Analysis of Venture Capital Entry and Withdrawal from the Perspective of Information Economics

Chenxi Mei

University of California, Davis; Davis, 95618, US

Abstract. Venture capital of institutions originated in Western Europe and flourished in the United States. Later, it was introduced to Zhongguancun by a group of Chinese students working in Silicon Valley and has been developing in China ever since. At present, it has entered a rapid development stage in China, making related issues more and more widely concerned. This paper first presents a brief introduction to the definition and characteristics of venture capital, and expounds the necessity and importance of its development. It is believed that improving information conditions will effectively reduce the risk of venture capital, thus addressing the difficulty of venture capital entry, and the way to withdraw venture capital depends on the degree of capital proliferation and information conditions.

Keywords: Venture Capital; Information Economics; Entry; Withdrawal.

1. The Concept of Venture Capital

Before venture capital was formally defined, similar operations existed for centuries. The term "Venture Capital" first appeared as early as the 15th century, when merchants in countries like Britain invested large sums of money in ocean exploration to explore new colonies and discover new business opportunities.

In the late 19th century and early 20th century, some investment groups were keen to invest in the exploitation and construction of new industries such as oil, steel and railway in the United States. In 1911, they began to invest in the computer industry, marking the start of venture capital on the right track. The American Venture Capital Association (AVCA) believes that venture capital enables professional financiers to invest in equity capital of fast-growing and highly competitive emerging enterprise. The essence of this definition is to nurture and mentor risky enterprises with high development potential during the startup period, with a view to sharing the long-term capital appreciation brought by the rapid growth of enterprises.

2. Characteristics of Venture Capital

Venture capital, as a new form of financial industry, is significantly different from conventional finance in terms of investment object, investment mode, investment risk, investment cycle and investment withdrawal.

Table 1. Differences between venture capital and other forms of investment

	Venture capital	Conventional investment
Object	Innovative entrepreneurial enterprises or small and medium-sized enterprises with greater development potential	Large and medium-sized enterprises that have made profits and have sufficient collateral
Mode	Equity investment	Credit invest investment
Stage	Start stage	Mature stage
Risk	High	Low
Liquidity	Small	Large
Cycle	Long period, at least 3~5 years, and at most 7~10 years	Medium and short period
Ways of withdrawal	Equity transfer after listing	Recovery of principal and interest

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Venture capital has its unique characteristics:

Firstly, high risk and high return coexist. As its objects are mainly high-tech small and medium-sized enterprises with high development potential. Since these enterprises are in their infancy and lack collateral, it is difficult for them to find a guarantee, so their venture capital has a long payback period and a high risk of high return. In addition, in the process of technological innovation, high-tech enterprises have to go through stages of research and development, experiment, production, sales, and etc., and high risks and high uncertainties exist in each stage. Therefore, venture capital has high risk, since not only can it not make high profits in a short time, but also it may face the risk of failure.

Second, it provides both financial and managerial support for those it invests in. Venture capital, by means of flexible and special investment methods, builds a bridge between capital and potential innovative high-tech enterprises that need a lot of money in the whole process of business operation but are difficult to obtain financing from banks and other channels, thereby offering an important fund guarantee for the cultivation and growth of such enterprises. Different from the traditional credit which only provides funds and does not involve in the operation and management of enterprises, venture capital mostly adopts the way of equity investment, and participates in management, product development, production, and sales, organization setup and personnel selection after the investment.

Third, the investment cycle is long and the liquidity is small. Venture capital is a medium - and long-term investment. In the early stage of investment, enterprises that may still be in the research and development stage need a large amount of investment but have no output. After being developed, high-tech products also need to experience the process of product experiment, production, marketing and so on. Therefore, the investment cycle of venture capital is long, at least 3~5 years, and at most 7~10 years. During this period, the capital that cannot be withdrawn at will has small liquidity. Only when the enterprise is listed in the capital market, merged or acquired, the venture capital can be recovered and the investment income can be obtained.

Fourth, the purpose of investment is not to obtain dividends or recover principal and interest, but to pursue excess profits in the growth period. Focused on the potential growth and profitability of the invested enterprises, venture capital is committed to investing in the development stage of venture enterprises, rather than the maturity stage. When the venture enterprise develops rapidly to a certain stage, the venture capital will sell its equity to obtain high profits. Instead of being attached to the long-term dividends of the enterprise, it starts to look for new investment opportunities and pursue new returns. It is this special mechanism of venture capital that makes small and medium-sized innovative enterprises emerge and grow. World-renowned companies such as Apple, Microsoft, and Intel are dependent on the support of venture capital.

3. Analysis of Venture Capital Entry and Withdrawal from the Perspective of Information Economics

3.1 Analysis of Venture Capital Entry from the Perspective of Information Economics

Generally, the industrialization process of a high-tech product consists of four stages: Seed Stage, Start Stage, Expansion Stage and Mature Stage. Venture capital usually enters in the seed stage and the start stage, and withdraws after obtaining certain returns in the expansion stage and mature stage. In the first two stages, the start-up has no record of profit, so whether the venture capital will enter depends on the possibility of success of the start-up and the comparison between the present values of the expected income obtained after success and the opportunity cost.

The real reason to consider whether venture capital enters is the Asymmetric Information between venture capital suppliers and venture enterprises. The serious asymmetric information and the adverse selection problem caused by it have greatly hindered the entry of venture capital. But that doesn't mean it's impossible for venture capital to enter. The experience of the Western developed countries such as the United States has proved that the venture capital not only succeeds in entering but also make great achievements, bringing investors rich benefits, which is largely attributed to the effective solution to the serious asymmetric information when the venture capital enters. In this process, professional venture capital intermediaries play a huge role. Venture capital institutions, relying on

specialized project evaluation institutions and consulting institutions composed of experts from various aspects, make relatively accurate judgment and prediction on the technical feasibility, profitability and the situation that may happen during the investment recovery period of the investment project. On the one hand, they can distinguish the authenticity of the information provided by start-ups and reduce the hidden information, thus decreasing and preventing the adverse selection problem caused by information asymmetry. On the other hand, through a certain scale of information input, they lessen the marginal information cost and increase the amount of information of investment projects, so as to reduce the information uncertainty or incompleteness of investment decision and improves the success rate of venture capital. In addition, the use of portfolio investment by venture capital institutions can significantly reduce the unsystematic risk, which provides a possibility for the low-risk action of venture investment. At this time, the unit risk premium (net income) of venture capital entry is generally higher than that of investment in other industries, forming the only game equilibrium of venture capital entry, that is, venture capital enters and start-ups are financed through venture capital. This is the result of pareto improvement brought about by improved information conditions by venture capital institutions.

3.2 Analysis of Venture Capital Withdrawal from the Perspective of Information Economics

The venture capital usually withdraws through four channels: first, initial public offering (IPO), which means that the start-up is reorganized into a listed company and venture capital sells its shares on the capital market to realize capital recovery and proliferation; second, the merger and acquisition of venture enterprises, that is, other enterprises buy the shares of venture capital to acquire the start-up, so that venture capital withdraw; third, repurchase of the start-up, that is, the start-up repurchases shares of the venture capital; and fourth, bankruptcy liquidation, which is a result venture capital and the start-up do not want to see. From the current situation of the United States, in the withdrawing ways of venture capital, IPO accounts for about 10% of the total, merger and acquisition of venture enterprises for 30%, repurchase of the start-up for 38%, and bankruptcy liquidation or other ways for the rest. The withdrawal of venture capital depends not only on the business performance of a start-up after maturity, but also on the return and information condition of capital withdrawal.

There are three types of potential buyers when venture capital chooses to withdraw: the public, other large companies and investment institutions, and start-ups themselves. Changes in information conditions have different effects on their expected earnings of different buyers and venture capital institutions. If more accurate information is obtained, the expected profit of potential purchasers who have acquired the right to buy will increase, causing that the expected return of venture capital will decrease; the expected profit of purchasers who have not acquired the right to buy will decrease, causing that the expected return of venture capital will increase. It can be seen that due to its Superior Information, the start-up often has a competitive advantage when repurchasing venture capital shares and can usually obtain higher net income than other enterprises.

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