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# China's Entrepreneurs

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**Summary.** — This paper investigates the traits of self-employed entrepreneurs in urban China, an economy rife with informational and institutional imperfections, under-developed financial markets, but a growing and important non-state sector. Despite this challenging context, this paper finds that entrepreneurs make on average 20% more than non-entrepreneurs, while being similar in age, marital status, educational attainment, and socio-economic background. Fewer are Communist Party members and more have experienced unemployment, however. Women, Party members, more educated and older workers are less likely to become entrepreneurs. Social networks, motivation and drive, and attitudes toward risk, are all significant factors associated with entrepreneurship.

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## 1. INTRODUCTION

Entrepreneurship and starting private businesses are important drivers of growth, particularly for an economy such as China, where partial marketization relies on the rapid growth of the non-state sector in the transition from central planning (Fan, 1994). China's gradualist reforms are associated with a high degree of market imperfection where many sectors are still controlled by the state, and as a result private economic activity tends to be characterized by a great deal of uncertainty. Moreover, China is a developing country where there are numerous information-related obstacles, which can impede obtaining credit and starting a business.

In developing countries, self-employment is challenging due to imperfect credit markets, supply chains, and product markets (Banerjee & Newman, 1993). The literature on what determines entrepreneurship focuses on institutional factors, such as credit constraints (Blanchflower & Oswald, 1998), and individual traits like a more embracing attitude toward risk (Rees & Shah, 1986). Both sets of approaches would support the importance of a number of characteristics that foster entrepreneurship, including social networks, motivation, and having drive to achieve economic gain, as well as attitude toward risk.

In China, the private sector has overtaken the state sector in importance even though the economy is characterized by an incomplete legal system affording limited protection to private assets, credit constraints for private enterprises, and regulatory opacity. However, in spite of this context, there is a growing segment of entrepreneurial activity that has propelled China along its gradualist transition path and helped it to achieve remarkable growth rates. In such an imperfect legal and financial system, it is important to know the characteristics of those who are able to start their own businesses. The dominance of informal and relation-based contracting in China suggests that the elements fostering private sector development are likely to evolve around social networks, as well as other traits associated with managing uncertainty such as motivation or having sufficient drive, but also widely recognized characteristics such as a willingness to embrace risk. The large-scale restructuring of state-owned enterprises (SOE) in the mid-1990s resulted in urban unemployment to a significant scale that can also be a factor in entering into self-employment.

The drivers of entrepreneurship in China, particularly in urban areas, are yet to be well understood despite the growing importance of the private sector. Studies of self-employment include analyses of both rural and urban China (Mohapatra, Rozelle, & Goodhue, 2007; Wu, 2002; Zhang, Zhang, Rozelle, & Boucher, 2006) and a cross-country survey of entrepreneurs by Djankov, Qian, Roland, and Zhuravskaya (2006). A study of rural China by Mohapatra *et al.* (2007) emphasizes education as the key factor in rural farmers leaving the agricultural sector and entering into self-employment and wage employment, while Wu (2002) finds that education as well as membership in the Communist Party are deterrents in urban areas. As with most issues in China, there are significant urban–rural differences, suggesting in this instance that rural residents who are able to move into higher value-added work are the educated ones, while more educated workers in urban areas tend to remain in the institutionally favored wage employment if they can. Party membership is also found to be a factor that inhibits entrepreneurship, which likewise suggests that the preferred sector in urban China remains the more secure state sector. Djankov *et al.* (2006) find that the most robust determinant of entrepreneurship was knowing people who had tried entrepreneurship. This is consistent with the work on the importance of social networks in China (see e.g., Knight & Yueh, 2008).

This paper will use a national urban household data set collected in China in 2000, which has comprehensive data on income and employment, in addition to specific and original measures of social networks and attitudinal information to proxy motivation or drive as well as some measures for attitudes toward risk. The data will allow for investigations of the characteristics of Chinese entrepreneurs and whether these are affected by social networks, motivation or drive, and attitudes toward risk.

Moreover, China has traditionally had a cultural and historical emphasis on inter-personal relationships or *guanxi*, which informs business dealings both within and outside of China. This suggests that networking is possibly an important factor in determining non-state sector development, alongside the other noted traits such as having drive and a willingness to accept risk.<sup>1</sup> In these respects, this paper seeks to determine the

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traits of entrepreneurs in urban China, suggest policy implications for private sector development, and holds potential lessons for other developing countries that aim to emulate the success of the growth of entrepreneurial activity in China.

## 2. DATA

The national urban household data set used in this paper is original and collected in China in 2000 pertaining to 1999. It is a representative survey administered across China, enumerated by China's National Bureau for Statistics (NBS), and designed by a team of international researchers from the Chinese Academy of Social Sciences, Japan, Australia, and the United Kingdom, including the author. The selected households were randomly drawn from the NBS sample households and the questionnaire was administered by the trained enumerators working for the NBS, who would often make repeated visits to ensure accuracy. Details of the data set can be found in Li and Sato (2006). Although the survey was not designed to be a study of entrepreneurship, the detailed information on income, employment, and personal characteristics allow for investigations of entrepreneurs in urban China. Because it is not designed as a study of entrepreneurship, those who are entrepreneurial but did not start their own firm or become self-employed and instead work in other firms are not measured in this survey. The total sample size of the 1999 survey is 4,500 urban households and around 9,000 working-aged individuals.<sup>2</sup> The survey covered six provinces and 13 cities. Given the breadth of the survey, there is no need to attempt to normalize the sample as with smaller scale data typically used in studies of entrepreneurship.

The questionnaire includes both household and individual level responses. There are 359 individuals in the sample who report that they are self-employed and have started their own business. This sample constitutes nearly 4% of all urban workers. This definition would preclude those entrepreneurs who work in formal employment or run privatized state-owned enterprises, joint ventures or the like. There are certainly entrepreneurs who are not self-employed and perhaps run privatized state-owned enterprises, but the data do not cover those individuals and only those who report themselves to be self-employed in terms of starting their own private firms. However, starting privately owned firms is an important element of transition and economic development, and this survey can explore the traits of those who start their own businesses in urban China.

There is no information on the size of these firms, but there is some limited information on profitability. Most respondents did not answer this question in the survey, perhaps because it is phrased as reporting on the profitability of an "enterprise" and the common conception of an enterprise is a state-owned enterprise. Of those who did (30% of the sample of the self-employed), only 5.6% reported themselves as having made "high profit" that year. The majority (62.9%) reported "marginal profit," while the remainder or 31.5% declared that they were making a loss or at the edge of bankruptcy.

In terms of regional distribution, the entrepreneurs are fairly evenly spread out among the six survey provinces. Around 12.3% are from Beijing (an independent administrative region on par with provinces), 16.7% from Liaoning, 14.8% from Jiangsu, 10.6% from Henan, 27.9% from Sichuan, and 17.8% from Gansu. On a *per capita* basis, it is again very similar across provinces as the sampling frame drew nearly equal numbers from each province. The highest proportion of entrepreneurs is in Sichuan, which is twice as high as Henan. All

other provinces have similar percentages of entrepreneurs in their populace despite having quite different economic contexts, for example, Beijing is experiencing strong growth while Liaoning suffers from rising unemployment from the reform of the state sector. Again, the large-scale survey allows us to find generalisable results for urban China.

When asked the reason why the respondent started his or her own business, 37% said that it was because he or she had the requisite skills and experience, 7% had funds, 11% had real estate, and 17% had started a business by joining with relatives.<sup>3</sup> The primary motivation appears to be self-belief and skills, while 11% were motivated by having access to an important asset, for example, real estate. A small 7% had their own funds, and 17% did so because of their personal relationships. Given the small proportion that started their business with their own funds and the credit constrained context as formal financing remains biased toward SOEs, finance is likely to be an issue and would suggest the entrepreneurs are likely to have a certain degree of drive and lack of risk aversion to overcome this barrier. As most declared their self-belief to be most important, motivation is surely a determinant of entrepreneurship. Having real estate in China suggests being fairly well placed as urban land is state owned and land/buildings were only beginning to become privatized during this period. Those who had the resource of real estate would likely need to have had the connections to attain such an asset.

The second most important reason for starting one's own business was to join in with relatives and knowing others who will also enter into entrepreneurship. This is consistent with the findings of the entrepreneurship literature that emphasizes the importance of knowing friends or relatives who are entrepreneurs (Blanchflower & Oswald, 1998; Djanikov, Miguel, Qian, Roland, & Zhuravskaya, 2005). Starting a business with family can also help with finances and is also consistent with the importance of social networks in fostering entrepreneurship.

Taking the analysis a step further, Table 1 compares the characteristics of entrepreneurs and non-entrepreneurs. The reported figures are conditional means and the difference between entrepreneurs and non-entrepreneurs which was tested first by Levene's test to establish equality in variances. Levene's test does not require the same sample sizes and works even if the normality assumption does not hold. In other words, Levene's test uses the test statistic constructed for the analysis of variance. By rejecting the null hypothesis, there is evidence of a difference in the population variances. If Levene's test for the equality of variances did not result in a significant *F* value, then equality of variances can be assumed. This is followed by a two-tailed *t*-test to confirm the ability to compare conditional means between entrepreneurs and non-entrepreneurs.

### (a) *Personal traits*

There are no significant differences in the mean age of entrepreneurs as compared with that of non-entrepreneurs or in their years of education attained or marital status. However, more entrepreneurs are male. The difference in years of employment experience is notable. Entrepreneurs have on average a decade less experience than non-entrepreneurs. The likely interpretation of this question in the context of China is experience in paid employment, as the lifetime employment system or "iron rice bowl" was only gradually dismantled starting in the mid-1990s, and working in a SOE is what urban residents would consider to be employment experience when answering the question. This would suggest

Table 1. *Differences between entrepreneurs and non-entrepreneurs*

Personal characteristics	Entrepreneurs	Non-entrepreneurs	Mean difference	Significance of <i>t</i> -test
Age	36.2	37.2	-1	Insignificant ***
Years of employment experience	12.9	22.6	-9.7	***
Experienced layoff	26.6%	19.2%	0.07	***
Education, in years	9.2	9.4	-0.2	Insignificant ***
Gender	55.7% male 44.3% female	49.7% male 51.3% female	0.006	
Marital status	83.4% married	84.2% married	-0.08	Insignificant ***
Communist Party member	6.2%	17.7%	-0.12	***
Social network (size)	8.2	6.4	1.8	
<i>Socio-economic background</i>				
Father's education, in years	5.4	5.2	0.2	Insignificant
Mother's education, in years	6.0	5.9	0.1	Insignificant
Father is Party member	26.5%	34.2%	-0.08	Insignificant
Mother is Party member	8.7%	10.8%	-0.02	Insignificant
Father is self-employed	3.9%	2.8%	0.01	Insignificant
Mother is self-employed	1.7%	1.8%	-0.001	Insignificant
Father is non-manual worker	22.3%	28.4%	-0.06	Insignificant
Mother is non-manual worker	8.1%	13.7%	-0.05	**
<i>Income and attitudes</i>				
Annual income (RMB)	9,526	7,429	2,097	***
Average income (RMB), 1995-98	6,474	5,365	1,109	***
<i>Main considerations when choosing a job (answers are ranked 1-4 with 4 being very important and 1 as unimportant):</i>				
Wage level	3.6	3.6	0.0	Insignificant
Social security provision	3.2	3.3	-0.1	Insignificant
Job stability	3.3	3.5	-0.2	*
Work conditions	2.7	2.8	-0.1	Insignificant
Being able to learn skills	2.9	2.9	-0.06	Insignificant
Job dignity	2.0	2.1	-0.1	**
<i>Have the importance of the following factors that influence household income change compared with before? (answers are (1) decreased; (2) unchanged; (3) increased)</i>				
Education	2.3	2.2	0.1	*
Political status	2.1	2.1	0.04	Insignificant
Rank of work unit	2.1	2.1	0.07	Insignificant
Social connections	2.2	2.2	0.004	Insignificant
Local urban hukou (household registration system)	1.9	1.9	0.003	Insignificant
Do you hope that your children will become self-employed? (answers are ranked 1-4, where 1 indicates no and 4 is very much)	1.9	2.2	0.3	***

Note: This table uses a two-tailed *t*-test for the equality of conditional means. Levene's test for equality of variances is applied first, followed by the *t*-test.

\* Indicates significance at the 10% level.

\*\* Indicates significance at the 5% level.

\*\*\* indicates significance at the 1% level.

that entrepreneurs have around on average 10 years of experience starting their own businesses, which would be consistent with China's liberalization of its consumer markets in particular in the late 1980s and early 1990s which created the opportunity to start private businesses selling consumer goods. Finally, entrepreneurs are also more likely to have experienced being laid-off during the large-scale restructuring of the mid-1990s of the SOEs, thus prompting them to start their own business.

#### (b) *Social networks and Chinese Communist Party membership*

There are notable significant differences distinguishing the entrepreneurs from the non-entrepreneurs in terms of Communist Party membership and their social networks. Whereas nearly 20% of all employed persons are Party members, only 6% of entrepreneurs are members. If Party members are more

likely to be allocated desirable jobs and less likely to be laid-off, then that could contribute to their smaller likelihood of leaving the secure lifetime employment for riskier self-employment. Also, entrepreneurs have significantly more contacts in their social networks than non-entrepreneurs. The difference in the conditional mean size of their respective social networks could be important in understanding entrepreneurship. The size of social networks is determined by asking the reported number of close contacts of an individual in any context, social or economic. The survey question asked was "In the past year, how many relatives, friends, colleagues, or acquaintances did you exchange gifts with or often maintain contact?" The mean size of social network is 6.4 persons and has a reasonable dispersion for non-entrepreneurs. For entrepreneurs, they have on average around two more persons in their networks, giving them substantially larger social networks than non-entrepreneurs.

(c) *Socio-economic background*

The next set of comparisons is of socio-economic background by examining the differences in family circumstances of entrepreneurs and non-entrepreneurs. There are no significant differences except for mother's occupation. Fewer entrepreneurs have mothers who are professional or non-manual workers as compared with non-entrepreneurs, though there are no notable differences in the father's occupation or any other parental characteristic, including whether the parents were themselves entrepreneurs. Given the prevalence of state-owned sector employment in the earlier generation, it is not unexpected that there were few self-employed among the parents.<sup>4</sup> The importance of mother's occupation could suggest that entrepreneurs from less established backgrounds were hungrier for success and, therefore, pursued self-employment.

(d) *Income and attitudes*

The final set of comparisons is of income and attitudes toward income and work. Entrepreneurs make nearly 30% more than non-entrepreneurs in the survey year, which is a significant difference in their conditional mean income after controlling for age, gender, education, employment experience, socio-economic background, and locale (cities). This is despite more entrepreneurs having experienced being laid-off, which typically reduces income upon re-employment. The survey also included recall data of annual income over the past four years. When comparing the average income from 1995 to 1998, entrepreneurs made 20% more than non-entrepreneurs. The trend confirms that the higher earnings of entrepreneurs are not a one-off phenomenon. Moreover, the maximum earned income for entrepreneurs was RMB 200,000, while it was RMB 93,780 for non-entrepreneurs. Earning this income is also associated with more variability as the standard deviation of the mean annual income for entrepreneurs was RMB 15,480 as compared with RMB 5,980 for non-entrepreneurs (see Table 4).

Entrepreneurs and non-entrepreneurs have similar attitudes toward most of the usual job considerations. They both value wages, social securities, learning skills on the job, and good work conditions. However, they differ in that entrepreneurs do not worry as much about job stability or about job dignity. The attitude of non-entrepreneurs is consistent with the administered job allocation system, in which the desirable jobs are in the state-owned sector and urban workers would not accept undesirable jobs outside the state sector, leaving room for migrants to enter the labor market (Knight & Yueh, 2004). The self-employed are less concerned.

In terms of attitudes toward the factors which affect income, entrepreneurs and non-entrepreneurs are very similar except that entrepreneurs believe more strongly that education is a more important determinant of earnings than before. As entrepreneurs have similar levels of education as non-entrepreneurs but are more likely to have experienced the labor market, this attitude picks up the general trend of greater reward of human capital in China (Yueh, 2004; Appleton et al., 2005).

The final attitudinal question asked whether the respondent wished for his or her children to become self-employed. Interestingly, entrepreneurs differed significantly from non-entrepreneurs. Entrepreneurs were less inclined for their own children to become self-employed. This result may highlight the risks and challenges of being self-employed in the transition stage of China's economy, and perhaps also the lingering perception that state-sector employment remains the preferred

sector. This is despite the fact that the incomes of entrepreneurs are significantly higher than those of non-entrepreneurs.

## 3. EMPIRICAL APPROACH

The empirical approach of this paper is to use a maximum likelihood multivariate probit estimation to investigate the traits associated with a person becoming an entrepreneur. Personal characteristics such as age, gender, education, and socio-economic background are first explored to form a baseline model. This is followed by asking whether three sets of factors also matter in increasing the probability of entrepreneurship, namely, having a social network, possessing motivation or drive, and a willing attitude toward risk. As discussed earlier, inter-personal relationships are reported to be important by the respondents and fit with the preliminary assessments of other studies which posit that knowing people is an important trait for distinguishing entrepreneurs in developing countries (Zhang et al., 2006). With a specific measure of social network, it is possible to test this possibility. Further, entrepreneurs are thought to possess motivation and personal drive to seek economic gain in transition economies (see Djankov et al., 2006). This will be the second set of factors to be pursued. Finally, most studies of entrepreneurs highlight their risk-embracing attitude (see e.g., Rees & Shah, 1986). This is the final factor that will be investigated.

The probit equation to be estimated is as follows:

$$ENTREPRENEUR_i = \alpha + \beta X_i + \gamma V_i + \varepsilon_i, \quad (1)$$

where entrepreneur equals one if person  $i$  is one and zero if not. Entrepreneurship is determined by a vector of observable personal characteristics,  $X_i$ , which is associated with occupational choice, including education, age, gender, and socio-economic background, and by other possibly related factors,  $V_i$ , such as networks or motivation or attitude toward risk, as well as an error term. Each of the latter set of variables will be entered after a baseline model is estimated. Although these variables are likely to be stable over time, including social networks, it is not possible to rule out omitted variable bias or reverse causality. Thus, any robust and significant relationships found in the estimations should be interpreted as suggestive and not causal. Finally, given the possibility of heteroskedasticity induced by the selection bias into labor force participation and also the clustering effect of using a household data set to estimate individual outcomes, robust standard errors that are also adjusted for clustering at the household level are computed. All coefficients are reported as marginal effects from the multivariate probit estimations and reflect the change in the probability of becoming an entrepreneur from a unit change in the explanatory variable.

## 4. EMPIRICAL FINDINGS

(a) *Baseline model, including social networks*

Table 2 gives the marginal effects of the likelihood of becoming an entrepreneur. The findings of the baseline model are generally consistent with other studies of self-employment (see e.g., Djankov et al., 2005, 2006; Rees & Shah, 1986; Zhang et al., 2006). The coefficients on gender and age imply that being female and each year of age reduce the probability of entrepreneurship, as does education and membership in the Communist Party. These results mirror existing work on urban China (Wu, 2002). Alone among the socio-economic

Table 2. *Entrepreneurship, full sample, probit regression, marginal effects (z-statistics in parentheses).*

Dependent variable: 1 if entrepreneur, 0 if non-entrepreneur	Baseline model (1)	Social networks (2)	Social networks and family background (3)
<i>Personal characteristics</i>			
Gender	-0.0075 (-3.14)***	-0.0077 (-2.91)***	-0.0088 (-3.48)***
Age	-0.0006 (-3.93)***	-0.0009 (-4.43)***	-0.0011 (-5.42)***
Education, in years	-0.0026 (-4.35)***	-0.0028 (-4.04)***	-0.0025 (-3.65)***
Communist Party member	-0.0209 (-5.01)***	-0.0208 (-4.64)***	-0.0195 (-4.38)***
Social network	—	0.0002 (2.51)**	0.0002 (2.51)**
<i>Socio-economic background</i>			
Father's education, in years			-0.0009 (-0.79)
Mother's education, in years			0.0021 (1.30)
Father is a non-manual worker			0.0004 (0.67)
Mother is a non-manual worker			0.0013 (2.05)**
Father is a Communist Party member			-0.0037 (-1.08)
Mother is a Communist Party member			0.0066 (1.11)
<i>Cities</i>			
	Yes	Yes	Yes
Wald $\chi^2$ (17)	100.72***		
Wald $\chi^2$ (18)		98.24***	
Wald $\chi^2$ (24)			114.54***
Pseudo R <sup>2</sup>	0.0694	0.0822	0.1023
Number of observations	8500	6871	6144

1. Omitted dummy variables for columns (1) and (2) are male, Pingliang. For column (3), they are male, Pingliang, father is a manual worker, mother is a manual worker, father is not a Communist Party member, mother is not a Communist Party member.

2. Robust standard errors adjusted for clustering at the household level are computed.

\*\* Indicates significance at the 5% level.

\*\*\* Indicates significance at the 1% level.

background factors, mother being in a non-manual occupation increases the prospect of entrepreneurship. Mothers who are professionals may provide the encouragement for children to venture out and start their own business. In terms of the social network variable, it is significant alongside the factors found in the baseline model (column 2) and remains so when the socio-economic background factors are also included (column 3). A one person increase in the size of a social network will increase the probability of entrepreneurship by 0.02%. It is not a large effect, but the only positive one influencing entrepreneurship among the personal traits. If a social network was to be expanded by 10 persons, then the probability of entrepreneurship rises by 0.2% and so forth.

Therefore, in China, the probability of becoming an entrepreneur is less if female, older, more educated and a Party member, but increases with having a mother who is/was in a skilled profession and a larger social network. This finding regarding networks supports the hypothesis that those with social networks are more likely to overcome the institutional constraints in China to start a business. They could be more likely to attain credit, have access to suppliers and distributors, and obtain the requisite licenses to operate. The social network variable in the occupational choice regression could also pick up the economic effects of personality traits that are associated with drive for success. Indeed, entrepreneurs have larger networks than non-entrepreneurs. To attempt to disentangle the personal motivation from the institutional factors, variables for motivation and drive which are available for a sub-sample of the survey are included in the further estimations.

#### (b) *Motivation and drive*

There is a sub-sample of around 1,500 persons, who experienced unemployment during the previous five years, which encompasses the large-scale SOE layoff program of the mid-1990s. Despite over a quarter of the population of the entre-

preneurs having experienced unemployment in our survey, entrepreneurs still earned 20% more on average than non-entrepreneurs. This is contrary to the expectation that the unemployed experience 'scarring' and lower wages upon re-entering the work force. Within this sample, 53% of entrepreneurs said that they were content with their jobs, whereas 58% of non-entrepreneurs claimed that they were content. Perhaps not being content also gives rise to motivation and drive.

Table 3 gives the probit regression results for the same set of explanatory variables as Table 2 but for the sample that had experienced unemployment. For this sub-sample, there were a number of questions in the survey that asked about motivation and drive. Columns (1)–(3) in Table 3 replicate the set of explanatory variables for the whole sample. For this sub-sample, however, personal and socio-economic background characteristics (with the exception of professional mothers) do not explain the entrepreneurship decision. Interestingly, Communist Party membership is a significant deterrent to entrepreneurship until a measure of social network is included. This suggests that Party membership at least partly operates through networks, so that when the latter is measured, the former ceases to be significant. For those who have experienced being laid-off, amongst the personal traits, only social networks significantly increases the probability of becoming self-employed. In this sample, the marginal effect of social networks on entrepreneurship is more than double that of the sample as a whole. A unit increase in the size of social networks will increase the probability of becoming self-employed by 0.05% (columns 2 and 3). More entrepreneurs experienced layoff than non-entrepreneurs, so the stronger effects in the cohort of those who were unemployed are consistent with greater involuntary job search for this cohort who would have occasion to use their social networks.

A fourth equation, which included a number of questions that measured motivation or drive, was estimated. The social network variable is again significant and its marginal effect is

Table 3. *Entrepreneurship, unemployed sample, probit regression, marginal effects (z-statistics in parentheses).*

Dependent variable: 1 if entrepreneur, 0 if non-entrepreneur	Baseline model (1)	Social networks (2)	Social networks and family background (3)	Social networks, family background, and drive (4)
<i>Personal characteristic</i>				
Gender	-0.0124 (-1.45)	-0.0100 (-1.06)	-0.0141 (-1.39)	-0.0045 (-0.33)
Age	-0.0008 (-1.19)	-0.0007 (-0.95)	-0.0010 (-1.28)	-0.0015 (-1.40)
Education, in years	-0.0010 (-0.45)	-0.0027 (-1.14)	-0.0041 (-1.59)	-0.0045 (-1.53)
Communist Party member	-0.0289 (-1.87)*	-0.0264 (-1.57)	-0.0250 (-1.52)	0.0255 (0.97)
Social network	—	0.0005 (4.41)***	0.0005 (4.18)***	0.0007 (4.07)***
<i>Socio-economic background</i>				
Father's education, in years			-0.0020 (-0.44)	0.0037 (0.68)
Mother's education, in years			-0.0038 (-0.75)	0.0019 (0.24)
Father is a non-manual worker			0.0013 (0.61)	0.0155 (0.78)
Mother is a non-manual worker			0.0037 (1.85)*	0.0341 (1.64)*
Father is a Communist Party member			0.0055 (0.40)	-0.0096 (-0.63)
Mother is a Communist Party member			0.0167 (0.70)	0.0405 (1.41)
<i>Drive and motivation: Do you agree with the following statements in order to ensure a stable household standard of living in the long-run?</i>				
Do not want to do much apart from follow the crowd				0.0247 (1.68)*
Do not want to do much as the government will not let us die of starvation				0.0002 (0.01)
Try to improve my abilities to be more competitive				-0.0153 (-0.65)
Earn as much as possible while working in order to save for the future				0.0335 (1.86)*
<i>Cities</i>				
Wald $\chi^2$ (14)	Yes 30.64***	Yes	Yes	Yes
Wald $\chi^2$ (15)		45.08***		
Wald $\chi^2$ (21)			65.43***	
Wald $\chi^2$ (24)				58.87***
Pseudo R <sup>2</sup>	0.0528	0.0607	0.0714	0.1111
Number of observations	1440	1222	1063	590

Notes: 1. Omitted dummy variables for columns (1) and (2) are male, Pingliang. For column (3), they are male, Pingliang, father is a manual worker, mother is a manual worker, father is not a Communist Party member, mother is not a Communist Party member. For column (4), they are the same as column (3) and all answers of 'disagree' to the motivation questions.

2. The dummy variables for the cities, Shenyang and Nanjing, were dropped from the estimations as they predicted failure perfectly. In column (4), Kaifeng was additionally dropped.

3. Robust standard errors adjusted for clustering at the household level are computed.

\* Indicates significance at the 10% level.

\*\*\* Indicates significance at the 1% level.

0.0007, larger than in the other formulations. Two of the motivation measures are also significant. The question asked to the respondent was what he or she would do to maintain household income in the long run. A significant variable captures those who said that they would earn as much as possible and save for the future. This answer suggests that the respondent is motivated to work and driven to seek economic opportunities. This economic motivation would be consistent with those who choose entrepreneurship with its higher rewards. Another more neutral response that is also significant suggests that respondents also wish to 'follow the crowd,' which could capture those who see others starting businesses and follow suit. The negative measure of intending to do nothing is not significant and neither is a more strongly worded positive measure. Thus, there is some limited evidence that motivation and drive could matter in determining entrepreneurship. Finally, the effects of the family background variables are similar to the full sample. Again one's mother being a non-manual worker is positively associated with entrepreneurship in column (4). Having mothers who are professionals could stimulate drive.

The results from the sub-sample of the unemployed are fairly dissimilar to those of the whole sample. One notable difference is that being female no longer significantly reduces the

probability of self-employment for those who have experienced unemployment. When forced to seek work in a labor market that is dominated by lifetime employment, gender does not seem to matter. The same reasoning applies to age and educational attainment. Communist Party membership is also mainly insignificant for those who experienced unemployment, suggesting that those who are members are less likely to become laid-off as one possible explanation. The social network variable remains a significant and positive determinant, and has a larger effect than in the whole sample. Again, those who must seek work are likely to become entrepreneurs if they had a social network. The stronger effect in this sample is not surprising as most of the urban workers in the whole sample are still in their first jobs and have not had the need to search for employment in a labor market that is characterized by low mobility.

Finally, for this sample, there is also a set of variables that measured motivation. Having the drive to earn money is found to be a significant determinant of entrepreneurship. This is consistent with the conclusion of Djankov *et al.* (2006) that motivation and greed are important factors alongside knowing people who are entrepreneurs in determining entrepreneurship. Including the motivation variables do not

reduce but rather increase the significance of the social network variable. This suggests that social networks are picking up factors other than motivation or drive, but also institutional constraints and other reasons why entrepreneurship is more likely when one has a network of contacts and relationships.

(c) *Attitude toward risk*

It is possible to measure motivation and drive to some extent in this survey. What is missing are explicit measures of risk. The willingness to embrace risk is thought to be a feature of entrepreneurship. This variable is investigated through the typically used proxy, the variability in expected income.

The decision to become an entrepreneur is re-estimated to include a proxy for risk, which is the variance of income. More risk-averse people would prefer wage employment even if the rewards were smaller if the variance of the income was less. On the other hand, if entrepreneurs are risk loving, then variability of income would not deter them and instead be a positive determinant. Attitude toward risk could thus be proxied by the variance of income over the past five years (see e.g., King, 1974).

Recall from Table 1, and also reported in greater detail in Table 4, that the mean annual income for entrepreneurs is around 9,500 RMB, which is approximately 2,000 RMB more than non-entrepreneurs in the survey year. The income of entrepreneurs is associated with greater variability as the standard deviation for entrepreneurs was RMB 15,480 as compared with RMB 5,980 for non-entrepreneurs. A similar

pattern is evident throughout the five year period of 1995 through 1999.

Although there is a concern about the reliability of recall data, this sample is of NBS survey households who are required to keep detailed records of their income and expenditure to be inspected every ten days (Appleton et al., 2005). Thus, this data will be used for the limited purpose of measuring the variance of income.

Table 4 gives the descriptives of the mean incomes for entrepreneurs and non-entrepreneurs for 1995–99. The variance of income is clearly much higher for entrepreneurs than for non-entrepreneurs in all years. Annual mean incomes are also greater for all five years.

Table 5 reports the results from including a proxy of risk in a re-estimation of Eqn. (1). It confirms that in the baseline model, the version including social networks, and the formulation with socio-economic background variables, the variance of income is significant and positive in all estimations. The variance of income positively increases the likelihood of entrepreneurship. As a proxy for risk, this suggests that entrepreneurs are more risk loving than non-entrepreneurs and that the variability in income increases the prospect of self-employment. The rest of the explanatory variables is virtually unchanged, implying a robustness of the results.

## 5. CONCLUSION

The growth of the non-state sector during China's gradual transition path has undoubtedly been a significant driver of economic development. Entrepreneurship plays an important

Table 4. *Descriptives of mean annual income, 1995–99, in RMB.*

	1995	1996	1997	1998	1999
<i>Entrepreneurs</i>					
Mean income	5,921	6,402	6,607	6,966	9,526
Standard deviation	8,144.705	8,356.797	8,083.118	7,891.365	15,479.72
Variance	66,336,220	69,836,056	65,336,797	62,273,642	239,621,731
Maximum	70,000	60,000	55,000	50,000	200,000
<i>Non-entrepreneurs</i>					
Mean income	4,674	5,062	5,538	6,183	7,429
Standard deviation	4,241.766	4,487.486	4,741.892	6,025.856	5,904.999
Variance	17,992,579	20,137,531	22,485,540	36,310,941	34,869,013
Maximum	85,000	97,000	120,000	175,000	93,780

Table 5. *Entrepreneurship, full sample, probit regression, marginal effects (z-statistics in parentheses)*

Dependent variable: 1 if entrepreneur, 0 if non-entrepreneur	Baseline model (1)	Social networks (2)	Social networks and family background (3)
<i>Personal characteristics</i>			
Gender	-0.0072 (-3.03)***	-0.0073 (-2.79)***	-0.0084 (-2.84)***
Age	-0.0006 (-3.95)***	-0.0009 (-4.41)***	-0.0011 (-5.79)***
Education, in years	-0.0027 (-4.44)***	-0.0029 (-4.11)***	-0.0025 (-3.86)***
Communist Party member	-0.0208 (-4.99)***	-0.0207 (-4.63)***	-0.0193 (4.40)***
Social network	—	0.0002 (2.52)**	0.0002 (2.36)**
Variance of income	1.84E-11 (3.15)***	1.89E-11 (3.01)***	1.85E-11 (3.05)***
<i>Socio-economic background</i>			
	No	No	Yes
<i>Cities</i>	Yes	Yes	Yes
Number of observations	8500	6871	6144

Notes: 1. The full specification is the same as Table 3, but for the addition of the risk proxy variable. Not all coefficients are reported for brevity. All Wald chi-squared remained highly significant.

2. Robust standard errors adjusted for clustering at the household level are computed.

\*\* Indicates significance at the 5% level.

\*\*\* Indicates significance at the 1% level.

role in the development of the non-state sector. The decision to become an entrepreneur could be informed by both institutional and personal factors. Institutional barriers to starting a business often includes credit constraints, lack of access to supply networks, and regulatory complexity. Having a social network would help ease these constraints. Indeed, the second most important reason after having the skills to starting a business is to do so with relatives. Networks of relatives, friends, etc. could help ease credit constraints, improve access to supply and distribution networks, and gain the necessary licenses to operate. Becoming an entrepreneur is also likely to be associated with personal traits, such as drive or motivation. Certainly respondents stated that self-belief that one has the requisite skills was the main reason for entering into self-employment and which would also testify to the significance of personal drive. Attitude toward risk is also a commonly noted factor in other economies, which appears to also pertain to Chinese entrepreneurs.

This paper investigated the traits of entrepreneurs and made comparisons with non-entrepreneurs in urban China. First, differences in conditional means of personal traits of entrepreneurs and non-entrepreneurs reveal that they are largely similar in age, marital status, educational attainment and socio-economic background. Where they differ is in years of employment experience, being a member of the Communist Party and the size of their social networks. Entrepreneurs earn on average as much as 20% more than non-entrepreneurs, despite a greater fraction of entrepreneurs having experienced unemployment.

Entrepreneurs are as concerned as non-entrepreneurs about job conditions, such as learning on the job and having a good work environment. However, they are significantly less concerned with job stability or job dignity. The former suggests less risk averseness, which is another trait thought to be associated with entrepreneurs. Finally, interestingly, entrepreneurs are less likely to want their own children to become self-employed. The variability of income and lack of job security may play a role in this view, despite the fact that entrepreneurs who have similar educational and socio-economic backgrounds nevertheless make more on average than non-entrepreneurs.

Next, probit regressions are estimated to determine the traits associated with entrepreneurship. Being a woman, older, more educated and a Communist Party member reduces the likelihood, while having a larger social network significantly increase the probability of becoming an entrepreneur. Socio-economic background is insignificant but for mother being a professional, which increased the prospect of entrepreneurship.

The paper next looked at a sub-sample where the respondent had experienced unemployment and examined questions which aimed to capture economic motivation or drive. Social networks have a stronger effect in this cohort than in the whole sample. This is the group most likely to have had need to look for work, so it is unsurprising that there is a larger effect of

networks. However, personal traits are no longer significantly negative determinants of entrepreneurship. When unemployment has been experienced, these traits do not matter, again with the exception of mothers being in skilled occupations that continues to prompt entrepreneurial tendencies. The motivation variables suggest that entrepreneurs have a greater drive to earn income.

Finally, the variance of income is used as a proxy for risk to estimate whether entrepreneurs are risk loving. For the full sample, the variance of income significantly increases the likelihood of entrepreneurship. When the risk variable is included, the social network variable continues to be significant at the same magnitude. Therefore, consistent with the hypotheses, all three factors of having networks, motivation or drive, and attitude toward risk are significantly and positively associated with entrepreneurship.

This paper has examined entrepreneurship in urban China using rich data from a national household survey and finds that there are notable differences between those who seek self-employment and those who do not. Entrepreneurs are more driven, motivated, more likely to be male, fewer are Party members, and tend to start a business with relatives. Few start their own business with sufficient funds, though those who do earn at least 20% more than non-entrepreneurs during the late 1990s.

Entrepreneurs also have significantly larger social networks, and network size is found to increase the likelihood of self-employment. Therefore, entrepreneurs in China are likely to have larger social networks and there is a relationship between starting a business and having the network to do so. Although it is not possible to disentangle the areas where social networks are most useful, it is probably due to the fact that social networks have multiple uses, both personal and professional, and this likely depends on the business and the entrepreneur. The evidence simply suggests that relationships are important in starting a business in China during a time when the legal and financial contexts are imperfect and uncertain, but economic growth is admirable.

The same can be said for confirming that having drive and determination as well as risk-embracing attitude matter. These traits are also associated with entrepreneurship particularly when there are challenges in remaining employed in the state-owned sector but all the while witnessing extraordinary increases in opportunities in the non-state sector.

The policy implications stemming from these findings are that entrepreneurs in urban China appear to need contacts to navigate the economy in transition as well as possess certain attitudes and motivation to cope with imperfect markets in a developing country. With policies aimed at reducing the deterrents to starting a business such as improving the banking system, fostering insurance to reduce risk, and increasing the transparency of the regulatory structure, China would be better able to stimulate entrepreneurship and the development of the private sector which are key drivers of economic growth.

## NOTES

1. Networking and developing inter-personal connects or *guanxi* were found to be important under the administered economy as well (see e.g., Bian, 1994).

2. Working-age individuals are defined as those aged 19–55 in consideration of the different retirement ages for men and women and full-time students.

3. The remaining 27% chose “other.” As this was during the period of the *xiagang* policy, when there were large-scale layoffs in the SOE sector, it is likely that some became self-employed or more likely small goods peddlers out of necessity.

4. Knight and Yueh (2004) find that 78% of urban residents in the late 1990s were still in their first allocated jobs.

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