
Structural change, environment and policies of entrepreneurial firms in China

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In this paper, the authors try to answer three questions. What trends and structural change have entrepreneurial firms experienced during the last decade? What differences has China displayed compared with other countries, especially major GEM countries? What should China do next with regard to entrepreneurship policy? We find that the unstable trends in entrepreneurial start-ups and private enterprises are the most active part in the creation of new ventures. We also find that the environment for entrepreneurship should be improved in four aspects, and China should consider an entrepreneurship policy with a strategic view.

Introduction

In a broad definition, there are about 40 million SMEs in China. According to a narrow definition, there are about 10 million SMEs. SMEs have accounted for 99%, 60%, 40% and 60% in total numbers of enterprises, sales, realised income and tax, and export, respectively. In the 1990s, about 76.6% of new added industrial income derived from SMEs. 75% of the working population were employed by SMEs, and 90% of the new jobs were created by SMEs. 60% of the export total came from SMEs. Wherever SMEs have good opportunities for development, the regional or industrial economy is in a good situation. In addition, 85% of SMEs are private firms, among which 15.2% are technology-based firms. SMEs play a very important role and occupy a significant position in the national economy.

One of key issues in the promotion of SME development of SMEs is the research into their environment and policies. Since in the course of the last two decades entrepreneurial firms have emerged and grown continuously, they have become an important driving force in the development of the Chinese economy. Entrepreneurial firms are the most active forces of SMEs. When individually owned firms are also taken into consideration, then entrepreneurial firms account for a higher percentage in total of SMEs. So far, only little research has been conducted into the environment and policies of entrepreneurial firms. Therefore, this paper pays a great deal of attention to the environment and policies of entrepreneurial firms.

This paper is organised as follows. The following section presents the growing trends and structure of entrepreneurial firms with the help of statistical data. In the third section, a comparative analysis of the entrepreneurial environment is introduced. Entrepreneurial policy is presented in the fourth section. The fifth section concludes the paper.

Growing trends and structures of entrepreneurial firms

Trends

The absolute number of Chinese entrepreneurial firms increased from 18 million in 1990 to 38 million in 1999. The average annual growth rate amounted to 11%.

However, the annual growth rate of new entrepreneurial firms began to decline after the peak rate was reached in 1994 (figure 1).

There are two reasons for this: the first is that Deng Xiaoping, the designer general of Chinese reform and opening, stated definitely that China would become a market economy when he visited South China in 1992. Entrepreneurship was encouraged nationwide, many more private funds were invested, taking out bank loans was relatively easy. After 1995, an obvious inflation occurred. The government took measures to overcome the economic heat and reduced the volume of investments. The central bank exercised a tight monetary policy and strictly controlled the size of loans. The financial environment became significantly worse.

The second is that high-tech firms are only part of the number of entrepreneurial firms. Although there is a clearly rising trend in new high-tech venture start-ups, a majority of entrepreneurial firms are not high-tech firms. Therefore, on the one hand, high-tech firms are started up and grow fast, whereas on the other hand, the sum-total of new entrepreneurial firms is decreasing.

Year	Small firms *(1M) (1)	Individually owned ** (1 M) (2)	(3) = (1)+(2)	Numbers of start-ups per year (1M); (4)= (3)Y _{n+1} - (3)Y _n
1990	4.64	13.28	17.92	—
1991	4.86	14.17	19.03	1.11
1992	5.91	15.34	21.25	2.12
1993	7.50	17.67	25.17	3.92
1994	8.25	21.87	30.12	4.94
1995	8.42	25.28	33.70	3.59
1996	8.21	27.04	35.25	1.55
1997	7.72	28.51	36.23	0.98
1998	6.75	31.20	37.95	1.72
1999	6.52	31.60	38.12	0.17

Data sources: * Chinese SMEs Yearbook (2000); ** Collection of industrial and commercial management Statistics (1991–1998), Office of State Administration of Industry and Commerce. Forty-Year Statistics of Administration of Industry and Commerce of China, China Statistics Press.

Figure 1: Growth trend of entrepreneurial firms during 1990–1999

Structures

Two points can be read from the trends, namely that the number of entrepreneurial firms is still increasing, and the growth rate of entrepreneurial firms is decreasing. We can deduce that the total number of entrepreneurial firms cannot increase without limit, and the annual growth rate of entrepreneurial firms cannot always rise to a higher level. After a certain period of time, the annual growth rate will be stable and change in line with the economic cycle, environment and policies.

In terms of the nature of firms, however, growth would appear to differ. Start-ups of SOEs, collective enterprises and FDIs decreased. The collective firms decreased to the highest degree, followed by SOEs. At the same time, the numbers of private firms grew fast and at a higher speed (figure 2). Technology-based firms showed a similar trend to that of private firms.

Thus the growth structure of Chinese entrepreneurial firms shows that start-ups of SOEs, collective enterprises and foreign investment decreased, whereas start-ups of private firms and technology-based firms increased. This trend indicates that an unbalanced development exists in different types of entrepreneurial firms. More and more private and technology-based firms are emerging. SOEs and collective enterprises account for fewer entrepreneurial firms.

Numbers of start-ups according to types of enterprise (1990-1999)

Year	SOEs		Collectives		Foreign		Private		Individually owned	
	Total number (1M)	Increment (1M)	Total number (1M)	Increment (1M)	Total number (000)	Total number (000)	Total number (1M)	Increment (1M)	Total number (1M)	Increment (1M)
1990	1.15	—	3.38	—	25	—	0.10	—	13.28	—
1991	1.25	0.10	3.48	0.1	37	11	0.11	0.01	14.17	0.89
1992	1.55	0.29	4.12	0.64	84	47	0.14	0.03	15.34	1.17
1993	1.95	0.40	5.16	1.04	168	84	0.24	0.10	17.67	2.33
1994	2.17	0.22	5.46	0.3	206	38	0.43	0.19	21.87	4.20
1995	2.22	0.05	5.34	-0.12	234	28	0.65	0.22	25.28	3.41
1996	2.16	-0.06	5.01	-0.33	240	6	0.82	0.17	27.04	1.76
1997	2.08	-0.08	4.47	-0.54	236	-6	0.96	0.14	28.51	1.47
1998	1.84	-0.24	3.74	-0.63	228	-8	1.20	0.24	31.20	2.69
1999	1.65	-0.19	3.17	-0.57	212	-16	1.51	0.31	31.60	0.40

Data source: 1. Collection of Industrial and Commercial Management Statistics (1991-1998), Office of State Administration of Industry and Commerce. 2. Forty-Year Statistics of Administration of Industry and Commerce of China, China Statistics Press.

Figure 2. Numbers of start-ups according to types of enterprise (1990-1999)

Private enterprises

It is necessary to analyse the private enterprises in a special paragraph, just as above, we mentioned private enterprises as the active part among entrepreneurial firms. If we exclude individually owned firms, only private firms display a positive growth rate in start-ups since 1995.

%

	Numbers	Investment	Employment	Registered capital	Production value	Sales
Eastern regions	67.06	61.68	63.09	69.80	74.70	68.08
Middle regions	20.03	23.27	22.97	17.09	16.23	21.16
Western regions	12.91	15.05	13.95	13.00	9.07	10.75

Figure 3: Private enterprise location and major economic indicators (1999)

However, private enterprises in China developed unevenly. More than two-thirds of private enterprises are located in the eastern regions. The same applies to investments, employment, registered capital and sales. The eastern regions are among the more highly developed areas in China and have also been successful with regard to reform and opening. Therefore the development of private enterprise may constitute one source of economic potential. Without private enterprises, the eastern regions could not develop so fast and become so affluent.

Technology-based firms

Many preference policies and programmes are focused on technology-based firms in China. Favourable measures have been taken in a systematic and continuous way. From the beginning, high-tech entrepreneurial firms have been granted many more advantages than those in the traditional industry sectors.

The term *technology-based firm* seems to have been coined by the Arthur D. Little Group, which defined it as an independently owned business that has been established for no more than 25 years and is based on the exploitation of an invention or technological innovation which implies substantial technological risks.

Shearman and Burrell refer only to new independent enterprises which develop new industries. Shearman and Burrell regard the development of the medical-laser industry as a classic example of where technology-based firms are established because, when the industry was new, such firms were both newly established and independent.

Butchart's definition has been widely used. Technology-based firms refer to sectors which have higher-than-average expenditures on R&D as a proportion of sales, or which employ proportionately more *qualified scientists and engineers* than other sectors.

A very broad definition would embrace all new firms that operate in *high technology* sectors. However, the definition of high technology is also problematic. In the Chinese definition, technology-based firms refer to the small and medium-sized firms run or founded by scientists and technical personnel who are guided by the principles of "fund raising by themselves, voluntary cooperation, independent management, and sole responsibility for profits and losses", and are mainly engaged in the industrialisation of achievements of research and development, technology transfer, consultancy and technological services.

There are four contributions made by Chinese technology-based firms:

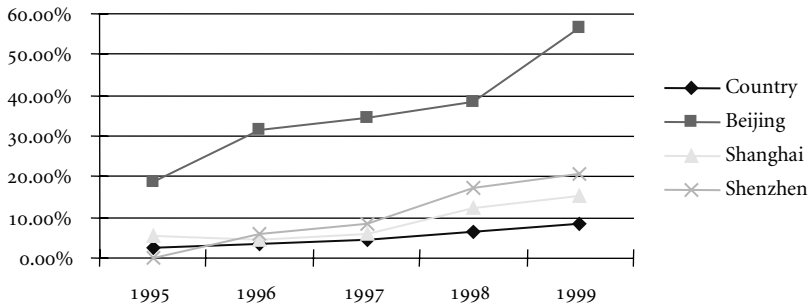
1. Creating a great number of jobs. While employment in the manufacturing industry decreased from 1995 to 2000, technology-based firms in high-tech zones retained a positive growth rate in job creation (figure 4).

Growth rate	1995	1996	1997	1998	1999	2000
High-tech zones (%)	25.3	15.2	28.9	18.4	27.0	13.6
manufacturing industry (%)	2.0	-0.4	-1.5	-13.5	-2.5	-0.8

Figure 4: Job creation comparison in the manufacturing industry and in high-tech zones.

Data source: China Economic Information Website

2. An increasing contribution to GDP. At the national level, technology-based firms contributed more and more to the GDP, from 2.6% in 1995 to 8.3% in 2000. Particularly in cities such as Beijing, Shanghai and Shenzhen, high-tech industries make higher contributions to the local GDPs, and these cities are also the most active places with regard to entrepreneurship (figure 5).



Source: China Science and Technology Statistics Yearbook (2000)

Figure 5: Total income of high-tech industry zones as the percentage of the local GDP.

3. A growing contribution to high-tech export. The export of high-tech products produced by technology-based firms accounted for 32.3% of the total of high-tech products exported in 1999. This is a great increase when compared with the quota of 15.4% in 1995. Obviously, technology-based firms are major players in high-tech product export.
4. A great number of entrepreneurs are appearing. In the past two decades, many successful new ventures and entrepreneurs have emerged. Their success encourages many would-be entrepreneurs. Their experiences provide valuable knowledge and skills, setting an example for followers. The real entrepreneurs have an impact on the entrepreneurial environment and policies. Actions and words from successful entrepreneurs are promoting the new entrepreneurial spirit.

Comparison with entrepreneurial environments

The degree of activity in the creation of new ventures is different in various types of firms. However, the entrepreneurial environment of private enterprise is not better than that of SOEs and collective enterprises.¹ Subsequent to the analysis of trends and structural change in entrepreneurial firms, it is necessary to examine the entrepreneurial environment and look for ways of improving it. Entrepreneurship is affected by a number of entrepreneurial conditions. We use the entrepreneurial conditions designed by GEM (Globe Entrepreneurship Monitor) to analyse the difference between China and major countries in the GEM report in a comparative perspective.

Entrepreneurial environment conditions include financial support, government policy, government programmes, education and training, research and development

¹ High-tech firms are not included since high-tech ventures have a better entrepreneurial environment than that of other types of firms.

transfer, business and professorial infrastructures, entry barriers, access to physical infrastructures, cultural and social norms.

Financial support

Major financing ways in GEM countries include informal private investment, venture capital and a growing enterprise market. Comparatively, informal investment is the dominant financing source for new ventures in China. Owing to the lack of a credit system, informal investment also encounters many problems. Considering Chinese practical working life, more attention should be paid to improving bank loans, apart from completing venture capital mechanisms and encouraging private capital to involve industry investments. Acceptable methods of improving bank loans are the provision of incentives for banks to grant loans to entrepreneurial firms, guarantee mechanisms, and the establishment of an SME banking system.

Government policy

GEM countries have a lot of favourable policies that focus on entrepreneurial firms, including high-tech firms. However, favourable policies in China mainly benefit high-tech firms, whereas start-ups in traditional industries are not lucky enough to share those favourable policies.

Government programmes

Many technological innovation-promoting programmes have been set up, such as the Spark Programme, the Torch Programme, the National New Product Programme, etc. But only a small programme focused on new ventures other than high-tech firms. The most famous government programme for the support of new ventures is the Innovation Fund for Technological Small and Medium-Sized Firms founded in 1999. The purpose of establishing this innovation fund is to promote technological innovation in firms and to accelerate the industrialisation of achievements of technological sciences and technology-oriented markets, such as the industrialisation of achievements of the “863” Programme, the Key Projects Programme, and the “Torch” Programme. Its keystone is to provide money for projects and firms in early stages of industrialisation (seed stage and start-up stage) with high growth potential, technology advantage, and a better market future being the most urgent requirements for the government. By the end of November 2001, the innovation fund had provided about CNY 1.8 billion. The average amount of funds for each project is CNY 745 000. Projects which obtained grants account for 75.46%, projects which received subsidies account for 24.54%.² Start-up firms that had been in existence for less than eighteen months account for 31% of the total of firms that received innovation funds. The projects of R&D and intermediary testing account for 73% of all the projects. Innovation fund support concentrated on the information technology industry (30%), the bio-pharmacy industry (18%), and the new-materials industry (15%).

² Source: www.innofund.gov.cn

The establishment of a national innovation fund results in the establishment of local government's technological innovation funds. Local governments and high technology development zones follow three ways to match the central government's innovation fund:

1. they set up special funds, i.e. they set up funds similar to those of central government
2. they provide matching money to the projects or firms that received support from the innovation fund of central government. For example, Guangdong province decided to set up a fund to provide matching money at ratios of 3:1 to 1:1
3. they set up venture capital companies.³

Education and training

Major GEM countries generally attach importance to liberal education and inject much capital into it. Although in recent years China has placed more emphasis on the importance of education, input is still lower. Entrepreneurship education has started in China, but it is in its infancy in comparison with other countries such as the United States.

It is urgent that China should develop entrepreneurship education and training abroad, and boost the motivation for and consciousness of entrepreneurship. The content of entrepreneurship education has its special issues, such as opportunity recognition, integrating resources and cultivating the entrepreneurial spirit, which are heaven and earth compared with general training in business and administration.

Research and development transfer

Owing to a difference in research and development transfer, there is a large gap between China and countries with a higher level of entrepreneurial activities. Our suggestions for reducing this difference are to encourage R&D at the level of firms, to increase inputs into information infrastructures, to reinforce the protection of intellectual property rights, and to support the establishment of a combined research centre among universities and firms.

Entry barriers

The opening of domestic markets comprises two aspects: an opening of industry, and local protection. An opening of industry means that now, many industries allow entrepreneurial firms to enter. Local protection means that now, local governments strongly protect their own firms.

With regard to industrial opening, from among more than eight industrial sectors, state-owned capital is permitted to enter 72 sectors, foreign capital is permitted to enter 62 sectors, but only 41 sectors are open to private enterprise.

As the elimination of monopoly in China is beginning now, however, local protection is becoming stronger and stronger. Some scholars have found that the trade and investment barriers among provinces are even higher than those of the members of the European Union.

³ Source: www.cssti.net.cn

Access to physical infrastructures

A better incubating environment has been provided for high-tech entrepreneurial firms. Almost all high-tech industry development zones have their own incubator(s). Originally, the government founded incubators, which were one of the services provided by the government. Since private capital discovered the huge space of value creation in a combination of incubator and venture capital, many new incubators were founded with non-government capital.

Moreover, the Chinese government has approved 20 university science parks after establishing high-tech industry development zones, incubators and high-tech guarantee companies in order to encourage the industrialisation of science and technology achievements and to drive the development of the high-tech industry.

Culture and social standards

China has a good tradition of becoming rich by hard work. Granting credit has always been respected. However, the most serious hidden problems in business operation are a lack of credit mechanisms and business rules. The former means that owing to the absence of a credit system, no monitoring and punishment mechanisms for bankruptcies have been established. Bankruptcy costs are very low. China needs to establish a credit industry through the introduction of an advanced credit system along the lines of other countries. Business rules should cover a firm's internal and external working requirements and the business ethic which employees should comply with.

Entrepreneurship policies

Framework of entrepreneurship policies

An improvement in the entrepreneurship environment directly depends on the guidance of entrepreneurship policies. The core of entrepreneurship policies is an improvement of the entrepreneurship environment, a reduction of the cost of creating new ventures, and the encouragement of entrepreneurial activities.

The framework of entrepreneurship policies should consist of legislative policies, business and administration policies, physical infrastructure policies, financial policies, fiscal policies, and education and training policies.

Concerning legislative policies, the central and local governments of China issued laws that enhance the legal position of entrepreneurial firms, such as the Law of Partnership (1997), and the Law of Sole Cooperation (1999). The State Commission for Economy and Trade issued opinions on encouraging and promoting the development of SMEs (2000). Now the very important law – the Law of Promoting SMEs – for entrepreneurial firms is being drafted at present.

The major purpose of business and administration policies is to reduce the costs of establishing a firm, which includes changing the system and procedure of starting up a firm, cutting down the steps and requirements, and increasing the efficiency of dealing with each item.

With regard to physical infrastructure, local governments support incubation aimed at high-tech firms, and actively encourage the development of local high-tech industry zones.

As to financial policy, local governments encourage various financial supports for entrepreneurial firms, such as bank loans, special funds, guarantee systems, and venture capital.

The most important policy for entrepreneurial firms may well be fiscal policy. The promotion of entrepreneurship in fiscal policy hinges on specific taxation policies. Even though most of these policies were not aimed at SMEs, SMEs obviously benefit from these policies, which include:

1. a township enterprise policy
2. a high-tech firms policy within high-tech industry development zones
3. policies concerning the tertiary industries
4. income tax policies for small firms.

Evaluating entrepreneurship policies

At present, the question is not if China has any entrepreneurship policies. China certainly does have entrepreneurship policies. The urgent question is how to design and form a national entrepreneurship-policy system and strategically push entrepreneurial activities. At this level, China has not modelled a systematic entrepreneurship policy. The policies mentioned above are only applied in different aspects, and most of them were not aimed at entrepreneurial firms. The national innovation system and technological innovation policies have been studied in depth in China and are closely considered by the government. Entrepreneurship policy is accorded the same importance as innovation policy. It is high time that all levels of government paid more attention to entrepreneurship policy.

Concerning the process of growth, entrepreneurial firms basically face four difficulties: it is difficult to raise capital, it is difficult to achieve innovation, it is difficult to get talent, and it is difficult to obtain a better entrepreneurial environment. Entrepreneurship policy can contribute many methods and ways to solve or overcome these difficulties.

Conclusion

Many problems have been raised in this paper. We have found that in a worse entrepreneurial environment, private firms grew fast compared with other types of firms. The basic reason is that they faced much more competitive pressure and had a much clearer motivation to create wealth.

Four key improvements for an entrepreneurial environment should be to increase the opening degree of domestic markets, to create a better financing environment, to develop entrepreneurship education and training, and to establish a credit system.

China has an entrepreneurship policy. But the urgent task is to build a policy framework for entrepreneurship in order to provide strategic guidance for entrepreneurial activities in the country as a whole.