

Individual resources, property rights and entrepreneurship in China

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Abstract

Purpose – In the last decade, the Chinese government enacted two rule-based policy changes related to property rights; namely, a constitutional amendment to protect the lawful rights of the private sector in 2004 and a property rights law in 2007. Using property rights theory, this study hypothesizes the contingent effect that these property rights changes have on the investment of individual human and financial capital towards entrepreneurship. In addition, this study also explores whether property rights changes have a differential effect on the two forms of entrepreneurship, namely, opportunity and necessity entrepreneurship.

Design/methodology/approach – This research uses logit regression analysis on a two-period model using the Global Entrepreneurship Monitor (GEM) database to test these effects.

Findings – Contrary to existing evidence from Western contexts, this study finds that property rights changes have a significant influence on the investment of both forms of capital towards necessity entrepreneurship in China.

Research limitations – The use of a secondary database like GEM has certain limitations, such as the non-availability of data on a longitudinal basis, and the need to operationalize certain constructs like human and financial capital as non-continuous variables.

Originality/value – There has been limited research on the phenomena of necessity entrepreneurship in economies such as that of China. The findings of this study highlight that property rights protection is equally important for necessity entrepreneurship in institutional contexts like China.

Keywords: Entrepreneurship, Property rights, Logit regression, Emerging markets, China

Article classification: Research paper

1. Introduction

China is the largest transition economy in the world today, making an institutional shift from relationship-based to rule-based transactions (Krug and Hendrischke, 2008; Li, 2013; Rottig, 2016). Considering the heavily state-based, government-run legal system backing this institutional transition, the creation of entrepreneurship in China is seen as very different from that in other economies (Ahlstrom and Bruton, 2002; Nee and Opper, 2012; Opper and Nee, 2015; Chatterjee and Sahasranamam, 2018). A key rule-based policy measure enabling entrepreneurship and innovation is the protection of property rights, since this incentivizes individuals to innovate (Teece, 1986; Li, 2004). This paper studies the effect of a property protection regime on entrepreneurship in China, and specifically on the investment of human and financial capital towards entrepreneurship.

In the wake of economic reforms in China, a series of economic activities were unleashed. Domestic entrepreneurial organizations, including town and village enterprises, transformed state-owned enterprises and private start-ups, and emerged as significant driving forces behind the rapid economic growth and job creation in China (Huang, 2008; *The Economist*, 2011). In the past decade and a half, the gradual weakening of Chinese state control of the economy has changed the institutional and incentive regime, encouraging the emergence of new enterprises (Bruton *et al.*, 2010; Alon and Rottig, 2013; Shen and Tsai, 2016). For example, the time required for starting a business has decreased from 48 days in 2004 to 33 days in 2014 (World Bank, 2015a). This ease of starting a business has led to an increase in the entrepreneurship rate from 13.05% in 2004 to 31.3% in 2014 (World Bank, 2015b). Despite this marked increase, academic research has paid limited attention towards a scholarly understanding of the effect of institutional transition towards a rule-based transaction regime on entrepreneurship in China (Yamakawa *et al.*, 2013; Ahlstrom and Ding, 2014; Bruton and Chen, 2016; Chatterjee and Sahasranamam, 2018).

In an attempt to respond to the research gap mentioned above, and drawing on property rights theory, this study explores the following question: *what is the contingent effect property rights policy changes have on the investment of individual human capital and financial capital towards entrepreneurship in China?* China has a tradition of supporting and protecting its state-owned enterprises (Li, 2004). As a result, these established organizations have always been in a better position than individuals to benefit from the legal and government infrastructure (Deng *et al.*, 2010; Alon *et al.*, 2013; Shu, 2017). First, they were in a position to enforce regulations that restrict the actions of their start-up competitors (Shane, 2001; Krug and Hendrischke, 2003). Second, with greater access to political and other formal and informal institutional resources, they could infringe on a new venture's unique concept (Li, 2004; Kim and Li, 2014). The Chinese government enacted two fundamental policy changes related to property rights to tilt this upper hand of state enterprises in favor of entrepreneurship, namely, the constitutional amendment to protect lawful rights of the private sector in 2004 and the property rights law in 2007.

The implementation of the property rights policy changes in 2004 and 2007 offers us a unique setting to study private entrepreneurship in state-controlled economies like China (Krug and Hendrischke, 2003, 2008; Li, 2004; Brunt, 2011). Furthermore, to understand the effect that property rights changes have on entrepreneurship, this study analyzes the entrepreneurship entry data for two time periods, one before and the other after the implementation of the legislation. This research uses a cross-sectional data set consisting of over 2,000 observations collected by the Global Entrepreneurship Monitor (GEM) through its 2002 and 2009 surveys that examine the relationship. Previous research has found that the institutional environment influences different forms of entrepreneurship, namely, opportunity and necessity entrepreneurship, differently (McMullen *et al.*, 2008; Sambharya and Musteen, 2014; Kuckertz *et al.*, 2016). Hence, this study also tests for the effect of property rights

policy changes on the investment of individual resources towards these two forms of entrepreneurship. Opportunity entrepreneurs are those who are involved in start-up activity as a result of a perceived business opportunity, while necessity entrepreneurs are involved in start-up activity for lack of alternative options (Galid and Levine, 1986; Reynolds *et al.*, 2005). A large volume of extant research has focused only on opportunity entrepreneurship, which includes high-growth, high-potential ventures that emphasize innovation and job creation (Bergmann and Sternberg, 2007; McMullen *et al.*, 2008; Kuckertz *et al.*, 2016). In emerging markets like China, there is a significant and widespread presence of necessity entrepreneurship (Deng *et al.*, 2010; Sahasranamam and Sud, 2016). However, limited research has explored this phenomenon (Alon and Rottig, 2013; Bruton and Chen, 2016). This study contributes to filling this research gap.

2. Evolution of entrepreneurship in China

The development of enterprise in China is a matter of significant academic interest for sinologists and policy-makers for several reasons (Krug and Hendrichske, 2003, 2008; Li, 2004; Nee and Opper, 2012; Shen and Tsai, 2016). First, it offers a setting to conduct observational studies to assess outcomes based on various policy interventions. For instance, from ancient times, constant tensions in policy-making have arisen due to policy shifts from centralization (*junquan*) to decentralization (*fenquan*) and then back to centralization (Liu, 1986). Just like other aspects of China, private entrepreneurship has also witnessed significant changes depending on government policies. Second, the Chinese case is also unique for studies related to entrepreneurship because, unlike in other countries, one does not notice the simultaneous coexistence of factors enabling necessity and opportunity entrepreneurship in post-1949 China. Furthermore, during the reforms era, China witnessed a rise of private entrepreneurs in eastern coastal regions, with relationship-based transactions (*guanxi*) helping to overcome the hurdles of the formal institutions. It was these informal

institutions which caused institutional changes conducive to the encouragement of private entrepreneurship (Nee and Opper, 2012). In short, the Chinese case is unique because, unlike other regions, one witnesses here the emergence of informal institutions to facilitate necessity entrepreneurship. Such a rise has led to the formation of official policies that have ultimately paved the way for the development of an ecosystem encouraging opportunity entrepreneurship.

Entrepreneurship experienced a boost in Republican China in the first decades of the 20th century (Rawski, 1989). Once the Chinese Communist Party came to power in 1949, the market economy was transformed into a socialist economy. During the first 30 years of the People's Republic of China, private entrepreneurship was largely eradicated. With the economy in abysmal shape, the new leadership of Deng Xiaoping launched the Four Modernizations under the auspices of the Third Plenary Session of the 11th Central Committee of the Chinese Communist Party in December 1978. However, the effect of the reforms was concentrated primarily in the coastal regions, with inland areas undergoing limited change (Nee, 1992).

The 15th Party Congress in September 1997 marked a significant shift in the Chinese ownership system. Following this Congress, state ownership was downgraded to a “pillar of the economy”, and private ownership was elevated to being an “important component of the economy” (Qian and Wu, 2000). This Congress also, and for the first time, explicitly emphasized “the rule of law”. In 1998, the government even paved the way for reforms to promote venture capital and private equity investment. For example, the State Council approved a government document in 1999 titled “several opinions on establishing a venture investment mechanism”, released jointly by the Ministry of Science and Technology and State Development Commission (Xu and Zhang, 2009). The document set out guidelines for venture capital regulation in China. In March 1999, at the second plenary of the Ninth

National People's Congress, a constitutional amendment affirmed that individually owned and private business are important components of the socialist market economy (Liu, 2002). Thus, unlike the initial stages of reforms, the Chinese state put the private sector on the same legal footing as the public sector for the first time.

In 2003, the Law on the Promotion of Small- and Medium-Sized Enterprises (SMEs) became the first special law for such entrepreneurial organizations in China. In 2004, the government amended the constitution to “protect the lawful rights and interests of the private sector”. Following this, regulations concerning the creation, transfer, and ownership of property were put in place with the 2007 Property Rights Law (Nee and Oppen, 2012). These legislative initiatives marked an attempt to transition from relationship-based transactions (*guanxi*) to rule-based transactions (Krug and Hendrichke, 2003, 2008). Such an institutional change was essential for the economy to be competitive in the international market (Li and Li, 2000; Peng, 2003; Li, 2004). Given this institutional transition, this study focuses on how the property rights policy changes have influenced individuals' willingness to invest their human and financial capital towards entrepreneurship.

3. Hypotheses development

Since the seminal work by Shane and Venkataraman (2000), the primary focus of entrepreneurship research has been on early stage phenomena and the study of how opportunities are detected and acted upon, or how new organizations come into being. Entrepreneurial action involves opportunity and motivation, in addition to individuals' ability (McMullen and Shepherd, 2006; McMullen and Dimov, 2013). Opportunity identification and motivation are to a large extent determined by the institutional context in which the individual is situated, and so too are the returns expected from investment towards entrepreneurship (McMullen *et al.*, 2008; Autio and Acs, 2010). The external environment of a country places restrictions on the individual's ability to start a new business (Baker *et al.*,

2005; Taormina and Kin-Mei Lao, 2007). For example, as suggested earlier, during the early reform period in China it was complicated to set up private enterprises owing to the adverse policy regime. Entrepreneurship cannot be explained through personal resources alone without considering the individual and the country-level context (Shane and Venkataraman, 2000; De Clercq *et al.*, 2013).

Entrepreneurial entry requires substantial resource mobilization. At an individual level, key resource requirements are in the form of human and financial capital (Autio and Acs, 2010; De Clercq *et al.*, 2013). Individuals who are better placed regarding these resources are more likely to meet the challenges associated with identifying and exploiting new opportunities (Shane and Venkataraman, 2000; De Clercq *et al.*, 2013; Estrin *et al.*, 2016).

Human capital refers to the educational level and skills of the individual (Becker, 1994). People with higher education are likely to more easily find new ideas and opportunities (Shane, 2000; Hajizadeh and Zali, 2016). They are also better equipped to learn about new markets and technologies (Autio and Acs, 2010; Sahasranamam and Sud, 2016). Moreover, with greater formal education, individuals can develop better skills that enable them to better exploit opportunities (Grant, 1996; Dimov, 2017).

Financial capital is needed to meet the initial cash flow requirements of the enterprise (Arenius and Minniti, 2005). It has been found that liquidity constraints limit individual entrepreneurship choice behavior (Bates, 1995). Compared with more developed economies, private enterprises and SMEs face significant restrictions in accessing finance from the Chinese banking sector (The Economist, 2011). A critical challenge faced by Chinese entrepreneurs has been their limited access to formal financing (Cong, 2009). In the absence of official sources of funding, entrepreneurs would need to resort to internal sources of financing or bootstrapping, and to use their financial assets, or those of their household or

friends (Liao and Sohmen, 2001; Arenius and Minniti, 2005). Moreover, during the initial stages of the venture, entrepreneurs have limited legitimacy and lack collateral (Wright *et al.*, 2006). Hence, individuals who have greater access to individual financial capital are more likely to be able to make an entrepreneurship entry choice in China.

Previous research on entrepreneurship offers extensive evidence suggesting that individual human capital and personal financial capital has a positive effect on entrepreneurship entry choice (Dakhli and De Clercq, 2004; De Clercq *et al.*, 2013; Marvel *et al.*, 2016; Sahasranamam and Sud, 2016). The focus of this paper is, however, on the contingent role of property rights regime transition on the investment of these two capital forms towards entrepreneurship entry.

According to Boettke and Coyne (2003), protection of property rights is an essential requirement for entrepreneurship. Property rights refer to the degree to which government creates the right to private property and enforces the laws written to protect that right (McMullen *et al.*, 2008; Heritage Foundation, 2015). In an environment where property rights are hardly protected, contracts are difficult to enforce, competition is incomplete, and market entry is not free (Baumol, 1990; DeSoto, 2000; Autio and Acs, 2010; Estrin *et al.*, 2013a).

As mentioned earlier, access to education is essential to start an enterprise. Education contributes to the creation of two forms of human capital, namely, capital consisting of alienable components and that consisting of inalienable components (Moen, 2005). The cognitive abilities of the individual are inalienable and are hence embedded in the individual (Zucker *et al.*, 2002). However, the products of the individual's ability and skills are alienable and can be separated from the person. These products can be traded in the marketplace, for example, by selling, licensing, trademarking, copyrighting, or franchising. The property rights regime in a country influences the alienable component of human capital and its investment towards entrepreneurship (Autio and Acs, 2010).

During periods of weak property rights, there are greater uncertainty and expropriation fears (Arora *et al.*, 2001). In China, the combination of vague property rights, a high degree of informality, and unstable government regulators add to the uncertainty (Krug and Hendrischke, 2003; Li, 2004; Batjargal, 2007). Unpredictability influences the likelihood of investment of resources towards entrepreneurship entry when the investment entails substantial sunk costs (Dixit, 1989; O'Brien *et al.*, 2003). Hence, in a weak property rights regime, individuals are more likely to utilize their human capital for paid employment rather than to invest it in starting a new venture. However, when there is stronger protection of property rights, lower fears of expropriation would encourage individuals to invest human capital towards starting a new venture (Teece, 1986).

Hypothesis 1: There is a positive relation between individual human capital and the likelihood of an individual to start an enterprise in both pre- and post-property rights law periods in China, with the relationship being stronger in the post- than the pre-property rights period.

Similarly, for a weak property rights regime in a state-controlled economy, there invariably exists a greater fear of expropriation of wealth by the government (Batjargal, 2007; Nee and Opper, 2012). For example, a study by new firms in post-communist countries found that weak property rights discourage firms from reinvesting their profits owing to fear of expropriation (Johnson *et al.*, 2002). They have less fear of their wealth being expropriated in a stronger property rights regime (Anton and Yao, 1994; DeSoto, 2000). Moreover, when the markets are well functioning, individuals from high-income households can buy the alienable human capital produced by others (Arora *et al.*, 2001; Autio and Acs, 2010) and start new ventures. Therefore, in the context of China, the effect of financial capital on entrepreneurship would be stronger during the post-property rights period than in the pre-property rights period.

Hypothesis 2: There is a positive relation between individual financial capital and the likelihood of an individual to start an enterprise in both pre- and post-property rights law periods in China, with the relationship being stronger in the post- than the pre-property rights law period.

Though the widely acknowledged conceptualization of entrepreneurship is one of discovery, evaluation, and exploitation of opportunities (Venkataraman, 1997; Shane and Venkataraman, 2000), more recently another variation of entrepreneurship has emerged: that of individuals who seek entrepreneurship due to a paucity of other options to earn a living. This facet of entrepreneurial behavior emerged from the GEM investigation that revealed high entrepreneurship rates in low-income countries (Reynolds *et al.*, 2005). Such individuals who took up entrepreneurship for lack of choice have been termed “necessity entrepreneurs”. Subsequently, multiple studies have explored necessity and opportunity entrepreneurship as separate forms of entrepreneurship (Block and Wagner, 2010; Block *et al.*, 2015; Xavier-Oliveira *et al.*, 2015; Sahasranamam and Sud, 2016).

In the case of China, the classification into necessity and opportunity entrepreneurship is relevant for the following reason. As mentioned earlier, one of the fundamental reasons behind the reform process in 1978 was the acute unemployment problem that resulted from the return of urban youth who had been sent to the countryside in the Mao era (Xu and Zhao, 2008). Hence, during the reform period the aim of the government was to neutralize social discontent and improve the poor state of the economy by allowing the establishment of household business, and township and village enterprises. Given that large parts of China in general, and the rural areas in particular, were distressed because of the politics of the Cultural Revolution, many of the Chinese farmers in the countryside were more than willing to step into the unknown world of entrepreneurship. Thus, it will not be wrong to conclude

that the urge to start these enterprises was mostly inspired by necessity than by business opportunity.

Opportunity entrepreneurship is considered a more innovative activity than necessity entrepreneurship (Xavier-Oliveira *et al.*, 2015; Sahasranamam and Sud, 2016). Innovative entrepreneurial activity involves knowledge creation, and property rights must be protected to encourage it (Baumol, 2002). Strong property rights protection provides an incentive for entrepreneurial action of an innovative nature (Rosenberg and Birdzell, 1986). In the context of China, it has been found that individual human capital and financial capital are more likely to encourage opportunity entrepreneurship than necessity entrepreneurship (Sahasranamam and Sud, 2016). McMullen *et al.* (2008) have found that opportunity entrepreneurship was significantly related to property rights, while necessity entrepreneurship was not. As mentioned earlier, necessity entrepreneurship arises in the absence of alternative employment opportunities. Though necessity entrepreneurs may sometimes exploit opportunities, this is not their primary motivation (Ho and Wong, 2007). In summary, research on necessity entrepreneurship has argued that property rights would have no significant effect on it. However, considering the weak institutional environment, its dynamism and strong government control over the economy (Krug and Hendrischke, 2003, 2008; Shen and Tsai, 2016), this paper argues that, in transitional economies like China, property rights protection is likely to have a positive moderating effect on individual resource investment towards both necessity entrepreneurship and opportunity entrepreneurship.

Hypothesis 3a: There is a positive relation between individual human capital and the likelihood of an individual to enter opportunity entrepreneurship in both pre- and post-property rights law periods in China, with the relationship being stronger in the post- than pre-property rights period.

Hypothesis 3b: There is a positive relation between individual financial capital and the likelihood of an individual to enter opportunity in both pre- and post-property rights law periods in China, with the relationship being stronger in the post- than in the pre-property rights period.

Hypothesis 4a: There is a positive relation between individual human capital and the likelihood of an individual to enter necessity entrepreneurship in both pre- and post-property rights law periods in China, with the relationship being stronger in the post- than in the pre-property rights period.

Hypothesis 4b: There is a positive relation between individual financial capital and the likelihood of an individual to enter necessity entrepreneurship in both pre- and post-property rights law periods in China, with the relationship being stronger in the post- than in the pre-property rights period.

Figure 1 highlights the study's conceptual model.

 Insert Figure 1 about here

4. Data and methods

To test the above hypotheses, this study uses data from the GEM Adult Population Survey (APS). This GEM database has been developed through surveys by private market-survey firms with a representative weighted sample of at least 2,000 adults (aged 18–64 years) through telephone or face-to-face interviews in each country. Scholars consider GEM as a rich, reliable and valid survey (Reynolds *et al.*, 2005). Using the APS data, GEM captures the total entrepreneurial activity (TEA) in the country (Alon *et al.*, 2016). TEA has been the major focus of publications based on GEM data and is defined as the “percentage of the adult population (18–64 years old) that is either actively involved in starting a new venture or is the owner/manager of a business that is less than 42 months old” (Reynolds *et al.*, 2002, pp. 5–

6). In addition to TEA, GEM also captures the rate of opportunity and necessity entrepreneurship. This classification of entrepreneurship into opportunity and necessity types was a result of uncovering the presence of high entrepreneurial rates in both developing and developed economies. In short, opportunity entrepreneurship focuses on current start-up attempts that perceive business opportunities, whereas necessity entrepreneurs start a business to make a living when confronted with a lack of alternatives.

GEM carries out the data collection from different countries by collaborating with academic institutions. The GEM collaboration with academic institutions involves a substantial financial commitment by the participating institutions. Hence, there are periods when countries could not join the survey, resulting in gaps wherein data is not available. In the case of China, data is available for 2002, 2003, 2005, 2006, 2007 and 2009. The rates of the two forms of entrepreneurship along with TEA in China for these years is provided in Table 1 (Sahasranamam and Sud, 2016).

Table 2 highlights the other macro-environment characteristics of China for the period 2002–2009 (World Bank, 2015c, 2015d). The GDP of China more than tripled during this time. According to world governance indicators data from the World Bank, which are consistent with the argument of better property rights and government regulation, it can be observed that governance effectiveness, rule of law and regulatory quality show the highest increase during the period.

 Insert Tables 1 and 2 about here

As mentioned earlier, two significant property rights policy changes occurred in 2004 and 2007. This provides an opportunity to understand the effect of these policy changes on entrepreneurship (Phan *et al.*, 2010; Brunt, 2011). This research uses the data from 2002 and 2009 for the analysis, 2002 being two years *ex ante* the 2004 policy and 2009 being two years

ex post the 2007 policy. For the years 2002 and 2009, there are 2,054 and 3,608 respondents respectively in the GEM database.

4.1. Dependent variable

If the respondent was either “involved in concrete activities to start up a new business” or “owning and managing a business that was less than 42 months”, the likelihood of entrepreneurship entry is operationalized as a binary variable, which equals 1. This captured both nascent and new entrepreneurs (Reynolds *et al.*, 2005; De Clercq *et al.*, 2013). To categorize necessity and opportunity entrepreneurs, participants in the GEM survey were asked to indicate whether they were starting and growing their business to take advantage of a perceived unique market opportunity (opportunity entrepreneurship, 1 = yes). Furthermore, they were asked, if they felt it was the best option available for them (necessity entrepreneurship, 1 = yes).

4.2. Independent variables

The independent variables in the study are individual-level human and financial capital. *Human capital* is a dummy variable, equal to 1 when respondents indicated that their highest educational qualification was greater than post-secondary level (De Clercq and Arenius, 2006; Minniti and Nardone, 2007). *Financial capital* is a dummy variable, equal to 1 when respondents indicated that “they belong to the middle of higher income group of the country”. This approach was also followed in previous studies (Arenius and Minniti, 2005; Autio and Acs, 2010).

4.3. Control variables

The control variables were gender, age, fear of failure, and individual social capital. *Gender* was operationalized as a dummy variable (0 = female; 1 = male) (Verheul *et al.*, 2006; Minniti and Nardone, 2007; Elam and Terjesen, 2010) and *age* as a continuous variable

(Autio and Acs, 2010). Previous research has found fear of failure to be negatively related to self-employment motivation in China (Wang *et al.*, 2012). Hence, *fear of failure* was added as a control variable measured as a dummy variable using the following statement: “Fear of failure would prevent me from starting a new business” (1 = yes) (Autio and Acs, 2010). A dummy variable that assesses whether the respondent “personally knew someone who had started a business in the past two years” measured *individual social capital* (Minniti and Nardone, 2007; Klyver *et al.*, 2008). Since entrepreneurship in China has traditionally grown regardless of the weak legal and financial system (mainly through the support of informal institutions and networks known as *guanxi*), it is particularly relevant in the Chinese context to control for the individual’s social capital (Li and Li, 2000; Nee and Oppen, 2012; Shi *et al.*, 2015).

5. Results

Table 3 provides the descriptive statistics, and Tables 4 and 5 depict the correlations. The variance inflation factors are below the cut-off value of 4, and thus multicollinearity is not a concern in this analysis (Neter *et al.*, 1996). Since the dependent variables are dummy variables (entrepreneurship entry – 1 or 0; opportunity entrepreneurship – 1 or 0; necessity entrepreneurship – 1 or 0), the study employed logistic regression analysis using STATA.

 Insert Tables 3, 4, and 5 about here

For testing the effect on entrepreneurship entry, the research calculated four logit regression models each of the years 2002 and 2009, as shown in Tables 6 and 7. By analyzing the results separately for the two periods, the study tests for the moderating effect of property rights regime change through the split-sample approach (Gujarati and Gunasekar, 2004; Hayes, 2013). Model 1 includes the control variables; Models 2 and 3 add the individual

human capital variable and the individual financial capital variable respectively in isolation; and Model 4 has both the two individual-level resources.

From Model 4 (in Tables 6 and 7), it can be observed that the effect of individual-level human capital on entrepreneurship choice in 2002 is not significant ($\beta = 0.09$, $p > 0.1$), while there is a significant positive effect in 2009 ($\beta = 0.24$, $p < 0.1$). This result offers support to Hypothesis 1. It is also found that there exists a significant negative effect of financial capital ($\beta = -0.59$, $p < 0.001$) on individual entrepreneurship choice in 2002, and a significant positive effect in 2009 ($\beta = 0.43$, $p < 0.001$). The chi-square test result between the coefficients for individual financial capital for the two years was significant ($\chi^2(1) = 17.22$, $p < 0.01$), suggesting that property rights protection made a significant difference in the investment of financial capital towards entrepreneurship. This result offers support to Hypothesis 2.

 Insert Tables 6 and 7 about here

In Table 8, results from logit regression analysis on the two forms of entrepreneurship (opportunity and necessity entrepreneurship) are presented. It is found that individual human capital has an insignificant effect on opportunity entrepreneurship for both the selected years. Hence, there is no support for Hypothesis 3a. The effect of individual financial capital on opportunity entrepreneurship, however, offers support to Hypothesis 3b, as the results suggest that the protection of property rights encouraged people to invest their financial capital towards opportunity entrepreneurship ($\beta = 0.89$, $p < 0.001$), with the effect being insignificant in the earlier period.

Though existing research did not expect property rights protection to have a significant effect on necessity entrepreneurship, this study found contrary evidence. In this study, individual human capital has a significant negative impact on necessity

entrepreneurship entry choice, with the effect decreasing after the property rights regime change. The result of the chi-square test between the coefficients for individual human capital for the two years was significant for necessity entrepreneurship. This result suggests that property rights protection made a significant difference in the investment of human capital towards necessity entrepreneurship, thereby supporting Hypothesis 4a. Furthermore, in the absence of property rights, there is an adverse effect on individuals' investment of financial capital towards necessity entrepreneurship ($\beta = -1.45$, $p < 0.001$), whereas during the period of property rights protection there was no significant effect. This offers partial support to Hypothesis 4b.

 Insert Table 8 about here

6. Discussion

This study uses the unique setting of institutional transition in China to understand the effect of property rights on entrepreneurship in state-controlled economies. The main contribution of the work is in understanding the contingent effect of property rights policy changes in China on the investment of individual resources towards entrepreneurship entry, and how the effect varies for opportunity and necessity entrepreneurship.

The study results for Hypothesis 1 suggest that individual human capital has a positive effect on individual entrepreneurship entry only during the post-property rights period, with the effect being non-significant in the pre-property rights period. The insignificant effect in the pre-property rights period goes against prior evidence that argues for a positive relationship between individual human capital and entrepreneurship choice (Davidsson and Honig, 2003; De Clercq *et al.*, 2013). This insignificant effect implies that property rights protection is a critical factor when it comes to the investment of individuals' human capital towards starting a venture. Moreover, it indicates that, during weak property

rights protection in state-controlled economies, people would prefer to direct their human capital towards paid employment rather than risk it towards a more uncertain self-employment initiative (O'Brien *et al.*, 2003; Batjargal, 2007).

From results corresponding to Hypothesis 2, the study finds that during the pre-property rights period there is a negative and significant effect of financial capital on entrepreneurial entry and this relationship becomes significant during the post-property rights period. This observation also offers contradictory evidence to previous research which had found a positive correlation between individual financial capital and entrepreneurship choice (Arenius and Minniti, 2005; De Clercq *et al.*, 2013). The chi-square test result confirmed that the property rights regime change made a significant difference to the investment of individual financial capital towards entrepreneurship in China. This result suggests that, for an investment of personal financial capital, entrepreneurs need to be assured of protection for their property. Such assured protection will also enable them to handle other associated risks, such as financial security of the family, fear of bankruptcy, and loss of reputation (Shane and Cable, 2002; Li, 2004; Bergmann and Sternberg, 2007; Lee *et al.*, 2011).

Based on the results for the investment of capital towards the two forms of entrepreneurship (Hypotheses 3 and 4), the research finds that higher levels of personal capital encourage opportunity entrepreneurship and necessity entrepreneurship differently, and its effect is contingent on the property rights protection. There is an insignificant impact on individual human capital on opportunity entrepreneurship entry during both the periods, suggesting a limited influence of property rights protection on human capital investment towards opportunity entrepreneurship. However, contrary to the expectations (Block and Wagner, 2010; Baptista *et al.*, 2014), it was found that property rights protection has a significant effect on the investment of both human and financial capital towards necessity entrepreneurship. In the case of necessity entrepreneurship during both the periods, it was

observed that the effect of individual human capital is negative and significant. The chi-square result confirms that the property rights regime made a significant difference in reducing the magnitude of the negative significant effect between individual human capital and necessity entrepreneurship choice. In addition, there is a negative and significant impact on individual financial capital and necessity entrepreneurship in the pre-property rights period that becomes non-significant in the post-property rights era. These effects of property rights on investment of private capital towards necessity entrepreneurship were unexpected, given that necessity entrepreneurship is associated with lower levels of complexity and is a choice made when there is a lack of alternatives (Reynolds *et al.*, 2005; Thurik *et al.*, 2008; Xavier-Oliveira *et al.*, 2015).

The results of the effect of individual financial capital on the different forms of entrepreneurship help to better understand the negative influence of individual financial capital on overall entrepreneurship in 2002 (Table 6) and the subsequent positive impact in 2009 (Table 7). Private financial capital had an active and significant effect on opportunity entrepreneurship only in the post-property rights period, with the effect being non-significant in the pre-property rights era. On the other hand, the relationship between financial capital and necessity entrepreneurship is negative and significant in the pre-property rights period, while it is non-significant in the post-property rights period. This negative and non-significant relationship suggests that the overall negative influence of personal financial capital on entrepreneurship in 2002 could be attributed to necessity entrepreneurship entry, while the positive effect in 2009 could be due to the effect on opportunity entrepreneurship entry. These findings emphasize that property rights protection and well-functioning markets are crucial for financial investment towards innovative activity led by opportunity entrepreneurs (McMullen *et al.*, 2008; Autio and Acs, 2010). It further reveals that property

rights are not just essential for opportunity entrepreneurship but are equally relevant for necessity entrepreneurship as well.

7. Conclusions

7.1. Contributions

This study makes several theoretical contributions. The primary contribution is to the literature on entrepreneurship and innovation in emerging markets (Ahmed *et al.*, 2005; Yamakawa *et al.*, 2013; Chatterjee and Sahasranamam, 2014; Bruton and Chen, 2016; Sahasranamam and Sud, 2016). It also extends the literature on the role of property rights protection in state-controlled economies (Krug and Hendrischke, 2003, 2008; Li, 2004; Schmiele, 2013; Marcotte, 2014; Chatterjee and Sahasranamam, 2018). This study observes that in economies undergoing an institutional transition, such as China, there is a strong disincentive for individuals to invest their human and financial capital towards starting a new venture in the absence of legislation offering property rights protection. Previous research highlighted the importance of property rights protection for opportunity entrepreneurship but not necessity entrepreneurship (Block *et al.*, 2015; McMullen *et al.*, 2008). However, the findings of this study highlight that property rights protection becomes equally important for necessity entrepreneurship in institutional contexts like China. This result complements the findings from the research by Cai (2015), which presented case studies from China on the transition from necessity to opportunity entrepreneurship and found that cultural and institutional factors were crucial in influencing necessity entrepreneurship.

This research also adds to the growing literature on the importance of institutional context on individual entrepreneurial behavior (De Clercq *et al.*, 2013; Estrin *et al.*, 2013b, 2016; Marvel *et al.*, 2016). These findings align well with existing research evidence which suggests that, though individual resources are necessary, they are probably not sufficient conditions to influence entrepreneurship choice (McMullen and Shepherd, 2006; McMullen

et al., 2008), and that institutional factors like property rights are equally important (Krug and Hendrischke, 2003; Jimenez *et al.*, 2017).

The findings of this research offer various policy implications. Firstly, the Chinese economy today is shifting from manufacturing-based, export-led growth to a more services-oriented, domestic-consumption-based model (Krug and Hendrischke, 2003, 2008; Jiao *et al.*, 2011). This change marks an onset of a different approach from economies of scale or cost advantage to one of product differentiation and innovation. For making a successful shift in this direction, transparency at government level and encouragement of entrepreneurship are important (Li, 2004; Peng, 2004; Tonoyan *et al.*, 2010). In this regard, from a policy perspective, these research findings highlight the importance of property rights legislative changes for encouraging individuals to invest their private resources towards starting new business activities.

Secondly, until now there has been an assumption that property rights primarily concern only opportunity entrepreneurs, who are driven by innovation, rather than necessity entrepreneurs, who are driven by lack of alternatives (McMullen *et al.*, 2008). Therefore, governments were encouraged to protect property rights only for opportunity entrepreneurship and not for necessity entrepreneurship. However, the results of this study highlight that governments need to offer due acknowledgment to protecting property rights even in the case of necessity entrepreneurship, and specifically in state-controlled economies like China. This becomes even more important when considering the evidence that nearly two-thirds of those who start off as necessity-oriented entrepreneurs turn into opportunity-oriented entrepreneurs (Williams and Round, 2009).

7.2. Limitations and future research

Like any other research, there are certain limitation to this study particularly on the data. As mentioned earlier, the database allowed the study for only certain periods when data was

available. However, since the aim was to investigate the effect of property rights legislation change, the chosen years of 2002 and 2009 are appropriate. Similarly, the limitations of the database led to the use of single item constructs for operationalizing human capital and financial capital. The study tested for the moderating effect on only one country-level factor, namely, property rights. It is important to acknowledge that the cross-sectional design limited the possibility to control from other country-level factors. However, from Table 2, it can be observed that macro-environment factors other than those related to property rights have remained relatively stable during the 2002–2009 period, indicating the significance of property rights protection. Finally, this research considers only entrepreneurial intention and not the actual commencement of the enterprise. Though this might be a limitation, past research has observed that higher levels of purpose are a good reflection of actual action in a vast number of new enterprises (De Clercq *et al.*, 2013; Levie and Autio, 2013). Despite these limitations, this study offers an understanding of the joint effect of individual resources and property rights on entrepreneurship in state-controlled economies like China.

Previous research has found that concentration of innovation in China is driven by agglomeration forces related to industry specialization (Crescenzi *et al.*, 2012). It has also been observed that different regions in China have adapted differently to the institutional transition (Shen and Tsai, 2016). Therefore, the talent pool and expertise related to a particular industry are likely to be co-located in distinct clusters or regions. Hence, future research could study the effect of industry- and cluster-level conditions on individuals' investment of resources towards business creation in China. As mentioned earlier, during the weak property rights regime, *guanxi* and informal networks played a crucial role in encouraging entrepreneurship (Li and Li, 2000; Guo and Miller, 2010; Nee and Oppen, 2012). Hence, it would be interesting to explore the combined influence that property rights and informal institutions have on encouraging individual resource investments towards firm

creation in China. Given the contrary evidence about necessity entrepreneurship, there is a need for further research to explore the effect of other institutional factors on necessity entrepreneurship in China and other countries that have undergone similar institutional transitions. Future research could also extend upon the work of Alon *et al.* (2013) to explore the contingent role of property rights transition on the internationalization of Chinese entrepreneurial firms. Similarly, given prior evidence of institutional context influencing the various variants of entrepreneurship like social and corporate differently in similar emerging market contexts (Agrawal and Sahasranamam, 2016; Sahasranamam and Ball, 2016, 2018), future research could extend this study to such contexts within China.

REFERENCES

- Agrawal, A. and Sahasranamam, S. (2016). “Corporate social entrepreneurship in India”, *South Asian Journal of Global Business Research*, Vol. 5 No.2, pp. 214-233.
- Ahlstrom, D. and Bruton, G. D. (2002), “An institutional perspective on the role of culture in shaping strategic actions by technology-focused entrepreneurial firms in China”, *Entrepreneurship Theory and Practice*, Vol. 26 No. 4, pp. 56–69.
- Ahlstrom, D. and Ding, Z. (2014), “Entrepreneurship in China: An overview”, *International Small Business Journal*, Vol. 32 No. 6, pp. 610–618.
- Ahmed, Z. U., Mahajar, A. J. and Alon, I. (2005), “Malay entrepreneurship: Historical, governmental, and cultural antecedents”, *International Journal of Entrepreneurship and Innovation Management*, Vol. 5 No. 3–4, pp. 168–186.
- Alon, I., Yeheskel, O., Lerner, M., and Zhang, W. (2013), “Internationalization of Chinese entrepreneurial firms”, *Thunderbird International Business Review*, Vol. 55 No. 5, pp. 495–512.
- Alon, I., Lerner, M. and Shoham, A. (2016), “Cross-national cultural values and nascent entrepreneurship: Factual versus normative values”, *International Journal of Cross Cultural Management*, Vol. 16 No. 3, pp. 321–340.
- Alon, I. and Rottig, D. (2013), “Entrepreneurship in emerging markets: New insights and directions for future research”, *Thunderbird International Business Review*, Vol. 55 No. 5, pp. 487–492.
- Anton, J. J. and Yao, D. A. (1994), “Expropriation and inventions: Appropriable rents in the absence of property rights”, *American Economic Review*, Vol. 84 No. 1, pp. 190–209.
- Arenius, P. and Minniti, M. (2005), “Perceptual variables and nascent entrepreneurship”, *Small Business Economics*, Vol. 24 No. 3, pp. 233–247.
- Arora, A., Fosfuri, A. and Gambardella, A. (2001), “Markets for technology and their implications for corporate strategy”, *Industrial and Corporate Change*, Vol. 10 No. 2, pp.

419–452.

Autio, E. and Acs, Z. J. (2010), “Intellectual property protection and the formation of entrepreneurial growth aspirations”, *Strategic Entrepreneurship Journal*, Vol. 4 No. 4, pp. 234–251.

Baker, T., Gedajlovic, E. and Lubatkin, M. (2005), “A framework for comparing entrepreneurship processes across nations”, *Journal of International Business Studies*, Vol. 36 No. 5, pp. 492–504.

Baptista, R., Karaöz, M. and Mendonça, J. (2014), “The impact of human capital on the early success of necessity versus opportunity-based entrepreneurs”, *Small Business Economics*, Vol. 42 No. 4, pp. 831–847.

Bates, T. (1995), “Self-employment entry across industry groups”, *Journal of Business Venturing*, Vol. 10 No. 2, pp. 143–156.

Batjargal, B. (2007), “Internet entrepreneurship: Social capital, human capital, and performance of Internet ventures in China”, *Research Policy*, Vol. 36 No. 5, pp. 605–618.

Baumol, W. J. (1990), “Entrepreneurship: Productive, unproductive, and destructive”, *Journal of Political Economy*, Vol. 98 No. 5, pp. 893–921.

Baumol, W. J. (2002), *The free-market innovation machine: Analyzing the growth miracle of capitalism*, Princeton University Press, Princeton, NJ.

Becker, G. S. (1994), *Human capital: A theoretical and empirical analysis with specific reference to education*, University of Chicago Press, Chicago, IL.

Bergmann, H. and Sternberg, R. (2007), “The changing face of entrepreneurship in Germany”, *Small Business Economics*, Vol. 28 No. 2–3, pp. 205–221.

Block, J., Sandner, P. and Spiegel, F. (2015), “How do risk attitudes differ within the group of entrepreneurs? The role of motivation and procedural utility”, *Journal of Small Business Management*, Vol. 53 No. 1, pp. 183–206.

Block, J. and Wagner, M. (2010), “Necessity and opportunity entrepreneurs in Germany: Characteristics and earning differentials”, *Schmalenbach Business Review*, Vol. 62, pp. 154–174.

Boettke, P. and Coyne, C. (2003), “Entrepreneurship and development: Cause or consequence?”, *Advances in Austrian Economics*, Vol. 6, pp. 67–87.

Brunt, L. (2011), *Property rights and economic growth: Evidence from a natural experiment*, CEPR Discussion Paper 6404, Bergen, Norway.

Bruton, G. D., Ahlstrom, D. and Li, H. (2010), “Institutional theory and entrepreneurship: Where are we now and where do we need to move in the future?”, *Entrepreneurship Theory and Practice*, Vol. 34 No. 3, pp. 421–440.

Bruton, G. D. and Chen, J. (2016), “Entrepreneurship research in Asia: What we know and where we move in the future”, *Journal of Industrial Integration and Management*, Vol. 1 No. 1, pp. 1–11.

Cai, R. (2015), *The transition from necessity-based start-up to subsequent opportunity entrepreneurship: A case study of China*, University of Tasmania, Tasmania, Australia.

Chatterjee, D. and Sahasranamam, S. (2014), “Trends in innovation management research in

- India – An analysis of publications for the period 1991–2013”, *Current Science*, Vol. 107 No. 11, pp. 1800–1805.
- Chatterjee, D. and Sahasranamam, S. (2018), “Technological innovation research in China and India: A bibliometric analysis for the period 1991–2015”, *Management and Organization Review*, Vol. 14 No. 1, pp. 179–221.
- De Clercq, D. and Arenius, P. (2006), “The role of knowledge in business start-up activity”, *International Small Business Journal*, Vol. 24 No. 4, pp. 339–358.
- De Clercq, D., Lim, D. S. K. and Oh, C. H. (2013), “Individual-level resources and new business activity: The contingent role of institutional context”, *Entrepreneurship Theory and Practice*, Vol. 37 No. 2, pp. 303–330.
- Cong, J. (2009), “Chinese informal financial systems and economic growth: A case study of China’s small and medium enterprises”, *Public Policy Review*, Vol. 5 No. 1, pp. 63–88.
- Crescenzi, R., Rodríguez-Pose, A. and Storper, M. (2012), “The territorial dynamics of innovation in China and India”, *Journal of Economic Geography*, Vol. 12, pp. 1055–1085.
- Dakhli, M. and De Clercq, D. (2004), “Human capital, social capital, and innovation: A multi-country study”, *Entrepreneurship & Regional Development*, Vol. 16 No. 2, pp. 107–128.
- Davidsson, P. and Honig, B. (2003), “The role of social and human capital among nascent entrepreneurs”, *Journal of Business Venturing*, Vol. 18 No. 3, pp. 301–331.
- Deng, S., Wang, X. and Alon, I. (2010), “Framework for female entrepreneurship in China”, *International Journal of Business and Emerging Markets*, Vol. 3 No. 1, pp. 3–20.
- DeSoto, H. (2000), *The mystery of capital: Why capitalism triumphs in the West and fails everywhere else*, Basic books New York, NY.
- Dimov, D. (2017), “Towards a qualitative understanding of human capital in entrepreneurship research”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 23 No. 2, pp. 210–227.
- Dixit, A. (1989), “Entry and exit decisions under uncertainty”, *Journal of Political Economy*, 97 No. 3, pp. 620–638.
- Elam, A. and Terjesen, S. (2010), “Gender and development”, *European Journal of Development Research*, Vol. 22 No. 3, pp. 331–348.
- Estrin, S., Korosteleva, J. and Mickiewicz, T. (2013a), “Which institutions encourage entrepreneurial growth aspirations?”, *Journal of Business Venturing*. Elsevier Inc., Vol. 28 No. 4, pp. 564–580.
- Estrin, S., Mickiewicz, T. and Stephan, U. (2013b), “Entrepreneurship, social capital, and institutions: Social and commercial entrepreneurship across nations”, *Entrepreneurship Theory and Practice*, Vol. 37 No. 3, pp. 479–504.
- Estrin, S., Mickiewicz, T. and Stephan, U. (2016), “Human capital in social and commercial entrepreneurship”, *Journal of Business Venturing*. Elsevier Inc., Vol. 31 No. 4, pp. 449–467.
- Galid, B. and Levine, P. (1986), “A behavioural model of entrepreneurial supply”, *Journal of Small Business Management*, Vol. 24 No. 4, pp. 45–53.
- Grant, R. (1996), “Toward a knowledge-based theory of the firm”, *Strategic Management*

Journal, Vol. 17, pp. 109–122.

Gujarati, D. N. and Gunasekar, S. (2004), *Basic Econometrics*, Tata McGraw Hill Education, New Delhi.

Guo, C. and Miller, J. K. (2010), “Guanxi dynamics and entrepreneurial firm creation and development in China”, *Management and Organization Review*, Vol. 6 No. 2, pp. 267–291.

Hajizadeh, A. and Zali, M. (2016), “Prior knowledge, cognitive characteristics and opportunity recognition”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 22 No. 1, pp. 63–83.

Hayes, A. F. (2013), *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*, Guilford Press, New York.

Heritage Foundation (2015), *Rule of law, 2015 Index of Economic Freedom*, available at: <http://www.heritage.org/index/rule-of-law> (accessed 15 October 2015).

Ho, Y. Y. P. and Wong, P. P. K. (2007), “Financing, regulatory costs and entrepreneurial propensity”, *Small Business Economics*, Vol. 28 No. 2, pp. 187–204.

Huang, Y. (2008), *Capitalism with Chinese characteristics*, Cambridge University Press, Cambridge.

Jiao, H., Alon, I. and Cui, Y. (2011), “Environmental dynamism, innovation, and dynamic capabilities: The case of China”, *Journal of Enterprising Communities: People and Places in the Global Economy*, Vol. 5 No. 2, pp. 131–144.

Jimenez, A., Puche-Regaliza, J.C., Jiménez-Eguizábal, J.A. and Alon, I. (2017), “Political discretion and corruption: The impact of institutional quality on formal and informal entrepreneurship”, *European Journal of International Management*, Vol. 11 No. 3, pp. 280–300.

Johnson, S., McMillan, J. and Woodruff, C. (2002), *Property rights and finance*, *American Economic Review*, Vol. 92 No.5, pp.1335-1356.

Kim, P. H. and Li, M. (2014), “Seeking assurances when taking action: Legal systems, social trust, and starting businesses in emerging economies”, *Organization Studies*, Vol. 35 No. 3, pp. 359–391.

Klyver, K., Hindle, K. and Meyer, D. (2008), “Influence of social network structure on entrepreneurship participation – A study of 20 national cultures”, *International Entrepreneurship and Management Journal*, Vol. 4 No. 3, pp. 331–347.

Krug, B. and Hendrichke, H. (2003), “China incorporated: Property rights, networks, and the emergence of a private business sector in China”, *Managerial Finance*, Vol. 29 No. 12, pp. 32–44.

Krug, B. and Hendrichke, H. (2008), “Framing China: Transformation and institutional change through co-evolution”, *Management and Organization Review*, Vol. 4 No. 1, pp. 81–108.

Kuckertz, A., Berger, E. S. C. and Mpeqa, A. (2016), “The more the merrier? Economic freedom and entrepreneurial activity”, *Journal of Business Research*, Vol. 69 No. 4, pp. 1288–1293.

Lee, S.-H., Yamakawa, Y., Peng, M.W. and Barney, J.B., (2011), “How do bankruptcy laws affect entrepreneurship development around the world?”, *Journal of Business Venturing*, Vol.

26 No. 5, pp. 505–520.

Levie, J. and Autio, E. (2013), *Growth and growth intentions: A meta-analysis of existing evidence*, Enterprise Research Centre White Paper, No. 1, Birmingham.

Li, S. (2004), “Why is property right protection lacking in China? An institutional explanation”, *California Management Review*, Vol. 46 No. 3, pp. 100–115.

Li, S. (2013), “China’s (painful) transition from relation-based to rule-based governance: When and how, not if and why”, *Corporate Governance: An International Review*, Vol. 21 No. 6, pp. 567–576.

Li, S. and Li, S. (2000), “The economics of guanxi”, *China Economic Quarterly*, Vol. 4 No. 1, pp. 40–42.

Liao, D. and Sohmen, P. (2001), “The development of modern entrepreneurship in China”, *Stanford Journal of East Asian Affairs*, Vol. 1, pp. 27–33.

Liu, A. P. (1986), *How China is ruled*, Prentice Hall, Englewood Cliffs, NJ.

Liu, Y. (2002), *Development of private entrepreneurship in China: Process, problems and countermeasures*, People's Bank of China Quarterly Statistical Bulletin, Chinese Academy of Social Science (CASS) Working Paper.

Marcotte, C. (2014), “Entrepreneurship and innovation in emerging economies: Conceptual, methodological and contextual issues”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 20 No. 1, pp. 42–65.

Marvel, M. R., Davis, J. L. and Sproul, C. R. (2016), “Human capital and entrepreneurship research: A critical review and future directions”, *Entrepreneurship: Theory and Practice*, Vol. 40 No. 3, pp. 599–626.

McMullen, J. S., Bagby, D. R. and Palich, L. E. (2008), “Economic freedom and the motivation to engage in entrepreneurial action”, *Entrepreneurship Theory and Practice*, Vol. 32 No. 5, pp. 875–896.

McMullen, J. S. and Dimov, D. (2013), “Time and the entrepreneurial journey: The problems and promise of studying entrepreneurship as a process”, *Journal of Management Studies*, Vol. 50 No. 8, pp. 1481–1512.

McMullen, J. S. and Shepherd, D. A. (2006), “Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur”, *Academy of Management Review*, Vol. 31 No. 1, pp. 132–152.

Minniti, M. and Nardone, C. (2007), “Being in someone else’s shoes: The role of gender in nascent entrepreneurship”, *Small Business Economics*, Vol. 28 No. 2–3, pp. 223–238.

Moen, J. (2005), “Is mobility of technical personnel a source of R&D spillovers?”, *Journal of Labor Economics*, Vol. 23 No. 1, pp. 81–114.

Nee, V. (1992), “Organizational dynamics of market transition: Hybrid forms, property rights and mixed economy in China”, *Administrative Science Quarterly*, Vol. 37 No. 1, pp. 1–27.

Nee, V. and Opper, S. (2012), *Capitalism from below: Markets and institutional change in China*, Harvard University Press, Cambridge, MA.

Neter, J., Kutner, M.H., Nachtsheim, C.J. and Wasserman, W., (1996), *Applied linear statistical models*, 4th edn., Irwin, Boston, MA.

- O'Brien, J. P., Folta, T. B. and Johnson, D. R. (2003), "A real options perspective on entrepreneurial entry in the face of uncertainty", *Managerial and Decision Economics*, Vol. 24 No. 8, pp. 515–533.
- Opper, S. and Nee, V. (2015), "Network effects, cooperation and entrepreneurial innovation in China", *Asian Business & Management*, Vol. 14 No. 4, pp. 283–302.
- Peng, M. W. (2003), "Institutional transitions and strategic choices", *Academy of Management Review*, Vol. 28 No. 2, pp. 275–296.
- Peng, Y. (2004), "Kinship, networks, and entrepreneurs in China's transitional economy", *American Journal of Sociology*, Vol. 105, pp. 1045–1074.
- Phan, P., Zhou, J. and Abrahamson, E. (2010), "Creativity, innovation, and entrepreneurship in China", *Management and Organization Review*, Vol. 6 No. 2, pp. 175–194.
- Qian, Y. and Wu, J. (2000), "China's transition to a market economy: How far across the river?", in Hope, N. C., Yang, D. T., and Li, M. Y. (eds), *How Far Across the River: Chinese Policy Reform at the Millennium*, Stanford University Press, Stanford, CA, pp. 31–63.
- Rawski, T. (1989), *Economic growth in Pre-war China*, University of California Press, Berkeley, CA.
- Reynolds, P. D., Bygrave, W.D., Autio, E., Cox, L.W., and Hay, M. (2002), *Global Entrepreneurship Monitor (GEM) 2002 Executive Report*, Global Entrepreneurship Research Association, London.
- Reynolds, P. D., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P. and Chin, N. (2005), "Global Entrepreneurship Monitor: Data collection design and implementation", *Small Business Economics*, Vol. 24 No. 3, pp. 205–231.
- Rosenberg, N. and Birdzell, L. E. (1986), *How the West grew Rich: The Economic Transformation of the Industrial World*, Basic books, New York.
- Rottig, D. (2016), "Institutions and emerging markets: Effects and implications for multinational corporations", *International Journal of Emerging Markets*, Vol. 11 No. 1, pp. 2–17.
- Sahasranamam, S. and Ball, C. (2016), "Sustainable procurement in social enterprises: Comparative case studies from India and Scotland", in Bals, L. and Tate, W. (eds), *Implementing triple bottom line sustainability into global supply chains*, Greenleaf Publishing, Sheffield, pp. 219–231.
- Sahasranamam, S. and Ball, C. (2018), "National context matters: Influence of national business system on social enterprises in Scotland and India", in Spence, L. J. et al. (eds), *Research Handbook on Small Business Social Responsibility: Global Perspectives*, Edward Elgar Publishing, Cheltenham, pp. 23–46.
- Sahasranamam, S. and Sud, M. (2016), "Opportunity and necessity entrepreneurship: A comparative study of India and China", *Academy of Entrepreneurship Journal*, Vol. 22 No. 1, pp. 21–40.
- Sambharya, R. and Musteen, M. (2014), "Institutional environment and entrepreneurship: An empirical study across countries", *Journal of International Entrepreneurship*, Vol. 12 No. 4, pp. 314–330.
- Schmiele, A. (2013), "Intellectual property infringements due to R&D abroad? A

- comparative analysis between firms with international and domestic innovation activities”, *Research Policy*, Vol. 42 No. 8, pp. 1482–1495.
- Shane, S. (2000), “Prior knowledge and the discovery of entrepreneurial opportunities”, *Organization Science*, Vol. 11 No. 4, pp. 448–469.
- Shane, S. (2001), “Technological opportunities and new firm creation”, *Management Science*, Vol. 47 No. 2, pp. 205–220.
- Shane, S. and Cable, D. (2002), “Network ties, reputation, and the financing of new ventures”, *Management Science*, Vol. 48 No. 3, pp. 364–381.
- Shane, S. and Venkataraman, S. (2000), “The promise of entrepreneurship as a field of research”, *Academy of Management Review*, Vol. 25 No. 1, pp. 217–226.
- Shen, X. and Tsai, K. S. (2016), “Institutional adaptability in China: Local developmental models under changing economic conditions”, *World Development*, Vol. 87, pp. 107–127.
- Shi, H. X., Shepherd, D. M. and Schmidts, T. (2015), “Social capital in entrepreneurial family businesses: The role of trust”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 21 No. 6, pp. 814–841.
- Shu, E. (2017), “Emergent strategy in an entrepreneurial firm: The case of Lenovo in its formative years”, *International Journal of Emerging Markets*, Vol. 12 No. 3, pp. 625–636.
- Taormina, R. J. and Kin-Mei Lao, S. (2007), “Measuring Chinese entrepreneurial motivation: Personality and environmental influences”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 13 No. 4, pp. 200–221.
- Teece, D. J. (1986), “Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy”, *Research Policy*, Vol. 15 No. 6, pp. 285–305.
- The Economist (2011), “Entrepreneurship in China: Let a million flowers bloom”, *The Economist*, March, p. 79.
- Thurik, R., Carree, M.A., Van Stel, A. and Audretsch, D.B. (2008), “Does self-employment reduce unemployment?”, *Journal of Business Venturing*, Vol. 23 No. 6, pp. 673–686.
- Tonoyan, V., Strohmeier, R., Habib, M. and Perlitz, M. (2010), “Corruption and entrepreneurship: How formal and informal institutions shape small firm behavior in transition and mature market economies”, *Entrepreneurship Theory and Practice*, Vol. 34 No. 5, pp. 803–831.
- Venkataraman, S. (1997), “The distinctive domain of entrepreneurship research”, in Katz, J. (ed.), *Advances in Entrepreneurship, Firm Emergence and Growth*, JAI Press, Greenwich, pp. 119–138.
- Verheul, I., Stel, A. Van and Thurik, R. (2006), “Explaining female and male entrepreneurship at the country level”, *Entrepreneurship & Regional Development*, Vol. 18 No. 2, pp. 151–183.
- Wang, L., Prieto, L., Hinrichs, K.T. and Aguirre Milling, H. (2012), “A cross-cultural study of motivation for self-employment: Comparing China, Mexico, and the USA”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 18 No. 6, pp. 649–672.
- Williams, C. C. and Round, J. (2009), “Evaluating informal entrepreneurs’ motives: Evidence from Moscow”, *International Journal of Entrepreneurial Behavior & Research*, Vol. 15 No. 1, pp. 94–107.

World Bank (2015a), *Ease of doing Business, Doing Business*, available at: <http://data.worldbank.org/indicator/IC.BUS.EASE.XQ> (accessed 30 November 2015).

World Bank (2015b), *Entrepreneurship, Doing Business*, available at: <http://www.doingbusiness.org/data/exploretopics/entrepreneurship> (accessed 30 November 2015).

World Bank (2015c), *China*, available at: <http://data.worldbank.org/country/china> (accessed 21 April 2015).

World Bank (2015d), *World Governance Indicators, The Worldwide Governance Indicators (WGI) Project*, available at: <http://info.worldbank.org/governance/wgi/index.aspx#home> (accessed 21 April 2015).

Wright, M., Lockett, A., Clarysse, B. and Binks, M., (2006), “University spin-out companies and venture capital”, *Research Policy*, Vol. 35 No. 4, pp. 481–501.

Xavier-Oliveira, E., Laplume, A. O. and Pathak, S. (2015), “What motivates entrepreneurial entry under economic inequality? The role of human and financial capital”, *Human Relations*, Vol. 68 No. 7, pp. 1183–1207.

Xu, C. and Zhang, X. (2009), *The Evolution of Chinese Entrepreneurial Firms: Township-Village Enterprises Revisited*, IFPRI Discussion Paper #854. Washington, DC: IFPRI.

Xu, H. and Zhao, L. (2008), “Legitimacy and private entrepreneurship in China’s transitional economy, 1978-1996”, *American Sociological Association Annual Meeting*, pp. 1–26.

Yamakawa, Y., Khavul, S., Peng, M.W. and Deeds, D.L. (2013), “Venturing from emerging economies”, *Strategic Entrepreneurship Journal*, Vol. 7, pp. 181–196.

Zucker, L. G., Darby, M. R. and Torero, M. (2002), “Labor mobility from academe to commerce”, *Journal of Labor Economics*, Vol. 20 No. 3, pp. 629–659.

Figure 1. Conceptual model

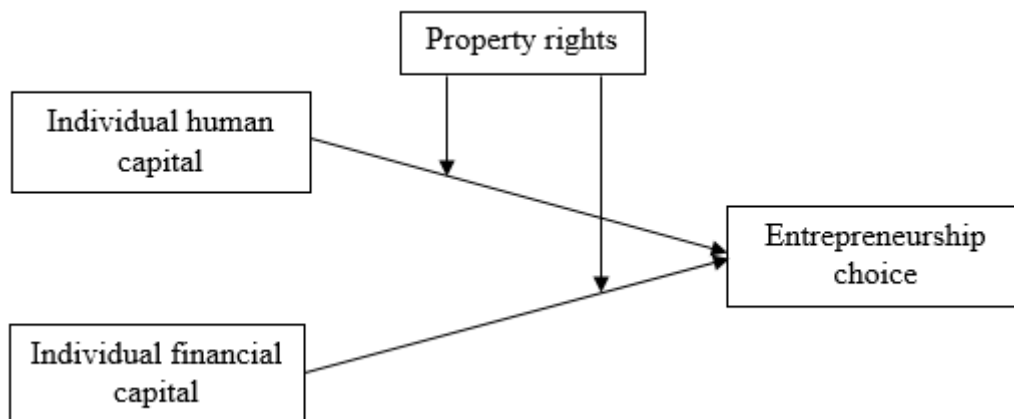


Table 1. Entrepreneurship rates in China

<i>Year</i>	<i>Opportunity entrepreneurship (%)</i>	<i>Necessity entrepreneurship (%)</i>	<i>Total entrepreneurship activity (%)</i>
2002	6.97	5.61	12.34
2003	5.45	6.11	11.59
2005	7.30	6.22	13.72
2006	9.59	6.27	16.19
2007	9.84	6.21	16.43
2009	9.17	9.09	18.70

*Extended from Sahasranamam and Sud (2016) to include 2009 statistics.

Table 2. Macro-environmental characteristics of China for the period 2002–2009

<i>Year</i>	<i>GDP per capita (current US\$)</i>	<i>GDP growth (annual %)</i>	<i>Control of Corruption</i>	<i>Government Effectiveness</i>	<i>Political Stability and Absence of Violence/Terrorism</i>	<i>Regulatory Quality</i>	<i>Rule of Law</i>	<i>Voice and Accountability</i>
2002	1141.76	8.36	-0.65	-0.05	-0.36	-0.53	-0.41	-1.57
2003	1280.59	9.34	-0.4	-0.03	-0.56	-0.33	-0.46	-1.54
2004	1498.17	9.42	-0.55	0	-0.36	-0.27	-0.43	-1.45
2005	1740.09	10.7	-0.63	-0.09	-0.47	-0.13	-0.48	-1.49
2006	2082.18	12.06	-0.5	0.08	-0.54	-0.18	-0.54	-1.68
2007	2673.29	13.6	-0.59	0.19	-0.49	-0.15	-0.44	-1.66
2008	3441.22	9.06	-0.54	0.15	-0.48	-0.13	-0.33	-1.64
2009	3800.47	8.69	-0.54	0.11	-0.42	-0.2	-0.32	-1.65

Table 3. Summary statistics of the sample

<i>Variables</i>	2002		2009	
	<i>Mean</i>	<i>s.d.</i>	<i>Mean</i>	<i>s.d.</i>
Individual entrepreneurship choice	0.05	0.23	0.07	0.25
Individual human capital	0.35	0.47	0.37	0.48
Individual financial capital	0.61	0.48	0.69	0.46
Individual social capital	0.57	0.49	0.59	0.49
Age	40.20	12.13	38.93	11.86
Gender	0.48	0.49	0.48	0.49
Fear of failure	0.35	0.47	0.30	0.46

Table 4. Correlation matrix for 2002 (N = 2054)

<i>Variables</i>	1	2	3	4	5	6	7
1. Individual entrepreneurship choice	1						
2. Individual human capital	0.17*	1					
3. Individual financial capital	-0.03	0.11*	1				
4. Individual social capital	0.11*	0.32*	0.16*	1			
5. Age	-0.09*	-0.21*	-0.13*	-0.19*	1		
6. Gender	0.07*	0.18*	0.08*	0.07*	-0.01	1	
7. Fear of failure	0.01	0.04*	-0.06*	0.07*	0.00	-0.02*	1

*p < 0.05; Source: GEM 2002.

Table 5. Correlation matrix for 2009 (N=3068)

<i>Variables</i>	1	2	3	4	5	6	7
1. Individual entrepreneurship choice	1						
2. Individual human capital	0.17*	1					
3. Individual financial capital	0.07*	0.09*	1				
4. Individual social capital	0.12*	0.25*	0.12*	1			
5. Age	-0.06*	-0.07*	-0.12*	-0.09*	1		
6. Gender	0.04*	0.12*	0.04*	0.06*	0.06*	1	
7. Fear of failure	-0.02	-0.05*	-0.00	0.05*	0.03	-0.07*	1

*p < 0.05; Source: GEM 2009.

Table 6. Logit regression results predicting entrepreneurship entry in 2002

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Controls: Individual level				
Age	-0.03*** (0.00)	-0.03** (0.00)	-0.03** (0.00)	-0.03*** (0.00)
Gender	0.59** (0.19)	0.61** (0.20)	0.68** (0.20)	0.68*** (0.21)
Fear of failure	0.08 (0.22)	0.07 (0.22)	0.00 (0.22)	0.00 (0.23)
Individual social capital	0.96*** (0.23)	0.97*** (0.24)	1.03*** (0.24)	1.03** (0.25)
Explanatory variables				
H1: Individual human capital		-0.29 (0.22)		-0.09 (0.24)
H2: Individual financial capital			-0.61** (0.20)	-0.59** (0.21)
Constant	-2.65*** (0.40)	-2.51*** (0.41)	-2.26*** (0.43)	-2.23*** (0.44)
Log-likelihood	-429.43	-425.05	-399.04	-395.52
No. of observations	2048	2029	1919	1901

*p < 0.10 **p < 0.05 ***p < 0.001; Standard errors specified in parenthesis.

Table 7. Logit regression results predicting entrepreneurship entry in 2009

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Controls: Individual level				
Age	-0.01** (0.00)	-0.01* (0.00)	-0.01** (0.00)	-0.01* (0.00)
Gender	0.27** (0.13)	0.24* (0.13)	0.26** (0.13)	0.25* (0.13)
Fear of failure	-0.17 (0.14)	-0.17 (0.14)	-0.15 (0.14)	-0.15 (0.14)
Individual social capital	0.97*** (0.15)	0.96*** (0.16)	0.90*** (0.15)	0.90*** (0.15)
Explanatory variables				
H1: Individual human capital		0.28* (0.15)		0.24* (0.15)
H2: Individual financial capital			0.46*** (0.16)	0.43*** (0.17)
Constant	-2.57*** (0.27)	-2.72*** (0.28)	-2.85*** (0.30)	-2.96** (0.31)
Log-likelihood	-847.46	-841.19	-821.68	-819.40
No. of observations	2979	2947	2860	2847

*p < 0.10 **p < 0.05 ***p < 0.001; Standard errors specified in parenthesis.

Table 8. Logit regression results predicting opportunity and necessity entrepreneurship entry in 2002 and 2009

<i>Variables</i>	<i>2002</i>		<i>2009</i>	
	<i>OE</i>	<i>NE</i>	<i>OE</i>	<i>NE</i>
Controls: Individual level				
Age	-0.03** (0.00)	-0.02* (0.00)	-0.01* (0.00)	-0.02*** (0.00)
Gender	0.75** (0.19)	0.28 (0.20)	0.37** (0.12)	-0.06 (0.12)
Fear of failure	-0.34 (0.24)	0.13 (0.23)	-0.36** (0.14)	-0.18 (0.13)
Individual social capital	1.25*** (0.26)	0.72** (0.23)	0.92*** (0.14)	0.65*** (0.13)
Explanatory variables				
H1: Individual human capital	0.11 (0.20)	-1.49** (0.22)	0.17 (0.14)	-0.45** (0.12)
H2: Individual financial capital	0.29 (0.22)	-1.15*** (0.22)	0.89*** (0.17)	0.06 (0.13)
Constant	-2.84*** (0.44)	-1.88*** (0.45)	-3.21*** (0.30)	-1.44** (0.27)
Log-likelihood	-427.38	-364.27	-918.00	-977.52
No. of observations	1901	1901	2847	2847

* $p < 0.10$ ** $p < 0.05$ *** $p < 0.001$; Standard errors specified in parenthesis.