The Investment Model of Aviation Industry VCGF Based on AHP Analysis of Computer Simulation

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Abstract. Venture capital guidance funds (VCGF) are a new way for the government to provide support to specific industries, especially for projects with funds far larger than the government's financial support capacity. The airline industry has a large capital footprint and a long return cycle. It will not be able to do so if it relies solely on government financing to invest. At present, the audit work of state-owned assets supervision and administration commission (sasac) and the ministry of finance on public-private cooperation projects is gradually strengthened, and VCGF has become an important development direction and realization way of the government's financial investment. Through the analytic hierarchy process, this paper constructs the investment model with computer simulation technology, makes a comprehensive analysis of the VCGF entering the aviation industry, and puts forward some strategic Suggestions.

Keywords: Investment Model, Venture Capital Guiding Fund, Aviation Industry, AHP Analysis

1. Introduction

VCGF, Venture Capital Guiding Fund (hereinafter referred to as guiding fund) is a policy fund established by the government and operated in a market-oriented way. It mainly supports the development of venture capital enterprises and guides social funds into the field of venture capital. Guide the fund itself not to directly engage in venture capital business. It is to give full play to the leverage amplification effect of financial funds, increase the supply of venture capital, and overcome the market failure of simply allocating venture capital through the market. Especially by encouraging venture capital enterprises to invest in the early stage of start-up, such as seed stage, start-up stage, to make up for the shortage of general venture capital enterprises mainly investing in growth stage, maturity stage and reconstruction of enterprises.
2. Basic idea of VCGF

The relevant departments of the people's governments at or above the prefecture level may set up guiding funds according to the needs and financial conditions of the development of venture capital. The establishment procedures are as follows: the relevant departments responsible for promoting the development of venture capital and the financial department shall jointly put forward the feasibility plan for the establishment of the guiding fund, which shall be submitted to the people's government at the same level for approval before the establishment\[1\]. All localities shall formulate and continuously improve the management measures for guiding funds in light of local actual conditions, which shall be jointly studied and proposed by the financial department and the relevant departments responsible for promoting the development of venture capital.

The capital sources of the venture capital guiding fund are: the financial special funds to support the development of venture capital enterprises; the investment income and guarantee income of the guiding fund; the interest income from the deposit of idle funds in banks or the purchase of national bonds; the funds donated by individuals, enterprises or social institutions free of charge, etc.

The guiding fund shall operate in accordance with the principle of "government guidance, market operation, scientific decision-making and risk prevention", and the main objects of support are all kinds of venture capital enterprises established in China according to the procedures of the Interim Measures for the management of venture capital enterprises. In the process of supporting the establishment and development of venture capital enterprises, it is necessary to innovate the management mode, realize the effective combination of the government's policy intention and the operation of the supported venture capital enterprises in accordance with the market principles; explore and establish a scientific and reasonable decision-making and assessment mechanism, effectively prevent risks, realize the sustainable development of the guiding fund itself; guide the fund not to be used in the field where the market has been fully competitive, do not compete with the market. The guiding fund mainly attracts social capital to jointly initiate the establishment of venture capital enterprises by means of equity participation.

3. Capital structure of VCGF

According to the previous analysis, the preparatory process of VCGF goes through three stages. As Figure 1.
Figure 1. Capital structure of VCGF

The first is the seed funding stage. At this time, the government makes full use of financial funds, transfers policy funds, fully mobilizes the mutual trust between commercial banks and government finance, and constructs the seed funds for project initiation. At this time, the external investment of VCGF is mainly policy investment, which injects funds into enterprises through government guarantee, integration of investment promotion channels, discount loan of financial funds and other ways, and also brings capital flow for the start-up of VCGF itself.

The second is the stage of equity capital. At this time, VCGF has formed a certain scale. At this time, VCGF will carry out equity reform to attract private equity investment institutions and venture capital institutions to participate in the capital pool of VCGF. At the same time, through the issuance of AAA and promotion of VCGF enterprise listing, further social funds can be obtained.

The third is the revenue fund stage. The external investment of VCGF can make it obtain dividend income and interest income. At the same time, in the field of venture capital, VCGF can obtain considerable withdrawal income of venture capital[3].

The essence of VCGF is a government initiated and led venture capital institution, which makes full use of social funds and has a policy oriented tendency. The essence of venture capital organization is to use equity or convertible debt investment to enter into the project, take dividend or interest income as short-term income, take equity withdrawal premium income as long-term income, and finally achieve a higher return on investment and higher investment security. Because the amount of government financial funds is limited, if we simply use the financial funds to directly invest in the policy oriented projects, it will have little effect. Make full use of the stimulation rate and amplification rate of social capital to achieve a 50-80 times amplification ratio of financial capital, and do not affect the government's right to speak to VCGF in the process of amplification.

4. The practical significance of VCGF

The vcfg model has made many "firsts" in the use of government financial funds. This model fully enlarges the utilization efficiency of government financial funds, and its social benefit creation ability is far greater than the previous model of construction investment company based on simple financial investment[3]. Social enterprises will also fully share the dividend of investment income under the vcfg mode. As shown in Figure 2.
4.1. The paper attempts to involve financial funds in commercial operation

In the past, all the funds of construction and investment companies constructed by financial funds came from government financial funds or other relevant government funds. However, the source of funds of VCGF has increased the items of social funds. The government financial funds used to support certain policy oriented projects are not directly invested in these projects, but invested in a VCGF enterprise aiming at these projects\textsuperscript{[4]}. At the same time, they are raised with social funds, so that the financial funds can be fully enlarged by VCGF enterprises before investing in these projects. Compared with the investment economic benefits of financial funds, the government would like to get more social benefits. For the investment economic benefits of financial funds, only guarantee the safety of principal is required. For the government, the follow-up income from investing in these projects also includes tax revenue, not just dividend and interest income\textsuperscript{[5]}.

4.2. The second financial operation of financial funds is attempted

In the operation process of VCGF, social financial instruments such as AAA, equity listing, enterprise special fund and other social capital operation modes such as equity fundraising are introduced, which is an attempt of a larger step after the reform and opening up. The proportion of general urban fiscal revenue to regional GDP is less, and the total amount of fiscal capital is also smaller. If we only use the financial funds to support the industry, it is difficult to get social feedback quickly. Therefore, the attempt of VCGF is a bold innovation of the construction mode of government investment enterprises. Through the VCGF model, the financial funds have been fully enlarged, and even formed a regional competitive investment enterprise. The private enterprises and commercial banks participating in VCGF can also fully share the huge investment returns brought by the industry with preferential policies\textsuperscript{[6]}.

5. Conclusion

VCGF is a bold attempt in the fields of finance, enterprise, government affairs and economics. It is an important attempt for the government to gradually get rid of planning and move towards marketization. Because of the particularity of VCGF, it involves many fields such as securities, finance and contract cooperation. Therefore, the industrial and commercial department, the banking regulatory department, the securities regulatory department, the insurance regulatory department, the tax department and the
financial department should make corresponding reforms so as to meet the application needs of vcgf in the whole industry after the market consensus has not been formed.

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