HITOTSUBASHI UNIVERSITY

Hi-Stat Discussion Paper

**Research Unit for Statistical
and Empirical Analysis in Social Sciences (Hi-Stat)**

**The Value of Power in China:
How Do Party Membership and Social Networks
Affect Pay in Different Ownership Sectors?**

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November 2008

The Value of Power in China:

How Do Party Membership and Social Networks Affect Pay in Different Ownership Sectors?[*]

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Abstract: Party membership and social networks, as two forms of nonmarket power, have significant effects on personal income. Do the effects vary across different ownership sectors (*suoyouzhi xingzhi*)? Using a nationally representative survey of urban households (China Household Income Project surveys in 1995 and 2002), we find that (1) party membership can significantly increase personal income, but this effect does not significantly differ between different ownership sectors or between the years 1995 and 2002 and (2) social networks are insignificant in State-Owned Enterprises (SOEs), while they contribute significantly to personal income in non-SOE sectors.

Keywords: Income, Party membership, Social networks, Ownership, Marketization

JEL Classification: J40, O15, P26, Z13

1. Introduction

In recent years, interest among economists in studying the effects of nonmarket power (e.g., personality, social networks) on personal income has grown. However, the relationship between nonmarket power and the market system is still unclear. It is possible that nonmarket forces could either be replaced by the market system during its formation and development, or lie embedded in the market mechanism with the result of an enhanced return to nonmarket forces caused by marketization. Market reforms in China, and especially the various degrees of marketization in different ownership sectors (*suoyouzhi xingzhi*), provide a rare opportunity to investigate the relationship between market and nonmarket power. In this paper, there are two types of nonmarket power. One is membership of the Chinese Communist Party, the Chinese variant of political status. The other is social network, which has been extensively discussed in the literature. In modern China, as a result of the hierarchical political and social structure and the differences caused by individual political status and social networks, these nonmarket factors have become important determinants of personal earnings, including invisible and gray income (e.g., Bian, 1994; Lee, 1998; Knight and Yueh, 2002; Appleton *et al*., 2005). Nevertheless, little research has explored the relationship between marketization and the effects of the two nonmarket forces. During the process of gradual economic reform, the power nurtured by nonmarket factors has not been eliminated by marketization. Instead, those who hold the power could probably realize its value by manipulating the new market system. China's marketization can be better understood if we know the returns to nonmarket forces.

Based on a nationally representative cross-sectional survey of Chinese urban households conducted by the China Household Income Project (CHIP) for two reference years, 1995 and 2002 (hereinafter referred to as the 1995 and 2002 CHIP surveys), we probe the impacts of Party membership and social networks on urban residents' incomes in different ownership sectors. Our results show that Party membership contributes significantly to

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individual earnings, but this effect does not differ by sector, or between 1995 and 2002. Meanwhile, the benefit of social networks on earned income does depend on the ownership sector. Social networks are insignificant in state-owned units, where the level of marketization is relatively low, but brings substantial income premiums in market-oriented parts of the labor market. If marketization proceeds over time and non-SOE sectors are more subject to market forces than their SOE counterparts, then our paper provides empirical evidence that marketization does not necessarily weaken the influences of nonmarket forces. Instead, the rewards for nonmarket power could possibly be realized in monetary terms because the new market mechanism contains many nonmarket factors.

These findings can help us forecast the pathway of China's future marketization. If social networks are more important in market-oriented sectors during China's economic transition, then in order to pursue further gains in income, people with a wide social network will reinvest in social capital to continue to increase their income premium. This might lead to a decline in China's income mobility, as suggested by the existing literature (Wang, 2005; Yin *et al*., 2006). Thus, this is a reminder not to be too optimistic about China's current high income mobility and that the future effects of intergenerational transmission of social networks, as well as education, should be considered when investigating income inequality in China in the long-run.[1] If the establishment of the market system is accompanied by an expanding social network, the impact of such marketization on China's future development is something well worth studying.

The structure of this paper is as follows. In Section 2 we review the relevant literature, and point out its potential problems and our contribution. Section 3 describes the data. Section 4 presents and interprets the empirical results. Section 5 concludes.

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[1] Previous studies have found that income mobility in postreform China has been significantly higher than in Western countries such as the US, Germany and Belgium. (Khor and Pencavel, 2005; Ding and Wang, 2005).

2. Literature Review

2.1 Communist Party Membership

The role played by Communist Party membership in the labor market has provoked much controversy in the literature. Two studies examine Chinese Communist Party membership as a form of political capital using CHIP surveys. Knight and Yueh (2002), based on another CHIP survey focusing on urban households for 1999, studied the economic importance of individual Party membership in urban labor markets. They found that Party membership could enhance personal income. As a by-product of the research, they categorized the whole sample according to ownership sector and age cohort, respectively, and then compared the coefficients on Party membership. They discovered that market-oriented sectors have higher rewards for Party membership than the nonmarket sector, as does the youngest cohort in comparison with its oldest counterpart. Therefore, they suggest that Party membership would have an increasing influence on personal earnings because the younger group would be more subject to market forces and, in addition, the private sector would expand with marketization.

Although interesting, the reason for their finding still needs further investigation. First, if we want to test whether the partial effects of Party membership differ significantly by ownership sector, it might be advisable to establish interactions between Party membership and ownership sector and age cohort, respectively, based on the overall sample. If the interaction term is significant, it indicates there is indeed significant difference between ownership sectors or age cohorts in returns to Party membership. In our paper, we introduce interaction terms in the econometric model, which are found to be insignificant. Second, they found Party membership was more important for younger relative to older groups, but it is still uncertain whether this stems from the enhanced benefits of Party membership from marketization. Sato and Eto (2008), using the 2002 CHIP survey, found that younger Party members tended to have more years of schooling than their older predecessors, thus it might be possible that the higher income premium in the younger cohort actually reflects the

increasing return to education during marketization, which is confirmed later in our paper.

Appleton *et al*. (2005), using the 1995 and 2002 CHIP data as well as the CHIP surveys for 1988 and 1999, found the premium to Party membership in 2002 smaller than that in 1999. They argued that, because of the changing composition of Party membership, new entrants might have unobserved characteristics that tend to be less productivity-enhancing, which resulted in a declined return to Party membership. However, their differences of coefficients on Party membership in these years were statistically insignificant. Again, it is better to integrate the data for all years and establish interaction terms for Party membership and the year dummy. If the interaction term is significantly negative, it demonstrates that the impact of Party membership on earnings is indeed decreasing significantly over time. In our paper, based on the pooled cross-sectional data set for 1995 and 2002, we constructed an econometric model with the interaction term between Party membership and the year dummy, only to find that the income premium does not differ between the two years.

Li *et al*. (2005a) showed that much of the economic return to Party membership resulted from the effects of omitted ability or family background variables. By employing a within-twin-pair fixed-effects model to control these omitted variables, they found that the effect of Party membership in ordinary least-squares estimates all but disappeared. In addition, considering the strict Party membership selection process, they conclude that the premium to Party membership was mainly attributed to unobserved ability or family background. In fact, there are some limits to the use of the within-twin-pair fixed-effects model to control unobserved variables. First, some unobserved qualities, which are cultivated via nurture and might vary even within a pair of twins, are difficult to control through the first difference approach. Second, given the possible preference of the parents, the family environment might not be exactly the same for each twin. Third, if the return to Party membership also depends on another variable (e.g., ownership sector of the work unit), which differs between the twins, then the first difference cannot completely control the unobserved factor either.

Is there a more direct approach to studying the return to Party membership over the period of the marketization process? Does Party membership represent individual ability or political capital? Li *et al.* (2005a) thought it largely indicated omitted ability. Their argument is that China's market reform started with a planned economy characterized by depressed returns to human capital. With the progress of market reform, ability as measured by Party membership, which is supposed to accord with education, would be rewarded more in market-oriented sectors. In our paper, we add the interaction term between Party membership and ownership sector in the income function as well as that of Party membership and year dummy, using pooled cross-sectional data for 1995 and 2002. If our empirical results showed that both education and Party membership had higher rewards in non-SOE sectors or in the more recent year, then Party membership is probably an indicator of either ability or political capital, and they would both generate a higher income premium during market reform. However, our findings suggest that education is more valuable in market-driven sectors and in 2002, as expected, while there is no significant difference between returns to Party membership in these comparison groups. Therefore, it is likely that Party membership reflects both ability and political capital, and when market reform enhances the return to unobserved ability, it reduces that of political capital.

2.2 Social Networks

As an informal institution, social networks contribute a great deal to economic development, as has been verified in the literature. In the labor market, social networks have positive effects on individual earnings in many countries (e.g., Granovetter, 1995[1974]; Waldinger, 1996; Bartlett and Miller, 1985; Mortensen and Vishwanath, 1994), and China is no exception (Bian, 1994; Lee, 1998). Furthermore, there is growing interest in the relationship between social networks and formal institutions. Can social networks be embedded in formal institutions and thus play a more important role, or be weakened by market forces during economic transition?

Sociologists have explored the relationship between market transition and social stratification, focusing on whether the redistributive economy-based stratification mechanisms still predominate during market transition.[2] "The power transition theory" (Szelenyi, 1978; Nee, 1991, 1996) holds that traditional power might transit to the market during market reform, hence the redistributive economy-based stratification mechanisms and traditional elites would decline, and new stratification mechanisms and elites would be nurtured by the market. In contrast, "The power persistence theory" believes that redistributive economy-based power still functions during marketization, thus the traditional elites continue to dominate based on stratification mechanisms. Zhang *et al*.（2007）studied whether the effects of social capital, including social networks and public trust, changed with marketization, and found that generally the return to social capital (especially the social network of the household) declined with marketization. With the focus on rural poverty, their research used data from rural areas, providing another piece of evidence about the influence of China's marketization on the returns to social capital. However, it might not reflect the whole reality of economic transition.

In our paper, we investigate the returns to social networks in Chinese urban labor markets and their possible change during marketization, which is the background in our paper. Based on data from urban China, our research probes differences between the benefits of social networks by ownership sector. Knight and Yueh (2002) found that social networks contributed to individual earnings in urban labor markets. Additionally, they divided the entire sample by ownership sector, and discovered that social networks paid more in privately owned sectors than in the state-owned sector. In our paper, we construct the interaction term between social network and the ownership sector to test whether there are significant differences in the returns to social networks by ownership sector.

If we confirm the impact of Party membership and social networks on earnings, we

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[2] In sociology, redistributive economy refers to the nonmarket trade dominated by national political power, and it mainly studies the system of redistribution under socialism. On the other hand, market economy is interpreted as free transactions based on the price mechanism in the market (Szelenyi, 1978). Here we follow the sociological literature since redistributive economy and market system are comparable terms.

still need to explore their mechanisms, hence it is especially important to study the changing roles of Party membership and social networks during market reform. In modern China's hierarchical political and social structure, political status and social capital normally symbolize power and can promote higher incomes. During the economic transition, we will investigate whether returns to power are influenced by market forces. If marketization results in a normative market system, then the rewards for political and social capital will decline, and it might be less likely that people with power can pursue higher earnings and thus gain more power. However, if the conventional political and social structure has entrenched itself within the newly-born market system, then the market rules might be dominated by people with power, and political and social capital will be transformed into market power owned by individuals. In this case, it is reasonable to expect that the returns to political and social capital will be enhanced rather than depressed by marketization, which might make it difficult to maintain China's high income mobility.

Our paper makes the following contributions that build upon previous literature. First, it is the first formal study of the impacts of marketization, political status and social networks on personal income by interacting ownership sector with political status and social networks, respectively. Second, through interaction terms between social capital and ownership sectors, it explores different effects of social capital in ownership sectors, which have different degrees of marketization. These findings can help us understand what Party membership and social capital really represent, and, more importantly, the nature of China's market economy and the future pathway to its economic transition.

3. Data

The data set we use is the China Household Income Project (CHIP) Survey conducted by the Institute of Economics, Chinese Academy of Social Science and National Bureau of Statistics in February 2003. The reference year is 2002. The sample size is 6835 urban households and

20,632 individuals, covering 12 provinces and 70 cities.[3] The provinces are Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Chongqing, Sichuan, Yuannan and Gansu. Since our research concentrates on employed persons, our sample actually includes information on 9998 individuals in the above 12 provinces in 2002.

Meanwhile, for comparison purposes, we also employ data from 1995. These data are also from CHIP in 1995. The sample size is 6934 urban households and 21,696 individuals, and covers 11 provinces and 69 cities. The provinces are Beijing, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Hubei, Guangdong, Sichuan, Yuannan and Gansu. Again, given the focus on employed individuals, our sample includes information on 12,290 persons in the 11 provinces in 1995.

Table 1 here

First, we concentrate on information about Party membership. Table 1 is the statistical description of our samples in 2002 and 1995. We summarize the ratios of Party membership in different ownership sectors as well as income comparison between Party members and non-Party members. The latter is measured by the difference between the mean income of Party members and non-Party members in all ownership sectors. In 2002, Party members accounted for 28.58% of the total, an increase of 3.94% over 1995. All ownership sectors experienced various rises in their percentage of Party membership. However, in both 2002 and 1995, the state-owned sector had the highest ratio, which is consistent with direct observation. Party members also earned more than their counterparts on average, and this income gap is significantly positive. We need to point out that in 1995 the private sector had only one Party member with an annual income of 3840 and 46 non-Party members with an average annual income of 6864.30. It is possible that the mean income for non-Party members is higher than its counterpart because of the small sample size.

Second, we need to find an appropriate operational measure of social capital at the individual level. Burt (1992) holds that size and density are the two typical measures of an

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[3] For a detailed description of the CHIP 2002 and 1995 data, see Gustafsson, Li and Sicular (2008).

individual's social network. The former refers to the number of contacts in the network and the latter their interrelatedness. For example, an individual might have a number of contacts who know each other. His or her network is denser and smaller than another individual's network in which few contacts know each other. Our measure of social capital is the reported number of relatives or friends an individual can ask for help to change his/her job. In urban labor markets, the number of contacts a person can approach for help in job switching is strongly correlated with the quality of resources and information he/she can use to increase earning power.

Table 2 presents summary statistics about social capital and related variables based on 2002 data.[4] We see that the mean size of social capital for an employed individual is around unity. To understand the significance of social capital, we divide each ownership sector subsample into two groups, those above the sector mean social capital and those below that mean. We then calculate the mean income difference between the two groups and test its significance. We find that the differences are significantly positive in all ownership sectors, with Others, Self-employed and Foreign and joint venture sectors among the top three.

Table 2 here

In some literature, Party membership is regarded as a type of social capital (e.g., Knight and Yueh, 2002), but we disagree for two reasons. First, social capital is based on social interaction, while Party membership is a form of political resource under China's unique political system. Second, using the 2002 sample, our correlation analysis of social networks and Party membership revealed a correlation coefficient of only 0.0442. Therefore, we can exclude the possibility that using Party membership and social networks simultaneously in the model might cause serious collinearity. It also indicates that Party membership is really distinct from social capital, so we need to control for them separately in the income function.[5]

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[4] There is no related information about social networks in the data of 1995.
[5] It should be noted that, because of data limitations, we do not consider differences in social network quality. It is quite possible that party members are more likely to have contact with more influential people.

4. Empirical Investigation

4.1 Differences between Ownership Sectors in Returns to Party Membership

First, we follow Knight and Yueh (2002) to study how Party membership influences income. Using the 2002 data, we partitioned the sample by ownership sector and then compared the coefficients on Party membership. The income function is as follows.

$$\ln Y_i = \alpha_{0i} + \beta_1 X_i + \beta_2 CP_i + \beta_3 OC_i + \beta_4 I_i + \beta_5 C_i + u_i$$

(1)

In Equation (1), the dependent variable is the log of individual annual income, which we choose for two reasons. First, total annual income can estimate a person's earnings more precisely than their wage. Since the income brought by political status and social network may not be necessarily transformed into wage growth, it is more appropriate to take total annual income as our dependent variable. Second, we tried the log of hourly income as an alternative dependent variable, but found no notable difference between the two indicators. Based on previous literature (Knight and Yueh, 2002; Appleton *et al.*, 2005), we employ the following independent variables.

1. Individual characteristics X_i. It encompasses a set of variables: gender, education, age and its square, a marital status dummy (base group is single), other Party member dummy. Because the turnover rate in China is relatively low and its strong correlation with age, we do not control for work experience in the model.[6]

2. Communist Party membership dummy, CP_i, equals 1 if an individual is a Communist Party member, and 0 otherwise.

3. Job Characteristics include the following. (1) Occupational status dummy OC_i. Occupational status is categorized into 11 segments including self-employed, enterprise

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[6] Even if we add the work experience variable, it does not influence the results.

owner, professional, clerical staff, skilled workers, unskilled workers and so on. based on the questionnaire. We use the self-employed status as the base group with 10 occupation dummies. (2) Industry dummy I_i. From the questionnaire, we define 15 industry dummies with the base group of government, Party, and other non-profit agencies.

4. City dummy C_i.

We need to point out that in the questionnaire, there are 12 ownership sectors, but in our paper, we reorganized these categories based on Knight and Yueh (2002) and Appleton *et al*. (2005) and the Chinese context. Specifically, SOE at central/provincial level, local SOE and state share-holding company are merged into a single state-owned sector. In addition, taking into account of the Chinese context, we add the government, Party, and other non-profit agencies to SOE as a broader state-owned sector. The private sector contains the original private firm (including partnership), rural private enterprise and other share-holding companies, our self-employed sector includes the original self-employed and rural individual enterprise[7], and we combine foreign company and Sino–foreign joint venture into our foreign and joint venture sector. The remaining two sectors, namely urban collective and other ownership sectors, remain the same.

Table 3 here

Table 3 shows our empirical results. Our t-tests show that Party membership can generate a positive income premium in the state-owned, urban collective, private and self-employed sectors. Specifically, the coefficient on Party membership in the state-owned sector is 0.07, the smallest among the above four. In the private and urban collective sectors it is 0.11 and 0.29, respectively, and it is largest in the self-employed sector, up to 0.43. In the remaining two sectors this coefficient is insignificant, which might be attributed to small sample size. These results appear to support the conclusion in Knight and Yueh (2002),

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[7] A small number of urban residents are employed in rural enterprises.

namely that the returns to Party membership differ by sector. In the market-oriented sectors, self-employed, private and urban collective, the returns to Party membership seem to be higher than their equivalents in the administrative sectors.

As we mentioned before, if we simply partition the entire sample into the different ownership sectors, without showing whether the differences of the coefficient on Party membership among these sectors is significant, the results might not be convincing. Therefore, we add interaction terms to our model as follows.

$$\ln Y_i = \alpha_{0i} + \beta_1 X_i + \beta_2 EDU_i + \beta_3 CP_i + \beta_4 O_i + \beta_5 CP_i * O_i + \beta_6 EDU_i * O_i$$
$$+ \beta_7 OC_i + \beta_8 I_i + \beta_9 C_i + u_i$$

$$(2)$$

In Equation (2), in addition to the control variables of Equation (1), we add an ownership sector dummy O_i (based on the questionnaire, we define six ownership sectors, namely state-owned, private, self-employed, foreign and joint venture, and other ownership sectors. We define five sector dummies with the state-owned sector the base group.), and the interaction term for Party membership and ownership sector, to see what difference, if any, Party membership makes in determining income in different ownership sectors. Since we divide the ownership sector into six groups with the state-owned sector the reference group, we construct five interaction terms, thus we interact Party membership with collective, private, self-employed, foreign and joint venture and other ownership sectors. If the coefficient on an interaction term is significant, it suggests that the role of Party membership does differ by sector, and not otherwise. We also define the interaction term $EDU_i * O_i$ for years of education and ownership sector.

Table 4 here

Table 4 shows the results of Equation (2), and here we focus our discussion on Party membership CP_i and its associated interaction term with ownership sector $CP_i * O_i$. First, we can confirm the positive premium Party membership generates for earnings. On the

interaction of Party membership and ownership sector, Table 4 demonstrates that all the interaction terms in question are insignificant, indicating that there is no substantial difference between the contribution of Party membership among sectors. Next we conduct an F-test for the joint significance of interaction terms of Party membership and ownership sector. Our hypothesis is that the five interaction terms are jointly insignificant. The resulting F statistic is 0.05 with a P value of 0.9988, which suggests that all the interaction terms are jointly insignificant and the rewards for Party membership do not vary across ownership sectors.

From the above results we learn that the economic role of Party membership does not differ by ownership sector based on the 2002 cross-sectional data set. Here we measure the degree of marketization by different owner sectors, about which a feasible alternative is to compare the results in 2002 and 1995 under the assumption that there is a higher degree of marketization in the more recent year. If the returns to Party membership rise over time, it suggests marketization makes Party membership more valuable. Similarly, in the 1995 function we control for individual characteristics X_i, ownership sector dummy O_i,[8] industry sector dummy I_i, occupation sector dummy OC_i, city dummy C_i, which denote the same as that in Equations (1) and (2). Again, in order to study how differently Party membership pays in these ownership sectors, we construct the Party membership dummy CP_i and its interaction term with ownership sector CP_i*O_i, as well as the interaction term of education and ownership sector EDU_i*O_i for Equation (3). Table 5 shows pertinent results.

$$\ln Y_i = \alpha_{0i} + \beta_1 X_i + \beta_2 EDU_i + \beta_3 CP_i + \beta_4 O_i + \beta_5 CP_i*O_i + \beta_6 EDU_i*O_i$$
$$+\beta_7 OC_i + \beta_8 I_i + \beta_9 C_i + u_i$$

. (3)

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[8] Based on the questionnaire in 1995, we combine the state-owned, at central or provincial level, and local publicly owned sectors together as a broad state-owned sector, while our collective sector is the integration of urban collective and township and village enterprise. In our sample, there are only three sample points for the township and village enterprise sector. Foreign company and Sino-foreign joint venture are merged, with the others remaining unchanged.

From the 1995 results we found that Party membership enhances earned income, but the interaction terms for Party membership and ownership sector are all insignificant. Again, our F-test for the joint significance of the five interaction terms (F = 0.76 and P = 0.5762) indicates that the value of Party membership does not differ by ownership sector. On the other hand, the return to education displays significant variance among ownership sectors. To be more specific, the interactions of education and foreign and joint venture companies, private sector and urban collective sector are significantly positive, showing that education is more beneficial in these three sectors than in the state-owned sector. In the foreign and joint venture sector, there is a 4.6% return to each year of schooling while in the private sector it is 6%. If the reward for education is higher in the market-driven sectors, and Party membership does not pay more in the nonstate-owned sectors, then the above results can at least serve as side evidence that Party membership does not completely represent unobserved human capital (ability), otherwise, it should generate higher premiums in market-oriented sectors, as education does.

Comparing our 1995 results with 2002, we find that although Party membership is generally valuable in both years, all the interactions of Party membership and ownership sectors are insignificant. The coefficient on Party membership is 0.093 in 1995 and 0.086 in 2002. Does that mean that Party membership is more valuable in 1995 than in 2002? To explore this, we pool the data for the two years and establish Equation (4)[9], in which we add the year dummy Y_i (1995 is the base year) and interact it with Party membership. In addition, education is also interacted with the year dummy and ownership sector, respectively,

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[9] Since the categories of occupation and industry are not exactly the same between the two years, we reorganize them for the pooled data. Specifically, for 1995, we combine the occupations owner of private or individual enterprise and owner and manager of private enterprise. For 2002, we combine the occupations owner (manager) of private firm and self-employed as a single sector, which is comparable to the above-mentioned term in 1995. For the category industry, we combine the two sectors of mineral and geological prospecting and irrigation administration, which is the counterpart of mining and geological survey and prospecting in 1995. The sectors electricity, gas and water supply facilities and real estate are brought together as comparable with real estate, public utilities, personal and consulting services in 1995. The other categories remain the same. Occupation is divided into 10 sections and industry into 14 sections in our pooled data.

generating $EDU_i * Y_i$ and $EDU_i * O_i$ accordingly.

$$\ln Y_i = \alpha_{0i} + \beta_1 X_i + \beta_2 EDU_i + \beta_3 CP_i + \beta_4 Y_i + \beta_5 CP_i * Y_i + \beta_6 EDU_i * Y_i + \beta_7 O_i$$
$$+ \beta_8 CP_i * O_i + \beta_9 EDU_i * O_i + \beta_{10} OC_i + \beta_{11} I_i + \beta_{12} C_i + u_i \qquad (4)$$

Table 5 here

In Table 5, we see that Party membership raises pay in both years, however, its interaction with the year dummy is not significant, which means that the reward for Party membership does not change over time. Furthermore, the insignificance of interactions between Party membership and ownership sectors suggests there are no differences across the labor market in the value of Party membership. Furthermore, the hypothesis that the interactions of Party membership and ownership sectors are jointly insignificant still cannot be rejected, given the following F-test (F = 0.06, P = 0.9974). By contrast, it is found that the rewards to education rise over time and the interaction of education and the foreign and joint venture sector is positive and significant. So no matter whether we use time or the different types of ownership seen between ownership sectors to measure marketization, we can see that the benefit of education goes with marketization, which is consistent with previous studies (Xing，2005; Zhang *et al.*, 2005). In contrast, Party membership is not rewarded differentially by the marketization process, thus we can be more confident that Party membership cannot be fully interpreted as omitted human capital (ability).

4.2 Differences between Ownership Sectors Concerning Returns to Social Networks

As a nonmarket factor, social networks also play an economic role in the labor market. The reason social networks at the individual level may raise pay is that they give employed individuals access to labor market information. To save transactions costs, enterprises tend to recruit candidates recommended by existing employees who, to preserve their own reputation, refer only people they know well. Therefore, if a job seeker has an abundant social network, he is likely to have more job opportunities, which will in turn bring higher pay (Ioannides and

Loury, 2004; Zanella, 2004). Because of the absence of social network measurement in the 1995 CHIP survey, we establish the following model based on 2002 data.

$$\ln Y_i = \alpha_{0i} + \beta_1 X_i + \beta_2 EDU_i + \beta_3 CP_i + \beta_4 O_i + \beta_5 CP_i * O_i + \beta_6 EDU_i * O_i + \beta_7 SN_i$$
$$+ \beta_8 OC_i + \beta_9 I_i + \beta_{10} C_i + u_i \tag{5}$$

In Equation (5), SN_i denotes a social network at the individual level, which we measure by the reported number of acquaintances from whom someone can seek help when he/she wants a job change. The other variables remain the same as in Equation (2).

Table 6 shows the results of Equation (5). We find that even with the inclusion of social capital, Party membership, as a type of political status, still has significantly positive effects on income, whereas the interactions of Party membership and the ownership sector remain insignificant. Given the weak correlation between Party membership and social capital, controlling for social capital in the model does not affect the estimates for Party membership.

Next we discuss the role of social capital. Unexpectedly, the coefficient on the social network itself is not significant. This suggests that a social network does not contribute to income, but does this apply equally to all parts of the labor market? To investigate whether social networks are rewarded differently in all sections of the labor market, we divide the overall sample into six sections according to ownership sector, and establish the interaction term $SN_i * O_i$ of social network and ownership sector. The ownership sector category stays unchanged, namely state-owned (base group), urban collective, private sector, self-employed, foreign and joint venture as well as the other sectors. The model is as follows.

$$\ln Y_i = \alpha_{0i} + \beta_1 X_i + \beta_2 EDU_i + \beta_3 CP_i + \beta_4 O_i + \beta_5 CP_i * O_i + \beta_6 EDU_i * O_i + \beta_7 SN_i$$
$$+ \beta_8 SN_i * O_i + \beta_9 OC_i + \beta_{10} I_i + \beta_{11} C_i + u_i \tag{6}$$

Table 6 here

For comparison, Table 6 combines the results of Equations (5) and (6), the difference between which is only whether the equation contains an interaction term for social network and the ownership sector. It can be seen that despite an insignificant coefficient on social

capital, all its interactions with ownership sectors are positive and significant. This implies that because, in Equation (6), the coefficient on social capital denotes the role of the social network in the base group, then this result suggests that the social network does not assist the base group. However, the interactions of the social network and ownership sectors are all positive and significant, indicating that the social network pays differently in the other four sectors compared to the base group. In other words, the social network can bring monetary returns to urban collective, private sector, self-employed, foreign and joint venture and others as well. Specifically, an additional contact can generate an income premium of around 4% in urban collective, private sector and foreign and joint venture, while in the self-employed sector the reward is up to 7%. However, we cannot rush to the conclusion that social networks are more valuable in market-oriented sectors simply because they pay more in market-oriented sections of the labor market, because the benefit of social networks may not be directly translated into money; in some cases, they might take the form of gray income, which is extremely difficult to capture in the income function.

In the traditional planned economy, social networks are critical to the allocation of resources. If an individual has a large number of helpful contacts, it is possible for that person to dominate the resource distribution. But because of a lack of market mechanisms, the value of social networks might not present itself in the form of monetary earnings. During the marketization process, the role of social networks may not be offset by the market system, which is filled with nonmarket power. Instead, the new market system realizes the return to social networks in monetary terms.

In previous studies, Zhang *et al.* (2007) found that in rural China, marketization weakened the effects of household-level social capital on poverty reduction. A possible explanation for the difference between rural and urban areas is that, in the former case, social networks are formed in a conventional and closed society, and the market process generates a price mechanism distinct from the traditional allocation mechanism, which is conducive to

expanding the scope of transactions, reducing social interaction in the traditional society as well as the returns to social networks. However, in urban China, the value of social networks is not transformed into earned income in the traditional state-owned sector. Beyond that, the new market system generated by the gradual marketization process is based on the original social structure, which is consequently embedded into the market system. As a result, this newly grown market system may raise the value of social networks.

It is worth mentioning that, even if we control for social networks and their interactions with the ownership sector, the interactions of Party membership and the ownership sector are still insignificant. The F-test for the joint significance of the interactions associated with Party membership yield F = 0.07 and P = 0.9961.

In Table 6, the regression on the right-hand side contains the social network and its associated interactions, which are found to be significant. Because the coefficients on the other variables remain largely unaffected by comparison with previous regressions, this result is the most comprehensive and covers all the variables with which we are concerned. Based on these results, we give a brief interpretation of our results for these other variables. (1) Personal characteristics, age and its square are significant and have opposite effects, showing an inverse U shape for the relationship between age and income. Income rises with age, but the opposite is true after the turning point of around 56. (2) Education raises pay significantly, implying the importance of education for earnings. In our estimates, an extra year of schooling can bring an income premium of 3.7%. From recent empirical studies, the return to education in China is still controversial. Based on micro data in 2000, Li and Heckman（2004）found that there was an income premium of up to 11% to advanced education. Li *et al*. (2005b) used twin data and discovered that the return to education was 8.7% in OLS estimation, but it fell to 2.7% after the exclusion of fixed effects within twins. It seems that our estimate is similar to that in Li *et al*. (2005b), and it also indicates that if we control for more variables, the bias in the estimate of return to education in OLS is negligible, merely 1%

higher than that in a fixed-effects model using twin data. (3) Regarding marital status, the coefficient of the married group is positive and significant with the base group of unmarried individuals, which means marriage can enhance earnings. (4) Ownership sector of a work unit also affects income. When focusing on coefficients on ownership sectors themselves, it appears that pay does not vary by ownership sector. However, since social networks are more important in nonstate-owned sectors, income in these sectors is actually higher than that in the state-owned sector, which is caused by social networks. Meanwhile, in the 1995 data, we see that education is more beneficial in nonstate-owned sectors, but when it comes to 2002, there is no remarkable difference in the return to education in all sectors, which might indicate an increasingly competitive labor market. (5) Occupation groups such as clerical/office staff, skilled worker, unskilled worker, sales clerk or service worker earn significantly less than the base group of self-employed, who are paid largely the same as the other groups of owner (manager) of private firm, professional, etc. (6) Only one industry, finance and insurance, has income significantly higher than the base group of government, Party, and other non-profit agencies, which earns more or less the same as all other groups.

5. Conclusion

In this paper we have examined the economic roles of political status and social network in the Chinese urban labor market based on the 1995 and 2002 CHIP surveys. Our main findings are as follows.

(1) Party membership raises earnings in urban China. The income premium for Party membership does not vary by ownership sectors. Comparing the results in 2002 and 1995, we also found that Party members' income premium did not change over time.

(2) Social networks, as a form of social capital, also exert a positive effect on earnings. The effects of social networks on earnings between different ownership sectors suggest that social networks do not pay in the traditional state sector while they benefit nonstate-

owned sectors significantly.

If we assume that marketization deepens over time and that non-SOE sectors are more subject to market forces than their SOE counterparts, then our findings imply that whatever the time or the ownership sector, Party membership does not pay more as marketization proceeds. We have also shown that Party membership does not represent unobserved ability, otherwise it would be more valuable in more market-driven sectors. By contrast, we discovered that social networks assist nonstate-owned sectors more in the Chinese urban labor market.

The establishment of the market system is a long-term process during which nonmarket power might penetrate the new market system and in turn influence market reform. In a market system with abundant nonmarket power, resource distribution will not be simply subject to the price mechanism, because the social interaction-based social capital will be embedded into the market system. As a result, how will the market system affect the price mechanism and resource allocation? Does nonmarket power harm social fairness? What does this mean for the future pathway to long-term economic development and transition to market institutions? These questions about the impact of nonmarket power on the market system and the transition process require serious thinking from economists.

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Table 1: Summary Statistics on Party Membership and Income in 2002 and 1995

Ownership sector	2002		1995	
	Party membership ratio (%)	Difference of mean income between Party and non-Party members （Yuan）	Party membership ratio (%)	Difference of mean income between Party and non-Party members （Yuan）
State-owned	35.73	3672.75***	27.81	2044.36***
Urban collective	18.66	2267.42***	11.85	1372.06***
Private	18.99	2811.56***	2.08	–3024.30
Self-employed	6.82	1635.59	2.94	4531.02*
Foreign and joint Venture	14.63	3658.43**	9.15	351.34
Others	14.06	2476.93***	7.46	977.29
Total	28.58	3974.22***	24.64	2086.25***

Notes: *** denotes significance at the 1 percent level, ** at the 5 percent level, * at the 10 percent level.

Table 2: Summary Statistics on Social Capital and Income in 2002

Ownership sector	Mean size of social capital (Headcount)	Difference in mean income between the two comparison groups (Yuan)
State-owned	1.27	717.42***
Collective	1.07	1843.82***
Private	1.25	1226.32**
Self-employed	1.05	2043.70**
Foreign and joint venture	1.63	1903.72*
Others	1.10	3206.04***
Total	1.23	1250.95***

Notes: *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, * at the 10 percent level.

Table 3: Determinants of Income for Employed Individuals Partitioned into Ownership Sectors (2002)

Panel A: Dependent Variables: Log of annual income

Independent variables	State-owned		Urban collective		Private	
	Marginal effect	Standard error	Marginal effect	Standard error	Marginal effect	Standard error
Male	0.129	(0.023)***	0.072	(0.070)	0.174	(0.052)***
Age	0.057	(0.011)***	−0.001	(0.036)	0.029	(0.020)
Age squared	−0.001	(0.0001)***	−0.000	(0.0004)	−0.0003	(0.0003)
Years of education	0.039	(0.005)***	−0.001	(0.015)	0.021	(0.011)**
Married	0.249	(0.056)***	0.148	(0.186)	0.286	(0.104)***
Communist Party	0.072	(0.026)***	0.287	(0.092)***	0.107	(0.067)*
Other Party member	0.092	(0.089)	0.365	(0.400)	−0.003	(0.269)
Number of observations	6492		625		1085	
Adjusted R^2	0.215		0.190		0.259	

Table 3:   Continued

Panel B: Dependent Variables: Log of annual income

Independent variables	Self-employed		Foreign and joint venture		Other ownership sectors	
	Marginal effect	Standard error	Marginal effect	Standard error	Marginal effect	Standard error
Male	0.221	(0.102)**	0.159	(0.110)	0.300	(0.102)***
Age	0.056	(0.043)	0.130	(0.052)**	0.029	(0.035)
Age squared	−0.0006	(0.0005)	−0.001	(0.001)**	−0.0002	(0.0004)
Years of education	0.048	(0.020)**	0.050	(0.022)**	0.019	(0.019)
Married	0.169	(0.242)	−0.480	(0.189)**	0.170	(0.190)
Communist Party	0.433	(0.204)**	0.152	(0.167)	0.054	(0.149)
Other Party member	0.277	(0.576)	——		0.081	(0.600)
Number of observations	571		202		999	
Adjusted R^2	0.233		0.372		0.069	

Notes: (1) For brevity, we do not report dummy variables for occupation, ownership sector, and city.

(2) *** denotes statistical significance at the 1% level, ** at 5% level, and * at 10% level.

(3) —— denotes there is no observation in the sub-sample.

Table 4: Determinants of Income after Introducing Interaction Terms (2002)

Independent Variables	Marginal effect	Standard error	Independent Variables	Marginal effect	Standard error
			Dependent Variables: Log of annual income		
Male	0.158	(0.020)***	Interaction of Party membership and urban collective	−0.008	(0.099)
Age	0.045	(0.009)***	Interaction of Party membership and private sector	0.026	(0.076)
Age squared	−0.0004	(0.0001)***	Interaction of Party membership and self-employed sector	0.031	(0.156)
Years of education	0.036	(0.005)***	Interaction of Party membership and foreign and joint venture	−0.042	(0.186)
Married	0.228	(0.045)***	Interaction of Party membership and other ownership sectors	−0.005	(0.090)
Communist Party	0.086	(0.027)***	Interaction of education and urban collective	−0.018	(0.015)
Other Party member	0.104	(0.085)	Interaction of education and private sector	−0.003	(0.011)
Urban collective	−0.012	(0.157)	Interaction of education and self-employed sector	0.005	(0.015)
Private	0.008	(0.124)	Interaction of education and foreign and joint venture	0.034	(0.024)
Self-employed	−0.193	(0.151)	Interaction of education and other ownership sectors	−0.013	(0.011)
Foreign and joint Venture	−0.215	(0.296)	Constant	8.094	(0.208)***
Other ownership sectors	−0.059	(0.123)			
Number of observations	9974		Adjusted R^2		0.218

Notes: (1) For brevity, we do not report dummy variables for occupation, ownership sector, and city.

(2) *** denotes statistical significance at the 1% level, ** at 5% level, and * at 10% level.

Table 5: Determinants of Income (Cross-sectional Estimates for 1995 & Pooled Cross-sectional Estimates for 1995 and 2002)

	1995		1995 & 2002	
Dependent Variables: Log of annual income				
Independent variables	Marginal effect	Standard error	Marginal effect	Standard error
Male	0.127	(0.010)***	0.143	(0.011)***
Age	0.048	(0.004)***	0.047	(0.005)***
Age squared	−0.0005	(0.0000)***	−0.0005	(0.0001)***
Years of education	0.015	(0.002)***	0.012	(0.003)***
Married	0.266	(0.022)***	0.246	(0.024)***
Communist Party	0.093	(0.013)***	0.084	(0.018)***
Year dummy (2002)			0.279	(0.112)***
Interaction of Party membership and year dummy			0.008	(0.024)
Interaction of education and year dummy			0.029	(0.004)***
Urban collective	−0.280	(0.049)***	−0.203	(0.062)***
Private	−0.701	(0.248)***	−0.056	(0.093)
Self-employed	−0.103	(0.142)	−0.147	(0.100)
Foreign and joint venture	−0.330	(0.169)**	−0.246	(0.166)
Other ownership sectors	−0.622	(0.192)***	−0.118	(0.089)
Interaction of Party membership and urban collective	0.009	(0.038)	−0.007	(0.045)
Interaction of Party membership and private sector	−0.705	(0.510)	0.007	(0.059)
Interaction of Party membership and self-employed sector	0.245	(0.227)	0.031	(0.114)
Interaction of Party membership and foreign and joint venture	−0.027	(0.147)	−0.048	(0.121)
Interaction of Party membership and other ownership sectors	0.185	(0.229)	−0.014	(0.068)
Interaction of education and urban collective	0.008	(0.005)*	0.001	(0.006)
Interaction of education and private sector	0.060	(0.023)***	0.0001	(0.008)
Interaction of education and self-employed sector	0.002	(0.016)	0.0005	(0.010)
Interaction of education and foreign and joint venture	0.046	(0.015)***	0.037	(0.014)***
Interaction of education and other ownership sectors	0.011	(0.019)	−0.012	(0.008)
Constant	7.395	(0.085)***	7.453	(0.105)***
Number of observations		11599	21573	
Adjusted R^2		0.429	0.344	

Notes: (1) For brevity, we do not report dummy variables of occupation, ownership sector, and city.

(2) *** denotes statistical significance at the 1% level, ** at 5% level, and * at 10% level.

Table 6: Determinants of Income after Introducing Social Network (2002)

	Dependent Variables: Log of annual income			
Whether interactions of social network and ownership sector are inclusive	No		Yes	
Independent variables	Marginal effect	Standard error	Marginal effect	Standard error
Male	0.158	(0.020)***	0.157	(0.020)***
Age	0.045	(0.009)***	0.044	(0.009)***
Age squared	−0.0004	(0.0001)***	−0.0004	(0.0001)***
Years of education	0.036	(0.005)***	0.037	(0.005)***
Married	0.229	(0.045)***	0.227	(0.045)***
Communist Party	0.086	(0.027)***	0.087	(0.027)***
Other Party member	0.103	(0.085)	0.111	(0.085)
Social network	0.006	(0.005)	−0.007	(0.006)
Urban collective	−0.013	(0.157)	−0.031	(0.157)
Private	0.006	(0.124)	−0.016	(0.125)
Self-employed	−0.195	(0.151)	−0.259	(0.152)
Foreign and joint venture	−0.215	(0.296)	−0.236	(0.296)
Other ownership sectors	−0.059	(0.123)	−0.091	(0.123)
Interaction of Party membership and urban collective	−0.010	(0.099)	−0.020	(0.099)
Interaction of Party membership and private sector	0.027	(0.076)	0.028	(0.076)
Interaction of Party membership and self-employed sector	0.031	(0.156)	0.035	(0.156)
Interaction of Party membership and foreign and joint venture	−0.036	(0.186)	−0.015	(0.187)
Interaction of Party membership and other ownership sectors	−0.008	(0.090)	−0.030	(0.090)
Interaction of social network and urban collective			0.038	(0.023)*
Interaction of social network and private sector			0.035	(0.017)**
Interaction of social network and self-employed sector			0.069	(0.025)***
Interaction of social network and foreign and joint venture			0.037	(0.023)*
Interaction of social network and other ownership sectors			0.056	(0.017)***
Interaction of education and urban collective	−0.018	(0.015)	−0.020	(0.015)
Interaction of education and private sector	−0.003	(0.011)	−0.005	(0.011)
Interaction of education and self-employed sector	0.006	(0.015)	0.004	(0.015)
Interaction of education and foreign and joint venture	0.034	(0.024)	0.031	(0.024)
Interaction of education and other ownership sectors	−0.013	(0.011)	−0.016	(0.011)
Constant	8.089	(0.208)***	8.126	(0.208)***
Number of observations	9974		9974	
Adjusted R^2	0.218		0.219	

Notes: (1) For brevity, we do not report dummy variables of occupation, ownership sector, and city.
(2) *** denotes statistical significance at the 1% level, ** at 5% level, and * at 10% level.