Entrepreneurial Activities and Institutional Environment in China

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5 October 2016

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5/10/2016

Abstract: This paper aims to examine the relationship between the quality of an institutional environment and the characteristics of entrepreneurial activities within the context of China. An event study was conducted to investigate the impacts of the announcement of the Forbes China Rich List on prices of the shares associated with entrepreneurs on the list. This paper concludes that the quality of an institutional environment is greatly negatively related to unproductive entrepreneurial activities.

Keywords: Forbes; Entrepreneurial Activities; Institutional Environment.
JEL Classifications: G3, L26.

[1] Bei Luo, Beijing Normal University–Hong Kong Baptist University, United International College. Email: beiluo@uic.edu.hk. Luo and Chong (2013) is the working paper version of this paper. We owe much to James Kung and Dennis Yang for their helpful comments. We are also very much indebted to Min Chen, Margaret Loo, Galvin Chia, and Mandy Cheung for their assistance in the research. Any remaining errors are ours.
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1. Introduction

Although China is the second largest economy in the world, owing to the regulatory concerns, it ranks 84 out of 189 countries with regards to institutional environment in the 2015 East of Doing Business Index published by the World Bank. Besides sub-standard institutional arrangements, private entrepreneurs in China face serious market access barriers due to excess state intervention (Yang, 1998). Thus, cooperation with local governments, or local cadres, is one of the main solutions to improve market access (Xin and Pearce, 1996; Bai *et. al.*, 2014). As a result, productive entrepreneurial activities (e.g., innovations in technology, management, products, and market development) cannot be clearly distinguished from their unproductive counterparts (e.g., organized crime or rent-seeking behaviors), and that they may be carried out concurrently by a given company. The crime rate of listees of the Forbes China Rich List from 1999 to 2002 was 15 convictions (Table 1) out of 213 listees, over 19 times higher than that of nation-wide.[3] .

Insert Table 1 Here

Could formal institutions reduce unproductive entrepreneurial activities? North (1990) found that institutional environments influence individual behavior. Baumol (1990) argued that policies and norms could affect choices between productive and unproductive activities. When an institutional environment improves, entrepreneurs choose productive activities over unproductive ones because the latter incur higher economic and moral costs (Fadahunsi and Rosa, 2002). In view of this, productive and unproductive activities are considered to be in competitive supply (Murphy, Shleifer, and Vishny, 1991; Lu, 1994).

However, there is endogeneity between institutional environments and entrepreneurial behavior. Institutional environments affect an entrepreneur's decisions,

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[3] The overall crime rate increased from 90.54 cases per 100,000 people in 1981, to 370.36 cases per 100,000 people in 2008. Data about the number of crime cases comes from LAW YEARBOOK OF CHINA, published by the Publishing House of Law, Beijing, from 1982 to 2009. The number of population comes from CHINA COMPENDIUM OF STATISTICS 1949-2009.

but this relationship may be subjected to reverse causality. For example, informal institutions (e.g., family clans) are able to influence local governance (Xu and Yao, 2015). It has therefore been historically difficult to empirically identify the causal relationship between institutional environments and the choice and then between the two types of entrepreneurial activities.

This paper examines the relationship between institutional factors and entrepreneurial decisions regarding the tendency towards engagement in the productive activities in the context of China. In this study, socio-cultural environment refers to the social desirability of and cultural belief towards entrepreneurship. There is a change of socio-cultural environment towards honorees after the launch of Forbes China Rich List in 1999. Some tycoons on the list are suspected to seek wealth through improper attempts. Furthermore, companies directly and indirectly affiliated with the honorees who are under investigation have also faced stricter scrutiny on operations and changes in senior personnel. However, the effect of the Rich List on the aforementioned entities varies in association with the institutional environment.

According to the semi-strong efficient market hypothesis, stock prices reflect all public information. Investment decisions are sensitive to public information and expectation of public information. The institutional environments have dual effect on the stock market performance of affiliated companies. On one hand, investigations on unproductive activities are more efficient in provinces with better institutional environments. On the other hand, since entrepreneurial choices between productive and unproductive activities are catalyzed by institutional factors, companies with headquarters located in provinces with more favorable institutional environments offload less risk onto related companies, should an affiliated honoree be listed on the Rich List. In turn, cumulative abnormal returns due to the event would be positive to a greater magnitude due to the lowered risk, as the list demonstrates the capability of the honoree to some extent.

Seemingly Unrelated Regression was used in this paper to identify fluctuations in stock prices of such listed companies due to the Forbes Rich List. An

Event Study was conducted to examine the correlation between the stock return of a company and the event in which its controller(s)[4] is (are) placed on the Forbes Rich List. Data was sourced from the China Stock Market and Accounting Research Database (CSMAR). It is found that the event has a significant impact on the performance of the associated stocks. Moreover, the institutional environment of the province where a company's headquarters are located is positively related to the said company's abnormal returns, at one percent significance level. It is also found that in provinces with better institutional environments, a negative shift in socio-cultural factors in 2001-2002 generated negative influence on cumulative abnormal returns in the event period.

This paper contributes to existing literature in several ways. Firstly, our findings support the theory that institutional environments influence an individual's engagement in entrepreneurial activities (Shane, 2003; Kreft and Sobel, 2005; Hall and Sobel, 2008), as well as the individual's choice between productive and unproductive types of activities (Sobel, 2008; Minniti, 2008; Ashby, 2015). To avoid endogeneity, for each related stock, we measure the institutional environment from 1985 up till one year prior to its controller's entrance to the Rich List. This measurement ensures the accuracy of the assessment of institutional environments as entrepreneurs could not predict, nor prepare for, the consequences of the Forbes listing.

Secondly, this paper extends the study of the relationship from the dimensions of legislation (Aldrich and Fiol, 1994) and economic policy (Parente and Prescott, 1999; Holmes and Schmitz, 2001), to include the social-cultural dimension, as it takes into account changes in public opinion towards tycoons on the list.

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[4] The listees either own the company or can significantly influence the operation of the company. For example, Lou Zhongfu and Liu Yonghao held just 17.87% and 7.98% of shares in Shanghai A-share stocks 600052 and 600016 from 2001 to 2002 respectively, but they were the largest shareholders and sat on the boards of directors, meaning that they could significantly influence the operation of the company.

Finally, this study enriches the literature by focusing on China. Previously, little research has been conducted on the nuances of entrepreneurial behavior in China in relation to institutional factors. Sobel (2008) used political entrepreneurship as a measure of unproductive entrepreneurial activities in the United States. Bjørnskov and Foss (2010), Bowen and Clercq (2008), and Amorós (2009) applied the economic freedom index as a proxy measure of institutional environments. This is the first paper to investigate the above-mentioned relationship in China using a provincial level measurement of institutional factors. Raw data generated by Xiao (2006) refers to the methodology used by the World Competitiveness Yearbook published by International Institute for Management Development annually.

The rest of the paper is organized as follows. Section 2 provides background information of our study. The empirical methodology is presented in Section 3, and the data description is presented in Section 4. Section 5 reports the estimation results and robust discussion results, and finally, Section 6 concludes the paper.

2. Background
2.1 The Forbes Rich List in Mainland China

In China, following the socialist transformation of private corporations, the development of private business has been suspended from 1956 to 1989. By 1999, only 10 years after the legalization of private enterprises, a number of entrepreneurs have accumulated substantial wealth. In the same year, Forbes magazine launched its first China Rich List.[5] The newcomers of the list had an estimated asset value of USD 6 million, equivalent to around USD 200 million on a purchasing power parity basis in the United States. At the time, China's annual per capita income was only around

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[5] In 1999, Forbes purchased the list for mainland China from Rupert Hoogewerf, a British chartered accountant who compiled the list. Hoogewerf collected information from various sources including newspapers and magazines, corporate financial reports, China's Who's Who, securities firms, the Internet, donors to charities, awardees of national prizes, and delegates to the National People's Congress. Hoogewerf compared different published estimates of individual's wealth and offered a conservative estimate for each person.

USD 700. Moreover, the ranking focused on individuals who actively work to increase their fortune, rather than "princelings", whose fortunes are mostly inherited.

In 2000, the survey methodology was refined. The survey compiled estimated the financial figures of enterprises that individual entrepreneurs preside over. The total estimated aggregated value of all assets of the top 50 richest on the list was USD 10 billion, with the average net worth USD 203.8 million. In the following year, 50 more newcomers joined the rank. Apart from that, Forbes extend the interpretation of the definition of "Chinese", to include anyone who was born and raised in Greater China,[6] and had conducted business in Mainland China. In 2002, there was no further adjustment in the forging of the list.

2.2 Institutional Environment in Mainland China after 1978

Reductions in government intervention in microeconomic activities and greater macroeconomic management and regulation facilitate the reforms regarding institutional environment in China (The World Bank, 1995). However, the macroeconomic and microeconomic policies have not made to work in a mutually reinforcing way. The non-synchronization between legislation and changes in microeconomic activity has shrouded entrepreneurial activities in a veil of great uncertainty.

Prior to the constitutional revisions in March 1999, non-state sectors were largely ignored in formulation of economy policies. Compared to state-owned enterprises (SOEs), private enterprises in China are more difficult to obtain political and financial supports from state government (Tsang, 1994; Chow and Fung, 1996). Such situation implies that private companies need to pay strong attention to the establishment of good relationships with local governments for smooth operation (Xin and Pearce, 1996; Peng and Luo, 2000; Park and Luo, 2001; Luo, 2003; Wu and Leung, 2005). Under such institutional environment, rent-seeking behavior was necessary in order to acquire critical resources and access entrepreneurial opportunities. Unproductive wealth accumulating activities thus became common for these future billionaires.

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[6] Greater China consists of mainland China, Hong Kong, Macau, and Taiwan.

3. Methodology

The Seemingly Unrelated Regression model below was applied to address the cross-sectional dependence in residuals (Christie, 1990; Firth et. al., 2014), i.e., eliminating the impact of unobservable variables that make these companies to be influenced by the same event.

$$R_{1t} = \alpha_{1t} + \beta_{1t} r_{mt} + \gamma_{1t} \mu_{1t} + \epsilon_{1t}$$

$$R_{2t} = \alpha_{2t} + \beta_{2t} r_{mt} + \gamma_{2t} \mu_{2t} + \epsilon_{2t}$$

$$........$$

$$R_{it} = \alpha_{it} + \beta_{it} r_{mt} + \gamma_{it} \mu_{it} + \epsilon_{it} \tag{1}$$

where:

- R_{it} is the daily stock return of a stock i in the event period;
- r_{mt} is the market index return in the event period;
- μ_{it} is a dummy variable that equals one if the trading day is in the event window, and zero if in the estimation window;
- ϵ_{it} is the residual;
- α_{it}, β_{it} and γ_{it} are the parameters;

t refers to the number of trading days in the event period, and γ_{it}s is expected to be zero if the announcement of the list has no effect.

The following hypotheses were tested.

Hypothesis 1: The parameters of the event dummy variable across the sample are not equal to zero.

Hypotheses 2 and 3 were proposed to identify whether the socio-cultural environment causes the event effect for the listed company's controller(s).

Hypothesis 2: For companies whose controllers entered the list for the first time, the estimated parameters of the event dummy variable across companies do not equal zero in all equations.

Hypothesis 2 is the sub-hypothesis of Hypothesis 1. That is, Hypothesis 1 holds if we do not have sufficient evidence to reject Hypothesis 2.

Hypothesis 3: For companies whose controllers were dropped out of the list, the estimated parameters of the event dummy variable across the stocks do not equal zero in all equations in the year of dropping out of the list.

Hypothesis 3 assumes that the effect of being falling out of the list is positive, *ceteris paribus*, if being on the list is negative.

After identifying the existence of the event effect, we define the cumulative abnormal return (CAR) following the model proposed by Dombrow *et al.* (2000). Firstly, the abnormal return (AR) on each trading day in the event window is recorded. The observations are then aggregated across the event period to draw overall inferences for the event of interest. For stock i, we define the CAR_i as:

$$CAR_i = \sum_{t_1} AR_{it} = \sum_{t_1} (R_{it} - \widehat{R_{it}}) \tag{2}$$

where

- $\widehat{R_{it}}$ is the predicted daily stock return in the event window, and

- t_1 is the total trading days in the event window.

- CAR_i of observations represents the influence of the event, which is different across companies due to their own individual characteristics.

Referring to the model developed by Fama and French (1992), we use a pooled cross-sectional OLS to examine the association between the magnitude of the

CAR and the characteristics specific to event observations. The following model was estimated:

$$CAR_i = \alpha_0 + \beta X_i + \eta Ins_i + \varepsilon_i \qquad (3)$$

where

- X_i is the variable vector measuring the company's characteristics of stocks;

- Ins_i is the variable vector representing institutional environments;

- α_0 is the intercept term;

- β is the vector of coefficients for company characteristics, including earning power (ROA), viability (the length of company history before IPO), corporate governance (the percentage of shares owned by the controller(s), and the dummy variable of whether SOEs hold stock shares in a company), relative competitiveness in the industry (the market share of the company in the industry), and the education level of the controller(s).

- η is the coefficient vector of the measurements of the institutional environment;

- ε_i is the error term.

Following the belief that provinces with better institutional environments offer entrepreneurs incentives to choose productive activities over unproductive activities, while more competitive government can carry out scrutiny more efficiently and influence the expectation about the firm, the following hypotheses were also tested:

Hypothesis 4: The government competitiveness index has a positive relationship with the CAR.

The competitiveness index of government administration for each province, obtained from the *China Regional Competitiveness Development Report* (Xiao, 2006),

is applied as a proxy for the institutional environment. The report provides data from 1985 to 2005. The index evaluates government administration from four aspects: government expenditure, fiscal policy, government efficiency, and social equality and safety. If companies choose more productive activities, when investigations are carried out, they are more likely able to prove their innocence. Being honorees of Rich List just illustrates that their controllers are the most capable entrepreneurs in mainland China.

Hypothesis 5: Interaction term of the government competitiveness index and time dummy has a negative relationship with the CAR.

Interaction terms measure effects of government competitiveness on CAR when socio-cultural environment changed. After 1999, the public has noticed that successful convictions usually followed investigations on illegal activities with regard to the companies presided by the honorees. And, investigation started by a more competitive government is more efficient. Therefore, investigation may deteriorate investors' confidence no matter whether the honorees are convicted later on or not, especially in provinces with better institutional environment.

4. Data

The sample period cover from 1999 to 2002, a period in which only Forbes published rich list of billionaires in mainland China annually. The effects of being on Forbes China Rich List is difficult to identify after 2002 for the launch of various similar lists of China's richest people by other institutions, such as Bloomberg L.P.. The financial figures were obtained from CSMAR, which also provides some data of personal characteristics of entrepreneurs. The variable data that measures institutional environment are sourced from *China Regional Competitiveness Development Report* (Xiao, 2006). The number of listed companies controlled by listees in 1999, 2000, 2001, and 2002 were 9, 12, 33, and 32, respectively.

The daily return data of a firm and its market index are drawn from the CSMAR stock files from 1998 to 2003. The data covers stocks in all four stock markets in mainland China: Shanghai A-share market, Shanghai B-share market, Shenzhen A-share market, and Shenzhen B-share market. The estimation window spans from 200 days to 31 days before the event date, and the event window consists of 30 trading days before and after the event date. For each year in the sample period, we have at most 201 observations for every stock and the relevant market index, except stocks that are newly listed or were suspended during the estimation window period.

In Table 2-1, a summary of the variables used in CAR analysis is presented.

Insert Table 2-1 Here

The cross-sectional analysis includes explanatory variables for firm characteristics, industries and institutional environments. The dependent variable, the CAR, varies from -50.02 percent to 51.08 percent with a mean of -1.09 percent. The change in socio-cultural environments is measured by the dummy year variables for

the years 1999 to 2002. The effect of investor perception is represented by the estimated coefficients of the dummy variables using observations in 1999 as the base.

The implication of the length of the period between a company's establishment and its listing as well as the ownership percentage of its listed shares are taken into consideration in the dummy variable. Table 2-1 shows that companies in this study were founded up to eight years before their IPO with the average being 2.08 years; stock shares of 23 companies in the sample were held by SOEs, and the mean proportion of stock shares held by listees is 40.34 percent, with the minimum and maximum being 7.89 percent and 71.25 percent respectively.

Compiling data from the China's Listed Firms Corporate Governance Research Database, the China Stock Market Financial Database, and the CSMAR annual report, we calculate the return on total asset ratio (ROA[7]) to measure the earning power of a company. As shown in Table 2-1, the mean ROA in the sample is 5.61 percent, with 21.04 percent being the maximum and -13.35 percent being the minimum.

The factor, educational attainment of the honorees is controlled for comparative purpose. Educational background is rated on a scale from one to six: one indicates primary school and six indicates university degree or above. In total, 76.74 percent of individuals in the sample received education above junior college level and 30.23 percent above undergraduate level.

According to the Guidance for Industry Classification of Listed Companies of China, a firm's industry share in the sample is calculated as the percentage of total market value of the whole industry that a firm constituted on the event date. The mean industry share of a company in the three years prior to the publication of the Rich List

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[7] Since different companies have their own capital structures, sometimes depending on the industry characteristics, we apply the ROA as a consistent measure of profitability across all companies.

is the average of the industry shares recorded 365, 710, and 1,095 calendar days before the event date, respectively. The minimum value of this variable is zero, indicating that the company was listed in the year the list was launched. As shown in Table 2-1, the mean of this variable is 4.65 percent.[8]

The average GDP growth rates from 1989 to one year prior to honorees being in the Forbes list, [9] (the subject is missing) was used to measure the economic performance of the province in which a company's general headquarters are located. This aims to measure economic trends consistently. The average GDP growth rate is 12.16 percent, while the minimum and the maximum are 7.85 percent and 16.58 percent respectively.

In China, the political climate of a province may influence entrepreneurial choices between productive and unproductive activities. For example, before 2001, the China Securities Regulatory Commission (CSRC) enforced quota system on the total number of listed companies and granted the quota to each province annually according to its economic situation. As a result, mainland enterprises with an intention to get listed in China stress great importance on establishment of good relationship with local governments. Hence, the mean competitiveness index of provincial government administrations from 1989 to one year before honoree appearing in the Rich List was used to represent the long-run political climate faced by companies. The mean is 63.88 and the standard deviation is 18.84.

Table 2-2 presents data of the locations and density of general headquarters across 17 provinces.

Insert Table 2-2 Here

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[8] We also find that, as Stock 600256 was the only publicly listed company in the non-metal mineral product industry, its industry share was 100 percent in our sample.
[9] CHINA COMPENDIUM OF STATISTICS 1949-2004 (2005), Beijing, China: National Bureau of Statistics of China.

5. Estimation Results and Discussion

Result

The results of the tests for hypotheses one to three are summarized in Table 3.

Hypothesis 1 was not rejected, while **Hypotheses 2 and 3** were rejected.

Insert Table 3 Here

F-test and x^2-test for hypothesis 1 show that the probability that the parameters of the event dummy variable all equate to zero is 0.0005. This reveals that the event of list publication does reveal more information to the stock market by identifying the names of successful entrepreneurs in China, allowing billionaires to concretely compare their wealth with others. The result is consistent with the findings of Firth et. al. (2014), in which they find that stocks of 113 listed companies presided by Hurun Rich honorees plunged following the publication of the rankings. The rejections of hypotheses 2 and 3 depicts that the public attitude towards honorees are not unanimous across three years.

To examine hypotheses 4 and 5, we conduct a cross-sectional analysis to further analyze and explain the influence of the institutional environment on CAR and effects of the event on relevant company stocks. Table 4 reports the pooled cross-sectional OLS estimation results of CAR.

Insert Table 4 Here

Hypothesis 4 holds as our results imply. This shows that institutional environment in the political dimension is found to have a strong positive relationship with the event effect. Note from Table 4 that the estimated parameter is significant at the 1 percent significance level after controlling for factors of economic environment, socio-cultural environment, and interaction terms. It is expected that a one-unit increase in the government competitiveness index result in 1.2971 percent increase in

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CAR according to the regression results. The result is consistent with the expectation that a better political environment encourages proportionately more productive activities and reduces proportion of unproductive entrepreneurial opportunities, such as rent-seeking or smuggling.

Our result reveals that there is not sufficient evidence to reject **Hypothesis 5**. Estimated coefficients of all three interaction terms are negative. From 2001 to 2002, the significance level increased from 10 percent to 1 percent. It can be inferred that as more and more listees are under investigation for suspected offence as time passes by, relevant government department and agencies might pay extra attention to the operations of the affiliated firms. Listees may feel powerless regarding their political destiny because of the uncertain political climate and inconsistent enforcement of laws.

The empirical results show that the impact of average provincial GDP growth is positive but insignificant, suggesting that aggregate stock market performance may be highly correlated with inflation and fortune growth (Flannery and Protopapadakis, 2002) rather than GDP growth.

Finally, the year dummies are included in the model to investigate the effects of public perception. Significant negative influence from being on the Forbes list was observed, taking 1999 as the reference group, in regression (4) in table 4. The public belief changed over the sample period. After adding the interaction term in regression (5) in table 4, the difference becomes insignificantly positive in 2000 and 2001, while that of the CAR figure is positive and significant at 10 percent significance level, in 2002. These results indicate that the relatively lower CAR in the 2000-2002 period results from more strict scrutiny in provinces with more competitive government.

To further discuss the annual differences, the daily cumulative average abnormal return (CAAR) of each year was calculated to further illustrate changes in public opinion towards listees over the four-year period.

$$CAAR_{i,t_2} = \sum_{t_1=1}^{t_1=T} AAR_{it_1,t_2} = \sum_{t_1=1}^{t_1=T} \frac{1}{N_s} \sum_{i=1}^{i=N_s} AR_{it_1,t_2} \qquad (4)$$

AAR_{it_1,t_2} is the average abnormal return of all observations in a year in each trading day of the event window. T is the length of the event window, t_2 is years 1999, 2000, 2001 and 2002, and N_s is the number of stocks in each year.

Figure 1 shows the results. Contrary to the findings of Firth et al. (2014), our result shows that strictly positive daily CAAR values of up to 18.87 percent were recorded at the end of the event window in 1999. In 2000, some of the daily CAAR values were negative. The negative sign of the daily CAAR figures in all trading days within the event window implies that public perception differed from that of 1999.

<u>Insert Figure 1 Here</u>

In each regression model, the following company-specific characteristics were also controlled for. The estimated coefficient of the ROA is positive but does not play a significant role in the CAR of each company after the addition of dummy year variable. Similar results can be found in the parameter estimation of the average industry share in the previous three years. It is found that company history has a positive and significant influence at one percent level on the CAR. A billionaire's education level does not have a significant relationship with the CAR. The dummy variable indicates that the share owned by SOE has a negative impact on the stock return of a company. From Table 4, if SOE has shares of a listed company presided by the honorees, the CAR of the company drops by 12.09 percent in the event window, as exhibited in regression (5). This result is consistent with that of Tian (2001), who found that when shares of a company owned by government increased, corporate performance of the company declined until government took over it.

Another corporate governance variable, the percentage of stock shares held by Forbes listees, shows both an individual's management ability and the relative risk of being on the list. The results show that after controlling the influence of institutional environment, the parameter's estimation is negative and significant at the 5 percent significance level as shown in column (5) of Table 4. The variable reflects the risk expected by investors, given that the higher proportion of company shares a billionaire owns, the higher the risk an investor faces if the billionaire is found guilty of a criminal offense.

Discussion

After carrying out two types of examination, our result remains to be robust. In one examination, four more possible factors that can influence the effect of institutional environment are investigated. Table 5 reports results. In the other, we generate government competitiveness index covering different time periods and replicate regression (5) in table 4. Results are showed in table 6.

Table 2-1 also describes four factors. Government relationship, i.e., whether there is local government among the top ten shareholders. From CSMAR, we identify that 8 observations have such relationship. Liu *et. al.* (2013) finds that political capital can facilitate the firms to go publicly listed in China, and political capital can create value for publicly listed companies (Faccio *et. al.*, 2006). If the observation has such relationship, the company is expected to be protected in the event. The next factor is the total loan to GDP ratio. [10] It is used to measure the financial development of the province from 1985 to one year before honorees appearing in the Rich List. The mean is 94.29 percent. In the province where firms have more access to fund, they are expected to conduct less unproductive activities. The third factor is the number of times that honoree appears in Forbes Rich List. On average, honorees make the cut 2.51 times. More times an honoree appears in the Rich List, the better reputation s/he has. The last one is whether honoree enhanced education attainment or not in the

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[10] GDP data and Loan data come from CHINA COMPENDIUM OF STATISTICS 1949-2009 (2011), Beijing, China: National Bureau of Statistics of China.

sample period. Forbes Lists from 1999 to 2002 reveal that 8 observations in our sample improve their education attainment. It is expected that better education attainment can help honorees' business operation.

In table 5, the estimated coefficients of government competitiveness index remains significant level of one percent and changes only a few percent. To facilitate presentation, regression (1) in table 5 is exactly regression (5) in table 4. All four factors have no significant influence on CAR, and adjusted R-square decreases when these four factors are included in regression. All four methods cannot protect the listed firms in the event.

In table 6, the calculation of government competitiveness extend to the year that honorees appear in the Rich List. In regression (1), the variable is the mean from the year that the company is established. The next is from 1985, and the final two methods are from 1990 and 1995 respectively. Comparing with original method, the significance level decreases from one percent to five percent in all four regressions. The estimated coefficients remains being positive, while the magnitude decreases to 0.7085 in regression (4). Since the government competitiveness indexes among provinces converge as time passing by, excluding earlier years and including the current year dampen the variability of the factor and reduce the explanation power. However, the influence of institutional environment in political dimension is robust and significant across various calculation methods.

6. Conclusion

In this paper, we investigate the relationship between the institutional environment and the tendency of engaging in unproductive entrepreneurial activities in China. The launch of the Forbes China Rich List had generated an exogenous shock to stock market, and changed the socio-cultural environment in China. The entrepreneurs on the list faced investigations for the past unproductive activities of their companies. An event study was conducted to analyze the associated changes a public company underwent when its controller was on the Forbes Rich list. The results show that the institutional environment directly influenced the nature of entrepreneurial activities carried out.

For the future research, the role of performance consistency in entrepreneurial decision-making could be examined (Gompers et al., 2010), investigating whether a successful entrepreneur's greater possibility to succeed in new ventures would influence his business choices. Finally, a behavioral economic experiment, similar to that of Weitzel et al. (2010), could be conducted to investigate the behavioral characteristics of listees and their selections between productive and unproductive entrepreneurial activities.

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Table 1: The Rich on the list from 1999 to 2002 and being in trouble or found guilty

Name	In list year	Trouble and crime sentence
Huang Hongsheng	1999–2002	Limited imprisonment of 6 years
Li Jingwei	1999	Being suspected of corruption and bribery
Liu Xiaoqing	1999	Being suspected of crime against tax collection
Lu Junxiong	1999	Limited imprisonment of 18 years
Lv Youzhen	1999	Limited imprisonment of 7 years
Mou Qizhong	1999	Life imprisonment
Rubia Kadell	1999	Limited imprisonment of 8 years
Sun Feng	1999	Limited imprisonment of 6 and a half years
Wu Zhijian	1999–2000	Limited imprisonment of 17 years
Gu Chujun	2001	Forbidden to enter stock market for a lifetime
Shi Minzhi	2001	Being suspected of raping two underage girls
Tang Wanxin	2001–2002	Limited imprisonment of 8 years
Yang Bin	2001	Limited imprisonment of 18 years
Yang Rong	2001	Exiled abroad for being suspected of embezzling state assets
Zhou Zhengyi	2001–2002	Limited imprisonment of 3 years

Table 2-1: Summary of pooled cross-sectional analysis variables

Variable	Obs. Num.	Mean	Std.	Min.	Max
Cumulative abnormal return (%)	86	-1.0938	16.9382	-50.0167	51.0795
The length of the company's history before its IPO	86	2.0814	2.2918	0.0000	8.0000
SOE holds stock share in company	86	0.2326	0.4249	0.0000	1.0000
Return on total asset ratio (%)	86	5.6109	4.5515	-13.3466	21.0442
Controller's stock share (%)	86	40.3358	14.3226	7.9800	71.2500
Education level	86	4.8256	1.2385	2.0000	6.0000
Mean previous industry share (%)	86	4.6528	11.3706	0.0000	100.0000
Average provincial GDP growth ratio (%)	86	12.1620	2.1656	7.8545	16.5818
Gov. competitiveness index	86	63.8827	18.8438	37.7180	91.2567
Government relationship	86	0.0930	0.2922	0.0000	1.0000
Provincial loan/GDP (%)	86	94.2913	19.6389	47.1125	121.2790
Num. of times being honoree	86	2.5116	1.0599	1.0000	4.0000
Education level enhanced	86	0.0930	0.2922	0.0000	1.0000

Table 2-2: Provinces where general headquarters are located

General Headquarters	Freq.	Percent	Cum.
Beijing	2	2.33	2.33
Chongqing	1	1.16	3.49
Fujian	3	3.49	6.98
Guangdong	10	11.63	18.6
Heilongjiang	4	4.65	23.26
Henan	2	2.33	25.58
Hubei	1	1.16	26.74
Hunan	1	1.16	27.91
Jiangsu	4	4.65	32.56
Jilin	2	2.33	34.88
Liaoling	1	1.16	36.05
Shandong	4	4.65	40.7
Shanghai	24	27.91	68.6
Shan'xi	8	9.3	77.91
Sichuan	9	10.47	88.37
Xinjiang	3	3.49	91.86
Zhejiang	7	8.14	100

Table 3: Hypothesis test results

	Being on the List	Newly on the List	Being out of the List
F test	F(87, 10701) = 1.58	F(46, 6026) = 1.08	F(13, 2561) = 0.29
Prob. >F	0.0005	0.3370	0.9930
χ^2 test	chi^2(87) = 137.36	chi^2(46) = 49.48	chi^2(13) = 3.81
Prob. >Chi2	0.0005	0.3362	0.9930

Figure 1: Cumulative average abnormal return from 1999 to 2002
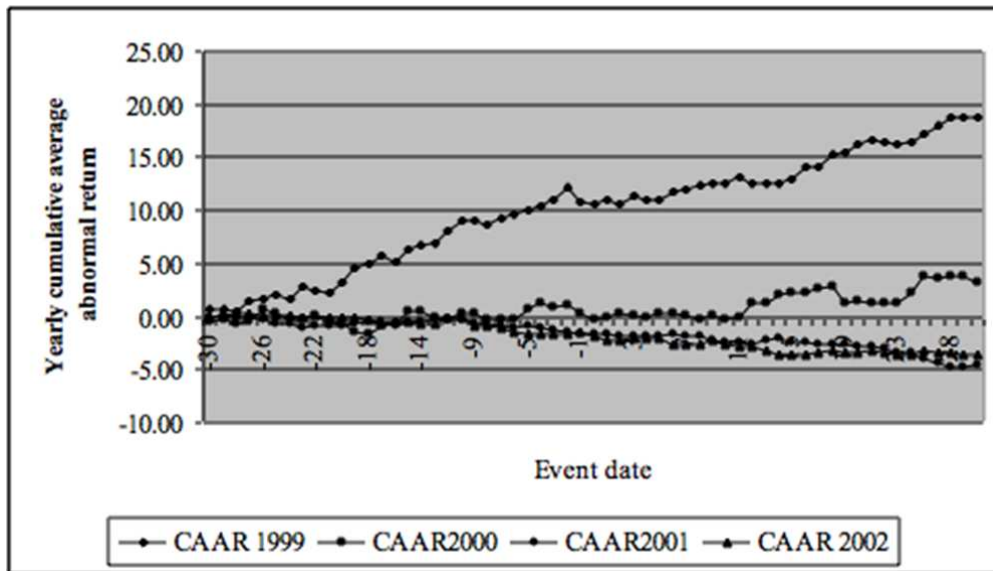
Table 4: Pooled cross-sectional OLS estimations of cumulative abnormal return

	(1)	(2)	(3)	(4)	(5)
	Cumulative Abnormal Return				
Company history length before IPO	1.4552*	1.6127**	1.7698**	1.9245***	1.9750***
	1.88	2.08	2.52	2.72	2.87
SOE holds stock share in company	-14.7994***	-16.6472***	-11.2049***	-13.1954***	-12.0946***
	3.46	3.7	2.78	3.1	2.85
Return on total asset ratio	0.7435*	0.8141*	0.2279	0.2852	0.2132
	1.75	1.92	0.55	0.68	0.53
Controller' stock share	-0.2721*	-0.3053**	-0.2604**	-0.3205**	-0.3270**
	1.95	2.15	2.05	2.47	2.59
Education level	1.2043	1.2645	1.8256	2.261	1.573
	0.78	0.85	1.33	1.62	1.14
Mean previous industry share	0.1576	0.1805	0.1561	0.2043	0.1724
	1.02	1.17	1.11	1.44	1.24
Average provincial GDP growth ratio	0.3213			0.5568	0.3884
	0.39			0.68	0.49
Gov. competitiveness index		0.1196		0.1492	1.2971***
		1.21		1.61	2.76
Year dummy for 2000			-14.1266**	-12.4416*	49.5771
			2.17	1.91	1.53
Year dummy for 2001			-24.3914***	-25.0080***	42.1632
			4.25	4.39	1.41
Year dummy for 2002			-22.3693***	-23.4447***	55.9417*
			3.73	3.87	1.86
Gov. index* year 2000 dummy					-1.0244*
					1.93
Gov. index* year 2001 dummy					-1.1207**
					2.31
Gov. index* year 2002 dummy					-1.3073***
					2.68
Constant	-4.3292	-7.4148	17.1701*	1.1865	-61.9595**
	0.30	0.68	1.87	0.08	2.12
Observations	86	86	86	86	86
Adjusted R-squared	0.1269	0.1412	0.2845	0.2995	0.3414

Absolute values of t-statistics under estimated coefficients; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5: Pooled cross-sectional OLS estimations of cumulative abnormal return

	(1)	(2)	(3)	(4)	(5)
	Cumulative Abnormal Return				
Company history length before IPO	1.9750***	1.9887***	1.9584***	1.9325***	1.9941***
	2.87	2.87	2.83	2.74	2.87
SOE holds stock share in company	-12.0946***	-10.8235**	-11.9577***	-12.4112***	-12.3812***
	2.85	2.08	2.79	2.82	2.83
Return on total asset ratio	0.2132	0.1311	0.2164	0.2198	0.222
	0.53	0.29	0.53	0.54	0.54
Controller' stock share	-0.3270**	-0.3344**	-0.3233**	-0.3251**	-0.3279**
	2.59	2.61	2.54	2.55	2.58
Education level	1.573	1.6019	1.8481	1.5451	1.6421
	1.14	1.15	1.23	1.11	1.17
Mean previous industry share	0.1724	0.1676	0.1797	0.1697	0.1752
	1.24	1.19	1.28	1.21	1.25
Average provincial GDP growth ratio	0.3884	0.4334	0.0311	0.3369	0.3983
	0.49	0.54	0.03	0.41	0.50
Gov. competitiveness index	1.2971***	1.2984***	1.3328***	1.3057***	1.2934***
	2.76	2.74	2.78	2.75	2.73
Year dummy for 2000	49.5771	48.6106	49.003	50.2938	50.0709
	1.53	1.49	1.51	1.54	1.54
Year dummy for 2001	42.1632	41.0842	41.589	42.7092	42.0782
	1.41	1.36	1.38	1.42	1.4
Year dummy for 2002	55.9417*	54.8771*	54.8827*	56.8819*	55.4819*
	1.86	1.80	1.81	1.87	1.83
Gov. index* year 2000 dummy	-1.0244*	-1.0102*	-1.0240*	-1.0307*	-1.0282*
	1.93	1.89	1.92	1.93	1.92
Gov. index* year 2001 dummy	-1.1207**	-1.1092**	-1.1131**	-1.1314**	-1.1158**
	2.31	2.27	2.28	2.32	2.29
Gov. index* year 2002 dummy	-1.3073***	-1.2977**	-1.2903**	-1.3222***	-1.2975**
	2.68	2.64	2.63	2.68	2.64
Government relationship		-3.3549			
		0.43			
Provincial loan/GDP (%)			-0.0681		
			0.46		
Num. of times being honoree				-0.5138	
				0.30	
Education level enhanced					-1.6543
					0.30
Constant	-61.9595**	-61.6508**	-54.9132	-60.3714**	-62.2255**
	2.12	2.10	1.66	2.02	2.12
Observations	86	86	86	86	86
Adjusted R-squared	0.3414	0.3338	0.3341	0.3329	0.3329

Absolute values of t-statistics under estimated coefficients; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6: Pooled cross-sectional OLS estimations for government competitiveness index with various calculation method

Method for the calculation of long-run government competitiveness index:	(1) The year company established to the year in list	(2) 1985 to the year in list	(3) 1990 to the year in list	(4) 1995 to the year in list
	Cumulative Abnormal Return			
Other variables controlled				
Gov. competitiveness index	0.8322**	1.0913**	0.9006**	0.7085**
	2.33	2.45	2.35	2.04
Year dummy for 2000	27.2469	41.3827	32.9374	22.4195
	0.99	1.29	1.14	0.81
Year dummy for 2001	20.3315	33.5878	24.1081	14.6662
	0.81	1.13	0.91	0.58
Year dummy for 2002	33.5255	47.5397	36.8329	26.3994
	1.3	1.57	1.37	1.02
Gov. index* year 2000 dummy	-0.5923	-0.8395	-0.6959	-0.509
	1.42	1.66	1.57	1.24
Gov. index* year 2001 dummy	-0.6847*	-0.9171**	-0.7535*	-0.5787
	1.85	2	1.9	1.61
Gov. index* year 2002 dummy	-0.8528**	-1.0987**	-0.9156**	-0.7230*
	2.27	2.38	2.28	1.97
Constant	-34.7398	-48.3856*	-38.7288	-27.9512
	1.49	1.78	1.59	1.23
Observations	86	86	86	86
Adjusted R-squared	0.3184	0.3252	0.3172	0.3022

Absolute values of t-statistics under estimated coefficients; * significant at 10%; ** significant at 5%; *** significant at 1%.