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Abstract

The rapid expansion of self-employment has accompanied the rise of a market economy in urban China. According to the National Bureau of Statistics of China, the state-owned enterprises' share of the country's GDP has declined from over 90% in 1978 to below 50% in 2005. Urban entrepreneurship and self-employment is an emerging force that is shaping the economic and physical form of Chinese cities. We provide an in-depth overview of the existing policy framework on urban entrepreneurship and small business development in the Chinese context as well as its role in urban economic development. Using 2007 Chinese Household Income Project (CHIP) data, we further investigate the rate and scale of urban entrepreneurship across Chinese cities, as well as the characteristics and earnings return associated with self-employment as compared to wage employment. We pay particular attention to the financial capital, human capital, and social capital factors underlying entrepreneurial entry and make distinction to "necessity entrepreneurs" and "opportunity entrepreneurs" and their respective socioeconomic characteristics.

Introduction

Urban entrepreneurship and self-employment is an emerging force that is shaping the economic landscape of Chinese cities. The self-employed entrepreneurs have accounted for an increasingly larger share of the Chinese workforce, especially after the mid-1990s (Yueh, 2007). The economic reforms since 1978 have shifted the Chinese economy from a planned economy to a market-oriented one by means of decentralizing the state apparatus, increasing local governments' fiscal capital, and introducing non-state sector into the market. The non-state enterprises, including township and village enterprises (TVE), urban collective, private enterprises, and foreign-invested enterprises, have progressively became the main driver of economic growth. According to the National Bureau of Statistics of China (NBS), the state-owned enterprises' (SOEs) share of the country's GDP has declined from over 90% in 1978 to below 50% in 2005. At the same time, the self-employment sector has experienced substantial growth. According to NBS, the percentage of self-employment in total workforce has grown to 12.5% in 2009. In 2009, the entrepreneurial prevalence rate in China was 18.8, which means that 18.8 percent of the population was involved in early entrepreneurial activity, more than doubling the rate in the United States and other developed countries such as Japan, United Kingdom, and Russia and also exceeding Brazil, another fast growing economy in recent years (GEM, 2009).

The development of the private sector and self-employment has come a long way in China. Private ownership was only revived after the economic reforms took place in 1978. In the early 1980s, individual family business (*getihu*) and private enterprises (*siying qiye*) were introduced into the socialist planned economy by the Chinese government to provide a solution to urban unemployment at that time (Gold, 1991). The private economy was regarded as a secondary and complementary element in the centrally planned economy. It was only in the

1990s that private ownership became fully legitimized and entrepreneurs have been recognized as a major engine of China's economic growth.

These economic changes have restructured the Chinese urban labor market. The expansion of the market sector opened up a new window of opportunity for urban workers, while the state sector remains its role as the predominant provider of social welfare. This 'dual opportunity structure' in the urban labor market has also evolved across different phases of marketization (Wu, 2002). In the early stage of the market transition, most workers still preferred the state sector over self-employment for the life-time employment and social security guaranteed by the SOEs. The self-employed at this time were predominately people of lower socioeconomic status or from the marginal groups in the socialist hierarchy. As the market played a greater role in the economy in the 1990s, self-employment started to gain more legitimacy and provided an increasingly lucrative alternative to wage work. Since the 14th Party Congress in 1992 which promoted a market-oriented economic system, opportunities in the private sector and self-employment gained social recognition. During this time, the state sector employment became more marketized. The 'iron rice bowl' of life-time employment and welfare benefits was broken, followed by a more commodified health service and pension system provided by most SOEs. Meanwhile, the coverage of the social security net extended, further reducing the risks of the private sector employment. Under these circumstances, more skilled workers from the state sector have entered the market and self-employment. Since the mid-1990s, urban entrepreneurship has experienced rapid growth and attracted more highly trained urban workers (Yueh, 2007).

The increasing contribution of entrepreneurship to the Chinese economy has attracted attention from the policy arena. The Ministry of Science and Technology of the People's Republic of China adopted a law to promote and foster small and medium enterprises through financial, business, technical, market as well as service assistance in 2002 (MOST, 2002). In 2009, the central government further issued several guidelines for assisting small businesses and reemphasized the vital role of entrepreneurship. In response to the growing size of self-employment, the government set up the China Center for Promotion of SME Development in the Ministry of Industry and Information Technology, responsible for making policies and designing programs targeted for small and medium enterprises (CCPSMED, 2011). Programs supported by this center include financial subsidies, tax credits, preferential procurement, loan assistance, business counseling, and entrepreneurial training programs (Year Book of SME, 2010). In addition to the central government, various programs are also offered at the provincial and local municipal levels.

Entrepreneurial entry provides an important route of upward mobility and economic advancement and self-employment displays an earnings advantage over other forms of employment in the West (e.g., Zhou & Cho, 2010; Portes & Zhou, 1992). In the Chinese context, the dismantling of the life-time employment system, or "iron rice bowl," the liberalization of the consumer markets, as well as the legitimization of the private ownership, which all took place in the 1990s, provided urban workers greater confidence to enter self-employment and better chances to earn higher business returns (Wu & Xie, 2002). This suggests that more urban workers may be pulled into self-employment by opportunity. However, the prevalent mentality among the Chinese urban workers remains to favor wage employment over self-employment even after decades of market liberalization. For example, a portion of urban entrepreneurs have

decided to start their own businesses only because they could not find jobs in the paid employment sector or after being laid-off during the large-scale restructuring of the SOEs in the mid-1990s (Yueh, 2007; 2009). In fact, data obtained from a national household survey conducted in urban China in 2000 indicates that about one third of entrepreneurs have experienced a spell of unemployment (Yueh, 2007). These entrepreneurs represent those who are pushed into self-employment by necessity. This analysis will use the newly released Chinese Household Income Project (CHIP) 2007 microdata to examine factors behind the entrepreneurial entry urban workers and any earnings disparities between self-employed workers and wage workers. We will make distinction between urban workers who enter self-employment out of necessity versus those by opportunity.

The remainder of the article will proceed in the following sections. First, we review relevant literature on the issue of entrepreneurship in both the western and Chinese contexts, since the theoretical framework on China is yet to emerge. Then, we introduce the design of the 2007 CHIP data, operationalization of independent, dependent variables and key control variables, and methodologies to be used. Next, we present the regression results and research findings. A final section concludes the study and offers some policy implications suggested by the analysis.

Review of Literature

Entrepreneurship is a long-standing line of inquiry in the Western literature (e.g., Aldrich & Waldinger, 1990; Bates, 1997; Fairlie & Meyer, 1997; Light, 1972; Logan et al., 2003; Portes, 2003). Previous studies have sought to understand the driving factors of self-employment entry

and the traits distinguishing entrepreneurs from non-entrepreneurs. Factors that have received examination include personal and socioeconomic characteristics, attitudinal characteristics, and institutional characteristics. However, no study has yet systematically investigated the financial, human and cultural capital factors that are associated with entrepreneurial entry in the Chinese context, which is the contribution of this paper.

Financial capital

Financial capital, denoted by household wealth, is of vital importance in starting a new venture. The theoretical perspective mainly comes from liquidity constraints thesis, which argues that businesses in their start-up phase require substantial capital (Evans & Jovanovich, 1989). Given the high capital requirements, although nascent entrepreneurs can capitalize their new businesses in the credit markets, they usually need to resort to personal funds for additional capital. This is especially the case in a challenging financial context. As the Chinese economy is still in the transitional phase which is characterized by imperfect legal system, underdeveloped financial markets and credit constraints, Chinese entrepreneurs encounter severe credit and financial constraints in their entrepreneurial transitions. A variety of reasons have contributed to small enterprises' financial situations, including the lack of small to medium finance institutions serving small enterprises, low credit standing due to unhealthy finance system and information asymmetry, skewed credit allocation that favors state-owned enterprises (SOEs) over private enterprises, and the slow development of the venture capital market (Jiang & Zhou, 2006). These problems have led to the low loan ratios and high financing costs of small enterprisers. As a result, entrepreneurs in the start-up process of a venture often turn to personal capital such as family assets to ease this process. Evidence from the U.S. also suggests that household assets

such as owned properties can impact the prospect of securing a loan (Cavalluzzo & Wolken, 2005).

In reality, most small businesses do not require large start-up capital. In the U.S., the majority of small businesses are small in scale. For example, 90% of the employer firms in the U.S. hired less than 20 people in 2009 (Dilger, 2012). Data from the Survey of Business Owners showed that about half of the firms surveyed were home-based in 2002 (Census, 2007). These businesses are likely to have low start-up capital requirements. The same survey reported that about one fifth (20.8 %) of all businesses even started their business with no capital up front (Census, 2007). In China, most small businesses start from individual family businesses and are therefore also small in scale (Pistrui et al., 2001). In these cases, entrepreneurs bypass the credit markets altogether and use their personal funds to finance the start-up of their businesses instead. In either case, financial capital should be positively associated with self-employment.

Human capital

Entrepreneurship in its simplest form was defined as the "creation of an organization" (Gartner, 1988). The level of education, managerial experience and previous entrepreneurial experience are identified as key factors to the entrepreneurial process (Bates, 1997; Fairlie & Robb, 2008, Kim et al., 2006). Education constitutes an important dimension of human capital. Returns to education in the labor market are revealed in terms of individuals' employment prospects and the earnings potential in their current employment. Studies so far have found a curvilinear association between education and entrepreneurship. Advanced education up to some point, usually college degree, is positively associated with being a nascent entrepreneur, while beyond that cutoff point, it is insignificantly or negatively related to entrepreneurship (Bates,

2007; Kim et al., 2006). However, the association between education and entrepreneurship appears to be mostly negative in China. Although crude descriptive figures derived from a household survey in 2000 indicated identical years of education between entrepreneurs and non-entrepreneurs (Yueh, 2007), empirical evidence shows that education has a deterring effect on urban workers' attempts at entrepreneurship (Wu, 2002; GEM, 2009).

On the other hand, managerial human capital has a more straightforward relationship with entrepreneurship in the U.S. Work experience has been found to play an important role in fostering entrepreneurial entry among urban workers (Borjas & Bronars, 1989; Carr, 1996; Kim et al., 2006). Experience gained from prior work can ease the transition into self-employment, though this relationship does not hold in China. Evidence shows that entrepreneurs in aggregate have substantially lower levels of experience than non-entrepreneurs (Yueh, 2012) and that work experience tends to reduce one's probability of becoming an entrepreneur (Yueh, 2009; Wu, 2002). Given the evidence of the negative impacts of education and work experience and education in China, we expect to see a negative association between human capital and entrepreneurship.

Social Capital

Social capital plays an extremely important role in entrepreneurial entry, especially when the legal system is underdeveloped or unfavorable to small businesses. In the western context, social capital has been documented to be beneficial to minority entrepreneurs who face institutional constraints. In a study on Chinese and Korean immigrants' economic well-being, Light (1972) found that the mobilization of ethnic resources and establishment of ethnic enterprises provide institutional supports for the economic advancement of these two groups.

Sanders & Nee (1987) pointed out that ethic solidarity generates group-based resources that assist Chinese and Cuban entrepreneurs in mitigating the hardships associated with residential segregation. It is argued that minority entrepreneurs take advantage of the dense social networks of kinship and co-ethnic friendship (ethnic solidarity hypothesis) in their ethnic neighborhoods (ethnic enclave hypothesis) in their business formation process (Zhou & Cho, 2010). These social networks provide access to immigrant labor (Light & Bonacich, 1988), capital (Coleman, 1988; Granovetter, 1985), institutional support and informal training system (Bailey & Waldinger, 1991).

Similarly, social networks help ease the business formation process in the Chinese context where self-employment faces a variety of challenges and hurdles, especially in terms of obtaining capital and credits (Jiang & Zhou, 2006). The lack of formal institutional protection of entrepreneurial activities also means that entrepreneurs have to seek alternative avenues of contracting and investment protections. Moreover, the traditional culture emphasis on inter-personal relationships (*guanzi*) in China has continued to shape people's social behaviors and inform business dealings among all kinds of business actors. In this context, social networks can play an important role in Chinese workers' entry into self-employment. In fact, studies have found that having connections and knowing relatives and friends who are entrepreneurs increases the probability that someone becomes an entrepreneur (Yueh, 2009; Djankov et al, 2006). In addition, social networks can function as an important facilitator of relational contracting outside the legal system and provide assistance in gaining the necessary license for business operation (Yueh, 2012).

Necessity versus Opportunity

In addition to observable personal traits and household wealth and connections, motivation also figures greatly into individuals' decisions of self-employment participation (Baumol, 1968). Motivations underlying entrepreneurial entry include autonomy, wealth, achievement and respect, or self-realization, recognition, innovation and independence (Reynolds & Curtin, 2008; Carter et al., 2003). In general, people can be pulled into entrepreneurship by opportunity or pushed into self-employment by necessity. Self-employment constitutes an alternative route out of unemployment and poverty, as suggested by the disadvantage theory in the case of minority in the U.S. (Light, 1972; Sanders & Nee, 1987; Wilson, 1987), while on other occasions just simply a route to private wealth. Similarly, different patterns of motivations can be expected in China. About one third of Chinese entrepreneurs had unemployment experience (Yueh, 2007; 2009). On the other hand, statistics have indicated that entrepreneurship in China is relatively equally distributed across different income groups (GEM, 2009), and that entrepreneurs earn substantively more than non-entrepreneurs in annual income (Yueh, 2007; Wu, 2002). In addition, the latest GEM report showed that most of the Chinese entrepreneurs were motivated by the economic opportunities contained in entrepreneurship (GEM, 2009).

Data and Methodology

Data and Sample

This research uses data from the urban survey of the 2007 Chinese Household Income Project (CHIP). The CHIP was initiated as a supplementary to the standard National Bureau of Statistics (NBS) surveys with rich data on detailed individual and household-level. The surveys contain three parts: the urban household survey, the rural household survey, and the rural-to

urban migrant household survey. Given the focus of this paper, the urban household survey is used. The project has conducted four waves of surveys in 1988, 1995, 2002, and 2007. Compared to the 2002 CHIP data, the latest 2007 surveys increase the geographic coverage from the previous waves, including 16 provinces across different regions in China, with the migrant household survey covering 9 of them. Following the sampling strategies of the NBS, the urban sample was collected through a multi-stage sampling strategy, containing 15,000 households in 302 cities within the 16 provinces (Li et al., 2011).

The 2007 survey includes a wide variety of questions on individual demographic information, education attainment, work experiences, employment status, and household-level measures of wealth and social networks. Questions related to self-employment involve past entrepreneurial experience, motivation and attitudes, self-assessment, as well as various funding-related issues during the start-up process. Notably, earnings are measured with extra care in the 2007 CHIP data. It specifies asset and transfer incomes in addition to the traditional measure of household wealth that is narrowly defined by the Census by wage income and family business income (Demurger et al., 2009).

Unlike most studies on Chinese entrepreneurs, our research focuses exclusively on urban residents. Although temporary migrants in the cities make up a large share of the current urban self-employed population in China, they in general possess less financial resources and educational credentials and face higher institutional barriers in the urban labor market than non-migrants. The historical disadvantages associated with migrant workers limit their employment opportunities and job mobility (Knight et al., 1999). The motivational structure and reasons behind migrants' entrepreneurial entry therefore differ systematically from those of local urban residents (Keung Wong et al., 2006). The main interest of this study is to explore factors behind

urban residents' decisions of self-employment and wage employment and the earnings return associated with the two employment forms. Given the more narrow-defined urban focus, the sample for this study is drawn from the urban household sample of the 2007 CHIP data, consisting of individuals above the age of 16 in 18 cities and 9 provinces/direct municipalities (Shanghai and Chongqing).

Model Specification

There has not been a consensus among scholars on what entrepreneurship is in China. On the one hand, the Global Entrepreneurship Monitor (GEM) focuses on nascent entrepreneurs who are pursuing 'early stage entrepreneurial activity'. This emphasis inadvertently excludes those entrepreneurs who work in existing companies, and in public and non-profit sectors from the analysis. On the other hand, Wu (2002) takes a broader perspective, defining individual business owners, private entrepreneurs, corporate entrepreneurs, and family enterprises co-owners as self-employed workers. Yueh (2009) extends the definition even further. She also includes individuals who work for themselves as secondary employment as entrepreneurs. In this study, we define entrepreneurs as a group of people who are self-employed in their individual or private businesses.

Probit model on self-employment is estimated on all labor force participates to gauge the three aforementioned capital factors on entrepreneurial entry. Ordinary Least Squares (OLS) models are estimated to test earnings potential of self-employment versus wage employment for different population groups. To distinguish between necessity entrepreneurs versus opportunity entrepreneurs, the OLS model on earning potentials is stratified by the two entrepreneurial motivations. The models are expressed as:

$$\text{Prob (Self-Employment}_{ij} = 1) = f\,(F_{ij}, H_{ij}, S_{ij}, L_j, X_{ij})$$

$$\text{Log (Income}_{ij}) = f\,(F_{ij}, H_{ij}, S_{ij}, L_{j,} I_{ij,} X_{ij}, SE_{ij}),$$

where *i* represents individuals and *j* represents communities, Self-Employment$_{ij}$ is binary self-employment status (self-employed or not), F_{ij}, H_{ij}, and S_{ij} represent financial capital, human capital, and social capital factors, respectively. L_j indexes locational context, including region dummy variables, provincial-level city dummy variables, and residential location dummy variables. X_{ij} consists of a series of individual and household characteristics such as household registration status (*hukou*), gender, age, marital status, presence of children in the household. Additional variables are added in the income model, which are I_{ij} and SE_{ij}. I_{ij} indexes a worker's industry of employment, and SE_{ij} is a binary variable indicating self-employment status.

Descriptive Statistics

Whether someone was pulled into entrepreneurship by opportunity or pushed into entrepreneurship by necessity is measured by motivation. The 2007 CHIP survey asked why an individual was engaged in self-employed business. The reasons include more money from self-employment, desire to become a boss, greater independence and freedom in entrepreneurial lifestyle, and no better choice of job. If an entrepreneur is motivated by one of the first three reasons, he or she is classified as being driven by opportunity. If the entrepreneur enters self-employment due to no better job available, then he or she is a necessity entrepreneur. Table 1 shows that the majority (83.4%) of urban entrepreneurs in China were motivated by economic opportunity rather than necessity. More specifically, most entrepreneurs were motivated by economic gains (37.64%) and freer lifestyle (32.05%), confirming the findings of previous

studies that entrepreneurs earn more than non-entrepreneurs in annual income (GEM, 2009; Yueh, 2007; Wu, 2002).

Table 1. Motivation of Entrepreneurial Entry

	Opportunity			Necessity (%)
	Desire for more profits	Desire to be boss	Desire for free lifestyle	Cannot be employed
All self-employed workers	37.64%	13.71%	32.05%	16.60%
Number of cases	195	71	166	86

Source: Authors' calculation of CHIP Urban Survey, 2007

Funding sources and amounts borrowed from external sources reflect the size of a business as well as the availability of financial resources in a given market. Kim et al. (2006) found that most American entrepreneurial businesses required little start-up capital and that most nascent entrepreneurs sought funds from private sources such as friends and other family members. In our Chinese case, 93% of current entrepreneurs used personal funding, whereas only 37% sought for external financial resources (Table 2). Among the external financing options, 32% of entrepreneurs have borrowed money from friends, other family members, or civic loan institutions and only 7% turned to formal financial institutions such as banks. In terms of funding amount, about 42% of entrepreneurs' funding comes from personal funding sources and 58% of it comes from external funding. Although it seems that external funds make up the majority of funds for entrepreneurial activities, money borrowed from banks only constitutes a very small share of these external funds on average across all industries (3.75%) (Table 2).

Chinese entrepreneurs also tend to be small in scale. Most entrepreneurs are strictly self-employed in a sense that they hired no employee outside of their families. Another quarter of the entrepreneurs surveyed hired less than five employees in 2007 (Table 3).

Table 2. Funding Sources and Money Amounts from Each Source

	Requested funding				Personal funding
	Total	Bank loan	Private loans	Other loans	
Number of entrepreneurs[a]	37.14%	7.26%	31.95%	19.50%	92.53%
Amount of fund[b]	57.81%	3.75%	24.17%	29.89%	42.19%

Source: Chinese Household Income Project Urban Survey, 2007

Note: a. It denotes the number of entrepreneurs who gained funding from each respective source among all entrepreneurs. It does not represent funding volume. Therefore, the percentage numbers do not necessarily add up to 100%.

b. It denotes the amount of funding obtained from each respective source. The percentage numbers add up to 100%.

Table 3. Number of workers hired

	Frequency	Percentage
0	320	62.02
1-5	130	25.19
6-20	42	8.14
20-100	17	3.29
100-500	5	0.97
600	1	0.19
2000	1	0.19
Number of cases	516	100

Source: Authors' calculation of CHIP Urban Survey, 2007

Table 4 presents a list of independent variables and their sample mean statistics for workers in self-employment and wage sectors, respectively. These statistics reveal disadvantages in almost all three capital forms for urban entrepreneurs compared to wage workers. The financial capital is conceptualized by household wealth. In order to bypass the reverse causality commonly associated with one's employment status, we excluded individuals' earned incomes such as business or wage earnings from current employment and included only non-wage incomes such as asset income and transfer income in calculating a household's financial capital. By this definition, wage workers possess higher levels of capital endowment than the self-

employed, leading by over ￥2,000 in 2007. In terms of human capital, self-employed workers also lag behind wage workers in education and the work experience in their current jobs. Compared to wage workers, the self-employed are more likely to have less than a high school education, and less likely to have a technical school degree or college degree. They also have, on average, 5 years less in current work experience than wage workers. However, they have greater work experience prior to entering the current job. These differences are all significant at the 0.001 level. The size of social networks is determined by the number of contacts during the past Chinese New Year reported by survey respondents. Sending greetings to relatives, friends, and acquaintances during the Chinese New Year is considered a norm in the Chinese culture, and in this case serves to provide a rough size approximation of a household's overall social networks. As shown in the table, wage workers in general had contacted more people, especially friends, during the 2007 Chinese New Year.

With regard to other socio-demographic characteristics, men are more likely to be entrepreneurs than women, so are people with more children. Although the individuals included in the urban survey are mostly formal urban residents with local household registration status, small shares of the respondents are either nonlocal residents or with rural *hukou*. The household registration (*hukou*) system is a prominent instrument inherited from the socialist period for mobility control of the Chinese population. This system erects substantial barriers for rural persons to urban employment and creates a disadvantageous institutional environment for migrant workers in the urban formal sectors. While the *hukou* system has been relaxed recently to ease migrants' settlements in the cities and small cities have started to grant "permanent" or long-term migrants local *hukou*, the majority of migrants (as "temporary" migrants) are still denied services and benefits that urban residents are entitled to.

Table 4. Mean Statistics of Self-employment and Wage-workers

	Self-employed	Wage workers	Significance[a]
Financial capital variable			
Household wealth (in CNY)	6826.62	8886.23	< 0.01
Human capital variable			
Educational attainment			
Below high school	0.50	0.23	< 0.001
High school graduate	0.28	0.28	ns
Technical school graduate	0.16	0.33	< 0.001
College graduate	0.04	0.15	< 0.001
Master's and above	0.02	0.03	ns
Work experience in current job	9.65	14.68	< 0.001
Prior work experience	14.62	8.40	< 0.001
Social capital variable			
Contacts during Chinese New Year	31.93	36.27	< 0.05
Relatives	15.02	14.37	ns
Friends	16.72	21.22	< 0.01
Control variables			
Age in 2007	41.01	41.77	ns
Male	0.60	0.56	< 0.05
Married	0.95	0.95	ns
Number of children	1.25	1.00	< 0.001
Hukou status			
Local urban *hukou*	0.75	0.94	< 0.001
Local rural *hukou*	0.08	0.02	< 0.001
Migrant urban *hukou*	0.05	0.02	< 0.01
Migrant rural *hukou*	0.13	0.02	< 0.001
Geographic location			
Central cities	0.82	0.81	ns
Suburbs	0.18	0.19	ns
Provincial-level cities	0.69	0.72	ns
Hours	57.46	42.93	< 0.001
Monthly earnings	3066.77	2222.17	< 0.001
Hourly earnings[b]	17.12	14.18	< 0.01
Number of cases	517	5501	--

Source: Authors' calculation of CHIP Urban Survey, 2007

Note: a. Significance is based on *t*-tests of mean differences

b. Computed by authors

Other contextual factors, such as geographic location and industry, are documented to shape workers' motivations, economic opportunities, business strategies and community resources, thereby influencing one's employment decisions and earnings (Liu, 2012; Haisken-DeNew & Schmidt, 1999; Arbache, 2004). The mean statistics in Table 4 show that entrepreneurs and wage workers differ little in where they live in the cities and the scale of the cities they reside in. Fuller and more detailed descriptions of regional and industrial differences in self-employment rate and earnings differences between the two employment groups are presented later in two other tables. Finally, the employment-related variables show that entrepreneurs worked on average for longer hours but at the same time were rewarded by higher monthly earnings and hourly earnings than wage workers in 2007. These statistics are largely in line with findings of previous research (Yueh, 2007; Wu, 2002).

As discussed earlier, locational context plays an important role in shaping individuals' employment opportunities, as levels of economic development vary across coastal, central and western in China (Schott, 2006). Statistics in Table 5 reveal regional differences in self-employment rate and demonstrates that the central region had the highest level of self-employment (10.26%) in 2007, followed by the East Coast (8.15%), and the West (7.08%).

As China had a centralized economic system, provincial capitals have historically possessed greater socioeconomic resources and received preferential treatments from the central government than other smaller municipalities. Shanghai and Shenzhen represent special cases among the cities in the survey. Although not a provincial capital itself, Shanghai is a large municipality with provincial status and one of the most developed cities in China. Due to its close proximity to Hong Kong, Shenzhen became one of the most successful Special Enterprise Zones (Yueh, 2012; Demurger et al, 2009). As a consequence, these two cities, together with

other provincial capitals, are categorized as provincial-level cities. There does not appear to be a clear pattern of entrepreneurship between provincial cities and non-provincial cities. While Shenzhen seems to attract many entrepreneurs (17.87%), Shanghai has a very low presence of the self-employed (3.77%).

The coastal region displays an earnings advantage over the other two regions for both entrepreneurs and wage workers, with a substantial margin in economic return on entrepreneurial activities. Dongguan has the highest entrepreneurial earnings, followed by Guangzhou, making Guangdong province rank first in entrepreneurial earnings. Compared to wage workers, entrepreneurs also display an earnings advantage in almost every city in the sample, with Guangdong province having the largest margin. It is also worth noting that opportunity entrepreneurs have higher earnings than necessity entrepreneurs in almost every city in the sample, pointing to the different outcomes associated with different entrepreneurial motivations.

Wage structures vary across industries which result in industrial wage differentials in both the western countries (Haisken-DeNew & Schmidt, 1999; Arbache, 2004) and China (Chen et al., 2009). As shown in Table 6, Chinese urban entrepreneurs are mostly represented in industries such as wholesale and retail trades (29.25%) and lodging, leasing, food and business services (20.20%), followed by construction (13%) and services to households (9.92%). These industries tend to have lower barriers to entry and capital requirements. To the contrary, entrepreneurs have low levels of presence in other industries, especially in the FIRE (finance, insurance and real estate) industries, education, culture and entertainment, and manufacturing. In terms of earnings, entrepreneurs lead in most industries except for social services and education, culture and entertainment. The earnings differentials between opportunity and necessity entrepreneurs in this table show similarities to those across cities in the previous table. The

Table 5. Regional Difference in Self-Employment Rate and Mean Earnings

	SE rate	Earnings (monthly)			
		All entrepreneurs	Opportunity entrepreneurs	Necessity entrepreneurs	Wage workers
Coastal	**8.15**	**4131.46**	**4401.04**	**3459.55**	**2737.93**
Shanghai	3.77	3229.17	3469.05	825.00	2734.87
Jiangsu	5.55	2550.00	2736.21	1975.00	2379.53
Nanjing	5.87	2326.00	2507.14	1633.33	2528.72
Wuxi	4.93	3059.09	3337.50	2316.67	2097.33
Zhejiang	9.87	3149.25	3315.25	1933.33	2551.96
Hangzhou	10.25	3337.78	3485.37	1750.00	2391.54
Ningbo	9.17	2763.64	2927.78	2025.00	2841.88
Guangdong	11.57	5420.71	5681.75	2487.50	3129.75
Guangzhou	7.30	6404.00	6504.29	5000.00	3390.80
Shenzhen	17.87	4111.54	4111.54	--	3631.54
Dongguan	11.28	6706.67	8230.43	1650.00	2200.12
Central	**10.26**	**2173.65**	**2284.03**	**2189.70**	**1730.83**
Anhui	12.36	2120.34	2077.20	2709.09	1845.08
Hefei	10.08	2691.15	2514.22	4466.67	2057.26
Bengbu	18.37	1295.83	1421.67	600.00	1229.76
Henan	7.74	2203.70	2464.10	1421.43	1639.47
Zhengzhou	9.30	2169.70	2234.62	1750.00	1736.55
Luoyang	6.20	2493.33	3288.89	1300.00	1600.94
Anyang	5.94	1666.67	2100.00	800.00	1402.49
Hubei	10.82	2235.00	2496.25	1000.00	1700.58
Wuhan	10.82	2235.00	2496.25	1000.00	1700.58
Western	**7.08**	**2101.86**	**2487.14**	**2028.28**	**1722.62**
Chongqing	4.65	3202.38	2711.76	5287.50	1659.12
Sichuan	8.53	1746.31	2389.23	762.17	1761.89
Chengdu	7.58	2880.77	3777.78	862.50	1670.01
Mianyang	5.76	1419.38	1338.00	1366.00	1905.60
Leshan	16.31	691.30	1072.73	380.00	1689.61
Total	8.59	3066.77	3374.50	2749.87	2222.17
N	6,018	517	422	83	5,501

Source: Authors' calculation of CHIP Urban Survey 2007

strikingly high earnings of necessity entrepreneurs in agriculture/mining and construction are probably a result of small sample size.

Table 6. Industrial Difference in Self-Employment Rate and Mean Earnings

	SE rate	Earnings (monthly)			
		All entrepreneurs	Opportunity entrepreneurs	Necessity entrepreneurs	Wage workers
Agriculture/Mining	4.00	3160.00	2600.00	4000.00	2270.33
Construction	13.00	4989.66	3951.85	19000.00	2234.40
Manufacturing	2.77	3935.48	4662.50	1620.00	2166.12
Transportation, communication and utilities	4.21	3713.89	3987.10	1533.33	2287.99
Wholesale and retail	29.25	3155.99	3541.48	1370.53	1829.88
Finance, insurance and real estate	1.34	4875.00	4875.00	--	2877.08
Lodging, leasing, food and business services	20.20	2382.72	2672.73	1076.92	1754.84
Household services	9.92	2119.01	2633.00	811.76	1377.13
Social services	3.52	1550.00	1550.00	--	2461.86
Education, culture and entertainment	2.60	1945.00	2171.11	1266.67	2511.90
Scientific research and professional services	5.57	3888.89	3888.89	--	3038.87
Public administration	--	--	--	--	2768.64
Total	8.59	3066.77	3374.50	1715.42	2222.17
N	6,018	517	422	83	5,501

Source: Authors' calculation of CHIP Urban Survey, 2007

Model Results

Table 7 presents results for probit models of self-employment status, and Table 8 shows the OLS model estimates of earnings return on employment. For self-employment status, different sets of variables were added to each model, creating three models. The first one has only the three forms of capital. The second model adds in personal and geographic control variables, while the last model adds in all the controls. For earnings return, the total sample, self-

employed sample, and wage workers sample are presented to highlight those factors that impact self-employed and wage workers differently. In that table, hourly earnings are also estimated.

Results in Table 7 show that financial capital has no statistically significant association with being an entrepreneur, after controlling for other variables. This finding is consistent with Kim et al. (2006) in their analysis of Panel Study of Entrepreneurial Dynamics (PSED) in the U.S. context. As discussed earlier, financial resources do not appear to constitute a barrier to entrepreneurial attempts as most entrepreneurial businesses required little start-up capital which can be sought from private sources of friends and family. Human capital has a significant but mixed association with self-employment. Prior work experience has a curvilinear relationship with self-employment. In both model 2 and model 3, the first 28 years of experience are positively associated with self-employment and after that, the relationship becomes negative. Educational attainments are negatively associated with self-employment. Individuals with higher educational level are less likely to pursue self-employment. The findings on human capital are largely consistent with previous research on China. Social capital has marginal and weakly significant relationships with self-employment. This finding is contradictory to Yueh's (2009) empirical conclusion that social networks serve as a significant predictor for self-employment. However, the measure of social networks in her study differs from the one in our study. While the size of the networks was determined by the extant of contacts a household reached out during the past whole year in her data, the 2007 CHIP data narrowed the timeframe of measuring social networks to the past Chinese New Year. The different measures are very likely to yield different regression outcomes on this delicate social construct.

Table 7. Probit Regression Estimates of Self-Employment

	Whole Sample		
	Model 1	Model 2	Model 3
Financial capital			
Household wealth (logged)	-0.0183	-0.00351	0.00861
Human capital			
Work experience	0.0545***	0.0671***	0.0737***
Work experience^2	-0.00116***	-0.00118***	-0.00128***
Educational attainment (below high school as reference)			
High school graduate	-0.351***	-0.223***	-0.199**
Technical school graduate	-0.465***	-0.380***	-0.357***
College graduate	-0.511***	-0.363**	-0.385**
Master's and above	-0.712*	-0.607	-0.57
Social capital			
Relatives	0.0028	0.00195	0.00156
Friends	-0.00333*	-0.00297	-0.00390*
Control variables			
Age in 2007		-0.0856**	-0.0900***
Age^2		0.000673*	0.000715*
Male		0.267***	0.278***
Married		0.201	0.166
Number of children		0.446***	0.446***
Hukou status (migrant rural status as reference)			
Local urban *hukou*		-1.030***	-1.008***
Local rural *hukou*		-0.640**	-0.617**
Migrant urban *hukou*		-0.238	-0.303
Geographic location			
Central cities		-0.0195	0.115
Provincial-level cities		-0.183**	-0.961***
Region (central region as reference)			
Coastal region		-0.381***	--
Western region		-0.247***	--
City dummies	No	No	Yes
Constant	-1.350***	1.147	1.309
Number of observations	3,494	3,494	3,494

Source: Chinese Household Income Project Urban Survey, 2007

Notes: Robust z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

In terms of other variables in the probit regression, age, gender, number of children, and *hukou* status have significant associations with self-employment. With each additional year of age, up to 62 years old, self-employment becomes less likely. Men are more likely to be entrepreneurs than woman, and individuals with more children are more likely to engage in self-employment activities than those who have fewer children. In general, migrant rural persons are more likely to be entrepreneurs than local rural residents, followed by local urban *hukou* residents, who are least likely. All these seem to suggest that in urban China of today, self-employment is still not the top choice for workers with formal education and *hukou* status, who are likely more prone to stable wage work with other benefits. Whether living in central cities or suburbs does not make a significant difference for self-employment. Interestingly, residence in provincial-level cities is negatively associated with self-employment. It might be the case that the formal sector remains a stronger presence in these provincial capital cities. After controlling for city dummies, the negative coefficient becomes stronger. Living in regions other than central China is associated with lower levels of self-employment, with the strongest coefficient found in the coastal region.

With respect to earnings models, statistics in Table 8 show that financial capital, surprisingly, is negatively associated with one's monthly earnings from wage work or business for all types of employment. Human capital, including both work experience in the current job and educational attainment, is positively associated with one's earnings. For work experience, the positive association lasts until around one's retirement age (up to 36-38 years of experience) and then starts to become negative. Education is a positive and significant predictor of earnings for the full sample and the wage worker sample, but not for the self-employed. The only exception is that a technical school degree gives self-employed workers an earnings advantage

compared to those who have less than high school education. With regard to social capital, having more friends in a household has a weak but significantly positive association with one's earnings return for the full sample and the wage worker, but not for the self-employed. Among personal characteristics, men are associated with higher earnings in the other two samples but the self-employed. Marital status does not seem to matter for the self-employed either. In terms of locational variables, residents of provincial-level cities display an earnings advantage over residents of other local municipalities among wage workers. These findings are consistent with the mean statistics discussed earlier. Finally, self-employed individuals have higher earnings than their comparable workers in wage employment. This advantage is greater in hourly wage than in monthly wage.

We created stratified samples to explore the interaction between employment form and the independent variables. However, due to relatively small sample size of the self-employed sample, few significant associations are observed. All three forms of capital appear to be muted in affecting entrepreneurs' monthly and hourly earnings, with only one exception of technical school degree. In terms of personal characteristics, age has a weakly significant, curvilinear relationship with earnings. It is positive until about 26 years old and then becomes negative. Interestingly, migrant urban entrepreneurs earn much less than their migrant rural counterparts in hourly wage. On the other hand, the statistics for the wage workers sample largely show similarities to the total sample, in all categories of the independent variables.

Table 8. Regression Estimates of Earnings

	Monthly Income (logged)			Hourly Income (raw)		
	All workers	Self-employed	Wage workers	All workers	Self-employed	Wage workers
Financial capital						
Household wealth (logged)	-0.0207***	-0.0237	-0.0191***	-0.108	-0.063	-0.0958
Human capital						
Work experience	0.0268***	0.0403	0.0263***	0.396***	0.168	0.399***
Work experience^2	-0.00035***	-0.00061	-0.00037***	-0.00596***	-0.00198	-0.00589***
Educational attainment (below high school as reference)						
High school graduate	0.164***	0.178	0.144***	1.871***	-2.834	2.208***
Technical school graduate	0.417***	0.478**	0.408***	5.384***	2.718	5.664***
College graduate	0.642***	-0.368	0.658***	10.50***	-6.723	10.96***
Master's and above	0.779***	0.323	0.784***	15.27***	-5.04	15.68***
Social capital						
Relatives	0.000831	0.00595	0.000302	0.00436	-0.0353	0.000858
Friends	0.00082***	0.00875	0.00086***	0.0172**	0.106	0.0160**
Control variables						
Age in 2007	0.00565	0.0412*	0.0009	-0.125	1.078	-0.155
Age^2	-0.00017	-0.00080	-9.48E-05	0.00148	-0.0121	0.00176
Male	0.263***	0.282	0.284***	2.499***	-0.377	2.667***
Married	0.0437	-0.382	0.0800**	0.982*	-6.552	1.305**
Number of children	0.0158	-0.0273	0.0153	0.467	0.837	0.428
Hukou status (migrant rural status as reference)						
Local urban *hukou*	-0.115	-0.132	-0.0391	0.528	-0.723	-0.339
Local rural *hukou*	0.080	0.316	0.0705	0.659	3.349	-0.727
Migrant urban *hukou*	-0.0403	-0.373	0.0526	-0.26	-10.43**	0.123
Geographic location						
Central cities	-0.0042	-0.06	-0.0041	-0.247	-2.848	0.0195
Provincial-level cities	0.259**	0.480	0.965***	-0.14	2.754	11.86***
Self-employed	0.196***	--	--	3.224***	--	--
City dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	6.594***	7.412***	6.588***	1.96	4.344	2.843
Number of observations	3,494	258	3,236	3,494	258	3,236
R^2	0.370	0.416	0.400	0.21	0.294	0.218

Source: Authors' calculation of CHIP Urban Survey, 2007

Notes: Robust z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Robustness Check

Table 9. Probit Regression Estimates of Self-Employment

	All self-employed	New entrants (2007-2008)	Long-term entrepreneurs (1973-2006)
Financial capital			
Household wealth (logged)	-0.00351	0.442***	-0.0199
Human capital			
Work experience	0.0671***	-0.296**	0.0660***
Work experience^2	-0.00118***	0.00532**	-0.000944***
Educational attainment (below high school as reference)			
High school graduate	-0.223***	-0.109	-0.235***
Technical school graduate	-0.380***	-1.348**	-0.373***
College graduate	-0.363**	-1.419	-0.364**
Master's and above	-0.607		-0.579
Social capital			
Relatives	0.00195	0.00396	0.00134
Friends	-0.00297	-0.0369***	-0.00272
Control variables			
Age in 2007	-0.0856**	0.579**	-0.0613*
Age^2	0.000673*	-0.00702**	0.00034
Male	0.267***	0.762***	0.236***
Married	0.201	0.533	0.159
Number of children	0.446***	-0.521	0.493***
Hukou status (migrant rural status as reference)			
Local urban *hukou*	-1.030***	-0.571	-1.186***
Local rural *hukou*	-0.640**	0.791	-0.835***
Migrant urban *hukou*	-0.238	0.729	-0.460*
Geographic location			
Central cities	-0.0195	-0.426	-0.0232
Provincial-level cities	-0.183**	-0.327	-0.186**
Region (central region as reference)			
Coastal region	-0.381***	-0.317	-0.391***
Western region	-0.247***	-0.532	-0.273***
City dummies	No	No	Yes
Constant	1.147	-12.05**	1.05
Number of observations	3,494	279	3,212

Source: Chinese Household Income Project Urban Survey, 2007
Notes: Robust z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

While in our measure of financial capital we exclude the person's wage and self-employment earnings to only include other family assets, there is the concern of endogeneity. It is possible that self-employment generates wealth and thus it creates a problem when we use it to model entrepreneurial entry. Our social networks measure might suffer from the same issue. As CHIP data is not a longitudinal data and we cannot necessarily control for these characteristics pre-self-employment, we instead selected a particular sample who entered self-employment in the 2 years preceding survey year in an effort to capture new entrepreneurs who have not yet generated sufficient financial capital and social networks as a robustness check. Results of these new entrants as compared to longer term entrepreneurs are presented in Table 9. One interesting difference across these two groups is the coefficients for household wealth, which is significantly positive for new entrants. It shows that household wealth does provide an important source of capital for entrepreneurial entry.

Conclusion and Discussion

This paper provides a detailed analysis of the motivations, characteristics, earnings potential, and financing schemes of self-employed urban entrepreneurs in China. Using the newly released China Household Income Project (CHIP) 2007 data, we contribute to the emerging literature that examines the important issue of entrepreneurial entry and performance in urban China. Our analysis is situated in both the Western theoretical framework of financial, human, and social capital's role on entrepreneurship, as well as the unique economic, social and institutional context of Chinese cities. The estimated self-employment rate of our CHIP urban

sample is at 8.59%, lower than the 12.5% reported by National Statistics Bureau in 2009, a discrepancy possibly due to the time difference and sample difference. Nonetheless, as a newly marketized socialized economy, China's self-employment rate is on par with that of the United States.

Self-employment rate in urban China varies across regions, localities, and industries. In general, the central provinces depict the highest rate (10.26%), followed by the Coastal provinces (8.15%) and the Western provinces (7.08%). Of all the cities in the sample, Shenzhen has the highest rate of 17.87%, possibly attributable to the entrepreneurial environment in this new Special Enterprise Zone city. We find greater self-employment rate in industries that feature lower economies of scale and lower barriers to entry such as Wholesale and Retail Trade (29.25%) and Lodging, leasing, food and business services (20.20%) as compared Finance/Insurance/Real Estate (1.34%), Manufacturing (2.77%), and Education/Culture (2.60%). These three industries are more likely to be traditionally state-owned enterprises thus have lower possibilities for self-employment.

When individual characteristics are compared, self-employed workers in general have lower financial, human, and social capital endowments than wage workers, as measured by household wealth, education, work experience, and social contacts. These groups are comparable, however, in terms of their age, gender, marital status and number of children. Self-employed individuals are also less likely to hold urban *hukou*. Thus, it is reasonable to conclude that though the majority of entrepreneurs report they enter entrepreneurship by opportunity instead of necessity, this group is largely composed of urban workers with less formal training and credentials in the formal labor market. These predictions are confirmed by model results as well.

Decades after the "iron bowl" is broken, many in urban China may still choose wage work over self-employment for its stability and other associated benefits.

Despite their generally lower capital endowments, urban entrepreneurs tend to earn higher income than their comparable wage workers and such effect is robust in all model specifications. Such earnings premium shows that entrepreneurship, with all the risks involved, does offer a lucrative route to wealth generation in China. All personal characteristics' effects on earnings show expected signs, e.g. higher education, more experience, greater networks, and being male are associated with higher pay. The self-employed stratified model shows a similar pattern, though small sample size reduces variable significance. One thing we are not able to capture is if there are other social security, housing allowance, retirement, and healthcare benefits associated with wage employment and their exact values. If we are able to sum the total monetary package, more accurate calculations can be conducted between self-employment and wage employment.

In addition, we find that most entrepreneurs use some personal funds to finance their start-ups, with only a small percentage request funding from external sources including banks, though the amount of these external loans make up considerable shares in their total portfolio. More research is needed to gauge if the financial institutions in China are accessible and adequate to the financing needs of this group. This question and several other issues raised earlier constitute important questions for future investigations. We also need to note that the cross-sectional nature of this dataset implies endogeneity is an inevitable issue of this study and drawing causal conclusions is unlikely as a consequence.

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