

Research on the Impact of Venture Capital on IPO Market Performance

An empirical analysis based on RESSET data

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Abstract: This paper takes all listed companies from 2016 to 2018 as the research object, and selects several indicators of total assets, assets and liabilities and assets as control variables, taking the turnover rate and the change of the first day of listing as the measure. Quantitative analysis of the impact of venture capital on the IPO performance of listed companies in China. On the basis of empirical research and literature summary, relevant policy recommendations are put forward on the related problems of China's venture capital mechanism, which provides theoretical support for further promoting the healthy development of China's IPO market.

Keywords: Venture capital; Initial public offering; Market performance; Assets and liabilities; Asset weighting

1. Introduction

Venture capital mainly refers to a financing method that provides financial support for start-ups and obtains shares of the company, and is closely related to the IPO market. Venture capital has not only become an important means of developing relatively mature high-tech industry financing funds, but also a strong backup force for successful IPOs of small and medium-sized enterprises. On the other hand, with the pilot of this year's registration system, the dual opportunities of the science and technology board and the GEM, venture capital also provides an important guarantee for venture capitalists to retreat.

1.1. Research background

In the 1980s, venture capital came into the capital market in China. Compared with foreign developed countries, the restrictions on the development level of the capital market make venture capital in China, and there are still shortcomings such as smaller company size, weaker financial strength and lower operational efficiency. On the other hand, the lack of financing channels, imperfect corporate governance structure, and lack of capital withdrawal channels in China's venture capital development model are also obvious. It can be seen that through the research on venture capital and IPO market performance, and then solving the objective problems, it is of great significance to promote the healthy development of the market.

1.2. Research and innovation

This paper takes all listed companies from 2016 to 2018 as the research object, and quantitatively analyzes the impact, impact mechanism and existing problems of venture capital on the IPO market performance of listed companies in China. Its significance is: This paper takes the first-day turnover rate and the rise and fall of listed companies' IPOs as the indicators to verify the impact of venture capital participation on the IPO performance of listed companies. Domestic research on these two indicators is quite small. The exploration of this aspect will enrich the research in the field of venture capital institutions to a certain extent. This paper selects several indicators of total assets, assets and liabilities and assets as control variables, and studies the impact of IPO performance of venture capital listed companies under this condition, and further explores the effects of related variables. The research scope of this paper is not limited to the GEM, but covers the entire market. Through the information collection, data processing and inspection analysis of listed companies in all markets, the results are more universal and recognized.

1.3. Research methods

The research methods in this paper are summarized as follows:

Literature research method: Search the literature of related topics through various literature platforms, and conduct research and study. The functions are as follows: Have a comprehensive perception of the subject to be studied, and have a correct understanding of related concepts; Through summarizing the research results of predecessors, we can discover new problems and locate research directions. Empirical research method: This paper

takes all listed companies in 2016-2018 as the research object, selects the enterprises with venture capital participation through the prospectus, collects the real data of the enterprise, and uses stata13 to construct a multivariate regression empirical model and t test. Comparative analysis method: This paper selects listed companies in recent years as samples, according to whether there is venture capital participation, set up the control group, through the database information collection, horizontally compare the IPO first day turnover rate and the rise and fall of the two types of companies. Indicators, comparative analysis to determine the impact of venture capital on corporate IPO performance.

2. Literature Review

Domestic scholars have relatively little research on the impact of venture capital investment on corporate IPOs. At the same time, they have raised the problems in their own markets while conducting empirical research on foreign perspectives.

2.1. Focus on the research of corporate IPO performance

Zhang Feng (2009) selected 256 IPO enterprises listed on the small and medium-sized board before June 30, 2008 in China, and found that the "authentication effect" has not been confirmed, and suggested that there may be "name-by-name" motives for domestic venture capital investment, with IPO. High underpricing is a high reputation for cost.

Deng Yugang (2010) selected 68 IPO companies listed on the Shenzhen Growth Enterprise Market before April 15, 2010 as a research sample, and found that venture capital can transmit positive signals to the market, but reflect the participation of venture capital. The test variables failed to pass the significance test.

2.2. Focus on the attributes and participation characteristics of venture capital institutions

Liu Xiaoming, Hu Wenwei and Li Zhan (2010) found that the reputation status of venture capital institutions is inversely related to the IPO discount rate by summarizing the representative research results at home and abroad; the reputation status of venture capital institutions and holding companies The long-term operating results are positively correlated. High-profile venture capital can more effectively exert its positive influence on the IPO of its holding companies.

Chen Jianli (2012) analyzed the influence of venture capital's reputation characteristics and participation degree on the operating performance of shareholding companies. The study found that there is no significant correlation between the number of venture capital investment institutions and the operating results of shareholding companies,

and venture capital holdings. After the proportion exceeds 30%, the operating results of the holding companies will become worse and worse.

2.3. Summary

Most of these documents on the role of venture capital in the enterprise IPO process, will sample companies into risky investment participation and risk-free investment in the two sample groups, respectively (before and after the IPO enterprise business performance study) from a financial perspective and The stock price perspective (investigate the underpricing rate, issuance costs, issue price-earnings ratio and other indicators) to study the role of venture capital in corporate IPO (certification / supervision effect and adverse selection / name-by-name effect). Since China's venture capital investment is still in the growth stage, from the current research results, most of the IPOs supported by venture capital are derived from the confirmation of developed capital markets. For analysis and comment the results of these studies, with great guiding significance for the study of the role of venture capital in the enterprise IPO process.

3. Empirical Research

3.1. Sample selection and data source

3.1.1. Research objects and research scope

Research object: This article takes companies listed on all markets as research objects, and excludes financial industries and enterprises with incomplete information.

Sample size: At the end of the paper, 547 listed companies were selected, of which 293 were venture capitalists and 254 were venture-free.

Time span: January 1, 2016 - December 31, 2018, for three years.

3.1.2. Data source

Sample data - capital market information disclosure platform, listed company prospectus

Indicator data - RESSET Financial Research Database

Reference data - company data related to the flush app

3.1.3. Sample grouping

Grouping basis: This paper draws on the research methods of relevant literatures, and divides the sample companies into two groups based on whether there are venture capital institutions involved, that is, companies with venture capital background and companies with no risk investment background. Judging basis: the prospectus for each listed company. Judgment method: Whether there are obvious words such as "risk investment, entrepreneurship, investment" among the top ten shareholders in the prospectus, if any, it is preliminarily judged that the enterprise has a risk investment background.

3.2. Selection of research indicators

The turnover rate on the first day of listing: "Handover rate" is also called "turnover rate". It has a positive relationship with the market's recognition of stocks, that is, the higher the market's recognition of stocks, the heavier the investor's investment psychology, and the higher the stock turnover rate.

The first day of the listing price change: it is a description of the price change, which is the value generated by comparing the latest transaction price (or closing price) of the current trading day with the closing price of the previous trading day. The ups and downs reflect the stock price stability after the IPO of listed companies. Total assets of a company: Total assets refer to all assets owned or controlled by an economic entity that can bring economic benefits. It reflects the size of the company's capital.

Corporate asset-liability ratio: The ratio of the capital provided by the creditor to the total capital, also known as the debt-to-debt ratio. It is an indicator of the company's ability to use creditor funds to conduct business activities, and also reflects the company's long-term solvency.

the weighting assets: risk weighted assets refers to bank assets be classified, determined according to different properties of different asset classes of risk risk factor, this risk factor as a weight obtained assets.

3.3. Empirical test and analysis of results

3.3.1. Research hypothesis

According to the previous theoretical analysis, the financing channels of listed companies with venture capital participation are more smooth. Under a series of value-added services of venture capital institutions, short-

term profitability and solvency are better, but they are inevitably affected by the negative effects of venture capital institutions. Due to institutional dependence, it may lead to insufficient long-term solvency. Based on this, the preliminary assumptions are:

Hypothesis 1: Venture capital participation has a positive impact on the first-day turnover rate of the company's listing, that is, positive effects.

Hypothesis 2: Venture capital participation has a negative impact on the first day of the company's listing, that is, negative effects.

3.3.2. Measurement analysis

Based on the assumption 1. Venture capital participation has a positive impact on the first day turnover of the company's listing, that is, positive effects. Carry out inspection:

Variable setting

Independent variable: Is there any venture capital participation?

Dependent variable: turnover rate on the first day of listing

Control variables: total assets, assets and liabilities, asset weighting

t test

Hypothesis: H0: $\mu = \mu_0$ (assuming that the risks involved in investments had no effect on the first day of IPO companies listed on the exchange rate)

H1: $\mu \neq \mu_0$ (Assuming that venture capital for listed companies to participate in IPO first-day turnover influential)

$t = -3.1126$ degrees of freedom = 544

$\Pr(T < t) = 0.0010$ $\Pr(|T| < |t|) = 0.0020$ $\Pr(T > t) = 0.9990$

Regression analysis

Table 1. Inspection result 1

Group	Obs	Mean	Std. Drr.	Std. Dev.	[95%Conf.Interval]	
0	254	0.0025071	0.0008055	0.0128369	0.0009208	0.0040933
1	292	0.0204699	0.005336	0.0911819	0.0099678	0.0309719

Table2. Inspection result2

Hsl	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Vc	0175913	058045	3.03	0.003	.00618961	0289934
Zc	0055783	0041386	1.35	0.178	-0025514	0137081
Zcjq	0000889	000384	0.23	0.817	-0006653	000843
Zcfz	0001404	0002121	0.66	0.508	-0002763	0005571
Cons	-1199939	083466	-1.44	0.151	-2839512	0439633

Number of obs = 546 $F(4, 541) = 3.72$
 Prob > F = 0.0054 R-squared = 0.0267
 Adj R-squared = 0.0195 Root MSE = 0.06713
 Analysis of results:

According to the t test, $t = -3.1126$ can be obtained. At the 95% confidence level, $\alpha = 0.05$, $\Pr(T < t) = 0.0010$ $\Pr(|T| > |t|) = 0.0020$, if less than 0.05, then H0 is rejected. that the

risk involved in investments in listed companies IPO first-day turnover affected.

According to the regression analysis, $P > |t|$ is 0.003, less than 0.05, indicating that there is a significant positive effect. The tested variables have a significant impact on the model, and it can be concluded that the venture capi-

tal participates in the IPO of the listed company. The daily turnover rate has a more significant positive effect. In summary, the hypothesis is established, and venture capital participation has a positive impact on the turnover rate of the company on the first day of listing. Based on the assumption 2. Venture capital participation has a negative impact on the first day of the company's listing, that is, negative effects. Carry out inspection: Variable setting
 Independent variable: Is there any venture capital participation
 Dependent variable: the first day of the listing

Control variables: total assets, assets and liabilities, asset weighting
 t test
 Assumption: $H_0: \mu = \mu_0$ (assuming that venture capital participation has no effect on the IPO of the listed company on the first day)
 $H_1: \mu \neq \mu_0$ (Assume that venture capital participation has an impact on the IPO of the listed company on the first day)
 $t = 0.7387$ degrees of freedom = 544
 $\Pr(T < t) = 0.7698$ $\Pr(|T| > |t|) = 0.4604$ $\Pr(T > t) = 0.2302$
 Regression analysis

Table 3. Inspection result 3

Group	Obs	Mean	Std. Drr.	Std. Dev.	[95% Conf. Interval]	
0	254	0.4395209	0.0005725	0.0091241	0.4383934	0.4406483
1	292	0.4383418	0.0014027	0.0239691	0.4355811	0.4411025

Table 4. Inspection result 4

Zdf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Vc	-001442	015766	-0.91	0.361	-004539	0016551
Zc	-0051683	0011241	-4.60	0.000	-0073766	0029601
Zcjq	-2.02e-06	0001043	-0.02	0.985	-0002069	0002028
Zcfz	00064	0000576	1.11	0.267	-0000491	000177
Cons	5465628	022671	24.11	0.000	5020288	5910969

Number of obs = 546 $F(4, 541) = 6.44$
 Prob > F = 0.0000 R-squared = 0.0455
 Adj R-squared = 0.0384 Root MSE = 01823
 Analysis of results:

According to the t test, $t=0.7387$ is obtained. At the 95% confidence level, $\alpha=0.05$, $\Pr(T < t) = 0.7698$
 $\Pr(|T| > |t|) = 0.4604$ $\Pr(T > t) = 0.2302 > 0.05$, then H_0 is not rejected, and it cannot be considered that the participation of venture capital has an impact on the IPO of the listed company on the first day . According to the regression analysis, $P>|t|$ was 0.361, which was greater than 0.05, indicating that the tested variables had no significant effect on the model.

In summary, the hypothesis is established, and venture capital participation has no significant impact on the turnover rate of the company on the first day of listing.

3.3.3 Empirical summary

Through the above empirical test, this paper verifies the hypothesis of the impact of venture capital on the IPO performance of listed companies. By verifying the positive impact of venture capital on the company's turnover on the first day of listing, it can be seen that the participation of venture capital is beneficial to the development and listing of the company to a certain extent. This solves the financing problem of SMEs, and provides a series of value-added services for listed companies while investing in stocks, which is beneficial to the improvement of IPO market performance of listed companies. However, since the impact on assets and liabilities

has not been effectively verified, it can be inferred that in the long run, the participation of investment companies cannot play an important role in improving the solvency of enterprises.

4. Policy Suggestion

Through a series of literature review and individual empirical research, we can see that the participation of venture capital institutions has promoted the effective development of corporate investment and financing activities, and to some extent improved its operational efficiency. Therefore, the venture capital industry has a relatively broad development prospects. However, this industry does not exist independently, it requires the support and cooperation of all parties. In the future development, in addition to paying close attention to the Chinese capital market, we should also absorb some foreign development experiences and learn from each other to promote the comprehensive construction of China's venture capital industry. Suggestions on the following aspects are proposed.

4.1. Promoting the diversification of venture capital entities

At present, most of China's venture capital institutions are dominated by government agencies, which has weakened the supervision of venture capital institutions to a certain extent, which is not conducive to the operation system of the industry and is not conducive to the

sustainable development of the venture capital industry. Therefore, according to the actual development of China's venture capital industry, private capital can be appropriately introduced in this field to promote the diversification of venture capital institutions and the diversification of venture capital sources.

4.2. Strengthen supervision to alleviate information asymmetry in the industry

The investment objectives of Chinese venture capital institutions are mainly concentrated in small and medium-sized high-tech enterprises. Therefore, the information received by internal managers and external investors is wrong. In order to achieve information symmetry, it is recommended to build a credit evaluation system to supervise and inspect the integrity of enterprises and reduce the employment risks of venture capital institutions.

4.3. Strengthening the training of venture capital talents

Human resources play a vital role in the development of the venture capital industry. It involves many professional knowledge such as economics, finance, management, finance, and law. On the other hand, she also requires employees to have keen and accurate insight and analytical skills. Therefore, the employees needed in this industry are high-quality comprehensive talents. Therefore, we must build a professional team of comprehensive talents.

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