

Study on the Effect of Venture Capital on Regional Industrial Structure Upgrade

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Abstract: *With the continuous development of the economy and the accumulation of economic stock, the old economy shows a tendency not to adapt to the new environment in the new period. Additionally, the regional development also shows the situation of uncoordinated industrial structure and unreasonable industrial layout, which negatively affects the further development of the economy. Moreover, venture capital, as an innovative result of combining technology and finance in the capital market, can provide financial, technological, and management support to high-tech enterprises and start-ups with high growth potential and has a marked positive effect in promoting the transformation of scientific and technological achievements and the development of new industries. The success of Silicon Valley has shown the world the essential role of venture capital in scientific and technological innovation, industrial transformation and upgrading, and economic growth. Furthermore, as China's macroeconomic development enters a new normal stage, the demand for economic growth for scientific and technological innovation and technological progress becomes increasingly strong, and the environment for entrepreneurship and innovation is continuously optimized and upgraded, which has a good promotion effect on guiding social capital into innovation and entrepreneurship projects and boosting the development of high-tech and emerging industries. This paper analyzes the influence mechanism of VC and SMEs development on industrial structure.*

Keywords: *venture capital; industrial structure optimization; regional development*

1. Introduction

Since the 21st century, innovation has increasingly become the key to regional economic development and the core of policy concerns^[1]. Nowadays, China has become one of the global leaders in science and technology innovation^[2], and such innovation achievements cannot be isolated from the important innovation contributions of domestic innovation agglomerations, which are often complementary to venture capital agglomerations^[3]. Currently, all venture capital agglomerations show a strong level of innovation, while the agglomeration of venture capital forms a rich network of venture capital, which is an important support for innovation development. Moreover, venture capital, as a kind of investment and financing mode closely connected with modern science and technology entrepreneurial enterprises, is a mode of investment and financing in which the investor, with the help of a precise and professional operation mode, promotes the invested enterprises to reasonably allocate technology, capital, talents, management, and other innovation factors in the production and operation process, thus realizing the marketization and industrialization of the project results, especially the results of science and technology innovation. Concurrently, the core investment concept of venture capital - "value investment" - is the same as the strategic idea of cultivating and developing forward-looking emerging industries. It can be said that promoting the development of venture capital and guiding venture capital to become a powerful support for the development of high-tech and emerging industries is the right thing to achieve innovation-led, high-quality development and the enhancement of new economic growth momentum in the new era.

2. Concept definition

2.1 Venture capital

Our government has delineated a clear conceptual scope of venture capital in the opinion on the development of venture capital. Moreover, according to the opinion on the methods promulgated by our government for the development of the venture capital industry, official venture capital refers to a kind

of investment method with clear input objects and for the purpose of capital appreciation by injecting equity capital into start-ups or restructuring enterprises and then transferring the equity share at a later suitable time. The proposal is to promote the development of various types of venture capital development, including angel investment, the general requirements, and development views, and further achieve the purpose of promoting venture capital's sustainable and healthy development.^[4] Venture capital, as a new form of financial industry, is significantly different from conventional finance, table 1 shows the differences between venture capital and other forms of investment.

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

This paper concludes that the essence of venture capital is an innovative product combining technology and finance under the progress of market development, and its initial purpose is to solve the problem of difficult financing for technology-based enterprises or start-up technology enterprises. Furthermore, with the increasing maturity of the venture capital industry and the updated iteration of the technology market, the behavior and operation of venture capital have taken on a richer connotation. The venture capital is mainly to invest capital into the enterprise activities of technology research and development and achievement transformation with uncertainty, thus contributing to the marketization of technology and maturation of enterprises as soon as possible and achieving capital appreciation. Concurrently, venture capital is a kind of equity investment activity. In the process of its investment project operation, the investor will give the invested enterprise to provide professional information consulting, risk assessment, strategic development, and other value-added services, which is a kind of investment method that can better balance the relationship between investors, invested enterprises and intermediary investment institutions.

2.2 Industrial structure

The industrial structure broadly refers to the technical and economic linkages and proportional relationships between the aggregates that carry out material production or labor provision in economic development. The industrial structure is dynamic and constantly evolving in economic and social development, and such changes are highly correlated with economic growth. The division of production with the improvement of technology level shows the social law of development towards refinement and specialization. Additionally, the more detailed the social division of labor is, the more different production links are assembled, that is, the more industrial parts, and the more complex the linkage of capital, labor, goods, or services in each industrial sector in terms of allocation and flow. The industrial structure is essentially the result of the allocation and flow of capital, labor, and other factors of production in different production sectors, under the synergistic effect of technology and production arrangements of each organization. In the process of economic growth, the input of production factors is an indispensable condition. However, if a large number of production factors are not allocated scientifically and rationally in each production sector, the economic benefits brought by capital and labor inputs in production cannot reach the level of reasonable potential output due to the different absorption and transformation capacities of technology in different sectors. The traditional theory of economic growth does not include structural factors in analyzing the sources of economic growth dynamics, as in the long term, the allocation of resources is effective. However, structuralism differs markedly from traditional economic growth theories in terms of assumptions, and its advocacy of the study of the effects of economic growth due to the structure of resource allocation in disequilibrium is more referential for developing countries^[5].

3. Effect of venture capital on regional industrial structure upgrade

The original intention of venture capital is to provide capital and value-added services to start-up enterprises with good development prospects, to promote R&D investment in the process of helping enterprises grow, and to accelerate the transformation of results and the introduction of new technologies and products. The development history of the United States information, electronics, communications and other industries shows that venture capital is the incubator and booster for the development of emerging industries, and emerging industries with meager profits are rapidly growing into pillar industries under the nurturing of venture capital. Figure 1 shows the influence mechanism of VC and SMEs development on industrial structure.

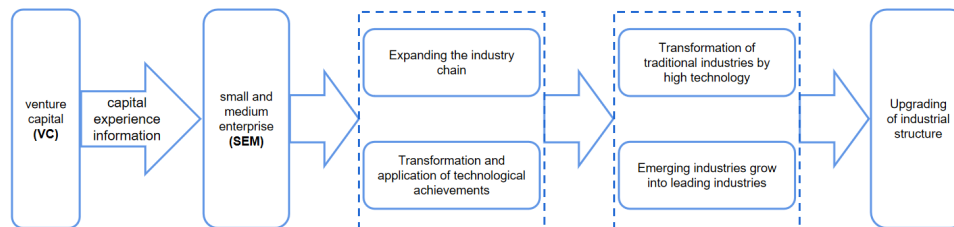


Figure 1. Influence mechanism of VC and SMEs development on industrial structure

3.1 Reduce risk for innovation and transformation of new technologies

In the process of industrial restructuring, many enterprises face great financial pressure and are afraid of transformation and adjustment, which results in very limited use of the capital market and always have a shortage of funds in the process of industrial restructuring. However, establishing venture capital guidance funds can bring financing opportunities for the industrial restructuring of many enterprises, thus effectively alleviating the problem of shortage of funds. Concurrently, the professional human capital and efficient investment network of venture capital institutions can realize the value increase of invested enterprises in the process of participating in the management and operation of invested enterprises. Furthermore, enterprises with venture capital backgrounds have lower research and development investment intensity and higher output compared to venture capital without venture capital participation.^[6] Technologies backed by venture capital are most likely to be the dominant technologies in the industrial upgrading process.

3.2 Promote the rapid development of high-tech industries

The establishment of a venture capital guiding fund can transform the industrial structure in the direction of the high-tech industry, thus effectively promoting the rapid development of the high-tech industry. On the one hand, venture capital can make technological innovation develop and rapidly transform into achievements, which avoids a lot of risk factors; on the other hand, the establishment of a venture capital guiding fund largely stimulates the innovation development of the industrial structure. Moreover, the vitality of capital is used to make high-tech enterprises dare to innovate in the process of development, and the technological innovation of enterprises can attract an influx of new venture capital after developing to a certain extent, which can make high-tech industries receive continuous financial support in the process of rapid development. The spatial clustering of financial institutions such as commercial banks, securities investment companies, insurance investment companies, and trust and investment companies reduces transaction frictions due to information asymmetry in the financial market, improves screening efficiency during the flow of funds, and helps enterprises with great potential for innovation and development to obtain financial support, which greatly benefits the innovative performance of enterprises, thus improving the technological innovation capacity of the region.

3.3 Clustering innovation contributes to the development of related industries

Venture capital builds communication channels for different enterprises in the industry, strengthens the penetration and linkage between upstream and downstream of the industry chain, accelerates the gathering of industrial innovation elements in the industry chain, stimulates the industrial innovation ability, and enhances the core competitiveness of the industry. With the transition of China's economic development from large volume to high quality, the transformation of industrial structure from low-end

manufacturing to high value-added, and intensive agglomeration development, venture capital has played a positive pulling role in the process of industrial structure upgrading. Additionally, there is still room to improve the efficiency of venture capital in China as an important intermediary to transmit the effect of research and development investment on industrial structure upgrading.

Moreover, venture capital can provide high-tech support for regional industries to transform and upgrade traditional industries, and the use of high-tech can accelerate the progress of traditional industries' transformation and upgrading and let traditional enterprises accelerate their steps to modern enterprises. The industrial structure restructuring needs the support of the Internet and other high-tech. However, the industrial structure restructuring and reform are not reflected in high-tech development but in the widespread application of high-tech. Therefore, traditional enterprises need to have economic support for the application of high-tech in the process of industrial restructuring and upgrading.

4. Problems of China's venture capital and regional industrial structure

4.1 Imperfect venture capital market

In addition to Beijing, Shanghai, Guangzhou, Jiangsu, and Zhejiang, China has venture capital sources mainly from government funds. Furthermore, the imperfection of the venture capital market, investment industry preference, project screening, capital operation, and other factors may have caused no significant correlation between the concentration of venture capital and industrial structure optimization in these regions and even impedes the situation of industrial structure optimization and adjustment to some extent.^[7]

4.2 Lack of momentum in upgrading the industrial structure

Most of the three industrial structures in China show the development trend of late industrialization with the ratio of "three, two, one". However, the industrial capacity in most of the central and western regions has not been effectively played and fully released, the construction and development of the modern service industry have not yet been actively responded to, and the development of agricultural modernization needs to be further supported and promoted. Shortly, the reasonably coordinated factor linkage and flow among industries in China is reflected in the tertiary industry, which increased significantly impacts economic growth. Therefore, it is necessary to further optimize the linkage and distribution relationship between different industrial sectors and continuously promote the process of industrial structure optimization.

4.3 Large differences in economic development

If we take into account the regional differences in China's economic development and study the impact of the level of venture capital on the industrial structure optimization in regions at different stages of economic development by eastern and western regions, it will be found that the significant of the effect of the level of venture capital agglomeration on the economically developed eastern regions is better than that on the central and western regions. It can be said that a certain regional development base and regional innovation strength are needed for venture capital to give full play to its positive effect on the role of industrial structure optimization.

5. Recommendations

5.1 Break the barriers of the industry development system

The strong regulation of venture capital has been the biggest institutional barrier to developing China's venture capital industry. Therefore, it is suggested to draw on international experience, promote the formulation and improvement of relevant policies and laws, and regulations in accordance with the principle of "classified regulation and moderate regulation", and develop a financial fund management system that is compatible with the laws of venture capital management.

5.2 Guide the direction of venture capital

In recent years, the scale of China's venture capital market has grown rapidly, the industry has

expanded dramatically, and various types of capital have actively rushed into the venture capital industry. However, the development of the industry is not standardized, the lack of professional talent reserves, investment direction is relatively fragmented, and other development problems have emerged one by one. Considering the important role of the venture capital industry in economic transformation and development, technological progress, and transformation of scientific and technological achievements, it is suggested to establish a standardized system for industry development as early as possible, encourage qualified investment institutions to focus on building a fund management brand and enhance the core competitiveness of the fund. Moreover, based on the rational operation of government-led investment funds, the local governments should encourage and support venture capital to invest in early-stage and start-up projects or enterprises, to implement the core value concept of venture capital development, and play an important role in supporting venture capital for innovation and entrepreneurship.

5.3 Optimize the investment ecosystem

The optimization of the venture capital ecosystem is not only limited to the process of venture capital being able to flow quickly in the capital market but starts with the four links of venture capital project exploration, selection, cultivation, and exit, which enables finance and technology to reach a state of organic integration and smooth flow of capital and technology. Specifically, it should accelerate the implementation of supporting policies such as tax incentives for landed enterprises, improves the project cultivation and incubation mechanism, gives full play to the role of science and technology service investment platforms, broadens the investment and exit channels of venture capital enterprises, and strengthens the linkage between banks, insurance, securities traders, various funds, guarantee companies and other science and technology financial institutions, thus realizing a reasonable optimization of the venture capital ecosystem.

6. Conclusion

With the investment market's rapid development, venture capital's operation mode has become more and more abundant, and several provinces have set up venture capital guiding funds one after another. The establishment of venture capital guiding funds can stimulate regional market vitality to the greatest extent, provide huge financial support for economic development, and play a pivotal role in achieving independent innovation development. Therefore, it should pay attention to the interactive effect of venture capital and regional innovation on the rationalization and advanced industrial structure, abandon the past strategy of "exchanging market for technology", pay attention to the quality of foreign investment introduction, encourage and guide local innovation, and introduce more flexible industrial policies according to local conditions, to make the organic integration of venture capital and regional innovation and better adapt to the requirements of high-quality economic development.

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