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Marketing Communist Party membership in China

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Abstract
The selection of political officials is under-studied in economic analysis of authoritarian politics. In the absence of elections, the autocracy alone is burdened with the task of selecting the right candidate for every political position. This paper tries to empirically investigate an authoritarian political selection market where a dictator "sells" potentially valuable political membership to eligible supporters who have to pay a "price" in terms of screening cost. We highlight one dilemma that many contemporary autocracies face, namely the need to recruit educated elites who usually have better options in the private sector and are less dependent on the regime. This paper argues that autocracies can minimize this challenge by actively screening for unobservable loyalty conditional on observed technical skills. Using micro-level Chinese Communist Party college recruitment data, we show that the party adopts a discriminative strategy of lowering (but not removing) the screening cost for high-ability students and more intensively screening for loyalty among low-ability students. Using brainwashing course scores as a measurement of loyalty provides suggestive evidence that party members of a given ability level have more loyalty than nonmembers at the same ability level.

Keywords Political selection · Party recruitment · Authoritarian regimes · China

JEL Classification O17

1 Introduction

In economic analysis of democratic politics, the selection of political officials plays a central role. Padovano (2013) reviews two dominant theoretical paradigms. The traditional Downsian paradigm (Downs 1957) emphasizes the molding power of electoral institutions. The more recent political-selection paradigm (Besley 2005) emphasizes diverse personal

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characteristics of politicians. Both paradigms treat the selection of political officials as a "market," where the incentives of the voters—those who have power to choose—and the incentives of potential candidates—those who decide the list of candidates and their platforms—jointly determine selection outcomes.

The selection of political officials is understudied in the economic analysis of authoritarian politics. Besley (2005) paid little attention to political selection in authoritarian regimes.[1] Tullock (1987) and Wintrobe (1998) do not elaborate on who shall provide support to the dictators and who shall receive patronage and benefits. De Mesquita et al. (2003) simply treat the "winning coalition" for a dictator as exogenously given. The existing approaches tend to emphasize the incentives of the dictators who have power to choose officials, paying little attention to the incentives of potential supporters.

On the contrary, some of the world's most famous authoritarian leaders treated political selection with the utmost seriousness. Stalin's (1935) motto "Cadres decide everything" was extremely influential among the Leninist states, and Mao (1938) made a similar statement that is well-known in China. Deng Xiaoping, the Chinese dictator who institutionalized leadership succession after Mao's death, declared cadre selection to be the ultimate guarantee of regime survival, even at a time when he was pushing for deep economic reforms (Deng 1992). Deng clearly prioritized selection over political institutionalization or economic reform.

Political selection is so important to authoritarian regimes because no autocrats rule alone. They build political institutions, some of which are the largest on Earth. In the absence of elections, the autocracy alone is burdened with the task of selecting the right candidate for every political position.[2] Most authoritarian regimes today have a ruling party to help build a stable ruling coalition (Gehlbach and Keefer 2012; Lazarev 2005; Magaloni 2008), and the process of political selection begins with the selection of party members. The individuals chosen for party membership are expected to support the regime in exchange for patronage, but this implicit contract is necessarily incomplete, resulting in an agency problem. Everybody in an authoritarian regime has an incentive to confess allegiance to the regime to obtain patronage (Kuran 1989), and the regime cannot easily verify whether they are truly sincere. Furthermore, the regime will not be in a position to punish defectors (i.e., to enforce the contract) if defections bring down the regime.

One way that authoritarian regimes address the agency problem described above is through loyalty screening. In the past, regimes have used highly intensive screening methods. For example, probationary membership in the Iraqi Baath Party took a minimum of seven years. To become a formal member, the candidate had to progress through the ranks of sympathizer, supporter, candidate, and trainee (Sissons 2008). Those selected to political office through such a screening process tend to have preferences that are far different from those of the median voter. This result is the opposite of the results of the selection process in democracies, where majoritarian voting prevents those with extreme ideologies from selection. However, since the end of the Cold War, most contemporary autocracies have had to build a broader power base and tolerate wider ideological divergence in a nominally democratic environment. A prominent challenge for these regimes is the need to recruit from educated elites. With the

[1] Besley (2005) only suggested four methods of selection to political office: drawing lots, heredity, the use of force and voting.

[2] Local elections in electoral authoritarian regimes may help dictators to make better local political selections (Blaydes 2009).

liberalization of planned economies across the world, more and more educated elites work in the private sector. These individuals are likely to possess an anti-authoritarian ideology (Magaloni and Kricheli 2010), but excluding them compromises legitimacy and meritocracy, both of which are desperately needed to ward off democratization pressures. Clientelistic practices may work well for the poor people (Blaydes 2009) but not for the educated elites. This is a political selection dilemma that authoritarian regimes either have already encountered [such as KMT of Taiwan in the 1970s (Dickson 2000) and PRI of Mexico in the 1980s (Camp 1985)], are encountering now (such as China), or will encounter in the near future.

We argue that autocracies can address the challenge described above by actively screening for unobservable loyalty conditional on observed technical skills. This study is set in the context of the Chinese Communist Party (CCP)'s recruitment of party members in college. As in other authoritarian regimes, it is difficult for the party to track and recruit party loyalists among educated young elites who work in the private sector because the party cannot directly reward them. Thus, the party shifts its recruitment efforts to college campuses because college students are more dependent on the regime before they find jobs. Using the administrative data from two universities, we show that the CCP practices a discriminative recruitment strategy based on ability to ensure that it attracts enough high-ability students. Moreover, we exploit the unique information on brainwashing course scores as a proxy for the loyalty of the students to provide further evidence of the discriminative recruitment strategy.

The theoretical logic behind our empirical work is straightforward. The liberalizing economy improves college students' private sector options, weakening their incentives to seek patronage from the party by passing loyalty screening process. To garner enough regime supporters, the party has to lower the screening requirements in general. As the high-ability individuals obtain greater benefit from the economic reforms, demand for party membership among this group will become more elastic. Therefore, the screening requirements for high-ability individuals have to be set even lower. Empirically, we focus on examining three implications of this hypothesis. First, high-ability party members are more likely to join the private sector despite the fact that membership is more valuable in the government sector. Second, the party practices a discriminative strategy of lowering the screening cost for high-ability students and more intensively screening for loyalty among low-ability students—a strategy that is similar to price discrimination by a monopolist. Finally, party members have more loyalty than non-members at the same ability level. We present empirical evidence consistent with each of these implications.

Our findings show one way that authoritarian regimes select regime supporters among the educated elites. These results suggest that the discriminative recruitment strategy based on ability is effective in achieving a certain level of ideological representativeness of the ruling party, even without democratic elections. However, true representativeness cannot be achieved because the party screens for loyalty at each ability level, with the result that on average, party members are more ideologically aligned with the party than with the general population.

The remainder of this paper is structured as follows. Section 2 introduces the institutional background related to the party's post-reform recruiting strategies on campus. Section 3 presents a simple demand-supply framework that emphasizes screening. Section 4 describes a micro-level college student dataset that contains information on student background, employment, and a suggestive measure of loyalty. Section 5 describes our empirical strategies and reports the findings. Section 6 discusses some robustness checks. Section 7 concludes.

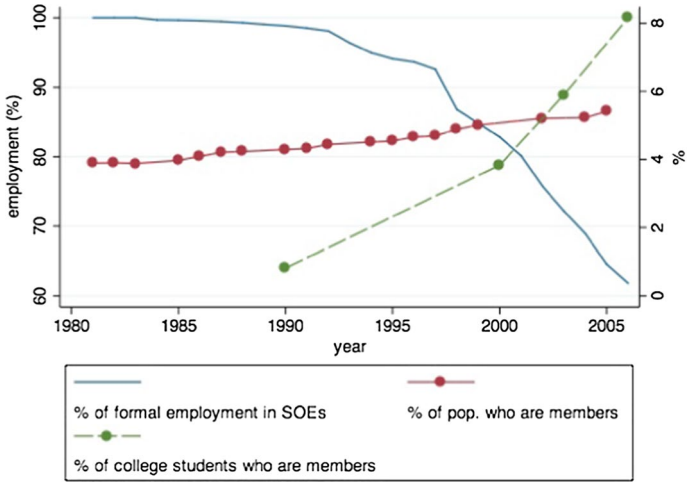

Fig. 1 Declining state sector versus increasing college party members. The source of employment data is from China Statistical Yearbook 2005. The source of data on Communist Party membership is the official statistics published by the Party Organization Department

2 Party recruitment in a new era

Before the market-oriented economic reforms, the selection of the CCP membership traditionally served two roles for the party-state: first, providing a pool of candidates for further selection into the core ruling class; second, penetrating and controlling every aspect of social life. Party activists and members all worked for the government and received state patronage (Walder 1995; Bian et al. 2001). Huntington (1970) argued that a consolidated single party regime has a tendency to move toward a technocracy. In China, the focus of screening criteria gradually shifted from loyalty ("redness") to ability ("expertise"), as measured by the improving level of education of the party members in China (Li and Walder 2001).

Deep market-oriented economic reforms have posed a new challenge for the party organization. The share of formal employment in state owned enterprises (SOEs) declined from more than 90% in the mid-1990s to 60% in the 2000s (see Fig. 1). The vast and still expanding private sector did not have any organized party presence (Shambaugh 2008), making it much more difficult for the party to identify, track, and recruit activists and members. The party thus went down the road of becoming "a labor union of bureaucrats," as observers of Russian politics sometimes sarcastically refer to United Russia (Reuter and Remington 2009). However, United Russia and other ruling parties in other electoral authoritarian regimes, can take advantage of nominally democratic institutions (i.e., elections and legislatures) to build mass support and co-opt the social elites. Without these institutions, the CCP has to rely on its party organization.

The party organization has to overcome ideological barriers before it can take on these new roles of recruiting in the private sector in addition to its traditional roles. As a revolutionary party, the CCP traditionally values advanced members of the working class, a legacy that dates back to the Communist Manifesto. The 1990s saw a great deal of confusion or even conflict among the ruling elites about the organizational direction of the party (Dickson 2000). These debates were not settled until Jiang Zemin, then the party boss,

published his "Three Represents" theory in July 2001. This theory claims that the party should stand for the new economic elites as much as or even more than the working class (Nathan 2003).

To generate mass support in the private sector, the party places a priority on recruiting members from the white-collar middle class. Although many scholars consider that the "Three Represents" theory is designed to open the door of the party to capitalists (Shambaugh 2008; Dickson 2007; Li et al. 2008, etc), recruiting capitalists is not the policy priority with regard to mass support. The Hu and Wen administration carefully distanced themselves away from the capitalist class in the public's eyes (Dickson 2007). The party has never published official statistics about capitalist party members, and this remains a sensitive political issue. In contrast, the party continues to emphasize its successful recruitment among educated young people in official reports every year.

It is difficult for the party to establish a patronage–client relationship with young middle class individuals who work predominantly in the private sector because their livelihood no longer depends on the regime in the post-economic reform period. To overcome this problem, the CCP has shifted its recruitment efforts to college campuses, recognizing that the key to recruitment is timing. Educated young people are more dependent on the regime before they find jobs. Because the graduate job market is highly competitive (Li and Zhang 2010), almost every student values a potential job in the government sector, even though high-ability students are more likely to enter high-paying foreign firms. With all else being equal, party membership enhances the probability of finding a job in the government sector. This potential benefit provides the party with some leverage over college students. As shown in Fig. 1, the share of party members who are still college students has grown at a much faster rate than membership rates in the general population, particularly after the publication of the "Three Represents" theory.

The increase in college student party members has facilitated a dramatic growth in the party's formal presence in the private sector. When these party members enter private firms, it becomes easier for the party to organize party cells in private firms, which further facilitates more party activities. In a recent work, Thornton (2012, 2013) illustrates innovative methods that the local party branches adopt to develop party activities in the private sector in Shanghai.

For example, PwC, the largest international accounting firm in the world, has a party branch in its Shanghai office,[3] with more than 800 members organized into 7 sub-branches. Party members constitute about one-quarter of the labor force in this office, and most members joined the party while in college. The PwC party branch helps the party to continuously track party members in a firm with a very high rate of turnover, to conduct basic party activities, to organize charitable activities in the name of the PwC party branch, and to publicly demonstrate support to the regime, again in the name of the PwC or the PwC party branch, including at important public events such as the Shanghai World Expo in 2010. All services have been framed as duties, charitable activities, or a valuable contribution to society. From a purely financial perspective, the maintenance of such a party branch is highly sustainable, as the party collects membership dues but does not pay anyone for their services to the party. In the absence of meaningful political competitors, such an extensive membership network is sufficient to build a manipulated image of mass support for the party. None of these outcomes would be possible without college party recruitment.

[3] The case materials discussed here come from *Let Pocket Party Members Find Their Home, Lao Dong Daily*, July 2nd, 2010, by Chengai Wang. http://news.xinmin.cn/rollnews/2010/07/02/5540970.html.

3 Conceptual framework

We will first set up a general framework of authoritarian political selection, discuss comparative statics related to economic reforms, and then apply this framework to understand CCP college recruitment. Our framework fundamentally differs from existing models of authoritarian regimes (e.g., Wintrobe 1998; Acemoglu and Robinson 2000, 2001; De Mesquita et al. 2003; Egorov and Sonin 2011; Svolik 2012) in that it explicitly includes the role of loyalty screening in forming an authoritarian ruling class.[4] A technical difference is that we resort to basic demand and supply analysis instead of explicitly using decision-theoretic or game-theoretic models.

We treat the party as a monopolist of party membership. The party charges a "price" for membership, called the joining cost c, which refers to the time-intensive requirements imposed on candidates. By setting various requirements and establishing indoctrination procedures, the party screens for its members' unobservable loyalty (or ideological alignment). Authoritarian parties are similar in this way to the religious cults that use time-intensive activities such as communal worship, Sabbath observance and dietary restrictions to extract signals of commitment from the potential believers (Iannaccone 1992; Berman 2000).

On one hand, individuals demand party membership because of the material benefits attached to that membership. On the other hand, given the benefits and costs of membership, an individual's marginal willingness to join is positively correlated with his/her loyalty. The demand curve for membership is downward sloping because a higher cost tends to reduce the demand for membership. Given the joining cost c, only those whose marginal willingness to join is higher than c would join the party. Therefore, setting a higher c allows the party to screen for members with greater loyalty. For a given cost set by the party and a given demand curve for membership, the equilibrium level of party membership can be readily identified. Figure 2 illustrates the idea of the above discussion, where m is the equilibrium level of party membership.

The major changes that occurred in the recruitment process during the economic reforms can be understood using the above framework. Before the economic reforms, membership was highly restrictive, and new members, who had typically worked for the party for many years, had to go through a demanding vetting process (very high c) to fully demonstrate their commitment to the party's cause. After the reforms, membership has become a more common status, the recruiting process has been dramatically simplified (lower c), and many students who have hardly worked for the party are now accepted into the party.

These political changes have been brought about by a rational political monopolist in response to deep economic reforms. When reform began in 1978, literally every employed adult worked for the state in one way or another. Party membership was almost indispensable for an individual's desire to receive more economic benefit. Thus, the demand for membership was inelastic and was equally inelastic for all individuals.

[4] Our paper is in spirit closest to Egorov and Sonin (2011), who discuss tradeoff between loyalty and competence a dictator faces in selecting a first minister. However, their model treats loyalty and competence as "two sides of the same token" in equilibrium. Because disloyalty arises endogenously in their model, there is no way of preventing disloyalty unless the dictator opts for a less able agent. In our framework, loyalty and competence are not directly correlated, neither is loyalty observable or verifiable. It is possible to screen loyalty early on. Our approach complements the theoretical approach in Egorov and Sonin (2011).

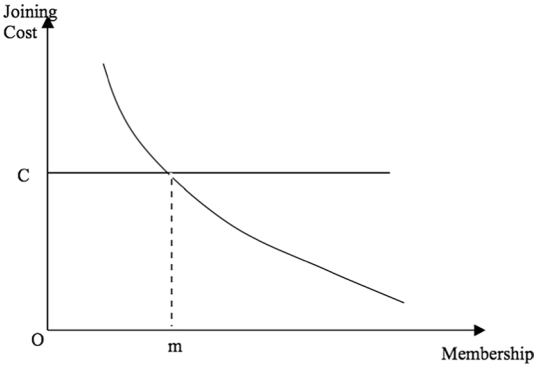

Fig. 2 Illustration of the conceptual framework

Not surprisingly, the optimal "price" of membership was set very high. Moreover, college-educated workers and illiterate workers were required to go through the same vetting process to become a party member. In the context of Czechoslovakia, Grzymala-Busse (2002) argued that educated workers were in an even weaker bargaining position compared to blue-collar workers because they could be easily punished (i.e., they could be sent to blue-collar positions).

A crucial consequence of the economic reforms is the development of a vibrant private sector, which provides an alternative channel through which ordinary people can improve their material lives. As a result, the demand for membership became increasingly elastic, and the demand curve became flatter and shifted to the left. If the party continues to set a very high screening cost, the number of people who are willing to "purchase" membership will become unacceptably small to the party. The party thus has to set a much lower price, i.e., lower requirements for work experience, a shorter application process, fewer required "thought reports", and less emphasis on ideological indoctrination.

The economic reforms also increased income inequality, with highly educated people gaining an increasingly higher market value (e.g., Knight and Song 2003; Appleton et al. 2009). Educated individuals' incentives to join the party became even more elastic than those of the less educated people. The party's legitimacy and ruling capacity would be dramatically undermined if only less educated people were willing to join the party. To attract educated people after the economic reforms, the party has had to set even lower screening costs for these people, making ability-based price discrimination a politically sound strategy during times of deep economic reform.

College recruitment during times of economic reform is only one special case of the above general situation. From an individual student's perspective, party membership is valuable primarily because it carries the enhanced prospect of finding a job in the government sector (evidence in Sect. 5.1 further supports this argument). Because the pay in the government sector is more compressed than that in the private sector (Chen et al. 2005), the possible job opportunities for a college graduate can be ranked as follows, from the top down: high-pay private-sector job (usually foreign firm job), government-sector job, and low-pay private-sector job. Most students eventually work in the private sector. Given the abundant availability of outside options, college students have a very high elasticity of joining the party. For the best students, their elasticity is even higher because they aim for the high-pay foreign firms and are willing to join the party only

because they want to hedge the adverse risks of not being able to find the best jobs in the market. Thus, it becomes necessary for the party to reduce the screening cost for college students and to set an even lower cost for the best students.

A usual practice to manipulate the joining cost is through manipulating the process of vetting a candidate. After someone applies to join the Chinese Communist Party, the local party branch will rarely decide whether to accept or reject the application immediately. There will always be a period of observation, during which the applicants are supposed to participate in events that are organized by the party or provide extra service to the party. There is never a rule that sets an upper bound for how long a local party branch should observe a candidate. Neither is there a rule that specifies how a candidate should be observed. In fact, an applicant is either accepted at certain point of time or remains under observation, at the discretion of the local party branch. No applicant will ever be rejected. The joining cost is higher if there are more requirements during observation or if the length of observation is longer.

The local party branch usually sets less requirements and a shorter observation period for high-ability students. The length of observation is a particularly easy manipulation tool. It is well known that students with extraordinary academic ability may join the party as early as in high school in the reform period. Other students *have to* wait at least until they enter college. At college, students with good grades may join the party as early as in the freshman year, whereas less extraordinary students may have to wait for more years.

4 Data

The data sources for this study are the administrative records for the graduating class of 2005 from two different Chinese universities. Although the data do not provide a representative sample of college students in China, the two universities are typical in many aspects. They are both national universities that admit students from across the country. One university is located in Shanghai, the most developed region in China, while the other is located in Chengdu, a less developed city in the western region. In 2005, the university in Shanghai was ranked among the top 15% of over 60 universities in Shanghai by the Project of Chinese Universities Ranking. The university in Chengdu is ranked lower than the one in Shanghai. While offering majors in most fields, the majors in both universities are overrepresented by economics, finance, and business, which is well suited to our research question because students studying economics-related fields face a relatively unconstrained choice between the private and public sectors compared to students in majors such as the basic sciences. The results from these two universities corroborate each other. For clarity, we will only report the main results from the Shanghai sample in the text, with the Chengdu data included in the "Appendix".

The Shanghai data contain the students' College Entrance Tests (CET) scores, hometown, gender, ethnicity, political affiliation, their parents' political affiliation, the titles and grades of all courses taken in college, and job placement upon graduation. We also obtain their hometown characteristics such as GDP, population, and FDI in 2003 from *The China Municipality Statistics Yearbook (2004)*.

We use the CET scores to measure innate individual ability. A major advantage of this measure is that CET scores, unlike SAT scores, cannot be used as a signal of ability to potential employers because no official reports or transcripts are available to potential employers in China. Because the administration of the CET can differ across provinces,

we measure ability by the decile of CET score within a province in each university so that the scores can be compared across provinces. Similar methods were used by Han and Li (2009) and Li and Zhang (2010). The CET decile ranges between 0 and 10, with 0 assigned to the lowest score in a province and 10 to the highest score.

We measure the strength of private-sector opportunities in each municipality using the ratio of foreign direct investment (FDI) to total *GDP* in the municipality in 2003 because jobs in foreign firms usually offer the highest pay.[5]

Besides other courses, students are required by the Ministry of Education to take two mandatory brainwashing courses: *Introduction to Mao Zedong's Thoughts* and *Introduction to Deng Xiaoping's Theory*. These courses are administered in the same way as regular courses through the registrar's office rather than through the college party branch. The scores from these courses are not used in the evaluation of party member candidacy. Thus, students who want to join the party do not have to invest extra effort in these courses. These two courses are meant to indoctrinate the ideology that the party advocates. The more aligned that a student is with this ideology, the more likely that the student will obtain a higher score in these brainwashing courses. Therefore, this information allows us to measure a student's loyalty or natural alignment with the party's ideology.

Table 1 presents the descriptive statistics of variables from the Shanghai sample. The graduating class of 2005 consists of a total of 2016 students. Excluding students from Hong Kong, Taiwan, Macau, Xinjiang, Tibet, and those where information is missing, the total number of observations is 1734. Out of these 1734 students, 279 were party members by the time of graduation. Of these, 15 had joined the party in high school.[6] The remaining 264 members joined the party in college, accounting for approximately 15% of the total students.[7]

Columns (1) and (2) in Table 1 show the summary statistics for the non-members and members, respectively. Column (3) presents the difference between these two groups. Approximately 35.1% of the non-members are male, while this proportion is slightly higher among members. There are more female students than male students in this university because women tend to choose majors such as accounting, business, and economics in China. Of the non-members, 44.3% have at least one party-member parent. The parents of party members are more likely to be party members themselves: approximately 51.9% of party members have party-member parents. The non-members and members tend to have different placements after graduation. Approximately 12.7% of the non-members continue their studies in graduate school, while this proportion is 21.4% for party members. The party members are also more likely to enter the government sector, with 8.8% of members finding government employment compared with only 4.2% of the non-members. The proportion of party members who joined foreign firms is approximately 24.8%, which is not significantly different from the proportion for the non-members.

[5] The results are robust if the employment ratio of foreign firms to SOEs is used to measure the private-sector opportunities.

[6] In high schools party membership is almost always awarded to those with exceptional academic performance. Time-demanding screening is unrealistic because students are engaged in intensive preparation for CET. It is only in the 1990s that the party started to recruit members in high school. The timing itself is suggestive of the party's strategy to lower entry barrier for high-ability youth in a more liberalized economy.

[7] This proportion is higher than the national average (8%) for two reasons: first, the graduating class has more party members than other classes; second, the first-tier colleges are assigned a larger quota from the party.

Table 1 Descriptive statistics: the college in Shanghai

	Non-member (1)	Party member (2)	Difference (3)
Individual information			
Male	0.351	0.366	− 0.015
	(0.478)	(0.483)	(0.0323)
Parent being Party members	0.455	0.519	− 0.0639
	(0.498)	(0.501)	(0.0337)*
Minority	0.0348	0.0191	0.0158
	(0.183)	(0.137)	(0.0119)
Join Party in high school	0	0.0534	− 0.0534
	(0)	(0.225)	(0.00613)***
CET decile	4.98	5.11	− 0.127
	(2.95)	(2.92)	(0.199)
Average grade in college	79.9	82.2	− 2.28
	(5.17)	(4.03)	(0.338)***
Grades on Brainwashing courses	76.9	79.2	− 2.28
	(10.8)	(9.42)	(.239)***
Avg. English grades	77	77.6	− 0.618
	(7.54)	(6.75)	(0.515)
Job placement			
Graduate schools	0.127	0.214	− 0.087
	(0.333)	(0.411)	(0.0234)***
Government	0.0415	0.0878	− 0.0463
	(0.2)	(0.284)	(0.0145)**
Foreign firms	0.265	0.248	0.0165
	(0.441)	(0.433)	(0.0297)
Other firms	0.567	0.45	0.117
	(0.496)	(0.498)	(0.0335)**
Hometown information			
FDI/GDP	0.0573	0.0528	0.00452
	(0.0387)	(0.0374)	(0.0026)**
GDP per capita	23384	21159	2224
	(11534)	(11753)	(781)**
N	1455	279	

The data is from administrative records of the graduating class 2005 from a college in Shanghai. I exclude from the sample students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang

*Significant at 10% level; **5%; ***1%

Table 1 includes the interesting fact that the party members have slightly higher CET scores, higher average college grades and higher scores in the brainwashing courses. The relationship between academic performance and the chance of becoming a party member is not linear. Figure 3 shows the CET deciles of party members and non-members separately. A considerable number of party members rank low, suggesting that the party cares about more than ability in recruitment.

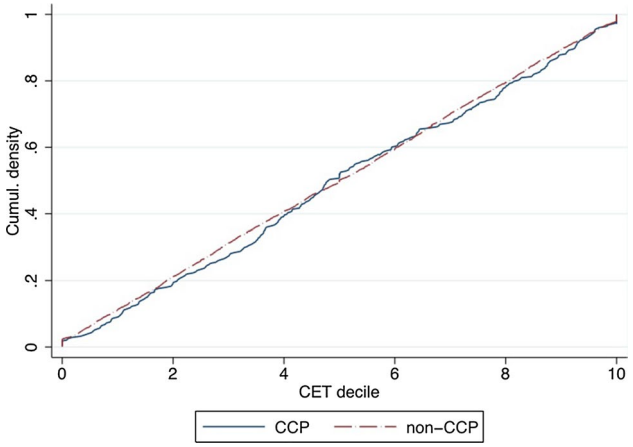

Fig. 3 The cumulative density function of CET deciles: Shanghai sample

Table 2 Balance checks: the Shanghai sample

	High-ability group (1)	Low-ability group (2)	Difference (3)
Male	0.359	0.349	0.00979
	(0.48)	(0.477)	(0.0239)
Parent being Party members	0.503	0.428	0.0749
	(0.5)	(0.495)	(0.0249)**
Minority	0.0324	0.0315	0.000892
	(0.177)	(0.175)	(0.00881)
FDI/GDP	0.0557	0.0578	− 0.00205
	(0.0371)	(0.04)	(0.00193)
GDP per capita	22974	23260	− 286
	(11574)	(11567)	(579)
N	877	857	

The data is from administrative records of the graduating class 2005 from a college in Shanghai. I exclude from the sample students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang

*Significant at 10% level; **5%; ***1%

We define those students in CET deciles (5, 10] as the high-ability group, while students in deciles [0, 5] are placed in the low-ability group. Table 2 presents the summary statistics of the individual and hometown characteristics for the high- and low-ability groups in columns (1) and (2), respectively, and the difference between the two groups in column (3). With the construction of the CET decile, the hometown characteristics of the two CET groups are remarkably similar, including GDP per capita and the FDI-to-GDP ratio. Those in the high-ability group are more likely to have a party-member parent.

5 Results

5.1 The value of party membership

What are the benefits associated with party membership? This subsection shows that party membership enhances an individual's chance of finding a job in the government sector. Nevertheless, high-ability party members are more likely to work in the high-paying private sector instead of materializing the potential benefit of party membership in the government sector.

We restrict the sample to those who did not continue graduate studies. Their jobs can be classified into three categories (in descending order of typical compensation level): jobs in large foreign firms, government jobs, and jobs in other firms. We use a multinomial logit model to analyze the determinants of getting a job in the government sector and foreign firms, treating finding a job in other firms as the reference group. The independent variables of interest include the indicator for party membership, the average grades in college, the CET deciles, and the proxy for hometown private-sector opportunities (FDI/GDP in 2003). We also include the interaction between the CET deciles and the FDI-to-GDP ratio ($CET * (FDI/GDP)$) to capture the potential difference in the effect of hometown private-sector development on job placement. The other covariates include the indicators for male, minority, parental party membership, and major.

Columns (1) and (2) in Table 3 show the estimated marginal effects on the likelihood of finding a job in the government sector and the likelihood of finding a job in a foreign firm, respectively. The first item to note is that party membership has no effect on the likelihood of entering a foreign firm [column (2)], while party members are more likely to enter the government sector. Interestingly, ability plays a different role in finding a job in a foreign firm compared to finding a job in the government sector. An increase in the CET decile increases the likelihood of entering a foreign firm and lowers the likelihood of entering the government sector. College grades have no impact on the likelihood of entering the government sector. The fact that the best-performing students tend to enter foreign firms also suggests that jobs in foreign firms are the best job options.

Columns (3) and (4) in Table 3 present the results of the multinomial model including the provincial dummy variables. The results remain robust. We further examine the effect of party membership on job placement by excluding the measures of ability and academic performance such as CET deciles and college grades from the regression. The results are reported in columns (5) and (6). Party membership has a statistically significant and positive effect on finding a job in a foreign firm without controlling for CET deciles and college grades. This result confirms our observation that many high-ability party members enter the high-paying private sector rather than choosing a political career path in the government.

Aside from measures of ability, the hometown economic conditions also affect the type of job that an individual student can find. As shown in columns (1) and (2) in Table 3, a 0.01 increase in the FDI-to-GDP ratio (FDI/GDP) is associated with a 1.7 percentage points increase in the likelihood of finding a job in a foreign firm. However, this ratio has no effect on the likelihood of entering the government sector. Hometown private-sector development matters because the *hukou* system (the household registration system, or a class system of residency permits) segregates the labor market in China. *Hukou* is linked with many welfare and public services such as inexpensive health care and education. Only a small fraction of employers can provide local *hukou* to employees who move

Table 3 Determinants of job placement: three-choice model

	Multinomial models					
	Model I		Model II		Model III	
	Govt.	Foreign	Govt.	Foreign	Govt.	Foreign
	(1)	(2)	(3)	(4)	(5)	(6)
Party member	0.035***	− 0.005	0.006***	0.010	0.006***	0.063**
	(0.011)	(0.027)	(0.002)	(0.031)	(0.002)	(0.029)
CET decile	− 0.008**	0.017**	− 0.001**	0.017**		
	(0.003)	(0.007)	(0.0005)	(0.008)		
FDI/GDP	0.138	1.088**	− 0.071*	0.509*	− 0.002	0.355
	(0.165)	(0.533)	(0.042)	(0.576)	(0.031)	(0.353)
CET decile * (FDI/GDP)	0.043	− 0.100	0.006	− 0.130		
	(0.027)	(0.100)	(0.007)	(0.123)		
Male	0.006	− 0.016	− 0.002	− 0.018	− 0.002	− 0.147***
	(0.013)	(0.022)	(0.002)	(0.022)	(0.002)	(0.026)
Parent Party members	0.029	0.023	0.002	0.045**	0.002	0.058***
	(0.010)	(0.025)	(0.002)	(0.022)	(0.002)	(0.019)
Minority	0.009	0.005	0.004	0.016	0.000	− 0.004
	(0.028)	(0.069)	(0.004)	(0.084)	(0.003)	(0.052)
Avg. college grade	0.015 ***	0.027***	0.001***	0.017***		
	(0.001)	(0.003)	(0.000)	(0.003)		
Avg. English college grade	− 0.005***	0.015***	0.001***	0.013***		
	(0.001)	(0.002)	(0.000)	(0.002)		
Provincial dummies	No	No	Yes	Yes	Yes	Yes
Pseudo-R^2	0.0760		0.1072		0.0661	
N of cases	1465	1465	1465	1465	1465	1465

The source of the data is the administrative records of the graduating class 2005 in a college in Shanghai. Students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample. I also exclude 269 students who entered graduate schools upon graduation. Marginal effects are reported. Marginal effects are calculated at the mean for continuous variables, and from 0 to 1 for discrete change of dummy variable. Robust standard errors, clustered at the municipality level, are reported in parentheses

*Significance at the 10% level; **5%; ***1%

from different locations. Graduates are likely to return to their *hukou* area (typically their parents' birthplace) to work. Consequently, students with similar abilities from different places will encounter different job opportunities, and these differences are beyond their direct control. In next subsection, we will use this information to design a test to show whether the party employs a discriminative recruitment strategy.

5.2 Evidence of a discriminative recruitment strategy

One particular difficulty in testing for a discriminative recruitment strategy is the lack of data on the requirements (i.e., joining cost c) imposed by the party. To overcome this difficulty, we design a test that explores the difference in joining rates across ability groups. Simply comparing the joining rates between the high- and low-ability groups cannot

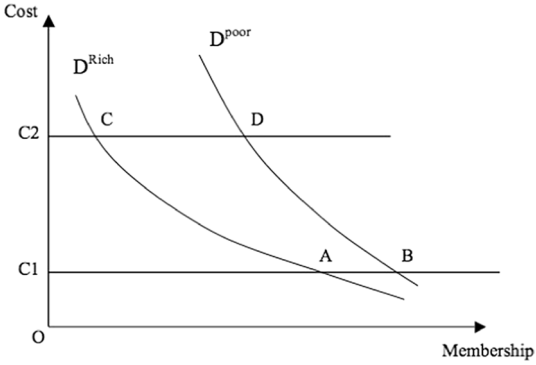

Fig. 4 Illustration of empirical strategy. *Note* D^{Rich} and D^{Poor} respectively stand for the membership demand of individuals from regions with a more- and less-developed private sector

distinguish the party's supply from individual demand because ability correlates with individual characteristics such as outside options, ideological bias, etc. Therefore, our test exploits an exogenous variation in individual private-sector job opportunities that is arguably orthogonal to the individual's ability—hometown private-sector development.

Consider the demand curve for party membership in a Chinese college. An exogenous improvement in private-sector opportunities is likely to weaken the incentive to "purchase" membership at any cost level and will therefore shift the demand curve to the left. In Fig. 4, we use D^{bad} to label the demand curve of students with fewer good private-sector opportunities and D^{good} to label the demand curve for students with abundant good private-sector opportunities. D^{good} is flatter than D^{bad} because the demand of the students with good private-sector opportunities (D^{good}) tends to be more elastic with respect to the joining cost than the demand of students with bad private-sector opportunities (D^{bad}).

If the cost is low enough (shown as c_1 in Fig. 4), people are willing to join regardless of their private-sector opportunities, as shown by the fact that points A and B in Fig. 4 corresponding to the joining rates for students with good and bad private-sector opportunities, respectively, are very close. If the joining cost is a serious concern ($c_2 > c_1$), individuals will be less likely to join the party if they have better expected private-sector opportunities (the corresponding points C and D in Fig. 4 are far from each other).

If the party does not practice price discrimination, i.e., if the party imposes the same joining cost c_2 for high-ability and low-ability students, an improvement in private-sector opportunities would have the same impact on the high- and low-ability groups. Figure 4 shows that an improvement in private-sector opportunities reduces the joining rates from point D to point C for both groups. If the party instead imposes a low cost (c_1) for the high-ability group and a high-cost c_2 for the low-ability group, the improvement in private-sector opportunities for the high-ability group would have a smaller impact on the joining rate of these individuals (distance $|AB|$ in Fig. 4) than on the joining rate of the low-ability group ($|CD|$ in Fig. 4). Therefore, we construct our test based on this logic.

The test that we adopted is similar to the difference-in-difference (DID) model without the time dimension (Meyer 1995).[8] We inferred the difference in joining costs from the response of the joining rate to hometown private-sector opportunities in each ability group, as these opportunities are uncorrelated with individual ability. In other words, if the joining costs were lower for the high-ability group than for the low-ability group,

[8] Unlike the usual DID tests, our DID model is applied to cross-sectional data. Our test resembles Madrian's (1994) DID test for the presence of job-lock effects of employer-provided health insurance.

the response of the joining rate to good private-sector opportunities would be lower for the high-ability group than for the low-ability group.

Empirically, an individual's private-sector opportunity is often correlated with his/her ability. However, the *hukou* system that segregates the labor market in China creates a variation in municipal private-sector opportunities that is orthogonal to individual ability. To the extent that innate ability is a natural lottery, we expect that the distribution of innate ability will not vary significantly across the different regions in China because of rigid migration restrictions. Therefore, hometown private-sector job opportunities can be considered orthogonal to student ability. Thus we use the hometown municipal FDI-to-GDP ratio as a proxy for good private-sector job opportunities.

Formally speaking, the test is equivalent to testing $\alpha_3 < 0$ in the following regression

$$I(Party\ member_{ir}) = \alpha_0 + \alpha_1 \cdot low\_ability_{ir} + \alpha_2 \cdot Z_r + \alpha_3 \cdot (low\_ability_{ir} \times Z_r) + X_i\beta + \eta_{it} \tag{1}$$

where $I(Party\ member_{ir})$ is the indicator of party membership; $low\_ability_{ir}$ is the indicator that individual i from municipality r belongs to the low-ability group; Z_r is the hometown municipal FDI-to-GDP ratio; and X_i is the vector of covariates.

Note that this test assumes that the effect of hometown private-sector job opportunities does not differ significantly between high-ability and low-ability groups. Otherwise, α_3 in Eq. (1) would capture the difference in the impact of hometown private-sector job opportunities between ability groups. This assumption is likely to hold in our setting. Because the sample includes students from the same college, the labor market will perceive only small differences in ability. Graduates from one college are unlikely to dominate the labor market. The labor market conditions and the rank of the college play a predominant role in determining the job opportunities for the individual students. The results from the job placement equation (columns (1)–(4) in Table 3) also support this assumption: the coefficients for the interaction between the CET decile and the FDI-to-GDP ratio ($CET * (FDI/GDP)$) are statistically insignificant for entering either a foreign firm or the government sector.

Table 4 presents the results for the determinant of party members. Columns (1) and (2) list the estimates for the high- and low-ability groups, respectively. The variables of interest for the estimation by group are the CET deciles and the proxy for hometown private-sector opportunities (FDI/GDP). A 1-decile increase in the CET score increases the joining rate by 2 percentage points for the high-ability group [column (1)], while the effect is statistically insignificant for the low-ability group [column (2)]. The coefficient of the variable FDI/GDP is statistically insignificant for the high-ability group [column (1)], showing that for this group, the hometown labor market conditions have little effect on the joining decision. In contrast, a 0.01 increase in the FDI-to-GDP ratio (approximately 1/5 of the standard deviation) reduces the joining rate in the low-ability group by 0.56 percentage points. The difference in the sensitivity of the joining rate to private-sector opportunities between the high- and low-ability groups suggests that the joining cost is so high for the low-ability group that they do not bother to join if they have better private-sector opportunities, while the cost does not appear to matter to the high-ability group.

The effect of this discriminative joining cost is more clearly observed by using the full sample to estimate Eq. (1). Column (3) in Table 4 reports the estimation result. The coefficients of the interaction term Low-ability * (FDI/GDP) show that increasing the FDI/GDP ratio by 0.01 reduces the membership rate by approximately 0.9 percentage points for those in the low-ability group relative to those in the high-ability group. Column (4) shows that the results are robust if the municipality fixed effects are included.

Table 4 Determinants of Communist Party membership: the Shanghai sample

	Dept. var: *I*(*Party member*)					
	High ability	Low ability	All sample			
	(1)	(2)	(3)	(4)	(5)	(6)
CET decile	0.021**	0.014			0.000	0.000
	(0.010)	(0.009)			(0.006)	(0.006)
FDI/GDP	0.498	− 0.563*	0.376			
	(0.342)	(0.314)	(0.359)			
Male	0.023	− 0.014	− 0.003	0.002	0.001	− 0.054
	(0.021)	(0.024)	(0.019)	(0.021)	(0.021)	(0.037)
Parent Party members	0.056**	0.046**	0.048**	0.044**	0.046**	0.054
	(0.018)	(0.021)	(0.018)	(0.020)	(0.020)	(0.035)
Minority	− 0.063	− 0.097*	− 0.073**	− 0.100**	− 0.099**	− 0.104**
	(0.049)	(0.057)	(0.037)	(0.047)	(0.047)	(0.047)
Low-ability * (FDI/GDP)			− 0.931**	− 1.054**		
			(0.453)	(0.502)		
Low-ability group			0.030	0.035		
			(0.032)	(0.036)		
CET decile * (FDI/GDP)					0.183**	0.194**
					(0.085)	(0.085)
Male * (FDI/GDP)						0.960*
						(0.556)
I(Parent members) * (FDI/GDP)						− 0.130
						(0.503)
Major dummies	Yes	Yes	Yes	Yes	Yes	Yes
Municipality dummies	No	No	No	Yes	Yes	Yes
R^2	0.069	0.062	0.034	0.140	0.144	0.146
N	867	851	1718	1718	1718	1718

The source of the data is the administrative records of the graduating class 2005 in a college in Shanghai. Students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample. I also exclude 16 students who joined the Party in high school. Robust standard errors, clustered at the municipality level, are reported in parentheses

*Significance at the 10% level; **5%; ***1%

We also allow for more flexible functional forms by replacing the low-ability indicator with the CET decile [column (5)]. As shown by the coefficients of the interaction term [CET * (FDI/GDP)], a 1-decile decrease in the CET score on average offsets this negative effect of the FDI/GDP ratio on membership rates by 0.18 percentage points. That is, improving private-sector opportunities dramatically *reduces* the joining rate but at lower CET deciles. In column (6) of Table 4, we further include the interactions between the FDI/GDP ratio and all other control variables, such as the indicators for male and parents' party membership. The result remains robust. Notably, the coefficient for the interaction between the FDI/GDP ratio and the parents' party membership is statistically insignificant. This result rules out the concern that the party practices price discrimination based on family social or political status.

Overall, all the above results support the hypothesis that the party practices price discrimination in recruitment. We provide various robustness checks in Sect. 7 to show that the results are not driven by other alternative stories.

5.3 Evidence of party members' ideological bias

Given that the party screens for loyalty at all ability levels, we would expect members to be more ideologically aligned with the party than non-members. Moreover, if the party indeed imposes higher screening costs for the low-ability group and lower screening costs for the high-ability group, we would also expect that the difference in loyalty between members and non-members of the same ability level would be greater for low-ability members than for high-ability members.

We use the scores for the brainwashing courses to measure a student's natural alignment with the party's ideology. To eliminate the confounding effects of examination skills, etc., we use the scores from a sequence of four mandatory English courses as comparison because English courses are the only merit-based courses required of every student. We normalize the scores in each course so that scores can be compared across courses.[9]

To test the aforementioned prediction, we first use a difference-in-difference (DID) type model to investigate whether party members earn higher scores in these two brainwashing courses relative to the English courses than non-members in the same ability group. Next, we use the difference-in-difference-in-difference (DDD) type model to explore whether the gap in the relative score for the brainwashing courses between members and non-members declines with ability. The DID and DDD type regressions are specified as follows.

$$Score_{ic} = \beta_1 Member_i + \beta_2 Brainwash_c + \beta_3 Member_i \times Brainwash_c + X_i\Gamma^1 + \epsilon_{ic} \quad (2)$$

$$\begin{aligned} Score_{ic} =& \gamma_1 Member_i + \gamma_2 Brainwash_c + \gamma_3 High\_ability + \gamma_4 Member_i \times Brainwash_c \\ &+ \gamma_5 High\_ability_i \times Brainwash_c + \gamma_6 High\_ability_i \times Member_i \\ &+ \gamma_7 High\_ability_i \times Member_i \times Brainwash_c + X_i\Gamma^2 + \epsilon_{ic} \end{aligned} \quad (3)$$

where $Score_{ic}$ is the standardized score of student i in course c; $Member_i$ is an indicator for party membership; $Brainwash_c$ is an indicator that course c is a brainwashing course; $High\_ability_i$ is an indicator that student i belongs to the high-ability group; X_i is a vector of controls including dummy variables for male, parental party membership, minority status, and municipality.

Table 5 presents the results of this analysis. Columns (1) and (2) show the estimation results of Equation (2) for the high-ability and low-ability groups, respectively. The variable of interest is the interaction between the party membership dummy and the brainwashing course dummy ($Member \times Brainwash$). Column (1) shows that compared to their scores in English courses, high-ability party members' scores in the brainwashing courses are 0.153 standard deviations higher than the scores of non-members in the same ability group. Column (2) shows that the low-ability party members' scores in brainwashing courses relative to scores in English courses are 0.253 standard deviations higher than those of non-members in the same group. Both coefficients are significant at

[9] By normalizing the scores, we subtract the mean score of each course from individual scores and divide it by the standard deviation of the course score.

Table 5 Do party members score higher in brainwashing courses

	Outcome Var: $NormalizedScore_{ic}$			
	Low-ability	High-ability	Whole sample	
	(1)	(2)	(3)	(4)
Brainwashing course	− 0.041	− 0.053	− 0.054	− 0.049
	(0.127)	(0.186)	(0.183)	(0.045)
Party member	0.245***	0.192**	0.195**	0.124**
	(0.055)	(0.070)	(0.069)	(0.060)
Member × Brainwashing	0.153**	0.253**	0.260**	0.368***
	(0.063)	(0.110)	(0.108)	(0.108)
High-ability			0.228***	
			(0.030)	
High-ability × Brainwash			0.014	
			(0.070)	
Party-member × High-ability			0.046	
			(0.069)	
Party-member × High-ability × Brainwash			− 0.099	
			(0.125)	
CET decile				0.045***
				(0.004)
Brainwash × CET decile				0.000
				(0.008)
Member × CET decile				0.016*
				(0.010)
Member × Brainwash × CET decile				− 0.031*
				(0.018)
R^2	0.200	0.200	0.187	0.192
N	5087	4776	9863	9863

The source of the data is the administrative records of the graduating class 2005 from a college in Shanghai. Scores for students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample. I also drop observations with missing scores. The dependent variable is course scores standardized by course. All the columns also control for gender, ethnicity, parents' party membership, and municipality fixed effects. Robust standard errors, clustered at the municipality level, are reported in parentheses

*Significance at the 10% level; **5%; ***1%

the 5% level. These results indicate that party members are more ideologically aligned with the party than the non-members in both ability groups.

Next, we pool the sample of high- and low-ability groups together to estimate Eq. (3). Column (3) in Table 5 shows the estimates. The coefficient of the interaction *Member* × *Brainwash* confirms the result in column (1): for the low-ability group, the party members' scores in brainwashing courses are approximately 0.260 standard deviations greater than those of non-members, compared to their scores in English courses. The coefficient for the interaction between the high-ability dummy and the brainwashing course dummy (*High_ability* × *Brainwash*) is statistically insignificant, with a magnitude close to 0. This result suggests that high-ability students do not tend to hold the party's

ideology to a greater degree than low-ability students. Furthermore, the coefficient of the triple interaction term $Member \times High\_ability \times Brainwash$ is negative. Although it is statistically insignificant, this coefficient shows that high-ability party members, similarly to other high-ability students, are not more aligned in terms of their ideology with the party. These members actually tend to be even less ideologically aligned than their low-ability counterparts. The statistical insignificance is likely to arise from the fact that the power of the test is small when we separate the students into two ability groups.

We further treat ability as continuous and replace the high-ability dummy with the CET decile in Eq. (3). The result is presented in column (4) of Table 5. The coefficient of $Member \times Brainwash$ shows that compared to the scores in English courses, party members' scores in brainwashing courses within the bottom CET decile are approximately 0.368 standard deviations higher than corresponding non-members. However, this gap shrinks by 0.031 standard deviations when the CET score increases by 1 decile, as shown by the coefficient of the triple interaction term $Member \times Brainwash \times CET$. This coefficient is significant at the 10% level. This finding is supportive of the prediction that the gap in loyalty between members and non-members shrinks as the ability level increases.

In summary, the above results provide evidence of the ideological composition of party members resulting from the party's price discriminative recruitment strategy. Compared to non-members, party members are more ideologically aligned with the party at the same ability level. Low-ability members are more ideologically aligned with the party than their high-ability counterparts, as implied by the party's price discriminative recruitment strategy.

6 Robustness checks: Are the results driven by individual demand?

Our findings in Sects. 5.1 and 5.3 only serve for descriptive purpose. The main findings of the paper lie in Sect. 5.2. Concerns could arise that our main results are driven by individual demand-side factors rather than the party's recruitment strategy. However, our findings do not support a demand-side explanation.

The first type of demand-side factors is related to the material benefits associated with party membership. One possibility is that high-ability students are attracted to party membership by the potential economic benefits associated with membership in the private sector, or that membership is an important complement to other activities in the private sector.[10] In Sect. 5.1, we show that party membership is valued more in the government sector than in the private sector (Table 3). Moreover, our result on the determinants of party membership shows that joining rates tend to decrease as hometown private-sector opportunity improves, which directly contradicts the hypothesis that membership carries greater benefits in the private sector.

A similar alternative hypothesis is that the high-ability students in wealthy regions are more willing to work in the government sector and are therefore more likely to join the party. This hypothesis is also inconsistent with the main effects of private-sector opportunity in our findings. Columns (1), (3) and (5) in Table 3 show that the improvement of private-sector opportunity in general tends to *reduce* the likelihood of entering the

[10] Siegel (2007) illustrates this type of complementarity between political networks and across-border alliances in South Korean companies.

Table 6 The determinants of job placement of students from coastal regions

	Multinomial models			
	Model I		Model II	
	Govt.	Foreign	Govt.	Foreign
	(1)	(2)	(3)	(4)
Party member	0.065***	− 0.037	0.058**	− 0.026
	(0.018)	(0.025)	(0.020)	(0.027)
CET decile	− 0.010**	0.038**	− 0.010**	0.045*
	(0.005)	(0.019)	(0.004)	(0.023)
FDI/GDP	− 0.571	1.116	− 0.765**	1.455
	(0.363)	(0.812)	(0.335)	(1.219)
CET decile * (FDI/GDP)	0.061	− 0.271	0.051	− 0.355
	(0.051)	(0.233)	(0.046)	(0.287)
Male	− 0.005	− 0.044*	− 0.004	− 0.037
	(0.009)	(0.026)	(0.011)	(0.025)
Parent Party members	0.005	0.058**	0.002	0.063***
	(0.010)	(0.018)	(0.009)	(0.017)
Minority	− 0.059***	− 0.030	− 0.058***	− 0.038
	(0.009)	(0.133)	(0.005)	(0.124)
Avg. grade	− 0.000	0.030***	0.001	0.030***
	(0.001)	(0.003)	(0.001)	(0.003)
Pseudo R^2	0.0710		0.0783	
N	920		920	

The source of the data is the administrative records of the graduating class 2005 in a college in Shanghai. The sample is restricted to those whose hometown is in the Eastern Coastal Region. I also exclude those who entered graduate schools. Marginal effects are reported. Marginal effects are calculated at the mean for continuous variables, and from 0 to 1 for discrete change of dummy variable. Robust standard errors, clustered at the municipality level, are reported in parentheses

*Significance at the 10% level; **5%; ***1%

government. Table 4 shows that improving private-sector opportunity also tends to reduce membership rates. To rule out this concern, we further restrict the sample to students from the Eastern Coastal Region where the economy is better developed and examine the determinants of job placement using this subsample. Table 6 presents the results of the multinomial model. The pattern is similar to that in Table 3 where the entire sample is used. Again, an improvement in private-sector opportunity tends to reduce the likelihood of entering the government. Moreover, high-ability students are also more likely to enter foreign firms. All of these findings show that the hypothesis that high-ability students are more willing to enter the government in rich areas is false.

The second type of demand-side factors are related to the inherent difference between the high- and low-ability groups. One concern could be that high-ability individuals are so efficient in accomplishing the tasks assigned by the party that the cost is negligible to them. If this is the case, then private-sector opportunity would have little effect on their decision to join the party. However, in screening for loyalty, the party usually imposes requirements that are intended to demand time rather than skills. These requirements

include mandatory courses in party schools, "political performance," such as active participation in the brainwashing events organized by the party branch, and regular reports that demonstrate whether the individual has learned the assigned brainwashing materials. These requirements are unlikely to be significantly less costly for the high-ability group. Moreover, the opportunity cost is likely to be higher for high-ability individuals because they are more productive in other profitable activities such as part-time jobs,[11] studying for scholarships, or preparing to study abroad. Evidence from brainwashing courses also shows that there is no significant difference in brainwashing course scores between high-ability and low-ability students (Table 5).

In summary, other demand-side rationales cannot consistently explain the findings on the determinants of job placement, party membership, and ideological composition.

7 Conclusions

This paper provides micro-level evidence of political selection in the context of Chinese Communist Party college recruitment. We discover that autocracies can minimize the challenge of recruiting a significant number of educated elites by actively screening for unobservable loyalty conditional on observed technical skills. The aim of this process is to recruit the "cream" (i.e., regime loyalists) off the top of each distinct social group.

While this study has several limitations, including the lack of a direct measure of screening costs and its use of a relatively specialized sample, it nevertheless provides a number of useful implications.

First, the party uses discriminative screening strategies to select candidates with a broader range of ideologies than were recruited in the past. This strategy moves the median ideological position of the party closer to the median ideological position in the general population, making the ruling party more representative of the population despite the absence of Downsian competitive elections. In other words, an authoritarian selection method can achieve some degree of representativeness, a feature that is believed to be only associated with democratic selection methods, as long as the ruling party has to compete for talents with the private sector. To what extent this claim is generally true merits more research in the future.

Second, true convergence to the ideological views of the median voter is not expected to occur. Because the party screens for loyalty at each ability level, on average, the party members still appear to be more ideologically oriented than the general population. As the party performs screening from rank and file members all the way to the top of the leadership structure, the ideological bias should be greater at the top. Landry et al. (2018) demonstrate that performance-based promotion is more common at lower levels of the Chinese party-state. The promotion of upper-level leaders is a lot more political. This process also provides a rationale for Besley et al.'s (2011) finding that autocracies tend to have less educated national leaders than democracies.

Third, the internal dispersion of ideology may result from political selection rather than simply from factional politics. The differences in preferences between hard-liners and soft-liners could be endogenous, conscientious party strategies to help the regime survive.

[11] A typical part-time job is to tutor primary or high school children. Students with high CET scores are preferred by parents of tutees and have better chances to find such jobs.

Finally, screening as a method of political selection may occur in democratic regimes as well. A large number of political positions are not selected by voters in democratic regimes, with the U.S. President's plum book as a good example. Party activist recruitment is another example (Mattozzi and Merlo 2007). In both cases, partisan loyalty will be valued. Whether democratic or undemocratic screening is conducted according to a common principle or not remains an open question.

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Appendix 1: Evidence on discriminative recruitment strategy using the Chengdu sample

Data description

The university in Chengdu exhibits a similar pattern as the university in Shanghai. Table 7 presents the descriptive statistics of the sample of the graduating class of 2005 from the university in Chengdu. There are 2248 students in this class in total. Approximately 13% of them joined the Party before graduation. Similar to the Shanghai sample, party members have slightly higher CET deciles than nonmembers. However, party memberships do not only go to high-ability students. Figure 5 shows the cumulative density functions of CET ranks for party members and non-members separately. We can observe that a large number of students with low CET deciles also joined the Party. There are a considerable number of party members at almost all the ability levels. This figure also suggests that the Party cares more about students' ability in recruitment.

Empirical results

To corroborate the results from the Shanghai sample, we re-estimate Equation (1) using the Chengdu sample. The results, presented in Table 8, exhibit similar patterns to those

Table 7 Descriptive statistics: the college in Chengdu

Variables	Non-members		Members	
	Mean	(SD)	Mean	(SD)
	(1)	(2)	(3)	(4)
Male	0.456	(0.498)	0.349	(0.477)
CET decile	5.20	(2.97)	5.34	(2.99)
N	1970		278	

The source of the data is the administrative records of the graduating class 2005 in a college in Chengdu. Students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample

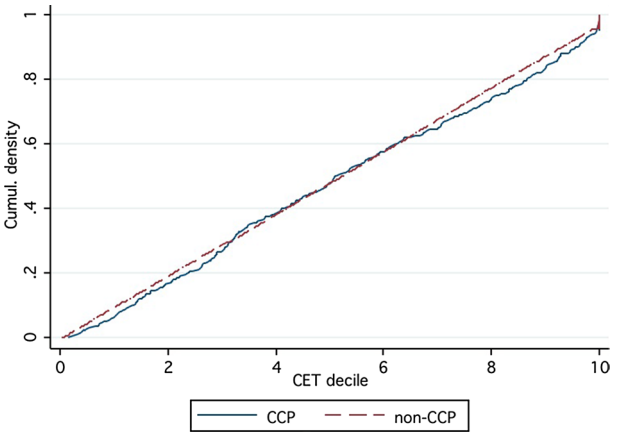

Fig. 5 The cumulative density function of CET deciles in Chengdu

Table 8 Determinants of party membership: the Chengdu sample

	Dept. var: *I*(*Party member*)		
	(1)	(2)	(3)
CET decile	0.012**		0.004
	(0.004)		(0.003)
FDI/GDP	0.411	0.407	− 0.551*
	(0.404)	(0.401)	(0.280)
Low-ability group	0.052*	− 0.009	
	(0.029)	(0.019)	
Low-ability group * (FDI/GDP)	− 0.643**	− 0.629**	
	(0.323)	(0.319)	
CET decile * (FDI/GDP)			0.125**
			(0.053)
Male	− 0.050**	− 0.050**	− 0.050**
	(0.016)	(0.016)	(0.016)
Major dummies	Yes	Yes	Yes
R^2	0.048	0.045	0.048
N	2248	2248	2248

The source of the data is the administrative records of the graduating class 2005 in a college in Chengdu. Students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample. Robust standard errors, clustered by municipality, are shown in parentheses.

*Significant at 10% level; **5%; ***1%

of the Shanghai sample. Column (1) shows that a higher CET decile is associated with higher membership rates. More importantly, similar to the results using the Shanghai sample, the coefficient for the interaction between the low-ability group dummy and the hometown ratio of FDI to GDP is significantly negative. Again, this result shows that an improvement in hometown private-sector opportunity is likely to reduce the joining rate of the low-ability group, while the impact is insignificant for the high-ability group. In column (2), the CET decile is not controlled for. The pattern remains robust. The

coefficient of the low-ability group dummy and the hometown ratio of FDI to GDP show that as the ratio of FDI/GDP increases by 0.1, the membership rate of the low-ability group would increase by 0.06. In column (3), I allow for more flexible functional forms by including the interaction between the ratio of FDI to GDP and the CET decile. As shown by the coefficients of the interaction term [CET * (FDI/GDP)], the improvement of private-sector opportunities reduces the joining rate only at the lower CET deciles.

Appendix 2: The four-choice model

In our paper, we excluded the students who pursue graduate studies when we analyze how party membership affects job choices. Here we include graduate studies as a potential job choice and re-do our analysis. We find that our main findings remain robust (Table 9).

Table 9 Determinants of placement: four-choice model

	Multinomial models					
	Model I			Model II		
	Govt.	Foreign	Graduate.	Govt.	Foreign	Graduate
	(1)	(2)	(3)	(4)	(5)	(6)
Party member	0.030***	− 0.014	0.018	0.004***	− 0.0003	0.014
	(0.010)	(0.028)	(0.019)	(0.001).	(0.030)	(0.022)
CET decile	− 0.007***	0.015**	− 0.002	− 0.001**	0.017**	-0.003
	(0.002)	(0.007)	(0.005)	(0.0004)	(0.008)	(0.004)
FDI/GDP	0.149	1.19**	− 0.849	− 0.053	0.592	-0.631*
	(0.154)	(0.500)	(0.589)	(0.033)	(0.569)	(0.337)
CET decile * (FDI/GDP)	0.036	− 0.095	0.025	0.006	− 0.125	0.033
	(0.025)	(0.096)	(0.078)	(0.005)	(0.119)	(0.060)
Male	− 0.005	− 0.021	0.026*	− 0.001	-0.027	0.029*
	(0.012)	(0.021)	(0.016)	(0.001)	(0.020)	(0.016)
Parent Party members	0.009	0.023	0.006	0.002	0.038**	0.0004
	(0.009)	(0.022)	(0.014)	(0.003)	(0.019)	(0.014)
Minority	0.008	0.017	− 0.024	0.002	0.037	− 0.030
	(0.025)	(0.063)	(0.037)	(0.003)	(0.075)	(0.037)
Avg. college grade	0.003**	0.006**	0.023***	0.0004***	0.008***	0.022***
	(0.001)	(0.003)	(0.004)	(0.0001)	(0.002)	(0.002)
Avg. English college grade	− 0.004***	0.014***	− 0.001	-0.0006***	0.012***	0.0004
	(0.001)	(0.002)	(0.002)	(0.003)	(0.000)	(0.002)
Provincial dummies	No	No	No	Yes	Yes	Yes
Pseudo-R^2	0.0760		0.1072		0.0661	
N of cases	1647	1647	1647	1647	1647	1647

The source of the data is the administrative records of the graduating class 2005 in a college in Shanghai. Students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample. Alternative-specific conditional multinomial logit model is used here. The marginal effects are reported. Marginal effects are calculated at the mean for continuous variables, and from 0 to 1 for discrete change of dummy variable. Robust standard errors, clustered at the municipality level, are reported in parentheses

*Significance at the 10% level; **5%; ***1%

Appendix 3: Reduced-form effects of $CET \times (FDI/GDP)$

We examine the reduced-form effects of the interaction between *CET* scores and the ratio (*FDI*/*GDP*) on job choices and brainwashing course grades by dropping the indicator to CCP membership from the regressions. Overall the interaction term $CET \times (FDI/GDP)$ does not affect students' job choices and brainwashing course scores in a significant way. The results are presented in the following subsections.

Job choice

Table 10 shows the result of estimating the alternative-specific conditional logit model. We exclude from the controls the indicator to CCP membership and college grades and focus on the effects of CET scores and the ratio of FDI to GDP, and their interaction term. Columns (1) and (2) show the marginal effects of those variables on the likelihood of entering government and enter foreign sector respectively. Individuals with higher CET deciles are more likely to enter foreign firms and less likely to enter government than the domestic

Table 10 Determinants of job placement: the three-choice model

	Multinomial models			
	Model I		Model II	
	Govt.	Foreign	Govt.	Foreign
	(1)	(2)	(3)	(4)
CET decile	− 0.008**	0.026***	− 0.001**	0.031***
	(0.003)	(0.007)	(0.0006)	(0.008)
FDI/GDP	− 0.008	1.087**	− 0.108*	1.10**
	(0.215)	(0.470)	(0.049)	(0.512)
CET decile * (FDI/GDP)	0.043	− 0.094	0.008	-0.181
	(0.035)	(0.098)	(0.007)	(0.126)
Male	− 0.004	− 0.015	-0.001	-0.141***
	(0.012)	(0.021)	(0.002)	(0.025)
Parent Party members	0.016	0.021	0.003	0.051***
	(0.011)	(0.025)	(0.002)	(0.020)
Minority	0.009	− 0.03	0.001	0.025
	(0.029)	(0.069)	(0.004)	(0.083)
Provincial dummies	No	No	Yes	Yes
N of cases	1465	1465	1465	1465

The source of the data is the administrative records of the graduating class 2005 in a college in Shanghai. Students from Hong Kong, Macau, Taiwan, Tibet and Xinjiang are excluded from the sample. I also exclude 269 students who entered graduate schools upon graduation. Marginal effects are reported. Marginal effects are calculated at the mean for continuous variables, and from 0 to 1 for discrete change of dummy variable. Robust standard errors, clustered at the municipality level, are reported in parentheses

*Significance at the 10% level; **5%; ***1%

private firms. Students from a city with a higher ratio of foreign investment to GDP are more likely to enter foreign firms than domestic private firms, but this ratio has no significant effect on the likelihood of entering government. We further include provincial dummies. The results are reported in Columns (3) and (4).

Brainwash course grades

In this subsection, we report the reduced-form effect of $CET \times (FDI/GDP)$ on college course grades. We exclude the indicator to CCP membership in the regression. Columns (1) and (2) in Table 11 report the estimates of the models without and with city dummies respectively. The statistically insignificant coefficients on the interaction terms $CET * (FDI/GDP)$ and $Brainwash * CET * (FDI/GDP)$ show that the interaction $CET \times FDI/GDP$ has little effect on both English and brainwashing course grades.

Table 11 The brainwashing courses

	Outcome var: College course scores	
	(1)	(2)
Brainwashing course	0.315**	0.308**
	(0.120)	(0.120)
CET decile	0.054***	0.057***
	(0.012)	(0.010)
FDI/GDP	4.367**	
	(1.705)	
CET * (FDI/GDP)	− 0.323	− 1.490
	(1.855)	(1.276)
Brainwash * CET	− 0.014	− 0.013
	(0.014)	(0.014)
Brainwash * (FDI/GDP)	− 5.246**	− 5.361**
	(2.468)	(2.493)
Brainwash * CET * (FDI/GDP)	1.318	1.394
	(2.103)	(2.138)
Male	− 0.530***	− 0.501***
	(0.049)	(0.047)
minority	− 0.162**	0.002
	(0.071)	(0.104)
Parent Party members	− 0.010	0.025
	(0.036)	(0.034)
Provincial dummies	No	Yes
R^2	0.108	0.189
N	9863	9863

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