Entrepreneurship and Income Inequality in China

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This paper explores the association between entrepreneurship and income inequality in China in recent years. Since the 1990s, according to the Global Entrepreneurship Monitor (GEM), China has become one of the most entrepreneurial countries in the world. Over the same period, China has also experienced growing income inequality as measured by the Gini coefficient. There is a large body of literature that examines the effects of entrepreneurship on economic growth and the relationship between economic growth and income inequality. It is generally acknowledged that entrepreneurial activity contributes to economic growth, but very little work has been done on the direct relationship between entrepreneurship and income disparities, especially in emerging economies. In this study we contribute to the literature by compiling the most recent data on Chinese entrepreneurship and income inequality and then investigating the impact of entrepreneurship on income inequality in China.

INTRODUCTION

Since 1978, China's transition from a centrally planned economy to a market economy has been accompanied by the rise of the non-state sector – private enterprises led by an emerging class of entrepreneurs. The private sector in China has gradually overtaken the state sector in importance as measured by the number of enterprises, the contribution to gross domestic product (GDP), and employment growth. In the last decade alone, the number of registered private businesses in China grew at an average of 30% a year, and it has been estimated that the private sector accounts for up to 70% of Chinese GDP (Haiyan & Wei, 2012).

Nicholas Lardy (2014) credits the private sector as being the main engine of China's transformation from a state-controlled economy into a vibrant market economy. The private sector encompassing self-employed, registered private enterprises and all firms with a predominant private shareholder, accounts for about two thirds of GDP and the majority of the 250 million jobs created in cities since the beginning of the economic reform, as well as 90% of all exports. Of the 60 million enterprises registered in China, about 96% are private and the output generated by (private) industrial enterprises has been growing at an average annual rate of 18% since 2008, twice as high as state-owned enterprises (SOEs) (Vaitheeswaran, 2015). China has indeed become one of the most entrepreneurial countries in the world since the 1990s. The Global Entrepreneurship Monitor (GEM) (n.d.) found that Total early-stage Entrepreneurial Activity (TEA) increased from 12.3% in 2001 to 24% in 2011. This increase, compared to other countries in the

survey, propelled China from 11th place in 2002 to second in 2011 (also second was China's female TEA rate).

Over the same period, China has also experienced a dramatic increase in income inequality (not only nationwide but also between urban and rural areas) as measured by the Gini coefficient, which rose from 0.3 in 1980 to a range of 0.53-0.55 in 2010 (Xie & Zhou, 2014). Official statistics show a recent decline, registering a Gini coefficient of 0.474 in 2012 and 0.473 in 2013 (China Statistical Yearbook, 2014).[1] However, that is still too high since a coefficient higher than 0.4 is likely to result in social unrest.

How does China's astonishing growth in private enterprise and rise of a dynamic class of entrepreneurs relate to income distribution? Do they contribute to greater income inequality or do they reduce inequality? There is a large body of theoretical and empirical literature that examines the effects of entrepreneurship on economic growth and the relationship between economic growth and income distribution. It is generally acknowledged that entrepreneurial activity contributes to economic growth, but little is known about the relationship between entrepreneurship and income distribution, especially in emerging economies.

In this study we contribute to the literature by identifying factors that determine the household income in China and by providing insights into the possible association between entrepreneurship and income inequality based on the 2011 China Household Survey. The paper is organized as follows: First, building on Li and DaCosta (2015), we provide an overview of China's enterprise reform and entrepreneurial development. Next, building on the work of Li and DaCosta (2013), we offer a review of studies of income inequality in China. Then, we explore the theoretical relationships between entrepreneurship and income inequality. Following that, we present the statistical model and empirical findings. Lastly, we offer some concluding remarks.

ENTERPRISE REFORM AND ENTREPRENEURIAL DEVELOPMENT IN CHINA POST 1978

Over the last few decades, China's economy has undergone structural reforms that have dramatically changed the economic landscape, particularly in the areas of enterprise organization, culture, and ownership. In 1978, the ownership of industrial production was solely divided between the state (77.6 percent) and collectives (22.4 percent). Since then, the private sector has been growing rapidly. For example, state ownership accounted for about 2 percent of the total number of "industrial enterprises above designated size" in 2013, followed by collective ownership at 1.4 percent, whereas the share of private ownership was up to 55.3% (China Statistical Yearbook, 2014).[2]

The state sector has been undergoing profound changes since the 1980s. Under China's "shareholding" approach, the capital of state-owned enterprises (either the original or the additional capital) was to be converted into shares to be sold to the employees or the public. In May 1990, the government endorsed this practice, but under serious restrictions – public ownership must be dominant, share ownership is limited to joint ventures and township and village enterprises (TVEs), and share ownership is restricted to certain geographic areas such as special economic zones and open coastal cities.

Later in November 1993, the Chinese government announced sweeping reforms, calling for the restructuring of the state-owned sector. Other measures followed, leading to the privatization of many small and medium sized SOEs. Furthermore, the ownership of SOEs has been diversified, and many of them are now listed in stock exchanges, even though the government has demonstrated the intention to hold on to a large state sector. Progress has also been achieved in the areas of governance, management, and profitability. However, more than one fourth remain unprofitable and their favorable treatment by state-owned banks remains a weakness of the Chinese economy at this time (World Bank, 2012).

Collectively owned enterprises include urban as well as rural enterprises. The latter are usually termed TVEs. These are community enterprises, encouraged by the existence of surplus labor in the rural communities. Many of these enterprises have strong linkages to agriculture, both backward and forward, such as farm machinery, fertilizers, and feed/grain processing. Though TVEs first appeared in 1956, it was with the rural economic reform that they exploded. In 1980, TVEs adopted the contract responsibility system and shared ownership, with employees as shareholders. The TVEs faced "harder" budget

constraints and were more autonomous and flexible than SOEs. Though in steady decline TVEs were a major source of growth during the first two decades of the reform.[3]

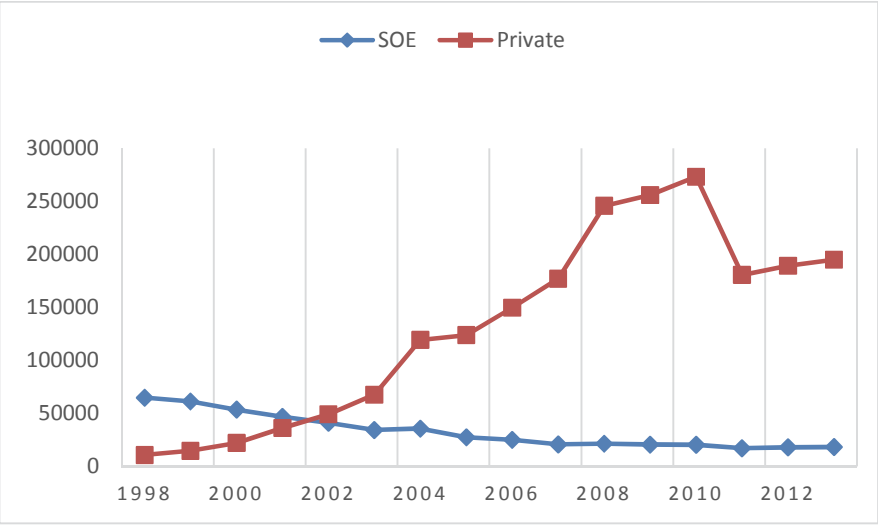
Private enterprises were practically eliminated during the Mao years, and it was not until private property was safeguarded in the Constitution in 1982 that they made a strong comeback. It was only after 1984 that private enterprises with more than seven employees were allowed (Xie, 1992). A privately owned enterprise can consist of one (self-employed) owner, who may hire up to seven other workers (individually-owned enterprises or *getihu*), or it may take the form of an enterprise that hires more than eight people (privately-owned enterprises or *sying qiye*).[4] Of particular significance was the enactment of the *Provisional Measures of Private Enterprises of the PRC* in 1988, which formally recognized a vast range of enterprises including shareholding corporations, and protected their rights to ownership and profits.

Private enterprises were given another push in 1997, when the 15th National People's Congress declared the private sector an "important component of the socialist market economy." They became an integral part of the socialist system after being recognized in a constitutional amendment in 1999. Private entrepreneurs were welcomed into the Party in 2001. Since then, the central government has implemented legislation that supports the private sector, such as the 2005 *Circular on Encouraging and Guiding the Development of Non-public Economy* and the 2009 *Opinions on Further Promoting the Development of Small- and Medium-sized Enterprises* (Li and Fung Research Centre, 2011).

Development of the Private Sector and Its Challenges

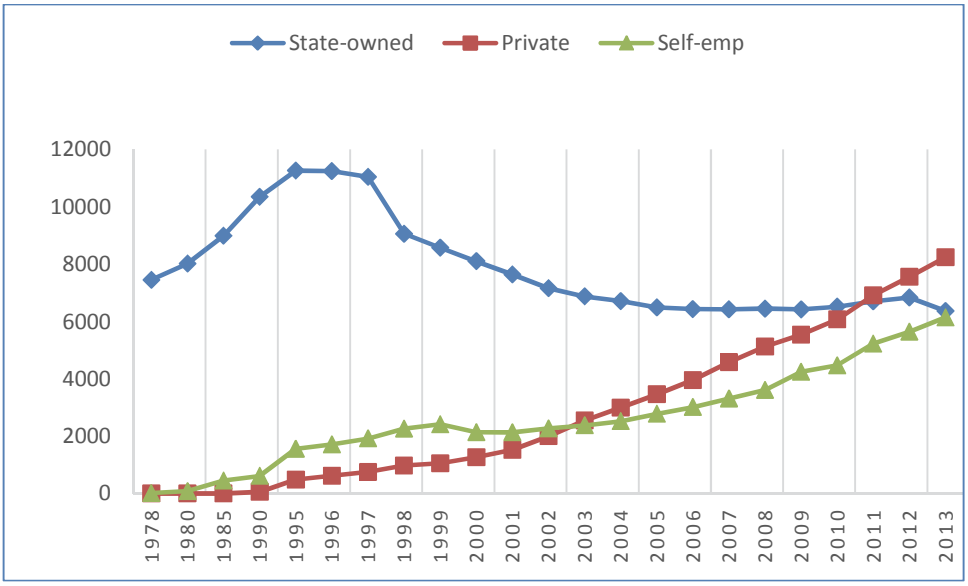
Gauging the exact size and contribution of the private sector to China's economy is difficult, but by all accounts, it appears to be steadily increasing. The rise of private enterprises and their contribution to China's economic growth have been documented in a number of studies including Garnaut, Song, Yao, and Wang (2001), Garnaut and Song (2004), and Lin and Zhu (2007). Their impact on the Chinese economy has been described as China's third economic transformation (Garnaut & Song, 2004). Official statistics indicate a growing trend in terms of numbers, employment, and contribution to GDP as shown in Figures 1, 2 and 3 (data source: China Statistical Yearbook, 2014). There are also strong signs that they are expanding, going public, and going global.

FIGURE 1
NUMBER OF ENTERPRISES (UNITS)



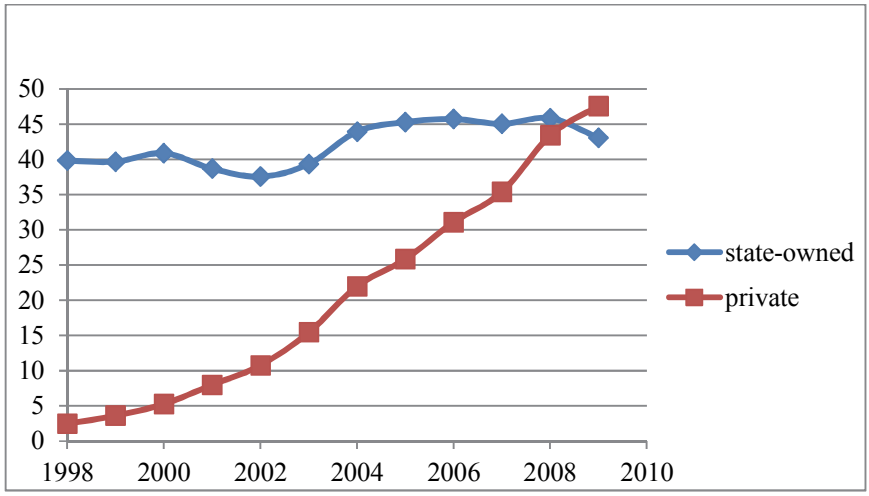
Private enterprises have been growing rapidly, exhibiting an average annual growth rate of 24.6% percent between 1998 and 2013, as illustrated in Figure 1 (in our study private enterprises consist of the above described individually owned and privately owned enterprises). During the same time, the number of state-owned enterprises declined at an average annual rate of 7.7%. The private sector in China has outnumbered the state-owned sector since 2002. The number of private enterprises fell abruptly from 273,259 in 2010 to 180,612 in 2011. This fall does not, however, represent the weakening of the private sector but rather the effects of the global financial crisis of 2007 and subsequent recession. It may also reflect a nationwide consolidation effort of smaller firms into larger enterprises. At any rate, one can certainly conclude that private enterprises are flourishing and playing a key role in China's economic transformation.

FIGURE 2
URBAN EMPLOYMENT (UNIT: 10,000)



Private enterprises have also been growing in terms of employment. Figure 2 compares the annual urban employment in the state-owned sector to that of the private sector from 1978 to 2013. The number of workers in individually owned (*getihu*) and privately owned enterprises (*siying qiye*) have been steadily increasing since the start of the economic reform and now closely match or outnumber those employed by state-owned enterprises. In 2013, there were 61,420,000 self-employed workers, whereas 63,650,000 worked for SOEs and 82,420,000 for private enterprises. As the state sector continues shrinking, it is expected that more and more workers will find employment in the private sector.

FIGURE 3
OUTPUT VALUE AS A PERCENTAGE OF GDP

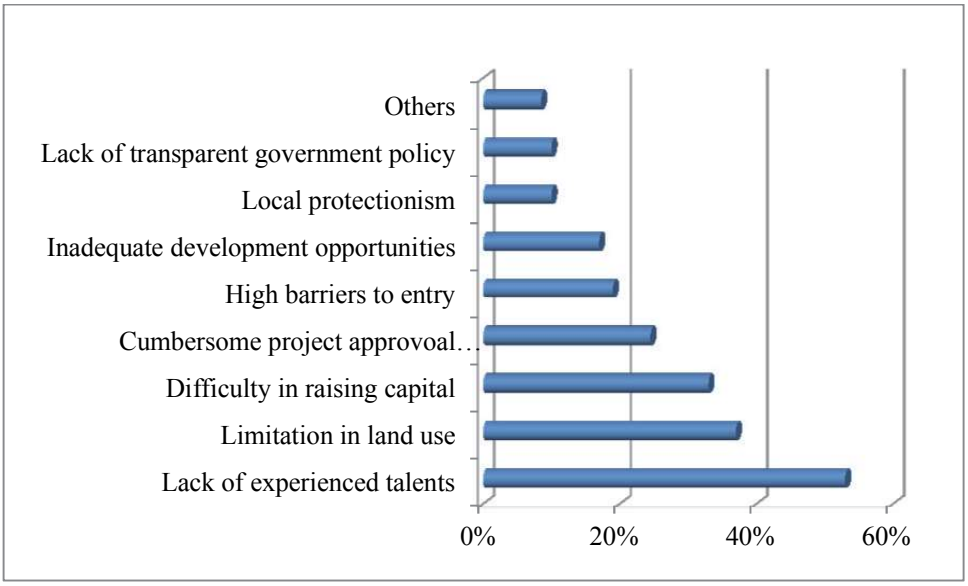


The private sector has outperformed the state-owned sector in terms of not only number and employment growth, but also productivity. Previous research has consistently found that state enterprises are not as efficient and innovative as their private counterparts. According to the Unirule Institute of Economics, a Beijing-based think tank, the average real return on equity for state-owned companies between 2001 and 2009 was -1.47 percent taking into account that SOEs receive hidden government subsidies, such as free land. Research also suggests that productivity tends to decrease with an increasing rate in state ownership. A 2005 study by the McKinsey Global Institute "found that companies in which the state holds a minority stake are 70% more productive than wholly state-owned ones" (Special Report, 2012, p. 14).

Brandt and Zhu (2010) ascertained that from 1978 to 2007 the Total Productivity Factor (TPF) in the state sector was only about a third of the TPF in the non-state sector (1.5 % compared to 4.6 % per year). Particularly after 2003, many small and medium-sized SOEs were privatized, which helps explain the decrease in the number (Figure 1) and relative importance of the state sector in terms of contribution to employment and GDP (Figures 2 and 3).

Despite the growth and dynamism of the private sector, private enterprises still operate in a harsh environment and face a myriad of challenges as identified by Lin and Zhu (2007). Private enterprises in China lack credit since the mostly state-run banking sector prefers lending to SOEs rather than to their private counterparts. Other serious constraints that private Chinese firms face include insufficient technical and information support and inadequate experience in management, international trade, and investment. At the same time, they also have to deal with strong competition from the SOEs and to resolve challenging problems, such as enterprise management disputes, contract violations, and corruption of government officials.

FIGURE 4
MAJOR OBSTACLES FACING PRIVATE ENTERPRISES IN CHINA



Source: The All-China Federation of Industry and Commerce, Report of China's Top 500 Private Enterprises2010

As shown in Figure 4, the lack of experienced personnel was ranked as the number one challenge in a 2010 survey of China's top 500 private enterprises. Apparently, management skills acquired in the state-owned sector are simply not applicable or cannot be easily transferred to the private sector. Difficulty in raising capital comes third for these large private firms, which appears to be contrary to the experience of small and medium enterprises (SMEs) whose primary challenge, as indicated by several studies, is access to finance. These survey results, however, are consistent with the findings by Xu (2004) that banks are more concerned with the size of the business enterprise than with the type of ownership. In other words, banks are more inclined to lend to large enterprises and simply discriminate against SMEs. Consequently, SMEs, especially private SMEs, have mainly resorted to non-conventional ways of procuring the funds that they need, creating informal networks to finance small business ventures, and giving rise to what has been described as "back-alley banking" (Tsai, 2002).

In addition to measures that address the talent shortage and land use issues, greater access to financing, reduction in barriers to entry, and other measures that lead to a reduction in transaction costs are likely to strengthen the private sector and further unleash innovation and restructuring. SMEs, based on international experience, contribute greatly to innovation. That appears to be the case in China as well where small firms are capable of generating more patents: 65% of patents filed and 75% of technological innovations are engendered by the non-state sector (Jia, 2009).

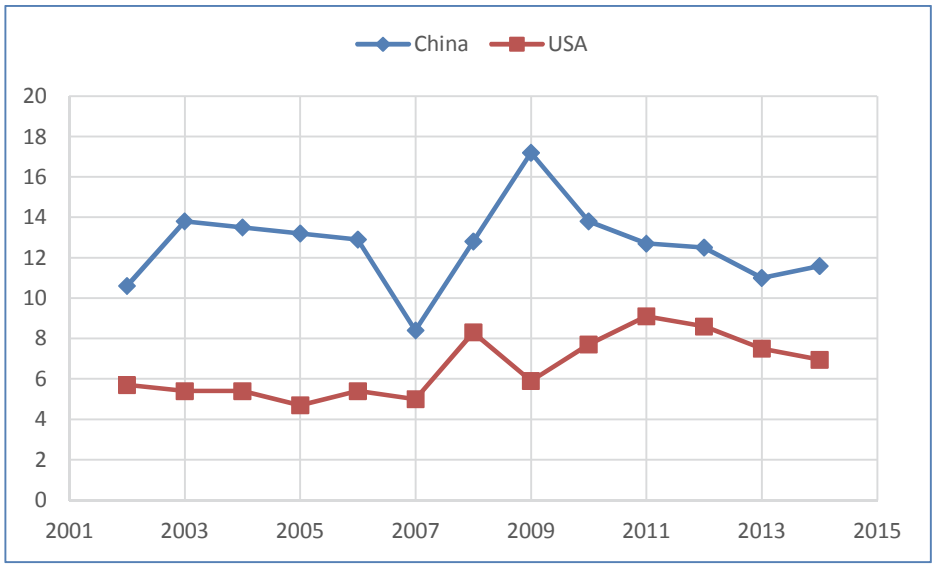
Entrepreneurial Development

There is a clear link between private enterprises and entrepreneurship, which is the focus of this section. Entrepreneurship is regarded as key to innovation and growth (Aghion & Howitt, 1997) and an important component of economic development. Entrepreneurship can be analyzed from different angles: 1) economists study the role played by institutions and incentives, such as credit availability, property rights, and regulation; 2) sociologists emphasize social networks, values, and social norms; and 3) psychologists concentrate on personality traits, such as attitudes towards risk and self-confidence (Djankov, Qian, Roland, & Zhuravskaya, 2006). Studies of the first group of factors include the work by Blanchflower and Oswald (1998). The importance of social networks, on the other hand, is examined by

Knight and Yueh (2008); whereas, personality traits, such as a positive attitude towards risk, are the subject of a study by Rees and Shah (1986).

An *entrepreneur* can be defined as a self-employed individual, an innovator, or someone that creates an enterprise.[5] Since the late 1990s, China has become one of the most entrepreneurial economies on the planet and the birthplace of many successful entrepreneurs at home and around the world. Edward Tse (2015) identifies "four entrepreneurial waves" in China. The first occurred in the 1980s with the start of the economic reforms. The second followed Deng Xiaoping's renowned "southern tour," which accelerated the process of economic liberalization and removed the political stigma associated with private ownership. The third arrived with China's accession to the World Trade Organization in 2001 and the global economy. The fourth is occurring now—a highly disruptive phase characterized by a more global outlook, a wider acceptance of outside investors, and a greater propensity to innovate (Vaitheeswaran, 2015). These are China's "disruptors" (Tse, 2015). Statistics after 2001 show that China's established and nascent entrepreneurship[6] have caught up with countries such as the United States as shown in Figures 5 and 6. Since the Global Entrepreneurship Monitor (GEM) started conducting surveys and collecting data on entrepreneurial activity, China has outperformed the United States in terms of established business ownership (Figure 5). For instance, in 2014 about 11.6 % of Chinese aged 18-64 owned an established business compared to a rate of about 7% in the United States.

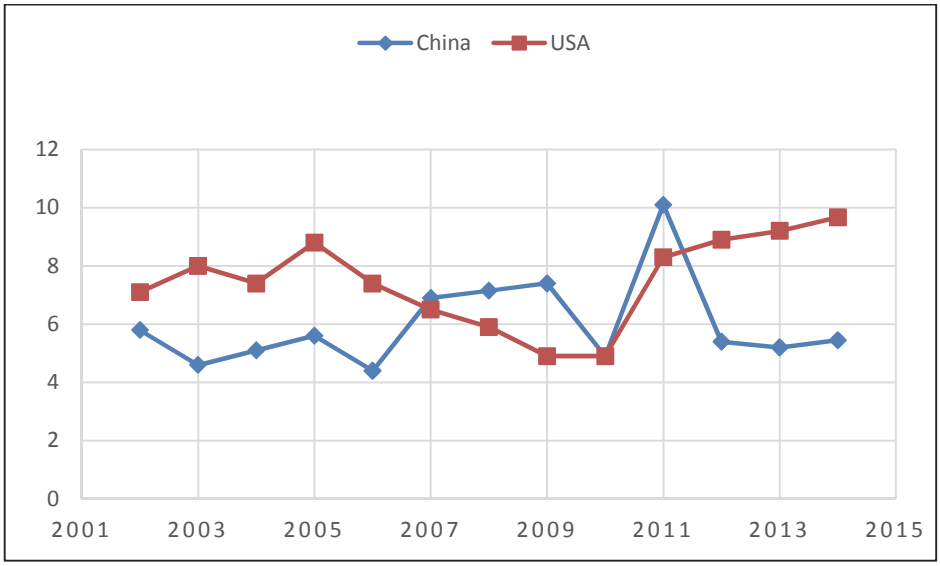
FIGURE 5
ESTABLISHED BUSINESS OWERNSHIP RATE (%)



Source: Knoema, 2016

In terms of nascent entrepreneurship, China was outperformed by the United States between 2002 and 2007 but then surpassed the United States, reaching a peak in 2011 from which it fell and later appears to have stabilized (Figure 6)

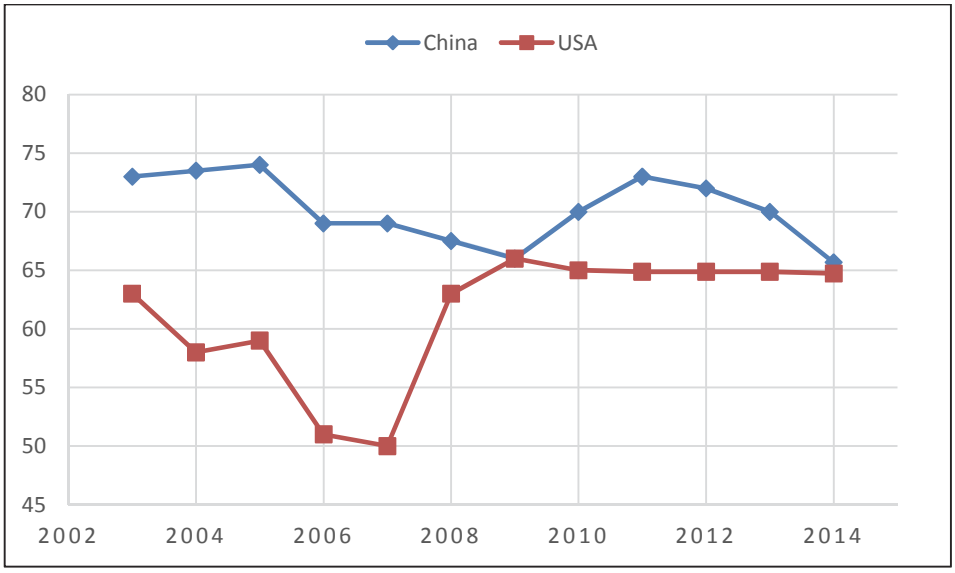
FIGURE 6
NASCENT ENTREPRENEURSHIP RATE (%)



Source: Knoema, 2016

In addition, more Chinese than Americans appear to be interested in becoming entrepreneurs and making it a career (Figure 7). The biggest difference was recorded in 2007 with 69% for would be Chinese entrepreneurs compared to 50% in the United States. The difference was narrowed down to about 1% in 2014 due to higher interest in the United States to start a business.

FIGURE 7
ENTREPRENEURSHIP AS A CAREER CHOICE



Source: Knoema, 2016

To sum up, entrepreneurship seems to be rooted and taking hold in China. In 90 Chinese cities, the number of entrepreneurs in every 10,000 members of the economically active population, increased from 130 in 2008 to 168 in 2010, with an average annual growth rate of 15 percent.

Factors Associated with China's Entrepreneurial Development

Literature in this area of study suggests that there are two types of factors – internal and external – that may influence a country's entrepreneurial development and performance. Internal factors include personal characteristics and motivation, whereas external factors include institutional and economic conditions.

Several studies investigate the determinants of self-employment in China such as Mohapatra, Rozelle, and Goodhue (2007), Zhang, Zhang, Rozelle, and Boucher (2006), and Wu (2002). These studies find a positive relationship between education and self-employment and a negative relationship between party membership and self-employment. The importance of social networks is well documented. Djankov et al. (2006) in a cross-section study of entrepreneurs covering six cities in three provinces, find that having family members and friends as entrepreneurs is the strongest influence in becoming an entrepreneur. Other factors, such as greed and the ability to take risks are also significant. Yueh (2009) finds that "the probability of becoming an entrepreneur is less if female, older, more educated and a Party member, but increases with having a mother who is/was in a skilled profession and a larger social network" (p. 782). In general, people engaging in entrepreneurial behavior have a few common personal traits such as independence, responsibility, diligence, a positive mind-set, desire for innovation, and so on. Other personal characteristics, including the ability to network, family background, educational attainment, age, gender, attitude towards risk, and marital status, also matter (Djankov et al., 2006).

Li and DaCosta (2015) compiled the personal profiles of Chinese entrepreneurs and non-entrepreneurs based on data collected by GEM in China in 2009 (Adult Population Survey) and found the differences to be statistically significant. In terms of age, more than half of all entrepreneurs are between 35 and 44 (34.3%) and between 45 and 54 (21%). The vast majority of entrepreneurs started their careers in the 1990s and are now in their 40s and 50s. Younger entrepreneurs (those aged 25 through 34) have vigorously emerged and already make up 23.9% of the entrepreneurial class in China. Gender differences in entrepreneurial activities are slight (2.4%). When it comes to education level, about 72.5% of Chinese entrepreneurs have only some secondary education or a secondary degree. Only 12.6% of them reveal they have post-secondary education. Non-entrepreneurs, however, seem to be better educated. When it comes to the self-confidence of survey respondents, about 30.5% of the entrepreneurs believe that fear of failure is one of the major obstacles preventing them from starting businesses, while this figure rises to 35.3% among the non-entrepreneurs. Among all entrepreneurs, 57.6% are confident that they have enough entrepreneurial knowledge, skill, and experience in operating businesses. Conversely, only 28.4% of non-entrepreneurs think they are equipped with such knowledge and ability.

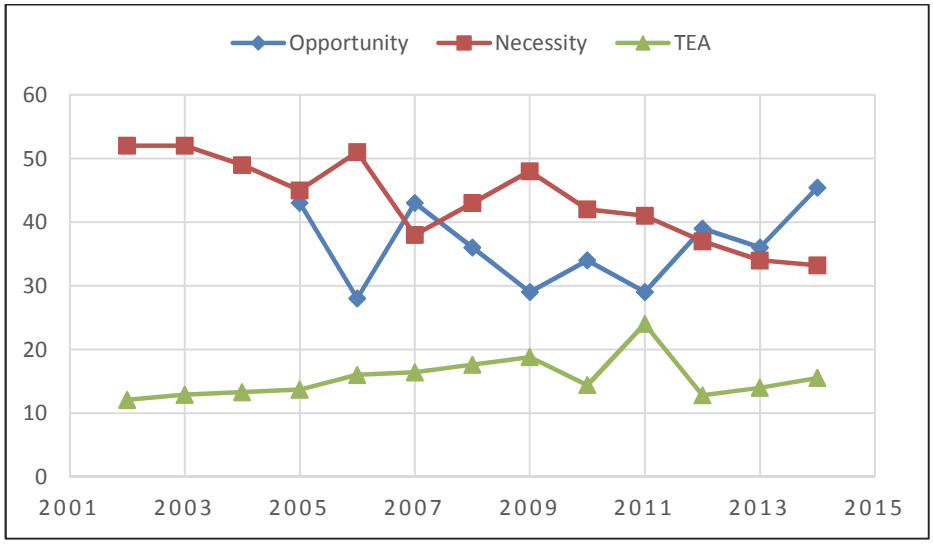
Li and DaCosta (2015) also offer insights on the role played by *guanxi* and motivation. There are two types of *guanxi* in China: *guanxi* with the Chinese Communist Party and personal *guanxi.* Yueh (2009) points out that *guanxi* can help entrepreneurs ease financial and institutional constraints. Li and DaCosta (2015) underscore the importance of personal *guanxi* for Chinese entrepreneurs. For instance, 70.8% of entrepreneurs personally know other entrepreneurs while only 55.3% of non-entrepreneurs have such connections. About 8.3% of entrepreneurs have recently provided funds to others, and among the investment recipients, 46.6% are close family members, 25% other relatives, 5.7% co-workers, 21.6% friends or neighbors, and 1.1% a stranger with a good business idea. By contrast, only 4.7% of non-entrepreneurs have recently been involved in such informal lending.

The remarkable income difference between entrepreneurs and non-entrepreneurs has encouraged many people to participate in entrepreneurial activities or *xiahai*. Yueh (2009) finds that urban entrepreneurs in China make around 30% more than non-entrepreneurs, which is a significant gap in their conditional mean income after controlling for age, gender, education, employment experience, occupation, employment sector, and locale (cities). Li and DaCosta (2015) found that 82% of entrepreneurs believe they will have high status and respect in society once they succeed. Furthermore,

86.8% of entrepreneurs believe successful enterprises have received wide media attention. Thus, such beliefs have contributed to a great entrepreneurial growth in China in recent decades. For example, 72.6% of entrepreneurs agree that starting a new business is a desirable career choice, while this opinion is supported by 65.5% of non-entrepreneurs. Entrepreneurs are also more optimistic than their counterparts about future business opportunities (30.6% versus 24.5%) and have higher expectations for business growth.

As for entrepreneurial motivation, 37.5% of entrepreneurs launch a business in response to a perceived opportunity, whereas 47.5% do it given "no better choice for work," (8.3% combine the two former reasons) and 6.7% have a job but seek better opportunities. As for the most important motive to pursue a business opportunity, 33.3% of entrepreneurs would like to gain greater independence, 55.6% would like to increase personal income, and the rest of 11.1% just hope to maintain their income. In contrast, 71% of non-entrepreneurs would like to pursue a business opportunity in order to improve their personal income. All these statistics suggest that money is a strong motive for non-entrepreneurs or entrepreneurs-to-be to initiate a start-up. Therefore, much of China's entrepreneurial behavior up to 2011 appeared to be dictated by necessity rather than opportunity. Li and DaCosta (2015) found that most entrepreneurial activity in China was "necessity push" rather than "opportunity pull." However, Chinese entrepreneurship appears to be entering a new stage. The motivation behind entrepreneurial activity has been shifting from necessity to opportunity (Figure 8).

FIGURE 8
TYPES OF ENTREPRENEURIAL ACTIVITY IN CHINA



Source: Knoema, 2016

On the other hand, Lu and Tao (2010) argue that the institutional environment generates stronger effects on entrepreneurship in China than the personal attributes of the would-be entrepreneurs. Clearly, the institutional environment, shaped by government policy and law enforcement, could largely speed up or slow down the entrepreneurial development in a country. Since the 1990s, the Chinese government at all levels has implemented fundamental reforms in taxation, finance, and law and has tried to create a more favorable and attractive business climate for private enterprises as described earlier.

Following the establishment of favorable laws to nurture the entrepreneurial culture, the Chinese government has also begun to promote public awareness of entrepreneurship, especially among the younger generation. Since the 1990s, most universities have integrated entrepreneurship education into their academic curriculum, aiming at cultivating young people's entrepreneurial talents and positive attitudes towards self-employment. To topple the barrier to entry in entrepreneurship, the government has

taken many proactive measures. For example, the government has eliminated the minimum capital requirements for young entrepreneurs to register enterprises. Many start-ups may also apply for seed financing from the government. At the same time, patents and copyrights have been strongly encouraged and highlighted on the government agenda as well.

Besides the institutional changes, economic revitalization also plays a critical role in promoting the entrepreneurial activities in China. Entrepreneurship has been recognized as an important engine for economic growth. The fast economic development, in turn, leads to a rapid growth of private enterprises and entrepreneurship in China. Due to the opening-up policy in the 1990s and the economic reforms that followed, market competitiveness in China has been greatly improved since then. The overall business climate has gradually become more supportive and friendly towards the private sector, attracting foreign direct investment (FDI) and with it "knowledge spillovers." All these factors will continue fostering the rapid development of Chinese entrepreneurship.

Last but not least, there are also regional disparities in entrepreneurial activity, as one would expect due to institutional, economic, and environmental differences across regions. Such differences stem from the dissimilitude in natural resources, human capital, religion, beliefs, education, infrastructure, local policy, culture orientation, etc. For example, the eastern areas of China are, in general, more entrepreneurial than the western regions due to historical and environmental reasons. The GEM Survey (Knoema, 2016) found that regional disparity in entrepreneurial activity increased between 2002 and 2011. The difference in the number of enterprises per 10,000 persons between developed and undeveloped regions increased from 20 in 2002 to 37 in 2011, which may exacerbate inequality.

INCOME INEQUALITY IN CHINA

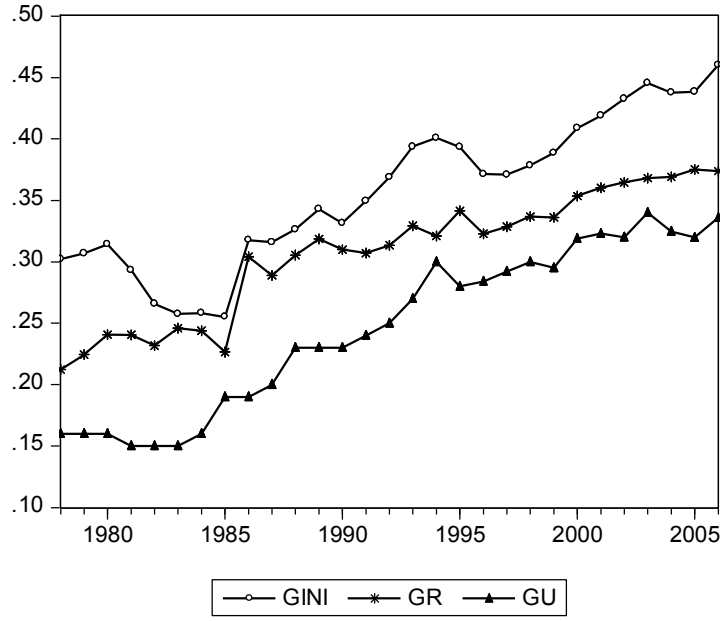
China embarked on a market-based economic reform in 1978 (c.f. Perkins, 1988). By most standards, this reform, which transformed China into the world's second largest economy, has been a colossal success.

However, one of the unintended consequences of the reform has been rising income inequality. The rural distribution of income during the 1970s and 1980s changed very little when compared to the mid-1950s while the within-urban inequality decreased.[7] That has been dramatically changing since the late 1980s as shown in Figure 9. These annual Gini coefficients measure overall income inequality as well as income inequality in rural and urban areas from 1978 until 2006 (Li & DaCosta, 2013). Figure 9 clearly illustrates that inequality has been growing over time. It also demonstrates that it is higher in the rural areas (GR) than in the urban areas (GU).

What is behind this rising inequality? Increases in rural-urban income differentials were found by Yang (1999) to be the driving factor behind the rising overall inequality in China. Yang relies on household survey data collected by China's State Statistical Bureau for the years of 1986, 1988, 1992, and 1994. The data consist of urban and rural samples of China's provinces of Sichuan and Jiangsu in proportion to their respective populations.

Other studies have addressed China's perceived growing income inequality by focusing on either rural areas or urban areas. For instance, Benjamin and Brandt (1999) examined income inequality in rural China by comparing data for 1935 and 1995 and concluded that the level of income inequality was essentially the same. They used household-level survey data for villages in north and northeast China (a sample of 1,094 rural households) and found a per capita household income Gini coefficient of 0.42 in 1935 and 0.38 in 1995. In other words, a more equal distribution of land did not seem to alter income distribution in a very significant way, perhaps due to undeveloped and ineffective factor markets. An additional, and new, factor put forth by the authors is the institutional change that the structure of households is undergoing – an increasing number of Chinese families are becoming smaller and nuclear, in lieu of multigenerational. This ongoing change may very well affect income inequality dramatically as it changes the traditional redistributive role of the family. In a more recent study, Benjamin et al. (2005) suggest that labor earnings from temporary migrant employment in urban areas are correlated with reductions in inequality in rural areas.

FIGURE 9
GINI COEFFICIENTS, 1978-2006



On the other hand, Khan et al. (1999) studied income inequality in urban China by comparing surveys for ten provinces undertaken in 1988 and in 1995.[8] They found that the income distribution in 1988 was "remarkably egalitarian." Even though urban inequality had increased somewhat, the Gini coefficient was still lower than for other countries. However, the Gini coefficient for the distribution of household income per capita went from 0.233 in 1988 to 0.332 in 1995, an increase of 42.5 percent (Khan et al., 1999). They concluded that "increased inequality in urban China was due entirely to greater inequality in the distribution within individual components of income" (pp. 297) and that government policy contributed to the growing inequality. Xue and Zhong (2003) found that income inequality in urban China had increased since 1995 and that urban unemployment and poverty were the major reasons. A different approach was adopted by Xu and Zou (2000) who used a panel data set to analyze provincial-urban income inequality and found that the reduction of the share of SOEs in GDP, high inflation, growth, and increasing exposure to foreign trade (measured by the sum of exports and imports as a share of GDP) contributed to rising inequality. In their study, schooling (measured as the share of residents with more than secondary schooling) and urbanization (measured as the share of nonagricultural population) were not significant.

Benjamin et al. (2005) summarize the findings of the existing economic literature as follows: "first, inequality has gone up during the transition; second, this is largely driven by widening interprovincial income differences; and third, in rural areas, the development of nonfarm opportunities has provided uneven rewards for households and is an important underlying source of inequality" (p. 770). However, their study finds that "the importance of spatial income differences at the regional, provincial and village level is declining over time" (p. 806) They find supporting evidence that nonagricultural incomes are an important source of inequality and suggest that the combination of rising education levels and the development of nonfarm opportunities can reduce inequality. Other studies have endorsed the importance of education in reducing inequality (Luo and Zhu, 2008).

Inequality is expected to increase in the early stages of development (and transition) but is it supposed to increase so much? Knight (2008) gives examples of how government policy has contributed to that state of affairs by trading equity for efficiency such as: 1) regional policy that favors certain regions namely along the coast; 2) government policy that promotes the rural-urban divide; and 3) the "large-scale redundancy program" in the state sector adopted in the 1990s that left 40 million state workers without jobs and benefits.

LINKING ENTREPRENEURIAL DEVELOPMENT AND INCOME INEQUALITY

Are entrepreneurship and income inequality positively or negatively related? Does entrepreneurial development increase or decrease income inequality? What is the theoretical relationship between entrepreneurship and income inequality? That relationship appears to be ambiguous as illustrated by previous research on the topic.

The importance of entrepreneurship for economic growth is well established in the literature. We then start by exploring the relationship between economic growth and inequality. Kuznets (1955) advanced that income inequality first increases with economic growth but then is expected to decrease as illustrated by the inverted U-shape of the Kuznets curve. In the early stages of economic development, those who own capital are the ones taking advantage of new investment opportunities, which will increase their wealth. On the other hand, an increase in the supply of labor brought about by rural migration to the cities contributes to low wages, thus increasing income inequality. According to Kuznets' hypothesis, economic inequality is expected to eventually decrease once society reaches a certain level of per capita income. Kuznets' U-hypothesis has been refuted by some (c.f. Fields, 2001) and supported by others (Barro, 2000).[9]

Of special relevance is Deutsch and Silber's (2004) contribution to the Kuznets hypothesis. By breaking down the Gini index into various income sources, they find that the "rising section of the Kuznets curve is mainly the consequence of the increasing share of wages while its declining section reflects the decreasing share of entrepreneurial income and the negative correlation between transfers and total income" (p. 110). In other words, income inequality increases with an increase in the labor income share and decreases with a decrease in the share of entrepreneurial income, revealing a positive relationship between entrepreneurial income—and thus entrepreneurship— and inequality. That finding is supported by Quadrini (1999) who shows that entrepreneurship leads to a larger concentration of wealth in the United States because of higher savings rates of entrepreneurs. Some studies link entrepreneurial income and wealth with the tax regime. Kanbur (1982) found that the extent to which entrepreneurship contributes to inequality depends on the progressivity of the tax system, as one would expect. Other studies such as Cagetti and DeNardi (2006) and Meh (2005) concur with these findings. That entrepreneurship contributes to income inequality appears to be the conventional wisdom, at least in the developed world. Isenberg (2014) goes as far as stating, entrepreneurship always leads to inequality because by definition entrepreneurs "burst into new markets and generate extraordinary wealth" as a reward for their smart and risk-taking behavior. He further postulates that the most successful entrepreneurship "disrupts" well-established industries and business models and may result in vast inequality.

However, inequality can also greatly motivate and foster innovation and entrepreneurial ventures (Isenberg, 2013). Gries and Naudé (2014) use a Lewis-type endogenous growth model to examine the role played by entrepreneurs in promoting structural change in developing countries. They differentiate between survivalist self-employment activities (in the traditional or informal sector), and opportunity-driven entrepreneurship (in the modern sector). They also distinguish between mature entrepreneurs and start-up entrepreneurs and between small and large firms. Their model shows how opportunity-driven entrepreneurship can propel structural transformation through innovation, provision of intermediate inputs and services as well as by increasing employment and productivity in both sectors. Naudé (2010) proposes that inequality can promote entrepreneurship in developing countries and that entrepreneurship

is a driver for development in the poorest countries. Fostering entrepreneurship through self-employment will be "welfare-enhancing" (p. 5). It will create new opportunities, increases in wages, and help reduce absolute and relative poverty (inequality). Conversely, Li and DaCosta (2015) found that income inequality has a negative impact on the entrepreneurial activities in China.

Entrepreneurial activities can be formal or informal. Developing countries are characterized by large informal sectors, which can help foster entrepreneurial development (Naudé, 2010). In these countries, self-employment is usually a matter of survival (necessity) rather than choice or opportunity. Some empirical studies support that, in fact, entrepreneurial activities contribute to less inequality by creating jobs at the local level, increasing wages, and improving social mobility. Kimhi (2010) claims that encouraging rural entrepreneurship in southern Ethiopia may be favorable for both income growth and income distribution. He found that "a uniform increase in entrepreneurial income reduces per-capita household income inequality" (p. 81) and that policies that promoted entrepreneurship among the low-income, low-wealth, and low-educated ranks of society would be particularly effective. Studies of other developing countries, like those by Oostendorp, Trung, and Tung (2009) in Vietnam and Chowdhury, Desai, Audretsch, and Belitski (2014) in South and East Asia, also found that entrepreneurship helps to reduce income inequality. And, in the context of economies in transition, Berkowitz and Jackson (2006) found that in Russia and Poland, higher rates of entry of new enterprises were associated with a more equitable distribution of income.

Chowdhury et al. (2014) examined three different types of entrepreneurial activity—necessity entrepreneurship, opportunity entrepreneurship, and total early stage entrepreneurial activity (TEA) — in low and middle-income countries[10] of South and East Asia during the period of 2004-2012 and concluded that the type of entrepreneurial activity is an important predictor of income inequality. More specifically, both necessity and TEA reduced income inequality whereas opportunity entrepreneurship increased income inequality. Opportunity entrepreneurs are likely to have higher motivation and education and better access to resources and networks. In addition, they found corruption to reduce the positive effect of entrepreneurship on income inequality. Countries with a low level of corruption are better equipped to reduce inequality through entrepreneurial activity than countries with a high level of corruption.

In short, previous research, mostly involving developed countries, suggests that higher rates of entrepreneurial activity are associated with higher income (and wealth) inequality. Two primary factors that contribute to this positive association are: 1) entrepreneurs are rewarded with higher rates of return for assuming higher risk; and 2) entrepreneurs exhibit higher savings rates. Barriers to entry, namely access to sources of credit, and other weak institutional conditions contribute to inequalities.

On the other hand, it has been proposed that inequality may promote entrepreneurship and that, at least in developing countries, entrepreneurial development is welfare enhancing and helps reduce inequality. It has also been suggested that different types of entrepreneurial activity may have different impacts on inequality and that the sign of the relationship depends on the level of development of the economy (Wong and Ho, 2010). Our study will add to the sparse research in this area by examining the case of China and offering additional evidence.

STATISTICAL MODEL AND EMPIRICAL ANALYSIS

In the following section, we will conduct a preliminary empirical analysis to find factors that determine the household income in China and the possible association between entrepreneurship and income inequality.

Data Source

Our data are retrieved from the 2011 China Household Survey (CHS). The CHS is a comprehensive questionnaire, administered to 8,092 households in China in 2011, designed to collect detailed information on each respondent family's financial conditions, educational attainment, entrepreneurial activity, attitudes, aspirations, and so on.

Statistical Model

A generalized linear regression model is adopted here to estimate the empirical linkage between personal characteristics and household income in China. This model can be written as below:

$$Income_i = \alpha + \beta \times P_i + \gamma \times S_i + \lambda \times E_i + \varepsilon_i \quad (1)$$

where "E" equals "1" if respondent i is an entrepreneur and "0" if not; P_i the vector of personal traits such as age, education, gender, employment status, motives, self-beliefs, political affiliation, and so on; S_i the vector of socioeconomic status, for example, house owner or renter; and ε_i the error term.

Preliminary Results

The preliminary results are presented in Tables 1 and 2 below. The current data set is cross sectional and only for the year 2011. We expect to continue this empirical analysis further in the future as we compile a longitudinal data set based on the historical information retrieved from the CHS.

1. The Association between Entrepreneurship and Income

TABLE 1
FACTORS ASSOCIATED WITH CHINESE HOUSEHOLD INCOME – CHS DATA (2011)

Dependent Variable: Income		Coefficients	
Famsize	How many family members are in your family?	0.134	(0.0097)***
Citypermit	Do you have this city/town's residence permit?		
	1. Yes	-0.154	(0.0623)**
	2. No		0^a
employed	Do you currently have a job including farming?		
	1. No	-0.191	(0.0593)***
	2. Yes		0^a
retiremode	Do you withdraw retirement salary, or social welfare?		
	1. Social welfare	0.235	(0.0350)***
	2. Retired / retirement payroll	0.311	(0.0521)***
	3. None		0^a
healthinsur	Does your family currently have social health insurance?		
	1. Yes	0.082	(0.0475)**
	2. No		0^a
unemployinsur	Do you have unemployment insurance?		
	1. Yes	0.255	(0.0481)***
	2. No		0^a
ruralresid	Do you live in rural area?		
	1. Yes	0.229	(0.0377)***
	2. No		0^a
region	Which region do you live?		
	1. East	0.282	(0.0374)***
	2. Middle	0.030	(0.0372)
	3. West		0^a
Marriage	Which marriage status are you in?		
	1. Single	0.117	(0.0895)
	2. Married	0.270	(0.0590)***
	3. Cohabitation	0.490	(0.2263)**

	4. Separated, Divorced or Widowed		0^a
Education	What is your education level?		
	1. Never attended school	-1.648	(0.1567)***
	2. Primary school or junior high	-1.304	(0.1489)***
	3. High school or secondary / vocational school	-1.008	(0.1475)***
	4. College/undergraduate degree	-0.657	(0.1455)***
	5. Master degree or beyond		0^a
Political	What is your political affiliation?		
	1. Youth League	0.125	(0.0677)**
	2. Chinese Communist Party	0.162	(0.0431)***
	3. Democratic or other parties or the masses		0^a
Houseown	The house you live in is which of the following?		
	1. Owned by family members	-0.026	(0.0889)
	2. Rented	0.184	(0.0915)**
	3. Free		0^a
Acqhome	How did you acquire this home?		
	1. Buy real estate / property	0.423	(0.0688)***
	2. Affordable housing	0.274	(0.1357)**
	3. Inheritance or gifts	0.078	(0.0871)
	4. Purchased at below market prices	0.455	(0.0863)***
	5. Financed housing	0.330	(0.0970)***
	6. Self-built / addition	0.184	(0.0656)***
	7. Demo / relocation	0.174	(0.1081)
	8. Other		0^a
Relocated	Has your family been relocated?		
	1. Yes	0.206	(0.0560)***
	2. No		0^a
Socialwelf	What do you think of the local social welfare		
	1. Extremely good	0.200	(0.0942)**
	2. Good	0.158	(0.0869)**
	3. Average	0.090	(0.0873)
	4. Poor	0.111	(0.0972)
	5. Very poor		0^a
Produc	Did you family engage in the production or operation of any industrial or commercial projects?		
	1. Yes	0.719	(0.0544)***
	2. No		0^a
Exprice	How do you expect commodity prices to rise in the coming year?		
	1. Rise a lot	0.389	(0.1238)***
	2. Rise a little	0.342	(0.1219)***
	3. Almost no change	0.191	(0.1280)
	4. Reduce a little	0.261	(0.1314)**
	5. Reduce a lot		0^a
Exphmprice	How do you expect home prices to change in the coming year?		
	1. Rise a lot	0.094	(0.0850)
	2. Rise a little	0.108	(0.0817)
	3. Almost no change	0.192	(0.0858)**
	4. Reduce a little	0.206	(0.0927)**
	5. Reduce a lot		0^a
EntrepreHH	Are you an entrepreneur, or self-employed?		
	1. Yes		0^a
	2. No	0.456	(0.0523)***

Data source: China Household Survey (2011). Authors' own calculation based on the full sample of raw data.
* Indicates significance at the 10% level; ** significance at the 5% level; *** significance at the 1% level;

Our results show that income is positively related to the family size. Unsurprisingly, if you do not have a job, your income is lower; on the other hand, if you receive social welfare or retirement, your income is higher. Social health insurance and unemployment insurance are also positively related to income. If you live in the eastern part of the country (East) your income is significantly higher underscoring regional disparities. A married household will have a higher income than its single counterpart. Being a member of the Communist Party appears to have a positive impact on income as well.

Our analysis also suggests that renting a home has a positive impact on income whereas owning is not significant. Being engaged in the production or operation of any industrial or commercial projects has a strong impact on the level of income. However, being a non-entrepreneur has a positive impact on income.

Note that 0^a indicates the "reference category" or the benchmark variable for comparison. For example, for *Education*, the "master degree or beyond" is the reference category. The negative signs in front of other categories imply that the lower the education, the lower the household income. Or, in other words, the higher the education, the higher the income. This means the relationship between education and income is actually positive.

2. Linkage between Entrepreneurship and Income Inequality

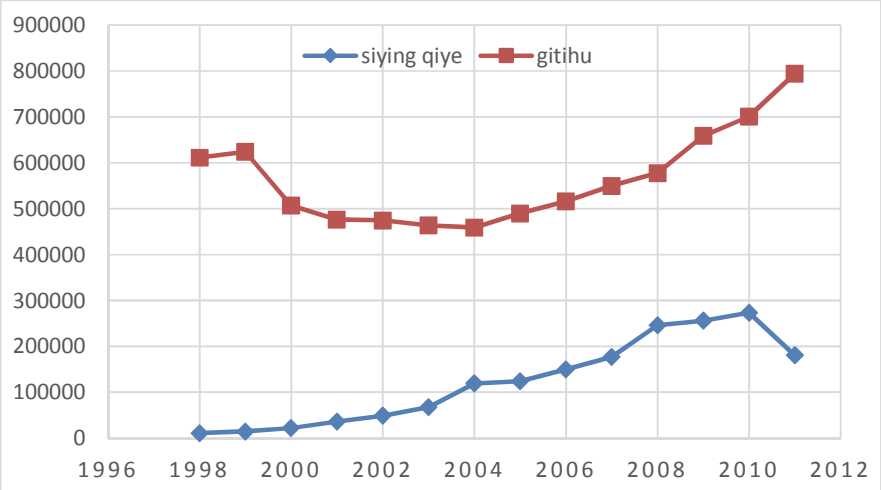
TABLE 2
INCOME INEQUALITY IN CHINESE HOUSEHOLDS – CHS DATA (2011)

	All Households (HH)	Entrepreneurial HH	Non-entrepreneurial HH
Gini	0.64	0.71	0.60

In the CHS data, entrepreneurs are reported as self-employed, consisting of two types: people running an individually owned business (*getihu*) and privately-owned enterprises (*siying qiye*). Again, *Getihu* is one self-employed owner who may hire up to seven other workers, while *siying qiye* may take the form of an enterprise that hires more than eight workers. If there is at least one entrepreneur in a surveyed household, we call it an entrepreneurial household, otherwise, a non-entrepreneurial household.

As Table 1 shows, becoming an entrepreneur does not necessarily help increase the household income. One possible reason might be that a large share of entrepreneurship in current China is necessity driven (Li and DaCosta, 2015), and most of the entrepreneurs are *getihu* (Figure 10). These are small businesses, which may generate relatively low and unstable income compared with those privately owned enterprises.

FIGURE 10
ENTREPRENEURIAL DEVELOPMENT IN CHINA (*GETIHU*'S UNIT: 100; *SIYING QIYE*'S UNIT: 1)



In the meantime, the results in Table 2 reveal that entrepreneurship does connect with income inequality as measured by the Gini coefficient. In fact, we find that income is more evenly distributed among non-entrepreneurial households than the entrepreneurial ones. It implies that income disparity and entrepreneurship may be negatively correlated with each other.

CONCLUDING REMARKS

China's transition from a centrally planned system to a market-oriented economy has transformed China's economic structure and created a growing private sector and a new class of dynamic entrepreneurs. Private enterprises have increased in economic importance, filling the vacuum left by a shrinking state sector in post-reform China. China has caught up with developed countries such as the United States in both nascent and established entrepreneurship overtaking the United States in terms of "entrepreneurship as a career choice." Entrepreneurship is certain to remain the primary driver of China's economy in the 21st century. Post-reform China has also been experiencing rising income inequality, one of the most difficult economic challenges faced by both developed and emerging economies. A Gini coefficient higher than 0.4 is likely to lead to social unrest, and China's is way over that level (NBS's estimate is 0.473 in 2013, but other estimates are higher than 0.5 including those calculated on the basis of the 2011 China Household Survey).

Our paper tries to explore the relationship between entrepreneurial development and income inequality in China. We first review the rise of the private sector since the 1990s in contrast to the decline of the state-owned sector during the same period. Next, we examine the factors that may affect entrepreneurial activities in China and the characteristics of Chinese entrepreneurs in particular.

Then we conduct empirical analysis to understand the relationship between entrepreneurship and income distribution in China. Our data are obtained from the 2011 China Household Survey (CHS). In the CHS data, an entrepreneurial household is defined as one where there is at least one entrepreneur. A generalized linear regression model is used to identify factors that affect household income in China. In the meantime, the Gini index is calculated for both entrepreneurial households and non-entrepreneurial households.

We find that becoming an entrepreneur does not necessarily help increase the household income. In addition, income is more evenly distributed among non-entrepreneurial households than entrepreneurial ones, which suggests a negative association may exist between entrepreneurship and income inequality.

However, in order to understand the direct relationship between the Gini index and entrepreneurship in China, we will need to compile a longitudinal data set. This work will be done in the near future.

ENDNOTES

1. According the National Bureau of Statistics (NBS) reached its peak at 0.491 in 2008, falling to 0.49 in 2009, 0.481 in 2010, and 0.477 in 2011.
2. "Industrial enterprises above designated size" are all state-owned enterprises and non-state owned enterprise with annual revenue from principal business over 5 million from 1998 to 2006, and are industrial enterprise with annual revenue from principal business over 20 million Yuan after 2006.
3. For more on the role played by Township and Village Enterprises on China's economic growth see DaCosta and Carroll (2001).
4. The difference between the two was ideologically and politically important, while the former were viewed as small proprietors the latter were viewed as capitalists. The number 8 is (wrongly) attributed to Marx (Xie, 1992).
5. Djankov et al. (2006) defines an entrepreneur as the "owner or co-owner of a business with five or more employees" (p. 349).
6. *Nascent entrepreneurship* refers to those in the first three months of running a new business. New business owners are former nascent entrepreneurs (in business more than three months, but less than three and a half years). They become established businesses afterwards.
7. There was a major decrease in rural inequality in the early 1950s because of land confiscation.
8. The 10 provinces were Beijing municipality, Shanxi, Liaoning, Jiangsu, Anhui, Henan, Guangdong, Yunnan, and Gansu. Sichuan was added in 1995.
9. Barro (2000) finds that although the Kuznets curve "emerges as a clear empirical regularity" it fails to "explain the bulk of variations in inequality across countries or over time" (p. 5) (Barro groups all theories that examine the macroeconomic relations between inequality and economic growth into four broad categories: credit-market imperfections, political economy, social unrest, and saving rates. Since these theories have offsetting effects, the net impact of inequality on investment and growth is ambiguous).
10. The countries included in the study are Bangladesh, China, India, Indonesia, Malaysia, Pakistan, Philippines, and Thailand.

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