

Determinants of Entrepreneurial Activities in China

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Abstract: The institutional environment – including protection of private properties and contract enforcement – has been rather unfavorable for the emergence and development of China's private enterprises. This is in sharp contrast to the case of the developed economies where the institutional environment is conducive to the entrepreneurial activities and only the personal attributes of would-be entrepreneurs determine their entrepreneurship decision. We thus propose a theoretical framework for the entrepreneurship decision in China with a focus on the role of the institutional environment. Using a life-histories survey data of 2,854 respondents from twenty cities in China, we find strong support for the impacts of the institutional environment and its interactions with other determinants of entrepreneurship decision.

Keywords: Protection of private properties; Contract enforcement; Institutional environment; Entrepreneurship

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Executive summary of “Determinants of Entrepreneurial Activities in China”

This paper studies the determinants of entrepreneurial activities in China, which is one of the worlds’ four biggest emerging economies. Since 1978, China has undergone a gradual transition from a centrally planned economy dominated by public ownership to a market economy through selective privatization of state-owned enterprises (Cao, Qian, and Weingast, 1999; Bai, Li, Tao and Wang, 2000; Bai, Lu, and Tao, 2006a). With the dominant and yet inefficient state-owned enterprises, there have been ideological biases against private sector development throughout China’s economic reform. Indeed private enterprises were not even formally permitted to exist until 1988 – ten years after China initiated its economic reform. As a result, private enterprises have been subject to expropriation of their private properties and discrimination in business dealings including contract enforcement. The institutional environment, which includes property rights protection and contract enforcement (North, 1990), has been rather unfavorable for the emergence and development of China’s private enterprises. This is in sharp contrast to the case of the developed economies where the institutional environment is conducive to the entrepreneurial activities and only the personal attributes of would-be entrepreneurs determine their entrepreneurship decision.

With the dominance of public ownership, both before and after the economic reform initiated in 1978, China’s would-be entrepreneurs generally have had working experience in enterprises of varying degrees of state ownership or public organizations or government agencies. The decision to become an entrepreneur often means quitting a position in an entity of public ownership and starting a private-ownership business with ambiguous legal status; hence in China entrepreneurship is often referred to as “jumping into the sea”. In particular, there are a set of personal attributes of would-be entrepreneurs (such as the political participation of would-be entrepreneurs as well as the public-ownership status of their current employers) that determine their payoffs from remaining in the public-ownership entities and therefore deter them from becoming entrepreneurs.

We thus propose that the entrepreneurial decision in China is shaped by the institutional environment for private ownership on the one hand and by the personal

attributes of would-be entrepreneurs on the other hand. Using a life-histories survey data of 2,854 respondents from twenty cities in China, we find strong support for the role of institutional environment in the entrepreneurship decision, and for the importance of the personal attributes of would-be entrepreneurs such as the public-ownership status of their current employers and their status within those entities that determine their costs of entrepreneurship. In addition, we find evidence for the interactions between the institutional environment and these personal attributes, consistent with the theoretical argument that the legal environment for private enterprises affects the premium placed by would-be entrepreneurs on their payoffs from employment in public-ownership entities. Our results are also robust to the controls for general determinants of entrepreneurship that have been found to be important in the existing literature (such as gender, marital status, age, education, financial conditions, and altitude for taking business risks); and the impacts of some of these general determinants are also found to depend on the institutional environment for private sector development.

Entrepreneurship has been recognized as one of the driving forces for market competitiveness and economic growth in the emerging economies. Our study on the determinants of entrepreneurial activities in China highlights the importance of the institutional environment for private sector development and has important implications for policy recommendations.

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Abstract: The institutional environment – including protection of private properties and contract enforcement – has been rather unfavorable for the emergence and development of China’s private enterprises. This is in sharp contrast to the case of the developed economies where the institutional environment is conducive to the entrepreneurial activities and only the personal attributes of would-be entrepreneurs determine their entrepreneurship decision. We thus propose a theoretical framework for the entrepreneurship decision in China with a focus on the role of the institutional environment. Using a life-histories survey data of 2,854 respondents from twenty cities in China, we find strong support for the impacts of the institutional environment and its interactions with other determinants of entrepreneurship decision.

1. Introduction

Entrepreneurship has been recognized as one of the driving forces for market competitiveness and economic growth. Business venturing introduces newer and better products and services, or offers existing products and services at lower costs, unleashing what Joseph Schumpeter called the forces of creative destruction (Schumpeter, 1976). To fend off potential competition from start-ups, large and established corporations have tried to nurture intra-firm entrepreneurial activities. Meanwhile, national and regional governments have raced to introduce policies that facilitate business venturing and encourage entrepreneurial spirits of their people.¹

Behind firm strategies and government policies, there is a need for understanding the determinants of entrepreneurial activities. Existing studies have uncovered a set of

¹ Some of the U.S. startups are set up by university researchers whose original research has been supported by government funding agencies. See for example Shane (2002), and Powers and McDougall (2005). In some of the East Asian countries, there are more explicit government policies promoting entrepreneurship (for example, the National Day celebration speech made by Singapore Prime Minister Lee Hsien Loong on August 2, 2005).

personal attributes of would-be entrepreneurs, such as gender, marriage status, age, education, financial conditions and altitude for taking business risks that may affect their entrepreneurial activities. Entrepreneurs are usually young, married males with reasonable levels of education, excellent personal financial conditions and preference for taking business risks (see, for example, Holtz-Eakin, Joulfaian, and Rosen, 1994; Blanchflower, and Oswald, 1998; Lévesque and Minniti, 2006).

This paper studies the determinants of entrepreneurial activities in China. Before 1978, China was a centrally planned economy dominated by public ownership; and since then it has undergone a transition to a market economy through privatization of state-owned enterprises and establishment of private enterprises (McMillan and Woodruff, 2002). Unlike the formerly centrally planned economies in the Eastern Europe and the former Soviet Union where private ownership has arisen quickly through massive privatization of state-owned enterprises and mushrooming establishment of private enterprises, China has taken a gradual approach to privatizing its state-owned enterprises (Cao, Qian, and Weingast, 1999; Bai, Li, Tao and Wang, 2000; Bai, Lu, and Tao, 2006a). More importantly, with the dominant yet inefficient state-owned enterprises, there have been ideological biases against private sector development throughout China's economic reform. Indeed private enterprises were not even formally permitted to exist until 1988 – ten years after China started its economic reform in 1978. As a result, private enterprises have been subject to expropriation of their private properties and discrimination in business dealings including contract enforcement. The institutional environment, which includes property rights protection and contract enforcement (North, 1990), has been rather unfavorable for the emergence and development of China's private enterprises. This is in sharp contrast to

the case of the developed economies where the institutional environment is conducive to the entrepreneurial activities and only the personal attributes of would-be entrepreneurs determine their entrepreneurship decision.

With the dominance of public ownership, both before and after the economic reform initiated in 1978, China's would-be entrepreneurs generally have had working experience in enterprises of varying degrees of state ownership or public organizations or government agencies. The decision to become an entrepreneur often means quitting a position in an entity of public ownership and starting a private-ownership business with ambiguous legal status; hence in China entrepreneurship is often referred to as "jumping into the sea". In particular, there are a set of personal attributes (such as the political participation of would-be entrepreneurs as well as the public-ownership status of their current employers) that determine their payoffs from remaining in the public-ownership entities and therefore deter them from becoming entrepreneurs. We thus propose that the entrepreneurial decision in China is shaped by the institutional environment for private ownership on the one hand and by the personal attributes of would-be entrepreneurs on the other hand. We further propose that the impacts of the personal attributes of would-be entrepreneurs, including both those found in the literature and those specifically relevant to China (political participation and public-ownership status of their employers) may change as China's institutional environment for private ownership evolves. Using a life-histories survey data, this paper attempts to uncover the impacts of the institutional environment and the personal attributes of would-be entrepreneurs on their entrepreneurial decision.

The paper is organized as follows. In Section 2, we outline a theoretical framework about the determinants of entrepreneurial activities in the emerging economy of China, and develop testable hypotheses accordingly. In Section 3, the data set is described and key variables are constructed. The method of econometric analysis and the empirical results are presented in Section 4. The paper concludes with Section 5.

2. A Theoretical Framework and Hypotheses

In his seminal work, North (1990) has established the importance of a country's institutions in determining its economic performance. Institutions are the rules of games in a society or, more formally, are humanly devised constraints that shape human interactions. While institutions could be of many types, the one affecting firm operation and performance the most is the economic institutions. Douglas North has subsequently elaborated on the two basic elements in the economic institutions: protection of private property rights (vertical relation between the state and firms), and enforcement of contracts between economic agents (horizontal relation between firms).

In most developed economies, there are both secure protection of private property rights and efficient contract enforcement. Thus the economic institutions are conducive to firm operation and performance including entrepreneurial activities. Under these circumstances, the decision of entrepreneurship is entirely determined by the personal attributes of would-be entrepreneurs such as gender, marriage status, age, education, financial conditions and altitude for taking business risks.

The situation for the emerging economy of China is, however, quite different. From 1949 to 1978, the Chinese government followed the doctrine of the Socialist planned economy, eliminating virtually all the private enterprises in the economy and replacing them with state-owned enterprises. With material incentives completely suppressed under the planned economy, the Chinese economy came to a precarious state by mid 1970s, which led to the economic reform initiated in 1978. Unlike the formerly planned economies in the Eastern Europe and the former Soviet Union, however, China has taken a gradual approach in reforming its inefficient state-owned enterprises. One possible rationale for the gradual reform approach is that the Chinese government wants to maintain social stability during its reform process (Cao, Qian, and Weingast, 1999; Bai, Li, Tao and Wang, 2000; Bai, Lu and Tao, 2006a). In the first ten years of China's economic reform from 1978 to 1988, the Chinese government started to open its economy to foreign trade and investment including entry of foreign invested firms; but there were still ideological biases against China's indigenous private enterprises, the emergence and development of which was restricted to the rural areas (Qian, 2000). The legal status of private-ownership businesses was not granted until 1988, ten years after China started its economic reform. Article 11 of the 1988 amendment of the Constitution of the People's Republic of China (approved by the First Plenary of the Seventh People's Congress on April 12, 1988) reads: "The state *permits* the private sector of the economy to exist and develop within the limits prescribed by law. The private sector of the economy is a complement to the socialist public economy. The state *protects* the lawful rights and interests of the private sector of the economy, and exercises guidance, supervision and control over the private sector of the economy". In the same year, three regulations

were issued by China's State Council, which further specified rights and obligations of the private sector and provided executable protection for the private sector (Zhang and Ming, 2000).² The role of private sector development was further elevated to being important to the Socialist market economy in the 1999 amendment of the Constitution (approved by the Second Plenary of the Ninth People's Congress on March 15, 1999). Finally, in the 2004 amendment of the Constitution (approved by the Second Plenary of the Tenth People's Congress on March 14, 2004), private sector development was called for, and formal protection of private property was offered.

A survey of 3,073 private enterprises conducted in 2000 reveals that 39% of private entrepreneurs have paid informal levies for various government projects and 56% of them have called for anti-corruption policies, which reflecting poor protection of private properties (Bai, Lu and Tao, 2006b). The same survey also shows that, with the ambiguous legal status for private ownership, private enterprises have faced severe discrimination in all aspects of business operations. In particular, only 9.4% of the private entrepreneurs surveyed have resorted to the formal legal channels for dispute resolution. The unfavorable institutional environment (including property rights protection and contract enforcement) for entrepreneurship in China implies that, in contrast to the conventional theory of entrepreneurship for the developed economies, the legal status for private ownership should play an important role in the entrepreneurship decision for China's would-be entrepreneurs.³ Specifically, during the sample period of our data set (1978-1994), Article 11 of the 1988 amendment of

² These three regulations are: "The temporary regulation of private enterprises in China", "The temporary regulation of company income taxes of private enterprises in China", and "The temporary regulation of income taxes of individual investors in private enterprises in China".

³ Aldrich and Fiol (1994) study some of the unique issues facing innovating entrepreneurs. In entering into new industries, there is a relative lack of legitimacy, as both entrepreneurs and crucial stakeholders may not fully understand the nature of the new ventures and their conformity to established institutional rules may still be in question.

the Constitution of the People's Republic of China was a watershed as it formally permitted the existence of private enterprises in China. Thus, we have:

Hypothesis 1: The granting of legal status for private enterprises in the 1988 amendment of the Constitution of the People's Republic of China is expected to have a positive impact on the entrepreneurial activities in China.

With the dominance of public ownership both before and after the economic reform initiated in 1978, China's would-be entrepreneurs generally have to quit their positions in some public-ownership entities and then start their private ownership businesses. While the legal status for private ownership affects the would-be entrepreneurs' benefit from starting private-ownership businesses, the cost of entrepreneurship is the payoffs the would-be entrepreneurs can have if they remain in the public-ownership entities. A would-be entrepreneur's payoffs from remaining in public-ownership entities depend on the degree of public ownership of his current employer as well as his personal political participation. The entities of public ownership could be government agencies, public organizations, state-owned enterprises affiliated with the central government, state-owned enterprises affiliated with the local governments, collectively-owned enterprises, and others (including semi-private or even private enterprises), descending in the degree of public ownership. In any entity of public ownership, a person's status is further enhanced and his control benefits are higher if he is a member of the Chinese Communist Party. This is because the Chinese Communist Party has control over the appointment of senior management of state-owned enterprises. In addition, membership of the

Chinese Communist Party is generally a precondition for senior positions in the government agencies or public organizations.⁴ We thus have:

Hypothesis 2: A person in an entity of higher public-ownership status is less likely to become an entrepreneur, and in any public-ownership entity a person who is a member of the Chinese Communist Party is less likely to become an entrepreneur.

Underlying hypotheses 1 and 2 is an opportunity selection model, where a person chooses between working for a public-ownership employer and becoming an entrepreneur. Specifically, the payoff from entrepreneurship can be simplified as the product of his company's profit (denoted by R) and the quality of the institutional environment for private sector development (denoted by p).⁵ The payoff from remaining an employee of the public-ownership entity is denoted by r , which in turn increases in the public ownership status of his current employer and the would-be entrepreneur's degree of political participation. If a person is risk neutral, he would choose entrepreneurship if the payoff from entrepreneurship is higher than that of employment (i.e., $pR > r$), and hypotheses 1 and 2 follow immediately.

In general, a would-be entrepreneur is risk averse. Given the more uncertain payoff from entrepreneurship than that of employment (more white noise in R than that of r), he would attach a premium (denoted by m) to the payoff from employment. That is, he would choose entrepreneurship if $pR > (1+m)r$. The more unfavorable institutional environment for private sector development, the higher the premium placed on the

⁴ Morduch and Sicular (2000) found that being a party member in rural China increases the possibility of becoming a cadre and enjoying political rents. In addition, Liu (2003) shows that political capital has positive and significant effects on individuals' income in the early stage of China's economic reform.

⁵ It is assumed for simplicity that the profit is confiscated with probability $(1-p)$.

payoff from employment. This suggests that m is increasing in p , with $m=0$ when $p=1$. Hypotheses 1 and 2 remain valid in this risk-aversion case. What is new is that there are interaction terms between the institutional environment for private sector development and the two variables determining the payoff from employment (the public ownership status of employer and the degree of political participation of would-be entrepreneurs). Specifically, we have:

Hypothesis 3: The negative impacts of those would-be entrepreneurs' personal attributes that determine their payoff from employment in the public-ownership entities attenuate as the institutional environment improves for private sector development.

There are several studies in the sociology literature about the cost of entrepreneurship with hypotheses similar to our Hypothesis 2 (Wu, 2004; Spires, Zhang, and Pan, 2004). The focus of this paper is about the impacts of the institutional environment for private sector development (hypothesis 1) and its interactions with would-be entrepreneurs' personal attributes (hypothesis 3). The importance of the institutional environment is apparent from the seminal work of North (1990), and it is highly relevant to the case of China because of the ideological biases against private sector development throughout China's economic reform. The interactions of the institutional environment with would-be entrepreneurs' personal attributes are equally, if not more, important, as they imply structural changes in the determinants of entrepreneurship decision.

To summarize, we have outlined a theoretical framework for the entrepreneurship decision in the emerging economy of China with an emphasis on the role of the institutional environment and its interaction with would-be entrepreneurs' personal attributes (Figure 1). We shall test the hypotheses developed based on the theoretical framework using a life-histories survey data of 2,854 respondents from twenty cities in China.

3. Data and Variables

3.1. Data

Our data comes from a life-histories survey conducted in 1994 in twenty cities of China. Six Chinese provinces (Hebei, Heilongjiang, Gansu, Guangdong, Jiangsu, and Sichuan) were chosen in addition to Beijing (China's capital) and Shanghai (an important economic center in China). In each province, three cities were selected, including the provincial capital city (population over 1 million), a medium-sized city (population between 200,000 and 1 million), and a small city (population under 200,000). These twenty cities covered a wide range of geographic locations with different types of urban economies (Zhou, 2000). The survey was conducted using stratified random sampling method. In China, urban households are organized in a four-level system: city, district, street, and residential block. In the survey, residential blocks were selected using a random sampling scheme. Households in each residential block were also selected using a random sampling scheme. Finally, a member between age 25 and 65 of the household was randomly selected to be interviewed.

The original data contains life-histories information of 4,073 urban residents between age 25 and 65, such as age, gender, marriage status, education, working experience, political participation, home ownership, family structure including information about their parents and spouse, and other social indicators. The survey required respondents to recall any spell of job, within or across work units, since their first jobs. The survey provides detailed information on up to ten job spells for each respondent, such as years started and left every job, and types of jobs.⁶

Recall errors are inevitable in retrospective data. However, as job mobility has been relatively low in China, the respondents did not need to recall many job shifts and thus the errors in collecting data retrospectively should not be very serious. To minimize the recall error problem, we exclude respondents who did not recall their job histories clearly or whose job histories were not recorded continuously. The sample size is reduced to 2,854 after deleting these respondents.

3.2. Variables

3.2.1. Dependent variable

Based on the information of job spells of respondents, we first construct a job-year table which contains job information of respondents from the year they started working. Using the job-year table, we identify every job change of respondents, and pay particular attention to whether and when the respondents became entrepreneurs.

The National Bureau of Statistics of China has classified people who started their own

⁶ There are two respondents who changed jobs more than ten times. These two respondents were excluded from the sample due to the lack of complete job histories, which are crucial for our analysis.

businesses into two types: those whose private enterprises hire less than eight employees (called *Getihu* in Chinese), and those whose private enterprises hire eight or more employees (called *Siying Qiye* in Chinese). In this paper, we do not make such a distinction and simply call those who started their own businesses as entrepreneurs. The dependent variable for the empirical study, denoted by *ENTREPRENEURSHIP*, equals 1 when a respondent started his/her own business in a specific year and 0 otherwise.

We focus on the time period of 1978 to 1994, because the choice of entrepreneurship was not possible in most parts of China prior to 1978 and in addition some of the independent variables have only been available since 1978. Table 1 gives detailed information on the number of surveyed respondents who were entrepreneurs for the time period of 1978 and 1994. Take 1978 as an example. Only 15 respondents were entrepreneurs in 1978, with 13 being the stock from the previous year and two new entrepreneurs in 1978. The table shows that the number of surveyed respondents being entrepreneurs increased from 15 in 1978 to 97 in 1994. The left axis of Figure 2 shows that the percentage of entrepreneurs in the total number of surveyed respondents increased from 0.88% in 1978 to 4.02% in 1994. As China continues its economic reform, the general environment for private enterprises has been improving though the formal legal status of private enterprises was not granted until 1988, and hence the increase in entrepreneurship. What is interesting to note is that, among the new entrepreneurs, 72 had previous working experiences, presumably in public-ownership entities (column 3 of Table 1) while 26 were fresh labor supplies directly

into entrepreneurship (column 2 of Table 1).⁷ The right axis of Figure 2 shows that the percentage of new entrepreneurs in the number of surveyed respondents who changed jobs increased from zero in 1978 to 10.61% in 1994. This suggests the importance of controlling for the costs of quitting positions in public-ownership entities when studying the determinants of entrepreneurship in China.

3.2.2. Independent variables

We first construct variables related to China's institutional environment for private sector development (Hypothesis 1) and a special set of personal attributes related to the costs of entrepreneurship (Hypothesis 2). As discussed in Section 2, we use the legal status of private ownership businesses to proxy the institutional environment for private sector development. A dummy variable regarding the legal status of private-ownership businesses, denoted by *LEGAL POSITION*, is constructed and it equals 1 for years on or later than 1989, 0 otherwise. Meanwhile, we use two variables to proxy the payoffs of would-be entrepreneurs from remaining in the public-ownership entities (or the costs of entrepreneurship). The public-ownership entities could be of the following types: government agencies, public organizations, state-owned enterprises affiliated with the central government, state-owned enterprises affiliated with the local governments, collectively-owned enterprises, and others (including semi-private or even private enterprises). Government agencies and public

⁷ There were entrepreneurs who subsequently shut down their own businesses and joined other companies as employees. Such reverse decision to entrepreneurship, however, is not studied in this paper. For a theoretical study on the switch between employment and entrepreneurship, see Lévesque, Shepherd and Douglas (2002).

organizations are similar in nature and they are combined into one category, all state-owned enterprises are also grouped into one category irrespective of their affiliation levels, and others (including private or semi-private enterprises) are treated as the reference category. Three dummies are thus constructed, which indicate whether the survey respondents worked in *GOVERNMENT AGENCIES OR PUBLIC ORGANIZATIONS*, *STATE-OWNED ENTERPRISES*, or *COLLECTIVE ENTERPRISES* in specific years. And a time-dependent dummy variable, *PARTY MEMBERSHIP*, is also constructed, which takes 1 if a respondent was a member of the Chinese Communist Party in a specific year and 0 otherwise.

Next, we construct a set of variables related to the personal attributes of would-be entrepreneurs other than those of the public-ownership status of their current employers and their political participation. They include variables about would-be entrepreneurs' gender, marriage status, age, education, their financial conditions for pursuing entrepreneurial activities, and their altitude for taking the risks of starting own businesses. *MALE* equals 1 for male respondents and 0 for female ones.

MARRIAGE indicates marriage status of respondents in specific years, with 1 for married and 0 otherwise. *AGE* is the age of a respondent in a specific year.

EDUCATION is measured by the number of years respondents had in formal education. It is zero for those respondents who are illiterate, five for those who had primary school education, eight for those with junior high school education, 11 for those with senior high school education, 13 for those respondents who had technical school education (*Zhongzhuan* in Chinese), 14 for those with polytechnics education (*Dazhuan* in Chinese), 15 for those respondents who had college education, and finally, 18 for those with graduate school education.

Would-be entrepreneurs' financial conditions have been found to be an important determinant for their entrepreneurial activities (Holtz-Eakin, Joulfaian, and Rosen, 1994; Hurst and Lusardi, 2004). This is because starting private-ownership businesses often requires a lot of financial resources. Even in the developed economies, would-be entrepreneurs may have difficulty getting access to external finance due to the information asymmetry between borrowers and lenders. As a result, would-be entrepreneurs may have to rely on their own savings and wealth to meet the financial needs of starting own businesses. In China, the financial markets are much less developed than those of the advanced economies. In addition, in the absence of formal protection of private properties, there could be expropriation of and discrimination against private enterprises, with their access to external finance severely restricted (Wei and Wang, 1997; Bai, Lu and Tao, 2006b). Hence, in China, the role of would-be entrepreneurs' financial conditions is expected to be significant in their entrepreneurship decision.

Inheritances or gifts are used as a measure of would-be entrepreneurs' financial conditions in the existing literature (Hurst and Lusardi, 2004). But we do not think it is a good measure in the setting of China for two reasons. First, the Chinese people remain relatively poor despite more than two decades of economic reform, and hence inheritances or gifts may not be that significant. Second, as the Chinese government remains predatory, people like to hide their wealth away from the government, which implies that information on inheritances or gifts is difficult to get in China. Instead, we use would-be entrepreneurs' home ownership as a measure of their financial conditions, for would-be entrepreneurs could mortgage their homes for bank loans

and get support for their entrepreneurial activities. In China, ownership of a person's dwelling could be of the following four types: owned by respondent's work unit, owned by other relative's (including his/her spouse) work unit, other types of public housing, and privately owned. *HOME OWNERSHIP* equals 1 if a respondent had private housing or apartment in a specific year and 0 otherwise.

Starting one's own businesses involves a lot of risks as compared with employment for other companies. Hence an important determinant of entrepreneurship is the altitude for taking business risks. It is found in the existing literature that a person is more willing to take risk if his parents have had entrepreneurial experiences.⁸

Presumably, preference for taking business risks could be genetically endowed. In addition, intergenerational transfer of knowledge about starting and managing businesses is valuable when there are few formal learning opportunities available as in the early stage of China's economic reform.⁹ It has also been found in the literature that a person is more willing to become an entrepreneur if he has had frequent job changes. Presumably, a person having more frequent job changes may encounter more misfits, hence having lower opportunity costs of becoming an entrepreneur.

Meanwhile, a person experiencing more frequent job changes tends to have wider job experiences, which have been argued as a positive determinant for entrepreneurial activities (Lazear, 2003). Two independent variables are thus constructed accordingly.

ENTREPRENEURIAL PARENT is a dummy variable indicating whether father or

⁸ Some studies have shown that only positive entrepreneurial experiences by parents have a positive impact on their children's decision to become entrepreneurs (Dunn and Holtz-Eakin, 2000). Nonetheless, it could be argued that children may learn more about how to do business from the failures as opposed to successes of their parents provided that they are generically inclined for entrepreneurial adventures.

⁹ Because of the emphasis on central planning, business education was suspended in China's tertiary institutions prior to its economic reform initiated in 1978. Business education was resumed in mid 1980s, and American-style Master of Business Administration programs were first offered in China in early 1990s.

mother of a respondent had been an entrepreneur before a specific year.¹⁰ *JOB CHANGE FREQ* is defined as the number of job shifts divided by total labor-market experience (i.e., the total years of working experience) for a respondent in a specific year.

Table 2 gives the definition and summary statistics of the dependent and independent variables discussed in this section, and Table 3 lists the correlation among the variables.

4. Empirical Analysis

4.1. Econometric methods

We use the logit model for discrete-time event history analysis, which allows us to incorporate time-varying covariates to account for the rate of event occurrence (Tuma and Hannan, 1984). It shifts the unit of analysis from respondents to life events at a specific time. In this case, all those people who have not yet become entrepreneurs are considered “at risk” of entry into entrepreneurship in each year starting from 1978. Those who had not yet become entrepreneurs by 1994 are right-censored. The model takes the following form: $\log(P_{it}/(1-P_{it})) = x(t)' \beta$, where P_{it} is the conditional probability that individual i experiences an event (i.e., entry into entrepreneurship) at time t (i.e., year), given that the event has not already occurred to that individual, $x(t)$ is a set of time-varying covariates and β is a vector of coefficients of these covariates.

¹⁰ The survey provides information about the types of jobs of both respondents' father and mother at six points in time: the year he/she started working, and 1965, 1975, 1978, 1986, and 1993.

We also include city dummies to control for possible differences across regions in economic development.

Institutional environment, including secure protection of private properties and efficient contract enforcement, is important for economic growth in general (North, 1990) and private sector development in the emerging and transition economies in particular (see, for example, Johnson, McMillan, and Woodruff, 2002; Cull and Xu, 2005). In the case of China, the institutional environment has been rather unfavorable for private sector development, due to its gradual reform approach to state-owned enterprises and persistent ideological biases against private sector development. Before 1988, there was no formal legal status for private enterprises, and private sector development was restricted to China's rural areas (Qian, 2000). The 1988 amendment of the Constitution of the People's Republic of China regarding the legal status of private enterprises significantly reduced the uncertainty for people to quit positions in public-ownership entities and start private-ownership businesses.

In our analysis, we consider three ways of estimating the impacts of the institutional environment (proxied by the legal-status variable) on the entrepreneurship decision and its interactions with other determinants of entrepreneurship. First, we have all the independent variables discussed in Section 3, including the legal-status variable, in the specification to test the "main effects" on entrepreneurial activities. It is assumed in this specification that the granting of legal status for private enterprises does not cause any structural change in the impacts of other determinants of entrepreneurship. The regression results are reported in column 1 of Table 4. Second, we separate our sample into two sub-samples: one before the granting of legal status for private

enterprises (henceforth called pre-1989 sample) and the other after the granting of legal status for private enterprises (called post-1989 sample), and exclude the *LEGAL POSITION* variable in the specification. Here the focus is on whether the other independent variables affect the respondents' entry into entrepreneurship differently in these two time periods. The regression results for the two sub-samples are reported in columns 2 and 3 of Table 4 respectively. Finally, to investigate both the role of the institutional environment and its interactions with other determinants of entrepreneurship, we add their interaction terms to the specification of the first regression (the one reported in column 1 of Table 4), and report the results in Table 5.

4.2. Results and Discussion

4.2.1. Main results

We would like to first report our results related to the institutional environment for private sector development. As shown in Column 1 of Table 4, the coefficient of *LEGAL POSITION* is positive and statistically significant at 1% level, implying that the surveyed respondents were more likely to become entrepreneurs after the granting of legal status for private enterprises in 1988. Our empirical finding offers strong support to Hypothesis 1 that the institutional environment is an important determinant for the entrepreneurial activities in the emerging economy of China. We also notice that the impacts of other independent variables in the pre-1989 sample differ from those in the post-1989 sample, mostly in terms of the magnitude or statistical significance of coefficients rather than the sign of coefficients (columns 2 and 3 of Table 4). This suggests that the granting of legal status for private enterprises in 1988

may have caused some structural changes in the impacts of the other determinants of entrepreneurship. In what follows, we mainly report the results of the other independent variables in the full sample, and we also highlight those cases where there are differences in results between the pre-1989 sample and the post-1989 sample.

Now we focus on the empirical validity of Hypothesis 2 that a person in an entity of higher public-ownership status is less likely to become an entrepreneur, and in any public-ownership entity a person who is a member of the Chinese Communist Party is less likely to become an entrepreneur. As shown in column 1 of Table 4, the odds of becoming entrepreneurs for people working in government agencies or public organizations, state-owned enterprises, and collective enterprises are 12.1%, 14.5% and 54.8%¹¹ of the odds for people working in the benchmark category (semi-private or private enterprises), respectively. Comparing the results of the pre-1989 sample with those of the post-1989 sample (columns 2 and 3 of Table 4), we also find that the coefficients of the various dummies for the public-ownership status (i.e., government agency or public organization, state-owned enterprises, and collectively-owned enterprises) are all less negative in the post-1989 sample than those of the pre-1989 sample. This implies that with the granting of legal status for private enterprises in 1988, the opportunity costs of quitting public-ownership entities have become lower and hence lower negative effects of the public-ownership status on the entrepreneurship decision.

Meanwhile our results show that the coefficients of *PARTY MEMBERSHIP* in both the pre-1989 sample and the post-1989 sample are negative, indicating that party

¹¹ The percentages are obtained as follows: $e^{-2.110}-1=12.1\%$, $e^{-1.929}-1=14.5\%$ and $e^{-0.601}-1=54.8\%$.

membership reduces the possibility of entrepreneurship. The net odds of entrepreneurship for party members are 12.67 percent of the odds for people who are not party members in the pre-1989 sample, but the corresponding number for the post-1989 sample is increased to 39.73 percent, indicating that the negative impacts of party membership on entrepreneurship are diminishing over time. In addition, only the coefficient of *PARTY MEMBERSHIP* in the pre-1989 sample is statistically significant. This suggests that, with the granting of legal status for private enterprises in 1988, the opportunity costs for members of the Chinese Communist Party to quit public-ownership entities have become lower and hence increased probability of entrepreneurship. Overall, our results offer strong support to Hypothesis 2 that the payoffs of would-be entrepreneurs from remaining in public-ownership entities are an important consideration in their entrepreneurship decision.

As discussed in Section 2, the quality of the institutional environment for private sector development affects the premium placed by would-be entrepreneurs on their payoffs from employment in public ownership entities. This implies interactions between the institutional environment and the other determinants of entrepreneurship, which in turn explains why the latter have different impacts on the entrepreneurship decision in the pre-1989 and the post-1989 sub-samples (columns 2 and 3 of Table 4). Therefore we add the interaction terms between the institutional environment and the other determinants into the specification of the regression reported in column 1 of Table 4. It turns out that our early results related to hypotheses 1 and 2 remain robust under this general specification. *LEGAL POSITION* has positive and statistically significant impact on entrepreneurship, while *PARTY MEMBERSHIP* and the three variables about the public ownership status (*GOVERNMENT OR PUBLIC*

ORGANIZATION, STATE-OWNED ENTERPRISES, and COLLECTIVE ENTERPRISES) all have negative and significant impacts on entrepreneurship (see Table 5 for details). More importantly, the interaction terms between *LEGAL POSITION* and the latter group of variables all have positive coefficients, with those for *LEGAL POSITION * PARTY MEMBERSHIP* and *LEGAL POSITION * COLLECTIVE ENTERPRISES* being statistically significant. These results imply that the negative impacts of those would-be entrepreneurs' personal attributes that determine their payoffs from employment in public-ownership entities attenuate as the institutional environment improves for private sector development, lending strong support to Hypothesis 3.

4.2.2. Controls for other personal attributes of would-be entrepreneurs

While the main focus of this paper is on the impacts of institutional environment for the entrepreneurship decision in China and those of the personal attributes that are related to the costs of quitting positions in public-ownership entities, we need to control for the impacts of some general determinants (personal attributes of would-be entrepreneurs such as gender, marital status, age, financial conditions and their altitude for taking business risks) that have been found to be important in the existing literature. It turns out that the impacts of those general determinants depend on the institutional environment for private ownership, which offers an even more important reason for their inclusion in the analysis.

The result in column 1 of Table 4 shows that, in the whole sample, older people are less likely to become entrepreneurs. However, when testing the effect of age in the two sub-samples, the negative and statistically significant coefficient of AGE was only found in the pre-1989 sample (column 2 of Table 4). This implies that the negative effect of age on entrepreneurship became weak after the legal status for private enterprises was granted in 1988. Presumably, older people are more risk averse; but with the reduced risk of starting private-ownership businesses after 1988, those old people became more receptive to entrepreneurship.¹² As for the impact of gender, we find that, in China, males are more likely to become entrepreneurs than females, consistent with what is found in the literature (Blanchflower, and Oswald, 1998). Existing studies have found the positive effect of marriage on entrepreneurship (Holtz-Eakin, Joulfaian, and Rosen, 1994; Blanchflower, and Oswald, 1998). However, we found that marriage status does not affect people's decision of entrepreneurship.

Education is used as an indicator of earning capability in the existing literature. Its impacts on entrepreneurship are difficult to predict theoretically. On the one hand, it could be argued that people with higher education have stronger ability of starting own businesses, and hence the impact of education on entrepreneurship decision should be positive (the ability argument). On the other hand, it could be argued that

¹² We are very grateful to an anonymous referee for pointing out the importance of social relationship (or Guanxi) in the transition and emerging economy of China. In the presence of dominant public sector, party affiliation and public-ownership status are proxies for the social relationship that would-be entrepreneurs have accumulated. Meanwhile the tenure in public ownership entities is another proxy for social relationship. It has been argued that social relationship is more important in private entrepreneurship than employment in public-ownership entities, in which case party affiliation, public-ownership status of employers and age are expected to have positive impacts on entrepreneurship. Our empirical findings are, however, just the opposite, and they are consistent with the argument put forward by Walder (2003) that, with economic reform and partial privatization, there are more values being injected into publicly-owned assets hence creating unprecedented opportunities for elite insiders.

people with higher education have higher opportunity costs of leaving their current employment and therefore become more risk averse toward entrepreneurship (the opportunity cost argument). We find that in the case of China the impact of education on entrepreneurship is negative implying that the opportunity cost argument is more dominant than the ability argument.¹³ What is more interesting is that one year of schooling decreases the net odds of becoming entrepreneurs by 20 percent in the pre-1989 sample but this negative effect is reduced to 10 percent in the post-1989 sample. Clearly with the formal legal status of private enterprises granted in 1988, there has been less risk of starting private-ownership businesses, and the opportunity cost argument has become less dominant than the ability argument, and hence the decreasing negative impact of education on the entrepreneurship decision.

Regarding the impacts of would-be entrepreneurs' financial conditions on their entrepreneurship decision, we find that the probability of becoming entrepreneurs for those owning their own dwelling is 2.3 times that of those who do not in our full sample (column 1 of Table 4). In addition, those who own their own dwelling are only 1.87 times more likely to become entrepreneurs than those who do not in the pre-1989 sample, but are 4.07 times more likely in the post-1989 sample (columns 2 and 3 of Table 4). One possible explanation is that, with the formal legal status granted for private enterprises in 1988, there has been less risk of starting businesses and hence more entrepreneurial activities. It is also possible that, with less legal risk for starting one's own businesses, would-be entrepreneurs would like to start more capital-intensive businesses. As the financial markets in China remain rudimentary, the higher demand for financial resources (due to either more entrepreneurial activities or more

¹³ This is in contrast to the finding of Davidsson and Honig (2003) that human capital as measured by years of schooling has a significant and positive effect on entrepreneurship decision.

capital-intensive entrepreneurial activities) means increasing advantage for those who have their own financial resources.¹⁴

Regarding the impacts of would-be entrepreneurs' altitude for taking business risks, we find that parents' entrepreneurial experiences have positive effects on respondents' decisions for becoming entrepreneurs. In the full-sample, a person's chance of becoming an entrepreneur increases by 87 percent if his parents have had entrepreneurial experience. More interestingly, the corresponding number for the pre-1989 sample is 209% and that for the post-1989 sample is 49%, with only the coefficient for the pre-1989 sample being statistically significant. There are two possible explanations for the positive impacts of parents' entrepreneurial experiences on children's decision to be entrepreneurs. One is that preference for taking business risks could be genetically endowed, and the other is that children could learn from their parents' entrepreneurial experiences (Blanchflower and Oswald, 1998; Dunn and Holtz-Eakin, 2000; Djankov, Qian, Roland and Zhuravskaya, 2006). Our findings of decreasing role of parents' entrepreneurial experiences over time imply more support for the inter-generational learning argument than the genetic endowment argument. Consistently, as China continues its economic reform, there are increasingly more formal channels (such as college education in business and economics, and the mushrooming growth of the American-style Master of Business Administration programs) through which would-be entrepreneurs can learn how to start and manage

¹⁴ Our data set has information on the industries involved by the ninety eight entrepreneurs covered during the sample period (1978-1994). Four out of the eight industries involved (the raw material and chemical industry, the electronic industry, the transport industry, and the metal products and machinery industry) are considered to be more capital intensive than the other four (the agriculture industry, the textile industry, the construction industry, and the catering service industry). It is found that the number of new entrepreneurs in the more capital-intensive industries in the pre-1989 sample is 14 out of 53 cases (or 26%), while the corresponding number for the post-1989 sample is 21 out of 45 cases (or 47%).

own businesses, and hence the decreasing impact of parents' entrepreneurial experiences.¹⁵

In addition to the results on *ENTREPRENEURIAL PARENT* as a proxy for the altitude of taking business risks, we find that a doubling of *JOB CHANGE FREQ* (from one in last five years to two) leads to 168% increase in the probability of becoming entrepreneurs, which is consistent with the two theoretical arguments related to job change frequency: People having more frequent job changes may encounter more misfits and hence have lower opportunity costs for quitting current jobs for entrepreneurial activities (Miller, 1984), and they could also accumulate wider ranges of skills which are essential for successful entrepreneurship (Lazear, 2003). We also find that the positive effects of job change frequency are stronger in the post-1989 sample than that in the pre-1989 sample. It is possible that as China undergoes the transition from a planned economy to a market economy, the set of skills needed for successful entrepreneurship increases and hence the increasing positive effects of job change frequency.

From the above analysis, it is clear that the impacts of these general determinants of entrepreneurship change as the institutional environment improves. To find out if there is any structural change in the determinants of entrepreneurship triggered by the change in the institutional environment, we carry out regression analysis using the most general specification (that of Table 5). We find that there are positive and statistically significant interactions between the institutional environment and two of the general determinants (*AGE* and *JOB SHIFT FREQ*). The improvement in the

¹⁵ For details on business education in China, please visit the website of China's Ministry of Education at <http://www.moe.edu.cn/english/index.htm>.

institutional environment for private sector development encourages older people and those with more frequent job shifts to pursue entrepreneurship, mitigating the negative effect of *AGE* and further enhancing the positive effect of *JOB SHIFT FREQ* on entrepreneurship. Together with the findings in Section 4.2.1, these results demonstrate the importance of the institutional environment for entrepreneurship in the emerging economy of China.

5. Concluding Remarks

This paper examines the determinants of entrepreneurship in the emerging economy of China with a focus on the impacts of institutional environment for private sector development and its interactions with other determinants of entrepreneurship (North, 1990). Using a life-histories survey data of 2,854 respondents from twenty cities in China, we find strong support for the role of institutional environment for the entrepreneurship decision, and for the importance of the personal attributes of would-be entrepreneurs such as the public-ownership status of their current employers and their status within those entities that determine their costs of entrepreneurship. Our results are robust to the controls for other personal attributes of would-be entrepreneurs that have been found to be important in the existing literature (such as gender, marital status, age, education, financial conditions, and altitude for taking business risks). We also find that the institutional environment has statistically significant interactions with the personal attributes of would-be entrepreneurs, implying a structural change in the determinants of entrepreneurship. Overall, our study on the determinants of entrepreneurial activities in China highlights the

importance of the institutional environment for private sector development and has important implications for policy recommendations.

Figure 1: A Theoretical Framework on the Entrepreneurship Decision in China

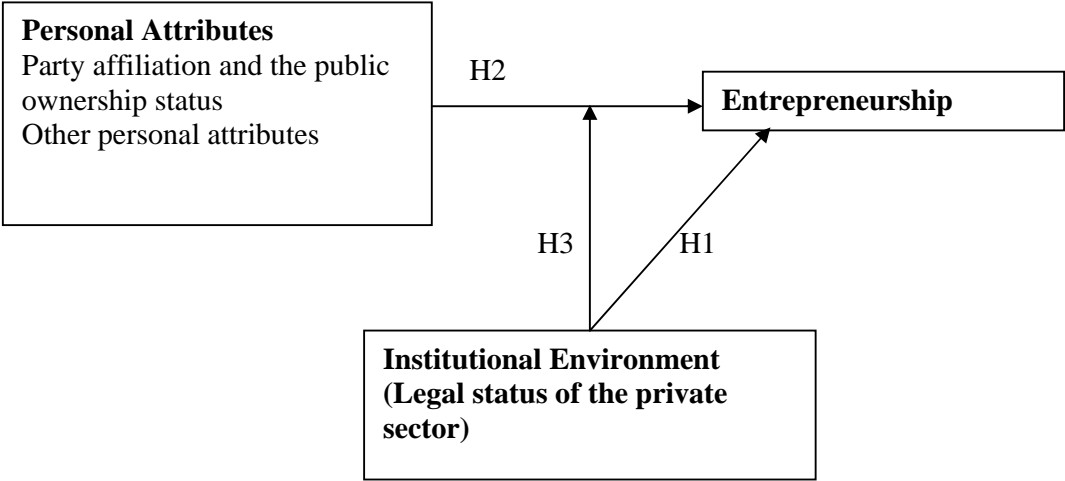
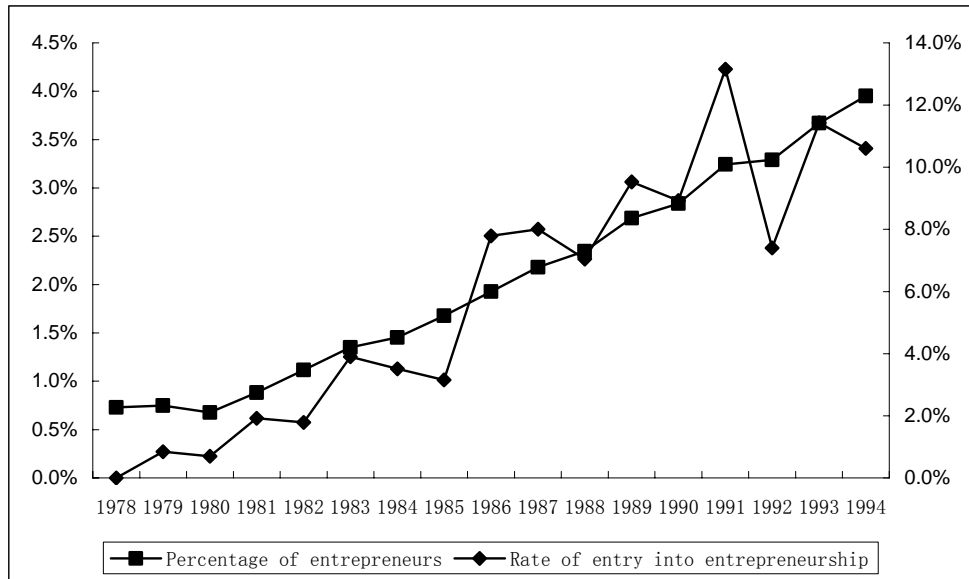


Figure 2: Percentage of Entrepreneurs and the Rate of Entry into Entrepreneurship



Note: The left axis shows the percentage of entrepreneurs to total respondents who were on the job market in various years. The right axis shows the rate of entry into entrepreneurship to the total number of people who changed their jobs in various years.

Table 1: Number of Entrepreneurs and Types of New Entrepreneurs in the Sample

Year	New entrepreneurs		New entrepreneurs		Number of entrepreneurs in the previous year
	Number of entrepreneurs	who did not have any working experiences	who had working experiences		
1978	15	2	0	13	
1979	16	1	1	14	
1980	15	0	1	14	
1981	20	4	2	14	
1982	26	5	1	20	
1983	32	3	3	26	
1984	35	1	2	32	
1985	41	3	3	35	
1986	48	2	6	40	
1987	55	1	6	48	
1988	60	1	5	54	
1989	69	1	8	60	
1990	73	2	5	66	
1991	83	0	10	73	
1992	84	0	4	80	
1993	92	0	8	84	
1994	97	0	7	90	
Total	861	26	72	763	

Note: The reason that number of entrepreneurs in the previous year (column 4) is not equal to lagged number of entrepreneurs (column 1) is that some people retired in corresponding years.

Table 2: Summary Statistics

Variable	Definition	N	Mean	Std	Min	Max
ENTREPRENEURSHIP	1 if the respondent is an entrepreneur in a specific year, 0 otherwise	40263	0.003	0.052	0	1
MALE	1 for male, 0 for female	40204	0.600	0.490	0	1
MARRIAGE	1 if married, 0 otherwise	40263	0.782	0.413	0	1
AGE	Age of the respondent	40263	35.665	10.362	15	65
EDUCATION	Number of years the respondent had in formal education	40263	9.523	3.608	0	18
HOME OWNERSHIP	1 if the respondent had private housing, 0 otherwise	40263	0.221	0.415	0	1
ENTERPRENEURIAL PARENT	1 if at least one parent of the respondent had been entrepreneur, 0 otherwise	40263	0.027	0.162	0	1
JOB CHANGE FREQ	The number of job shifts divided by total years of working experience	40263	0.0345	0.0516	0	0.5
GOVERNMENT AGENCIES OR PUBLIC ORGANIZATIONS	1 for respondents who worked in government agencies or public organizations in a specific year, 0 otherwise	40263	0.216	0.412	0	1
STATE-OWNED ENTERPRISES	1 for respondents who worked in state-owned enterprises in a specific year, 0 otherwise	40263	0.474	0.499	0	1
COLLECTIVE ENTERPRISES	1 for respondents who worked in collective enterprises in a specific year, 0 otherwise	40263	0.136	0.343	0	1
PARTY MEMBERSHIP	1 if the respondent is a member of the Chinese Communist Party in a specific year, 0 otherwise	40263	0.169	0.375	0	1
LEGAL POSITION	1 for years on or later than 1989, 0 otherwise	40263	0.367	0.482	0	1

Table 3: Correlation Table

	1	2	3	4	5	6	7	8	9	10	11	12	13	
ENTREPRENEURSHIP	1	1												
MALE	2	0.005	1											
MARRIAGE	3	-0.025	-0.065	1										
AGE	4	-0.031	0.030	0.487	1									
EDUCATION	5	-0.022	0.087	-0.144	-0.234	1								
HOME OWNERSHIP	6	0.035	-0.017	0.045	0.001	-0.183	1							
ENTREPRENEURIAL PARENT	7	0.009	0.011	-0.005	0.024	0.017	0.024	1						
JOB CHANGE FREQ	8	0.049	0.046	0.028	-0.047	0.151	-0.054	-0.015	1					
GOVERNMENT AGENCIES or PUBLIC ORGANIZATIONS	9	-0.022	-0.015	0.102	0.132	0.221	-0.063	-0.003	0.074	1				
STATE-OWNED ENTERPRISES	10	-0.035	0.076	0.092	0.054	-0.047	-0.084	-0.016	-0.008	-0.399	1			
COLLECTIVE ENTERPRISES	11	0.021	-0.080	0.020	-0.010	-0.196	0.170	0.003	-0.033	-0.209	-0.377	1		
PARTY MEMBERSHIP	12	-0.021	0.155	0.194	0.289	0.058	-0.092	-0.012	0.132	0.155	0.019	-0.107	1	
LEGAL POSITION	13	0.017	0.016	0.140	0.214	0.089	0.011	0.007	-0.001	0.029	0.024	-0.011	0.023	1

Note: Numbers in bold are statistically significant at 5% level.

Table 4: Coefficient Estimates for Discrete-Time Hazard Models on Entrepreneurship decision

Independent Variables	Full Sample	Pre-1989 sample	Post-1989 sample
<i>MALE</i>	0.380* (0.200)	0.397 (0.260)	0.427 (0.337)
<i>MARRIAGE</i>	-0.015 (0.259)	0.192 (0.350)	-0.052 (0.436)
<i>AGE</i>	-0.072*** (0.015)	-0.087*** (0.022)	-0.027 (0.021)
<i>EDUCATION</i>	-0.197*** (0.032)	-0.224*** (0.041)	-0.108** (0.054)
<i>HOME OWNERSHIP</i>	0.836*** (0.206)	0.625** (0.269)	1.404*** (0.343)
<i>ENTERPRENEURIAL PARENT</i>	0.627 (0.436)	1.128** (0.528)	0.398 (0.747)
<i>JOB CHANGE FREQ</i>	0.985*** (0.098)	0.856*** (0.143)	1.221*** (0.151)
<i>GOVERNMENT AGENCIES OR PUBLIC ORGANIZATIONS</i>	-2.110*** (0.470)	-2.331*** (0.732)	-1.643** (0.640)
<i>STATE-OWNED ENTERPRISES</i>	-1.929*** (0.288)	-2.135*** (0.395)	-1.459*** (0.367)
<i>COLLECTIVE ENTERPRISES</i>	-0.601*** (0.233)	-0.962*** (0.324)	-0.067 (0.367)
<i>PARTY MEMBERSHIP</i>	-1.395* (0.730)	-2.066*** (0.205)	-0.923 (0.760)
<i>LEGAL POSITION</i>	1.167*** (0.207)		
<i>INTERCEPT</i>	-2.336*** (0.540)	-1.327* (0.689)	-4.469*** (1.049)
City Dummies	Yes	Yes	Yes
-2 Log-likelihood	-1529	-917	-611
Chi2	305.31	171.20	131.17
Person-year at risk	40204	25468	14736
Event	111	66	45

Note: ***, **, and * indicate significant at 1%, 5%, 10%, and 15% level, respectively. Numbers in parentheses are standard errors.

Table 5: Event History Analysis Results with Interaction Terms

Independent Variables	Full Sample
<i>MALE</i>	0.375 (0.296)
<i>MALE*LEGAL POSITION</i>	0.041 (0.418)
<i>MARRAGE</i>	0.321 (0.396)
<i>MARRAGE*LEGAL POSITION</i>	-0.461 (0.544)
<i>AGE</i>	-0.111*** (0.026)
<i>AGE*LEGAL POSITION</i>	0.068** (0.032)
<i>EDUCATION</i>	-0.224*** (0.046)
<i>EDUCATION*LEGAL POSITION</i>	0.054 (0.658)
<i>HOME OWNERSHIP</i>	0.647** (0.304)
<i>HOME OWNERSHIP *LEGAL POSITION</i>	0.504 (0.425)
<i>ENTERPRENEURIAL PARENT</i>	1.101* (0.607)
<i>ENTERPRENEURIAL PARENT *LEGAL POSITION</i>	-0.592 (0.868)
<i>JOB CHANGE FREQ</i>	0.769*** (0.164)
<i>JOB CHANGE FREQ *LEGAL POSITION</i>	0.426** (0.214)
<i>GOVERNMENT AGENCIES OR PUBLIC ORGANIZATIONS</i>	-2.074*** (0.738)
<i>GOVERNMENT AGENCIES OR PUBLIC ORGANIZATIONS *LEGAL POSITION</i>	0.174 (0.968)
<i>STATE-OWNED ENTERPRISES</i>	-2.202*** (0.452)
<i>STATE-OWNED ENTERPRISES*LEGAL POSITION</i>	0.708 (0.599)
<i>COLLECTIVE ENTERPRISES</i>	-1.262*** (0.398)
<i>COLLECTIVE ENTERPRISES*LEGAL POSITION</i>	1.196** (0.511)
<i>PARTY MEMBERSHIP</i>	-1.245** (0.601)
<i>PARTY MEMBERSHIP*LEGAL POSITION</i>	1.142** (0.485)
<i>LEGAL POSITION</i>	2.016* (1.176)
City Dummies	Yes
-2 Log-likelihood	-1529
Chi ²	326.15
Person-year at risk	40204
Event	111

Note: ***, **, and * indicate significant at 1%, 5%, 10%, and 15% level, respectively. Numbers in parentheses are standard errors.

References:

- Aldrich, H. E. and C. M. Fiol (1994). Fools Rush in? The Institutional Context of Industry Creation. *Academy of Management Review* 19(4): 645-670.
- Bai, C.-E., D. D. Li, Z. Tao and Y. Wang, 2000. A Multitask Theory of State Enterprise Reform. *Journal of Comparative Economics* 28(4): 716-738.
- Bai, C.-E., J. Lu and Z. Tao, 2006 a. The Multitask Theory of State Enterprise Reform: Empirical Evidence from China. *American Economic Review* 96(2): 353-357.
- Bai, C.-E., J. Lu and Z. Tao, 2006 b. Property Rights Protection and Access to Bank Loans: Evidence from Private Enterprises in China. *Economics of Transition* 14(4): 611-628.
- Blanchflower, D. G. and A. J. Oswald, 1998. What Makes an Entrepreneur? *Journal of Labor Economics* 16(1): 26-60.
- Cao, Y., Y. Qian and B. Weingast, 1999. From Federalism, Chinese Style, to Privatization, Chinese Style. *Economics of Transition* 7(1): 103-131.
- Cull, R. and L. C. Xu, 2005. Institutions, Ownership, and Finance: The Determinants of Profit Reinvestment among Chinese Firms. *Journal of Financial Economics* 77(1): 117-146.
- Davidsson, P. and B. Honig, 2003. The Role of Social and Human Capital among Nascent Entrepreneurs. *Journal of Business Venturing* 18(3): 301-331.
- Djankov, S., Y. Qian, G. Roland and E. Zhuravskaya, 2006. Who Are China's Entrepreneurs? *American Economic Review* 96(2): 348-352.
- Dunn, T. and D. Holtz-Eakin, 2000. Financial Capital, Human Capital, and the Transition to Self-Employment: Evidence from Intergenerational Links. *Journal of Labor Economics* 18(2): 282-305.
- Holtz-Eakin, D., D. Joulfaian and H. S. Rosen, 1994. Entrepreneurial Decisions and Liquidity Constraints. *Rand Journal of Economics* 25(2): 334-347.
- Hurst, E. and A. Lusardi, 2004. Liquidity Constraints, Household Wealth, and Entrepreneurship. *Journal of Political Economy* 112(2): 319-347.
- Johnson, S., J. McMillan and C. Woodruff, 2002. Property Rights and Finance. *American Economic Review* 92(5): 1335-1356.
- Lazear, E. P., 2003. Entrepreneurship. IZA Discussion Paper.
- Lévesque, M. and M. Minniti, 2006. The Effect of Aging on Entrepreneurial Behavior. *Journal of Business Venturing* 21(2): 177-194.
- Lévesque, M., D. A. Shepherd and E. J. Douglas, 2002. Employment or self-employment: A dynamic utility-maximizing model. *Journal of Business Venturing* 17(3): 189-210.
- Liu, Z., 2003. The Economic Impact and Determinants of Investment in Human and Political Capital in China. *Economic Development & Cultural Change* 51(4): 823-850.
- McMillan, J. and C. Woodruff, 2002. The Central Role of Entrepreneurs of Transition Economics. *Journal of Economic Perspectives* 16(3): 153-170.
- Miller, R. A., 1984. Job Matching and Occupational Choice. *Journal of Political Economy* 92(6): 1086-1120.

- Morduch, J. and T. Sicular, 2000. Politics, Growth, and Inequality in Rural China: Does It Pay to Join the Party? *Journal of Public Economics* 77: 331-356.
- North, D. (1990). *Institutions, Institutional Change and Economic Performance*, Cambridge University Press.
- Powers, J. B. and P. P. McDougall, 2005. University Start-up Formation and Technology Licensing with Firms That Go Public: A Resource-based View of Academic Entrepreneurship. *Journal of Business Venturing* 20(3): 291-311.
- Qian, Y., 2000. The Process of China's Market Transition (1978-1998): The Evolutionary, Historical, and Comparative Perspectives. *Journal of Institutional and Theoretical Economics* 156(1): 151-171.
- Schumpeter, J. A., 1976. *Capitalism, socialism, and democracy*. 5th ed. (with a new introduction by Tom Bottomore), London : Allen and Unwin.
- Shane, S., 2002. Executive Forum: University Technology Transfer to Entrepreneurial Companies. *Journal of Business Venturing* 17(6): 537-552.
- Spires, A. J., F. Q. Zhang and Z. Z. Pan, 2004. *Jumping into the Sea: Entry into Self-Employment During China's Reform Era*. Working paper, Yale University Sociology Department.
- Tuma, N. B. and M. T. Hannan, 1984. *Social Dynamics: Models and Methods*. San Diego, Calif., Academic Press.
- Walder, A. G., 2003. Elite Opportunity in Transitional Economies. *American Sociological Review* 68(6): 899-916.
- Wei, S. and T. Wang, 1997. The Siamese Twins: Do State-owned Banks Favor State-owned Enterprises in China? *China Economic Review* 8(1): 19-29.
- Wu, X., 2004. *Jumping into the Sea: Entry into Self-Employment in Urban and Rural China, 1978-1996*. Working Paper, Hong Kong University of Science and Technology.
- Zhang, H. and L. Ming, 2000. *Blue Book of Private Enterprises (No.2)*. Beijing, Social Sciences Documentation Publishing House.
- Zhou, X., 2000. Economic Transformation and Income Inequality in Urban China: Evidence from Panel Data. *American Journal of Sociology* 105(4): 1135-1174.