

Does Communist Party Membership Pay? Estimating the Economic Returns to Party Membership in the Labor Market in China

Joanne Song McLaughlin*
University at Buffalo, SUNY
jsmclaug@buffalo.edu

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Abstract: Many studies have found that Chinese Communist Party membership brings economic benefits to party members, but some studies also argue that the premium associated with party membership is merely due to members' higher levels of ability and advantageous family backgrounds. The lack of consensus on the economic returns of party membership implies that the role of party membership is not well understood. This study estimates the economic returns to Chinese Communist Party membership using complementary approaches to address the endogeneity of party membership status: propensity score matching and instrumental variable. Although the magnitudes of these estimates vary across estimators, all the estimates show positive economic returns to party membership. This paper also examines possible mechanisms for how party membership may bring benefits to members and provides evidence that party membership may generate political capital, but not social capital in the labor market in China.

Keywords: Chinese Communist Party membership, economic returns, wage premium, Chinese labor market, political capital, social capital

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1. Introduction

Many studies have found that Communist Party members receive a wage premium in the labor market in China relative to non-Communist Party members (Appleton et al., 2005; Appleton et al, 2009; Dickson and Rublee, 2000; Johnson and Chow, 1997; Liu, 2003; Knight and Yueh, 2008; Wu and Xie, 2003; Zhou, 2000). These findings suggest that party membership is an important determinant of wages in the Chinese labor market. However, most of these results are based on ordinary least squares (OLS) estimations that may be subject to bias due to endogeneity. Since the assignment of party membership is not random, a systematic difference between party members and non-party members in unobservable characteristics, such as higher ability level or advantageous family background, may drive these OLS results. Addressing this endogeneity was the motivation behind the within-twin fixed effect (FE) estimator in Li et al. (2007).¹ Based on estimation using the within-twin FE estimator, they concluded that the premium associated with party membership is simply due to members' unobserved higher abilities and advantageous family backgrounds rather than party membership. However, some economists argue that within-twin FX estimators do not always solve omitted variable bias problems (Bound and Solon, 1999; Neumark, 1999) since even twins have unobservable differences which, even if small, could be drivers in different choices observed between twins – such as party membership. In addition, if small, unobserved differences really are driving choices, then within-twin fixed effect estimators may exacerbate bias caused by measurement error. This suggests that the literature on the economic returns to party membership need to be re-evaluated. This study revisits estimating economic returns to party membership by adopting complementary approaches: propensity score matching (PSM) and instrumental variables (IV).

Another aspect of Communist Party membership that is not well understood is the role it plays in the labor market. To the extent that a substantial wage premium truly exists, it is important to understand the mechanism for how membership brings this benefit to members in the labor market. I explore this

¹ They argue that identical twins have similar genetic ability and the same family background, so Party membership differences are not likely to be due to these characteristics.

mechanism by using a unique institutional feature in China known as the “government job assignment program.”

The Chinese labor market is unique in that the government has dominant control over employment through its job assignment program.² Although it is supposed to be impartial and reflect the competence of the applicant, it is often based on *ad hoc* decisions of the person in authority (Bian, 1997). Given the complete dominance of the Communist Party in China’s political system, party membership signals an important political affiliation. It is, therefore, possible that government authorities may show preferential treatment towards party members when allocating jobs.³ If members receive greater benefits in the government job assignment program compared to non-party members with similar human capital, party membership may be a type of political capital.

Communist Party membership may also be a source of social capital benefits in the labor market. One of the benefits party provides for their members is access to contact information of all other party members (Bian, 1997). In China, interpersonal relationships are an important aspect of both economic and non-economic life (Bian, 1994; Bian, 1997). Many workers obtain job information through social networking, so if party membership results in network expansion, then members may be better off than non-members in the labor market. However, there is no direct evidence that party membership helps to build wider social networks and party members gain benefit through network expansion. I explore this aspect in this study.

The purposes of this study are (1) to examine the causal effect of party membership, and (2) to provide a better understanding of how party membership may bring benefits in the labor market in China. Specifically, I implement complementary approaches to address the endogeneity in estimating returns to the party membership: PSM and IV. In the IV approach, I use a father’s party membership as an

² The job assignment program is described in greater detail in the following section. Although there was a radical change in the program, Table 4 shows that it is still the manner through which more than half of workers get their jobs.

³ Bian (1997) used this institutional feature to study the effect of personal social networks, which he asserts can influence the job assignment decision process.

instrument for an individual's Party membership conditional on parental occupations and educational attainment. With respect to the mechanism of how membership may bring benefits, I take advantage of a distinct institutional feature of China (the job assignment program) and interpersonal relationship information available in the data to explore the following questions: Do Party members benefit from preferential treatment from the government in job assignment (i.e., political capital)? Is membership a way to expand social networks (i.e., social capital)?

The rest of the paper is organized as follows. Section 2 explains briefly the institutional background of party membership. Section 3 discusses relevant empirical studies estimating the returns to party membership. Section 4 presents empirical methods. Section 5 describes the data. Section 6 discusses empirical findings and section 7 concludes by providing a summary of results.

2. Background on the Chinese Communist Party

The political system in China is completely controlled by the Communist Party. The Communist Party has maintained its power by strict screening and continued scrutiny of members after joining the party, as well as induced loyalty (Appleton et al., 2009). The conjecture that party members have higher levels of ability than non-party members is plausible given the stringent selection process for party members. Applicants must go through various stages after filing written applications before they can become members. After submitting applications, they must demonstrate active participation in political activities, volunteer for community activities, and study current policies. Each applicant is assigned to a party member from the branch authority and applicants are evaluated on their progress. In other words, to be accepted as a member, applicants are required to prove a combination of superior performance, social skills, a commitment to political activity, and knowledge of public policies (Bian et al., 2001).

A unique characteristic of the Chinese labor market is that the government assigns jobs to workers. The job assignment program was originally based on the Maoist ideology that labor is a national resource, which nearly eliminated private labor rights (Bian, 1994). It was implemented in the 1950s to control the size and distribution of urban jobs in the labor market (Bian, 1997). The policy forced young workers who just graduated from school to wait for state job assignments and prohibited them from

switching employers. Using urban survey data, Bian (1997) reports that the government assigned approximately 90 percent of workers to their jobs in the 1960s and 1970s. Although there was a radical change toward abandoning this job assignment program in the 1990s, the impact of this government assignment still persists. As of 2002, more than half of all workers gained employment through this government assignment program.⁴

The power of the Communist Party reaches nearly all levels of social organization. The party also provides information and opportunities for members to contact other members. As discussed earlier, the selection process of party members requires applicants to volunteer for various activities. Therefore, some studies argue that party members have wider social networks (Knight and Yueh, 2008). Based on this structure and additional benefits given to party members, Knight and Yueh treat party membership as a source of social capital. They use party membership as a proxy for social capital in studying the role of social capital in the labor market. Similarly, Bian (1997) uses party membership tied together with the government job assignment program to study the effect of different levels of social networks on job search activities. These studies make an assumption that party members have wider social networks. However, there has not been a direct test of the relationship between social networks and party membership to my knowledge.

3. Related Empirical Studies

Most previous studies using ordinary least squares (OLS) to estimate the effects of Communist Party membership on earnings have found positive economic benefits for party members compared to non-party members. Since party membership may be correlated with unobserved characteristics such as ability and family background, though, OLS estimates may be subject to omitted variable bias. Although some studies ignore this possible endogeneity issue (Johnson and Chow, 1997; Dickson and Rublee, 2000; Wu and Xie, 2003), others have tried to address the issue through panel data, the Heckman

⁴ See Table 8.

selection model, IV estimation, and within-twin fixed effects estimation (Zhou, 2000; Gerber, 2000; Liu, 2003; Appleton et al., 2005; Li et al., 2007).

Zhou (2000) and Appleton et al. (2005) use a panel data approach and find a positive economic value for party membership. The limitation of using a panel data approach to model returns to Party membership is that membership status is usually time-invariant. Zhou (2000) does not provide enough information to assess how much variation was observed in the data. Appleton et al. (2005) use a method they call a “recalled panel data approach,” in which they pool cross sectional data incorporating survey questions asking respondents’ past income and the year they joined the party. One concern in this approach is measurement error because respondents usually have a hard time remembering their income from previous years as well as when they joined the party.

In the context of Russia, Gerber (2000) uses an endogenous switching regression and argues that the economic benefits shown in the OLS estimates are due to selection into party membership. Gerber uses three instruments: parental party membership, parental education, and parental occupations. In a similar study, Liu (2003) uses father’s occupation and party membership as instruments and finds an even greater effect than the OLS estimate. However, I argue that excluding parental educational attainment and occupation may be invalid because they are correlated with advantageous family backgrounds and thus may have a direct effect on earnings. In other words, a father’s occupation and education cannot be used as instruments and it is important to be included as controls. Appleton et al. (2009) adopt Heckman’s two-step estimator, a variation of the method used by Gerber, using parental membership as the identifying variable without controlling for parental occupation and education. They come to the opposite conclusion of Gerber, finding that there is *no* selection into Party membership. Appleton et al. use this finding as their justification for adopting the OLS estimator and they find positive economic returns. As I show later, the characteristics of party members and non-party members are very different, making it hard to believe there is no selection into membership.

Lastly, Li et al. (2007) adopt a within-twin FE estimator to directly control for unobserved characteristics and find no evidence of a causal effect of party membership on earnings. The motivation

for this approach is that it controls for time-invariant omitted variables since twins have similar genetic ability and family backgrounds. The idea is that since there is little difference in unobserved ability and family background between twins, the difference in earnings between party member twins and non-Party member twins would be due to membership status. Based on their small and insignificant estimated coefficient on Party membership, they conclude that positive OLS estimates reflect higher ability and advantageous family background rather than a causal effect of membership.

However, it has been argued that the within-twin FE does not eliminate the unobserved omitted variable bias and can even aggravate it (Bound and Solon, 1999; Neumark, 1999). The intuition is that differencing between twins does not remove the endogeneity completely because even monozygotic twins are not exactly identical.⁵ That is, twins still differ in characteristics that are not purely genetic, such as temperament and abilities. This suggests that within-twin FE still potentially suffers from endogeneity bias. Another well-known limitation of the within-twin FE includes aggravated measurement error problems.

4. Empirical Strategy

I adopt Mincer's (1974) human capital earnings function with an indicator for party membership status as a basic framework. The specification is as follows:

$$\log(Wage_i) = \alpha + \beta_1 Com_i + \beta_2 Sch_i + \beta_3 Exp_i + \beta_4 Exp_i^2 + X_i \mu + \varepsilon_i \quad (1)$$

Wage denotes individual *i*'s wage; *Com* is an indicator for whether the person is a party member; *Sch* is the number of years of education attained; *Exp* is potential years of experience defined as individuals' age minus the years of schooling minus 6; and *X* is a vector of individual level controls including gender, urban household registration status (i.e., hukou), race, and marital status. Urban household registration status is a binary variable equal to one if the respondent obtained urban household registration status either in the resident city or other city; race includes a set of binary variables indicating minority, and other race; marital status includes a set of binary variables indicating married, divorced, widowed, and

⁵ Li et al., (2007) did not specify if their sample consists of monozygotic twins.

other marital status. The estimated effect of party membership ($\hat{\beta}_1$) would be biased if there are unobserved characteristics in the error term, ε , that affect both party membership status and wage. If unobserved ability or advantageous family background are captured in the error term, OLS estimates would likely be upward biased because they are positively correlated with both Party membership and wage in Equation (1).

I use two complementary approaches to address this potential endogeneity: PSM and IV. I also include middle school performance measures as a proxy for ability to mitigate omitted variable bias. In choosing an appropriate proxy for omitted variables, one caveat is that proxy variables cannot be affected by the variable of interest. I use middle school performance as a proxy for ability because middle school performance reflects ability and achievement in the early stage of life. Thus, it is unlikely that this measure is affected by an individual's party membership status. I also use parental occupation and educational attainment as proxies for family background. Although not perfect, using these proxy variables should mitigate the bias caused by the omission of these variables.

I begin with PSM estimation. The intuition of PSM is straightforward: it provides a method to find a control group (i.e., non-party members) that is comparable to the treatment group (i.e. party members) based on observable characteristics. The limitation of PSM is the assumption of selection-on-observables. In other words, it assumes that selection into party membership is strictly based on observable characteristics. If, however, we believe that the source of endogeneity is due to unobservables, this may be an inappropriate assumption. Nonetheless, I use PSM estimator as an alternative to OLS estimator for two reasons. First, PSM is nonparametric, which is its main advantage over OLS. If the covariate distributions differ greatly between the treatment and control groups, OLS estimates could be sensitive to minor changes in functional form (Dehejia and Wahba, 1999; Drake, 1993; Imbens, 2015; Rubin, 1997; Zanutto, 2006).⁶ Second, it is plausible that the difference in unobservable characteristics between party

⁶ I acknowledge that PSM does not overcome the selection bias on unobservables. The reason for using PSM in this analysis is not to ignore this assumption and claim that PSM result overcomes the selection problem. The main focus is to take advantage of nonparametric feature of PSM that OLS does not provide. Under the selection-on-

members and non-party members may be minimized by matching them on observable characteristics. For example, it is likely that differences in ability between party members and non-party members who have the same levels of educational attainment are smaller than for individuals with different educational attainment.

To address the identification challenge caused by unobservable characteristics, I use father's Party membership as an IV for own Party membership. Since Party membership status is a binary variable I use two-step IV method (Wooldridge, 2002, chapter 18) to take the binary nature of the endogenous variable into account. I estimate a probit model for party membership and form the fitted probabilities. I then use the obtained fitted values as an IV for party membership in Equation (1).⁷ There are many advantages to this procedure. First, the two-step IV estimator is robust to misspecification in the first stage because I am using the fitted probabilities as an instrument for own party membership. Second, the two-step IV estimator is more efficient than two-stage least squares (2SLS) estimators because the probit model in the "zeroth" stage constrains the probabilities to lie between zero and one, eliminating meaningless variation in the fitted probabilities obtained from the linear probability model that is outside the range of zero and one.

The IV estimation identification hinges on the assumption that father's party membership has no effect on the outcome except through the own party membership. First, the causal link between father's party membership and own party membership is coming from the screening process of party membership. One of the requirements of the application process is parental membership status and histories, which is used as one of the criteria for loyalty. This benefit of having fathers who are party members effectively

observables, some studies show that PSM estimates can come much close to the experimental benchmark estimates if used properly (Dehejia and Wahba, 1999). In response to LaLonde (1986), Dehejia and Wahba (1999) show that propensity score can recover the experimental benchmark estimates most closely. Agodiri and Dynarski (2004), Luellen, Shadish, and Clark (2005), Michalopoulos, Bloom, and Hill (2004), Peikes, Moreno, and Orzol (2008), and Smith and Todd (2005) have shown that PSM does not work well. In response to Smith and Todd (2005), Dehejia emphasizes examining the sensitivity of the result to propensity score specification.

⁷ It is important to highlight that this method is different from "forbidden regression," which is running an OLS of logged wage on fitted probability and other independent variables. The standard 2SLS approach yields qualitatively similar results.

reduces the marginal cost of individuals for becoming a party member.⁸ In Section 6, below, I report a strong relationship between father's party membership and own membership.

Second, to present the evidence that father's party membership does not have direct effect on the wage (i.e. not correlated with the error term), I show that there is no relationship between observable measures of father's party membership status and individual's measurable characteristics. Unlike the relevance assumption, it is well known that exclusion restriction assumption is not testable. However, I test to see if there is any relationship between individual's observable characteristics and father's party membership to support the credence of instrument. I recognize that finding no relationship between observable measures of ability and the instruments cannot prove that the instrument satisfies exclusion restriction because correlation with unobserved ability may still remain. Nonetheless, it will be useful in supporting the credibility of the instrument if father's party membership status is not an important determinant of measurable individual characteristics once parental occupation and education are controlled for. In other words, the observable characteristics between treatment (individuals whose father is a party member) and control (individuals whose father is a non-party member) should be similar. I test this on several characteristics focusing on observables that are highly correlated with ability. Specifically, in all the tests that I perform to examine the exogeneity of the father's party membership, I regress individual's measures on father's party membership, human capital controls, and other controls I include in my main specification and show that father's party membership is uncorrelated with individual's characteristics

Throughout I include parent's occupation and education controls because they are important for exclusion restriction requirement. Father's party membership may not be exogenous if advantageous family background affects individual's labor market outcomes. For example, it is conceivable that a father, who is a party member, may bring advantageous job search for their children through connections of party. Most likely, however, the benefits of the advantageous family background related to party

⁸ Liu (2003) includes a simple theoretical model that helps to understand the first-stage relationship.

membership come from parents' occupation and education. Therefore, inclusion of parents' occupation and education will effectively solve this problem. In addition, it is plausible that father's party membership is correlated to individual's ability if there is intergenerational correlation in ability between father and children. Inclusion of parent's education controls is expected to mitigate this concern because parent's education can be a good proxy for parents' ability as well as advantageous family background.

The identification comes from the effect of those individuals who are on the margin of the membership decision. The father's membership or lack thereof either pushes them into membership or does not. Intuitively my comparison is between these two groups, and since these individuals are similar in being on the margin of the decision, they are probably similar across other unobserved characteristics, such as parents helping in job search. In my model with a valid IV, I am identifying off of a comparison of individuals who have similar job search characteristics. Thus, it is reasonable to think that my estimates are not coming from unobserved characteristics such as job search advantages, because the people I am comparing against each other are likely similarly situated in that dimension.

As a robustness check, I restrict the sample to individuals who do not work in the same occupation as their fathers to address the possibility that there is favoritism through father's party connection in the labor market. I also divide the sample to those who work in private, or public sectors with the expectation that party membership does not matter much in private sector.

Lastly, father's party membership is endogenous if father's party membership expands individual's social networks in the labor market. I present some evidence in the next section that individual's social networks (i.e., the number of friends or relatives who can help to find work) has no relationship with father's party membership. I also control for individual's social network in my estimation.

Finally, to study the mechanism for how Party membership brings benefits, I incorporate information on government job assignment and the number of friends and relatives individuals can ask for help in seeking jobs. I first examine the relationships between the government job assignment program and party membership as well as each occupation by estimating their correlation. I also study the effects

of party membership on an individual's social networks, exploring whether or not party membership expands an individual's social network. I then use regression analysis to study whether government job assignment (i.e. political capital) or social networking (i.e. social capital) function as intervening mechanisms for bringing benefits to party members. Specifically, I test whether the inclusion of controls for how individuals obtained their job and social networks absorb any effects of the party membership.⁹

5. Data and Descriptive Statistics

The main data come from the Chinese Household Income Project (CHIP) 2002 Urban.¹⁰ The CHIP is arguably one of the best publicly available data sources on household income and expenditures in China (Gao and Riskin, 2009). It is an interview-based study and is a sub-sample of the yearly household survey conducted by the National Bureau of Statistics. It represents about 450 million urban residents. The respondents are sampled from eastern, central, and western regions of China: Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Yunnan, Gansu, Sichuan, and Chongqing. The samples are selected by using a multistage stratified probability sample. The advantage to using CHIP 2002 is that it provides rich background information on household and individuals. For the head of the household and his/her spouse, it also includes their parental background. For those who are identified as children of the head of the household, I match their parents' information using the household identification in the data. Thus, I restrict the sample to heads of households and their spouses and children.

In CHIP 2002 Urban, about 35 percent of the entire sample are party members. Table 1 reports overall differences between party members and non-party members. As Table 1 shows, there are considerable differences between the two groups. On average, party members are slightly older, earn more, and have higher educational attainment than non-party members. More than half of party members

⁹ Gordon (2010) has a good summary of how regression analysis can be used to study intervening mechanisms.

¹⁰ I also use CHIP 2002 Rural and CHIP 1988 Urban and Rural, and CHIP 1995 Urban and Rural for additional analyses included in this study. I cannot use 2007 CHIP because it does not contain Party membership status information.

have graduated from junior college or above, whereas only 23 percent of non-party members have obtained the equivalent level of education. There is a large difference in the occupational distribution of members and non-members as well. The majority of the party members work as directors of institutions, or as office, professional, or technical workers. In contrast, a large proportion of non-party members work as unskilled, skilled, professional, or technical workers.

6. Results

A. OLS Results

I begin the analysis by using OLS to estimate the wage difference between party members and non-party members. However, these estimates should not be interpreted as causal because they do not account for endogeneity. Column (1) of Table 2 presents results for a model with limited individual level controls. It shows that party members earn about 19 percent ($100 \cdot (\exp(.174) - 1)$) more than non-party members after controlling for human capital, while the return to an additional year of education is estimated to be 7 percent. Both estimates are statistically significantly different from zero. In column (2), I report estimates for the model after adding middle school performance as a proxy for ability (via a set of binary variables indicating top 20%, upper 20%, middle 20%, and lower 20%). This results in a slight decline in the coefficient estimate for party membership from 0.174 to 0.159, and a somewhat larger reduction for the return to an additional year of education from 7 percent to 5 percent. The middle school performance measures are jointly highly significantly different from zero and monotonic in the right direction. This is what we expect if ability is positively correlated with the membership status. Throughout the rest of my analysis, I include middle school performance in all regression specifications.

Whether it is appropriate to control for occupation is unclear without an understanding of how party membership brings benefits to workers in the labor market. Thus, I present results for the membership premium based on models with and without occupation controls. Including controls would be improper if Party members enjoy their benefits through securing jobs in high paying occupations. In contrast, if benefits flow to members through some other channels, though, then controls for occupation will keep the influence of membership separate from the impact of occupation choice. For these reasons,

the estimates from the specification with and without occupation controls have different interpretations. The occupational categories are owner or manager of a private enterprise; self-employed; professional or technical worker; director of an institution; office worker; skilled worker; unskilled worker; and other occupation. Column (3) shows that including occupation controls reduces the estimate by 44 percent, but a positive premium nevertheless remains. One possible reason for this is that party members benefit from better opportunities for promotion within the same occupation.

To address another potential source of omitted variables – advantageous family background – I use parental education level and occupation as proxies for an individual’s family background. The family background controls included are detailed education level and occupational categories of an individual’s father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. Column (4) reports OLS estimates after including these controls. The estimates on both party membership and schooling do not change much, indicating that there still exists an additional economic benefit from party membership that is not explained by difference in ability and advantageous family background. Lastly, in column (5), I include province fixed effects to remove the concern that the membership dummy is picking up an effect that is actually due to differences in income levels across regions. When I include the province fixed effects, the estimates decrease slightly.

B. Propensity Score Matching Estimation

Next, I report the estimates from PSM in Table 3. If selection into the party membership is based on unobservable characteristics, PSM does not overcome selection bias. However, the PSM estimator does provide some advantages, including less reliance on the assumption of a correctly specified model and more straightforward diagnostics on the validity of the analysis. As discussed in Section 4, the OLS estimator relies heavily on extrapolation, so if the covariate distributions are substantially different by

membership status, as Table 1 shows they are in this case, it can be sensitive to minor specification changes. For these reasons, I include propensity score matching as an alternative to OLS estimation. Since PSM estimates can be sensitive to changes in matching algorithms, I use six different matching algorithms to show robustness. To assure the matching quality, Appendix Table 1 reports the balance in covariates between party members and non-party members after matching and Appendix Figure 1 shows the common support. The distribution shows that there is significant overlap, which is an important requirement in PSM method. Additionally, I evaluate three metrics of match quality: percent bias, t -statistics, and joint-significance of all covariates. Inspection shows that the percent bias is less than 5 percent for most of the covariates and the most of the differences in covariates after matching are statistically insignificant. For brevity, I do not report covariate balances and common supports for all matching algorithms, but I have satisfactory match quality in the remaining match algorithms.¹¹

Table 3 reports the PSM estimates across six matching algorithms. I report both regular and bootstrapped standard errors and all the estimates are statistically significant at the one-percent level. The estimates for both the membership coefficients and the standard errors are robust, being similar across all matching algorithms. They suggest that, conditional on observable characteristics, party members earn about 11 to 16 percent more than non-party members. These estimates are similar to OLS estimates in Table 2.

C. Effect of Father's Membership on Own Party Membership and Wage

Neither OLS nor PSM matching estimates account for unobservable characteristics that may be correlated with party membership status. To address possible endogeneity due to unobserved characteristics, I use father's party membership as an instrumental variable. Before I present the IV estimates, this subsection discusses the effect of IV on likelihood of being a party member and presents reduced form estimates to show that the instrument is not weak. Table 4 reports the results. I begin with the estimates of the equation for party membership in columns (1) and (2) from probit regressions. The

¹¹ Results are available upon request.

table reports marginal effects that are evaluated at the means. The marginal effects of the father's party membership on likelihood of being a party member is highly significant with the expected positive sign at 0.093. The estimates are robust to whether I include province fixed effects or not (column (2)). Columns (3) and (4) report the direct effect of father's party membership on own wage. Given that father's party membership increases the probability of individuals being a party member, a reduced-form relationship between father's party membership and wage should emerge. I do find the expected pattern of coefficients emerging in columns (3) and (4). Not surprisingly, these reduced form estimates are much smaller than the IV estimates reported below.

D. Validity of Instrumental Variable

Although it is well known that exclusion restriction assumption of IV is not testable, it is still useful to investigate whether there is a relationship between observable measures of ability. As discussed in Section 4, finding no relationship between observable measures of ability and the instruments cannot prove that the instrument satisfies exclusion restriction. However, it can be shown to support the credibility of the instrument. In other words, a valid instrument should not be an important determinant of other observable individual characteristics. I test this on several characteristics focusing on measurable individual characteristics that are highly correlated with ability. Specifically, the variables I investigated are middle school performance, being top 20% in middle school, whether the individual attended high-ranked university or national, provincial, city level middle school, health status, and social network. Table 5 presents the report.¹² In the odd number columns, I first present that own party membership is highly correlated with the selected observable characteristics to show that there is relationship between own party membership and these tested observable characteristics. Then I proceed to show that father's party membership is not an important determinant of these observable characteristics. If father's party membership is a strong determinant of these dependent variables, I should be concerned with violation of

¹² Appendix Table 2 that reports the comparison of raw mean of observable measures of ability and other characteristics by father's party membership and the residuals of the regression after I include the controls included in main specification.

exclusion restriction. The results in the odd columns show that own party membership status is an important determinant of these observable characteristics, which corroborate the ability omitted variable bias. The estimates in the even columns support the credence to use of father's party membership as an IV. All these estimates show that observable attributes are similar between individuals whose father is a party member and those who not.¹³

I begin focusing on set of measurable characteristics that is highly correlated with ability. In Column (1), I examine models for middle school performance. Although I include a vector of dummy variables indicating individuals' middle school performance in my main specifications, it is worth investigating directly whether father's party membership is correlated with individual's middle school performance. If we are concerned with intergenerational ability between father and children, I should observe positive correlation in this specification as well as for top 20 % in middle school, attended high-ranked or larger level middle school. However, the estimates show that there is no relationship between IV and these measurable ability variables (Columns (4), (6), and bottom panel Column (2)). I also explore health status¹⁴ and a proxy for social network. The important evidence is that none of the estimates in the even columns show that the father's party membership is correlated with individual observable characteristics. These finding are encouraging for the use of the father's party membership as an IV.

E. Instrumental Variable Estimation

This section presents instrumental variable estimates that account for omitted variable bias. Since I lose some observations due to missing information on father's party membership, I begin by presenting OLS estimates on the more restricted sample to provide a meaningful reference point. Columns (1)-(2) of Table 6 are the OLS estimates on the restricted sample and columns (3)-(7) report the two-step IV estimates described in the previous section. The magnitude of the OLS estimates is similar to the previous results in Table 2. The IV estimates in column (3) is marginally significant at the 15 percent level and the

¹³ This is analogous to a balance check table.

¹⁴ Health status is potentially correlated individuals unobserved characteristics that is in the error term (e.g., Duleep, 1986; Wolfe and Behrman, 1987; Menchik,1993).

estimate is 0.24. When I include the province fixed effects in column (4) to control for income level differences across regions, the estimate becomes larger and it is statistically significant at the 1 percent level, with the standard error shrinking slightly. The F -statistic obtained in the first stage for the instrumental variable ranges from 125 to 128. This is well over the rule of thumb critical value of 10 that indicates weak instrument (Staiger and Stock, 1997).

I have shown in the previous section that the father's party membership does not affect an individual's social network. Nonetheless, to confirm that there is no other type of family externality, I separate the sample to individuals who have and who do not have the same occupation as their fathers. The rationale behind this sample restriction is that if there is any spillover effect from having more job information or favoritism through family party connections, it would be more pronounced if both an individual and their father work within the same occupation. Column (5) shows the estimates after restricting the sample to individuals who do not have the same occupation as their father. The magnitude of the IV estimate is even larger and is statistically significant at the 1 percent level. Furthermore, when I restrict the sample to individuals who have the same occupation as their father (column (6)), the IV estimate is no longer statistically significant and has an opposite sign. This is reassuring because this implies that family externality is not the reason the IV estimate is larger than the OLS estimates.¹⁵ In columns (7) and (8), I restrict the sample to public and private employment sectors, respectively. This heterogeneous effect is interesting per se, but more importantly, this serves as a placebo test. If party membership is a form of political capital, I should observe the premium in public sector and not in the private sector. The estimates reported in columns (7)-(8) support this prediction. The magnitude of the estimate in column (7) is almost identical to the one reported in column (4), although the standard error is much bigger due to much smaller sample size. The estimate is marginally statistically significant at the 15 percent level. For the IV estimates for the private sector, I do not find evidence that individuals enjoy wage premium from party membership. The IV estimate for private sector sample has an opposite sign

¹⁵ The standard IV estimates are larger in magnitude than the two-step IV estimates reported and have much larger standard errors. However, they yield qualitatively similar results.

and it is no longer significant. The reported F -statistic is still well over 10 and Anderson-Rubin p -value of the IV estimate is 0.96, showing that this null finding is not driven by a weak instrument. This suggests that party membership only matters for the public sector and there is no wage premium for party membership in the private sector.

If there is a concern that the OLS estimate is biased upward because of the ability and family background omitted variables, the IV estimate should be smaller in magnitude. However, it appears that the IV estimate is not consistent with the upward bias concern in OLS because IV estimates are larger compared to OLS estimates. One potential interpretation would be OLS is either downward biased or biased towards zero due to measurement error in Party membership. One possibility for downward bias in OLS is that if higher ability individuals can secure jobs without being a party member, one could argue that higher ability or more driven people are non-party members. Another interpretation would be heterogeneous treatment effects. In other words, the instrumental variable estimator does not measure the average treatment effect, but estimates the local average treatment effect (LATE) for the subpopulation of treated individuals for whom parental party membership causes them to be members. This subset of treated individuals is called compliers in the LATE framework (Imbens and Angrist, 1994). In my context, this implies that I am estimating the effects of Party membership for those whose membership status (i.e., compliers) is affected by variation in the father's party membership. Although compliers are not individually identifiable, I can still describe the characteristics of this subpopulation by calculating the ratio of first stage for certain characteristics to the overall first stage (Angrist and Pischke, 2009).¹⁶ Table 7 reports the characteristics of complier for father's membership instrumental variable. The reported likelihood of various characteristics show that compliers of the father's party membership instrumental variable are more likely to be 25 years old or younger. They are much less likely to have professional occupations, but more likely to be office workers at a public sector. Further, they are less likely to have

¹⁶ A general method for obtaining the distribution of characteristics uses Abadie's (2003) kappa-weighting scheme. However, I follow the simple approach in Angrist and Pischke (2009) by calculating the ratio of the first stage for each characteristics of interest to the overall first stage.

graduated from a technical school or obtained jobs from open exam. These reflect two distinct career paths of urban Chinese adults: administrative and professional careers (Walder et al., 2000). Walder et al., have found that urban Chinese adults have dual career paths and party membership and education have different effects for each path. Party membership always has been an important credential for administrative positions, which is different from the meritocratic standards found in professional occupations. In other words, in professional occupations, party membership is not likely to provide major advantages in wage, but for administrative careers, party membership is an important prerequisite. Therefore, the complier population seems to be comprised more of workers in industries where membership matters and less of workers in industries where membership matters less. This distinct career mobility helps to understand the larger IV estimates generated by father's party membership. Although the IV estimates do not measure the effect of party membership of the average party members, but rather the LATE of those who are affected by their father's party membership, it still indicates that party membership brings additional economic benefits in the labor market in China.

F. The Role of Party Membership

The analyses to this point have been focused on estimating the economic returns to party membership. All our results consistently have shown significant and large positive economic returns to party membership. In this section, I shift the focus to study possible mechanisms for how party membership may bring these positive economic benefits in the labor market in China. Specifically, I examine if party membership brings either political or social capital benefits, or both.

Before I begin the analysis of possible mechanisms, I provide an overview of the characteristics that may be linked to possible avenues for how party membership may bring benefits in the Chinese labor market. In China, government job assignment is strongly associated with higher earning occupations such as director of institution, professional, technical worker, and office worker.¹⁷ As briefly discussed in sections 1 and 2, one hypothesis is that if job assignment decisions are often based on *ad hoc* decisions of

¹⁷ Results are available upon request.

the person in authority (Bian, 1997), then Party membership status indicating an important political affiliation with the ruling party may lead to preferential treatment with respect to assignment to better job opportunities. The top panel of Table 8 presents the distribution of how workers gain employment by party membership status. It demonstrates the dominance of the government's job assignment program. Furthermore, it shows that higher proportion of party members gain their employment through government assignment than non-party members. About 70 percent of party members gained their job through government assignment, whereas less than half of non-party members take advantage of government job assignment. For both groups, government job assignment is the main channel to obtain employment and this surpasses other modes of gaining employment.

The lower panel of Table 8 shows the average difference in the social network measure by party membership status. It shows that party members have more friends or relatives who can help them to seek employment. To explore the difference in social networks further, I estimate social networks models studying the effect of party membership on social networks conditional on father's party membership, years of education attained, experience, and individual level characteristics.¹⁸ Table 9 shows that party members have 10 percent more friends or relatives who can help them to find jobs than non-party members. This indicates that party membership strengthens an individual's social networks.

Finally, I test if party membership brings benefits either as political capital or social capital, or both. If party membership works as political capital in the government job assignment program, then the introduction of modes of obtaining employment in the specification should reduce the estimated effect of party membership. Similarly, if party membership works as social capital by expanding an individual's social networks, then including social network measures should reduce the estimated effect of party membership. Table 10 presents these results. Column (1) of Table 10 reports the party membership premium without introducing controls for possible intervening mechanisms to set a reference point. Column (2) of Table 10 shows that when the modes of obtaining employment are included in the

¹⁸ The individual controls are explained in Equation (1).

specification, the coefficient on party membership falls by about 29 percent. In addition, individuals who gain their employment through government job assignment earn about 32 percent ($100 \cdot (\exp(.275) - 1)$) more than those who find employment on their own. The implication of this result is that government job assignment works as an intervening mechanism in bringing benefits to Party membership in the labor market in China.

To test the other possible mechanism – social networks – I include the social networks measure in the specification. Similar to testing the mechanism of political capital, the inclusion of networks in our model allows me to test if party membership brings benefits as social capital. I include a full set of dummy variables to control for social network to examine how much the social network measure absorbs the variation in the party membership estimate. Surprisingly, the coefficient on party membership in column (3) is identical whether I include social network or not. The social network measures are not jointly significant from zero with a p -value of 0.30. In other words, the estimate on party membership does *not* change, indicating social network does not bring any economic benefits in the labor market. Previous studies have shown that social networking brings benefits to workers in the labor market by providing a better flow of information (Granovetter, 1974). Alternatively, by developing an adverse selection model, Montgomery (1991) has also shown that individuals with social contacts have higher earnings. However, I do not find any evidence of party membership bringing benefits through social capital channels, even though I do find that party membership expands an individual's social networks.

G. Heterogeneous Effects of Party Membership

China has gone through a significant economic transition since the market-oriented reforms that initiated in the late 1970s. Since the economic reform, China experienced rapid economic growth and a dramatic increase in income inequality, especially regionally. I, therefore, extend my analysis to examine how the returns to party membership changed over time during this transition, and also whether they differ between urban and rural China. For these additional analyses, I use earlier year samples of the CHIP Urban from 1988 and 1995, and also the CHIP Rural samples from 1988, 1995, and 2002.

I begin by analyzing the changes in wage premium over time, with results reported in Table 11. For ease of comparison, the table also presents the corresponding IV estimates from CHIP 2002 Urban previously reported in Table 6. One limitation of using the earlier CHIP is that father's party membership status is not surveyed directly as a question to each respondent. Instead, I am only able to obtain membership status of fathers for children still living in households with their fathers by matching fathers to children within households. This leads to a much smaller sample size, as shown in columns (2)-(3) and (5)-(6), and a much younger sample.¹⁹ When analyzing the evolution of returns over time, if one assumes that the magnitude of the bias does not vary over time, then the changes in the OLS estimates (columns (1), (4), and (7)) over the three different sample periods will be unbiased. The comparison of three estimates show that the returns to Party membership increased significantly since the 1980s. On average, Party members earned about 8 percent ($100 \cdot (\exp(0.080) - 1)$), 13 percent ($100 \cdot (\exp(0.120) - 1)$), and 19 percent ($100 \cdot (\exp(0.170) - 1)$) more in 1988, 1995, and 2002, respectively. However, the evidence is less clear when considering estimates obtained using the IV approach. Since the sample used for IV estimates are different, I report OLS estimates for each corresponding restricted samples. For each restricted sample, none of the estimates are statistically significant, although the general pattern of increasing in returns emerges except for the IV estimate for 1995. The estimates for returns to schooling also show increase in the return to education from 1988 to 1995, but it is similar between 1995 and 2002.

Lastly, I turn to estimating returns to Party membership in rural area. Table 12 reports the results for rural China. I present estimates for rural China over time to make the analysis more complete, but the earlier estimates are likely of limited value since nearly all respondents are lacking information on wages. However, for 2002 survey, which has much more complete data, much larger OLS and IV estimates suggests that membership is even more valuable in rural areas than in urban ones of China. In columns (5) and (6) I restrict the sample to individuals who work in public and private sectors, respectively. Similar to urban sample, I do not find any evidence of wage premium for party membership in the private sample

¹⁹ The average age for CHIP 1988 and 1995 respondents for whom I am able to observe their fathers' status is 22 and 24, respectively.

while the IV estimates for the public sector sample is similar to the IV estimate reported in column (4). Although I lose some precision due to smaller sample size, the IV estimate is statistically significant at the ten percent level and the magnitude of the estimate is similar to the one reported in column (4). This placebo test is reassuring as it is intuitive to presume that the benefits of political capital only matter in the public sector. The evidence of a higher wage premium for Party membership in rural China is not surprising given that employment opportunities outside of government jobs are much more limited in rural areas, and government positions usually pay well and nearly always go to Party members (Potter and Potter, 1990; Knight and Song, 1993).

7. Conclusion

In this paper I examine evidence on economic returns to Chinese Communist Party membership using both PSM and IV estimation methods. The focus of my estimation strategy is to account for the endogeneity of party membership, caused by unobserved characteristics of members such as ability and family background, which likely biases OLS estimation. In contrast to some previous findings that the premium associated with party membership is merely due to members' higher levels of ability and advantageous family backgrounds, my findings suggest robust and sizeable economic returns to party membership even after including controls for such factors. Overall, party members are estimated to enjoy higher wage premiums ranging from 7 to 29 percent. The extended analysis show that wage premium has increased since the 1980s, and party members in rural China benefit more from party membership than those from urban areas.

This paper also finds suggestive evidence on the mechanism for how party membership brings benefits in the labor market in China. Exploring the distinctive institutional characteristics of the Chinese government job assignment program, I find that political affiliation with the party brings higher paying jobs via the assignment program. However, I did not find any evidence that members benefit from the wider social networks party membership brings them. This is an interesting finding as a growing number of studies have argued that there are benefits to non-human capitals such as political or social capital in the labor market.

An important limitation of this study is that my analysis is based on reported earnings and cannot take under-reported earnings of party members such as bribes into account. If party membership is correlated with under-reported earnings, my estimates are underestimating the benefits of membership. My findings are consistent with theories and anecdotal evidence on how Party members gain power in the labor market in China. In the midst of growing income inequality it is important to understand the economic returns on non-human capital such as political and social capital as well as human capital.

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Table 1: Characteristics of Communist Party Members and Non-Party Members , CHIP 2002 Urban

	2002	
	Party	Non-party
Earning (yuan/month)	1155.68 (740.42)	890.82 (616.97)
Age	41.87 (9.89)	40.12 (8.55)
Male	0.65 (0.48)	0.52 (0.50)
Years of education	12.61 (2.84)	10.94 (2.86)
Number of people who can help to find jobs	1.38 (2.20)	1.19 (1.98)
Education Level:		
Graduate school (avg 17 yrs of educ)	0.01 (0.12)	0.004 (0.06)
College or university (avg 15 yrs of educ)	0.17 (0.38)	0.06 (0.24)
Junior college (avg 14 yrs of educ)	0.34 (0.47)	0.17 (0.38)
Technical school (avg 12 yrs of educ)	0.14 (0.35)	0.12 (0.32)
Senior middle school (avg 11 yrs of educ)	0.21 (0.41)	0.32 (0.47)
Junior middle school (avg 8 yrs of educ)	0.11 (0.32)	0.29 (0.45)
Elementary school (avg 4 yrs of educ)	0.01 (0.09)	0.03 (0.17)
Classes for eliminating illiteracy (avg 2 yrs of educ)	0	0.001 (0.03)
Never schooled	0	0.001 (0.04)
Occupation:		
Owners or managers of private enterprise	0.003 (0.05)	0.004 (0.06)
Self-employed	0.005 (0.07)	0.02 (0.15)
Professional or technical workers	0.25 (0.43)	0.20 (0.40)
Directors of institution	0.25 (0.43)	0.04 (0.19)
Office workers	0.27 (0.44)	0.18 (0.39)
Skilled workers	0.11 (0.32)	0.24 (0.43)
Unskilled Workers	0.10 (0.30)	0.28 (0.45)
Other	0.02 (0.12)	0.03 (0.16)
N	3,186	5,921

Notes: The data come from Chinese Household Income Project (CHIP) 2002 Urban. Average years of education attained are reported in parenthesis next to each education level. They are calculated from the data to provide comparison of the education level. Standard deviation is reported in parenthesis. I have restricted the sample to respondents who are 18 or older.

Table 2: OLS Estimates of Returns to the Communist Party Membership, CHIP 2002 Urban

	Dependent variable: log(wage)				
	(1)	(2)	(3)	(4)	(5)
Communist Party membership	0.174 ^{***} (0.017)	0.160 ^{***} (0.017)	0.090 ^{***} (0.017)	0.162 ^{***} (0.017)	0.155 ^{***} (0.016)
Years of education	0.072 ^{***} (0.004)	0.054 ^{***} (0.004)	0.034 ^{***} (0.004)	0.052 ^{***} (0.004)	0.049 ^{***} (0.004)
Potential experience	0.043 ^{***} (0.006)	0.040 ^{***} (0.006)	0.042 ^{***} (0.005)	0.041 ^{***} (0.006)	0.035 ^{***} (0.006)
Potential experience squared	-0.001 ^{***} (0.0001)	-0.001 ^{***} (0.0001)	-0.001 ^{***} (0.0001)	-0.001 ^{***} (0.0001)	-0.001 ^{***} (0.0001)
Female	-0.192 ^{***} (0.016)	-0.195 ^{***} (0.016)	-0.168 ^{***} (0.016)	-0.203 ^{***} (0.016)	-0.229 ^{***} (0.016)
Ability proxy:					
Top 20%	...	0.237 ^{***} (0.035)	0.148 ^{***} (0.034)	0.223 ^{***} (0.035)	0.211 ^{***} (0.033)
Upper 20%	...	0.156 ^{***} (0.028)	0.083 ^{***} (0.026)	0.146 ^{***} (0.028)	0.127 ^{***} (0.027)
Middle 20%	...	0.112 ^{***} (0.026)	0.077 ^{***} (0.025)	0.103 ^{***} (0.026)	0.087 ^{***} (0.025)
Lower 20%	...	0.023 (0.059)	0.043 (0.052)	0.015 (0.059)	-0.016 (0.055)
Family background controls	No	No	No	Yes	Yes
Occupation controls	No	No	Yes	No	No
Province fixed effects	No	No	No	No	Yes
<i>F</i> -stat for ability proxy (<i>p</i> -value)	...	12.89 (< 0.001)	...	11.23 (< 0.001)	11.82 (< 0.001)
R ²	0.150	0.156	0.240	0.164	0.252
N	8,029	8,029	8,029	8,029	8,029

Notes: Robust standard errors are reported in parenthesis. ^{***}, ^{**}, and ^{*} indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. In addition to the control variables reported in the table, each specification also includes urban household registration status (hukou), race, and marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. Urban registration status is equal to one if the respondent obtained urban household registration status either in the resident city or other city; race includes minority, and other race; marital status includes married, divorced, widowed, and other marital status. Ability controls are respondents' middle school performance and the omitted category is lowest 20th percentile. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. Respondents' occupation controls include categories reported in Table 1. I have restricted the sample to respondents who are 18 or older and only urban households are included. The sample size is smaller than Table 1 because I lost some observation due to missing parental education and occupation information.

Table 3: Propensity Score Matching Estimates, CHIP 2002 Urban

	Radius Caliper (0.0001) (1)	Radius Caliper (0.00005) (2)	Caliper (0.0001) (3)	Caliper (0.00005) (4)	Nearest (1) (5)	Kernel Matching (6)
Difference in log earning (ATT)	0.151 (0.026) ^{***} [0.031] ^{***}	0.101 (0.031) ^{***} [0.038] ^{***}	0.145 (0.028) ^{***} [0.029] ^{***}	0.109 (0.032) ^{***} [0.038] ^{***}	0.135 (0.028) ^{***} [0.028] ^{***}	0.136 (0.022) ^{***} [0.023] ^{***}
N	3,958	2,486	3,958	2,486	7,986	7,986

Notes: Standard errors are reported in parenthesis and bootstrap standard errors are reported in brackets. Number of observations refer to observations on common support that is used to make comparison between treatment and control groups. Probit models are used for propensity score estimation. The balance of covariates between party members and non-party members for radius caliper (0.0001) is reported in Appendix Table 1.

Table 4: Relationship between Father's Party Membership and Own Party membership and Reduced Form Estimates, CHIP 2002 Urban

Independent variables	Dependent variable: Own party membership status		Dependent variable: Log(wage)	
	(1)	(2)	(3)	(4)
Father's Communist Party membership	0.092*** (0.014)	0.093*** (0.014)	0.037** (0.018)	0.050*** (0.017)
Years of education	0.052*** (0.003)	0.054*** (0.003)	0.060*** (0.004)	0.057*** (0.004)
Potential experience	0.004 (0.003)	0.005 (0.003)	0.042*** (0.006)	0.036*** (0.006)
Potential experience squared	0.0002*** (0.0001)	0.0002** (0.0001)	-0.001*** (0.0001)	-0.001*** (0.0001)
Female	-0.103*** (0.012)	-0.104*** (0.012)	-0.219*** (0.016)	-0.243*** (0.015)
Ability proxy:				
Top 20%	0.187*** (0.025)	0.179*** (0.025)	0.249*** (0.035)	0.234*** (0.033)
Upper 20%	0.150*** (0.020)	0.141*** (0.020)	0.165*** (0.028)	0.142*** (0.027)
Middle 20%	0.063*** (0.019)	0.055*** (0.020)	0.108*** (0.026)	0.090*** (0.025)
Lower 20%	-0.056 (0.045)	-0.068 (0.045)	0.005 (0.060)	-0.027 (0.056)
Family background controls	Yes	Yes	Yes	Yes
Province fixed effects	No	Yes	No	Yes
Pseudo R ² / R ²	0.137	0.143	0.155	0.245
N	8,021	8,021	8,021	8,021

Notes: I use probit to model the relationship between own party membership and father's party membership in columns (1) – (2) and table reports marginal effects that are evaluated at the means. OLS estimate is used in columns (3) – (4). Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. In addition to the control variables reported in the table, each specification also includes urban household registration status (hukou), race, and marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. Urban household registration status is equal to one if the respondent obtained urban household registration status either in the resident city or other city; race includes minority, and other race; marital status includes married, divorced, widowed, and other marital status. Ability controls are respondents' middle school performance and the omitted category is lowest 20th percentile. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. I restricted the sample to age 18 or older and only urban households are included. The sample size is smaller than Table 2 because I lose some observations due to missing parental education, occupation, and father's party membership information.

Table 5: Regression of Observable Measure of Ability and Other Characteristics on Father's Party Membership IV, CHIP 2002 Urban

Independent variables:	Dependent variables:					
	Middle School Performance		Top 20% in Middle School		Attended High-Ranked University	
	(1)	(2)	(3)	(4)	(5)	(6)
Own Communist Party membership	0.177*** (0.017)	...	0.048*** (0.008)	...	0.028 (0.021)	...
Father's Communist Party membership	...	-0.012 (0.020)	...	-0.004 (0.010)	...	-0.028 (0.025)
Years of education	0.110*** (0.004)	0.116*** (0.004)	0.040*** (0.002)	0.042*** (0.002)	0.033*** (0.005)	0.033*** (0.005)
Potential experience	0.010*** (0.002)	0.008*** (0.002)	0.004*** (0.001)	0.004*** (0.001)	-0.009*** (0.003)	-0.009*** (0.003)
Potential experience squared	-0.00003 (0.0004)	0.00002 (0.00004)	-0.00004 (0.00002)	-0.00003 (0.00002)	0.0003*** (0.0001)	0.0003*** (0.0001)
Female	-0.003 (0.016)	-0.026 (0.016)	-0.025*** (0.008)	-0.031*** (0.008)	-0.080*** (0.021)	-0.080*** (0.021)
Family background controls	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.148	0.146	0.086	0.082	0.045	0.044
N	8,731	8,731	8,731	8,731	2,264	2,264

	Attended National/Provincial/City Level Middle School		Health Status		Social Network	
	(1)	(2)	(3)	(4)	(5)	(6)
Own Communist Party membership	0.025*** (0.010)	...	0.065*** (0.019)	...	0.163*** (0.060)	...
Father's Communist Party membership	...	-0.001 (0.011)	...	0.014 (0.022)	...	-0.007 (0.068)
Years of education	0.025*** (0.002)	0.026*** (0.002)	-0.015*** (0.004)	-0.012*** (0.004)	0.041*** (0.014)	0.050*** (0.013)
Potential experience	-0.008*** (0.001)	-0.008*** (0.001)	-0.020*** (0.002)	-0.021*** (0.002)	0.007 (0.013)	0.006 (0.013)
Potential experience squared	0.0002 (0.00002)	0.0002 (0.00002)	0.0001 (0.0004)	0.0001 (0.0004)	-0.0003 (0.0003)	-0.0003 (0.0003)
Female	-0.017** (0.009)	-0.021** (0.009)	-0.123*** (0.018)	-0.131*** (0.018)	-0.063 (0.058)	-0.082 (0.058)
Family background controls	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.075	0.074	0.079	0.074	0.014	0.013
N	8,602	8,602	8,731	8,731	6,159	6,159

Notes: OLS is used for estimation. Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. These are the same set of control variables I have in the main specification in Table 6. In addition to the control variables reported in the table, each specification also includes urban registration status (hukou), race, and marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. Urban household registration status is equal to one if the respondent obtained urban house registration status either in the resident city or other city; race includes minority, and other race; marital status includes married, divorced, widowed, and other marital status. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. Middle school performance is an index that summarizes individual's middle school performance. The higher number indicates higher performance. Top 20% in middle school is a binary variable equal to one if individual performance belongs to top 20% of the distribution. Attended high-

ranked university is a binary variable equal to one if individual reported attended high-ranked university. Attended national/provincial/city level middle school is a binary variable equal to one if individual reported attended one of these three middle schools. Health status is an index that summarizes the individual's health status. The higher the number indicates the better health status. Social networks is a number of friends and relatives whom respondents can ask for help if they want to change the job. I restricted the sample to who are 18 and only urban households are included.

Table 6: The Effect of Chinese Communist Party Membership, CHIP 2002 Urban

	Dependent variable: Log(wage)							
	OLS	OLS	IV	IV	IV	IV	IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Communist Party membership	0.160*** (0.017)	0.162*** (0.017)	0.208 (0.146)	0.328** (0.138)	0.434*** (0.156)	-0.184 (0.302)	0.342 (0.227)	-0.010 (0.189)
Anderson-Rubin p-value	...	...	0.158	0.018	0.005	0.542	0.123	0.958
Years of education	0.054*** (0.004)	0.052*** (0.004)	0.049*** (0.008)	0.041*** (0.008)	0.036*** (0.009)	0.042*** (0.013)	0.032*** (0.009)	0.044*** (0.010)
First stage:								
Predicted CCP (IV)	...	...	1.265*** (0.113)	1.256*** (0.111)	1.320*** (0.129)	1.098*** (0.224)	1.130*** (0.205)	1.236*** (0.137)
<i>F</i> -stat for IV	...	...	125.09	128.11	104.47	23.99	30.26	81.49
Family background controls	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province fixed effects	No	No	No	Yes	Yes	Yes	Yes	Yes
Same or different occupation as father?	No	No	No	No	Different	Same	No	No
Public or private sector	Both	Both	Both	Both	Both	Both	Public	Private
R ²	0.156	0.164	N/A	N/A	N/A	N/A	N/A	N/A
N	8,021	8,021	8,021	8,021	6,667	1,347	2,688	5,244

Notes: Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. In addition to the control variables reported in the table, each specification includes the same set of individual level controls reported in Table 2. In addition to the control variables reported in the table, each specification also includes ability controls, urban household registration status (hukou), race, and marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. Urban household registration status is equal to one if the respondent obtained urban household registration status either in the resident city or other city; race includes minority, and other race; marital status includes married, divorced, widowed, and other marital status. Ability controls are respondents' middle school performance and the omitted category is lowest 20th percentile. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. I have restricted the sample to who are 18 or older and only urban households are included.

Table 7: Complier Characteristics Ratios for Father's Party Membership Instrument

Variable	Relative Likelihood
Male	0.94
Age 25 or younger	1.10
Professional occupation	0.71
Office workers at public sector	1.08
Skilled workers	0.77
College or above graduates	0.80
Technical school graduates	0.51
Obtained the job from open exam	0.83

Note: The relative likelihood a complier is in these categories is the ratio of the first stage for individuals in these categories to the overall first stage (Angrist and Pischke, 2009).

Table 8: Distribution of How Workers Gain Employment and Social Networks,
CHIP 2002 Urban

	Party members	Non-party members
	Percent	Percent
Assigned by government	69.50	49.11
Inherited it	3.34	6.88
Open examination	8.48	8.36
Employment agency	3.09	3.73
Newspaper	1.86	2.68
Referral	4.76	11.23
On your own	6.58	12.94
Started own business	0.44	2.92
Other	1.95	2.15
N	3,174	5,897
Average Number of Friends/Relative who can provide help to find jobs	1.38	1.20
N	3,186	5,921

Notes: The sample size is smaller than Table 1 due to missing information on how they got their jobs. I restricted the sample to respondents who are 18 or older and only urban households are included.

Table 9: Effect of Communist Party membership and Father's Party Membership on Social Networks, CHIP 2002 Urban

	Dependent variable: Log (Number of people who can help to find jobs)		
	(1)	(2)	(3)
Communist party membership	0.096*** (0.024)	0.088*** (0.024)	0.089*** (0.024)
Father's party membership	0.016 (0.022)	0.007 (0.026)	...
Years of education	0.029*** (0.004)	0.016*** (0.006)	0.016*** (0.006)
Potential experience	0.0001 (0.005)	-0.005 (0.006)	-0.005 (0.006)
Potential experience squared	0.00002 (0.0001)	0.0001 (0.0001)	0.0001 (0.0001)
Other individual level controls	No	Yes	Yes
R	0.028	0.048	0.048
N	3,574	3,574	3,574

Notes: Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. Other individual level controls include ability controls, urban registration status (hukou), race, and marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. Urban registration status is equal to one if the respondent obtained urban hukou status either in the resident city or other city; race includes minority, and other race; marital status includes married, divorced, widowed, and other marital status. Ability controls are respondents' middle school performance. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. The dependent variable, social networks, is a number of friends and relatives whom respondents can ask for help if they want to change the job.

Table 10: The Effect of Chinese Communist Party Membership, Modes Gaining Employment and Social Networks, CHIP 2002 Urban

	Dependent variable: Log(wage)		
	(1)	(2)	(3)
Chinese Communist Party (CCP)	0.163*** (0.016)	0.116*** (0.017)	0.163*** (0.018)
Years of education	0.051*** (0.004)	0.042*** (0.004)	0.051*** (0.004)
<i>Modes of getting jobs:</i>			
Assigned by government	...	0.275*** (0.031)	...
Inherited it	...	0.225*** (0.039)	...
Open examination	...	0.143*** (0.037)	...
Employment agency	...	0.067 (0.048)	...
Newspaper	...	0.124* (0.067)	...
Referral	...	0.092 (0.041)	...
Started own business	...	-1.046*** (0.109)	...
Other	...	0.067 (0.055)	...
<i>F</i> -statistic for modes of getting job (<i>p</i> -value)	...	34.56 (< 0.0001)	...
<i>Social network:</i>			
Include number of friends who can help to find a job	No	No	Yes
<i>F</i> -statistic for social network (<i>p</i> -value)	...	...	1.14 (0.301)
R ²	0.165	0.237	0.167
N	8,024	8,024	8,024

Notes: Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. Each specification includes ability controls, potential experience, potential experience squared, female, urban registration status (hukou), race, marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. Urban registration status is equal to one if the respondent obtained urban hukou status in the resident city or other city; race includes majority, minority, and other; marital status includes single, married, divorced, widowed, and other. Ability controls are the respondent's middle school performance. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. I restricted the sample to those who are 18 years or older and only urban households are included

Table 11: The Changes in Wage Premium of Chinese Communist Party Membership, CHIP Urban

	Dependent variable: Log(wage)							
	1988			1995			2002	
	OLS (1)	OLS (2)	2SLS (3)	OLS (4)	OLS (5)	2SLS (6)	OLS (7)	2SLS (8)
Communist party membership	0.080*** (0.005)	0.056 (0.050)	0.193 (0.277)	0.120*** (0.012)	0.067 (0.086)	-0.189 (0.403)	0.155*** (0.016)	0.328** (0.138)
Anderson-Rubin p-value	...	...	0.486	...	...	0.641	...	0.018
Years of education	0.037*** (0.001)	0.048*** (0.005)	0.047*** (0.006)	0.052*** (0.002)	0.061*** (0.010)	0.067*** (0.015)	0.050*** (0.004)	0.041*** (0.008)
Potential experience	0.039*** (0.001)	0.030*** (0.007)	0.029*** (0.007)	0.057*** (0.003)	0.061*** (0.013)	0.065*** (0.015)	0.036*** (0.006)	0.034*** (0.006)
Potential experience squared	-0.0004*** (0.00002)	0.0004 (0.0005)	0.0004 (0.005)	-0.001** (0.0001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001*** (0.0001)	-0.001*** (0.0001)
Female	-0.087*** (0.004)	-0.030 (0.020)	-0.028 (0.020)	-0.150*** (0.011)	-0.102** (0.042)	-0.104** (0.041)	-0.229*** (0.016)	-0.213*** (0.021)
Family background controls	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.482	0.142	N/A	0.280	0.214	N/A	0.252	N/A
First stage:								
Predicted CCP (IV)	...	...	1.016 (0.287)	...	...	0.830 (0.248)	...	1.256 (0.111)
F-stat for IV	...	...	12.51	...	...	11.15	...	128.11
χ^2 -stat for father's Communist party membership in probit	...	...	3.07	...	...	0.06	...	43.90
N	17,407	1,366	1,366	11,872	1,136	1,136	8,021	8,021

Notes: Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. The middle school performance measures are jointly highly significant. For columns (1) – (6), each specification includes potential experience, potential experience squared, female, urban registration status, race, marital status. Potential experience is calculated as individual's age minus the years of schooling minus 6. The family background controls include education level and occupation of respondents' father and mother. Parental education level includes dummy variables indicating classes for eliminating illiteracy, elementary, junior middle, senior middle, technical secondary or junior, college, and graduate school; parental occupational category includes dummy variables for owner, self-employed, professional director of government institution, department director of government institution, clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker, and other or homemaker. For columns (7) – (8), notes from Table 6 apply. I restricted the sample who are 18 and only urban households are included.

Table 12: Wage Premium of Chinese Communist Party Membership, CHIP Rural

	Dependent variable: Log(wage)					
	1988	1995	2002			
	OLS (1)	OLS (2)	OLS (3)	IV (4)	IV (5)	IV (6)
Communist party membership	-0.044 (0.041)	0.106 (0.075)	0.299*** (0.048)	0.819*** (0.284)	0.763* (0.425)	-0.422 (0.452)
Anderson-Rubin p-value	...	...	...	0.004	0.065	0.344
Years of education	0.033*** (0.006)	0.014 (0.010)	0.083*** (0.007)	0.067*** (0.011)	0.071 (0.021)	0.109 (0.013)
Potential experience	0.022*** (0.004)	0.020*** (0.006)	0.017*** (0.006)	0.011* (0.007)	0.036 (0.014)	0.036 (0.010)
Potential experience squared	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0004*** (0.0001)	-0.0004*** (0.0001)	-0.001 (0.0002)	-0.001 (0.0002)
Female	-0.159*** (0.031)	-0.169*** (0.045)	-0.013 (0.033)	0.006 (0.034)	0.106 (0.077)	0.015 (0.049)
Family background controls	No	No	Yes	Yes	Yes	Yes
Village fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Private or public only?	Both	Both	Both	Both	Public	Private
R ²	0.137	0.116	0.090	N/A	N/A	N/A
First stage:						
Predicted CCP (IV)	...	...	...	0.870*** (0.072)	1.027*** 0.155	0.998*** (0.159)
F-stat for IV	...	...	...	145.83	43.70	39.56
χ^2 -stat for father's Communist party membership in probit	...	...	...	39.14	8.41	26.54
N	1,961	1,397	7,694	7,694	937	2,111

Notes: Robust standard errors are reported in parenthesis. ***, **, and * indicate that the estimates are statistically significant at the one-, five-, or ten-percent level. The middle school performance measures are jointly highly significant. For columns (1) – (2), each specification includes potential experience, potential experience squared; dummy variables for female and minority. Potential experience is calculated as individual's age minus the years of schooling minus 6. For columns (3) – (4), notes from Table 6 apply. I restricted the sample to those who are 18 years or older. Only rural households are included.

Appendix Table 1: Comparison of Part Members and Non-party Members in Matched Sample Using Radius Caliper (0.0001) with Replacement Algorithm

	Party Members (N=1,197)	Non-Party Members (N=2,883)	% Bias	t-stat	p-value
Potential	25.154	24.444	7.6	2.13	0.033
Potential experience squared	721.05	691.47	6.4	1.79	0.073
Urban household registration	0.990	0.992	-1.6	-0.49	0.623
Minority	0.039	0.036	1.8	0.53	0.598
Married	0.953	0.940	6.2	1.77	0.077
Divorced	0.010	0.012	-1.5	-0.39	0.696
Widow	0.005	0.006	-0.7	-0.21	0.833
Female	0.410	0.393	3.5	1.00	0.318
Graduate school	0.006	0.010	-3.7	-1.20	0.232
College	0.125	0.108	5.4	1.52	0.128
Junior college	0.248	0.264	-3.7	-1.03	0.305
Technical school	0.151	0.151	-2.5	-0.69	0.490
Senior middle school	0.273	0.284	-3.9	-1.12	0.264
Junior middle school	0.182	0.172	2.5	0.75	0.455
Elementary school	0.015	0.011	2.4	0.88	0.379
Years of education	11.818	11.873	-1.9	-0.55	0.580
Years of education squared	148.1	148.89	-1.2	-0.34	0.733
Years of education cubed	1941.4	1949.1	-0.6	-0.18	0.861
Top performance	0.159	0.142	4.9	1.40	0.160
Upper performance	0.348	0.388	-8.4	-2.34	0.019
Middle performance	0.262	0.254	1.9	0.55	0.584
Lower performance	0.015	0.018	-2.6	-0.79	0.428
Age	42.971	42.317	7.9	2.27	0.023
Age squared	1912.5	1861.3	7.4	2.11	0.035
Age cubed	87664	84654	6.5	1.87	0.061

Notes: Probit models are used for PSM estimation. In addition to above covariates, the specification includes father's education level and occupation, and interactions between education level and occupation.

Appendix Table 2: Comparison of Mean of Observable Measures of Ability and Other Characteristics by Father's Party Membership

Variables	Father is Party	Father is non-party	Difference (p-value)
Middle school performance	3.762	3.756	-0.006 (0.358)
Top 20% in middle school	0.180	0.180	-0.0002 (0.489)
Attended high-ranked university	0.381	0.409	0.027 (0.904)
Attended national/provincial/city level middle school	0.278	0.224	-0.055*** (< 0.001)
Health status	3.893	3.813	-0.080*** (< 0.001)
Social network	1.375	1.308	-0.066 (0.122)
Residuals from the following regression:			
Middle school performance	-0.005	0.003	0.008 (0.696)
Top 20% in middle school	-0.002	0.001	0.003 (0.645)
Attended high-ranked university	-0.011	0.008	0.018 (0.818)
Attended national/provincial/city level middle school	-0.001	0.0003	0.001 (0.534)
Health status	0.006	-0.003	-0.009 (0.302)
Social network	-0.003	0.002	0.005 (0.535)

Note: Raw means without any adjustments are reported in the top panel. P-values of the difference in mean are reported in the parenthesis. The bottom panel reports the mean of residuals from regressions that includes the same controls as Table 5, but without father's party membership indicators.

Appendix Figure 1: Distribution of the Propensity Score by Membership Status Using Radius Caliper (0.0001) with Replacement Algorithm

