JRACR

Journal of Risk Analysis and Crisis Response, 2024, 14(2), 284-290
https://jracr.com/
ISSN Print: 2210-8491
ISSN Online: 2210-8505

Review

A Review of Research on the Impact of Equity Investment on the Debt Financing of Invested Enterprises

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Received: March 15, 2024; Received in revised form: May 15, 2024; Accepted: May 20, 2024; Available online: June 30, 2024

Abstract: To promote the theoretical and empirical research on the linkage of "stock loan debt insurance", this paper summarizes the current situation of English and Chinese literatures research on the impact of VC/PE on the debt financing of invested enterprises. At present, the relevant research on the impact of VC/PE on the debt financing of invested enterprises in English literatures mainly focuses on the role and mechanism of third-party VC/PE, the role and mechanism of bank-affiliated VC/PE. The relevant research on the impact of VC/PE on the debt financing of invested enterprises in Chinese literatures mainly focuses on the direct role of third-party VC/PE and the mechanism of third-party VC/PE. From the relevant research results of English literatures and Chinese literatures, scholars generally believe that VC/PE has a positive impact on the debt financing of invested enterprises. The certification effect, corporate governance effect and ownership effect of VC/PE are the main mechanisms. In general, scholars' research on ESG equity investment decisions of equity investment institutions for technology-based SMEs is relatively weak; in addition, scholars have rarely studied the impact of ESG equity investment intervention on the credit behavior of banks and technology-based SMEs. Under the concept of ESG, the academic research on the theoretical quantification and empirical estimation of the influence mechanism of ESG equity investment on the bank credit decision-making of technology-based SMEs needs to be carried out urgently.

Keywords: Technology-based SMEs; Equity Investment; Venture Capital; Private Equity; Debt Financing; Literature Review

1. Introduction

Technology-based SMEs are the main carrier of technological innovation and an important driving force for economic growth. They play an important role in promoting the transformation and industrialization of scientific and technological achievements, promoting employment through innovation, and building an innovative country. However, due to information asymmetry, weak guarantee ability and high operating risk (referring to the uncertainty of transforming scientific and technological achievements into products and the uncertainty of product market performance), small and medium-sized technology-based enterprises are "difficult to finance" and "expensive to finance".

To alleviate the financing difficulties of small and medium-sized technology-based enterprises, on June 16, 2023, the executive meeting of the State Council deliberated and adopted the "Action Plan for Increasing Efforts to Support the Financing of Technology-based Enterprises". The meeting emphasized that financial institutions should be guided to further optimize products, markets and service systems according to the different needs of technology-based enterprises at different stages of development and provide diversified relay financial services for technology-based enterprises in the whole life cycle. It is necessary to take the support of start-up technology-based enterprises as the top priority and accelerate the formation of a financial service support system based on equity investment and the linkage of "stock loan debt guarantee".

As a concept, ESG advocates that enterprises should pay more attention to environmental friendliness, social responsibility and corporate governance in the process of development and operation, which is a concept focusing on sustainable development. ESG investment refers to the integration of ESG concept into the practice of investment analysis. Based on traditional financial analysis, it examines the medium and long-term development potential of enterprises through the three dimensions of E (Environmental), S (Social) and G (Governance), hoping to find investment targets that create both shareholder value and social value and have sustainable growth ability.

On July 17, 2020, Yida Capital, a private equity investment institution, officially released the "Corporate Social Responsibility Report 2019" and announced the full implementation of ESG investment standards. On October 18, 2021, Sequoia China officially released its first social responsibility report, proposing to establish and improve the communication mechanism with the invested enterprises in the field of ESG by formulating ESG investment clauses, due diligence procedures and exclusion clauses, and fully embed ESG into all links of "fundraising, investment, management and withdrawal", to realize the deep integration of social responsibility in corporate strategic management.

At the same time, the "Guiding Opinions of the China Banking and Insurance Regulatory Commission on Promoting the High-quality Development of Banking and Insurance Industry" (CBRC No. 52) clearly stated that banking financial institutions should establish and improve the environmental and social risk management system, integrate environmental, social and governance requirements into the whole process of credit granting, and strengthen environmental, social and governance information disclosure and interaction with stakeholders.

Therefore, it can be seen that equity investment institutions regard ESG as an important factor in investment decision-making when investing in small and medium-sized technology-based enterprises, and run ESG through all aspects and stages of development in the management and operation of the enterprise itself and the management of the invested enterprise, which helps to accelerate the formation of a financial service support system based on equity investment and the linkage of "stock loan debt guarantee".

This paper will review the English and Chinese literatures on the impact of VC/PE on the debt financing of invested enterprises, to further promote the theoretical and empirical research on the linkage of "stock loan debt insurance". The structure of the rest of this paper is as follows:

The second part introduces the relevant research on the impact of VC/PE on the debt financing of invested enterprises in English literatures; the third part introduces the relevant research on the impact of VC/PE on the debt financing of invested enterprises in Chinese literatures; the fourth part is a brief comment.

2. Research Status of English Literatures

The relevant research on the impact of VC/PE on the debt financing of invested enterprises in English literatures is mainly carried out from two aspects: the role and mechanism of third-party VC/PE and the role and mechanism of bank-affiliated VC/PE.

2.1. The Role and Mechanism of Third-Party VC/PE

In terms of the role and mechanism of third-party VC/PE, Baeyens and Manigart (2006) studied the financing strategies of 191 start-ups after obtaining venture capital. In the five years after the initial venture capital, these venture-backed start-ups raised 345 financings. Bank debt is the most important source of funding for these young and growth-oriented companies, which supports the view that venture investors play a certification role in their portfolio companies [1]. Huang et al. (2016) found that when other factors remain unchanged, the credit spread of bonds issued by PE-backed companies is on average 70 basis points lower. Compared with non-PE-backed companies, PE-backed companies are more conservative in their investment and dividend policies after bond issuance; the reputational problems of private equity firms dominate their wealth expropriation incentives and help their portfolio companies reduce the cost of debt [2]. Wu and Xu (2020a) tested the role of venture capital in SME loans through a sample of the national SME share transfer system. The results show that venture capital support can effectively improve the opportunities for SMEs to obtain bank loans, especially short-term loans and unsecured loans at a lower cost. Venture capital-backed loans are also unlikely to default and are positively correlated with the performance of SMEs. Venture capital supports reducing the information asymmetry between banks and SMEs through the "hard" information of high-quality financial statements and the "soft" information of SME credit [3]. Wu and Xu (2020b) studied the impact of venture capital support on SMEs' access to bank loans through a small and medium-sized enterprise-specific data set on the National SME Share Transfer System. The results show that venture capital support can help SMEs obtain more bank loans under better conditions and significantly alleviate their financing constraints [4]. Wu et al. (2023) studied the impact of venture capital support on companies' access to bank loans and its potential mechanism through a proprietary dataset of annual observations of 21,811 companies on the Shanghai and Shenzhen Stock Exchanges from 2009 to 2018. The results show that venture capital support has a significant and positive impact on the short-term and long-term access to bank loans. The mechanism test shows that this effect comes from the state ownership of venture capital, rather than the governance or certification effect. In addition, the impact of venture capital only exists in private enterprises. State ownership of venture capital may contribute significantly to better access to bank loans [5]. In addition, Buchner et al. (2023) studied the key role played by venture capital and private equity companies in the private debt market. Comparing private debt funds invested in VC/PE shareholding (sponsor) companies and other companies without VC/PE sponsors, it is found that private debt without VC/PE sponsors will generate premiums. This unsecured premium compensates for higher risk and risk mitigation costs, because unsecured lenders have adopted a more practical approach to mimic the role of VC/PE promoters, providing important lessons for investors and invested companies in private debt, risk lending, and private equity investments [6].

2.2. The Role and Mechanism of Bank-Affiliated VC/PE

In terms of the role and mechanism of bank-affiliated VC/PE, Masaru and Katsushi (2007) empirically studied the role of bank-affiliated VC firms in alleviating the harmful information asymmetry in small business loans by taking the Japanese initial public offering as an example. The results show that simultaneous bank loans and investments through venture capital subsidiaries benefit firms by increasing the availability of credit, especially by increasing the availability of long-term loans rather than by lowering interest rates. Banks that jointly provide loans and investments through venture capital subsidiaries have established close ties with companies, and a strong bank-enterprise relationship can be established through the scope of the relationship, which benefits the company through the availability of credit [7]. Hellmann et al. (2008) examined bank behavior in venture capital. Considering the relationship between the bank's venture capital and its subsequent loans, it can be considered as intertemporal cross-selling. Unlike independent venture capital firms, banks may be strategic investors seeking complementarity between venture capital and lending activities. There is evidence that banks use venture capital to establish lending relationships. Having a previous relationship with a company in the venture capital market increases the chances that the bank will subsequently lend to the company. Companies can benefit from these relationships through better loan pricing [8]. Fang et al. (2013) found that bank-affiliated private equity groups accounted for 30% of all private equity investments, and their market share was the highest at the peak of the private equity market. At this time, the parent bank arranged more debt financing for internal transactions, but the debt exposure was the lowest. The financing terms and after-the-fact performance suggest that banks' equity investments are not superior to independent private equity groups, and instead appear to have expanded private equity participation to take advantage of the credit market boom while reaping private benefits from cross-selling of other banking services [9]. In addition, Sun and Uchida (2016) found that after controlling the impact of direct ownership of parent banks (PBs), the investment of bank-linked venture capitals (BVCs) is positively correlated with the probability that the invested company has a loan balance with PBs in the year of IPO. However, BVCs usually sell their shares in the invested company within 2 years after IPO. The ownership level of BVCs has no explanatory power on whether the invested enterprises obtain loans from PBs. The direct shareholding of PBs is positively correlated with the probability of the invested company obtaining PBs loans for many years after IPO [10].

3. Research Status of Chinese Literatures

The relevant research on the impact of VC/PE on the debt financing of invested enterprises in Chinese literatures is mainly carried out from two aspects: the direct effect of third-party VC/PE and the mechanism of third-party VC/PE.

3.1. The Direct Effect of Third-Party VC/PE

In terms of the direct effect of third-party VC/PE, Wu et al. (2012) studied the influence mechanism and effect of venture capital institutions on the investment and financing behavior of listed companies. The results showed that the addition of venture capital can not only inhibit the excessive investment of listed companies in free cash flow, but also increase the company's short-term interest-bearing debt financing and external equity financing, and to a certain extent alleviate the problem of insufficient investment caused by cash flow shortage [11]. Lu and Ben (2013) tested the impact of venture capital on the financing decisions of listed companies based on the sample of

listed companies in the SME sector from 2004 to 2011. The results show that venture capital has a significant role in promoting the debt and equity financing of listed companies [12]. Wang et al. (2014) found that companies with PE participation can obtain more debt financing than companies without PE participation, and the cost of debt financing is lower, and the proportion of long-term borrowing is larger [13]. Based on the micro data of A-share listed companies from 2009 to 2014, Jiang and Lei (2016) tested the spillover effect of venture capital on the financing of strategic emerging industries. It is found that the intervention of venture capital has a significant positive driving effect on the financing of strategic emerging industries. Strategic emerging enterprises with venture capital background are more likely to obtain external debt financing and external equity financing represented by short-term debt financing. The financing driving effect of venture capital is more effective for non-state-owned strategic emerging enterprises [14]. Peng and Peng (2021) used the panel data of NEEQ listed companies that received venture capital from 2015 to 2018 to explore the impact and mechanism of venture capital institutions' reputation on corporate innovation. The results show that high-reputation venture capital institutions can promote enterprise innovation by alleviating the subsequent financing constraints of the invested enterprises [15]. In addition, Xiong et al. (2022) found that the equity investment of special construction funds did not have a significant impact on the risk-taking level of enterprises at the overall level; under the medium equity investment intensity, the risk-taking level of enterprises will be significantly improved. Corporate loan capacity plays a partial mediating role between equity investment and corporate risk-taking level [16].

3.2. The Mechanism of Third-Party VC/PE

In terms of the mechanism of third-party VC/PE, Hu and Zhou (2018) took A-share companies listed on Shanghai and Shenzhen Stock Exchanges from 2007 to 2016 as samples to empirically test the mitigation effect, internal mechanism and influence path of venture capital institutions' shareholding on subsequent financing constraints. The results show that venture capital institutions not only have an objective certification effect on enterprise value, but also actively help enterprises and market intermediaries to establish a good cooperative relationship, effectively alleviating the information asymmetry between external investors and enterprises. In addition, venture capital institutions also actively participate in the post-investment management of enterprises, which effectively resolves the principal-agent conflict. Venture capital holdings help companies raise more funds for development in the capital market at a lower cost [17]. Based on the signal theory, Wu (2019) studied the impact of venture capital as a certification signal on the availability of bank loans for small and medium-sized enterprises by taking the New Third Board listed companies as samples. The results show that small and medium-sized enterprises with venture capital participation have more bank loan scale (including short-term loans and long-term loans), lower loan costs, and more relaxed loan conditions (greater probability of obtaining pure credit loans), that is, the participation of venture capital can significantly improve the bank loan availability of small and medium-sized enterprises ; and this positive impact mainly exists in SMEs with more severe credit constraints [18]. Wu and Yang (2021) studied the impact of venture capital participation on the availability of corporate bank loans and tested the mediating effect of governance level by taking Shanghai and Shenzhen A-share listed companies from 2009 to 2019 as samples. The study found that the participation of venture capital can significantly improve the bank loan availability of enterprises.

The state-owned property rights mechanism has played a major role in the availability of corporate bank loans [19]. In addition, Zhou and Yuan (2023) empirically tested the relationship between venture capital and the financing cost of small and medium-sized enterprises based on the sample of listed companies on the small and medium-sized board and the GEM from 2008 to 2022. The results show that venture capital can significantly reduce the financing costs of SMEs. The analysis of the mechanism shows that venture capital affects corporate debt financing through four ways: signal transmission effect, supervision effect, social network effect and corporate governance effect [20].

4. Brief Comment

At present, the relevant research on the impact of VC/PE on the debt financing of invested enterprises in English literatures mainly focuses on the role and mechanism of third-party VC/PE, the role and mechanism of bank-affiliated VC/PE. The relevant research on the impact of VC/PE on the debt financing of invested enterprises in Chinese literatures mainly focuses on the direct role of third-party VC/PE and the mechanism of third-party VC/PE. From the relevant research results of English literatures and Chinese literatures, scholars generally believe that VC/PE has a positive impact on the debt financing of invested enterprises. The certification effect, corporate governance effect and ownership effect of VC/PE are the main mechanisms. However, scholars' research on equity investment institutions' ESG equity investment decisions for technology-based SMEs is relatively weak; in addition, scholars have rarely studied the impact of ESG equity investment intervention on the credit behavior of banks and technology-based SMEs. In summary, under the ESG concept, the academic research on the theoretical quantification and empirical estimation of the influence mechanism of ESG equity investment on the bank credit decision-making of technology-based SMEs needs to be carried out urgently.

The future research directions are as follows: Firstly, the evolutionary game theory (EGT) is used to construct a tripartite evolutionary game model of technology-based SMEs, equity investment institutions and the government, and to analyze the ESG equity investment decisions of equity investment institutions under government incentives for technology-based SMEs. Secondly, using evolutionary game theory (EGT), the evolutionary game models of banks and small and medium-sized technology-based enterprises under situation 1 (obtaining ESG equity investment) and situation 2 (not obtaining ESG equity investment) are constructed respectively. Through comparative analysis, the impact of ESG equity investment intervention on the credit behavior of banks and small and medium-sized technology-based enterprises is explored, to reveal the impact mechanism of ESG equity investment intervention in small and medium-sized technology-based enterprises on bank credit decision-making under government incentives. Thirdly, it empirically tests the impact of ESG equity investment on bank credit decision-making and its mechanism, as well as the strengthening effect of government equity investment incentive policy.

Funding: This research was funded by the Regional Project of National Natural Science Foundation of China, grant number 71861003.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

References

[1] Baeyens, K., & Manigart, S. (2006). Follow-on financing of venture capital backed companies: The choice between debt, equity, existing and new investors [Unpublished manuscript]. Vlerick Leuven Gent Working Paper Series 2006/05. http://hdl.handle.net/20.500.12127/1957.

[2] Huang, R., Ritter, J. R., & Zhang, D. (2016). Private Equity Firms' Reputational Concerns and the Costs of Debt Financing. Journal of Financial and Quantitative Analysis, 51(1), 29-54. https://doi.org/10.1017/S0022109016000053

[3] Wu, L., & Xu, L. (2020a). The role of venture capital in SME loans in China. Research in International Business and Finance, 51, 101081. https://doi.org/10.1016/j.ribaf.2019.101081

[4] Wu, L., & Xu, L. (2020b). Venture capital certification of small and medium-sized enterprises towards banks: evidence from China. Accounting & Finance, 60(2), 1601-1633. https://doi.org/10.1111/acfi.12489

[5] Wu, L., Xu, L., & Jiang, P. (2023). State-owned venture capitals and bank loans in China. Pacific-Basin Finance Journal, 77, 101923. https://doi.org/10.1016/J.PACFIN.2022.101923

[6] Buchner, A., Espenlaub, S., Khurshed, A., & Mohamed. (2023). Private Debt and the Role of Venture Capital and Private Equity Sponsors. Management Science, 70(1), 372-395. https://doi.org/10.1287/MNSC.2022.4664

[7] Masaru, K., & Katsushi, S. (2007). The Benefits of Concurrent Bank Lending and Investing via Bank-affiliated Venture Capital. Hitotsubashi journal of commerce and management, 41(1), 19-36. https://doi.org/10.15057/14620

[8] Hellmann, T., Lindsey, L., & Puri, M. (2008). Building Relationships Early: Banks in Venture Capital. The Review of Financial Studies, 21(2), 513-541. https://doi.org/10.1093/RFS/HHM080

[9] Fang, L., Ivashina, V., & Lerner, J. (2013). Combining Banking with Private Equity Investing. The Review of Financial Studies, 26(9), 2139-2173. https://doi.org/10.1093/rfs/hht031

[10] Sun, Y., & Uchida, K. (2016). The Role of Bank-Affiliated Venture Capital for Parent Banks in Japan: New Evidence. Asia-Pacific Journal of Financial Studies, 45(6), 864-885. https://doi.org/10.1111/ajfs.12155

[11] Wu, C. P., Wu, S. N., Cheng, J. Y., & Wang, L. (2012). Empirical research on the impact of venture capital on the investment and financing behavior of listed companies. Economic Research, 47(01), 105-119+160.

[12] Lu, B., & Ben, X. Q. (2013). Venture capital and financing decisions of listed companies. Accounting Monthly, (10), 21-24. https://doi.org/10.19641/j.cnki.42-1290/f.2013.10.006

[13] Wang, H. J., Wei, C. Y., & Zhang, R. (2014). Research on the impact of private equity investment on the debt contract of invested enterprises. Journal of Shanxi University of Finance and Economics, 36(10), 24-34. https://doi.org/10.13781/j.cnki.1007-9556.2014.10.014

[14] Jiang, Y. L., & Lei, X. Y. (2016). Research on the spillover effect of venture capital on the financing of strategic emerging industries. Science and technology management research, 36(14), 160-164.

[15] Peng, X. Y., & Peng, J. J. (2021). Venture capital reputation, subsequent financing constraints and enterprise innovation-Empirical evidence from panel data of NEEQ enterprises. Accounting Friends, (14), 88-94.

[16] Xiong, H. F., Yan, Q., & Wang, Z. Q. (2022). Policy equity investment and corporate risk-taking - A natural experiment based on special construction funds. Local Finance Research, (03), 66-75.

[17] Hu, L. F., & Zhou, Z. J. (2018). Can venture capital institutions' shareholding alleviates the subsequent financing constraints of enterprises? - Empirical evidence from Chinese listed companies. Economic Management, 40(07), 91-109. https://doi.org/10.19616/j.cnki.bmj.2018.07.006

[18] Wu, L. (2019). Venture capital, certification effect and SME bank loans. Economic management, 41(02), 172-190. https://doi.org/10.19616/j.cnki.bmj.2019.02.011

[19] Wu, L., & Yang, Y. H. (2021). Can venture capital improve the availability of corporate bank loans? Finance and economy, (02), 19-28. https://doi.org/10.19622/j.cnki.cn36-1005/f.2021.02.003

[20] Zhou, C., & Yuan, J. F. (2023). Research on the influence mechanism of venture capital on the financing cost of SMEs. Shandong Social Sciences, (09), 151-158. https://doi.org/10.14112/j.cnki.37-1053/c.2023.09.016

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(Executive Editor: Meng-yao Zhan)