Cross-Border Venture Capital Investments: An Analysis of Exit Outcomes for Canadian Firms

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Abstract

Foreign investors are making larger investments in the Canadian venture capital (VC) market than Canadian investors, and Canadian VC exits are primarily M&As (Canada's Venture Capital and Private Equity Association, various years). This research provides a joint exploration of foreign venture capitalists' (VCs) participation in Canada and outcomes of VC exits. Using binary logistic regression and multivariate linear regression, this paper reports that the presence of foreign VCs in the Canadian market is accompanied with mixed exit-related outcomes. On the one hand, foreign VCs' participation is associated with higher likelihood of a successful exit through initial public offering (IPO), greater capital availability, and shorter time to exit. On the other hand, the relation between foreign VCs' participation and lower purchaser price per dollar of VC investment in exit through merger and acquisition (M&A) raises concerns about the monetary returns to Canadian investee firms and Canadian syndicate VCs. These empirical findings will help to facilitate a more comprehensive understanding of the Canadian VC market, as well as adding to the growing body of literature on cross-border VC investment.

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1. Introduction

This research addresses the presence of foreign investors in the Canadian venture capital (VC) market, with particular reference to VC exit outcomes. Defining a successful VC exit as either an initial public offering (IPO) or a merger and acquisition (M&A) (Brander, Egan, & Hellmann, 2008; Gompers & Lerner, 1999; Nitani & Riding, 2013), this study examines the associations between foreign venture capitalists' (VCs) participation in the Canadian VC market and the likelihood of successful VC exits. Given that Canadian VC exits weigh towards M&A (Canada's Venture Capital and Private Equity Association (CVCA), various years), this research also focuses on the links between foreign VCs' participation and outcomes of VC exits through M&As, namely, the likelihood of being foreign-acquired, the amount of VC funding, the monetary returns on exit through M&A, and the VC financing duration.

VC plays an essential role in the development of entrepreneurial firms receiving investments (Fried & Hisrich 1995; Tyebjee & Bruno, 1984), filling the financing gap between limited funds from family, friends, and angels, and commercial borrowing (Wright & Robbie, 1998). Offering equity-linked financing, venture capitalists (VCs) invest in the commercialization of innovative ideas (Kortum & Lerner, 2000), and add value to their investee firms, providing strategic, financial and marketing advice (Cumming & Johan, 2008). In Canada, the VC fund size distribution skews towards small funds (Nitani & Riding, 2013). The preponderance of small funds and the deficiency of large funds constrain Canadian VCs' ability to finance successful portfolio companies and increase the reliance on foreign investors (Nitani & Riding, 2013; Murray, 2007). Nitani and Riding (2013) show that the relative scarcity of large VC firms leads to over-syndication and compromised performance of both investee firms and VC funds. During 2013, however, total VC investment in Canada was approximately $2 billion, of which $828 million was invested by foreign VCs, typically at later stages of development of portfolio firms. Accordingly, it might be argued that investments by large, relatively experienced, foreign VC funds redress this imbalance.

The success of the VC process depends heavily on the ability to achieve lucrative exits (Ibrahim, 2012). VC exits affect every step in the VC cycle, from attracting additional capital to financing entrepreneurial firms (Gompers & Lerner, 1999). While both IPOs

and M&As are usually regarded as successful exits (Brander et al, 2008; Gompers & Lerner, 1999; Nitani & Riding, 2013), from the founders' perspective IPOs are arguably the preferred VC exit route (Cumming, 2008; Hellman, 2006). Founders are relatively more likely to maintain control rights and enjoy the private benefit of being the CEO of a publicly listed company (Cumming, 2008; Hellmann, 2006). An M&A exit might be viewed as the second best VC exit strategy—even when the M&A exit is financially superior to an IPO—because the founders usually lose ownership and control rights over the firm. In Canada, however, IPOs are rare: VC exits are much more likely to be M&As, accounting for 77% of Canadian VC liquidity events between January 1999 to April 2011. Among these, cross-border M&As were more frequent (235 cases) than domestic M&As (219 cases) [1].

The rapidly increasing presence of foreign VCs and the trends of VC exits in the Canadian market warrant scholarly research. But very few previous studies have considered foreign investors' participation in the Canadian VC setting, and there appears to be a paucity of research that investigates M&As as a VC exit mechanism for Canadian firms. Accordingly, this research addresses foreign VCs' participation in the Canadian VC market with respect to VC exits through M&A, and adds further to our understanding of the roles of VC financing. The contributions of this research are two-fold:

First, this study adds to our understanding of the Canadian VC market, one not unlike VC markets outside the US. These empirical analyses confirm that foreign VCs' participation is positively related to larger amounts of VC availability and higher likelihoods of successful exit through IPO, which suggests that foreign VCs might bring financial benefits to Canadian investee firms. However, the negative relation between foreign VCs' participation and purchase price per dollar of VC investments in exit through M&A raises concerns about the monetary returns to Canadian syndicate VCs and Canadian investee firms. These empirical findings will inform public policy at the federal and provincial levels and will also help to address the ongoing debate about the use of foreign funds to finance Canadian firms.

[1] More detailed statistics are provided in the section "4.2.1. Data Description".

This research also adds to an embryonic but growing body of literature on cross-border VC investment. As international VC financing activities started to intensify in the late 1990s, cross-border investments have drawn increasing scholarly attention to the driving factors of cross-border VC flows (Alhorr, Moore, & Payne, 2008; Dai, Jo, & Kassicieh, 2012; Guler & Guillén, 2010; Schertler & Tykvová, 2012; Tykvová & Schertler, 2011). Previous research also examined the role of cross-border VCs to their investee firms (Mäkelä & Maula, 2005), and the performance of cross-border VC investments in emerging markets (Wang & Wang, 2011). Using data from VC-backed Canadian firms, this paper provides a joint exploration of foreign VCs' presence and VC exits through M&A and seeks to facilitate a more comprehensive understanding of the role of foreign VCs to Canadian firms as well as Canadian syndicate VCs.

This thesis is structured as follows: the next section provides an overview of the related literature on VC investments and exits; the literature review is followed by the development of hypotheses; the tests of hypotheses and the interpretation of regression results are then presented; and finally, this paper concludes with a discussion of the empirical findings, limitations, and implications.

2. Literature Review

VC can be viewed as a professionally managed pool of capital that is primarily devoted to equity or equity-linked investments in high-potential and/or young radically changing ventures (Aizenman, 2012; Landström, 2007; Sahlman, 1990; Wright & Robbie, 1998). Tyebjee & Bruno (1984) modeled VC investment activities as a sequential process involving five steps, starting with "deal origination", in which VCs search for potential investment candidates. The deal origination is followed by a process of screening potential investment candidates to limit the number of available deals. VCs then evaluate their potential investee companies, which are usually entrepreneurial firms with little performance history (Marx, 1998); they assess potential investments based on multidimensional set of criteria, and weigh expected rates of returns against future uncertainties to make decisions. After the decisions are made, VCs and the entrepreneurs enter into contracts and structure the deals (Sahlman, 1990). The next step is post-investment activities, which comprise both monitoring and various forms of non-financial

value added (De Clercq & Manigart, 2007; Large & Muegge, 2008). VCs allocate substantive follow-up financing to entrepreneurial firms (MacMillan, Kulow & Khoylian, 1989; Sahlman, 1990), serve on the board of directors, provide managerial expertise, and monitor the operation and performance of the portfolio companies (Fried & Hisrich 1995; Gorman & Sahlman, 1989; Lerner, 1995; MacMillan, et al., 1989; Sahlman, 1990). VCs nurture the investee firms with both financial and non-financial support so as to, at some point, participate in a profitable exit from their investments. Exits are critical to the whole process of VC investments in that profitable exits allow VCs to obtain monetary returns to capital providers, to raise additional capital pools, and to recycle funds to new portfolio companies (Black & Gilson, 1998).

2.1. Post-Investment Venture Capital Financing

Previous research on VC financing highlights two broad types of VC post-investment activities: value adding and monitoring (De Clercq & Manigart, 2007). VCs fund and assist the development of their investee firms to increase the value and potential of their investments. Representing the interest of their own shareholders, VCs also monitor investee firms to keep the owner/manager's activities in accordance with the jointly established objectives (Fried and Hisrich, 1995), reduce the cost of information asymmetry (Amit, Brander, & Zott, 1998), and mitigate potential risks. Value adding and monitoring activities represent VCs' complementary roles in the relationship with their investee firms (De Clercq & Manigart, 2007). Both VCs and their portfolio companies benefit from open and active interactions between the two parties (Sapienza, 1992).

2.1.1. Value Adding Activities

Unlike financial intermediaries devoted to debt financing, VCs offer equity-linked investments to entrepreneurial enterprises with relatively opaque information and insufficient liquidity to support debt obligations (Marx, 1998). To ensure adequate funds for the growth of investee firms, VCs usually participate in several rounds of financing to the same investee firm (Sahlman, 1990). VCs also provide financial discipline (Fried & Hisrich, 1995), access to alternative sources of equity and debt financing (MacMillan et al., 1989), and a network of contacts with accounting consultants, investment banks, and

outside financiers (Cumming & Johan, 2008; Gomez-Mejia, Balkin, & Welbourne, 1990; Sahlman, 1990).

In addition to financing their portfolio companies, VCs establish active and open interactions with owners of their investee firms to increase the value of their involvements in the management of the investee firms (Large & Muegge, 2008; Gorman & Sahlman, 1989; Sapienza, 1992). Serving on the board of directors (Fried & Hisrich 1995; MacMillan et al., 1989; Sahlman, 1990), VCs provide oversight and a variety of operating services (Fried & Hisrich, 1995; Gompers, 1995). In the early stage of the firm growth, VCs assist owners/founders of their investee firms to establish inter-organizational structure by "professionalizing their human capital base" (Hellmann & Puri, 2002, p.170). VCs utilize their networking resources to locate new management candidates (Fried & Hisrich, 1995), interview and recruit high- and low-level managers (Gorman & Sahlman, 1989; Hellmann & Puri, 2002), build professional management teams, and formulate human resource policies (Hellmann & Puri, 2002). VCs also help owners/founders handle complicated organizational issues, solve internal conflicts, and facilitate inter-firm cooperation (Berglund, Hellström, & Sjölander, 2007; Hsu, 2006). Experienced VCs possessed of technical expertise and/or other industry specified expertise also offer guidance in identifying and developing appropriate business models and technical solutions to highly innovative early stage entrepreneurial firms (Berglund et al., 2007; Sapienza, 1992).

To promote the commercialization of innovative ideas and advanced technology, VCs collect marketing information (Berglund et al., 2007); instruct (or hire) marketing consultants to assist the owners/founders to formulate and refine marketing strategies, identifying and opening new markets (Fried & Hisrich, 1995; Lockett, Wright, Burrows, Scholes, & Paton, 2008), and establishing and strengthening relationships with suppliers and key customers. VCs also play a key role in the internationalization of investee firms. The involvement of VC funds increases the export intensity of their portfolio companies (Lockett et al., 2008), and promotes entrepreneurial firms to develop "long-term, knowledge-based resources for internationalization" (Zahra, Neubaum, & Naldi, 2007, p. 323). In terms of networks and external relationships, VCs provide significantly beneficial networking resources to investee firms. VCs networks could be important sources of employment candidates, specialized service providers, key customers, strategic

information, and access to scarce resources (Fried & Hisrich, 1995). VCs may also build strategic alliances among their portfolio companies, which allows firms to mitigate firm-specific risks, develop partnerships, and obtain crucial resources (Lindsey, 2008; Wang, Wuebker, Han, & Ensley, 2009). In the process of exits, VC networks could help investee firms to seek potential acquirers (Fried & Hisrich, 1995), and the VC backed cooperation increases the likelihood of successful IPOs (Hsu, 2006). Providing substantive financing, corporate governance and managerial expertise, and networks and alliances, VCs nurture the growth of their portfolio companies and increase the value of their investments.

2.1.2. Monitoring Activities

Compared to equity financing in publicly traded companies, VCs invest in entrepreneurial firms with few or no performance records or tangible assets as collateral (Amit et al., 1998; Lerner, 1995; Tyebjee, & Bruno, 1984). The restricted access to private information of investee firms indicates that owners/founders may possess a better insight into their own capabilities and the nature of their products, while the VCs may have better industry specified expertise and more comprehensive analysis of market situations (Amit et al., 1998; Cable & Shane, 1997).

The unequal distribution of information highlights one of the key distinctions between VC financing and commercial banking, and entails problems of information asymmetry (Wright & Robbie, 1998). Furthermore, owners of portfolio companies and VCs may not share the same strategic goal (Amit et al., 1998). For instance, VCs may invest for early lucrative exits, while owners/founders of investee firms may aim for long-term profits (De Clercq & Manigart, 2007; Ţurcan, 2008). Even after joint objectives are established, owners/founders might act out of self-interest, jeopardizing the relationships as well as hindering VC value adding activities (Amit et al., 1998). Asymmetric information, coupled with goal incongruency, addresses the agency problems (Eisenhardt, 1989) and requires VCs' distinctive skills in monitoring activities (Amit et al., 1998; Wright & Robbie, 1998).

In the deal negotiating process, VCs and owners/ founders structure mutually acceptable agreements and establish a series of mechanisms to handle potential agency problems (Gompers & Lerner, 1999; Tyebjee & Bruno, 1984). VCs contract a compensation

system, offering managers and key personnel a fraction of compensation in the form of equity or option directly linked to value creation, to align the incentives between owners/ founders and VCs. (Gompers & Lerner, 1999; Sahlman, 1990). To further prevent the owners/ founders from acting out of self-interest (Amit et al., 1998), VCs stage the capital commitment and preserve the option to withdraw from the investment (Sahlman, 1990). If the portfolio company fails to realize the goal, VCs might also "dilute the entrepreneurs' stake in subsequent financings" (Gompers & Lerner, 1999, p. 131). In the financing rounds, convertible securities are the most commonly used (Kaplan & Strömberg, 2003; Sahlman, 1990). VC financing also allows VCs to allocate capital commitment and control rights separately (Kaplan & Strömberg, 2003). These control rights enables VCs to undertake close monitoring activities. Reserving seats on the board of directors of investee firms, VCs play an actively interventionist role in the management of portfolio companies (Wright & Robbie, 1998). VCs possess the board and voting rights to evaluate and fire top management, and to formulate and assess corporate decisions and strategies (Gorman & Sahlman, 1989; Kaplan & Strömberg, 2003). VCs also visit investee firms, spend time on telephone conversations or on-site interactions with entrepreneurs (Gorman & Sahlman, 1989), review financial report to keep track of the operation and performance of the investee firms (Beuselinck & Manigart, 2007; MacMillan et al., 1989).

In spite of the increased information reporting costs, monitoring activities have positive effects to both VCs and owners/founders of their investee firms. VCs could obtain returns on their skills in investing and monitoring entrepreneurial firms with opaque information (Wright & Robbie, 1998). Monitoring activities could also increase the effectiveness of corporate governance and promote the professionalization of entrepreneurial firms (De Clercq & Manigart, 2007). For external stakeholders such as employees, suppliers, customers, and commercial banks, monitoring activities increase the quality of reporting to the public community and decrease information asymmetry (Beuselinck & Manigart, 2007). By the time of VC exit, monitoring activities also mitigate information opaqueness of investee firms to new owners (Cumming & Johan, 2008).

2.2. Cross-Border VC Investment and Syndication

Information asymmetries between VCs and informationally-opaque risky ventures typically require intensive post-investment monitoring activities (Amit et al., 1998; Sahlman, 1990; Wright & Robbie, 1998), in which case closer geographical proximity between VCs and their investee firms were traditionally preferred (Bengtsson & Ravid, 2009). However, as international VC financing activities started to intensify in the late 1990s, cross-border investments have represented a substantial proportion of worldwide VC deal volume (Aizenman & Kendall, 2008; Schertler & Tykvová, 2011).

Various factors at multiple levels tend to drive or impede cross-border VC flows. At the macroeconomic level, higher expected growth (Schertler & Tykvová, 2011), attractive tax regulations (Schertler & Tykvová, 2012), favorable legal protections (Cumming, Fleming, & Schwienbacher, 2009), abundant innovative opportunities (Guler & Guillén, 2010), and adequate high-end human capital (Aizenman & Kendall, 2008) in the portfolio companies' countries could facilitate foreign VC inflows. Information asymmetry and cultural disparity, on the other hand, might hinder cross-border VC flows between the host and home countries (Dai et al, 2012). At the microeconomic level, local investors play an important role in attracting foreign VC investments. Mäkelä & Maula (2008) posited a VC investing order, through which foreign VCs typically follow local VCs in later financing rounds, and thus high quality local VCs are crucial to increasing the investee firms' cross-border investment readiness (Mäkelä & Maula, 2008). Stronger local tie intensity, which is measured by the local connections that had been established within the host country, would also promote international VC syndication as well as cross-border VC inflows (Tykvová &Schertler, 2011).

Deeper stock market capitalization could promote both cross-border VC inflows and cross-border VC outflows in that higher capitalization leads to higher VC supply (Schertler & Tykvová, 2011; Schertler & Tykvová, 2012). Adopting a common market (e.g. European Union) and/or a common currency (e.g. Euro) of the regional economic community would also spur cross-border VC outflows (Alhorr et al, 2008). At the individual level, VCs' domestic and foreign experiences might positively affect their intention and participation in cross-border investment (Schertler & Tykvová, 2011). However, as Schertler & Tykvová (2011) argued, given limited resources possessed by

VCs and constrained access to additional funds, higher expected growth and more promising investment opportunities in the home country might discourage cross-border VC outflows.

The increasing prevalence of cross-border VC flows has fueled international VC syndication, in which multiple VCs from various countries co-finance one enterprise for a joint pay-off (Jääskeläinen, 2012; Lockett & Wright, 2001; Wilson, 1968). Extensive previous research has investigated motivations of VC syndications. Forming and/or participating in VC syndication enhance both pre-investment screening (Brander, Amit, & Antweiler, 2002) and post-investment monitoring (Manigart et al, 2006), and allow VCs to diversify financial risks (De Clercq & Dimov, 2004; Lerner, 1994; Lockett & Wright, 2001). Provision of human capital (Deli & Santhanakrishnan, 2010), firm-specific resources (Manigart et al, 2006), expertise (Bygrave, 1987), and complementary information (De Clercq & Dimov, 2004) could also drive VC syndication. Syndicating with local investors also might be an efficient way for foreign VCs to reduce barriers to local market entry.

2.3. Routine of Venture Capital Exit

As financing intermediaries, VCs raise money from outside investors and organize investments into entrepreneurial firms (Sahlman, 1990). Lucrative VC exit is critical to both the relationship between the VC fund and its capital providers, and the relationship between the VC fund and its investee companies (Black & Gilson, 1998). On one side, VC exit mechanisms represent a measure of VC manager's competence to fund providers, and allow fund providers to reallocate capital in partnerships of skilled VC managers (Black & Gilson, 1998). On the other side, liquidating their current investments allows VCs to recycle and reinvest funds to new ventures (Black & Gilson, 1998). Furthermore, an exit is important to VCs' sustainable operations. Successful VC exits lead to attractive returns for outside investors, thereby encouraging the flow of new capital into VC funds, and increasing the available financing supply to both portfolio companies and new investments (Gompers & Lerner, 1999). Thus making profitable exits is one of the essential objectives of VC investments (Cumming & MacIntosh, 2003; Sahlman, 1990).

According to Cumming & MacIntosh (2003) and Cumming & Johan (2008), there are five types of VC exits: (a) an IPO, in which a significant portion of the investee firm is sold to the public; (b) an acquisition exit, in which the entire firm is bought by a third party; (c) a secondary sale, in which only the VCs' shares are sold to a third party while the owners of the investee firms maintain their shares and ownership; (d) a buyback, in which the owners repurchase the shares from the VCs; and (e) a write-off, in which the VCs withdraw from their investment. An IPO or an M&A is typically considered as a "successful" VC exit (Brander et al, 2008; Gompers & Lerner, 1999; Nitani & Riding, 2013).

The routine of VC exit is affected by multiple factors, and VCs typically remain important control rights over the choice and timing of an exit (Schwienbacher, 2008). Cumming (2008) identified the allocation of control rights between the VC fund and the entrepreneur as an important factor affecting VC exits. Stronger VC control rights increase the likelihood of an acquisition exit, rather than a write-off or an IPO (Cumming, 2008). Different structures of VC funds could entail different exit routines. IPOs and acquisition exits are more likely for limited partnership VC firms. Corporate VC funds are more often associated with strategic acquisitions, while government VC funds are more likely to exit through secondary sales, buybacks or write-offs (Cumming & Johan, 2008). Product and the level of innovation also affect VC exit decisions. Schwienbacher (2008) pointed out that more innovative and profitable ventures are more likely to go public than ventures with more imitative or derivative projects. Besides, as legality is one central mechanisms which mitigates agency problems between VCs and entrepreneurs, high quality of a country's legal system fosters mutual development of IPO markets and VC markets, and facilitates VC backed IPO exits (Cumming et al, 2009). Taking the dynamic timing of VC exits into consideration, Giot and Schwienbacher (2007) proposed an exit order, in which VCs first target the IPO as the preferred way of cashing out on investments. Because the window of opportunity for acquisition extends for a considerable amount of time, acquisition exits are second-best choices available for an extended amount of time (Giot & Schwienbacher, 2007).

Previous research has also identified various factors affecting VC exit outcomes. Cumming & Dai (2011) points out a concave relation between the VC fund size and exit performances. The small size of VC funds constrains the ability to raise capital (Nitani &

Riding, 2013), and decrease the probability of successful exit (Cumming & Dai, 2011). However, unnecessarily large VC fund size may cause limited attention (defined such that "individual's attention spent on one task must reduce her attention available for other tasks due to human's limited ability to process information and to perform multiple tasks simultaneously" (Kahneman, 1973, as cited in Cumming & Dai, 2011, p. 4)). The VCs limited attention negatively affects exit outcomes (Cumming & Dai, 2011). Information asymmetry also plays a key role in determining VC exit performances (Cumming & Johan, 2008). For instance, US venture capitalists investing in Asia avoid informationally opaque ventures and form strategic partnerships with local VC funds to increase both the probability and the profitability of exits (Dai et al, 2012).

3. Theoretical Foundations and Hypotheses

In spite of the fruitful literature on driving factors of cross-border VC investing activities, little previous empirical research explicitly analyzes the impacts of the presence of foreign investors in VC markets. To address this issue, testable hypotheses are presently developed based on the review of related literature.

3.1. Foreign VCs' Presence and Successful Exits

VCs usually provide multiple rounds of financing to ensure that their investee firm obtain adequate funds to develop from one stage of firm growth to the next (Lewis & Churchill, 1983; Sahlman, 1990) and to keep the investee's activities in accordance with the jointly established objectives (Amit et al., 1998; Fried and Hisrich, 1995). The first round of financing is typically riskier, while, with the certification of early-round VCs, later rounds of financing are relatively less risky (Dai et al, 2012; Lerner, 1994). When investing abroad, foreign VCs usually avoid early rounds of financing and join local VCs in later financing rounds (Dai et al, 2012; Mäkelä & Maula, 2008). Nitani & Riding (2013) also report that the relative absence of large VC firms in Canada results in an unbalanced VC sector, one in which the smaller Canadian VC firms typically invest in early-stage and relatively risky enterprises while the (larger) foreign VCs invest in (relatively less risky) VC-backed businesses that have succeeded as far as later rounds of VC financing. As an IPO is one of the significant determinants of later stage VC

activities (Jeng & Wells, 2000), foreign VCs might arguably select Canadian VC portfolio companies with better performance and/or higher potential for successful exits through IPO and therefore participate mainly in follow-up, later stage, financing rounds. This cherry-picking process might contribute to a different frequency of successful exits through IPO between investee firms funded by foreign VCs and investee firms funded solely by domestic VCs.

In addition to the "cherry-picking" hypothesis, participation of foreign VCs might also promote successful exits. Cross-border VC investment/syndication could reduce the Canadian portfolio company's liability of foreignness, which is defined as "all additional costs a firm operating in a market overseas incurs that a local firm would not incur (Zaheer, 1995, p.343)", and facilitate the internationalization of portfolio companies (Mäkelä & Maula, 2005; Tykvová & Schertler, 2011). In case of exits, the portfolio company's international operations and/or top management international experiences could increase the likelihood of listing overseas (Hursti & Maula, 2007). In addition to management team's internal experiences, foreign investors' pre-IPO ownership is also positively related to foreign IPOs (Hursti & Maula, 2007). Foreign VCs' knowledge of both the quality of their Canadian investee firms, foreign stock markets and legal environments would possibly increase the likelihood of successful exit through foreign IPOs. Thus it is plausible to assume that foreign VCs' participation could open the door to more opportunity of successful exit through IPO. Hence, the initial hypothesis advanced is:

> *Hypothesis 1a:* The probability of a successful exit[2] through IPO is greater for investee firms with foreign VC participation than for investee firms lacking foreign VC participation.

In terms of VC exits through M&A, from the acquirer's standpoint, one of primary motives of M&A could be to achieve synergy by combining two or more business units into one that would generate additional value and/or increase competitive advantages (Calipha, Tarba, & Brock, 2010; Goold & Campbell, 1998). From the resource-based view of the firm, M&A offers a high level control over the crucial business resources

[2] The use of "successful" is per the definition of successful VC exit provided by Brander, Egan, & Hellmann (2008); Gompers & Lerner (1999); and Nitani & Riding (2013).

possessed by the acquired firms (Hopkins, Chaganti, & Kotabe, 1999; Shimizu, Hitt, Vaidyanath, & Pisano, 2004). And these resources might enable the acquirers to increase scale economies and obtain efficiency gains (Brakman, Garretsen, Van Marrewijk, & Van Witteloostuijn, 2013; Neary, 2007), and/or to improve growth performance, keeping ahead or abreast of technological development in their field and eliminating potential competitions (Mason & Harrison, 2006; Shimizu et al., 2004). Following the "cherry-picking" hypothesis, foreign investors might arguably choose Canadian VC investee firms possessed with pivotal resources for successful exits through M&A and participate in VC syndication. On the other hand, foreign VCs' financial and non-financial supports to their Canadian investee firms might be transferred into important business resources that are not possessed by VC portfolio companies lacking foreign VCs' participation, thus arguably making VC investee firms with foreign VCs' presence main targets in M&A.

Furthermore, linkages between home and host countries are positively related to foreign M&As in the host country (Buckley, Forsans, & Munjal, 2012). The presence of foreign VCs might be able to facilitate these linkages at the firm level. For instance, foreign investors' social connections and/or business linkages in their home country would arguably play vital roles in locating potential acquirers abroad (Fried & Hisrich, 1995) and mitigating information asymmetry between their portfolio companies and potential acquirers. From the demand side, corporations aiming for diversification overseas might seek and build connections with potential target firms abroad through VCs that perform cross-border investment. Therefore, the presence of foreign VC might not only promote successful exits through M&A, but also increases the likelihood of exit through cross-border M&A. Accordingly, additional hypotheses are:

> *Hypothesis 1b:* The probability of a successful exit through M&A is greater for investee firms with foreign VC participation than for those lacking foreign VC participation.

> *Hypothesis 1c:* Among VC exits through M&A, the probability of being foreign-acquired is greater for investee firms with foreign VC participation than for those lacking foreign VC participation.

3.2. Foreign VCs' Presence and VC Exit Through M&A

Financing is one of the crucial factors in the growth of entrepreneurial firms. Financial capital promotes entrepreneurs' exploitation of growth opportunities (Fadahunsi, 2012; Scott & Venkataraman, 2000), while the lack of financial resources may hinder the company from strategically best development (Davila, Foster, & Gupta, 2003). Both VCs and their investee firms would benefit from the financing process with timely investments (Davila et al., 2003). However, the small size of VC funds might constrain capital availability to portfolio companies (Murray, 2007). When obtaining additional capital, relatively smaller Canadian VC firms may prefer to achieve diversification rather than increasing the amount of funds invested in each portfolio company (Nitani & Riding, 2013). This limitation of domestic VC availability and the desire to overcome financial capital constraints in the host country might drive cross-border VC inflows and international VC syndication (Deli & Santhanakrishnan, 2010; Dossani and Kenney, 2002; Schertler & Tykvová, 2011).

In the Canadian context, the Canada's Venture Capital and Private Equity Association (CVCA, 2014) maintains that foreign VCs are essential to higher levels of VC investing activities. In 2013, non-Canadian VCs' investments accounted for 50% of the share of dollars invested in Canadian companies, and the median of foreign VCs' investment size was approximately three times the median of domestic VCs' investment size (CVCA, 2014). Previous research findings that the small size of VC funds reduces their abilities to finance investee firms (Murray, 2007; Nitani & Riding, 2013), coupled with the statistics that foreign VCs make larger investments than domestic VCs in Canada, make it plausible to hypothesize that VC portfolio companies with foreign VC participation might thus receive additional funding when compared to portfolio companies funded solely by domestic VCs.

> *Hypothesis 2:* Acquired investee firms with foreign VCs' participation obtain more VC funding than acquired investee firms lacking foreign VCs' participation.

Compared to pure local VC investments, cross-border VC investments might be able to create additional value that goes beyond geographical portfolio diversification and deal flow generation (Tykvová & Schertler, 2011). For instance, financial capital provided by

foreign syndicate members, complementing available funds from domestic VCs, might further facilitate innovation and development of their portfolio companies. Foreign VCs' non-financial resources, such as foreign market specific expertise and direct social contacts, might enable investee firms to identify and exploit new opportunities abroad, expand customer base and market share outside Canada, and exhibit higher growth rates (Devigne, Vanacker, Manigart, & Paeleman, 2011). Moreover, syndicating with local VCs, foreign VCs might also increase the bargaining power in the process of exit, which, coupled with the portfolio company's better performance, generate larger returns in exit through M&A (Brander et al, 2002).

However, as selecting potential investee companies abroad and/or forming international VC syndication could be costly, the extra costs stemming from cross-border VC investment might outweigh the financial benefits brought by foreign investors. The geographical, institutional, legal, and cultural differences between the host country (Canada) and the home countries of foreign VCs might exacerbate problems caused by information asymmetry (Dai et al, 2012; Wright, Pruthi, & Lockett, 2005). Participation of foreign investors might also expand the extent of VC syndication, increasing potential conflicts of interest and resulting in extra operational costs. To provide a framework for exploring these arguments, a third hypothesis is advanced.

> *Hypothesis 3:* Acquired investee firms with foreign VC participation generate smaller monetary returns in exits as compared to acquired investee firms lacking foreign VCs' participation.

The VC investment duration, which is the time interval between initial financing and exit, is of crucial importance to VCs (Giot & Schwienbacher, 2007). In the dynamic resource-based theoretical context, Cumming & Johan (2010) proposed that the timing of exit could be interpreted as when the VCs' projected marginal cost from maintaining the investment exceeds the VCs' projected marginal value added to their portfolio companies. The presence of foreign VCs in Canadian markets might change both the marginal cost and the marginal value added, and thus change the VC financing duration.

Following the line of reasoning that foreign VCs may be better able to nurture Canadian investee firms, cross-border VC investments/syndication might shorten the time taken to

reach the point where the efficiency advantages of VCs' value adding and monitoring activities start to diminish as the investee firm matures (Black & Gilson, 1998). Thus cross-border VC syndication might exit their investments earlier than those financed by purely local VC syndication in order to recycle funds to increase efficiency advantages of its financial and non-financial supports. On the other hand, the extra costs stemming from cross-border investment/syndication might increase the marginal costs from maintaining the investment (Cumming & Johan; 2010), and force the VCs to liquidate their investments. Furthermore, the provision of successful exits brought by foreign VCs might also shorten the VC financing duration. Again, to provide a framework for exploring these arguments, a fourth hypothesis is advanced.

Hypothesis 4: Acquired investee firms with foreign VC participation take less time between initial financing to successful exit as compared to acquired investee firms lacking foreign VCs' participation.

3.3. Summary of Hypotheses

Table 1 summarized the research hypotheses.

Table 1. Summary of Research Hypotheses

Presence of Foreign VCs	*VC Exits*		
	H1a	+	Likelihood to successfully exit through IPO
	H1b	+	Likelihood to successfully exit through M&A
	VC Exits Through M&As		
	H1c	+	Likelihood to exit through cross-border M&A
	H2	+	Amount of VC investment
	H3	−	Monetary returns generated in VC exits
	H4	−	VC financing duration

4. Empirical Analyses and Findings

To test the above-listed research hypotheses, binary logistic regression models and multivariate linear regression models are formulated. This section describes the data and

methodologies used to establish these models, and interprets the results of regression analyses.

4.1. Likelihood of Successful Exits

This section presents the results of analyses of the relationship between the presence of foreign VCs and the likelihood of successful exits through IPO (hypothesis 1a) or M&A (hypothesis 1b).

4.1.1. Data Description

The data are extracted from the Thomson Financial VCReporter database, which documented 5,133 Canadian VC investments between January 1999 and December 2009. These data focused on "classical" VC investments in the Canadian context, excluding financings of buyouts, turnarounds, and consolidations; investments for which all investors are unknown; investments made after the firm had exited; and investments in already-public companies. Regarding to the outcome of VC financing projects, these VC exits were categorized into: (1) IPO, (2) trade sale, (3) secondary sale, (4) reverse takeover, (5) write off, and (6) no exit. Table 2 presents the further classification of these VC exits according to the syndicate VCs' countries of origin.

Table 2. Presence of Foreign Investors and VC Exits

	Cross-Border VC Investments/	Local VC Investments/Syndications	Total
IPO	29	77	106
Trade Sale	75	406	481
Secondary Sale	6	18	24
Reverse Takeover	1	8	9
Write Off	6	40	46
No Exit	422	4045	4467
Total	539	4594	5133

Source: Thomson Financial VCReporter Database

As shown in Table 2, 110 out of 539 (20.41%) Canadian entrepreneurial firms with foreign VCs' participation successfully exited through either IPO or M&A (trade sale and secondary sale), whereas only 501 out of 4594 (10.91%) Canadian investee firms solely financed by local VCs successfully exited.

Table 3. Industry of VC Investee Firms

	Total	Types of Exit						Types of VC Investments	
		IPO	Trade Sale	Secondary Sale	Reverse Takeover	Write Off	No Exit	Cross-Border Investments/ Syndications	Domestic Investments/ Syndications
Agriculture, Forestry, Fishing and Hunting	103	0	4	0	0	1	98	6	97
Mining	142	5	20	1	1	0	115	35	107
Utilities	41	0	5	0	0	0	36	5	36
Construction	124	1	8	2	0	1	112	5	119
Manufacturing	1892	58	152	6	3	23	1650	176	1716
Wholesale Trade	238	1	13	1	0	0	223	5	233
Retail Trade	145	3	8	1	0	0	133	10	135
Transportation and Warehousing	74	1	6	0	0	1	66	4	70
Information	982	22	162	5	2	5	786	136	846
Finance and Insurance	114	2	6	1	0	1	104	16	98
Real Estate Rental and Leasing	60	0	0	0	0	0	60	4	56
Professional, Scientific, and Technical Services	739	11	79	1	2	9	637	65	674
Management of Companies and Enterprises	10	0	0	0	0	0	10	3	7
Administrative and Support and Waste Management and Remediation Services	140	2	8	1	1	3	125	14	126
Educational Services	14	0	0	0	0	0	14	3	11
Health Care and Social Assistance	59	0	3	2	0	0	54	7	52
Arts, Entertainment, and Recreation	44	0	1	0	0	1	42	4	40
Accommodation and Food Services	60	0	2	0	0	0	58	4	56
Other Services (except Public Administration)	71	0	2	2	0	1	66	3	68
Public Administration	38	0	2	1	0	0	35	6	32
Unknown	43	0	0	0	0	0	43	28	15

Source: Thomson Financial VCReporter Database

This ten-year data on VC liquidity transactions highlights a different successful exit rate[3] between cross-border and local VC investments/syndications. Accordingly, a closer examination of the links between foreign VCs' participation and the likelihood of successful exit will be presented in the next section.

A preliminary analysis of these VC investee firms in various industries with regard to the types of exits and the syndicate VCs' country of origin is demonstrated in Table 3.

The original database categorized and coded the sector of these VC investee firms based on the two-digit North American Industry Classification System (NAIC). The NAICS Code Drill Down Table is provided in Table 21 in the appendix.

The data show that both cross-border and local VC investments/syndications were mainly in manufacturing firms. When it comes to successful exit, the three highest ratio of successful exit[4] were recorded in VC-backed firm in information (19.25%[5]), mining (18.31%[6]), and professional, scientific, and technical services industry (12.31%[7]). A further exploration of potential industrial differences in the likelihood of successful exit will also be presented in the following section.

4.1.2. Variable Description

The dependent variables are dichotomous variables indicating the outcomes of VC investments by the time the data was recorded. The first sets of estimation models are the likelihood of IPOs (hypothesis 1a). Therefore, the dichotomous dependent variable *IPO* is set equal to 1 if the VC successfully exited through an IPO; if VC had not exited or if VC successfully exited through other routines[8] then the variable was set equal to 0. VC exits through write offs were coded as missing values[9]. In the second sets of models

[3] The successful exit rate is defined as the number of successful VC exits through IPO and M&A (trade sale and secondary sale) divided by the number of total VC investments.
[4] The ratio of successful exit is defined as the number of successful exits (IPO, trade sale, and secondary sale) dividend by the number of VC investments within the industry.
[5] The ratio of successful exit in VC-backed firm in information = (22+162+5)/982 = 19.25%.
[6] The ratio of successful exit in VC-backed firm in mining = (5+20+1)/142 = 18.31%.
[7] The ratio of successful exit in VC-backed firm in professional, scientific, and technical services industry = (11+79+1)/739 = 12.31%.
[8] In this case, other VC exit routines refer to trade sale, secondary sale, and reverse takeover.
[9] In this research, the write offs are considered as neither successful exits nor VC investments that had not exited, and thus were coded as missing values to be excluded from the analyses.

(hypothesis 1b), the dichotomous dependent variable *M&A* was set equal to 1 if the VC successfully exited through trade sale or secondary sale; if VC had not exited or if VC successfully exited through other routes[10] then the variable was set equal to 0. Again, VC investments that went out of business were coded as missing values.

The independent variable of interest is a dichotomous variable named *presence of foreign VCs,* which indicates the syndicate VCs' country of origin. If it is cross-border VC investment/syndication, then the variable equals to 1; if it is local VC investment/syndication, then the variable equals to 0. In other words, for Canadian investee firms with foreign VCs' participation, the independent variable equals to 1.

Other information provided in the dataset that might be useful in analyzing the links between foreign VCs' participation and the probability of successful exits is set as control variables. Namely, the *number of syndicate VCs*, the *amount of VC funding*, and the *rounds of VC financing* are control variables. The two-digit NAIC was transformed into a categorical variable named *industry of VC portfolio company* that indicates the industry of the VC investee firms, and is also set as a control variable to explore possible industrial differences.

Table 4 presents the summary of variables used in the binary logistic models.

[10] In this case, other VC exit routines refer to IPO and reverse takeover.

Table 4. Variables in Binary Logistic Regression Models of Probability of Successful Exit Through IPO or M&As

Variable Name	Definition
Dependent Variables	
IPO	A dichotomous variable equals to 1 if VC successfully exited through IPO.
M&A	A dichotomous variable equals to 1 if VC successfully exited through trade sale or secondary sale.
Independent Variable of Interest	
Presence of Foreign VCs	A dichotomous variable indicates the VCs' countries of origin. For Canadian investee firms with foreign VCs' participation, the variable equals to 1.
VC Syndication Related Control Variable	
Number of Syndicate VCs	The total number of VCs in the syndication.
VC Financing Related Control Variables	
Amount of VC Funding	The amount of VC funding before exit
Rounds of VC Financing	The number of VC financing rounds.
Industry Related Control Variable	
Industry of VC Portfolio Company	A categorical variable, defined in two-digit NACI, indicates the industry of the VC portfolio company.

4.1.3. Findings: Presence of Foreign VCs and Successful Exits

Two binary logistic regression analyses were conducted to test whether, and to what extent, the probabilities of successful exit through IPO (hypothesis 1a) or M&A (hypothesis 1b), respectively, differ in terms of cross-border VC investment/syndication or local investment/syndication. Binary logistic regression is appropriate because research hypotheses 1a and 1b examine the likelihood of a successful exit, and because the dependent variables are dichotomous. Logistic regression also allows for a mix of continuous and categorical independent (and control) variables, and tests the impact of multiple independent (and control) variables presented simultaneously on the relation between foreign VCs' participation and the likelihood of successful exits (Burns & Burns, 2008).

Table 5 shows the binary logistic regression estimation of the probability of successful exit through IPO (hypothesis 1a) or M&A (hypothesis 1b). Models [1] and [3] include only control variables, and the independent variable of interest - *Presence of Foreign VCs* – is added to models [2] and [4]. All the four logistic models are significant and good fits to the data.

Table 5. Binary Logistic Regression Estimation of Probability of Successful Exit Through IPO or M&A

	Probability of Successful Exit Through IPO		Probability of Successful Exit Through M&A	
	[1]	[2]	[3]	[4]
VC Syndication Related Control Variable				
Number of Syndicate VCs	0.196	0.186	0.162	0. 165
	(0.030)***	(0.030)***	(0.018)***	(0.019)***
VC Financing Related Control Variables				
Amount of VC Funding	0.001	0.001	0.000	0.000
	(0.001)**	(0.001)**	(0.000)	(0.000)
Rounds of VC Financing	-0.211	-0.211	- 0.023	- 0.024
	(0.056)***	(0.056)***	(0.024)	(0.024)
Industry Related Control Variable				
Industry of VC Portfolio Company[11]				
Independent Variable of Interest				
Presence of Foreign VCs		0.612		- 0.120
		(0.262)**		(0.167)
Number of Observations	5133	5133	5133	5133
Observations Included in Analysis	2444	2444	2444	2444
-2 log likelihood	630.514	625.439	1821.316	1820.795
Cox & Snell R^2	0.040	0.042	0.079	0.079
Nagelkerke's R^2	0.156	0.164	0.140	0.140
Chi-square	100.822***	105.897***	200.659***	201.180***

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.

The results suggest that the likelihood of successful exit through IPO is positively related to the presence of foreign VCs (ρ-value = 0.020), which supports hypothesis 1a that Canadian investee firms with foreign VC participation are more likely to successfully exit through IPO. This empirical result adds to the previous research finding that the small size of VC funds decreases the probability of successful exit (Cumming & Dai, 2011), suggesting that foreign VCs' participation might help to ameliorate the exit-related problem entailed from the deficiency of large Canadian VC funds.

A significantly positive correlation is also exhibited between the likelihood of successful exit through IPO and the amount of VC investment (ρ-value of 0.043 and 0.048 in models [1] and [2], respectively). The number of VC financing rounds, on the other hand,

[11] Industry of Portfolio Company, defined in 2-digit NAIC, was used as a control variable but was not significant.

is negatively associated with successful VC exit through IPO (ρ-value of 0.000 in both models [1] and [2]).

The results also show that the presence of foreign VCs is statistically unrelated to the likelihood of successful exit through M&A (ρ-value = 0.474). Thus hypothesis 1b that the probability of a successful exit through M&A is greater for investee firms with foreign VC participation is not supported. One of the explanations might be that the typical buyers in M&A are strategic acquirers, aiming to incorporate the acquired firms' product and/or technology into its own so as to keep ahead or abreast of technological development in their field and to eliminate potential competitions (MacIntoch, 1994; Mason & Harrison, 2006; Shimizu et al., 2004). Thus data on Canadian investee firms' knowledge base (Kongpichayanond, 2009; Vermeulen & Barkema, 2001), technology, human capital, networks, distribution channels and key constituencies (Mason & Harrison, 2006; Shimizu et al., 2004) might be needed to analyze the probability of successful VC exit through M&A.

The amount of VC investment (ρ-value of 0.656 and 0.639 in models [3] and [4], respectively) and the number of VC financing rounds (ρ-value of 0.337 and 0.306 in models [3] and [4], respectively) are also not related to the probability of successful exit through M&A.

It is also noteworthy that larger size of VC syndication, which is measured by the number of syndicate VCs, is associated with higher probability of successful VC exit through either IPO (ρ-value of 0.000 in both models [1] and [2]) or M&A (ρ-value of 0.000 in both models [3] and [4]). This adds to the previous research findings between the size of VC syndication and the hazard for a successful exit (Giot & Schwienbacher, 2007; Nitani & Riding, 2013).

No significant industrial differences are demonstrated in the empirical analyses.

4.1.4. Robustness Checks

Notably, only 2444 VC investments were included in the binary logistic models [1], [2], [3], and [4]. And among the 2689 missing cases, only 46 observations are VC

investments that wrote off and thus were coded as missing values, and the rest are VC investments with undisclosed amount of VC financing. Considering that the amount of VC funding is set as a control variable while contributing to the majority of missing cases, two additional binary logistic models are established that exclude the amount of VC funding in the analyses so as to check the robustness of the empirical findings.

Table 6 presents the results of the robustness checks.

As shown in Table 6, after excluding the amount of VC funding from the analyses, the only missing values in models [5] and [6] are write offs. Both models are significant and good fits with data, and the results are consistent with the binary logistic regression estimation of the probability of successful exit through IPO or M&A presented in Table 5. The results provide additional empirical evidence to the tests of hypothesis 1a and hypothesis 1b.

Table 6. Robustness Checks: Binary Logistic Regression Estimation of Probability of Successful Exit Through IPO or M&A

	Probability of Successful Exit Through IPO	Probability of Successful Exit Through M&A
	[5]	[6]
VC Syndication Related Control Variable		
Number of Syndicate VCs	0.241 (0.030)***	0.180 (0.017)***
VC Financing Related Control Variables		
Rounds of VC Financing	- 0.239 (0.057)***	0.006 (0.021)
Industry Related Control Variable		
Industry of VC Portfolio Company[12]		
Independent Variable of Interest		
Presence of Foreign VCs	0.709 (0.250)***	0.030 (0.151)
Number of Observations	5133	5133
Observations Included in Analysis	5087	5087
-2 log likelihood	889.859	2942.642
Cox & Snell R^2	0.027	0.066
Nagelkerke's R^2	0.149	0.139
Chi-square	140.570***	348.463***

Estimated coefficients are listed in the table. Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively

[12] Industry of Portfolio Company, defined in 2-digit NAIC, was used as a control variable but was not significant.

4.2. Outcomes of VC Exit Through M&A

This section focuses on empirical analyses on M&A exits of VC-backed Canadian firms, including the relationship between the presence of foreign VCs and types of M&A (hypothesis 1c), the amount of VC funding before exit (hypothesis 2), the purchase price per dollar of VC investment (hypothesis 3)[13], and the VC financing duration (hypothesis 4).

4.2.1. Data Description

Data on VC exits through M&A gathered by Thomson Reuters are used to analyze the relations between the presence of foreign investors and VC exits through M&As. The dataset recorded VC investments that exited between January 1999 and April 2011. Three types of Canadian VC liquidity transactions are documented in the dataset, which are: (1) M&As, (2) IPOs, and (3) out of business. Table 7 presents the number of exited VC investments in Canadian firms.

Table 7. Number of Exited VC Investments in Canadian Firms

Year of Event	M&A	IPO	Out of Business	Total
1999	17	18	0	35
2000	26	20	0	46
2001	39	9	1	49
2002	31	10	0	41
2003	27	3	5	35
2004	40	18	3	61
2005	57	18	2	77
2006	43	13	0	56
2007	54	14	0	68
2008	36	2	2	40
2009	43	1	3	47
2010	59	4	0	63
2011[14]	14	0	0	14
Total	486	130	16	632

Source: Thomson Reuters

The statistics reinforce that VC exits in Canada are primarily M&As. 486 out of 632 (76.90 %) recorded VC liquidity transactions were finalized through M&A, nearly four

[13] The purchase price per dollar of VC investment is used as a measure of monetary returns generated in VC exit through M&A to test hypothesis 3. One additional measure of monetary returns is provided in Table 24 in the appendices.
[14] Only VC investments that exited before April 2011 were recorded in the data.

times the number of VC exits through IPO (130). The past twelve years from 1999 to 2010 also saw an increase in the number of VC exits through M&A, and a decrease in the number of VC exits through IPO. Recognizing the trends of VC exits in Canada and the absence of literature on M&As as a VC exit mechanism, analyses in the section focuses on the M&A of VC-backed Canadian firms.

Table 8 shows the number of VC exits through M&A with regard to the presence of foreign investor and different types of M&A.

Table 8. Foreign Investor Presence and Types of M&A

	Cross-Border VC Investments/Syndications	Local VC Investments/Syndications	Undisclosed Investor	Total
Cross-Border M&A	86	164	6	256
Domestic M&A	40	176	13	229
Undisclosed Acquirer	1	0	0	1
Total	127	340	19	486

Source: Thomson Reuters

As presented in Table 8, 340 out of 486 (69.96%) acquired investee firms were solely financed by Canadian VCs, and 256 out of 486 (52.67%) M&As were finalized through cross-border M&As. The statistics also show clearly that the proportion of exits through cross-border M&As is considerately higher among VC investee firms with foreign investors' participation (86 out of 127, 67.72%) than investee firms funded solely by local VCs (164 out of 340, 48.24%).

Furthermore, the data categorized the acquired VC-backed firms into 18 industries, which are classified into 4 groups. The first group is *bio- and health-related industries*, consisting of (1) biopharmaceuticals, (2) healthcare, (3) medical devices and equipment, and (4) medical/biotech software and information services; the second groups is *consumer-related industries*, including: (1) consumer and business services, (2) consumer products, and (3) retailers; the third groups is *technology- and IT-related industries*, which are (1) communications and networking, (2) electronics and computer hardware, (3) Internet focus, (4) semiconductors, (5) software, (6) other it services, and (7) other technologies; the forth group is *other industries*, including (1) energy and environmental

technologies, (2) finance, (3) manufacturing, and (4) miscellaneous. Table 9 presents the number of acquired VC-backed firms in each industry group.

Table 9. Industry Groups of VC Portfolio Companies

	Bio- and health-related industries	Consumer-related industries	Technology- and IT-related industries	Other industries
Types of VC Syndication				
Cross-Border VC Investments/Syndications	9	19	88	11
Local VC Investments/Syndications	61	45	188	46
Undisclosed Investor	2	1	13	3
Types of M&A				
Cross-Border M&A	39	19	176	22
Domestic M&A	33	46	112	38
Undisclosed Acquirer	0	0	1	0
Total	72	65	289	60

Source: Thomson Reuters

As shown in Table 9, both cross-border and local VC investments/syndications were mainly in technology- and IT- related industries. And technology- and IT- related VC investee firms were also the main targets in both cross-border M&As (176 out of 256, 68.75%) and domestic M&As (112 out of 229, 48.91%). It is also noteworthy that larger proportion of bio- and health-related and technology- and IT- related investee firms were foreign acquired, while a larger proportion of investee firms in consumer-related and other industries were domestically acquired. More potential industrial differences will be examined in the regression analyses.

4.2.2. Sample Description

The sampling procedure is based on the accessibility of information on: (1) VC syndicate members; (2) the date of initial VC financing and the date of VC exit; (3) the amount of VC funding; (4) the purchase price in exit through M&A; and (5) the acquirer in M&A. 205 VC exits through M&A with disclosed above information are included in the sample.

Table 10, 11, and 12 present the descriptive statistics of the sample.

Presence of Foreign VCs

Table 10. Descriptive Statistics on Foreign VCs' Presence

	Cross-Border VC Investments/Syndications	Local VC Investments/Syndications
Number of VC Exits	58	147
Amount of VC Investment (CAD, M)		
Mean	150.58	31.02
5% Trimmed Mean	92.50	12.39
Median	42.63	8.40
Standard Deviation	317.54	122.34
Purchase Price Per Dollar of VC Investment (CAD)		
Mean	6.86	13.62
5% Trimmed Mean	2.53	8.19
Median	1.74	3.17
Standard Deviation	27.52	32.23
Duration of VC Financing (Month)		
Mean	55.97	63.17
5% Trimmed Mean	55.24	59.07
Median	51.50	51.00
Standard Deviation	29.99	49.92

Source: Thomson Reuters

As shown in Table 10, 28.29%[15] of the acquired investee firms in the sample have foreign VCs' participation. The descriptive statistics indicates that the acquired investee firms with foreign VC participation averagely stayed shorter with VCs while received larger amount of VC funding. In VC exit through M&As, the mean purchase price per dollar of investment for VC-backed firms with foreign investor participation is considerably lower than firms solely funded by Canadian VCs.

[15] A two-tailed one-sample z-test for proportion states that there is no statistically significant difference between the sample proportion and the population proportion of cross-border VC investments/ syndications ($z = 0.704$, $p < 0.05$).

Types of M&A

Table 11. Descriptive Statistics on Types of M&A

	Cross-Border M&A	Domestic M&A
Number of VC Exits	115	90
Amount of VC Investment (CAD, M)		
Mean	71.00	56.97
5% Trimmed Mean	31.52	18.06
Median	18.00	10.21
Standard Deviation	205.62	203.82
Purchase Price Per Dollar of VC Investment (CAD)		
Mean	14.95	7.56
5% Trimmed Mean	7.63	5.87
Median	2.93	1.91
Standard Deviation	39.83	12.16
Duration of VC Financing (Month)		
Mean	65.45	55.61
5% Trimmed Mean	63.43	50.32
Median	60.00	43.50
Standard Deviation	39.86	50.96

Source: Thomson Reuters

Table 11 shows that, within the sample, cross-border M&As account for 56.10% of VC exits through M&A[16]. As compared to domestically acquired Canadian VC-backed firms, foreign acquired Canadian VC-backed firms, on average, maintained longer relationship with VCs, obtained more VC funding, and generated higher purchase price per dollar of investment.

[16] The two-tailed one-sample z-test for proportion states that that there is no statistically significant difference between the sample proportion and the population proportion of cross-border M&A ($z = 0.9828$, $p < 0.05$).

Industry Differences Among The Acquired VC Portfolio Companies

Table 12. Descriptive Statistics on Industry Groups of VC Portfolio Companies

	Bio- and health-related industries	Consumer-related industries	Technology- and IT-related industries	Other industries
Number of VC Exits	41	27	114	23
Amount of VC Investment (CAD, M)				
Mean	22.63	231.15	27.99	127.56
5% Trimmed Mean	19.98	168.72	17.96	82.50
Median	18.53	21.80	11.18	11.88
Standard Deviation	21.80	448.05	64.33	282.51
Purchase Price Per Dollar of VC Investment (CAD)				
Mean	4.75	11.17	14.12	12.76
5% Trimmed Mean	3.36	8.02	7.03	9.57
Median	1.47	3.10	2.69	2.55
Standard Deviation	8.30	18.74	38.81	23.23
Duration of VC Financing (Month)				
Mean	86.63	55.96	56.46	44.87
5% Trimmed Mean	79.01	53.42	54.49	43.18
Median	79.00	49.00	51.00	35.00
Standard Deviation	65.47	38.18	36.53	31.02

Source: Thomson Reuters

Table 12 presents the descriptive statistics by industry groups of VC portfolio companies[17]. Bio- and health related VC investee firms, on average, displayed longer times to exit, whereas consumer- related investee firms averaged relatively more VC financing. Among VC exits through M&As, the highest mean purchase price per dollar of investment was recorded in technology and IT- related VC-backed firms.

4.2.3. Variable Description

Four dependent variables: *Cross-Border M&A* (hypothesis 1c), *Ln (Investment)* (hypothesis 2), *Ln (Purchase Price / Investment)* (hypothesis 3), and *Sqrt (Duration)* (hypothesis 4) are formulated to test the hypotheses regarding the outcomes of VC exits through M&As.

[17] The two-tailed one-sample z-test for proportion states that that there is no statistically significant difference between the sample proportion and the population proportion of the consumer-related industries ($z = - 0.086$, $p < 0.05$); the technology- and IT-related industries ($z = - 1.124$, $p < 0.05$); and the other industries ($z = - 0.490$, $p < 0.05$).

Table 13 lists the variables used to test whether and to what extent the VC exit through M&A differ with regard to participation of foreign VCs.

Table 13. Variables in Analyses of Outcomes of VC Exits Through M&A

Variable Name	Definition
Dependent Variables	
Cross-Border M&A	A dichotomous variable indicates the types of M&A through which VC liquidate their investment. If VC exits through cross-border M&A then the variable equals to 1, and if VC exits through domestic M&A then the variable equals to 0.
Ln (Investment)	The natural logarithm of the amount of VC funding before exit in millions of Canadian dollars.
Ln (Purchase Price / Investment)	The natural logarithm of the ratio of the purchase price for VC investee firms to the amount of VC investment.
Sqrt (Duration)	The square root of VC financing duration in month.
Independent Variable of Interest	
Presence of Foreign VCs	A dichotomous variable indicates the VCs' countries of origin. For Canadian investee firms with foreign VCs' participation, the variable equals to 1; for Canadian investee firms lacking foreign VCs' participation, the variable equals to 0.
VC Syndication Related Control Variable	
Number of Syndicate VCs	The total number of VCs in the syndication.
Industry Related Control Variables: VC Portfolio Company	
Bio- and health-related portfolio company	A dummy variable equals 1 for portfolio companies in bio- and health-related industries.
Consumer-related portfolio company	A dummy variable equals 1 for portfolio companies in consumer-related industries.
Technology- and IT-related portfolio company	A dummy variable equals 1 for portfolio companies in technology- and IT-related industries.
Other portfolio company	A dummy variable equals 1 for portfolio companies in other industries.
Industry Related Control Variables: Acquiring Company	
Bio- and health-related acquiring company	A dummy variable equals 1 for acquiring companies in bio- and health-related industries.
Consumer-related acquiring company	A dummy variable equals 1 for acquiring companies in consumer-related industries.
Technology- and IT-related acquiring company	A dummy variable equals 1 for acquiring companies in technology- and IT-related industries.
Other acquiring company	A dummy variable equals 1 for acquiring companies in other industries.

As in the tests of hypothesis 1a and hypothesis 1b, the independent variable of interest is a dichotomous variable named *presence of foreign VCs,* which indicates the VCs'

countries of origin. For Canadian investee firms with foreign VCs' participation, the variable equals to 1; and for Canadian investee firm lacking foreign VCs' participation, the variable equals to 0.

Likewise, other information provided in the dataset that might be relevant to the analyses of the links between foreign VCs' participation and VC exits through M&A are set as control variables. Namely, the number of syndicate VCs, and the VC portfolio company's and the acquiring company's industry groups are control variables.

4.2.4. Findings: Presence of Foreign VCs and Types of M&A

Binary logistic regression is employed to test the links between the presence of foreign VCs and the probability of VC exit through cross-border M&A (hypothesis 1c). The dependent variable is the dichotomous variable *cross-border M&A*, which equals to 1 if the VC investee firm was foreign acquired in exits through M&A. The independent variable of interest is the *presence of foreign VCs*. The industry dummy variables are control variables to explore the extent to which the likelihood of cross-border M&A of VC investee firms reflects industry differences among both acquired and acquiring companies.

Table 14 presents the results of estimation of the binary logistic models of the probability of cross-border M&A of VC investee firms. Model [7] is formulated to analyze potential differences regarding the control variables. The independent variable of interest – *presence of foreign VCs* – is included in model [8]. All two logistic models show good fits with the data, and adding the independent variables of interest to the logistic model [8] substantially increases Cox & Snell R^2 and Nagelkerke's R^2.

Table 14. Binary Logistic Regression Estimation of Probability of Cross-Border M&A

	Probability of Cross-Border M&A	
	[7]	[8]
VC Syndication Related Control Variable		
Number of Syndicate VCs	0.144 (0.073)**	0.060 (0.082)
Industry Related Control Variables: VC Portfolio Company		
Bio and health-related portfolio company	- 1.417 (1.078)	- 1.309 (1.108)
Consumer-related portfolio company	- 1.213 (0.700)*	- 1.384 (0.715)*
Technology and IT-related portfolio company	Reference Group	Reference Group
Other portfolio company	- 1.737 (0.696)**	- 1.765 (0.707)**
Industry Related Control Variables: Acquiring Company		
Bio and health-related acquiring company	0.937 (1.085)	1.180 (1.118)
Consumer-related acquiring company	0.056 (0.690)	0.011 (0.703)
Technology and IT-related acquiring company	Reference Group	Reference Group
Other acquiring company	0.994 (0.611)	1.030 (0.616)*
Independent Variable of Interest		
Presence of Foreign VCs		0.926 (0.403)**
Number of Observations	205	205
-2 log likelihood	260.092	254.577
Cox & Snell R^2	0.098	0.122
Nagelkerke's R^2	0. 131	0.163
Chi-square	21.042***	26.557***

Estimated coefficients are listed in the table, and Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.
The choice of Technology and IT-related portfolio company as the reference group is based on a complete comparison between the four industry groups, which is provided in Table 22 in the appendix.

The significant positive relation between the presence of foreign VCs and the probability of exit through cross-border M&As (ρ-value = 0.022) supports hypothesis 1c that Canadian entrepreneurial firms with foreign VCs' presence are more likely to be foreign acquired in VC exits through M&A.

In terms of the industry differences, technology- and IT-related portfolio companies are more likely to exit through cross-border M&A than either consumer-related portfolio company (B = 1.384, ρ-value = 0.053), or VC portfolio companies in other industries (B = 1.765, ρ-value = 0.013).

4.2.5. Findings: Presence of Foreign VCs and VC Exit Through M&A

Three multivariate regression models are employed to analyze the relationship between foreign VCs' participation and the amount of VC funding before exit (hypothesis 2), the purchase price per dollar of investment in exit (hypothesis 3), and the VC financing duration (hypothesis 4). Accordingly, the three dependent variables are *Ln (Investment)* (hypothesis 2), *Ln (Purchase Price / Investment)* (hypothesis 3), and *Sqrt (Duration)* (hypothesis 4). The independent variable of interest is also the *presence of foreign VC*. In addition to the industry related control variables, the dummy variable *cross-border M&A* is also set as a control variable to test if the outcomes of VC exit through M&A differ in terms of the acquirers' country of origin.

Table 15 shows the results of estimation of the multivariate linear regressions models. Models [9], [11], and [14] are developed to analyze potential differences regarding the control variables. Given that foreign VCs' participation is positively related to higher likelihood of VC exits through cross-border M&As, models [12] and [15] are used to control possible systematic differences between foreign-acquired and domestically acquired VC investee firms. The independent variable of interest – *presence of foreign VCs* – is entered into models [10], [13], and [16].

VC Investment

Both the linear regression model [9] (ρ-value = 0.000) and model [10] (ρ-value = 0.000) are good fits with the data. On entering the independent variable of interest, model [10] accounts for approximately 37.5% of the variance in the amount of VC investment.

The results show that the presence of foreign VCs and the amount of VC funding to their portfolio company are positively related (ρ-value = 0.000). This empirical result supports hypothesis 2 that acquired investee firms with foreign VCs' participation obtain more VC funding compared to acquired investee firms solely financed by local VCs. The number of syndicate VCs is also positively associated with larger amount of VC investments (ρ-value = 0.000), which is consistent with the reasoning that small VC firms syndicate to overcome financial constrains (Nitani & Riding, 2013; Murray, 2007).

Table 15. Multivariate Linear Regression Estimation of Outcomes of VC Exit Through M&A

	Ln (Investment)		Ln (Purchase Price / Investment)			Sqrt (Duration)		
	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
VC Syndication Related Control Variable								
Number of Syndicate VCs	0.338	0.191	- 0.288	- 0.316	- 0.271	0.288	0.271	0.374
	(0.048)***	(0.050)***	(0.052)***	(0.051)***	(0.058)***	(0.082)***	(0.083)***	(0.092)***
Industry Related Control Variables: VC Portfolio Company								
Bio- and health-related	- 1.165	- 0.702	- 0.705	- 0.763	- 0.830	Reference	Reference	Reference
portfolio company	(0.743)	(0.687)	(0.841)	(0.814)	(0.812)	Group	Group	Group
Consumer-related portfolio	Reference	Reference	0.027	- 0.067	0.009	- 2.129	- 2.152	- 1.820
company	Group	Group	(0.516)	(0.500)	(0.500)	(1.270)*	(1.266)*	(1.258)
Technology- and IT-related	- 1.713	- 1.480	0.178	- 0.147	- 0.161	- 2.373	- 2.545	- 2.421
portfolio company	(0.469)***	(0.432)***	(0.476)	(0.469)	(0.467)	(1.211)*	(1.212)**	(1.199)**
Other portfolio company	- 1.323	- 1.060	Reference	Reference	Reference	- 2.933	- 2.895	- 2.739
	(0.474)***	(0.438)**	Group	Group	Group	(1.321)**	(1.317)**	(1.303)**
Industry Related Control Variables: VC Acquiring Company								
Bio- and health-related	- 1.465	- 1.105	0.871	0.868	0.754	- 1.497	- 1.499	- 1.763
acquiring company	(0.718)**	(0.663)**	(0.782)	(0.757)	(0.757)	(1.228)	(1.224)	(1.214)
Consumer-related	- 0.821	- 0.888	0.456	0.629	0.663	- 0.119	- 0.007	0.071
acquiring company	(0.417)*	(0.383)**	(0.454)	(0.442)	(0.441)	(0.713)	(0.715)	(0.707)
Technology- and IT-related	- 0.766	- 0.792	0.200	0.370	0.390	- 0.290	- 0.180	- 0.132
acquiring company	(0.369)**	(0.339)**	(0.402)	(0.392)	(0.390)	(0.631)	(0.634)	(0.626)
Other acquiring company	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	Group	Group	Group	Group	Group	Group	Group	Group
VC Exit Routine Related Variable								
Cross-Border M&A				0.865	0.927		0.558	0.703
				(0.231)***	(0.233)***		(0.373)	(0.374)*
Independent Variable of Interest								
Presence of Foreign VCs		1.510			- 0.474			- 1.103
		(0.247)***			(0.285)*			(0.458)**
Number of Observations	205	205	205	205	205	205	205	205
F-test	11.170***	16.268***	6.223***	7.560***	7.087***	4.785***	4.493***	4.736***
Adjusted R^2	0.259	0.375	0.152	0.205	0.212	0.115	0.120	0.141

Estimated coefficients are listed in the table, and standard errors are given in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.
The choices of the reference groups are based on a complete comparison between the four industry groups, which is provided in Table 23 in the appendix.

In terms of the industrial differences, consumer-related VC portfolio companies received larger amounts of investment than either technology and IT-related portfolio companies (B = 1.480, ρ-value = 0.001) or portfolio companies in other industries (B = 1.060, ρ-value = 0.016). VC investee firms purchased by acquiring companies in the other industries obtained larger VC investments than VC investee firms purchased by bio- and health-related acquiring companies (B = 1.105, ρ-value = 0.097), consumer-related acquiring companies (B = 0.888, ρ-value = 0.022), or technology and IT-related acquiring companies (B = 0.792, ρ-value = 0.021).

Purchase Price Per Dollar of VC Investment

The ratio of purchase price in VC exit through M&A to investment measures the monetary returns per dollar of VC investment in the exit through M&A[18]. The linear regression model [11] (ρ-value = 0.000), model [12] (ρ-value = 0.000), and model [13] (ρ-value = 0.000) are significant and indicate a good fit to the data. Adding the independent variable of interest in model [5] considerably increases the F-statistics and adjusted R^2.

The purchase price per dollar of VC investment is negatively related to the presence of foreign VCs (ρ-value = 0.098), which (weakly) supports hypothesis 3 that acquired investee firms with foreign VC participation generate less monetary returns in exits as compared to acquired investee firms solely financed by local VCs. This empirical finding is consistent with the idea that extra costs stemming from cross-border VC investments/syndications might discount the financial benefits brought by foreign investors.

A significantly negative relationship is also demonstrated between the number of syndicate VCs and the purchase price per dollar of VC investment (ρ-value = 0.000). Given that the preponderance of relatively small VC firms leads to excessive syndication (Nitani & Riding, 2013), this finding provides empirical evidence that a higher number of syndicate VCs might discount the monetary returns to each syndicate members.

[18] One additional measure of monetary returns in VC exit through M&As, which is the difference between purchase price and the amount of VC investment per dollar of VC investment: [(purchase price – VC investment) / VC Investment], is formulated as a supplement to analyses on relations between foreign VCs participation and the purchase price per dollar of VC investment. The regression analyses are provided in Table 24 in appendices.

Moreover, as previous studies pointed out that foreign VCs tend to follow local VCs and participate in later financing rounds (Dai et al, 2012; Mäkelä & Maula, 2008; Nitani & Riding, 2013), the presence of foreign VCs could decrease the purchase price per dollar of VC investment when enlarging the VC syndication.

Exiting through cross-border M&As, on the other hand, is positively associated with the purchase price per dollar of VC investment (ρ-value of 0.000 in both models [12] and [13]). This result is consistent with previous research findings that target shareholders usually obtain significantly larger wealth gains in successful cross-border M&A (Dos Santos, Errunza, & Miller, 2008; Morellec & Zhdanov, 2005).

No significant industrial differences are demonstrated in either VC investee firms or acquiring companies.

VC Financing Duration

All the linear regression models [14] (ρ-value = 0.000), [15] (ρ-value = 0.000), and [16] (ρ-value = 0.000), are good fits with the data. In spite of the relatively low adjusted R^2, entering the independent variable of interest in model [16] further improves goodness of fit measures (F-statistics and adjusted R^2).

As hypothesis 4 predicted, exits of acquired investee firms with foreign VCs' participation take less time from initial financing to successful exit (ρ-value = 0.017). Larger syndicate sizes, on the other hand, are positively related to longer VC financing duration (ρ-value = 0.000). While the correlation is weak, these results suggest that VC portfolio companies that were acquired by foreign purchasers in M&A displayed longer times to exit compared to portfolio companies that were domestically acquired (ρ-value of 0.137, 0.062 in models [15], and [16], respectively).

With regard to VC investee firms in various industries, bio- and health-related VC portfolio companies display longer duration than either technology- and IT-related portfolio companies (B = 2.421, ρ-value = 0.045) or the portfolio companies in other industries (B = 2.739, ρ-value = 0.037).

4.2.6. Robustness Checks

For robustness checks, an alternative measure of foreign VCs' participation is used as the independent variable of interest, which is a continuous variable named *foreign VCs participation ratio*. It equals to the number of foreign VCs in the syndication divided by the total number of syndicate VCs. Consistent with the dummy variable – *presence of foreign VCs* – that are used in testing the hypotheses, if it is a local VC investment/syndication, then the foreign VCs participation ratio equals 0. If it is a cross-border VC investment/syndication, then the foreign VCs participation ratio measures the proportion of foreign VCs in the syndication. The objective of formulating this continuous variable is to capture the extent of cross-border VC investment/syndication, and to provide further empirical evidence on the links between the presence of foreign VCs and the outcomes of VC exit through M&As. Table 16 summarizes the comparisons of the two measures of foreign VCs' participation.

Table 16. Measures of Foreign VCs' Presence

Variable Name	Variable Description	Use of Variable
Presence of Foreign VCs	A dichotomous variable indicates the VCs' countries of origin. If it is cross-border VC investment/syndication, then the variable equals to 1.	Hypotheses Tests
Foreign VCs Participation Ratio	A continuous variable measures the proportion of foreign VCs in the VC syndication. It equals to the number of foreign VCs in the syndication divided by the total number of syndicate VCs.	Robustness Checks

The robustness check of the binary logistic regression of the probability of cross-border M&A is demonstrated in Table 17.

The binary logistic model [17] is significant (ρ-value = 0.000), and shows good fits with the data. The results in Table 17 are consistent with the results of estimation of the binary logistic models using the dichotomous variable – *presence of foreign VCs* – presented in Table 14. And the positive relation between *foreign VCs participation ratio* and the likelihood of VC exit through cross-border M&A (ρ-value = 0.014) highlights that the increased proportion of foreign investors in VC syndication is accompanied with an increased probability of being foreign acquired in exit through M&A. This significant

positive relation also adds additional evidence to the connection between cross-border VC investments/syndications and exit through cross-border M&As.

Table 17. Robustness Check: Binary Logistic Regression Estimation of Probability of Cross-Border M&A

	Probability of Cross-Border M&A
	[17]
VC Syndication Related Control Variable	
Number of Syndicate VCs	0.108 (0.661)
Industry Related Control Variables: VC Portfolio Company	
Bio- and health-related portfolio company	- 1.299 (1.087)
Consumer-related portfolio company	- 1.450 (0.728)**
Technology- and IT-related portfolio company	Reference Group
Other portfolio company	- 1.745 (0.712)**
Industry Related Control Variables: Acquiring Company	
Bio- and health-related acquiring company	1.063 (1.094)
Consumer-related acquiring company	- 0.048 (0.709)
Technology- and IT-related acquiring company	Reference Group
Other acquiring company	1.014 (0.619)
Independent Variable of Interest	
Foreign VCs Participation Ratio	1.625 (0.076)**
Number of Observations	205
-2 log likelihood	253.178
Cox & Snell R^2	0.127
Nagelkerke's R^2	0.171
Chi-square	27.956***

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.

As shown in Table 18, multivariate linear regression models [18], [19], and [20] test the links between the *foreign VCs participation ratio* and the amount of VC funding (hypothesis 2), the purchase price per dollar of VC investment (hypothesis 3), and the VC financing duration (hypothesis 4), respectively.

Table 18. Robustness Checks: Multivariate Linear Regression Estimation of Outcomes of VC Exit Through M&A

	Ln (Investment)	Ln (Purchase Price / Investment)	Sqrt (Duration)
	[18]	[19]	[20]
VC Syndication Related Control Variable			
Number of Syndicate VCs	0.268	- 0.293	0.308
	(0.043)***	(0.052)***	(0.083)***
Industry Related Control Variables: VC Portfolio Company			
Bio- and health-related portfolio company	- 0.563	- 0.838	Reference Group
	(0.657)	(0.806)	
Consumer-related portfolio company	Reference Group	0.076	- 1.804
		(0.498)	(1.261)
Technology- and IT-related portfolio company	- 1.399	- 0.146	- 2.423
	(0.414)***	(0.463)	(1.200)**
Other portfolio company	- 0.908	Reference Group	- 2.775
	(0.420)**		(1.303)**
Industry Related Control Variables: VC Acquiring Company			
Bio- and health-related acquiring company	- 1.253	0.789	- 1.625
	(0.632)**	(0.749)	(1.212)
Consumer-related acquiring company	- 0.918	0.684	0.081
	(0.367)**	(0.438)	(0.708)
Technology- and IT-related acquiring company	- 0.739	0.379	- 0.166
	(0.324)**	(0.387)	(0.627)
Other acquiring company	Reference Group	Reference Group	Reference Group
VC Exit Routine Related Variable			
Cross-Border M&A		0.961	0.712
		(0.232)***	(0.375)*
Independent Variable of Interest			
Foreign VCs Participation Ratio	2.702	- 0.998	- 1.594
	(0.351)***	(0.422)**	(0.683)**
Number of Observations	205	205	205
F-test	20.088***	7.497***	4.688***
Adjusted R^2	0.428	0.223	0.140

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.

The multivariate linear models [18] (ρ-value = 0.000), [19] (ρ-value = 0.000), and [20] (ρ-value = 0.000) are all good fits with the data. The results in Table 18 are also consistent with the results of estimation of the multivariate linear regression models using

the dichotomous variable – *presence of foreign VCs* – presented in Table 15. Notably, the foreign VCs participation ratio is positively related to the amount of VC funding (ρ-value = 0.000), and is negatively related to either the purchase price per dollar of VC investment (ρ-value = 0.019) or the VC financing duration (ρ-value = 0.021). These significant correlations point out that the higher proportion of foreign investors in VC syndication is associated with larger amount of VC funding, shorter time to exit, whereas lower purchase price per dollar of VC investment. Again, these empirical findings provide additional evidence to support hypotheses 3, 4 and 5.

4.3. Summary of Hypotheses and The Related Empirical Findings

Table 19 presents the summary of the research hypotheses and the related empirical findings. The only hypothesis that is not supported by the empirical analyses is hypothesis 1b.

Table 19. Research Hypotheses and the Related Empirical Findings

Presence of Foreign VCs	*VC Exits*			
	+	Likelihood to successfully exit through IPO	H1a Supported	Model [2] (Table 5)
	Not-Sig	Likelihood to successfully exit through M&A	H1b Not Supported	Model [2] (Table 5)
	VC Exits Through M&A			
	+	Likelihood to exit through cross-border M&A	H1c Supported	Model [8] (Table 14)
	+	Amount of VC investment	H2 Supported	Model [10] (Table 15)
	−	Monetary returns generated in VC exits	H3 Supported	Model [13] (Table 15)
	−	VC financing duration	H4 Supported	Model [16] (Table 15)

5. Conclusions and Discussions

This paper reports that the presence of foreign VCs is accompanied with mixed exit-related outcomes for Canadian investee firms and syndicates comprising Canadian VCs. Table 20 synthesizes the empirical findings in this paper.

Table 20. Summary of Empirical Findings

Panel A: VC Exits		
	Likelihood of Exit Through IPO	Likelihood of Exit Through M&A
Foreign VC Presence	+	Not-Sig
Number of Syndicate VCs	+	+
Amount of VC Investment	+	Not-Sig
Rounds of VC Financing	−	Not-Sig
Industry of VC Portfolio Company (NACI)	Not-Sig	Not-Sig

Panel B: VC Exits Through M&A				
	Likelihood of Cross-Border M&A	Amount of VC Investment	Purchase Price Per Dollar of VC Investment	VC Financing Duration
Foreign VC Presence	+	+	−	−
Number of Syndicate VCs	Not-Sig	+	−	+
Cross-Border M&A			+	+
Industry Group of VC Portfolio Company				
Bio- and health-related portfolio company	Not-Sig	Not-Sig	Not-Sig	Reference Group
Consumer-related portfolio company	−	Reference Group	Not-Sig	Not-Sig
Technology- and IT-related portfolio company	Reference Group	−	Not-Sig	−
Other portfolio company	−	−	Not-Sig	−
Industry Group of VC Acquiring Company				
Bio- and health-related acquiring company	Not-Sig	−	Not-Sig	Not-Sig
Consumer-related acquiring company	Not-Sig	−	Not-Sig	Not-Sig
Technology- and IT-related acquiring company	Not-Sig	−	Not-Sig	Not-Sig
Other acquiring company	Not-Sig	Reference Group	Not-Sig	Not-Sig

First, Canadian investee firms with foreign VCs' participation demonstrate a higher propensity of successful exit through IPOs. Second, the presence of foreign VCs is positively related to larger amounts of funding and shorter times to exit. These favorable outcomes imply that foreign VCs probably bring financial benefits to their Canadian investee firms. Moreover, foreign VCs' participation is associated with higher likelihoods of foreign M&As of investee firms, which is related to higher purchase price per dollar of investment. Also as the descriptive statistics indicate, the average purchase price per

dollar of investment paid by foreign purchasers is about two times as that paid by domestic purchasers. This empirical result indicates that VC-backed Canadian firms might also benefit from exits through cross-border M&A, which is positively related to the presence of foreign VCs. Considering that the number of syndicate VCs is positively related to higher probability of successful exit through either IPO or M&A and larger VC availability, Canadian investee firms might also profit from the presence of foreign VCs when foreign investors' participation increases the number of syndicate VCs.

However, the link between the presence of foreign VCs and lower purchase price per dollar of VC investment in exit through M&A suggests that foreign VCs' participation might decrease the financial returns to Canadian syndicate VCs, and thus discount the above-mentioned benefits brought to Canadian investee firms. Moreover, the empirical result that a larger number of syndicate VCs is related to lower purchase price per dollar of investment, coupled with the previous research finding that foreign VCs tend to participate in later rounds of financing and syndicate with local VCs (Dai et al, 2012; Mäkelä & Maula, 2008; Nitani & Riding, 2013), imply that the presence of foreign VCs' might discount the purchase price per dollar of investment when foreign VCs' participation enlarges the size of VC syndication. These downsides accompanied with (or potentially related to) the foreign VCs' investing activities suggest a more conscious attitude towards the use of foreign funds in Canadian VC market.

Sector-specific outcomes were also identified. Technology and IT-related portfolio companies were more likely to exit through cross-border M&A than either consumer-related portfolio company or VC portfolio companies in "other" industries. Second, consumer-related VC portfolio companies received larger investments than either technology and IT-related portfolio companies or portfolio companies in "other" industries. Also, VC investee firms purchased by acquiring companies in "other" industries obtained larger VC investments. Finally, the duration of VC investments in bio and health-related VC portfolio companies were longer than in "other" industries.

This research is not without limitations, which will provide directions for future studies. Notably, the empirical analyses are highly constrained to the available information in the data sets. Macro-level factors that might mediate the relation between foreign VCs' participation and VC exits, such as the economic conditions in the year of VC liquidity

events, are not provided in the data. The absence of related information in the data sets leads to a neglect of possible heterogeneity among foreign VC funds. The data limitations also prevent firm-level analyses, and thus the regression models fail to consider the potential effects associated with the size and age of the VC investee firms as well as the VCs' experiences. The limited data also required information on VC-backed Canadian entrepreneurial firms to be extracted from two data sets, which classified the industry of VC portfolio companies in different ways, resulting in some inconsistency regarding the coding of the industry dummy variables. In terms of purchase price for Canadian investee firms in exit through M&A, the data limitation results in this research's inability to distinguish monetary returns to local syndicate VCs or Canadian investee firms from those paid to foreign syndicate VCs. Thus future research could conduct macro-level analyses, and/or gather supplementary firm-level data to investigate additional factors that might contribute to variations in the associations between the foreign investors' presence and the exit-related outcomes to the Canadian VC market.

Solely scrutinizing the foreign investors' presence in the Canadian VC market from the financial perspective is another limitation of this research. Non-financial benefits that might accompany foreign VCs' investing activities, such as the foreign-market specific expertise, expanded networking resources, and accumulated entrepreneurial experiences, are beyond the scope of this study. Further research could investigate the nature of cross-border VC investments in Canada to identify the advantages and hindrances imbedded in the presence of foreign VCs. A more in-depth examination of foreign VCs' participation from both financial and non-financial perspectives will also be helpful in proposing approaches to make better use of foreign funds in the Canadian VC market.

Further studies might also incorporate both quantitative and qualitative analyses to overcome this work's inability to identify causal relations between foreign VCs' participation and the VC exit-related outcomes. Determining the existence of causalities will then enable more profound analyses on mechanisms by which foreign VCs' participation affects the outcomes of VC investing activities, and more efficient tactics to balance benefits and drawbacks brought by foreign investors to the Canadian VC market.

In addition to the presence of foreign VCs in Canadian market, the associations between the VC syndicate size and the mixed VC exit-related outcomes are another possible

further research direction. The lack of data on financing rounds in acquired VC-backed firms precludes the analysis on possible interaction effects between foreign VCs' participation and the size of VC syndication. Considering that foreign VCs might invest in Canadian entrepreneurial firms in the first financing rounds without syndicating with local VCs or joint the Canadian VC syndication in later rounds of financing, future research could collect addition data to deliver a more thorough examination on the influences of VC syndicate size on financial returns to each syndicate members.

Moreover, given the empirical result that cross-border investment is related to higher likelihood of VC exit through cross-border M&A, another possible research area could be the influences of cross-border M&A of Canadian VC-backed firm to the economy. Previous research pointed out that cross-border M&A could result in the loss of top managerial positions (Ashcroft, 1988; Krug & Aguilera, 2005; Krug & Nigh, 2001; Walsh, 1988); the transfer of key functional operations to other countries (Ashcroft, 1988; Mason & Harrison, 2006); and fewer promotion opportunities for local employees (Ashcroft, 1988), whereas this paper confirms that there are an positive outcome associated with VC exits through cross-border M&A, namely higher purchase prices per dollar of VC investment. The use of funds generated from VC exit through cross-border M&A and the exited founder/owner's post-acquisition activities could also be possible research directions following the work of this study.

In spite of all these limitations, this paper demonstrates a series of interesting empirical findings, which add to the scholarly research on cross-border VC investment and M&A as a VC exit mechanism. This paper highlights the foreign VCs' presence in Canadian market, and identifies their direct or (potential) indirect links to various exit-related outcomes. The empirical findings will inform public policy at the federal and provincial levels, and aims to promote a better use of foreign funds in the Canadian VC market. The analyses regarding the VC syndicate size, the VC exit through cross-border M&As, and the industrial differences in VC exit will help to facilitate a more comprehensive understanding of the Canadian VC sector, as well as providing possible direction for further research.

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Appendix

Table 21. NAICS Code Drill Down Table

11	Agriculture, Forestry, Fishing and Hunting
21	Mining
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information
52	Finance and Insurance
53	Real Estate Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)
92	Public Administration

Table 22. Reference Group: Binary Logistic Regression Estimation of Probability of Cross-Border M&A

Probability of Cross-Border M&A	[1]	[2]	[3]	[4]
VC Syndication Related Control Variable				
Number of Syndicate VCs	0.060	0.060	0.060	0.060
	(0.082)	(0.082)	(0.082)	(0.082)
Industry Related Control Variables: VC Portfolio Company				
Bio- and health-related	Reference	0.075	- 1.309	0.456
portfolio company	Group	(1.130)	(1.108)	(1.198)
Consumer-related portfolio	- 0.075	Reference	- 1.384	0.381
company	(1.130)	Group	(0.715)*	(0.719)
Technology- and IT-related	1.309	1.384	Reference	1.765
portfolio company	(1.108)	(0.715)*	Group-	(0.707)**
Other portfolio company	- 0.456	- 0.381	1.765	Reference
	(1.198)	(0.719)	(0.707)**	Group
Industry Related Control Variables: VC Acquiring Company				
Bio- and health-related	Reference	1.168	1.180	0.150
acquiring company	Group	(1.115)	(1.118)	(1.113)
Consumer-related	- 1.168	Reference	0.011	- 1.019
acquiring company	(1.115)	Group	(0.703)	(0.640)
Technology- and IT-related	- 1.180	- 0.011	Reference	- 1.030
acquiring company	(1.118)	(0.703)	Group	(0.616)*
Other acquiring company	- 0.150	1.019	1.030	Reference
	(1.113)	(0.640)	(0.616)*	Group
Independent Variable of Interest				
Presence of Foreign VCs	0.926	0.926	0.926	0.926
	(0.403)**	(0.403)**	(0.403)**	(0.403)**
Number of Observations	205	205	205	205
-2 log likelihood	254.577	254.577	254.577	254.577
Cox & Snell R^2	0.122	0.122	0.122	0.122
Nagelkerke's R^2	0.163	0.163	0.163	0.163
Chi-square	26.557***	26.557***	26.557***	26.557***

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively

Table 23. Reference Group: Multivariate Linear Regression Estimation of Outcomes of VC Exit Through M&A

Panel A: Ln (Investment)	[1]	[2]	[3]	[4]
VC Syndication Related Control Variable				
Number of Syndicate VCs	0.191	0.191	0.191	0.191
	(0.050)***	(0.050)***	(0.050)***	(0.050)***
Industry Related Control Variables: VC Portfolio Company				
Bio- and health-related	Reference	- 0.702	0.778	0.359
portfolio company	Group	(0.687)	(0.652)	(0. 711)
Consumer-related portfolio	0.702	Reference	1.480	1.060
company	(0.687)	Group	(0.432)***	(0.438)**
Technology- and IT-related	- 0.778	- 1.480	Reference	- 0.419
portfolio company	(0.652)	(0.432)***	Group	(0.402)
Other portfolio company	- 0.359	- 1.060	0.419	Reference
	(0.711)	(0.438)**	(0.402)	Group
Industry Related Control Variables: VC Acquiring Company				
Bio- and health-related	Reference	- 0.217	- 0.313	- 1.105
acquiring company	Group	(0.672)	(0.662)	(0.663)**
Consumer-related	0.217	Reference	- 0.096	- 0.888
acquiring company	(0.672)	Group	(0.421)	(0.383)**
Technology- and IT-related	0.313	0.096	Reference	- 0.792
acquiring company	(0.662)	(0.421)	Group	(0.339)**
Other acquiring company	1.105	0.888	0.792	Reference
	(0.663)*	(0.383)**	(0.339)**	Group
Independent Variable of Interest				
Presence of Foreign VCs	1.510	1.510	1.510	1.510
	(0.247)***	(0.247)***	(0.247)***	(0.247)***
Number of Observations	205	205	205	205
F-test	16.268***	16.268***	16.268***	16.268***
Adjusted R^2	0.375	0.375	0.375	0.375

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively

Table 23. Reference Group: Multivariate Linear Regression Estimation of Outcomes of VC Exit Through M&A (Cont'd)

Panel B: Ln (Purchase Price /Investment)	[1]	[2]	[3]	[4]
VC Syndication Related Control Variable				
Number of Syndicate VCs	- 0.271	- 0.271	- 0.271	- 0.271
	(0.058)***	(0.058)***	(0.058)***	(0.058)***
Industry Related Control Variables: VC Portfolio Company				
Bio- and health-related	Reference	- 0.839	- 0.669	- 0.830
portfolio company	Group	(0.784)	(0.747)	(0.812)
Consumer-related portfolio	0.839	Reference	0.170	0.009
company	(0.784)	Group	(0.498)	(0.500)
Technology- and IT-related	0.669	- 0.170	Reference	- 0.161
portfolio company	(0.747)	(0.498)	Group	(0.467)
Other portfolio company	0.830	- 0.009	0.161	Reference
	(0.812)	(0.500)	(0.467)	Group
Industry Related Control Variables: VC Acquiring Company				
Bio- and health-related	Reference	0.092	0.364	0.754
acquiring company	Group	(0.769)	(0.758)	(0.757)
Consumer-related	- 0.092	Reference	0.272	0.663
acquiring company	(0.769)	Group	(0.480)	(0.441)
Technology- and IT-related	- 0.364	- 0.272	Reference	0.390
acquiring company	(0.758)	(0.480)	Group	(0.390)
Other acquiring company	- 0.754	- 0.663	- 0.390	Reference
	(0.757)	(0.441)	(0.390)	Group
VC Exit Routine Related Variable				
Cross-Border M&A	0.927	0.927	0.927	0.927
	(0.233)***	(0.233)***	(0.233)***	(0.233)***
Independent Variable of Interest				
Presence of Foreign VCs	- 0.474	- 0.474	- 0.474	- 0.474
	(0.285)*	(0.285)*	(0.285)*	(0.285)*
Number of Observations	205	205	205	205
F-test	7.087***	7.087***	7.087***	7.087***
Adjusted R^2	0.212	0.212	0.212	0.212

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively

Table 23. Reference Group: Multivariate Linear Regression Estimation of Outcomes of VC Exit Through M&A (Cont'd)

Panel C: Sqrt (Duration)	[1]	[2]	[3]	[4]
VC Syndication Related Control Variable				
Number of Syndicate VCs	0.374	0.374	0. 374	0.374
	(0.092)***	(0.092)***	(0.092)***	(0.092)***
Industry Related Control Variables: VC Portfolio Company				
Bio- and health-related	Reference	1.820	2.421	2.739
portfolio company	Group	(1.258)	(1.199)**	(1.303)**
Consumer-related portfolio	- 1.820	Reference	0.601	0.919
company	(1.258)	Group	(0.800)	(0.803)
Technology- and IT-related	- 2.421	- 0.601	Reference	0.318
portfolio company	(1.199)**	(0.800)	Group	(0.749)
Other portfolio company	- 2.739	- 0.919	- 0.318	Reference
	(1.303)**	(0.803)	(0.749)	Group
Industry Related Control Variables: VC Acquiring Company				
Bio- and health-related	Reference	- 1.834	- 1.630	- 1.763
acquiring company	Group	(1.235)	(1.217)	(1.214)
Consumer-related	1.834	Reference	0.204	0.071
acquiring company	(1.235)	Group	(0.771)	(0.707)
Technology- and IT-related	1.630	- 0.204	Reference	- 0.132
acquiring company	(1.217)	(0.771)	Group	(0.626)
Other acquiring company	1.763	- 0.071	0.132	Reference
	(1.214)	(0.707)	(0.626)	Group
VC Exit Routine Related Variable				
Cross-Border M&A	0.703	0.703	0.703	0.703
	(0.374)*	(0.374)*	(0.374)*	(0.374)*
Independent Variable of Interest				
Presence of Foreign VCs	- 1.103	- 1.103	- 1.103	- 1.103
	(0.458)**	(0.458)**	(0.458)**	(0.458)**
Number of Observations	205	205	205	205
F-test	4.736***	4.736***	4.736***	4.736***
Adjusted R^2	0.141	0.141	0.141	0.141

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively

Table 24. Robustness Check: Monetary Returns in VC Exit Through M&A

Ln [(Purchase Price - Investment)/Investment]		
	[1]	[2]
VC Syndication Related Control Variable		
Number of Syndicate VCs	- 0.271 (0.058)***	- 0.293 (0.052)***
Industry Related Control Variables: VC Portfolio Company		
Bio- and health-related portfolio company	- 0.669 (0.747)	- 0.692 (0.742)
Consumer-related portfolio company	0.170 (0.499)	0.222 (0.496)
Technology- and IT-related portfolio company	0.161 (0.467)	0.146 (0.463)
Other portfolio company	Reference Group	Reference Group
Industry Related Control Variables: VC Acquiring Company		
Bio- and health-related acquiring company	0.364 (0.758)	0.410 (0.750)
Consumer-related acquiring company	0.272 (0.480)	0.305 (0.477)
Technology- and IT-related acquiring company	- 0.390 (0.390)	- 0.379 (0.387)
Other acquiring company	Reference Group	Reference Group
VC Exit Routine Related Variable		
Cross-Border M&A	0.927 (0.233)***	0.961 (0.232)***
Independent Variable of Interest		
Presence of Foreign VCs	- 0.474 (0.285)*	
Foreign VCs Participation Ratio		- 0.998 (0.422)**
Number of Observations	205	205
F-test	7.086***	7.497***
Adjusted R^2	0.212	0.223

Estimated coefficients are listed in the table.
Standard errors are given in parentheses.
***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.

The dependent variable is the natural logarithm of the difference between purchase price and the amount of VC investment per dollar of VC investment: Ln[(purchase price – VC investment) / VC Investment]. The independent variable of interest in Model [1] is the dichotomous variable named Presence of Foreign VCs, and the independent variable of interest in Model [2] is the continuous variable named Foreign VCs Participation Ratio. The control variables are the same as those used in regression analysis of the purchase price per dollar of VC investments, which are Model [11], [12], and [13] in Table 15.

Either the Presence of Foreign VCs or the Foreign VCs Participation Ratio is negatively related to the difference between purchase price and the amount of VC investment per dollar of VC investment.

Hypotheses and the Related Binary Logistic Models:

Hypothesis 1a:

The binary logistic model [1]:

$$logit\ (IPO_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Amount\ of\ VC\ Funding_i) + \beta_3 \times (Rounds\ of\ VC\ Financing_i) + \beta_4 \times (Industry\ of\ VC\ Portfolio\ Company_i)$$

The binary logistic model [2]:

$$logit\ (IPO_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Amount\ of\ VC\ Funding_i) + \beta_3 \times (Rounds\ of\ VC\ Financing_i) + \beta_4 \times (Industry\ of\ VC\ Portfolio\ Company_i) + \beta_5 \times (Presence\ of\ Foreign\ VCs_i)$$

Hypothesis 1b:

The binary logistic model [3]:

$$logit\ (M\&A_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Amount\ of\ VC\ Funding_i) + \beta_3 \times (Rounds\ of\ VC\ Financing_i) + \beta_4 \times (Industry\ of\ VC\ Portfolio\ Company_i)$$

The binary logistic model [4]:

$$logit\ (M\&A_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Amount\ of\ VC\ Funding_i) + \beta_3 \times (Rounds\ of\ VC\ Financing_i) + \beta_4 \times (Industry\ of\ VC\ Portfolio\ Company_i) + \beta_5 \times (Presence\ of\ Foreign\ VCs_i)$$

Hypothesis 1c:

The binary logistic model [7]: $logit\ (Cross-border\ M\&A_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) + \beta_3 \times (Indistry\ of\ Acquiring\ Company_j)$

The binary logistic model [8]: $logit\ (Cross-border\ M\&A_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) + \beta_3 \times (Indistry\ of\ Acquiring\ Company_j) + \beta_5 (Presence\ of\ Foreign\ VCs_i)$

Hypotheses and the Related Multivariate Linear Regression Models:

Hypothesis 2:

The multivariate linear regression model [9]: $\ln(Investment_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) + \beta_3 \times \left(Indistry\ of\ Acquiring\ Company_j\right)$

The multivariate linear regression model [10]: $\ln(Investment_i) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) + \beta_3 \times \left(Indistry\ of\ Acquiring\ Company_j\right) + \beta_4 \times (Presence\ of\ Foreign\ VCs_i)$

Hypothesis 3:

The multivariate linear regression model [11]: $\ln\left(\frac{Payment_i}{Investment_i}\right) = \beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) + \beta_3 \times (Indistry\ of\ Acquiring\ Company_j)$

The multivariate linear regression model

[12]:$\ln\left(\frac{Payment_i}{Investment_i}\right) =$

$\beta_0 + \beta_1 \times (Number\ of\ Syndicate\ VCs_i) +$
$\beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) +$
$\beta_3 \times (Indistry\ of\ Acquiring\ Company_j) + \beta_4 \times (M\&A_i)$

The multivariate linear regression model [13]: $\ln\left(\frac{Payment_i}{Investment_i}\right) = \beta_0 + \beta_1 \times$
$(Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) +$
$\beta_3 \times (Indistry\ of\ Acquiring\ Company_j) + \beta_4 \times (M\&A_i) +$
$\beta_5 (Presence\ of\ Foreign\ VCs_i)$

Hypothesis 4:

The multivariate linear regression model [14]: $\text{sqrt}(Duration_i) = \beta_0 + \beta_1 \times$
$(Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) +$
$\beta_3 \times (Indistry\ of\ Acquiring\ Company_j)$

The multivariate linear regression model [15]: $\text{sqrt}(Duration_i) = \beta_0 + \beta_1 \times$
$(Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) +$
$\beta_3 \times (Indistry\ of\ Acquiring\ Company_j) + \beta_4 \times (M\&A_i)$

The multivariate linear regression model [16]: $\text{sqrt}(Duration_i) = \beta_0 + \beta_1 \times$
$(Number\ of\ Syndicate\ VCs_i) + \beta_2 \times (Indistry\ of\ VC\ Portfolio\ Company_i) +$
$\beta_3 \times (Indistry\ of\ Acquiring\ Company_j) + \beta_4 \times (M\&A_i) +$
$\beta_5 (Presence\ of\ Foreign\ VCs_i)$