

Research on the Development Status and Countermeasures of Venture Capital in Shandong Province

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Abstract—Venture capital plays an important role in promoting the development of emerging industries, accelerating the transformation of the economic structure and building an innovative country. However, many problems exist in the development process of venture capital in Shandong Province, such as the slow pace of development, small scale, lack of capital and shortage of talents. This thesis first introduces the development status of the venture capital industry in Shandong Province from the following aspects: the number of institutions, the scale of management capital, the source of capital, the intensity of investment and the stage of investment. Next, to tackle the problems above, it is suggested that the development of venture capital industry in Shandong Province can be effectively promoted by vigorously developing government-guided funds and supporting the development of high-tech industries.

Keywords—venture capital; development status; countermeasures and suggestions; Shandong province

I. INTRODUCTION

Innovation is the soul of enterprise progress and the strategic support of national modernization. With the advance of science and technology and the adjustment of economic structure, increasing attention is being paid to the innovation ability of enterprises. The 19th National Congress of the Communist Party of China clearly pointed out that we should speed up the construction of an innovative country. With the guidance of innovation strategy, the venture capital industry in Shandong Province has seen continued development, but it also faces many problems that urgently need to be solved. Therefore, it is of great significance to study the development status of venture capital in Shandong Province, find out the countermeasures to promote the development of the venture capital industry in Shandong Province, and promote the implementation of the conversion of new and old kinetic energy in Shandong Province.

II. THE DEVELOPMENT STATUS OF SHANDONG VENTURE CAPITAL INDUSTRY

A. The Number and Scale of Venture Capital Institutions

Statistics show that in recent years, the number and scale of venture capital institutions in Shandong Province fluctuate considerably, but the overall trend is upward. Up to now, the largest number of venture capital institutions in Shandong was 94 in 2015. In 2016, the total number of venture capital institutions in Shandong Province accounted for 3.96% of the whole country. In 2016, it includes 61 venture capital funds and 20 venture capital management agencies. The number of VC funds decreased by 22 compared with 2015 and the number of VC management agencies increased by 9. Therefore, compared with 2015, the total number of VC agencies in 2016 reduced by 13 (as shown in "Fig. 1"). From the perspective of geographical distribution, China's venture capital institutions were still concentrated in the developed eastern coastal areas in 2016, showing a "three-pillar" situation: Jiangsu, Zhejiang and Beijing are the top three in the number of venture capital institutions in China, with the total number of VC institutions accounting for 56.23%. Shandong has the sixth largest number of venture capital institutions in the country after Jiangsu, Zhejiang, Beijing, Anhui and Chongqing (as shown in "Fig. 2").

In addition, from 2012 to 2016, Shandong's venture capital management agencies increased by 10 times from 2 to 20, which is consistent with the growth trend of national VC management agencies. This shows that the management mode of venture capital funds is becoming increasingly popular with the development of venture capital. In other words, there are more and more venture funds entrusting their daily business and investment functions to professional venture capital management agencies for management (Hu Zhijian et al, 2017).

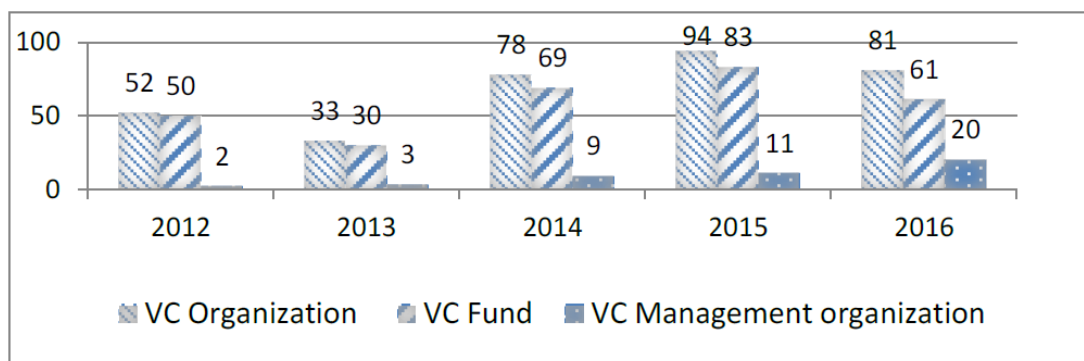


Fig. 1. Number of VC Institutions in Shandong Province from 2012 to 2016.

^a. Source: China Venture Capital Development Report

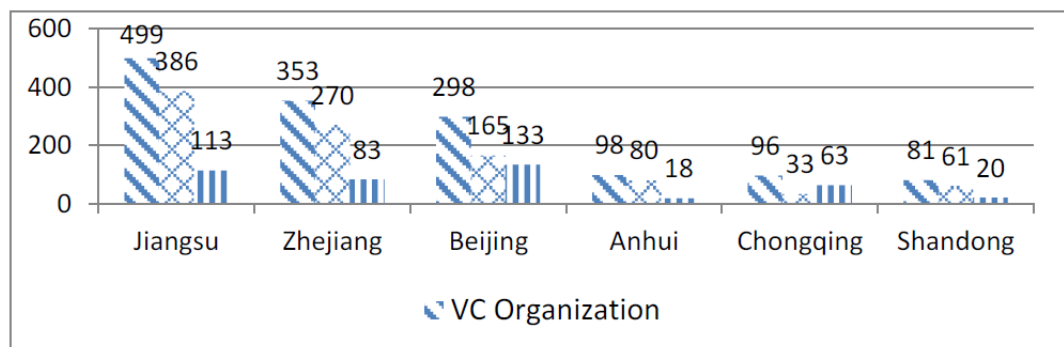


Fig. 2. Venture Capital Institutions in Some Regions of China in 2016.

^a. Source: China Venture Capital Development Report

B. Capital Scale Managed by Venture Capital Institutions

As to capital scale, in 2016, 29.63% of the VC institutions in Shandong Province had less than ¥50 million in venture capital management funds, up by 0.83% compared with 2015. VC institutions with a management capital of ¥50-200 million accounted for 42.6%. However, there are also a large number of enterprises expanding the scale of management funds. In 2016, institutions with management funds of ¥200-500 million accounted for 25.93%, increasing by nearly 17% compared with 2015. VC institutions with management funds of ¥500 million or more accounted for 1.85%, decreasing slightly compared with 2015 (as shown in "Fig. 3").

On the whole, the average scale of capital managed by Shandong venture capital institutions in 2016 was slightly smaller than 2015, and the total capital managed by VC was also slightly lower, decreasing by 24.6% from ¥9.3 billion to ¥7.01 billion. Given these statistics, we can see that firstly the scale of funds managed by venture capital institutions in Shandong has shown a downward trend; secondly the management of investment funds is obviously scattered; thirdly the status of small and medium-sized enterprises in the development process of venture capital has gradually increased; and fourthly they have become the main force of venture capital.

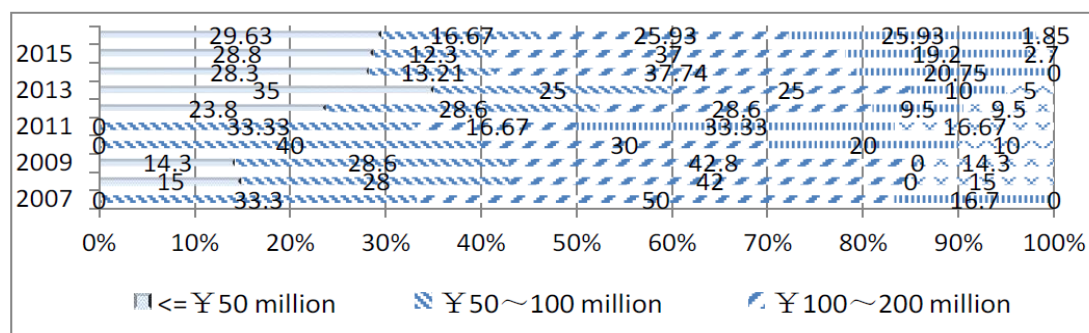


Fig. 3. Distribution of Management Capital Scale of Shandong Venture Capital Institutions.

^a. Source: China Venture Capital Development Report

C. Sources of Capital for Venture Capital Institutions

In recent years, the distribution of capital raised by venture capital has become increasingly diversified. From the perspective of institutional ownership, government investment still dominated the capital sources of Shandong venture capital in 2016, followed by private institutions, with mixed ownership enterprises accounting for the lowest proportion. Among them, the total government investment accounted for 38.3%, which decreased by 6% compared with 2015. Newly added foreign-funded enterprises are the fastest-growing source of capital, accounting for 5.8%, which makes Shandong the third highest in China after

Shanxi and Beijing. Private capital accounted for 11.7%. From the perspective of whether enterprises are listed or not, in 2016, the total capital of Shandong's enterprises accounted for 64.6%. Among them, unlisted companies are the most important source of capital for venture capital institutions, accounting for 62.7% and the listed companies only account for 1.9%. In terms of the financial nature of the sources of capital, other financial capital increased significantly from 25.2% in 2015 to 39.9%. Non-financial capital remained the top source of capital for venture capital institutions, accounting for 60.1%, while the capital of banking, insurance, securities, trust and other financial institutions accounted for zero.

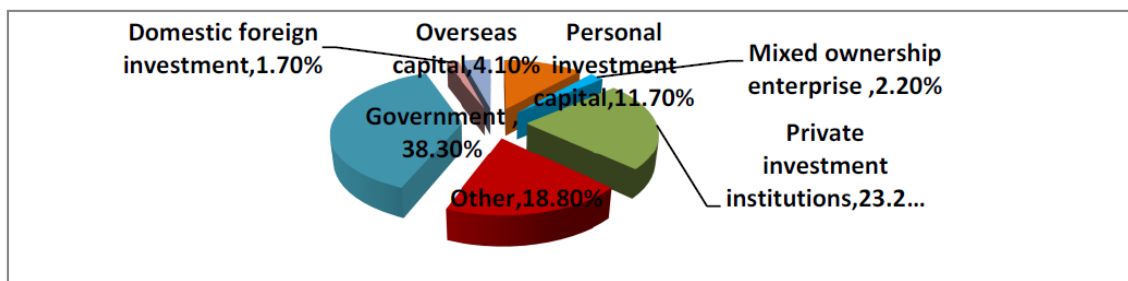


Fig. 4. Sources of Venture Capital in Shandong in 2016.

D. Investment Intensity and Investment Stage of Venture Capital Projects

In 2016, Shandong's venture capital intensity increased significantly to ¥12.793 million per item, increasing by 8.12% compared with 2015. Overall, from 2007 to 2016, Shandong's venture capital investment intensity was above ¥10 million, and since 2014, there has been an upward trend year by year. From the investment stage, the proportion of

a. Source: China Venture Capital Development Report

Shandong venture capital investment in the growth (expansion) period has increased significantly in recent years, which reached 49.4% in 2016 and was an increase of 9.6% from 2015. The proportion of investment in initial projects (seed stage and initial stage) decreased significantly, accounting for 42.9% in 2016, which declined by 9% compared with the previous year. Investment in mature (transitional) projects accounted for 3.9% with the obvious development.

TABLE I. OVERALL DISTRIBUTION OF SHANDONG VENTURE CAPITAL PROJECTS AT DIFFERENT STAGES

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Growth stage										
Seed stage	15.8	33.3	8.7	33.3	8	9.7	21.7	21	25	18.2
Initial stage	10.5	13.3	17.4	0	36	48.4	30.4	44.4	26.9	24.7
Growth period	73.7	26.7	60.9	50	48	38.7	43.5	32.1	39.8	49.4
Mature period	0	26.7	13	0	8	3.2	4.3	1.2	5.6	3.9
Reconstruction period	0	0	0	16.7	0	0	0	1.2	2.8	3.9

a. By Proportion of Investment Projects; Unit: %

b. Source: China Venture Capital Development Report

III. MAJOR PROBLEMS FACED BY SHANDONG VENTURE CAPITAL INDUSTRY

On the whole, the venture capital industry in Shandong witnessed a good momentum of development in 2016, but there are still many problems and defects hindering its development. Major problems are explained in the following aspects.

A. Venture Capital Enterprises Lack Capital

In 2016, Shandong's total venture capital management capital ranked 16th in the country, accounting for only 0.85% of the country's total venture capital management capital. Compared with more developed provinces and cities with venture capital, Shandong's total venture capital management capital was 2.4% of Beijing, 3.6% of Jiangsu, 12.2% of Guangdong, 13.6% of Zhejiang, 17% of Anhui,

23.5% of Hubei and 26.5% of Chongqing. Judging from the sources of capital, Shandong venture capital institutions have limited sources of capital. Venture capital institutions' capital mainly comes from government capital investment, non-listed companies and non-financial institutions, followed by private institutions' investment and personal investment. Listed companies' investment and foreign capital investment are relatively scarce, accounting for a small proportion. With limited sources of capital, they fail to make full use of all kinds of capital to invest in the venture capital industry. Therefore, venture capital enterprises are short of capital.

B. Venture Capital Industry Is Small in Scale

In 2016, the number of venture capital institutions in Shandong accounted for only 3.96% of the total number of venture capital institutions in the country. Compared with the provinces and cities with relatively rapid development of venture capital industry, the number of Shandong venture capital institutions accounted for 16.2% of Jiangsu, 22.9% of Zhejiang, 27.2% of Beijing, 82.7% of Anhui and 84.4% of Chongqing. The number of venture capital management institutions in Shandong ranks 7th in the country, accounting for 15% of Beijing, 17.7% of Jiangsu, 24.1% of Zhejiang, 31.7% of Chongqing and 64.5% of Hubei. At the same time, the number of venture capital investment projects in Shandong is relatively small, accounting for only 3.3% in China, and the overall scale of venture capital industry in Shandong is relatively small.

C. The Proportion of Investment in Start-up Enterprises at the Later Stage Is Relatively Low

The only effective financing method for innovative emerging enterprises is usually venture capital (Sahlman, 1990), which often influences the growth and development of enterprises by investing in emerging enterprises with great innovation potential and participating in enterprise management (Zhang Xueyong and Zhang Ye Qing, 2016). As an important form of financing for emerging enterprises, venture capital has a high proportion of investment in the early stage (including seed stage and initial stage) of start-up enterprises, as the case in Shandong. Venture capital mainly focuses on the early stage of start-up enterprises and correspondingly has a low proportion of investment in the late mature stage. In particular, the proportion of investment in projects in the reconstruction period started to improve in 2014 after several years of zero investment. Subsequently, Premier Li Keqiang first proposed to promote the conversion of old and new kinetic energy in the government report in 2015. Since then, the proportion of investment in projects in the reconstruction period has increased year by year, reaching 3.9% in 2016.

D. The Shortage of Venture Capital Professionals

As the development model of venture capital projects gradually matures and has more complete supporting and financial support, venture talents will gradually replace capital as the core of venture capital (Xu Feng and Ma Jiawei, 2018). Due to the fact that the number of venture capital institutions in Shandong is small, the proportion of

investment projects is relatively low, the development mode of investment projects is immature, and the financial capital and support for venture capital in Shandong are insufficient, the core focus of venture capital in Shandong is still on capital. Therefore, insufficient attention is paid to professional venture capital talents, and there is a shortage of venture capital related professionals.

IV. COUNTERMEASURES AND SUGGESTIONS

A. Improving the Entrepreneurial Borrowing Capacity and Expand Sources of Capital

Sufficient capital is the prerequisite for the stable development of venture capital industry. Wu Chaopeng et al (2012) proposed that due to information asymmetry between internal managers and external investors, the external financing cost of the enterprise is too high, resulting in a single source of enterprise capital and a lack of financing capital. Therefore, the most direct and effective way to expand the sources of financing capital for venture enterprises is to strive to improve the financing capacity of Venture enterprises. First of all, the government should strongly support venture capital enterprises to open to the outside world, encourage enterprises to "go out and import" to reduce the degree of information asymmetry, increase external investment and broaden the channels of cross-border financing for enterprises; Secondly, venture capital enterprises should also provide systematic support in enterprise management and marketing, besides providing follow-up financing support (Li Shilin, 2018). In addition, the management level of an enterprise can affect the investment of foreign capital and to a certain extent it will reflect the size of borrowing capacity. Therefore, an enterprise should improve its internal management and management system and raise its level of governance structure so as to form a good business operation mode, reduce various risks in the enterprise's operation process and improve the financing level of start-up enterprises.

B. Supporting the Development of High-tech Industries and Expand the Scale of Venture Capital Investment

Venture capital has a grab effect on enterprise innovation. Venture capital with high reputation can significantly improve the level of enterprise innovation (Wen Jun and Feng Genfu, 2018). The improvement of enterprise innovation capability will bring higher market valuation to enterprises, thus bringing higher investment benefit of venture capital (Chen Si, et al, 2017). Therefore, increasing support for the new generation of high-tech industries can accelerate the expansion of venture capital scale, which is conducive to the development of venture capital industry. Therefore, the government should not only pay attention to the scientific and technological strength and innovation capability of venture capital enterprises, but also expand capital investment, give sufficient financial support to emerging science and technology industries, encourage more start-up enterprises to actively carry out innovation activities and research and develop innovation projects, so as to expand the scale of venture capital industry.

C. Improving the Role of Government-led Funds

Venture capital funds are made up of government-led funds, venture capitalists and government-led funds according to the difference of ownership nature (Yan Zhixiong et al, 2016). Different government funds have different impact performance on venture capital. Yan Zhixiong et al established a model to find that government-led funds have stronger ability to reduce the crowding-out effect of government funds, thus confirming that government-led funds have the strongest promotion effect on venture capital. Therefore, in order to promote effectively the development of venture capital, the government ought to make active efforts to develop guiding funds, and play a leading role in the venture capital market instead of becoming the leader (Kannianen & Keuschnigg, 2004). The government had better encourage fund enterprises to invest heavily in projects in Shandong Province, establish an interactive system of provincial fund managers, and gradually form a model chain of "angel-venture capital-industry fund" to develop the government-guided fund.

D. Introducing and Training of Venture Capital Talents

In order to facilitate the rapid development of venture capital industry, Shandong Province needs to vigorously foster venture capital professionals. On the one hand, Luo Wei et al (2017) believe that under the incentive measures of "fixed salary plus income deduction", managers of venture capital institutions usually have stronger motivation to pursue high investment returns. Therefore, the most direct and effective way to introduce outstanding venture capital talents is to establish and perfect the financial talent incentive mechanism and optimize the financial talent development environment. On the other hand, the government should make full use of the resources of major universities, strengthen cooperation with universities, and establish a venture capital training platform and a venture capital talent training base so as to strive to improve students' financial literacy and train high-level venture capital talents for venture capital enterprises.

V. CONCLUSION

To sum up, this paper studies how to promote the venture capital industry in Shandong Province in view of the current development situation and problems faced by the venture capital industry in Shandong Province. The research shows that improving the financing capacity of venture capital enterprises, supporting the development of high-tech industries, establishing and perfecting government-guided funds and training venture capital professionals can effectively expand the scale of venture capital industry and broaden the sources of capital, thus promoting the development of venture capital in Shandong Province. At the same time, this can also contribute to the implementation of the transformation of old and new kinetic energy in Shandong Province and promoting the economic development of Shandong.

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REFERENCES

- [1] Wen Jun, Feng Genfu. Venture Capital and Enterprise Innovation: "Value Added" and "Grabbing" Balance Perspective [J]. *Economic Research*, 2018, 53(2): 185-199.
- [2] Chen Si, He Wenlong, Zhang Ran. Venture Capital and Enterprise Innovation: Impact and Potential Mechanisms [J]. *Managing the World*, 2017(01): 158-169.
- [3] Luo Wei, Yu Yan, Zhou Xiaosong. Disposition effect and Venture Capital Institutions: Evidence from IPO Companies [J]. *Economic Research*, 2017, 52(4): 181-194.
- [4] Xu Feng, Ma Jiawei. Research on Influencing Factors of Venture Capital Development in China from the Perspective of Investor Policy Demand [J]. *Macroeconomic Research*, 2018, (3): 89-102.
- [5] Hu Zhijian, Zhang Xiaoyuan, Zhang Zhihong. China Venture Capital Development Report 2017 [M]. Beijing: Economic Management Press, 2017: 41-53.
- [6] Li Shilin. Israeli Venture Capital Industry Development Experience and Reference [J]. *Regional and Global Development*, 2018, 2(2): 125-140, 159-160.
- [7] Zhang Xueyong, Zhang Ye Qing. Venture Capital, Innovation Ability and IPO Market Performance [J]. *Economic Research*, 2016, 51(10): 112-125.
- [8] Yan Zhixiong, Zhang Jingwei, Fei Fangyu. Agency Problem, Nature of Risk Fund and Financing of Small and Medium-sized High-tech Enterprises [J]. *Economic Research*, 2016, 51(09): 132-146.
- [9] Wu Chaopeng, Wu Shinong, Cheng Jingya, et al. Empirical Study on the Impact of Venture Capital on Investment and Financing Behavior of Listed Companies [J]. *Economic Research*, 2012, 47(1): 105-119, 160.
- [10] Sahlman, W. A., 1990, "The Structure and Governance of Venture-capital Organizations", *Journal of Financial Economics*, Vol.27, 473-521.
- [11] Kannianen, V., and Keuschnigg, C., 2004, "Start-up Investment with Scarce Venture Capital Support", *Journal of Banking and Finance*, 28 (8), 1935-1959.