**Yönetim Bilimleri Dergisi/Journal of Administrative Sciences**
Cilt / Volume: 16, Sayı / N: 31, ss. / pp.: 83-108, 2018

# Social Network: An Emerging Income Distribution Mechanism In Transitional Urban China

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• **Abstract**
*In the decades since 1978, when China initiated economic reform, the country's income distribution structure has substantially changed. Unlike the majority of existing studies that use individuals' social network as a key indicator to explain their income in urban China, we contend that social network is an important mechanism that influences income distribution. Using the 2009 Social Networks and Job Search Survey, this study adopts a social capital perspective to investigate how the impact of a social network on income changes with the development of market reforms. The study finds that while social capital from a social network has a positive effect on income, the rates of income return decrease with accumulation of social capital. In addition, with increasing marketization, the income return of accessed social capital decreases, and that of mobilized social capital increases. By comparing multiple resource allocation mechanisms, this paper also discusses the logic of effect change of social capital.*
***Keywords:*** *Marketization, Social Network, Social Capital, Income Effects, China*

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• Research Grant Information: This research was funded by the second-class General Financial Grant from the China Postdoctoral Science Foundation (project number: 2016M602789), the Fundamental Research Funds for the Central Universities (project number: sk2016018), the Humanities and Social Sciences Research Project of Chinese Ministry of Education (project number: 15YJC840003), and a major project grant (project number: 13&ZD177) from China's National Social Science Foundation.

## 1. INTRODUCTION

Since 1978, China has shifted from a centrally planned economy to a market economy and has experienced an extraordinary economic boom.[1] This transition created far-reaching institutional change and societal transformation,[2] a multifaceted process that led to changes in the returns to human capital and political capital, and increases in economic disparities across the country.[3] Against this backdrop, scholars studying institutional transformation and social stratification in former state-socialist societies have debated whether the significance of redistributive power on economic benefits has declined and whether the returns to human and political capital have increased in the post-socialist era. The "market transition thesis" proposed by Nee[4] holds that, in the shift from redistributive economy to market economy, the return to human capital has gradually increased while the return to political capital has decreased. The contrasting view, the "power persistence" thesis,[5] contends that the market transition has led to a strengthening of both the redistributive system and market economy, and that the returns to both human capital and political capital have risen during this phase.

In both perspectives, social capital from a social network is seen merely as a tool used by those who control the process of redistribution to maintain their advantage or dominance.[6] A number of subsequent studies provide new insights on mechanisms of resources allocation in transitional socialist societies;[7] one interpretation suggests that China will eventually develop a full-fledged market economy, not unlike those in Western societies;[8] the second view[9] contends that the trajectory of China's

1 G. Lai and R.P.L. Lee, 'Market Reforms and Psychological Distress in Urban Beijing', *International Sociology*, vol. 21, no. 4, 2006, pp. 551-579.

2 V. G. Nee and R. Matthews, 'Market Transition and Societal Transformation in Reforming State Socialism', Annual Review of Sociology, vol. 22, 1996, pp. 401-435.

3 K. Storesletten and F. Zilibotti, 'China's Great Convergence and Beyond', Annual Review of Economics, vol. 6, no. 6, 2014, pp. 333–362.

4 V.G. Nee, 'A Theory of Market Transition: From Redistribution to Markets in State Socialism', American Sociological Review, vol. 54, 1989, pp. 663–681.

5 X. Zhou, 'Economic Transformation and Income Inequality in Urban China: Evidence from Panel Data', American Journal of Sociology, vol. 105, no. 4, 2000, pp. 1135-1174. Y. Xie and E. Hannum, 'Regional Variation in Earnings Inequality in Reform-era Urban China', American Journal of Sociology, vol. 101, no. 4, 1996, pp. 950-992. Y. Bian and J.R. Logan, 'Market Transition and the Persistence of Power: The Changing Stratification System in Urban China', American Sociological Review, vol. 61, no. 5, 1996, pp. 739-758. W. Jansen and X. Wu, 'Income Inequality in Urban China, 1978–2005', Chinese Sociological Review, vol. 45, no. 1, 2012, pp. 3–27. A. G. Walder, 'Markets and Inequality in Transitional Economics: Toward Testable Theories', American Journal of Sociology, vol. 101, no. 4, 1996, pp. 1060-1073. X. Wu and Y. Xie, 'Does the Market Pay off? Earnings Inequality and Returns to Education in Urban China', American Sociological Review, vol. 68, 2003, pp. 425–442.

6 R. Akos, 'The First Shall Be the Last? Entrepreneurship and the Communist Cadres in the Transition from Socialism', American Journal of Sociology, vol. 100, no. 1, 1994, pp. 40-69.

7 Y. Bian, 'Chinese Social Stratification and Social Mobility', Annual Review of Sociology, vol. 28, 2002, pp. 91-116.

8 V.G. Nee, 'A Theory of Market Transition: From Redistribution to Markets in State Socialism', American Sociological Review, vol. 54, 1989, pp. 663–681. V.G. Nee, 'The Emergence of a Market Society: Changing Mechanisms of Stratification in China', American Journal of Sociology, vol. 101, 1996, pp. 908–949.

9 M.K. Whyte, 'Paradoxes of China's Economic Boom', Annual Review of Sociology, vol. 35, 2009,

economic development will be different from the West's. However, neither of the two viewpoints gives enough significance to the role of social network as an independent mechanism of social stratification. As Nee and Matthews[10] observe, "state socialism is viewed as a distinctive institutional arrangement in which society, economy, and the state are integrated through society-wide redistributive arrangements."

Since the 1970s, Western scholars have developed a robust social capital theory, especially in explaining how social actors attain status through social capital from social network.[11] Expanding on that research, Chinese scholars have, since the 1990s, begun to focus on social networks as an informal mechanism of resource allocation in transitional China.[12] One of the central arguments of social capital theory is that social actors can utilize social ties, chiefly weak ones, to achieve higher income return and socioeconomic status.[13] Numerous studies on China's labor market empirically support this proposition.[14] These studies suggest that social network is an important income allocation mechanism in China. As the country's economic reform deepens, the redistributive system weakens, and the market mechanism begins to emerge. During the process, "structural holes" (note 1) are bound to emerge, and the social network mechanism strengthens. The purpose of our study is to investigate how the social network mechanisms change with increasing marketization in China.

## 2. SOCIAL NETWORKS AS A RESOURCE ALLOCATİON MECHANISM

Social networks are known to have both instrumental and non-instrumental effects.[15] Our study focuses on the income effect, which is one type of instrumental effect of social networks as social capital. More specifically, we engage with Granovetter's[16] "strength-of-weak-tie" hypothesis, which views social networks as a means for individuals to reach their instrumentalist goals of better jobs and income by acquiring non-redundant information through weak social ties. Lin's theory of social resources[17] focuses on social capital embedded in social structure, and points out that

pp. 371–392.

10 V. G. Nee and R. Matthews, 'Market Transition and Societal Transformation in Reforming State Socialism', Annual Review of Sociology, vol. 22, 1996, 401-435.

11 M. Granovetter, 'The Strength of Weak Ties', American Journal of Sociology, vol. 78, no. 6, 1973, pp. 1360-1380.

12 W. Zhang, 'Non-institutional Factors and Status Attainment: A Particular Focus on Social Stratification Structure in Current China', Sociological Studies, vol. 1, 1996, pp.64-73.

13 M. Granovetter, 'The Strength of Weak Ties', American Journal of Sociology, vol. 78, no. 6, 1973, pp. 1360-1380.

14 Y. Bian, 'Bringing Strong Ties back in: Indirect Ties, Network Bridges and Job Searches in China', American Sociological Review, vol. 62, no. 3, 1997, pp. 366-385. Y.Liang, 'Is Social Capital and Social Networks Useless?', Sociological Studies, vol. 5, 2010, pp. 50-82.

15 W. Zhang, 'Non-institutional Factors and Status Attainment: A Particular Focus on Social Stratification Structure in Current China', Sociological Studies, vol. 1, 1996, 64-73.

16 M. Granovetter, 'The Strength of Weak Ties', American Journal of Sociology, vol. 78, no. 6, 1973, pp. 1360-1380.

17 N. Lin, 'Social Resources and Instrumental Action', in Marsden, P. V. and Lin, N. (eds.),Social Structure and Network Analysis, Beverly Hills, CA, Sage Publications,1982, pp. 131-145.

weak ties are essentially superior social resources that can be mobilized for a better income return. Noticing the dominance of redistributive system and widespread use of *guanxi* networks, Bian[18] suggests that strong ties, instead of weak ones, can also become bridges, transmitting information and favoritism for economic returns in a relational Chinese culture. Studies carried out by other Chinese researchers also document supporting empirical evidence of the link between social capital and income under various circumstances.[19] For instance, rural-to-urban migrants' socioeconomic status is found to be significantly shaped by their social capital;[20] retirees' incomes increase with strong ties embedded in social capital;[21] laid-off workers' employment in urban China is facilitated by social capital;[22] and women's earnings in the lower and middle levels of the earnings bracket increase because contact use substantially narrows the gender earnings gap.[23]

As an income allocation mechanism, a social network possesses several key traits. The first trait is the embeddedness of social networks. Granovetter[24] was the first sociologist to suggest that economic actions are always embedded in social networks. Lin's theory of social capital[25] contends that social capital is the instrumental social resource embedded in social networks. The second trait is "informality," meaning that social capital is accumulated informally through particularistic interpersonal relationships rather than through formal rules. Next, the traits of "spontaneity" and "supplementarity" refer to the fact that a social network only plays its part within or in the absence of two formal mechanisms (redistribution and market).[26] Each of the characteristics has shaped the income effects of social capital and their changes in China's market-oriented reform.

How does use of social networks influence an actor's income? The established knowledge is that by mobilizing social resources embedded in one's social networks, a social actor obtains better occupational status and business opportunities, and hence receives better income).[27] More specifically, there are four ways in which a social

18 Y. Bian, 'Bringing Strong Ties back in: Indirect Ties, Network Bridges and Job Searches in China', *American Sociological Review*, vol. 62, no. 3, 1997, pp. 366-385.

19 Y. Liang, 'Is Social Capital and Social Networks Useless?', Sociological Studies, vol. 5,2010, pp. 50-82.

20 P. Li, 'The Social Networks and Social Status of Floating Migrant Workers', Sociological Studies, vol. 4, 1996, pp. 41-52.

21 Y. Zhang and J. Li, 'Strong Relation Tie and the Retirees' Reemployment', Chinese Journal of Population Science, vol. 2, 2000, pp. 34-40.

22 Y. Zhao, 'The Social Networks and Retention Wage for Job Searchers: A Case of the Reemployment of Laid-off Workers', Sociological Studies, vol. 4, 2003, pp. 51-60.

23 J. Shen and K. Irena, 'Contact Use in Job Placement and its Impact on the Gender Earnings Gap in Transnational Urban China: Evidence from Xiamen, 1999', International Sociology, vol. 32, no. 1, 2017, pp. 130-154.

24 M. Granovetter, 'Economic Action and Social Structure: The Problem of Embeddedness', American Journal of Sociology, vol. 91, no. 3, 1985, pp. 481-510.

25 N. Lin, Social Capital: A Theory of Social Structure and Action, Cambridge, Cambridge University Press, 2001.

26 J. E. Stiglitz, 'Formal and Informal Institution', in Dasgupta, P. and Serageldin, I. (eds.), Social Capital: A Multi-faceted Perspective, Washington DC, World Bank, 2000, pp. 59-68.

27 Y. Bian, 'Bringing Strong Ties back in: Indirect Ties, Network Bridges and Job Searches in China', American Sociological Review, vol. 62, no. 3, 1997, pp. 366-385.

network influences income. First, social networks provide information and market opportunities, hence reducing the costs of searching and transacting.[28] Second, social networks composed of particularistic interpersonal relationships offer useful information to both parties.[29] Third, social networks are capable of social sanctions, hence increasing the trust between people of different interests.[30] Fourth, particularistic relationships in social networks may enable actors to receive preferential treatment in employment or business opportunities, hence increasing economic benefits.[31]

## 3. SOCIAL NETWORKS AND ACTION DOMAINS

The economic reform has significantly altered the structural conditions under which social capital impacts income distribution. We argue that social capital as a resource allocation mechanism coexists with the redistributive system and the market mechanism in shaping the income distribution in China during economic reform. Then, how does the social network mechanism interact with the redistributive system and the market in the process? In other words, under what conditions does social capital exert its influence in income distribution?

Analytically, social network represents a third resource allocation mechanism. In theory, the redistributive economy is a formal institutional arrangement that functions in state sectors (note 2) (i.e., state-owned and some collective enterprises/ work units), and allocates income based on political capital.[32] Similarly, the market economy represents a formal institutional arrangement, as it works primarily in market sectors (e.g., private enterprises, share-holding enterprises, joint ventures, and foreign enterprises) and determines individuals' income through human capital.[33] Social capital, by comparison, is an informal institutional arrangement, and it affects individuals' income through the use of social resources embedded in social networks. Social network works either singly or in combination with the other two mechanisms to determine individuals' income. In reality, however, it only plays its part within or in the absence of the other two formal mechanisms.

28 M. Granovetter, 'The Strength of Weak Ties', American Journal of Sociology, vol. 78, no. 6, 1973, pp. 1360-1380.

29 G. Saloner, 'Old Boy Networks as Screening Mechanisms', Journal of Labor Economics, vol. 3, no. 3, 1985, pp. 255-267.

30 R. D. Putnam, Making Democracy Work: Civic Traditions in Modern Italy, Princeton, Princeton University Press, 1993.

31 Y. Bian, 'Bringing Strong Ties back in: Indirect Ties, Network Bridges and Job Searches in China', American Sociological Review, vol. 62, no. 3, 1997, pp. 366-385.

32 T. P. Gerber and M. Hout, 'More Shock Than Therapy: Market Transition, Employment, and Income in Russia, 1991-1995', American Journal of Sociology, vol. 104, no. 1, 1998, pp. 1-50. X. Zang, 'Labor Market Segmentation and Income Inequality in Urban China', The Sociological Quarterly, vol. 43, 2002, pp. 27-44. Y. Xie and E. Hannum, 'Regional Variation in Earnings Inequality in Reform-era Urban China', American Journal of Sociology, vol. 101, no. 4, 1996, pp. 950-992. Y. Bian and J. R. Logan, 'Market Transition and the Persistence of Power: The Changing Stratification System in Urban China', American Sociological Review, vol. 61, no. 5, 1996, pp. 739-758.

33 Y. Cao, and V. G. Nee, 'Comment: Controversies and Evidence in the Market Transition Debate', American Journal of Sociology, vol. 105, no. 4, 2000, 1175–1189.

During economic reform, when the market system are being introduced on a large scale, the three mechanisms—redistributive economy, market, and social network—coexist. However, in different industries, the roles these three mechanisms play in determining one's income vary. In state-run industries, typically heavy and energy industries, and governmental branches that are close to the core of national political power, the redistributive system plays a primary role, and the influences of market and social network are auxiliary. In non-core industries, such as retail business, the market plays the major role, and the other two mechanisms are supplementary. Although in theory the social network is an independent mechanism, in practice its domains of influence overlap with that governed by the formal mechanisms, and the roles it plays are supplementary. Table 1 shows these three mechanisms of resource allocation in China.

*TABLE 1 Three Mechanisms of Resource Allocation*

| Mechanism | Form of capital | Type of Institutional Arrangement | Change in Role | Sector |
|---|---|---|---|---|
| Redistribution | Political Capital | Formal | Primary to Secondary | State Sector |
| Market | Human Capital | Formal | Secondary to Primary | Market Sector |
| Social Network | Social Capital | Informal | Supplementary | Both |

From a social actor's perspective, personal social networks influence not only one's first job search, but his or her career.[34] Whether individuals get jobs through redistribution or market mechanisms, upon entering the labor market, they may use social networks to acquire useful information to reduce the cost of job seeking process. After entering the labor market, their social capital affects income in different ways. Within an organization, an individual's income depends mainly on the redistribution mechanism within the organization, and the social network mechanism affects probabilities of promotion and, subsequently, economic return (note 3). In the labor market, an individual's income is mainly determined by the market mechanism, and the social network mechanism helps transmit information and establish trust, and, subsequently, economic return (note 4) . In the absence of redistribution and market mechanisms, individuals often completely rely on social capital for higher economic return (note 5).[35]

34 Y. Bian, 'Chinese Social Stratification and Social Mobility', Annual Review of Sociology,vol. 28, 2002, pp. 91-116.

35 G. Ma and E. Yang, 'Social Networks, Informal Finance and Entrepreneurship', Economic Research Journal, vol. 3, 2001, pp. 83-93.

## 4. THE INCOME EFFECTS OF SOCIAL CAPITAL AND THEIR CHANGES

Unlike human capital and political capital, which emerge from individuals' own resources, social capital, according to Lin,[36] represents the resources extracted from social networks, or resources borrowed from other members of the networks.

It is generally agreed among scholars that the rate of return to human capital is indicative of the level of marketization, in that the higher the return, the higher the level of marketization. Similarly, the rate of return to political capital is an indicator of the redistribution mechanism.[37] Social capital, as discussed above, is the social resources embedded in social networks that can bring about higher economic return. Therefore, any increase in the rate of return to income that can be attributed to social capital suggests that the effects of the social network mechanism, and any changes in rates, reveal the strength and characteristics of the social network mechanism. In this paper, we operationalize the effects of social capital as rates of income return attributable to social capital.

How does the effect of social capital change in China? In general, the higher the resources embedded in social networks, the higher the income return. On the other hand, the more social resources are in the networks, the higher the cost for individuals to pay for the maintenance of such resources, and the domains in which social capital have effects become smaller, which ultimately makes the rate of income return to social capital smaller. Hence, we propose the first hypothesis:

H1. The more the social capital is embedded in social networks, the higher the income return to social capital, but the rates of the income return effect of social capital decline with social capital.

China's economic reform and opening up is a gradual but colossal process of top-down social transformation from a market sector (*tizhiwai*) to state sector (*tizhinei*), and from the coastal areas to the inland regions. Since 1984, the focus of the reform shifted from the countryside to the cities, aiming at breaking the monopoly of state-run enterprises and creating a hybrid of enterprises with multiple types of property ownership. This strategy results in piecemeal change in China. Private businesses were encouraged in non-essential industries, and special economic zones were established along the coastal areas. Since 1993, in different industries, large-scale state-run enterprises were corporatized and many of them were privatized and transformed into shareholding systems. As a result, the degree of marketization of majority state-run enterprises varies by region and industry.

In regions and industries with lower levels of marketization, the redistribution mechanism has weakened, while the market mechanism has not yet been well estab-

36 N. Lin, Social Capital: A Theory of Social Structure and Action, Cambridge, CambridgeUniversity Press, 2001.

37 V. G. Nee, 'A Theory of Market Transition: From Redistribution to Markets in State Socialism', American Sociological Review, vol. 54, 1989, pp. 663–681. Y. Bian, 'Bringing Strong Ties back in: Indirect Ties, Network Bridges and Job Searches in China', American Sociological Review, vol. 62, no. 3, 1997, pp. 366-385.

lished. Due to a lack of clear regulations, there is a strong tendency for individuals to rely on social capital to facilitate their economic activities. Accordingly, the income return to social capital tends to be high; the same can be said with political capital, although the return to human capital tends to be low. By contrast, in regions and industries with a higher degree of marketization, the market mechanism has gradually normalized, and there are fewer institutional loopholes; individuals rely less on social capital in their economic activities. In this case, the return to social capital is low, but the return to human capital grows. In other words, the economic reform in China is a process in which the degree of institutional uncertainty increases while the market system is gradually being developed into maturation. In this process, the return to social capital has been growing, with decreasing rates of return declines over time. Based on the discussions above, we propose the second hypothesis:

H2. With a higher degree of marketization, the more embedded the social capital in social networks, the higher the income return to social capital, but the rates of the income return effect of social capital decline with social capital.

## 5. DATA, VARIABLES, AND METHODS

### 5.1. Data

The data used for analysis are from a large scale social survey titled "Social Networks and Job Search Process Survey." The target population consists of non-institutionalized adults aged 18 to 69 years old with working experience and residing in eight major cities in China. A multi-stage area probability sampling plan using the PPS selection method was adopted for selection of respondents. The face-to-face household interviews were conducted from June and July of 2009. For each household selected, one adult person with the birth date closest to July 1 was selected. A questionnaire was used for the interview. The size of the final sample is 7,102. For our study reported here, students and other people with substantial missing information were removed. The size of the resulting study sample is 5,817.

### 5.2. Variables

*Income.* The dependent variable is the respondent's average monthly income (note 6) from the previous year, in Chinese yuan. Because of the typical skewness of income distribution, the natural log of the variable was used in analysis. The natural logarithm transformation of the income allowed us to interpret the regression coefficient as a percentage differential of the income.

*Social capital.* This is a key concept in our study. We used characteristics of personal social networks, namely courtesy visits during the Chinese New Year holiday in the previous year,[38] to measure social capital. In Chinese culture, Chinese New Year is a special and the most important holiday during which people pay courtesy visits

38 A. Tyner and Y. Ren, 'The *Hukou* System, Rural Institutions, and Migrant Integration in China', *Journal of East Asian Studies*, vol. 16, 2016, pp. 331-348.

to their relatives, friends, co-workers, and other acquaintances, mainly for the purpose of renewing and reaffirming the connections and commitments to each other. Many scholars have used the visits people make during this holiday as a measure of social capital.[39] It is worth noting that this variable, in essence, reflects an accumulative outcome of people's social contacts, not only in the past year, but throughout their lives. Thus, it is of greater value to use this variable as an independent variable to predict people's income from the previous year, rather than the reverse, that is, using the previous year's income as an independent variable to predict people's social capital.

Following Lin, we created four indicators measuring the characteristics of the social capital operationalized as such, including (1) network size; (2) network upper reachability; (3) network diversity; and (4) network composition. Network size is the total number of people to whom the respondent has paid courtesy visits during the last Chinese New Year. Network upper reachability is the Duncan's Socioeconomic Index (SEI) of the person visited with highest occupational prestige. Network diversity measures the number of different occupations in the network. Network composition is an index that measures whether the network consists of three measures: governmental officials, business managers, and professionals. Initial analysis indicated that the six measures are highly correlated, creating an issue of multicollinearity for regression analysis. Factor analysis was used for data reduction, and a single factor, standardized on a 100 point scale, was created. The results of the factor analysis are presented in Table 2.

*TABLE 2 Factor Analysis Results for Social Capital*

| Indicators | Factor Loading | The Characteristics of Common Factor | |
|---|---|---|---|
| Network Diversity | 0.863 | Mean | 35.57 |
| Network Upper Reachability | 0.857 | SD | 20.13 |
| Ties with Professionals | 0.738 | Min | 0 |
| Ties with Officials | 0.658 | Max | 100 |
| Ties with Managers | 0.625 | Observations | 6634 |
| Network Size | 0.501 | Explained Variance | 51.7% |

*Human capital and political capital*. We used the respondent's years of education to measure human capital. Following the methods used by other researchers, we used CCP membership to measure political capital.[40]

*Marketization.* The level of marketization in China is differentiated by region and industry, and actors in different regions and/or industries face different institutional

39 Y. Bian, 'Source and Functions of Urbanites' Social Capital: A Network Approach', Social Sciences in China, vol. 4, 2004, pp. 136-146.

40 V. G. Nee, 'A Theory of Market Transition: From Redistribution to Markets in State Socialism', *American Sociological Review*, vol. 54, 1989, pp. 663–681.

environments. Therefore, we constructed 48 (8 cities*6 industries) groups for comparison (note 7). Using public national statistical data, we then computed the proportion of working employees in each group who worked in the market sector, and used this new measure as the level of marketization. This measurement has been adopted by other researchers for its validity and simplicity.[41]

*Control variables.* We also considered a number of control variables that were thought to affect income in the regression models. These mainly include region, type of work unit (*danwei*), type of occupation, gender, marital status, residence status (*hukou*), age, family background, and so on. Specifically, region was divided into coastal (Tianjin, Xiamen, Guangzhou, and Shanghai) and inland (Changchun, Xi'an, Lanzhou, and Jinan) areas; type of work unit (*danwei*) indicates whether the respondent worked in the state sector (*tizhinei*) or market sector (*tizhiwai*); type of occupation is categorized into professionals, managers and officials, and other non-elites; marital status has two categories, married and unmarried; residence status (*hukou*) includes local and non-local *hukou*; family background is father's educational attainment. The descriptive statistics of variables are reported in Table 3.

41 D. Hao and L. Li, 'State Monopoly and Income Inequality in Regional Disparity Reform: Based on National Comprehensive Social Survey Data 2003', Social Sciences in China, vol. 2, 2006, pp. 136-146.

*TABLE 3 Descriptive Statistics of Variables*

| Variable | Count | Mean | SD | Notes |
|---|---|---|---|---|
| Dependent Variables | | | | |
| Monthly Income | 6036 | 2075.3 | 1841.6 | Min=100, Max=10000 |
| (log) Monthly Income | 6036 | 7.28 | 0.92 | Min=4.61, Max=9.21 |
| Independent Variables | | | | |
| Social Capital | 6638 | 35.25 | 18.61 | Min=0, Max=100 |
| Network Size | 6668 | 27.18 | 30.67 | Min=1, Max=300 |
| Network Upper Reachability | 6752 | 74.00 | 24.35 | Min=6, Max=95 |
| Network Diversity | 6719 | 5.52 | 3.91 | Min=0, Max=20 |
| Ties with Professionals | 6752 | 0.67 | | 0=No, 1=Yes |
| Ties with Managers | 6752 | 0.31 | | 0=No, 1=Yes |
| Ties with Officials | 6752 | 0.38 | | 0=No, 1=Yes |
| Macro-level Variable | | | | |
| Level of Marketization | 7062 | 0.36 | 0.18 | Min=0.11, Max=0.75 |
| Control Variables | | | | |
| Years of Schooling | 7089 | 12.2 | 3.26 | Min=0, Max=18 |
| Type of Work Unit | 6980 | 0.37 | | 1=Market Sector, 0=State Sector |
| Type of Occupation | 6946 | | | 1=Management Elites, 2=Technology Elites, 3=Non-elites |
| Gender | 7101 | 0.47 | | 1=Male, 0=Female |
| Political Membership | 7093 | 0.18 | | 1=Communist, 0=Non-communist |
| Marital Status | 7096 | 0.84 | | 1=Married, 0=Unmarried |
| Residence Status | 7101 | 0.83 | | 1=Local *Hukou*, 0=Non-local *Hukou* |
| Age | 7084 | 43.14 | 13.36 | Min=17, Max=77 |
| Father's Educational Attainment | 6001 | 8.13 | 4.82 | Min=0, Max=18 |
| Region | 7102 | 0.62 | | 1=Coastal Areas, 0=Inland Areas |

### 5.3. Statistical Methods

We employed in this study three statistical methods: the ordinary least squares (OLS) regression, the quantile regression, and hierarchical linear modeling. The first, OLS regression, was used to investigate the income effects of social capital. In OLS regression, since the dependent variable is log-transferred income, the regression coefficients can be interpreted as the percentage of change in income with changes in the variables. But due to its focus on mean income distribution, the OLS regression is unable to display the contribution made by the independent variables to the shape of the entire income distribution. To achieve this goal, we then used the quantile regression to precisely describe the income effects of social capital at various locations across the entire distribution. The model can be expressed as follows:

$$Y^{\theta} = X^{'}\beta_{\theta} + \mu_{\theta}, Y^{\theta} = Y_{Quant(\theta)}\big|X$$

where $Y^{\theta}$ refers to quantiles, and residual error $\mu_{\theta}$ satisfies the condition $\mu_{\theta}$ =0. The estimated value of parameter $\beta_{\theta}$ for $\theta$ th（$0<\theta<1$）quantile must satisfy:

$$\min_{\beta}\frac{1}{n}\Big\{\sum_{i:Y^{\theta}\geq X_i^{'}\beta}\theta\Big|Y_i^{\theta}-X_i^{'}\beta\Big|+\sum_{i:Y^{\theta}\leq X_i^{'}\beta}(1-\theta)\Big|Y_i^{\theta}-X_i^{'}\beta\Big|\Big\}$$

This formula represents the weighted sum of minimized errors. In this formula, $\theta$ is used as the weighted value for the absolute value of the positive error, and (1-$\theta$) is assigned as the weighted value for the absolute value of the negative error. The estimation of parameter at selected quantile, $\theta$ （$0<\theta<1$）is $\hat{Y_{\theta}}\big|X = X^{'}\hat{\beta}_{\theta}$. Selected quantiles in this paper include 25th, 50th, and 75th percentiles of distribution, which represent low, middle, and high income groups, respectively.

The third is hierarchical linear modeling, which is used to estimate the effects of macro level of marketization on the association between social capital and income. It is assumed that the intercept, social capital, and the interaction between social capital and macro-level variables are random coefficients. The hierarchical linear modeling includes two parts. First, individual-level hierarchical linear modeling is represented as below:

$$\begin{aligned}\log(y_{ik}) &= \beta_{0k} + \beta_{1k}x_{1ik} + \beta_{2k}x_{1ik}^2 \\ &+\beta_{3k}x_{2ik} + \beta_{4k}x_{3ik} + \sum\beta_j x_{jik} + \varepsilon_{ik}\end{aligned} \quad (1)$$

where $x_{1ik}$ refers to social capital for individual *i* at the marketization level of *k*, $x_{2ik}$ stands for human capital, $x_{3ik}$ is political capital, and $\beta_j$ indicates other control variables. The second-level model is shown as below:

$$\begin{aligned}
\beta_{0k} &= \alpha_0 + \mu_{0k} \\
\beta_{1k} &= \alpha_1 + \lambda_1 z_k + \lambda_2 z_k^2 + \mu_{1k} \\
\beta_{3k} &= \alpha_3 + \lambda_3 z_k + \mu_{3k} \\
\beta_{4k} &= \alpha_4 + \lambda_4 z_k + \mu_{4k} \\
\beta_j &= \alpha_j
\end{aligned} \tag{2}$$

where $\beta_{0k}$ is affected by the level of marketization, but it does not change systematically with variations in the level of marketization; $\beta_{1k}$ indicates that the income effects of social capital, which is shaped not only by the level of marketization, but also varies with the level of marketization and its square; $\beta_{3k}$ shows the income effects of human capital, which are shaped by both the level of marketization and by changes in the level of marketization; likewise, $\beta_{4k}$ reflects the income effects of political capital, shaped by both the level of marketization, and by changes in the level of marketization; and $\beta_j$ presents the coefficients of other variables, which are not affected by the level of marketization.

We substitute formula (2) into formula (1), and get the particular hierarchical linear modeling used in this paper.

$$\begin{aligned}
&\log(y_{ik}) = (\alpha_0 + \mu_{0k}) + (\alpha_1 + \lambda_1 z_k + \lambda_2 z_k^2 + \mu_{1k}) x_{1ik} + \alpha_2 x_{1ik}^2 \\
&+(\alpha_3 + \lambda_3 z_k + \mu_{3k}) x_{2ik} + (\alpha_4 + \lambda_4 z_k + \mu_{4k}) x_{3ik} \\
&+\sum \alpha_j x_{jik} + \varepsilon_{ik}
\end{aligned} \tag{3}$$

Formula (3) can be further transformed into the following:

$$\log(y_{ik}) = (\alpha_0 + \alpha_1 x_{1ik} + \alpha_2 x_{1ik}^2 + \alpha_3 x_{2ik} + \alpha_4 x_{3ik} + \sum \alpha_j x_{jik})$$
$$+(\lambda_1 z_k x_{1ik} + \lambda_2 z_k^2 x_{1ik} + \lambda_3 z_k x_{2ik} + \lambda_4 z_k x_{3ik})$$
$$+(\mu_{0k} + \mu_{1k} x_{1ik} + \mu_{3k} x_{2ik} + \mu_{4k} x_{3ik} + \varepsilon_{ik}) \quad (4)$$

## 6. RESULTS

### 6.1. Statistical Tests for H1

First of all, we analyzed the pattern of relationship between income and social capital. Before our interpretation of this relationship, it is necessary to indicate that we don't deny the effects of income on social capital as many conventional studies found, particularly when we thought about the complex determinants of individuals' current income in urban China. But as discussed above, in this paper we would like to explore the reversed, which refers to the effects of social capital on income. Without controlling for other variables, the relationship between income and social capital appears to be a non-linear, quadratic one. In figure 1, the vertical axis is the logged income, and the horizontal axis is social capital. The curves indicate that social capital is positively related with income, but the income return declines gradually as the social capital increases. One caveat to note is that though the value range of social capital is limited,[42] social capital has a positive effect on income at the maximum.

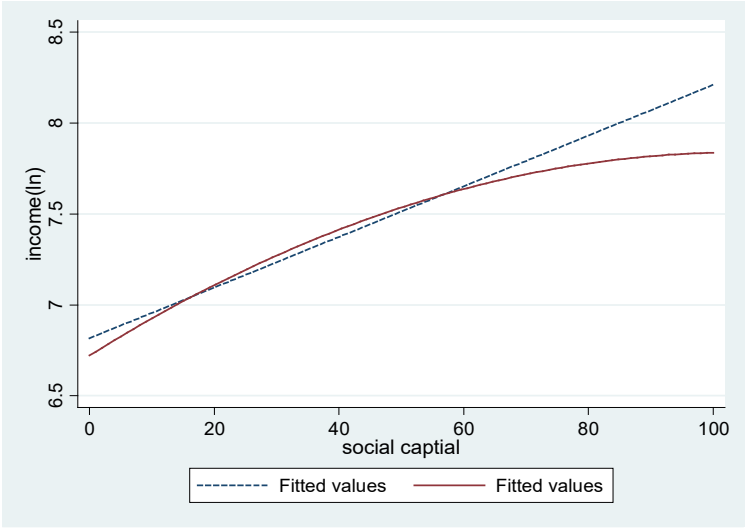


**Figure 1 The Declining Trend of the Effects of Social Capital on Income**

42 J. Jaccard and R. Turrisi, *Interaction Effects in Multiple Regression*, CA, Sage, 2003.

We also ran OLS regressions to test hypothesis 1. Three different models were tested, and results are reported in Table 4. All regression coefficients in all models are statistically significant. Adjusted R squares suggest that the model fitting improves with social capital variables added into the equation.

*TABLE 4 OLS Regression of Log-transferred Income*

| | (1) Base Model | (2) Nested Model 1 | (3) Nested Model 2 |
|---|---|---|---|
| Social Capital | | | 0.009*** |
| Social Capital Square/100 | | | -0.006** |
| Years of Schooling | | 0.072*** | 0.064*** |
| Political Membership (ref.: Non-Communist) | | 0.204*** | 0.188*** |
| Type of Work Unit (ref.: Market Sector) | 0.101*** | 0.200*** | 0.195*** |
| Type of Occupation (ref.: Ordinary Workers) | | | |
| Managers | 0.501*** | 0.338*** | 0.299*** |
| Professionals | 0.219*** | 0.143*** | 0.123*** |
| Gender (ref.: Women) | 0.242*** | 0.204*** | 0.200*** |
| Marital Status (ref.: Unmarried) | 0.124*** | 0.154*** | 0.148*** |
| *Hukou* (ref.: Non-local *Hukou*) | -0.007 | 0.089** | 0.085** |
| Age | -0.014*** | -0.007*** | -0.007*** |
| Father's Educational Attainment (ref.: Primary School and below) | | | |
| Junior High School | 0.101*** | 0.051! | 0.048! |
| Senior High School | 0.179*** | 0.072* | 0.055! |
| College and Higher | 0.303*** | 0.134*** | 0.116*** |
| Passed away(before Being Employed) | 0.040 | 0.041 | 0.042 |
| Regions (ref.: Inland areas) | 0.312*** | 0.273*** | 0.263*** |
| Intercept | 7.208*** | 6.085*** | 5.995*** |
| N. | 5817 | 5817 | 5817 |
| Adj. $R^2$ | 0.207 | 0.277 | 0.289 |
| BIC | 13348 | 12821 | 12739 |

! $p < 0.10$ * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The baseline includes all the control variables in the equation. Most variables (except for *hukou*) in the model are statistically significant.

In the second model, variables of human capital and political capital were added into the equation. The effects of other variables are taken into account, with an increase in years of schooling, income increases by 7.5% (note 8). This figure represents the rates of the income effects of human capital. It not only falls into the range of 2% –10%, which is calculated by other extant studies (note 9),[43] but is also the average. This can be seen as evidence for an argument that missing data on wage income (note 10) in this paper has not affected the core findings of this paper. As for political capital, individuals who have the Communist Party membership earn 22.6% higher than those who do not. Results above from Model 2 confirm that a redistributive economy that emphasizes political capital, and a market economy that focuses on human capital have both been very important mechanisms for income distribution in the decades since economic reform in China.

In the third model, variables including the measure of social capital is included. Results show that social capital positively associate with individuals' income, and the square of each of them is significantly negative. Other independent variables and control variables almost remain the same and stay significant. All these observations indicate that though there is a positive association between social capital and income, growth of return to income tends to decrease. In other words, there is an inverted U relationship between social capital and income, which means when social capital increases to a certain level, individuals' income will decline if they keep relying on social capital. Thus, hypothesis 1 is supported.

Table 4 also reveals that all control variables are statistically significant with income. Specifically, individuals working in the state sector (*tizhinei*) earn 21.5% less than those in the market sector (*tizhiwai*); elites, including managers and professionals, respectively earn 34.9% and 13.1% more than normative workers; females earn 22.1% less than males; those who get married have 16.0% higher pay than those who do not; individuals with non-local *hukou* earn, on average, 8.9% higher than locals; age is negatively associated with income, which indicates that an additional year in age makes 0.7% less income; the higher a father's educational attainment, the higher an individual income; and individuals living in coastal areas have 30.1% higher pay than those in inland.

Table 5 reports income at selected quantiles across the distribution. As the results indicate, the income effects of social capital are steadily decreasing at each selected quantile, which provide clear support for H1. For social capital, with increasing social capital, the income effects of social capital tend to be smaller at the top end of the distribution (0.006) than at the bottom (0.009). The rates of decrease in the income effects of social capital are bigger at the lower quantile than at the upper end. Res-

43 S. Li and S. Ding, 'Long-term Change in Private Returns to Education in Urban China', *Social Sciences in China*, vol. 6, 2003, pp. 58-72. Y. He, 'The Changes of the Rate of Return to Education: An Empirical Study Based on the Data of CHNS', *Chinese Journal of Population Science*, vol. 2, 2009, pp. 44-54.

pectively, the rates of decrease in the income effects of social capital are statistically negative both at the 25th and 50th percentiles. This pattern is not surprising, as individuals at the lower quantile from low income groups are mostly poorly educated, and they take jobs within the secondary labor market. Accordingly, their incomes tend to heavily rely on their social capital, which makes the effect of social capital on income big, but at the same time, leads to high rates of decrease in the effect of social capital on income. The rates of decrease in the effect of social capital on income become smaller when moving up from the bottom indicates that social capital might work to increase income inequality.

*TABLE 5 The Quantile Regression Estimates of Income*

| Selected Quantiles<br>Variables | 25th | 50th | 75th |
|---|---|---|---|
| Social Capital | 0.009*** | 0.009*** | 0.006*** |
| Social Capital Square/100 | -0.006* | -0.006** | -0.002 |
| Years of Schooling | 0.067*** | 0.068*** | 0.062*** |
| Political Membership<br>(ref.: Non-Communist) | 0.184*** | 0.099*** | 0.152*** |
| Type of Work Unit (ref.: Market Sector) | 0.137*** | 0.149*** | 0.208*** |
| Type of Occupation(ref.: Ordinary Workers) | | | |
| Managers | 0.258*** | 0.290*** | 0.328*** |
| Professionals | 0.116*** | 0.138*** | 0.146*** |
| Gender (ref.: Women) | 0.191*** | 0.207*** | 0.215*** |
| Marital Status (ref.: Unmarried) | 0.200*** | 0.197*** | 0.143*** |
| *Hukou* (ref.: Non-local *Hukou*) | 0.104** | 0.115*** | 0.113*** |
| Age | -0.009*** | -0.003** | -0.003** |
| Father's Educational Attainment<br>(ref.: Primary School and Below) | | | |
| Junior High School | 0.066* | 0.084*** | 0.019 |
| Senior High School | 0.070* | 0.100*** | 0.052! |
| College and Higher | 0.075! | 0.159*** | 0.137*** |
| Passed away(before Being Employed) | 0.030 | 0.032 | 0.030 |
| Regions (ref.: Inland Areas) | 0.270*** | 0.272*** | 0.297*** |
| Intercept | 5.739*** | 5.809*** | 6.306*** |
| N. | 5817 | 5817 | 5817 |

! $p < 0.10$ * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

### 6.2. Statistical Tests for H2

Table 6 reports the results of hierarchical linear modeling. Model 1 is the base model; Model 2 additionally considers the interaction effects of the level of marketization, human capital, and political capital; and in Model 3, the interaction effects of the level of marketization and social capital are further included. All nested models are statistically significant.

*TABLE 6 Hierarchical Liner Modeling of the Level of Marketization, Social Capital, and Income*

| | (1) | (2) | (3) |
|---|---|---|---|
| **Individual-level Coefficients** | | | |
| Intercept | 6.456*** | 6.395*** | 6.377*** |
| Social Capital | 0.009*** | 0.009*** | 0.016*** |
| Social Capital Square/100 | -0.006** | -0.005** | -0.006** |
| Years of Schooling | 0.055*** | 0.047*** | 0.049*** |
| Political Membership (ref.: Non-Communist) | 0.146*** | 0.138* | 0.133* |
| Type of Occupation (ref.: Normative Workers) | | | |
| Managers | 0.300*** | 0.297*** | 0.295*** |
| Professionals | 0.123*** | 0.120*** | 0.118*** |
| Gender(ref.：Women) | 0.207*** | 0.207*** | 0.206*** |
| Marital Status (ref.：Unmarried) | 0.174*** | 0.180*** | 0.179*** |
| *Hukou* (ref.：Non-local *Hukou*) | 0.086** | 0.088** | 0.090** |
| Age | -0.009*** | -0.009*** | -0.009*** |
| Fathers' Educational Attainment (ref.：Primary and below) | | | |
| Junior High School | 0.045 | 0.047! | 0.047! |
| Senior High School | 0.067* | 0.064* | 0.064* |
| College and Higher | 0.085* | 0.078* | 0.077* |
| Passed away (before Being Employed) | 0.007 | 0.008 | 0.007 |
| **Individual-macro Level Coefficients** | | | |
| Years of Schooling* the Level of Marketization | | 0.031! | 0.025 |
| Political Capital* the Level of Marketization | | 0.018 | 0.032 |
| Social Capital* the Level of Marketization | | | -0.043* |
| Social Capital*the Level of Marketization Square | | | 0.055* |
| **Macro-level Variance Components** | | | |

| | | | |
|---|---|---|---|
| Intercept $[Var(\mu_0)]$ | 0.064 | 0.020 | 0.013 |
| Years of Schooling $[Var(\mu_1)]$ | | $2.62\times10^{-4}$ | $2.68\times10^{-4}$ |
| Political Membership $[Var(\mu_2)]$ | | $2.30\times10^{-22}$ | $6.80\times10^{-15}$ |
| social Capital $[Var(\mu_1)]$ | | | $3.44\times10^{-6}$ |
| **Individual-level Variance Components** | | | |
| $Var(\varepsilon)$ | 0.494 | 0.491 | 0.489 |
| **Rho Value** | 0.115 | 0.040 | 0.026 |
| *N* | 5544 | 5544 | 5544 |
| Log likelihood | -5967 | -5953 | -5948 |
| LR Chi Square Test | | 0.000 | 0.000 |

! $p < 0.10$ * $p< 0.05$, ** $p < 0.01$, *** $p < 0.001$

In Model 2, the coefficient of interaction between the level of marketization and human capital is positive (0.031), and the coefficient of interaction between the level of marketization and political capital is insignificant. This finding indicates that when social capital is not controlled, the higher the degree of marketization, the higher the rate of return to human capital; at the same time, an increased level of marketization does not necessarily lead to a lower rate of return to political capital. This is basically consistent with existing studies.[44] After controlling for social capital, however, the coefficient of interaction between the level of marketization and human capital is no longer significant. This finding reveals that part of the income effects of human capital is attributed to social capital.

It is clear from Model 3 that the interaction between the level of marketization and social capital is statistically significant, suggesting an important role of the level of marketization in shaping the income effects of social capital. The coefficient of interaction between social capital and the level of marketization is negative (-0.043), and demonstrates that income return to social capital tends to drop with increased level of marketization. By contrast, the coefficient of interaction between social capital and the level of marketization square is positive (0.055), which shows that the rate of decline of the income effects of accessed social capital slows down. Two theoretical explanations can be made to support this argument. First, a higher level of marketization means that China's urban labor market is moving toward a more open trend, which involves universalism rather than particularism during job search and recruitment processes. Therefore, the effects of social capital featured by *guanxi* and favor decline.[45] An alternative explanation is that increasing marketization sug-

44 X. Zhou, 'Economic Transformation and Income Inequality in Urban China: Evidence from Panel Data', American Journal of Sociology, vol. 105, no. 4, 2000, pp. 1135-1174.

45 D. Guthrie, 'The Declining Significance of Guanxi in China's Economic Transition', China

gests more intense competition in China's urban labor market. In this situation, each person tends to use all of his/her social capital to find better jobs with high income.[46] But at the same time, the effects of social capital on income decrease as an increased number of people are attaching importance to and using *guanxi* for high-paying jobs. Hypothesis 2-2 is supported.

## CONCLUSION AND IMPLICATION

The decades since the economic reform initiated in 1978 have, as Jansen and Wu[47] argue, "provided a unique opportunity for scholars to study the impact of institutional changes on stratification outcomes, or more precisely, the patterns of social stratification emerging from the new social order." Due to the substantial changes it has undergone, the income distribution structure in China has attracted the attention of many researchers.[48] This historical transition has not only seen a shift from a redistributive economy to a market economy as a fundamental income distribution mechanism,[49] but it has also witnessed the significant role played by social networks as another (informal) income distribution mechanism in transitional China. Many conventional studies have implicitly recognized the income effects of social capital in transitional countries, but they have mostly ignored the role of social networks as an independent mechanism of social stratification. Accordingly, this paper attempts to explore the impact of economic reforms on China's changing stratification system, particularly focusing on how the income effect of social capital changes with the development of market reforms.

This paper has three main findings. First, for social capital, each additional unit of input (i.e., individuals' social capital) yields less and less additional output (i.e., income). In other words, as the social capital increases, the income return will decrease gradually. Accordingly, individuals normally will stop expanding their social capital at a certain point. Second, in terms of quantile regressions, it is clear that the income effects of social capital change across different locations of income distribution. Of particular interest is that individuals' social capital is able to reinforce income inequality. Individuals at the higher quantile, namely, those with higher social status and higher pay, are more likely to have richer social capital, which helps them to access more opportunities for promotion and pay increase; those at the lower quantile, with lower social status and lower income, end up with inadequate social capital, and thus have fewer opportunities for advancement. Third, the decades following

Quarterly, vol., 154, 1998, pp. 254-282.

46 Y. Bian and X. Huang, 'The *Guanxi* Influence on Occupational Attainment in Urban China', *Chinese Journal of Sociology*, vol. 1, no. 3, 2015, pp. 307-332.

47 W. Jansen and X. Wu, 'Income Inequality in Urban China, 1978–2005', Chinese Sociological Review, vol. 45, no. 1, 2012, pp. 3–27.

48 M. Djilas, The New Class: An Analysis of the Communist System of Power, New York, Praeger, 1957.

49 Y. Bian, 'Chinese Occupational Prestige: A Comparative Analysis', International Sociology, vol. 11, no. 2, 1996, pp. 161-186. D. J. Adamchak, S. Chen and J. Li, 'Occupations, Work Unites and Work Rewards in Urban China', International Sociology, Vol. 14, no. 4, 1999, pp. 423-441.

the economic reform have witnessed an increase in individuals' income return to human capital, political capital, and social capital. With the improvement of market rules, however, the return to human capital and political capital will remain the same or rise steadily, while the return to social capital will drop in the long run. It is also clear that social capital, which is mostly motivated by economic interests, represents persistent instrumental effect in transitional China.

In sum, it is clear that the three mechanisms coexist in the income distribution structure in China's transition period. The social network mechanism plays out at the forefront in the absence of the other two mechanisms, or when redistribution/market failure occurs; it becomes less important when the other two mechanisms take priority in income distribution. The shifting primacy of the income distribution mechanism takes place in the processes of economic reform. Having initially established redistributive economy, this transitional phase has brought about diverse ways of resources distribution.[50] The social network mechanism has been included as one of them, and it is increasingly playing an important role in resources distribution. The central government's reform of redistributive economy has substantially facilitated the development of market economy, and with the improvement of market transaction regulations, a socialist market economy has gradually formed. Put simply, with the development of market reforms, all these changes have also occurred specifically in income distribution, which has witnessed a shift from redistributive economy to market economy,[51] and the income effects of the social capital have changed accordingly. The complicated and delicate process above has long been ignored by the market transformation theory and its relevant debates.

Based on all these findings above, this paper contributes to the literature in two ways. First, beyond human capital and political capital, social capital serves as an independent mechanism of income distribution. Second, social capital in China has diminishing marginal returns on wage income. More interestingly, the macro marketization process interacts dynamically with social capital in affecting individuals.

Results from this paper shed a light on recommendations for future policy directions. In transitional China, the importance of the social network mechanism for income distribution should be recognized, but it also cannot be exaggerated, as it may run against social equality and justice. The social network mechanism can be replaced by the other two formal types of income distribution mechanisms (i.e., the redistribution mechanism and the market mechanism) when its "hidden rule" contradicts the standard regulations. Furthermore, the finding that the rates of growth of income effects of social capital have slowed down confirms remarkable achievements of economic reform in China.

One limitation of the study is the issue of causality. For example, it is definitely true that what we focus on in this paper is the effects of social capital on income, but

50 L. Li, X. Yang and F. Wang, 'The Structure of Social Stratification and the Modernization Process in Contemporary China', International Sociology, vol. 6, no. 1, 1991, pp. 25-36.

51 G. Lai and R. P. L. Lee, 'Market Reforms and Psychological Distress in Urban Beijing', International Sociology, vol. 21, no. 4, 2006, pp. 551-579.

there may be a reverse causality problem, namely, that higher income leads to more social capital than vice versa. If there is dynamic data, more leverage perhaps can be gained by using lagged variables to predict outcomes. Counter-factual analysis will also be helpful to explore this issue in the future study.

## REFERENCES

Acemoglu D and Robinson J (2012) *Why Nations Fail: The Origins of Power, Prosperity and Poverty*. NewYork: Random House.

Adamchak DJ, Chen S and Li J (1999) Occupations, work unites and work rewards in urban China. *International Sociology* 14(4): 423-441.

Akos R (1994) The first shall be the last? Entrepreneurship and the communist cadres in the transition from socialism. *American Journal of Sociology* 100(1): 40-69.

Bian Y (1996) Chinese occupational prestige: A comparative analysis. *International Sociology* 11(2): 161-186.

Bian Y (1997) Bringing strong ties back in: Indirect ties, network bridges and job searches in China. *American Sociological Review* 62(3): 366-385.

Bian Y (2002) Chinese social stratification and social mobility. *Annual Review of Sociology* 28: 91-116.

Bian Y (2004) Source and functions of urbanites' social capital: A network approach. *Social Sciences in China* 4: 136-146.

Bian Y and Logan JR (1996) Market transition and the persistence of power: The changing stratification system in urban China. *American Sociological Review* 61(5): 739-758.

Bian Y and Huang X (2015) The *guanxi* influence on occupational attainment in urban China. *Chinese Journal of Sociology* 1(3): 307-332.

Cao Y and Nee VG (2000) Comment: Controversies and evidence in the market transition debate. *American Journal of Sociology* 105(4):1175–1189.

Djilas M (1957) *The New Class: An Analysis of the Communist System of Power.* New York: Praeger.

Fei X (1949/1992) *From the Soil, the Foundations of Chinese Society: A Translation of Fei Xiaotong's Xiangtu Zhongguo.* Berkeley: University of California Press.

Gerber TP and Hout M (1998) More shock than therapy: Market transition, employment, and income in Russia, 1991-1995. *American Journal of Sociology* 104(1): 1-50.

Granovetter M (1973) The strength of weak ties. *American Journal of Sociology* 78(6): 1360-1380.

Granovetter M (1985) Economic action and social structure: The problem of embeddedness. *American Journal of Sociology* 91(3): 481-510.

Guthrie D (1998) The declining significance of *guanxi* in China's economic transition. *China Quarterly* (154): 254-282.

Hao D and Li L (2006) State monopoly and income inequality in regional disparity reform: Based on national comprehensive social survey data 2003. *Social Sciences in China* 2: 136-146.

Hainmueller J, Mummolo J and Xu Y (2016) How much should we trust estimates from multiplicative interaction models? Simple tools to improve empirical practice. Available at http://dx.doi.org/10.2139/ssrn.2739221 (accessed January 6 2017).

He Y (2009) The changes of the rate of return to education: An empirical study based on the data of CHNS. *Chinese Journal of Population Science* 2: 44-54.

Jaccard J and Turrisi R (2003) *Interaction Effects in Multiple Regression*. Thousand Oaks, CA: SAGE.

Jansen W and Wu X (2012) Income inequality in urban China, 1978–2005. *Chinese Sociological Review* 45(1): 3–27.

Lai G and Lee RPL(2006) Market reforms and psychological distress in urban Beijing. *International Sociology* 21(4): 551-579.

Li L, Yang X and Wang F (1991) The structure of social stratification and the modernisation process in contemporary China. *International Sociology* 6(1): 25-36.

Li P (1996) The social networks and social status of floating migrant workers. *Sociological Studies* 4: 41-52.

Li S and Ding S (2003) Long-term change in private returns to education in urban China. *Social Sciences in China* 6: 58-72.
Liang Y (2010) Is social capital and social networks useless? *Sociological Studies* 5: 50-82.
Lin N (1982) Social resources and instrumental action. In: Marsden PV and Lin N (eds) *Social Structure and Network Analysis.* Beverly Hills, CA: Sage Publications, pp. 131-145.
Lin N (1995) Local market socialism: Local corporatism in action in rural China. *Theory and Society* 24(3): 301-354.
Lin N (2001) *Social Capital: A Theory of Social Structure and Action*. Cambridge: Cambridge University Press.
Ma G and Yang E (2011) Social networks, informal finance and entrepreneurship. *Economic Research Journal* 3: 83-93.
Nee VG (1989) A theory of market transition: From redistribution to markets in state socialism. *American Sociological Review* 54: 663–681.
Nee VG (1991) Social inequalities in reforming state socialism: Between redistribution and markets in state socialism. *American Sociological Review* 56: 267–282.
Nee VG (1996) The emergence of a narket society: Changing mechanisms of stratification in China. *American Journal of Sociology* 101: 908–949.
Nee VG and Matthews R (1996) Market transition and societal transformation in reforming state socialism. *Annual Review of Sociology* 22: 401-435.
Putnam RD (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton UniversityPress.
Saloner G (1985) Old boy networks as screening mechanisms. *Journal of Labor Economics* 3(3): 255-267.
Shen J and Irena K (2017) Contact use in job placement and its impact on the gender earnings gap in transnational urban China: Evidence from Xiamen, 1999. *International Sociology* 32(1): 130-154.
Stiglitz JE (2000) Formal and informal institution. In: Dasgupta P and Serageldin I (eds) *Social Capital: A Multi-faceted Perspective.* Washington, DC: World Bank, pp. 59-68.
Storesletten K and Zilibotti F (2014) China's great convergence and beyond. *Annual Review of Economics* 6(6): 333–362.
Tyner A and Ren Y (2016) The *hukou* system, rural institutions, and migrant integration in China. *Journal of East Asian Studies* 16: 331-348.
Walder AG (1996) Markets and inequality in transitional economics: Toward testable theories. *American Journal of Sociology* 101(4): 1060-1073.
Whyte MK (2009) Paradoxes of China's economic boom. *Annual Review of Sociology* 35: 371–392.
Wu X (2002) Work units and income inequality: The effect of market transition in urban China. *Social Forces* 80(3): 1069-1099.
Wu X and Xie Y (2003) Does the market pay off? Earnings inequality and returns to education in urban China. *American Sociological Review* 68: 425–442.
Xie Y and Hannum E (1996) Regional variation in earnings inequality in reform-era urban China. *American Journal of Sociology* 101(4): 950-992.
Zang X (2002) Labor market segmentation and income inequality in urban China. *The Sociological Quarterly* 43: 27-44.
Zhang W (1996) Non-institutional factors and status attainment: A particular focus on social stratification structure in current China. *Sociological Studies* 1: 64-73.
Zhang Y and Li J (2000) Strong relation tie and the retirees' reemployment. *Chinese Journal of Population Science* 2: 34-40.
Zhao Y (2003) The social networks and retention wage for job searchers: A case of the reemployment of laid-off workers. *Sociological Studies* 4: 51-60.
Zhou X (2000) Economic transformation and income inequality in urban China: Evidence from panel data. *American Journal of Sociology* 105(4): 1135-1174.

## DECLARATION OF CONFLICTING INTERESTS

There are no conflicts of interest to disclose.

## NOTES

The term "structural hole" defines a situation where in imperfect labor markets, job assignments, and wage offers are flexible, and this flexibility creates a social space in which favoritism could operate to influence hiring decisions. In essence, it represents a social tie-favoritism link, and refers to the dark side of social capital about unjust access to scarce resources that are distributed as favors through old-boy networks.[52]

The term "state sector" and" market sector and the distinction between them throughout this paper are all borrowed from Wu's[53] typology of workers in labor market transition.

This is because social capital in a particular interpersonal relationship is able to establish and strengthen trust and rapport between supply and demand, thereby increasing probabilities of promotion and economic return.[54]

This is because, in terms of particular interpersonal relationship embedded in social capital, both supply and demand may have particular information that helps narrow down the best possible use of people and material.[55]

This is because social capital may, under the same conditions or even in case of stronger competitors, give priority to individuals with strong ties, helping them to access opportunities and positions.[56]

In China, significant income also called grey income may occur either within or outside one's main occupation. Some jobs are fixed on the pay check, whereas other jobs have significant grey income that official pay check only accounts for a small portion of their total real income. However, considering that the majority of participants of the survey are ordinary residents, whose monthly income almost do not include grey income, it is believed that this issue does not affect our findings much.

These six industries include traditional secondary industries, traditional tertiary industries, the manufacturing industry, the banking and real estate industry, science, culture, education industry and social organizations, and others.

52 X. Fei, *From the Soil, the Foundations of Chinese Society: A Translation of Fei Xiaotong's Xiangtu Zhongguo,* Berkeley, University of California Press, 1949/1992.

53 *X. Wu, 'Work Units and Income Inequality: The Effect of Market Transition in Urban China', Social Forces, vol. 80, no. 3, 2002, pp. 1069-1099.*

54 *R. D. Putnam, Making Democracy Work: Civic Traditions in Modern Italy, Princeton, Princeton University Press, 1993.*

55 *G. Saloner, 'Old Boy Networks as Screening Mechanisms', Journal of Labor Economics, vol. 3, no. 3, 1985, pp. 255-267.*

56 *Y. Bian, 'Bringing Strong Ties back in: Indirect Ties, Network Bridges and Job Searches in China', American Sociological Review, vol. 62, no. 3, 1997, pp. 366-385.*

It is calculated by exp(0.072)-1. All results below follow the same way of calculation.

Due to differences in target group, survey place, and control variables, results for the rates of the income effects of human capital from existing studies vary, ranging from 2% to 10%.

The authors are aware that wage income is different from other variables because missing data on wage income is a common issue for income data and its absence usually is non-random.