2016, state-owned and state-controlled industrial enterprises accounted for only 17.1 per cent of industrial profits, a significant decrease from 47.3 per cent in 1997.

The decline of the public sector is also evident in the realm of employment, as illustrated in [Figure 1](#). The proportion of urban employment in state-owned units drastically decreased from 76.8 per cent in 1980 to 33.3 per cent in 2018.¹⁹ [Figure 2](#) displays the breakdown of total employed workers by employer type.²⁰ Out of the 776 million employed workers in 2018, 56 per cent were based in urban areas. Among urban employees, only 13.2 per cent were employed in the public sector.

As the public sector workforce shrank, the Chinese government and SOEs became more selective in their recruitment of entry-level staff. In the 1980s, the Chinese government acknowledged the necessity of cadres with the right human capital to grow the economy. To address this, Deng Xiaoping introduced reforms that mandated the recruitment of younger, educated and professional individuals into the system, leading to an increased demand for highly educated employees.²¹ Reforms in China's SOEs in the 1980s and 1990s brought in modern corporate governance and incentive systems, contributing to rising profitability.²² The reforms of the 1990s resulted in the shutdown or privatization of most unprofitable small- and medium-sized SOEs and the restructuring of the remaining large SOEs, raising the relative demand for highly educated workers and increasing the appeal of SOE jobs.²³

College-educated workers

In China, high school students are required to take the National College Entrance Examination, also known as the *gaokao* 高考, in order to be admitted to college. The scores needed to gain entry to better or elite colleges are higher.²⁴ This paper employs a commonly accepted definition of elite colleges in China, specifically those that are part of the 211 Project, which comprises around 100 leading universities in the country. Additionally, nearly all college students are required to take the College English Test (CET) prior to graduation.

Since the post-reform era, college graduates have been free to choose their employers. However, data indicate that a significant portion of college-educated workers have continued to be employed in the state sector ([Figure 1](#)). We use various data sources to estimate the percentages of college-educated workers in the state sector between 1988 and 2009 (see the figure notes for details).

18 NBSC 2010; 2017.

19 Excluding rural and informal employment (NBSC 2019).

20 Including rural and informal employment (NBSC 2019).

21 Li, Hongbin, and Zhou 2005.

22 Groves *et al.* 1994; Li, Hongbin, and Rozelle 2003; 2004.

23 Cao, Qian and Weingast 1999.

24 Jia and Li 2021.

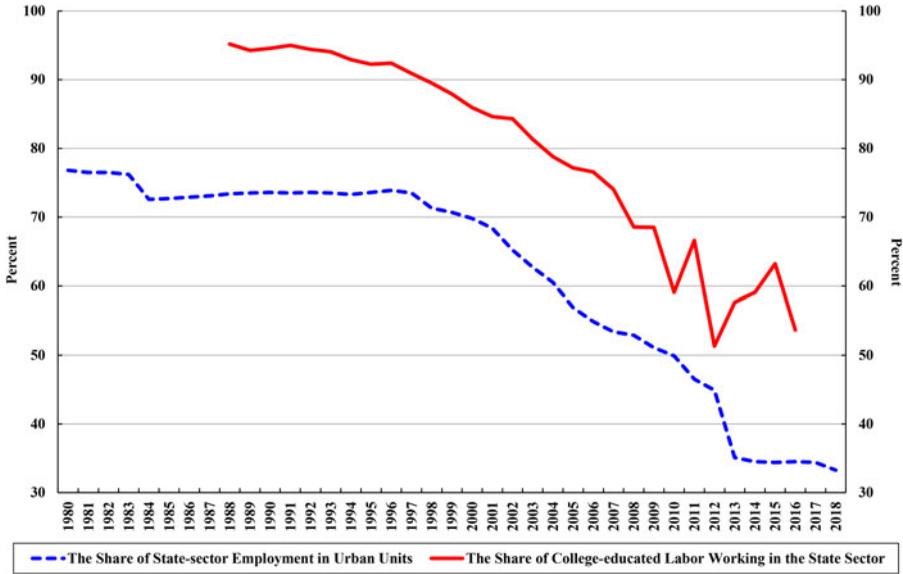


Figure 1. The Share of Employment in the State Sector

Source: Authors' calculations using China Statistical Abstract 2018; the Urban Household Survey 1988–2009; China Health and Nutrition Survey 2006; 2009; 2011; 2015; China Family Panel Studies 2010; 2012; 2014; 2016; and Chinese General Social Survey 2008; 2010; 2013.

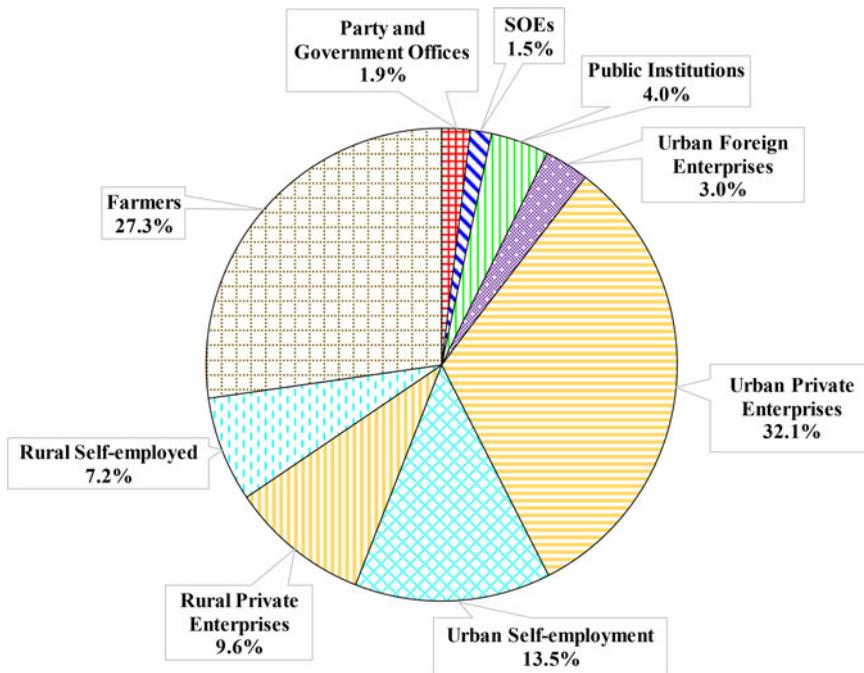


Figure 2. China's Employed Persons by Sectors in 2018

Source: Authors' calculations using *China Population & Employment Statistics Yearbook 2019*. There are 775.9 million workers in total.

As depicted in [Figure 1](#), college-educated workers were heavily concentrated in the state sector until the late 1990s, and although the proportion has decreased in recent years, as of 2016, 53.7 per cent of college-educated workers were still working in the state sector.

While the state sector has significantly decreased as a percentage of the overall labour force, it still employs a substantial number of college-educated workers. As a result, we can anticipate that a considerable state sector job market for college graduates will persist in the future, and it is important to examine who desires and secures these positions.

Survey and Data

The Chinese College Student Survey

This study utilizes data from the Chinese College Student Survey (CCSS), which was conducted annually by the China Data Center at Tsinghua University between 2010 and 2015. One of the authors directed the survey. The CCSS sample was constructed by randomly selecting 100 colleges from a list of 2,300 colleges in China. The selection was stratified according to five geographical regions (North-East China, East China, Central China, West China, and Beijing/Shanghai/Tianjin) and seven tiers of colleges. Each college was weighted by its student population, making the sample representative of the population of all college students in China.²⁵

To carry out the surveys, we selected two to three survey administrators for each college. These administrators were typically responsible for registering students, teaching or managing student affairs. To control the quality of the survey, we held several days of training sessions in Beijing for all survey administrators. Returning to their own colleges, the survey administrators selected a random sample of students. They then gathered all sample students in one location and asked them to individually and anonymously fill in their questionnaires. The completed questionnaires were then coded and mailed to Beijing for data entry and cleaning to guarantee consistency and quality.

We conducted the survey in May or June of each year, just before students graduated from college, when many had already begun their job search or received job offers. The questionnaires covered a wide range of variables, including socioeconomic characteristics (individual and family background) and educational background (for example, student ability, school performance and college quality), as well as variables related to the students' future employment, such as job search behaviour, the characteristics of their desired job and the characteristics of their best job offer.²⁶

In our sample of 40,911 students,²⁷ 67.6 per cent planned to start working after graduation²⁸ and 65.1 per cent reported actively job searching. Among the job seekers, 95.2 per cent provided information on their desired jobs (25,346 students, 62 per cent of the total sample), while 72 per cent provided information on their best job offers (19,176 students, 46.9 per cent of the total sample). The students who had received job offers were also asked to provide details such as the job type, location, employer size and compensation package.

In our survey, we directly asked students to report their preferred ownership type and actual ownership type of their potential employer. We asked the following questions: "What type of work do you aspire to?" and "What type of work does your best job offer belong to?" Students were provided with the following answer choices:

25 For the purpose of other studies, we oversampled elite colleges. However, this oversampling may have little effect on the analyses in this study. In [Table 3](#), we show that both students who graduated from elite and non-elite colleges preferred to find state sector employment. There is no statistically significant difference in the percentage points (63.719 versus 63.830).

26 For a more detailed discussion on survey design and implementation, see Li, Hongbin, et al. [2012a](#); [2012b](#); [2013](#); Jia and Li [2021](#).

27 We further restrict our sample to 40,872 students who were aged 16 and above at the time of survey.

28 Of these, 21.6% planned to go to graduate school, 7.1% had no explicit plan and 3.6% did not answer the question.

- 1) Party and government offices;
- 2) Public organizations or social groups such as the Union, the Communist Youth League, the Women's Federation;
- 3) Public institutions (*shiyè danwèi* 事业单位);
- 4) State-owned enterprises;
- 5) Collective enterprises;
- 6) Foreign enterprises;
- 7) Private enterprises;
- 8) Self-employment;
- 9) Others (please specify).²⁹

Variables

Table 1 presents a summary of our sample. In Panel A, we observe that 55.6 per cent of the students were male, 46.5 per cent had urban *hukou* prior to college, and 30.8 per cent were Party members.

Panel B in **Table 1** displays information on the educational background of our sample students. Of these students, 41.8 per cent attended elite universities. The most popular major was engineering, with 41.4 per cent of students, followed by EFML (economics, finance, management and law), science (science, agriculture and medical science), and social sciences/arts (philosophy, education, literature, history and the arts).³⁰ Our university sampling method resulted in a proportional distribution of students across regions.

We collected several measures of student academic quality. The first measure is the students' standardized *gaokao* scores, which range from -9.9 to 11.2, with an average score of 0.4.³¹ The second measure is the Grade Point Average (GPA) earned in college coursework, a standardized score ranging from 0 to 4. The average GPA in our sample is 3.1. The third measure is a student's rank in class, which we operationalize using a dummy variable called "Top 20 per cent." This variable is equal to 1 if students reported that their academic achievement was in the top 20 per cent of the class and 0 otherwise; 46 per cent of students reported that they were ranked within the top 20 per cent of their class. The fourth measure is the student's English language ability, as measured by the CET. It is important to note that all four academic measures are self-reported and may be subject to non-classical measurement error or non-random recall bias, potentially leading to noisy and/or biased estimates.

In Panel C, we present a summary of the family background characteristics of the sample students. We found that 18.6 per cent of the students had at least one parent who held a job with administrative rank such as a civil servant or bureaucrat; 25.4 per cent of the students had at least one parent who completed college; and the average annual household income of the students was 81,609 yuan (USD 13,000 in 2015 prices). Moreover, 65.9 per cent of the students reported having at least one relative or close friend who worked in the state sector.

Student Preferences

Strong, consistent preference for state sector jobs

Despite China's state sector reforms over the past three decades, Chinese college students still exhibit a strong preference for state sector jobs. As presented in **Table 2**, the percentage of college

29 There was no "no preference" option. There might be a measurement error in this case, i.e. students who are indifferent between the two may have been forced into choosing one. However, as long as this is a random error (some choose state, while others choose private), we will still obtain a correct average.

30 These represent standard categories used by the Ministry of Education.

31 *Gaokao* scores are standardized by province, year and educational track (science or arts). For a detailed explanation of *gaokao*, see Jia and Li 2021.

Table 1. Descriptive Statistics

Variable	Mean	Std. dev.	Min.	Max.	N
<i>Panel A: Individual Characteristics</i>					
Gender (Male=1)	0.556	0.497	0	1	40,701
Hukou (Urban=1)	0.465	0.499	0	1	38,619
Party member (yes=1)	0.308	0.462	0	1	40,526
<i>Panel B: Educational Characteristics</i>					
Elite university (yes=1)	0.418	0.493	0	1	40,872
Standardized <i>gaokao</i> score	0.444	1.137	-9.885	11.240	34,584
GPA	3.065	0.507	0	4	32,729
Top 20 per cent	0.460	0.498	0	1	38,669
CET score	463	62	220	700	29,683
Engineering major (yes=1)	0.414	0.493	0	1	40,386
EFML major (yes=1)	0.250	0.433	0	1	40,386
Science major (yes=1)	0.172	0.377	0	1	40,386
Social sciences/arts major (yes=1)	0.164	0.370	0	1	40,386
Coastal areas (yes=1)	0.473	0.499	0	1	40,872
<i>Panel C: Family Background Characteristics</i>					
Parent is a cadre (yes=1)	0.186	0.389	0	1	27,284
Parent attended college (yes=1)	0.254	0.436	0	1	37,438
Total household income, yuan	81,609	185,000	500	5,427,703	34,900
Relatives or close friends work in state sector (yes=1)	0.659	0.474	0	1	13,529
<i>Panel D: Job Preference and Outcome</i>					
Ideal job is in state sector (yes=1)	0.638	0.481	0	1	25,346
Received job offer in the state sector (yes=1)	0.418	0.493	0	1	19,176

Source: Authors' calculations using CCSS.

Notes: State sector includes the Party and government offices, public institutions and SOEs. "EFML" refers to economics, finance, management and law; "science major" includes science, agriculture and medical science; "social sciences/arts major" includes philosophy, education, literature, history and the arts; "engineering major" includes engineering and military science.

students who listed their ideal job as being in the state sector was consistently above 60 per cent between 2010 and 2015. Further analysis reveals that of those students who preferred state sector jobs, 18 per cent preferred jobs in Party and government offices, 26 per cent preferred jobs at SOEs and 20 per cent desired jobs at public organizations over the six-year period.

Despite the Chinese government's recent anti-corruption campaign, which began in 2012, Chinese college students have maintained a consistent preference for state sector jobs, which is surprising. The campaign resulted in significant restrictions on working and living benefits (for example, housing and transportation) for state sector employees. This could have potentially reduced the appeal of pursuing state sector careers among college students. However, our data reveal that, despite some job preference reshuffling in the initial aftermath, interest in employment within the state sector remained consistently high after peaking in 2012. Between 2012 and 2013, interest in Party and government office jobs and SOE jobs decreased by 3 and 4 per cent respectively, while interest in public institutions increased by over 5 per cent. However, in

Table 2. Students' Ideal Jobs by Sector (%)

	2010	2011	2012	2013	2014	2015	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Party and government offices	16.031	16.917	19.469	16.721	15.196	20.757	17.660
SOEs	32.377	26.432	27.682	23.861	25.635	23.007	26.040
Public institutions	16.346	18.908	18.670	23.888	19.677	18.593	20.090
State sector	64.754	62.257	65.821	64.470	60.508	62.357	63.790
Private enterprises	5.460	11.851	9.306	11.143	13.210	12.358	10.589
Foreign enterprises	11.516	16.720	17.265	16.288	16.397	16.202	16.014
Self-employment	18.271	9.171	7.608	8.098	9.885	9.083	9.607
Non-state sector	35.247	37.742	34.179	35.529	39.492	37.643	36.210
No. of obs.	2,857	4,067	5,126	7,619	2,165	3,512	25,346

Source: Authors' calculations using CCSS.

the years following 2013, interest in these three categories gradually returned to levels similar to those before the campaign.

Variations across student background

Table 3 presents an analysis of how students' preferences for state sector jobs vary according to their observable characteristics. Despite differences in these characteristics, we find that the majority of students consistently preferred state sector employment, with over 60 per cent *across all categories*. To test for differences in preferences between groups, we use t-tests and set the null hypothesis as the absence of a difference in means between the groups.

Students' personal characteristics played a role in their job sector preferences. Female students were more likely than males to prefer a career in the state sector, with a difference of 7 percentage points. This may be because a larger proportion of female students desired to work in public institutions compared to male students. Surprisingly, students' place of upbringing (urban versus rural) did not significantly affect their job preferences. Both students who grew up in rural areas (i.e. those with rural *hukou* before going to college) and students raised in urban environments (i.e. holding urban *hukou*) had a similar desire for a job in the state sector (64 per cent for both groups). Our t-test analysis does not find a statistically significant difference in job preferences between students raised in rural versus urban areas.

Party members, on average, preferred state sector jobs more than non-members. Joining the CCP is a costly and time-consuming process, and Party membership may indicate a desire to participate in the Chinese political system or the state sector more broadly. Furthermore, Party membership may be useful in obtaining a state sector job, and Party members may be more exposed to information and experiences that might encourage them to pursue a state sector career. However, over 61 per cent of non-members also desired a career in the state sector, indicating that this trend was not limited to Party members.

The state sector was appealing to students of different academic abilities – we do not observe significant differences in state sector job preferences based on students' academic quality. The proportion of students at elite and non-elite colleges who desired state sector employment was almost the same. Similarly, there is no significant difference in preferences for state sector jobs between students with above- and below-median *gaokao* scores (63 versus 64 per cent) or between students

Table 3. Percentages of Ideal Jobs in the State Sector (by Sample Student Characteristics)

	(1)		(2)
A: Individual Characteristics		C: Family Background Characteristics	
<i>Gender</i>		<i>Parent is a cadre</i>	
Male	60.947	Yes	66.935
Female	67.531	No	63.148
<i>Difference</i>	-6.585***	<i>Difference</i>	3.786***
<i>Hukou</i>		<i>At least one parent attended college</i>	
Urban	63.918	Yes	64.366
Rural	63.527	No	63.585
<i>Difference</i>	0.391	<i>Difference</i>	0.781
<i>Party member</i>		<i>Household income</i>	
Yes	69.440	Yes	62.226
No	61.472	No	65.779
<i>Difference</i>	7.968***	<i>Difference</i>	-3.553***
B: Educational Characteristics		<i>Social connection</i>	
<i>College quality</i>		Yes	64.866
Elite college	63.719	No	59.983
Other college	63.830	<i>Difference</i>	4.883***
<i>Difference</i>	-0.112	D: Major	
<i>Gaokao score</i>		History	78.571
Above median	63.284	Law	78.489
Below median	64.359	Medical science	77.258
<i>Difference</i>	-1.075**	Education	74.065
<i>GPA</i>		Philosophy	69.318
Above median	63.919	Agriculture	66.379
Below median	63.381	Science	63.936
<i>Difference</i>	0.539	Military science	63.637
<i>Top 20 per cent</i>		Engineering	62.756
Top 20%	65.938	Economics	62.743
The rest	62.189	Literature	62.025
<i>Difference</i>	3.749***	Management	61.200
<i>CET score</i>		Arts	57.756
Above median	61.960		
Below median	66.275		
<i>Difference</i>	-4.315***		

Source: Authors' calculations using CCSS.

Notes: *Gaokao* scores are standardized by province, year and educational track (arts or sciences). CET score measures the English ability of undergraduate students. A t-test is used to determine whether the means of two groups are equal to each other. The null hypothesis is that the difference in group means is zero. * significant at 10% level; ** significant at 5% level; *** significant at 1% level.

with above- and below-median GPAs (64 versus 63 per cent). Students in the top 20 per cent of their class were more likely to prefer a career in the state sector by four percentage points (66 versus 62 per cent). However, students with above-median CET scores showed a lower preference for state sector jobs, although this is likely owing to their desire to work for foreign enterprises (21 to 13 per cent). Although there are variations in preferences, the state sector was still attractive to students with varying levels of academic ability.

Interestingly, however, student preferences vary with parental political capital and socioeconomic status. Children of Party cadres were 4 per cent more likely to prefer a state sector job and nearly 10 percentage points more likely to want to work in Party and government offices than other students (25.0 versus 15.7 per cent). Relatedly, students with social connections in the state sector were 5 percentage points more likely to desire employment in the state sector. Finally, parents' socioeconomic status mattered, while their college attendance did not.

Household income makes a difference in students' preference for state sector jobs. Students from below-median income households were 4 per cent more likely to prefer a state sector job than their wealthier counterparts. This figure is mainly a result of the difference in the proportion of students who aimed to work at SOEs, which was 28.4 per cent for lower-income students compared to 24.6 per cent for higher-income students. SOE jobs are perceived as very stable, low-risk and high-paying, which may be particularly attractive to lower-income students.³² In contrast, graduates with more financial flexibility may be more inclined to pursue riskier ventures or switch between private sector jobs early in their careers.

Student preferences vary significantly between different majors. History (78.6 per cent), law (78.5 per cent) and medical science (77.3 per cent) students exhibit the strongest preferences for state sector jobs.³³ On the opposite end of the spectrum, literature (62.0 per cent), management (61.2 per cent) and arts (57.8 per cent) students expressed the least interest in state sector employment. Still, the primary takeaway is that technical and non-technical majors, preprofessional and non-preprofessional majors – that is, the majority of students in *all* majors sampled – sought a state sector job.

Reasons for preferring state jobs

Our results suggest that most Chinese students preferred to work in the state sector; the question is why? To answer this, we compare the wages and benefits (such as pensions, health insurance and housing subsidies) of state and private jobs.

Based on our survey data, it appears that entry-level positions for college graduates in the state sector offered higher pay than their counterparts in the private sector. [Table 4](#) displays the mean wages by sector from 2010 to 2015, and for each year, a t-test result demonstrates that the average monthly wages offered by the state sector are greater than those provided by the private sector. Specifically, in 2015, the average monthly wage in the state sector was over 12 per cent higher than that in the private sector. These findings align with previous research indicating that China's state sector tends to offer higher wages.

In line with prior research, our analysis utilizing a series of t-tests indicates that jobs in the state sector generally offer more extensive benefits compared to those in the private sector, as presented in [Table 4](#).³⁴ Specifically, our findings reveal that state sector jobs were more inclined to provide a wider offering of benefits, including local urban *hukou*, pensions, various types of insurance and housing benefits, in comparison to private sector jobs.

In addition to considering compensation and benefits, students may also take into account the implicit benefits associated with various jobs. This hypothesis is supported by the existing literature,

32 Li, Xin, and Brødsgaard 2013.

33 Medical students prefer state sector employment because the majority of hospitals in China are public institutions.

34 Same as [Fn. 8](#)

Table 4. Monthly Wages and Benefits in State and Non-state Sectors

	State Sector	Non-state Sector	Difference
	(1)	(2)	(3)
<i>Monthly wage, yuan</i>			
2010	2,123.396	1,975.176	148.220***
	(825.815)	(858.970)	
2011	2,604.258	2,510.777	93.481***
	(941.296)	(992.846)	
2012	2,861.368	2,764.842	96.526***
	(1,057.169)	(1,236.843)	
2013	2,955.316	2,751.920	203.396***
	(1,119.487)	(1,072.973)	
2014	2,907.583	2,671.867	235.716***
	(953.347)	(957.264)	
2015	3,420.880	3,042.579	378.301***
	(1,124.380)	(1,068.732)	
<i>Benefits, per cent</i>			
Provision of local urban <i>hukou</i>	0.496	0.230	0.266***
Pension	0.891	0.770	0.121***
Health insurance	0.906	0.804	0.101***
Unemployment insurance	0.843	0.721	0.122***
Employment injury insurance	0.865	0.761	0.105***
Maternity insurance	0.815	0.685	0.130***
Housing fund	0.856	0.637	0.219***
Housing subsidy	0.635	0.423	0.212***

Source: Authors' calculations using CCSS.

Notes: Standard deviations are in parentheses. A t-test is used to determine whether the means of two groups are equal to each other. The null hypothesis is that the difference in group means is zero. * significant at 10% level; ** significant at 5% level; *** significant at 1% level.

which suggests that state jobs are often associated with greater job security and higher levels of prestige (as discussed above).

Student Job Offers

The role of the state in employing college students

The market for entry-level state jobs is highly competitive. Our data show that 64 per cent of college graduates aimed to secure a job in the state sector, but only 42 per cent were successful in doing so (as illustrated in Table 5, Panel A). Furthermore, even among students who expressed a preference for state sector jobs, only half were ultimately able to secure employment in this sector (as presented in Table 5, Panel B).

Steady preferences for state sector jobs, combined with a declining labour demand in the state sector, have intensified competition for state employment. Our data show a decreasing trend in labour demand for state sector jobs, as illustrated in Panel A of Table 5. From 2010 to 2012, the

Table 5. Students' Best Job Offers by Sector (%)

	2010	2011	2012	2013	2014	2015	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Panel A: Unconditional on Students' Preference</i>							
Party and government offices	1.571	1.946	2.516	2.471	1.759	3.660	2.258
SOEs	34.566	31.688	32.283	26.583	21.922	23.595	29.615
Public institutions	9.264	10.990	9.852	12.376	6.281	5.163	9.934
State sector	45.401	44.624	44.651	41.430	29.962	32.418	41.807
Private enterprises	39.804	38.927	36.821	41.143	49.812	50.915	40.984
Foreign enterprises	11.129	10.824	12.579	10.677	9.234	7.712	10.847
Self-employment	3.666	5.625	5.949	6.75	10.992	8.954	6.362
Non-state sector	54.599	55.376	55.349	58.570	70.038	67.581	58.193
No. of obs.	3,055	4,213	4,253	4,533	1,592	1,530	19,176
<i>Panel B: Conditional on Students Who Prefer State Sector Jobs</i>							
Party and government offices	2.043	2.663	3.468	3.335	2.339	5.632	3.111
SOEs	40.033	38.743	38.501	31.587	28.285	27.471	35.446
Public institutions	11.264	12.734	13.113	16.416	8.797	6.667	12.692
State sector	53.340	54.140	55.082	51.338	39.421	39.770	51.249
Private enterprises	35.726	32.876	31.048	34.811	42.650	44.713	35.098
Foreign enterprises	7.731	8.073	8.768	7.878	7.461	6.667	7.968
Self-employment	3.203	4.911	5.102	5.973	10.468	8.851	5.686
Non-state sector	46.660	45.860	44.918	48.662	60.579	60.231	48.752
No. of obs.	1,811	2,403	2,509	2,729	898	870	11,220

Source: Authors' calculations using CCSS.

proportion of college students who received a job offer from the state sector remained stable, at approximately 45 per cent. Of these, around one-third secured jobs in SOEs, while 12 per cent received offers from government and public institutions. However, the proportion began to decline in 2013, and in 2014, the proportion of college graduates who obtained state sector jobs decreased by 11 percentage points compared to the previous year. This significant drop is primarily attributed to the reduction in the employment share of public institutions (from 12.4 per cent to 6.3 per cent) and SOEs (from 26.6 per cent to 21.9 per cent). The proportion in Party and government offices decreased as well. Eventually, the share of total students who received a job offer from the state sector remained less than one-third in 2015.

In contrast, the proportion of college students who were self-employed increased by two-thirds, rising from 6.8 per cent in 2013 to 11.0 per cent in 2014. This trend continued in 2015, with the proportion remaining at 9.0 per cent. This increase was likely owing to the government policy implemented in 2014, which aimed to encourage college graduates to start their own businesses. While the share of employment in foreign enterprises declined over time, there was a significant increase in the proportion of students who received job offers from domestic private enterprises. In fact, private enterprises provided more than half of all job offers to college graduates in 2015 (as depicted in [Table 5](#), Panel A).

The data also indicate a decreasing trend in the number of state sector jobs received by graduates who preferred to work in that sector. Panel B of [Table 5](#) reveals that only 51 per cent of students who wanted to find a job in the state sector were able to obtain an offer. Moreover, since 2014, the share of employment in the state sector has fallen below 40 per cent. The next section will examine the factors that influence which of the students who prefer to work in the state sector can ultimately obtain an offer.

Characteristics of college graduates preferred by the state sector

As previously mentioned, there is a significant gap between the percentage of students who desired state sector employment and those who actually obtained it. In order to shed light on this discrepancy, we examine the characteristics of the students who received state sector job offers in [Table 6](#), where t-tests are used to determine the statistical significance of observable differences between those who received offers and those who did not.

We observe significant variation in state sector job offers based on individual characteristics. Despite female students' overall greater preference for state sector employment, male students were significantly more likely to receive a state sector job offer. In particular, 57 per cent of men landed jobs in the state sector, compared to only 45 per cent of women, even though 7 per cent more women listed a state sector preference. Women faced particular difficulty in landing jobs at SOEs compared to men (26 per cent of women versus 44 per cent of men), although they had some advantages in getting jobs in public institutions such as schools and hospitals (16.0 per cent of women versus 9.7 per cent of men). Urban students were more likely to obtain a state sector job than rural students (56 per cent versus 48 per cent). Party members were also more likely to obtain a state sector job (55 per cent versus 50 per cent), with higher employment in SOEs as well as Party and government offices.

Students with stronger academic backgrounds had better chances of receiving state sector job offers compared to their less academically distinguished peers. Specifically, those who attended elite colleges or had higher than median *gaokao* scores had higher success rates in obtaining a state sector job offer, with 61 per cent and 57 per cent respectively, compared to 46 per cent and 45 per cent for those who did not meet these criteria. Additionally, students with higher CET scores also had higher success rates in obtaining state sector jobs, with 56 per cent compared to 48 per cent for those with lower CET scores. Among academically elite students, there was a significantly higher likelihood of receiving SOE job offers and a significantly lower likelihood of being self-employed or working in private enterprises.

Table 6. Percentages of Best Job Offers in the State Sector by Student Characteristics for Those Who Want to Find Jobs in the State Sector

	(1)		(2)
A: Individual Characteristics		C: Family Background Characteristics	
<i>Gender</i>		<i>Parent is a cadre</i>	
Male	56.604	Above median	65.834
Female	44.798	Below median	49.341
<i>Difference</i>	11.807***	<i>Difference</i>	16.493***
<i>Hukou</i>		<i>At least one parent attended college</i>	
Urban	55.860	Yes	61.602
Rural	48.026	No	47.929
<i>Difference</i>	7.834***	<i>Difference</i>	13.672***
<i>Party member</i>		<i>Household income</i>	
Yes	54.550	Yes	52.736
No	49.542	No	49.317
<i>Difference</i>	5.009***	<i>Difference</i>	3.419***
		<i>Social connection</i>	
B: Educational Characteristics		Yes	64.866
<i>College quality</i>		No	46.543
Elite college	61.024	<i>Difference</i>	10.917***
Other college	45.618		
<i>Difference</i>	15.406***	D: Major	
<i>Gaokao score</i>		Philosophy	71.429
Above median	56.975	Economics	42.953
Below median	45.332	Law	58.054
<i>Difference</i>	11.643***	Education	54.688
<i>GPA</i>		Literature	35.958
Above median	46.933	History	63.158
Below median	54.905	Science	45.795
<i>Difference</i>	-7.972***	Engineering	57.483
<i>Top 20 per cent</i>		Agriculture	33.333
Top 20%	48.720	Medical science	79.466
The rest	53.323	Management	43.795
<i>Difference</i>	-4.603***	Arts	34.042
<i>CET score</i>		Military science	100.000
Above median	55.835		
Below median	48.216		
<i>Difference</i>	7.619***		

Source: Authors' calculations using CCSS.

Notes: *Gaokao* scores are standardized by province, year and educational track (arts or sciences). CET score measures the English ability of undergraduate students. A t-test is used to determine whether the means of two groups are equal to each other. The null hypothesis is that the difference in group means is zero. * significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Surprisingly, students with higher GPAs are less likely to land state sector jobs compared to those with lower GPAs. The negative correlation between GPA and job offers from the state sector persists even after controlling for demographics.³⁵ This is potentially owing to the GPA being traded off for other career-related activities such as work experience, networking or obtaining a driver's licence. Additionally, students with high *gaokao* scores fared better in obtaining state jobs than those with high GPAs. This indicates that state sector hiring practices prioritize academic ability, as indicated by *gaokao* scores, over college performance, as measured by college GPAs. This negative correlation is also observed when using the "Top 20 per cent" to measure academic performance, where students in the top 20 per cent of their class were less likely to receive a job from the state sector.

Parental political capital and socioeconomic status are significant factors in determining who secured state sector jobs. Students with at least one parent who was a Party cadre had a higher chance of receiving a state sector job offer, with 66 per cent of these students receiving offers compared to 50 per cent of those without a cadre parent. Moreover, students with a college-educated parent, high-income families and social connections to the state sector were also more likely to receive state job offers, potentially through family ties.

There are notable disparities among students in various majors regarding their chances of obtaining state sector jobs. Philosophy and law majors were offered the highest percentage of jobs from Party and government offices, while engineering majors received more offers from SOEs, and medical science and history majors received more offers from public institutions. Agriculture majors were offered the smallest number of state sector jobs. Despite being the students least interested in joining the state sector, art majors (58 per cent expressed preference, 34 per cent received offers) had relatively high employment rates in state sector jobs.

To test the statistical significance of the factors that influence state sector job offers, we employed formal regression models instead of simple t-tests. Our OLS regressions employed the indicator for successfully obtaining a state sector job as the dependent variable, with control variables such as college major, job preference, year and location, in addition to the key factors of interest that were identified in the t-tests of Table 6. Our regression results (not shown) confirm the findings of our prior analysis, indicating that males, urban *hukou* holders, CCP members, strong standardized test-takers, elite university students and students with higher household income or more elite parental backgrounds were more likely to receive job offers in the state sector.

Discussion

The characterization of state sector employment suggests that while the overall number of state sector jobs has been decreasing, the sector is highly selective in its recruitment of entry-level staff. This stringent selection process aligns with the direction of government agency and SOE reforms discussed above.

These findings shed light on gender inequality and potential limitations on the influence of intergenerational privilege in state sector employment. Women faced greater challenges in securing state sector jobs, particularly at SOEs, compared to men (45 per cent versus 57 per cent, among students who preferred state sector employment). This gender disparity suggests a possible bias in hiring at SOEs and warrants further investigation. Research indicates that in countries where gender diversity is highly valued, there is a correlation between firm performance and gender equality in the workplace.³⁶ As China ranks relatively low in terms of normative and regulatory support for gender diversity, this gender gap in hiring may have a negative impact on the performance of public

35 In regressions not reported, we find that among other factors, male students have lower GPAs than female students; the correlation coefficient between GPA and gender is -0.24 and significant at 1% level.

36 Zhang 2020.

sector firms. Moreover, this gender gap may also be linked to intergenerational factors, as studies have shown that only men tend to benefit significantly from their fathers' social connections in China.³⁷

Our research on public sector employment complements previous studies on the benefits of having a cadre parent. Prior literature has shown that children of CCP cadres are more likely to gain admission to elite educational institutions and receive a 15 per cent wage premium compared to children of non-cadres upon entering the workforce.³⁸ Our findings indicate that children of cadres have significantly better employment outcomes in the state sector than those without cadre parents (66 per cent versus 50 per cent, among students who prefer state sector employment), providing further evidence of the privileges associated with cadre status. Surprisingly, income appears to be less of a factor than parental connections. Students with social connections in the state sector are 11 percentage points more likely to receive a job offer, while students from high-income families have only a 3 percentage point higher probability of obtaining a state sector job.

Conclusion

This paper analyses survey data to investigate graduating college students' job preferences and offers, with a focus on the choice between state and private sector employment. Despite private enterprises accounting for 94.4 per cent of all industrial firms and employing 85 per cent of the Chinese urban workers in 2017, 63.8 per cent of college students seeking employment aspired to work in the state sector.³⁹ We observe consistent and widespread preferences for state sector employment across multiple survey years and state sector reforms.

We offer several possible explanations for why college students favour state jobs. We suggest that state sector employment may offer higher wages and more benefits, greater job security, better working conditions and greater prestige and control rights. On the demand side, government and SOE reforms may have led to an increased relative demand for college-educated workers.

This study is one of the first to differentiate between the factors that influence Chinese college students' job preferences and those that affect their likelihood of receiving a job offer in the state sector. The results of this research offer novel and pertinent insights into the sectoral job preferences of China's college-educated workers. Despite four decades of economic transition and privatization, our findings confirm that educated individuals still favour employment in the state sector over employment in the private sector.

The implications of this study's findings for the Chinese labour market are significant. As the Chinese workforce becomes increasingly educated, job preferences play a crucial role in labour allocation and, consequently, the Chinese economy. Nevertheless, it is important to recognize that our study merely illustrates job preferences and job offers for highly educated workers, and we cannot infer causation. Further investigation is necessary to determine the reasons behind these preferences and how state enterprises choose students for these highly sought-after positions.

Our findings carry significant implications for the future of China's economy. The strong preference among college-educated workers for state sector jobs, despite the growth of the private sector, suggests challenges for private firms in attracting top talent. This brain drain to the state sector may limit the pool of highly skilled human capital available to private firms, potentially hindering their growth and competitiveness. On the other hand, the Chinese government and state-owned enterprises may benefit from the ability to attract and retain highly educated workers, contributing to improved economic management and technical efficiency. However, this concentration of human capital in the state sector raises concerns about the overall efficiency and innovation potential of the Chinese economy.

37 Lin, Nan, and Bian 1991.

38 Jia and Li 2021; Li, Hongbin, et al. 2012b.

39 NBSC 2018.

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