The Role of Internationalization and Geographic Location on Entrepreneurial Intention: Empirical Evidence from China

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Abstract

This study examines the importance of regional internationalization on entrepreneurial intention. Empirical results indicate that location significantly impacts entrepreneurial intention, with rural China outpacing highly internationalized Shenzhen and Hong Kong. Integrating data from multiple sources to create an operational measure of internationalization intensity, this study contributes to the literature by revealing a complex relationship between internationalization and entrepreneurship. While highly internationalized locations allow better access to resource markets they may also hinder entrepreneurship due to higher competition for resources. Striking results provide empirical evidence to support recent theories on the importance of within country comparative differences in internationalization and entrepreneurship.

Key Words: Internationalization, Entrepreneurship, Geographic Location, China

1. Executive Summary

There are a number of compelling reasons for examining the link between internationalization and entrepreneurship in China. From a policy perspective, institutional shifts targeting internationalization and entrepreneurship in China over the last three decades have resulted in dynamic but rather uneven internationalization intensity and new venture activity across regions.

Our knowledge of the entrepreneurship process in emerging economies is also limited while it remains important for us to better understand the recent extraordinary growth phenomenon behind the world's largest and fastest growing economies which is rapidly reshaping our global landscape. Many basic questions need to be answered, such as how can institutional transition shape the nature of entrepreneurial opportunities? Does this transition impact the entrepreneurial process differently between regions?[1] How might different degrees of internationalization impact entrepreneurial intention in transitional emerging markets and what does this tell us about the ability of policy to stimulate venture formation?

The aggressive shifts in national and region policy to stimulate internationalization and entrepreneurship in China provide a natural experiment for examining the impact of these reforms on the early stages of entrepreneurship –what is sometimes referred to as "entrepreneurial intention". This study make use of the most recent update of the Global Entrepreneurship Monitor (GEM) data to examine at the individual level, the drivers of entrepreneurship between regions in China that have radically different levels of internationalization.

Empirical findings provide a clear contribution to the literature, revealing the complex nature of this link. Regions with higher levels of internationalization appear to have lower entrepreneurial intention while more rural areas with lower levels of internationalization appear to be those that have benefited most from recent reforms with 1) higher levels of entrepreneurial intention, and 2)

higher percentages of both opportunity and necessity based entrepreneurship. Clearly regional differences matter, particularly in a larger and more diverse emerging economy like China. This suggests a more complex relationship between institutional reforms and entrepreneurship than suggested by many entrepreneurial studies on more developed and homogeneous countries. One implication of this study is that policy reform, whether in China or other countries, needs to consider that reform policies are not of a "one size fits all" nature, in that policies may have differing impacts across and within a country depending on the regional/locational characteristics.

2. Introduction

Ecological theory suggests that local environment plays a key role in providing firms with access to the necessary resources to start-up and grow. Over time, these can grow into geographic clusters because these locations are successful in providing many of the resources needed to operate and grow firms (Audretsch and Feldman, 1996). Dunning (1998), Porter, (1990), and FGM (2008) identify the resources within a firm's geographic location as a key determination of the subsequent level of internationalization activities pursued. We argue that the resource benefits of a particular geographic location with higher degrees of internationalization intensity may result in a greater ability for international new ventures to form.

Entrepreneurship in emerging economies, including China, is one of the least studied significant economic phenomenons in the world today.[1] Thirty years of extensive market reforms and policy shifts centered on internationalization, entrepreneurship, and economic growth have created a dynamic market economy with burgeoning opportunities for both entrepreneurs and the researchers who study them. This relatively recent internationalization or opening up of the Chinese economy

has implications for the tenor of the entrepreneurial environment and the firm's access to international resource markets, thus providing fertile ground to examine the linkage between internationalization and the rise of the global-born entrepreneurial firm. This paper relates entrepreneurial intention to shifts in the institutional environment, focusing specifically on the impact of internationalization variations between geographic regions in China.

This paper's focus is on the individuals who perceive opportunities and plan to take advantage of them given the varying international intensity of their particular regional environment. As an unusually large and non-homogeneous country, China is characterized by a highly diverse set of languages, institutions, resources and policies at the regional and national level which interact to modify the degree to which internationalization and entrepreneurship are possible or stimulated in any specific location. This suggests that regional analysis is not only justified but fundamentally important in order to understand the entrepreneurship process "in China". Ahlstrom and Burton (2010) in their study on Russia remind us that while transition economies are the fastest growing in the world and hold a majority of the world's population, our understanding of these economies and the dynamics of firm growth is currently rather limited. This paper addresses this lacuna of information on this topic by directly examining the link between internationalization by region and new venture formation in China.

Location has been found to be important in many previous studies of entrepreneurship for a variety of reasons (Audretsch and Feldman, 1996, Armington and Acs, 2002, Fernhaber et. al., 2008), but in the context of emerging economies it takes on an additional importance as regional policies, economic reforms, and institutions tend to vary significantly between locales compared to more developed economies.[2]

[2] Although Fernhaber et. al (2008) even find significant impacts of location on entrepreneurship in the US.

This study contributes to the literature by examining the early stages of the entry decision of individuals in three distinct locations with different levels of internationalization in China from 2002-2007, controlling for the potential importance of individual characteristics and perceptions, about opportunities within their communities.

3. Theoretical Framework

The multidisciplinary nature of international entrepreneurship has resulted in a rich blend of literature which draws from such disciplines as international business, entrepreneurship, economics, psychology, financing, marketing, sociology and more. There are clearly numerous disciplines and approaches in the literature to studying firm formation. This study will use an approach that integrates an economic based entrepreneurship framework with an explicit link to the internationalization of the business environment in China –which varies in internationalization intensity between regions.

Oviatt and McDougall (1994) provides a theoretical foundation for the study of international new ventures, defining them as those firms which "from inception seek to derive significant competitive advantage from the use of resources and sale of outputs in multiple countries." Later Oviatt and McDougall (OM) (2005) extends this study presenting a model detailing how the speed of entrepreneurial internationalization is influenced by several forces, including technological advances, opportunity, perceptions of entrepreneurs, knowledge and networks. More recently, Fernhaber et al. (2008) provides empirical evidence on the importance of geographic location for international entrepreneurship concluding that "location influences new venture internationalization and firm characteristics impact the nature of this relationship". Our study complements this work by empirically examining entrepreneurial dynamics between regions in China which have varying degrees of internationalization. As such, we examine the link between internationalization by location and entrepreneurship providing a connection to the framework outlined in Fernhaber et al.

(2008) which combines insights from international business, entrepreneurship, and ecological theory. Many of the new firms in China are what they define as international new ventures -firms which start out with an intentional or strategic international focus as opposed to a traditional multinational enterprise (MNE) which starts local and grows into an international firm over time.

This study asserts that regional entrepreneurial talent will be responsive to international and entrepreneurial policies reforms, and that regional environments can vary in their degree of internationalization. In the case of China, reforms were specifically targeted to special regions to improve and stimulate international entrepreneurship within that region. These reforms directly stimulated internationalization in the form of: foreign direct investment, strategic alliances with foreign resources or partners, and participation in foreign markets. This internationalization was in some cases even further encouraged or subsidized by differing layers of regional and national policies which encouraged globalization within the entrepreneurial sector. The significance of the international focus of the new entrepreneurial class is therefore important for understanding the dynamics of firm formation generally in China in over the last three decades. The primary contribution of this study is to provide framework to examine whether entrepreneurial activity was higher/lower in more international environments and how entrepreneurial dynamics may vary between regions with varying international intensity. From a policy perspective it is interesting to consider if policies leading to increased internationalization of a region also drive entrepreneurial activity in that region, or whether other internationalization may reduce entrepreneurial activity due to competition or other reasons. For example locations with higher industrial clustering like Hong Kong, may have more entrepreneurship due to better availability of resources including resources used for the internationalization process, or less entrepreneurship, if competition or other factors constrain the potential entrepreneur's ability to access the available resources. As such this study

contributes to our knowledge about the importance of the linkage between internationalization of regions and entrepreneurial activity in a highly diverse emerging economy.

There are several recent studies in the entrepreneurship literature which inform us on the characteristics, behaviors and perceptions of Chinese entrepreneurs. One branch of these studies focuses on the effects of culture and cross-national differences on the behavior of entrepreneurs. Brush & Chaganit (1996) and Lau & Busenitz (2001) suggest that the propensity to engage in entrepreneurial activities is a function of individual cognitions in China. Another branch of the literature, which includes Hayton, George & Zahra (2002), Holt (1997), McGrath et al., (1992), and Tan (2002), examine the relationships between cultural demographics, economics or structural characteristics and entrepreneurial choices. Institutional factors are also of potential importance. China like many emerging economies, does not have well developed capital markets, so many entrepreneurs rely more heavily on informal funding to support venture formation and growth. Studies such as Elston, Chen, and Weidinger (ECW) (2013) find that both demographic and financial variables are significant in influencing the individual's decision to start a firm in China.

This study will build on this work by linking the degree of internationalization within three distinct areas (mainland China, Shenzhen, and Hong Kong) to the level of entrepreneurial activity in each region. Note hereinafter the terms China or "broader China" refers to all regions of China including Shenzhen and Hong Kong, whereas the term "mainland China" will refer to a regional area which explicitly excludes Shenzhen, and Hong Kong. Per GEM definitions all references to China exclude regions of Macau and Taiwan.

4. Institutional shifts, regional internationalization and entrepreneurship

Generally speaking, China is one of the top 10 countries in the world in terms of the pace of economic reforms aimed at improving the environment for doing business. The IFC *Doing Business 2007: How to Reform* documents a number of institutional reforms that China implemented to speed business registration and trading, ease access to credit, and strengthen investor protection, making it the top reformer in the Asian region and the fourth best worldwide in 2007.

China is a large and diverse country both in geographic terms and due to the complex nature of the regional economies. There have emerged ten regional economies with major metropolitan centers emerging in China with policies of market-based institutional reform and a steady decentralization of economic power to regional authorities (Teng, 2000). This has positively impacted entrepreneurial opportunities and resources in these centers. Because of the potential importance of regional differences in the economy and the GEM data construct, we can study the entrepreneurial behavior in one of these ten major regional economies -Shenzhen, in addition to Hong Kong or Special Administrative Region (SAR) and mainland China –which includes relatively more rural communities across a broader geographic area.

Another important institutional reform is the recently established credit information registry for consumer loans. 340 million citizens now have credit histories, improving their access to credit (IFC, 2011). Amendments to the company law strengthened investor protections against insider dealings. And new online customs procedures reduced the time to import and export by two days, helping international competitiveness. (Hong Kong in particular has improved investor protections by increasing the availability of internal company documents for inspection, boosting transparency. The time to import and export dropped from 16 and 13 days to only five days, after three new boundary bridges opened and customs documents were simplified and put online (IFC, 2011).

4.1 Mainland China

Before recent reforms, mainland China was a largely rural and agricultural based economy (Logan, 1992). Mainland China is ranked number one in global incoming foreign direct investment (FDI) worldwide and the value of its exports are the fourth highest in the world, but the geographic distribution is not evenly spread throughout. The government's encouragement of joint ventures with foreign investors, combined with the availability of a large low wage labor force, has boosted exports of Chinese consumer products to the West at phenomenal levels (Logan, 1992:3).

4.2 Shenzhen

Shenzhen was the first city to be set up as a Special Economic Zone (SEZ) in China. Because of its geographic location near Hong Kong, Shenzhen is geographically situated to be a natural link for Hong Kong to the rest of China where lower wages and market reform produces opportunities for entrepreneurs with ties to Hong Kong. Its proximity to Hong Kong has been a boon for both its internationalization and entrepreneurial activity. About percent of its entrepreneurs have already setup an office in Hong Kong or plan to do so in the next two years (GEM, 2003). The purposes of these offices are mostly for marketing and sales and import/export In the Shenzhen area, there is adequate private investment capital but almost no formal venture capital and relatively little in the availability of bank loads and bond funding. In spite of this weakness in capital markets, through government policies concerning financial support, commercial infrastructure, market accessibility and development, the local government is considered both more transparent and efficient in supporting economic development than compared to other regions in China (GEM,. 2003: 89-92). By 2003 Shenzhen's gross domestic product (GDP) growth rate was about 17.8 percent, making Shenzhen the fastest growing modern city in China (GEM, 2003).

A comparison of internationalization across several different cities and regions in China is listed in Appendix 3. Logan (1992:69) provides a detailed ranking of the degrees of internationalization of

cities based on 9 key factors: foreign funded industrial enterprises, enterprises with the largest valued imports and exports, offices of foreign-funded telecommunications, offices of foreign-funded consumer enterprises, foreign-funded financial institutions, foreign capital actually used, import and exports through customs, international flights, and foreign travelers. Shenzhen ranks in the top 5 cities for 6 of theses international factors. Further for the top 500 import and export regions, Shenzhen ranks 15th in 1995, while coming in as the 5th largest location in China for foreign funded firms. Using these and other statistics to gauge the degree of internationalization in different areas of China, Shenzhen ranks in the top 6 locations overall in terms of internationalization.

4.3 Hong Kong

The highest level of international intensity would be mature international or global cities, on a par with London, New York, or Tokyo ---in this study Hong Kong is identified as such. Until 1997 Hong Kong was Britain's international free market city in Asia. Now part of China it is at the center of the economy of the Pearl River Delta region. In 2000 institutional changes were introduced to bring Hong Kong in the realm of a knowledge-based world class economy. These include the introduction of a Chief Executive Counsel of Advisors on Innovation and Technology and The Innovation and Technology Commission, with its economy concentrated in services such as software, logistic, business services and medicine. From an industrial organization perspective, most of its manufacturing base has been moved to Shenzhen and the rest of China to take advantage of lower costs of production and resources. Hong Kong has a highly developed capital market, as well as many world class universities including The University of Hong Kong, the Chinese University of Hong Kong, The City University, Hong Kong Polytechnic University and the Hong Kong University of Sciences and Technology. Its' Total Entrepreneurial Activity (3.2) is in line with that of

mature developed economies of Italy (3.2) and Japan (2.8), which distinguishes it from the emerging market nature of mainland China.

Figure 1
Level of Internationalization by Region

Low High

← ---------- →

Mainland China Shenzhen, Hong Kong

Table 1 reports global measures of Total Entrepreneurial Activity (TEA) by country and in some cases regions, including a breakdown of the TEA into Opportunity v Necessity based entrepreneurship. Hong Kong's TEA is a low 3.2 percent, compared with Shenzhen's 10.5 percent, China's 11.6 percent, but it is consistent with the TEA for other developed countries (GEM TEA averages of 8.9 percent across all countries in the study). Shenzhen's TEA is not only high, but entrepreneurs start businesses mainly to seize opportunities (opportunity TEA of 8.6 percent) rather than out of necessity (necessity TEA of 1.8 percent). These TEAs are more like an advanced entrepreneurial economy's than a developing economy's. Hong Kong's necessity TEA of 1.1 percent is similar other developed economies' and mid-ranking in among the GEM economies, but its opportunity based TEA is fourth from the bottom (GEM, 2003).

Table 1

Total Entrepreneurial Activity by Opportunity and Necessity

Economy	Total TEA	Opportunity TEA	Necessity TEA
Belgium	3.87	3.34	0.32
Brazil	12.9	6.9	5.5
Canada	8.01	6.45	1.05
Chile	16.9	10.5	5.9
China	**11.6**	**5.5**	**5.5**
Croatia	2.56	1.74	0.59
Denmark	5.9	5.3	0.4
Finland	3.14	2.7	0.3
France	1.4	0.81	0.51
Germany	5.2	3.7	1.2
Greece	6.8	4.2	2.6
Hong Kong	**3.2**	**2.2**	**1.12**
Italy	3.19	2.9	0.22
Japan	2.8	2	0.59
Netherlands	3.6	3	0.4
Shenzhen	**10.49**	**8.63**	**1.83**
Singapore	4.9	3.9	1
Slovenia	4	3.1	0.8
Sweden	4.1	3.7	0.4
Switzerland	7.4	6.3	1
U.S.A.	11.9	9.1	1.7
Venezuela	27.3	16.1	11.6
Ave. (30 countries)	8.93	6.4	2.4

Source: Adapted from GEM: Hong Kong and Shenzhen 2OO3, *Adult Population Survey*

Based on these TEA percentages, we can define a continuum of entrepreneurial activity by region:

Figure 2

Total Entrepreneurial Activity (TEA) by Region

Low High

←----------→

Hong Kong (3.2) Shenzhen (10.5), Mainland China (11.6)

There are two distinct possibilities for potential impact of internationalization/region on the level of entrepreneurial activity. The first is that increases in the internationalization of a region could lead to an increase in entrepreneurial activity if market reforms are effective in stimulating entrepreneurship through various internationalization measures, including regional incentives to firms for internationalization The other is possibility is, that since Hong Kong is already relatively more developed region regarding entrepreneurial activity per the TEA measure (GEM, 2003 & 2004) compared to other regions, we might see that on the margin, there is more entrepreneurial opportunities in Shenzhen or mainland China that are currently available to be exploited or less competition. We will therefore formally test for the potential impact of degree of internationalization on entrepreneurial intention in our model:

Hypothesis 1: The more international the region the higher the probability of starting a new venture.

4. Modeling entrepreneurial activity

To date the entrepreneurship literature is replete with studies which model entrepreneurial choice focusing on various personal characteristics, such as gender, age and education. Parker (2004) provides a comprehensive survey of theories, empirical models, and recent studies on this topic. Entrepreneurial opportunities in the first iteration of the GEM model (Reynolds et al. 1999: 11) explicitly include both "existence" and "perception" of opportunities under this heading. Schade, Köllinger, and Minniti (2007) for example use GEM data for Western Europe to show that perception of opportunities can be important in the decision to start a firm in such countries as Germany, and as such will be included in this study.

This paper starts with a benchmark model of the entrepreneurial decision controlling for age, and race as outlined in other studies including ECW (2013), and then tests for the significance of several

key variables which should important in the entrepreneurial decision. We would expect that many of these key variables (networking ability, perceived opportunities, fear of failure, entrepreneurial experience) may vary in importance depending on the degrees of internationalization and policy differentials between regions. The following lists and discusses how these variables may impact entrepreneurial intention.

Gender: Deng, and Wang and Alon (2011) detail a supportive institutional structure for women entrepreneurs in China, suggestive that empirical studies of female entrepreneurial success in China may yield some surprises. However (GEM, 2003 and Minniti & Bygrave 1999) indicate that women are less likely to be entrepreneurs than men and also that they are more likely to be involved in necessity based versus opportunity based entrepreneurship. While being female may reduce the probability of starting a firm generally, this impact may also be reduced in highly competitive labor markets with higher degrees of internationalization -like in Shenzhen or Hong Kong.

Hypothesis 2: Being female leads to a reduction in the probability of starting a new venture

*Education***:** Education is often used as a proxy for quality of entrepreneurial talent, and is well supported in the literature as having a generally positive impact on the decision to become an entrepreneur. Some studies have suggested that education can be a proxy for knowledge, which some moderates or improves the speed at which an opportunity is perceived or exploited (OM, 2005). According to GEM 2003, higher education has a negative impact on entrepreneurship in Hong Kong, but conversely has a positive impact on entrepreneurship –particularly high technology entrepreneurship-- in Shenzhen. Our model will provide evidence on this potential dichotomy by examining regional variations in the role of education on the intention to start a new venture.

Hypothesis 3: Increases in the level of education completed leads to an increase probability of starting a new venture.

Income: Capital is one of the key factors of determining the ability of an individual to start a new venture (Elston, 2011. In emerging economies with weak capital markets, access to capital is even more crucial. Personal wealth or income in this context is likely to be highly significant in the start up process. However, since capital markets are global in nature and Hong Kong has relatively more advanced capital markets this problem may be mitigated in this region. GEM 2003 and ECW (2013) also found that informal investment (entrepreneur's owned capital, loans from family members and friends, and other private capital) was the most important source of start-up capital. Since capital appears to be more readily available in the relatively mature capital markets of Hong Kong versus more rural regions, we will explicitly test for the importance of personal income.

Hypothesis 4: Increases in personal income lead to an increase probability of starting a new venture.

Networks: Many studies have suggested that being part of an entrepreneurial network or knowing others who have started a firm is linked to the individual's ability to start a firm successfully. Networks can enhance the entrepreneurs' ability to access resources in a region, like capital or employees, so are a potentially important factor in the entrepreneurial decisions process. Networking is an important tool for international entrepreneurship because they help entrepreneurs to identify international opportunities, establish credibility, and help in the formation of other strategic alliances Coviello and Munro (1995, 1997).

Hypothesis 5: Being part of a network leads to an increased probability of starting a new venture.

Opportunities: Perceived entrepreneurial opportunities, which may be a function of economic reforms, should also be positively associated with entry decisions. We expect this to be significant in highly international environments like Shenzhen. However, opportunities may be scarcer in more

competitive and developed regions like Shenzhen or Hong Kong, so it is difficult to predict the importance of this factor.

Hypothesis 6: Increases in perceived opportunities lead to an increased probability of starting a new venture.

Risk: If the Chinese are risk averse, as predicted by Holt (1997), then we would expect that fear of failure should negatively impact the probability of starting a firm in the near future. However, the potential importance of risk attitude may also vary by location as need versus opportunity based entrepreneurship varies by location. Wagner (2005) found that fear of failure was higher for necessity based entrepreneurs compared to opportunity based entrepreneurs in Germany. In this study mainland China has far more necessity based entrepreneurs than Shenzhen or Hong Kong.

Hypothesis 7: Increases in the fear of failure lead to a decreased probability of starting a firm.

Experience: Finally, if past experience either managing or starting a firm has enabled the entrepreneur to learn more about the entrepreneurial process, then it should also improve the probability of starting a firm in the future. This effect should be significant in regions with a longer history of entrepreneurship like Hong Kong. Any evidence that "having closed down or discontinued a firm in the last 3 years" increases the probability of starting a new venture would support the notion that there are serial entrepreneurs or a learning by doing effect.

Hypothesis 8: Increases in the probability of having closed down or discontinued a firm in the last 3 years lead to an increased probability of starting a new venture.

These hypotheses can be tested with the following empirical model of behavior:

$$Entry_j = \beta_0 + \beta_1 Demographics_{ij} + \beta_2 Income_j + \beta_3 Location_j + \beta_4 Perception_{ij} + \varepsilon_j \qquad (1)$$

where $Entry_j$ is the likelihood of starting an entrepreneurial firm within the next 3 years for individual j. $Demographics_{ij}$ is a matrix of i individual characteristics for the jth individual including: $Female_j$ is the gender of the individual coded as 1 for female and 0 for male, Age_j is the current age of the individual, *Education* is highest level of education of person j, ranging from 0 (none) to 5 (graduate level). *Income* is measured by the current income of the potential entrepreneur –an indicator of the importance of wealth on entrepreneurial intention. We assert that the presence of income or wealth of the entrepreneur improves the individual's ability to start a firm.

$Location_j$ which is equal to 1 for mainland China, 2 for Shenzhen and 3 for Hong Kong, the higher value relating to the higher degree of internationalization of the region in which individual j resides.

$Perception_{ij}$ is a matrix of i perception variables for the jth individual which include: $Opportunity_j$ which is a measure of the individual j's perceived opportunities for starting a new firm within their community within the next 3 years. $Network_j$ measures if the individual knows someone who personally started a business in the past 2 years for individual j and is a measure of the individuals networking ability which impacts access to resources. $Fearfail_j$ is a measure of the individual's fear of failure that would prevent the individual from starting a business for individual j, which is also a measure of risk attitude in this study. $Experence_j$ reflects whether the respondent j has in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community.

5. GEM Data

The data for this study comes from the *Global Entrepreneurship Monitor* (GEM) Adult Population Survey for 2001-2008. Since data on individuals in emerging economies including China is very hard to come by, and the GEM data is a great resource in that it is an unusually large, well-documented and detailed source for information on entrepreneurial activity. This data includes both demographic and survey information collected in a two stage process, the first stage was a random

selection of households leading to a contact and the second stage involved interviews with the contacts. This information includes data on individual and firm characteristics for the general population, in this case China, across three key regions, rural or mainland China, Shenzhen, and Hong Kong, totaling about 18,000 observations that had data for our variables of interest.

There are however some limitations of this data which impact the study. The actual years for which the data was available for all three regions in China was only 2002-2003. However the entrepreneurial data for mainland China and Hong Kong was available for 2002, 2003, 2005, 2006, and 2007. As such, the data represents an unbalanced panel which was utilized in this study as a pooled cross-section. Of the total 18,000 observations, almost 25% overall were identified as expressing entrepreneurial intention in that they indicated that they were interested in opening a business during the next 3 years and the remainder did not or did not know. Regional breakdowns show significant variation in entrepreneurial activity, entrepreneurs as a percentage of by regional population sampled over 2002-2007 averaged: rural China 3716 (36%), Hong Kong 726 (10%).[3]

For details on the coding of variables see Appendix 1. Descriptive statistics for key variables are listed in Appendix 2. The correlation matrix in Table 2 below indicates that many of the perception variables are highly correlated with each other, so these factors have been entered into the regressions one at a time to reduce the potential for mulitcollinearity problems in the estimates. Regressions will then control for demographic characteristics while examining the importance of perception, income, and international intensity variables.

<Correlations for key variables are listed in Table 2>

6. Empirical results

[3] Examining the data for only 2002-2002 when there was information on the Shenzhen region average rates of entrepreneurship were: rural China (18%), Shenzhen (9%), and Hong Kong (4%).

Table 3 indicates that all demographic characteristics are significant in predicting the intent to open a firm in the next 3 years. That is, being young, male, and highly educated with a good income all lead to an increased probability of starting a firm in the future. The fact that being female has a negative impact on entrepreneurship is common in most GEM countries, and suggests that in spite of government efforts/policies to support female entrepreneurship as detailed in Deng, and Wang and Alon (2011) China too has more policy work in store if it wants to have equitable female participation in entrepreneurship. Because these variables are statistically significant, we have controlled for them in the remaining regional regressions, in spite of the fact that some may be correlated with our key factors of interest.

The impact of education varies greatly by region. In pooled samples and in Hong Kong education positively impacted entrepreneurial intention, but there are mixed results for the impact of education on entrepreneurship in mainland China. This could mean that education simply matters more in more internationalized areas like Hong Kong because competition for resources is higher and/or opportunity based entrepreneurship is lower.

In addition, coefficients on perception of opportunities and previous experience positively impact intent to start a new venture, while the individual's fear of failure reduces the likelihood of starting a new venture

<Insert Tables 4-7 here>

Of key interest in Table 4 is the coefficient on *International,* which is negative and statistically significant, indicating that the degree of regional internationalization is negatively related to entrepreneurial activity. This result is striking and underscores the significance of doing a regional level analysis. There are several non-mutually exclusive reasons which may explain this result. First, this finding supports the notion that even though mainland China is less internationalized than

Hong Kong or Shenzhen, there may be more entrepreneurial activity there because of the comparatively earlier stage of its economic development in that many opportunities have yet to be tapped, and many entrepreneurial activities in the highly developed and international Hong Kong (and even Shenzhen) have already been exhausted. Second, stronger competition in the more internationalized regions of Hong Kong and Shenzhen may constrain new entrepreneurial access to resources. In addition, mainland China as a more rural regional simply has more entrepreneurship in the form of necessity based entrepreneurship at 5.5% versus Hong Kong 1.1% or Shenzhen 1.8%. Finally, this result may suggest that reforms in mainland China were highly effective in stimulating entrepreneurial activity as intended; a fact which is further evidenced by the opportunity-based entrepreneurship level which is more than double Hong Kong's.

In Table 5 we look at the same models run across only 2 regions, mainland China and Hong Kong but estimated over all years of data from 2002-2007. Here we see similar results in that the International variable is negative and statistically significant indicating that regions matter. Individuals are more likely to start a firm in the next three years in mainland China than in Hong Kong. Young men with a higher education and income level are also more likely to planning to start a firm than those with other characteristics. Focusing on perception variables, we find that similar to our more limited 2002-2003 data, the perception of good opportunities within their environment, existence of networks, and experience all seem to positively impact the probability of entrepreneurship. Interestingly only the sign on fear of failure is different between data subsets, begging the question if the exclusion of Shenzhen in the later data or the wider time frame renders the relationship positive between fear of failure and entrepreneurship. Given the small size of the coefficient in the 2002-2003 estimates our interpretation is that the longer time period improved the robustness of results. Perhaps only those who are thinking of starting a firm acknowledge fear of failure would indeed prevent them from starting a business.

Tables 7 and 8 examine our model on individual regions with results exhibiting several similarities to the pooled data samples -as well as some distinct differences. Robust findings in both of the regional subsamples indicate that, like the pooled data sample, being a young male with higher education, income and experience, all improve the probability of starting a firm –again regardless of region. Fear of failure was statistically significant in the individual's decision to start a firm in the next 3 years across all regions --including Hong Kong and China. Relating this result to existing theories in the literature, this finding supports the notion that the Chinese are less averse as some studies have suggested (Weber & Hsee, 1998). One interpretation is that fear of failure would prevent them from starting a firm, but they do not think that they will fail. This finding suggests that Chinese risk perceptions are not yet well understood, and worthy of future detailed studies to resolve the apparent positive association between fear of failure and entrepreneurial intentions.

Regional differences were also interesting when it came to perceived entrepreneurial opportunities and networking. Perceived entrepreneurial opportunities and networking had relatively large coefficients in our model and significant in increasing the probability of starting a firm in every region. However, the pooled samples which included altogether, it was not the opportunity and network factors but the international differences between regions that was large and statistically significant. Our interpretation of these results is that regional differences or location matter more than perceived opportunities and networking; but perceived opportunities and networking are consistently important in the decision to start a firm -independent of region.

Experience was the largest most significant factor in predicting firm start-up across all data samples and years. This supports the notion of a learning-by-doing process of entrepreneurship since those that "have in the past 12 months shut down, discontinued or quit a business they owned or

managed" were the most likely to be planning to start a firm within the next 3 years. This finding is consistent with the concept of "serial entrepreneurship" that observed in many mature economies.

7. Summary and conclusions

China is an emerging economy with a number of recent market reforms to boost both internationalization and entrepreneurial activity. In order to better understand the impact of the resulting institutional shifts, this study examines data on entrepreneurial intentions using a standard model of entry from the entrepreneurship literature. Controlling for a number of demographic and perception factors in addition to regional intensity of internationalization, empirical results suggest that both demographic and perception characteristics impact the intention to start a new venture within the next three years. Specifically, young, well-educated males are more likely to start a firm in every region, than older males, females or individuals with lower levels of education. In addition, higher levels of income also improve the probability of starting a firm, suggesting that like most young entrepreneurs around the world, Chinese entrepreneurship also is constrained by lack of capital resources. In addition, perception variables regarding perceived opportunities, ability to network, and particularly experience as an entrepreneur improved the chances of starting a firm in the near future.

A key finding in this study is that a higher degree of internationalization of a region is significant in predicting a lower level of entrepreneurial activity. Specifically, relatively rural mainland China which has weaker access to resource markets shows more total entrepreneurial activity than the highly developed international locations of Hong Kong or Shenzhen. This finding suggests complexity in the linkage between internationalization and entrepreneurship. We believe there are several important reasons for this finding. First, mainland China has a comparatively larger amount of necessity-based entrepreneurial activity 5.5%, compared to Hong Kong 1.1% or Shenzhen 1.8%,

which constitutes a larger percentage of the total entrepreneurial activity. It is also quite possible that necessity based entrepreneurship may not be as sensitive to locational advantages -namely access to capital and labor markets as opportunity based entrepreneurship. Further, because of mainland China's earlier stage of economic development many entrepreneurial opportunities may exist that have already been exhausted in worldly Hong Kong and Shenzhen. It is also true that these urban and international regions have more competition for resources, which may also negatively impact entrepreneurial intention. Finally, this finding may simply be a sign that market based reforms in mainland China may have been successful or effective in stimulating entrepreneurial activity, as evidenced by the fact that the opportunity-based entrepreneurship in mainland China is also more than double Hong Kong's.

Although we use an alternative approach, our main finding is consistent with that of Fernhaber, Gilbert, & McDougall, (2008) which finds evidence of an inverted u-shaped relation between industry clustering locations and internationalization in several US regions. Both studies provide empirical evidence to support the notion that location influences the nature and internationalization of new venture formation.

We note that limitations of this data and study include the absence of information on individual's decision making over time, as individuals were only interviewed over two years each, even though the study ran over several years. Future studies on these growth dynamics over time in China would be of value once longer term panel data becomes available. In addition, empirical comparisons across multiple transition economies would be helpful for understanding how these processes vary in differing institutional environments. Future studies on specific industrial sectors like high technology would help us to better understanding the technology transfer process. Studies on firm

performance under differing corporate governance structures such as that between state owned enterprises (SOE) and private firms would also inform us on the transitional successes in China.

The theoretical foundations used in this study provides us insights on the growth dynamics between different regions in China. Findings suggest dramatic differences in the impact of internationalization between regions which in turn play a significant role in the regional levels of entrepreneurial activity. From a policy perspective this suggests that extensive policy reforms aimed at internationalization may have been particularly effective in stimulating entrepreneurial activity in the mainland China, but not as effective in other regions due to competitiveness for resources, percentage of necessity versus opportunity based entrepreneurship or other mitigating factors. This study underscores the need to consider regional differences in the impact of internationalization on entrepreneurship in emerging economies, as demonstrated by China's complex regional environments which contrast a largely rural mainland region with high necessity-based rate of entrepreneurship with highly internationalized regions Shenzhen and Hong Kong.

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APPENDIX 1

Details on GEM Variables and Coding

Most of the variables in the GEM data are categorical and are therefore coded as such, although an attempt to retain information was made by keeping continuous variables in their original state for regressions. All missing values take the place of '.' in the coding process.

Entre, the dependent variable, is coded into a binary variable based on the respondents answer to the question whether they thought they would open their own business within the next 3 years, if they answered yes or maybe the variable took on a value of 1, and the value of 0 otherwise except for missing values. For robustness checks we also ran estimates with an alternative measure, coding the variable with yes =1 and the value of 0 otherwise, and estimates were not significantly changed in significance or sign.

Demographic variables:

Gender is the respondent's gender, recoded for this study as 0=Male and 1=Female.

Age is the respondent's current age.

Education is the respondent's highest level of educational attainment, which is a categorical variable in GEM. This study recoded this variable 0-5, where 0 (none), 1 (some secondary education), 2 (secondary degree), 3 (post-graduate experience), 4 (post-secondary experience) and 5 (graduate experience).

Income is a measure of the household's income, or respondent's actual income at the time of the interview, which GEM categorized into 3 levels reflecting the lowest, middle and upper 33 percentile income groups. 33=lowest 33 percentile, 3467=middle 33 percentile, 68100=highest 33 percentile.

Location, which is equal to 1 for China, 2 for Shenzhen and 3 for HK and 0 for any other value, the higher value relating to the higher degree of internationalization of the region.

Perception variables:

The variable *Opportunity* is based on the question if they thought "good opportunities for starting a new business will develop in the next 6 months where they live", coded 1 for yes and 0 otherwise.

Network is the percent of respondents who know someone who personally started a business in the past 2 years, and is coded 1 for yes and 0 otherwise. This variable is often interpreted as measuring the impact of influence from peers. However, knowledge of others starting a firm may well be a good proxy for the ability of the respondent to access local networks of entrepreneurs, and should have a positive impact on the decision to start a firm.

Fearfail is a measure is based on the question whether "fear of failure would prevent you from starting a business", which is coded 1 for yes and 0 otherwise.

Experience is the Discent variable in GEM, which is based on the question whether the respondent has "in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community", a variable which is coded to take on a value of 1 if the respondent has done so and 0 otherwise.

APPENDIX 2

Table 2

Descriptive Statistics of Key Variables

Variable	*Entre*	*Gender*	*Age*	*Education*	*Income*	*Opportunity*	*Fearfail*	*Network*	*Experience*
Mean	0.27	0.52	40.34	1.81	19926.32	0.34	0.28	0.48	0.07
Standard Dev	0.44	0.50	14.74	1.08	29794.81	0.47	0.45	0.50	0.25
Min	0	0	16	0	33,000	0	0	0	0
Max	1	1	95	4	68,100,000	1	1	1	1
Obs	18351	18897	18859	18790	11405	12594	14385	13890	18077

Note: The dependent variable *Entre* is coded into a binary variable based on the respondents answer to the question whether they thought they would open their own business within the next 3 years, in which case the variable took on a value of 1, and the value of 0 otherwise. *Female* is the respondent's gender in which 0 is coded for Male and 1 is coded for Female. *Age* is the respondent's current age. *Income* is a measure of the household's income, or respondent's actual income at the time of the interview, which GEM categorized into 3 levels reflecting the lowest, middle and upper 33 percentile income groups (33 is the lowest 33 percentile, 3467 is the middle 33 percentile, 68,100 is the highest 33 percentile). The categorical variable *Education* is the respondent's highest level of educational attainment, which is a categorical variable in GEM. This study recoded this variable 0-5, where 0 (none), 1 (some secondary education), 2 (secondary degree), 3 (post-graduate experience), 4 (post-secondary experience) and 5 (graduate experience). *International* is the region and coded as 1 for China and 3 for Hong Kong. *Opportunity* based on the question if they thought "good opportunities for starting a new business will develop in the next 6 months where they live", coded 1 for yes and 0 otherwise. *Network* is the percent of respondents who know someone who personally started a business in the past 2 years, and is coded 1 for yes and 0 otherwise. This variable is often interpreted in the literature as measuring the impact of influence from peers. However, knowledge of others starting a firm may well be a good proxy measure for the ability of the respondent to access local networks of entrepreneurs, and in any event should have a positive impact on the decision to start a firm. *Fearfail* is a measure is based on the question whether "fear of failure would prevent you from starting a business", which is coded 1 for yes and 0 otherwise. *Experience* reflects the respondent's who have, "in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community" a variable which is coded to take on a value of 1 if the respondent has done so and 0 otherwise. All missing values take the place of '.' In the coding process.

Table 3

Correlation Coefficients of Key Variables										
	Entre	*Gender*	*Age*	*Education*	*Income*	*Opportunity*	*Network*	*Fearfail*	*Experience*	*International*
Entre	1									
Gender	-0.101**	1								
Age	-0.235**	0.014	1							
Education	0.127**	-0.093**	-0.298**	1						
Income	0.132**	-0.126**	-0.162**	0.357**	1					
Opportunity	0.173**	-0.044**	-0.114**	0.156**	0.109**	1				
Network	0.332**	-0.100**	-0.180**	0.177**	0.161**	0.204*	1			
Fearfail	-0.006**	0.022*	-0.013	-0.026*	-0.029*	0.028*	0.016	1		
Experience	0.231**	-0.059**	-0.054**	0.004	0.06**	0.042**	0.140**	0.009	1	
International	-0.336**	0.036*	0.127**	-0.105**	0.017	0.022*	-0.280**	0.153**	-0.154**	1
**** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed).**										

TABLE 4

Logistic Regression of Entrepreneurial Activity Across 3 Regions: China, Shenzhen and Hong Kong 2002-2003

Entre	**1**		**2**		**3**		**4**		**5**		**6**	
Parameter	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**
Constant	2.05***	13.67	2.09***	13.93	2.22***	14.20	2.20***	14.06	2.31***	14.69	1.93***	13.03
Female	-0.05***	24.29	-0.05***	22.73	-0.05***	22.03	-0.05***	21.93	-0.05***	22.03	-0.05***	23.47
Age	-0.43***	8.63	-0.42***	8.16	-0.40***	7.55	-0.40***	7.56	-0.39***	7.36	-0.42***	8.35
Education	0.23***	8.52	0.20***	6.87	0.28***	9.62	0.29***	9.97	0.29***	9.97	0.24***	8.82
International	-0.78***	25.57	-0.79***	25.00	-0.78***	24.22	-0.79***	24.53	-0.80***	24.69	-0.76***	24.76
Income			3.5E-6***	4.00								
Opportun ity					0.03***	3.14						
Network							0.07***	3.98				
Fearfail									-0.06***	3.51		
Experience											0.83***	8.80
Likelihood (pr)†	1888.44 (.0001)		1772.53 (.0001)		1814.26 (.0001)		1824.91 (.0001)		1820.08 (.0001)		1985.87 (.0001)	
Wald (pr)	1330.54 (.0001)		1244.94 (.0001)		1251.34 (.0001)		1253.61 (.0001)		1252.32 (.0001)		1374.58 (.0001)	

† if p < 0.10, * if p < 0.05; ** if p < 0.01; * if p < 0.0001.**

*** t-value indicates variable significant at 10% level, ** 5%, and *** 1%.**

Note: The dependent variable *Entre* is coded 1 if the respondent thought they would open their own business within the next 3 years and 0 otherwise. *Female* is the respondent's gender which is coded 1 for Female and 0 otherwise. *Age* is the respondent's current age. *Income* is a measure of the household's income. The categorical variable *Edu* is the respondent's highest level of educational attainment which is coded 0-5, where 0 is (none) to 5 (graduate experience). *International* is the regional intensity of internationalization, coded as 1 for mainland China, 2 for Shenzhen and 3 for Hong Kong. *Opportunity* is coded 1 if the respondant thought they had "good opportunities for starting a new business in the next 6 months", and 0 otherwise. *Network* is coded 1 if the respondens knew someone who personally started a business in the past 2 years, and 0 otherwise. *Fearfail* is coded 1 if respondant answered that "fear of failure would prevent you from starting a business", and 0 otherwise. *Experience is coded 1 if* respondent's have, "in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community" and 0 otherwise.

TABLE 5

Logistic Regression of Entrepreneurial Activity in 2 Regions: China and Hong Kong 2002-2007

Entre	**1**		**2**		**3**		**4**		**5**		**6**	
Parameter	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**
Constant	2.19***	24.95	2.37***	21.29	1.98***	19.78	1.50***	14.89	2.26***	23.69	1.91***	21.07
Female	-0.44***	-11.98	-0.38***	-8.32	-0.40***	-9.55	-0.34***	-8.29	-0.42***	-10.49	-0.42***	-11.04
Age	-0.04***	-27.21	-0.05***	-23.62	-0.04***	-22.16	-0.04***	-22.91	-0.04***	-24.88	-0.04***	-26.67
Education	0.05***	3.09	-0.03	-1.46	0.06***	3.20	0.05***	2.70	0.11***	5.75	0.08***	4.24
International	-0.88***	-40.55	-0.86***	-29.50	-0.82***	-34.12	-0.71***	-29.77	-0.84***	-36.19	-0.82***	-37.13
Income			8.1E-06***	10.37								
Opportun ity					0.78***	17.69						
Network							1.08***	25.92				
Fearfail									0.25***	5.56		
Experience											1.45***	21.11
Likelihood (pr)†	3327.63 (.0001)		1990.89 (.0001)		2511.25 (.0001)		3240.9 (.0001)		2680.44 (.0001)		3712.63 (.0001)	
Wald (pr)	2394.69 (.0001)		1439.11 (.0001)		1849.11 (.0001)		2316.40 (.0001)		1963.02 (.0001)		2622.89 (.0001)	

† if p < 0.10, * if p < 0.05; ** if p < 0.01; * if p < 0.0001.**

*** t-value indicates variable significant at 10% level, ** 5%, and *** 1%.**

Note: The dependent variable *Entre* is coded 1 if the respondent thought they would open their own business within the next 3 years and 0 otherwise. *Female* is the respondent's gender which is coded 1 for Female and 0 otherwise. *Age* is the respondent's current age. *Income* is a measure of the household's income. The categorical variable *Edu* is the respondent's highest level of educational attainment which is coded 0-5, where 0 is (none) to 5 (graduate experience). *International* is the regional intensity of internationalization, coded as 1 for mainland China, 2 for Shenzhen and 3 for Hong Kong. *Opportunity* is coded 1 if the respondant thought they had "good opportunities for starting a new business in the next 6 months", and 0 otherwise. *Network* is coded 1 if the respondens knew someone who personally started a business in the past 2 years, and 0 otherwise. *Fearfail* is coded 1 if respondant answered that "fear of failure would prevent you from starting a business", and 0 otherwise. *Experience is coded 1 if* respondent's have, "in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community" and 0 otherwise.

TABLE 6

Logistic Regression of Entrepreneurial Activity in China Only 2002-2007

Entre	**1**		**2**		**3**		**4**		**5**		**6**	
Parameter	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**
Constant	1.56***	16.26	1.75***	14.96	1.42***	12.50	1.12***	10.21	1.69***	15.97	1.34***	13.45
Female	-0.36***	-8.47	-0.33***	-6.47	-0.30***	-6.08	-0.25***	-5.29	-0.33***	-7.02	-0.33***	-7.58
Age	-0.05***	-25.03	-0.05***	-22.36	-0.05***	-20.59	-0.05***	-21.75	-0.05***	-22.95	-0.05***	-24.34
Edu cation	0.01	0.49	-0.06***	-2.25	0.03	1.12	0.01	0.42	0.06***	2.67	0.03*	1.65
Income			6.9E-06***	7.9E+00								
Opportun ity					0.83***	15.90						
Network							1.01***	20.95				
Fearfail									0.31***	5.72		
Experience											1.35***	18.23
Likelihood (pr)†	828.81 (.0001)		742.55 (.0001)		904.43 (.0001)		1187.84 (.0001)		748.42 (.0001)		1211.95 (.0001)	
Wald (pr)	751.83 (.0001)		658.65 (.0001)		785.74 (.0001)		1010.62 (.0001)		673.90 (.0001)		1029.34 (.0001)	

† if p < 0.10, * if p < 0.05; ** if p < 0.01; * if p < 0.0001.**

*** t-value indicates variable significant at 10% level, ** 5%, and *** 1%.**

Note: The dependent variable *Entre* is coded 1 if the respondent thought they would open their own business within the next 3 years and 0 otherwise. *Female* is the respondent's gender which is coded 1 for Female and 0 otherwise. *Age* is the respondent's current age. *Income* is a measure of the household's income. The categorical variable *Edu* is the respondent's highest level of educational attainment which is coded 0-5, where 0 is (none) to 5 (graduate experience). *International* is the regional intensity of internationalization, coded as 1 for China 2 for Shenzhen and 3 for Hong Kong. *Opportunity* is coded 1 if the respondant thought they had "good opportunities for starting a new business in the next 6 months", and 0 otherwise. *Network* is coded 1 if the respondens knew someone who personally started a business in the past 2 years, and 0 otherwise. *Fearfail* is coded 1 if respondant answered that "fear of failure would prevent you from starting a business", and 0 otherwise. *Experience is coded 1 if* respondent's have, "in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community" and 0 otherwise.

TABLE 7

Logistic Regression of Entrepreneurial Activity in Hong Kong Only 2002-2007

Entre	**1**		**2**		**3**		**4**		**5**		**6**	
Parameter	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**	**Est**	**t-stat**
Constant	-0.95***	-7.06	-0.81***	-4.14	-0.88***	-6.01	-1.27***	-8.19	-0.74***	-5.09	-0.10***	-7.26
Female	-0.74***	-9.60	-0.64***	-6.07	-0.70***	-8.50	-0.64***	-7.69	-0.72***	-8.96	-0.71***	-9.07
Age	-0.03***	-1.2E+01	-0.03***	-8.68	-0.03***	-9.58	-0.03***	-8.84	-0.03***	-11.02	-0.03***	-12.17
Edu cation	0.18***	5.16	0.05	1.01	0.16***	4.21	0.16***	4.31	0.23***	6.47	0.18***	5.27
Income			1.10E-05***	6.4E+00								
Opportun ity					0.63***	7.65						
Network							1.28***	15.55				
Fearfail									0.16**	1.93		
Experience											1.84***	11.53
Likelihood (pr)	332.92 (.0001)		215.82 (.0001)		312.15 (.0001)		536.47 (.0001)		312.47 (.0001)		443.02 (.0001)	
Wald (pr)†	296.91 (.0001)		185.05 (.0001)		278.27 (.0001)		466.11 (.0001)		276.10 (.0001)		399.84 (.0001)	

† if p < 0.10, * if p < 0.05; ** if p < 0.01; * if p < 0.0001.**

*** t-value indicates variable significant at 10% level, ** 5%, and *** 1%.**

Note: The dependent variable *Entre* is coded 1 if the respondent thought they would open their own business within the next 3 years and 0 otherwise. *Female* is the respondent's gender which is coded 1 for Female and 0 otherwise. *Age* is the respondent's current age. *Income* is a measure of the household's income. The categorical variable *Edu* is the respondent's highest level of educational attainment which is coded 0-5, where 0 is (none) to 5 (graduate experience). *International* is the regional intensity of internationalization, coded as 1 for China 2 for Shenzhen and 3 for Hong Kong. *Opportunity* is coded 1 if the respondant thought they had "good opportunities for starting a new business in the next 6 months", and 0 otherwise. *Network* is coded 1 if the respondens knew someone who personally started a business in the past 2 years, and 0 otherwise. *Fearfail* is coded 1 if respondant answered that "fear of failure would prevent you from starting a business", and 0 otherwise. *Experience is coded 1 if* respondent's have, "in the past 12 months, shut down, discontinued or quit a business they owned or managed firm in the community" and 0 otherwise.

APPENDIX 3

Rankings of Chinese Cities by Intensity of Internationalization				
Dimension		**Ranking of the Top Six Cities**		**Explanation of the Dimension**
Foreign-Funded Industrial Enterprises		1 - Shanghai, 2 - Tianjin, 3 - Guangzhou, 4 - Beijing, **5 - Shenzhen**, 6 - Zhuhai		These corporations located around China reflect, to a certain degree, their relationship to the world capital market and commodity production market
Enterprises with Largest Import and Export Value		1 - Beijing, 2 - Shanghai, 3 - Guangzhou, 4 - Qingdao, 5 - Nanjing, 6 - Hangzhou		These corporations have the closest relationship with the world market and have the best prospect of growing into transnational corporations
Offices of Foreign-Funded Telecom Enterprises		1 - Beijing, 2 - Shanghai, 3 - Guangzhou, 4 - Nanjing		It is reported that 151 of the 500 largest transnational corporations in the world had invested and set up factories in Beijing by the end of 1998
Offices of Foreign-Funded Computer Enterprises		1 - Beijing, 2 - Shanghai, 3 - Guangzhou, 4 - Chendu, **5 - Shenzhen**		
Foreign-Funded Financial Institutions		1 - Beijing, 2 - Shanghai, 3 - Guangzhou, **4 - Shenzhen**, 5 - Dalin, 6 - Tianjin		In 1999 the president of the People's Bank of China canceled the restriction on regions where foreign-funded banks can set up their business branches. He also guaranteed continuous improvement of regulations on foreign-funded banks managing Chinese yuan.
Foreign Capital Actually Used		1 - Shanghai, **2 - Shenzhen**, 3 - Tianjim, 4 - Beijing, 5 - Guangzhou, 6 - Qingdao		
Imports and Exports Through Custom		1 - Shanghai, **2 - Shenzhen**, 3 - Guangzhou, 4 - Tianjim, 5 - Qingdao, 6 - Dalian		
International Flights		1 - Beijing, 2 - Shanghai, 3 - Guangzhou, 4 - Dalian, 5 - Qingdao, 6 - Xiamen		International airlines' network with the global urban system plays an important role in personnel exchange. International cities are the hinges of the network.
Foreign Travelers		1 - Beijing, 2 - Shanghai, 3 - Guangzhou, 4 - Xi'an, **5 - Shenzhen**, 6 - Kunming		

Source; John R. Logan, *The New Chinese City* (Malden, MA: Blackwell Publishers Inc., 2002).

[1] It is somewhat ironic that most of our understanding of entrepreneurs is based on studies of the estimated 18 million entrepreneurs in Western countries (US & EU), not the larger populations of India and China which alone have over 200 million owner/managers/entrepreneurs (Lingelback, Vina & Asel, 2005).