



The performance of governmental venture capital firms: A life cycle perspective and evidence from China

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ABSTRACT

This paper investigates the difference between governmental venture capital firms (GVCs) and private venture capital firms (PVCs) from the perspective of a VC life cycle. Compared to PVCs, GVCs have less success over the cycle as a whole. We argue that the lack of a link between current performance and future fundraising, and a less efficient compensation mechanism for those involved may be important contributions to the explanation. Using data on VC investments in the Chinese market between 1991 and 2010, the empirical results show that portfolio companies backed by GVCs underperform those backed by PVCs in going public. However, the underperformance of GVC-backed start-ups is offset by the GVCs' privileged access to their local resources, especially the priority of getting listed on the domestic stock market. The results are supported by a series of robustness checks and selection bias tests.

1. Introduction

Recently, there has been growing interest in the role of government in catalysing the development of the venture capital market. To bring both funding and players to their domestic venture capital market, many countries have set up governmental venture capital firms (hereafter GVCs). Given their increasing importance, there has therefore been increasing questions about the performance of GVCs.

Researchers have evaluated the effect of GVCs that have been established in different countries. Although the Yozma Program in Israel and SBIC (Small Business Investment Company) in the USA (Gompers and Lerner, 2004; Howell, 2014) are widely recognized as the successful cases of promoting both the local venture capital market and economic development, many efforts by the governments of other countries have turned out to be failures (Lerner, 2009). The typical proxies for evaluating venture capital firms are whether there is a successful exit through IPOs (Initial Public Offering) or M&As (Merger and Acquisition), and whether there is a steady growth in the business of the portfolio companies. In European countries (Cumming et al., 2017) and in Canada (Brander et al., 2008), the enterprises financed by GVCs underperformed those backed by private VC firms (PVCs hereafter) in terms of the likelihood of successful IPOs and M&As. Compared to companies backed by PVCs, those invested in only by GVCs experienced no significant increase in their sales growth (Grilli and Murtinu, 2014a), a statistically significant destruction in productivity three years after the investment (Alperovych et al., 2015), and a relatively smaller increase in patent application (Brander et al., 2008).

As well as the weaker performance of the portfolios backed by GVCs, the behaviour of GVCs has also been examined. GVCs are less active than their private peers are in helping their portfolio companies to raise further funding and to recruit managers (Bottazzi et al., 2008). As for the impact of GVCs on the local venture capital industry, in Canada Cumming and MacIntosh (2006) found a “crowding out” effect of GVCs on PVCs' fund-raising and investment.

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In the Chinese VC market context, researchers obtain different results for the impact GVCs on investees compared to PVCs when controlling for different factors in their empirical analysis. Jiang and Liu (2014) found that when the investment specialization of VC firms was controlled for, the government background (interpreted from the records in PEdata¹ without correction) of a venture capital firm has an insignificant effect on the probability of successful exit from portfolios. Ke and Wang (2015) found that the portfolios of GVCs (which are defined as VC firms where more than 50% of funds raised within the first three months since establishment came from government agencies or government controlled business enterprises) underperform those of PVCs in successful exits and patent applications.

China provides an interesting and unique context for exploring the performance of GVCs. On the one hand, GVCs in China are governed as state-owned enterprises, which are assessed annually by the government; on the other hand, GVCs enjoy privileged access to the IPO approval, which is crucial to the successful exit from portfolios. At the same time, GVCs in China also share some common characteristics with GVCs in EU countries regarding the establishment statute and compensation mechanism. Thus, the results of this research may also be generalizable to other countries.

The extant literature identified the main reason for the different performance of portfolio companies backed by GVCs and PVCs as being the different characteristics of GVCs compared to PVCs. The strength of GVCs comes from their close ties with the government, via privileged access to governmental resources. The weaknesses of GVCs have more aspects, which include the absence of well-negotiated contracts between the investors in VC funds (known as limited partners or LPs) and VC firms, less efficient compensation provisions and less decision-making independence (Cumming et al., 2017), and diversified economic and political goals other than just making profits (Lerner, 2009). However, the venture capital literature summarises the advantages and disadvantages of GVCs in a fragmented way. It tends to focus on only one or a few facets of GVCs.

This paper provides a systemic framework for recognising the distinction of GVCs from PVCs in a structured way, by scrutinising them in each stage of a venture capital life cycle. The fundamental distinction of GVCs from PVCs is, on the VC firm level, whether there is a link between the firms' current performance and their future fund-raising, and on the individual level, whether there is an efficient compensation mechanism.

Based on VC life cycle analysis, the hypotheses of this paper are: (1) Portfolio companies backed by GVCs are less likely to achieve a successful exit, compared to those backed by PVCs; (2) Early-stage investments by GVCs do not have a higher chance of achieving a successful exit than those by PVCs; (3) The disadvantage of portfolio companies backed by GVCs compared to those backed by PVCs is alleviated if the companies are invested in by their local GVCs.

The hypotheses are tested and supported by the results of the empirical analysis, using data on venture capital investments from 1991 to 2010 in the Chinese VC market. We find that portfolio companies backed by GVCs have about a 7-percentage-point lower success in achieving an IPO than those backed by PVCs. If unobservable variables, which may affect the propensity of being backed by GVCs and achieving an IPO, are taken into consideration, portfolio companies backed by GVCs have about a 26-percentage-point lower success in achieving an IPO than those backed by PVCs.

The results are robust to a series of alternative tests when using further financing rounds and successful exit excluding those listed on NEEQ (National Equity Exchange and Quotations, which is regarded as a less liquid stock exchange) as proxies for the performance of portfolio companies.

The paper proceeds as follows. The second section discusses the background. Section 3 introduces the framework of the VC life cycle for comparing GVCs and PVCs and explains how the fundamental characteristics of GVCs lead to a lower effort level compared to PVCs. Section 4 shows the hypotheses and uses regressions results to support the hypotheses. Section 5 discusses the selection bias problems using three different methods. It is followed by further robustness checks in section 6. Section 7 draws conclusions and provides policy suggestions.

2. Background

2.1. Purpose of setting up GVCs

The primary consideration in establishing governmental venture capital firms is to bridge the gap between the strong funding demand of SMEs (small and medium-sized enterprises) and high-tech industries, and the limited funding supply from the traditional financial sector (White et al., 2002), where the prospects for those seeking for funding are thought to be good. When the Chinese VC industry was still in its infancy in the 1990s, it was believed that the intervention of the government can lead to a virtuous cycle in the immature market when all participants (entrepreneurs, venture capitalists, intermediaries such as lawyers and accountants, and institutional investors) become familiar and confident with the VC process (Lerner and Watson, 2008). Thus, GVCs are established to add market participants as well as funding resources for the VC industry to reach a sufficient state of development.

In addition, early-stage investment is less attractive to private VC firms due to severe information asymmetry and insufficient collateral. Therefore, GVCs are set up with the particular mandate to invest in seed and early-stage projects (del-Palacio et al., 2012; Yu et al., 2014).

Furthermore, another motivation comes from the governments' eagerness to reform the economy-boosting mechanism. Before the 1990s, public grants to R&D programmes are the dominant way to stimulate the high-tech industry. However, such administration-

¹ A commercial database developed by the Zero2IPO Research Centre, tracing venture capital investments in China.

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