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Research on Mechanism of Application and Exit of Venture Capital in University Science Park in China

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Abstract

Venture capital in the investment of University Science Parks (USP) in China is low and has difficult to play a leading role. Also venture capital can't be integrated with projects and is in a poor efficiency. Adopting diversified methods to build a network of using venture capital and establishing a scientific evaluation system to construct a management system for venture capital ensures the efficient use of venture capital. Since recycling of venture capital promote the development of the USP, research on the exit mechanism of venture capital is very important. In order to make the venture capital exit smoothly, the USP should use appropriate introducing way and select the best exiting way and time and train venture capitalists.

Key words: University science park; Venture capital; Efficient utilization; Exit mechanism

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INTRODUCTION

Venture capital played a critical role in the development of University Science Parks (USP). Foreign scholars generally believe that venture capital can meet the financing requirements of technology innovation. Hellmann & Puri (2002) concluded that the enterprises supported by venture capital generally develop faster and robust. Keuschnigg & Nielsen (2004) built a financing model for project start-up phase based on the two-way moral hazard, after empirical analysis, they believed that venture capital had a dramatic role in entrepreneurship financing and management, but capital gains tax levied by the government would weaken the positive effect.

According to statistics by Torch High Technology Industry Development Center of the Ministry of Science and Technology of the People's Republic of China (MOST), there are more than 300 venture capital organizations holding about 500 billion Funds and more than 2,000 investment projects. Among the total amount of investment, 90% or more were concentrated towards high-tech industry; and 85% invested firms have been operating for not more than 5 years; and 65% firms were in seed stage, early stage or growth stage; and the paid-in capital of 80% firms was less than 30 million Yuan. Compared with foreign counterparts, China's venture capital organizations preferred to small businesses and invested in high-tech sectors significantly higher than the international level. In all the firms which were invested, 4% have been listed, about 10% will be listed, 11% were acquired by other companies, 63% were bought back by corporate managements and only 5% were closed and liquidated. The data suggest that operating conditions of the firms supported by venture capital is far better than general domestic enterprises (Torch High Technology Industry Development Center of the Ministry of Science and Technology of the People's Republic of China, 2010).

Since the amount of venture capital is limited, the USP should construct application and exiting mechanism of venture capital so as to fully use of it.

1. ANALYSIS ON THE APPLICATION OF VENTURE CAPITAL IN THE USP IN CHINA

1.1 Problems on the Application of Venture Capital in the USP in China

Venture capital is important in guarantying the funds which are needed by Chinese USP, but it has not been fully used.

1.1.1 Smaller Venture Capital Difficult to Play Leading Role in the Development of the USP

Because the network of venture investment has not been formed which included all potential forces such as individuals, corporations, financial institutions and non-financial institutions, the individual venture investors have limited investment in supporting the USP and operation results of the investment are poor. Presently, many venture capital organizations are short of capital, and only have a few hundred million or even million Yuan. It is very difficult to provide financial support for technology projects. Because of weakly financial strength, venture capital organizations are not able to resist risk, that is, they can't diversify investment risk, which make the venture capital not able to recycle and difficult to promote the development of the USP.

1.1.2 Low-Efficient Venture Capital Difficult to Make the Combination of Capital and Project

According to an analysis about 13 venture investment funds of America, the finding is that 50% of income obtained by only 6.8% of venture investment and 75% of income obtained by 15.7% of venture investment. The invested projects which can bring benefits are less than 1/4 (ZHANG, YANG, 2010). Due to information asymmetric, Venture capitalists could not grasp the prospects of proposed projects, and they are afraid to invest in line with prudence. Then there were two bad consequences. One is venture capital not meet with the need of R&D and industrialization; the other is the poor efficiency in using venture capital because the funds couldn't invest to the project with development potential (MAO, YAO, 2007).

1.2 Measures to Efficient Use of Venture Capital in the USP in China

In most foreign countries, the main source of venture capital are government subsidies, low interest or interest-free loans, funds from venture capital companies, the owners' capital of venture investors, various financial subsidies and foreign investment. Only all these venture capitals together can the benefits get.

1.2.1 Building the Network of Venture Capital by Diversifying the Venture Investment

Different sources of venture investment will produce different effects on the running of the USP.

1) Venture investment to the USP by venture capital organizations

China's venture capital is mainly from venture investment institutions. The total amount of venture investment institutions and the incremental, the total amount of capital managed and the incremental in 1998-2009 are as shown in table 1.

Table 1
The Total Amount of Venture Investment Institutions and the Capital Managed and the Incremental in 1998-2009 in China

Years	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
The total amount of institutions	76	118	249	323	366	315	304	319	345	383	464	576
The incremental institutions	25	42	131	74	43	-51	-11	15	26	69	81	112
The total amount of capital (100 millions)	168.8	306.2	512	619.3	688.5	616.5	617.5	631.6	663.8	1112.9	1455.7	1605.1
The incremental capital (100 millions)	67.6	137.4	205.8	107.3	69.2	-72.0	1.0	14.1	32.2	449.1	342.8	149.4

Source: Wang Yuan etc.. *Venture Capital Development in China 2010*. Beijing: Economy and Management Publishing House, Sep. 2010

After 2006, the "stage forward" trend of venture capital was more obviously, that is, venture capital has become heavily concentrated on the early and middle stage (SHAN, 2001). Therefore, it is possible for venture capital firms to invest to the USP.

2) Venture investment to the USP by themselves

The USP fund R&D or incubation joint with venture capital companies. By taking advantage of the incubators for the "convergence" of businesses and "seed" capital injection into technology start-ups, the cost and risk of venture investment can be reduced. Up to now, there are 279 state-level science and technology incubators and among which there are 86 national USPs. It was said in *Annual Report of National Science and Technology Project 2010* that angel investment to incubators was increased in 2009. Results are as follows. First, "The First Fund of Start-ups" was established by Business Plan Competition, which was organized by the incubators in Shenzhen, Beijing, Shanghai, Chengdu and other places. 29 million Yuan investment was injected into 17 winning projects. Second, the First Incubation Funds was established by 5 private incubators and Shanghai Tianyi Investment Company. The scale of the Funds is 43 millions Yuan. Third, national pilot work of Shared Business Incubation was carried out by Beijing CapitalBio, SOKY and HuiLongsen International Business Incubator Co. Ltd in order to promote the development of holding-share incubators (Department of Development and Plan of the Ministry of Science and Technology of People's Republic of China, 2010).

3) Venture investment to the USP by government

State or local government sets up fund of funds. Since the fund has leverage effect, it guides social capital to invest to the USP in promoting their development by using the government or state credit. In order to support the development of high-tech companies, government puts the development of the USP into national "Torch Plan". In 2007, the Ministry of Finance (MOF) and MOST set up Innovation Fund for Technology Based Firms. And in July 2007, they issued the Provisional Measures for Administration of the Guiding Funds for Investment in Technology-based SMEs (Department of Development and Plan of the Ministry of Science and Technology of People's Republic of China, 2010). The guiding funds were mainly invested to the firms at pilot and industrial scale. It is difficult to attract their involvement into the research and development stage. Currently, government should give the enterprises at lab scale more funding.

1.2.2 Constructing the Management System of Venture Capital for the USP

To ensure the effective introduction of venture capital to the USP, intermediary service system should be sound. Not only general intermediaries such as accounting firms, law firms, patent offices, etc. should be introduced into the USP, but also the special independent agency such as standard certifications, valuation, investment banks, etc. should be set up for the safe and efficient operation of venture capital. For example, the USP can establish project evaluation agencies including the officials in charge of technology and industry, well-known experts from the USP and all sectors of society, and researchers. The agencies can establish a scientific, quantifiable evaluation index system and reach an objective and impartial evaluation results about the project. On the basis of surveying the actual needs of the market, entrepreneur and venture investors, the agencies can recommend and promote targeted projects in depth (MAO, YAO, 2007). Furthermore, corporate governance based on human capital should be established by venture capital institutions and the firms in the USP to provide scientific management mechanism.

2. EXIT MECHANISMS FOR VENTURE CAPITAL IN THE USP

Cumming etc. (2005) concluded, despite venture capital funds could provide expert experience in the strategic planning and management process, the funding role of venture capital in technology innovation was considerably limited for the higher transaction costs while enter and exit (Douglas Cumming, Grant Fleming, Jo-Ann Suchard, 2005). *China Venture Capital Yearbook 2009* revealed that the main factors hindering the development of venture capital are as follows in table 2.

Table 2
The Main Factors Hindering the Development of Venture Capital

Main factors	ratio	rank
Not smooth exit channel	19.86%	①
Greater macroeconomic uncertainty	14.55%	②
Poor access to financing	13.86%	③
Slowdown for growth enterprises	12.93%	④
Income of investment institutions affected by stock market downturn	10.39%	⑤
Impact on the global financial markets of U.S. subprime crisis	8.31%	⑥
Lack of effective projects	7.85%	⑦
Difficult to implement tax incentives	6.47%	⑧
Lack of professionals proficient in using venture capital	5.54%	⑨
other	0.23%	⑩

Source: China Venture Capital Yearbook 2009

Among all the factors, the exit risk is in the first place. To eliminate the high risk of exiting, we should take measures in the following aspects.

2.1 Taking Appropriate Mode of Entry of Venture Capital

2.1.1 More Stringent Terms of the Contract Provisions

In order to protect their own interests, venture capitalists provide as detailed terms of contract as possible. In the contract, the requirements of the growth of the investors and the results of failure are all explicitly listed. If investors fail to meet the contract requirements, then there will be corresponding punishment provisions, such as the quit of venture capital or adding shares.

2.1.2 Invest Jointly by the Fund to Spread Risk

Currently, venture capitals are generally from individual institution. On one hand, it is difficult to meet the needs of the project in the small-scale funding; on the other hand, the institution takes greater risk. To attract more venture capital and diversify risks, Venture Capital Associations should be established and joint ventures through the establishment of the Fund.

2.2 Choosing Way of Quit of Venture Capital

With the rapid development of capital markets, venture capital can exit through IPO (Initial Public Offering), by acquisition or liquidation. We can choose the appropriate way to withdraw venture capital form the USP after the

scientific and technological achievements hatching two or three years and reaching industrial level.

2.2.1 Venture Capital Exit through IPO

Venture capital inputting to the USP can be listed to exit after successfully incubate. *China Venture Capital Yearbook 2009* reports that venture capital exit through IPO in China accounted for 23.28%, which is lower than that of the United States (China Venture Capital Research Institute, 2009). Exit through IPO is mainly supported by GEM (Growth Enterprise Markets). GEM provides market opportunities for innovative businesses to financing and the way to withdrawing of venture capital. Currently, GEM in Shenzhen, Hong Kong, Singapore, NASDAQ and UK AIM can be taken advantage of. In addition, China should focus on the characteristics of SMEs and introduce of OTC stock market to expand opportunities for their exit through IPO.

2.2.2 Venture Capital Exit through Acquired by Other Enterprises

Businesses after hatching successfully can also exit through acquired by other companies, in the way which venture capital can withdraw from the USP with funds circulation. Whether the successful hatching businesses and the acquired businesses achieve docking, the key is to construct a powerful information platform as support. For example, venture capital can exit through the established property rights trading market.

2.2.3 Venture Capital Exit through the Liquidation of Hatching Businesses

According to the statistics of China Venture Capital Research Institute, in the venture investment exit strategy, there are 75.32% of the projects exiting by way of share transfer, 23.28% of the projects withdrawing by way of listing for trading, and 1.30% of the projects exiting through liquidation (China Venture Capital Research Institute, 2009). Withdrawal way of liquidation is a negative approach taken by failed businesses, and it is the last resort which could only recover part of the investment.

2.3 Bringing up Experts Specializing in Venture Capital Professionals

Venture capital investment and exit efficiency depends on the quality of venture capitalists. The following measures should be taken. The qualification criteria of venture investment managers should be determined, which includes appropriate education level, work experience, personal property and so on. Venture capitalists should improve their own quality, including the theoretical level and practical capacity. Venture capital managers should improve the ability through job training and international exchanges (XING, TU, 2007).

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