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# Should I stay, or should I go? – How fund dynamics influence venture capital exit decisions

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ABSTRACT

We investigate the determinants of venture capital (VC) exit behavior after the lockup expiry in initial public offerings (IPOs) by considering insights from prospect theory and behavioral finance for the first time. Hereby, the paper concentrates on the under-researched relationship between fund managers and the limited partners investing in these funds. The results from a proprietary dataset of 292 U.S. VC-backed IPOs from 1991 to 2008 imply that VC firm characteristics and fund dynamics have a significant influence on the exit extent after the lockup expiry and may not always be in line with limited partners' interests, hinting at the relevance of behavior grounded in prospect theory. In particular, first-time funds keep their shares longer after an IPO, whereas funds satisfied with current fund performance cash out soon after the end of the lockup period.
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## 1. Introduction

An IPO (initial public offering) is commonly considered the most favored exit type for venture capitalists because it promises the highest returns (Bayar & Chemmanur, 2011; Cochrane, 2005; Sahlman, 1990). To mitigate the agency problem between old and new investors occurring as old investors know the firm well in contrast to new investors, a lockup period is implemented, among various mechanisms (Brav & Gompers, 2003). It forces old investors to remain invested for a certain period after the IPO and binds them to the value development of the share price so that it diminishes the risk that they provide erroneous signals about a firm's quality at the IPO. After the lockup period, venture capitalists are free to cash out to realize the returns of a successful investment (Gompers & Lerner, 2001). Venture capitalists have basically two main options: (1) exit as quickly as possible after the lockup period to cash out (full exit) or (2) wait for the perfect timing of a final exit to potentially maximize the return on investment (partial exit).

Interestingly, venture capitalists often do not tend to opt for a full exit shortly after the expiration of the lockup period to realize the returns as fast as possible but, instead, tend to sell only part of their shares and remain invested in the portfolio company for a substantial time (Barry, Muscarella, Peavy Iii, & Vetsuypens, 1990). This pattern can be perceived in recent IPOs backed by venture capital (VC), such as those of Groupon, Pandora, and Facebook.[1] Many VC firms, acting as general partners (GPs), that invested in these newly public firms retained their shares long after the lockup period. However, their investors, so-called limited partners (LPs), were of the opinion that the VC funds should have usually exited as soon as possible to realize the returns quickly. Since VC firms' typical management fee of about 2% of the committed capital exceeds the average costs of actively managed equity funds (Metrick & Yasuda, 2010), the limited partners refuse to allow the VC firms to stay invested in public companies. This aspect is emphasized by a limited partner quoted in a Reuters article published in August 2012: “We don't pay you to hold on to a public stock” (McBride, 2012). However, many VC firms remain invested after the lockup period.

This discussion indicates a lack of understanding of VC firms' exit decision making and the difference in intentions after public filings between general partners and limited partners which is considered an under-researched relationship (Florou, 2005; Gompers, 1996; Kandel, Leshchinskii & Yuklea, 2011; Metrick & Yasuda, 2011; Sahlman, 1990). A broad range of research papers on VC-backed IPOs has concentrated

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[1] Groupon, Pandora, and Facebook are used as examples of large VC-backed IPOs in 2011 and 2012 because they stand out in terms of size and media coverage: however, there were more than 150 other VC-backed IPOs in that time period.

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**Table 1**
Literature Overview on VC exit decisions.

| Study | Theoretical background | Relationship | Sample period | Sample | VC firm characteristics | Lead VC variable | VC reputation variable | Syndicate variable |
|---|---|---|---|---|---|---|---|---|
| Neus and Walz (2005)[1] | Agency theory | VC and new investors into public firms | | | | | | |
| Barry et al. (1990) | – | VC and old/new investors into public firms | 1978–1987 | 433 VC-backed IPOs | | x | x | x |
| Lin and Smith (1998) | Agency theory | VC and old/new investors into public firms | 1979–1990 | 497 VC-backed IPOs | | x | | |
| Cumming and MacIntosh (2003) | Agency theory | VC and old/new investors into public firms | survey data of 112 VCs from 1992 to 1995 | 66 VC-backed IPOs | | | | |
| Fürth and Rauch (2012) | – | VC and old/new investors into public firms | 1999–2008 | 279 buyout-backed IPOs | | x | x | x |
| Paeglis and Veeren (2013) | Agency theory | VC and old/new investors into public firms | 1993–2004 | 1649 VC-backed IPOs | | | x | x |
| Bock and Schmidt (2015) | Agency theory/prospect theory | VC fund managers and fund investors | 1991–2008 | 292 VC-backed IPOs | x | x | | |

[1]Theoretical study.

on understanding the determinants of venture capitalists' exit decisions in IPOs. A major strand of this research investigates the agency problems that occur between venture capitalists who are old investors, with deep knowledge about a firm, and new investors, who have limited insight into the firm at the time of the IPO (e.g. Barry et al., 1990; Cumming & MacIntosh, 2003; Lee & Wahal, 2004; Lin & Smith, 1998; Neus & Walz, 2005). However, first, the former research concentrates on agency theory and relies on the assumption that individuals behave rationally, but neglects other relevant theories for VC fund managers' decision making. Prospect theory is such a relevant theory as it proposes a framework for individuals' decision making taking real behavior into account (Tversky & Kahneman, 1992). For example, other studies using prospect theory in the area of finance found that investment managers tend to keep stocks in their portfolio longer than necessary if they don't perceive that the stocks gained enough value (Frazzini, 2006; Kyle, Ou-Yang & Xiong, 2006; Shefrin & Statman, 1985). Furthermore, people tend to overweigh the small probability that IPO stocks can tremendously gain in value and are therefore reluctant to sell the stock (Barberis & Huang, 2008; Odean, 1998). Hence, besides relevant agency-contingent aspects, our paper considers for the first time such findings of prospect theory which can influence VC fund managers' decision making in the exit process.

Second, it is the case that on the one hand a growing body of literature focuses on investigating the relationship between general and limited partners (Chung, Sensoy, Stern & Weisbach, 2012; Figge, Bauer, Braun & Achleitner, 2012; Kandel et al., 2011). But these papers do not empirically account for the timing of exit decisions. Focusing on the relationship between general and limited partners is particularly important, as limited partners are interested whether the VC governance model is designed in a way that general partners behave as limited partners want them to. Hence, the outcome of general partners' behavior is of interest in this research area. On the other hand, the studies which deal with the exit process in the VC context, do not consider VC firm characteristics so far (see Table 1). Our study aims to fill this research gap by determining whether the general partners' decision to exit after IPOs is driven by VC firm characteristics and fund dynamics by newly integrating relevant aspects of prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). Theoretically, these factors should not have any influence on general partners' decision making, as their main interest should only be to maximize returns in line with limited partners' interests. Findings of influence of VC firm characteristics and fund dynamics would thus imply that suboptimal decision making can occur and that general partners' decisions are not necessarily aligned with limited partners' preferences.

There is ample reason to believe that general partners' exit decisions are influenced by VC firm characteristics, fund governance structure, as well as the compensation system. Agency-related aspects play a role in this context, since there is the potential for conflicting interests in the relationship between VC fund managers and limited partners. Fund managers have an interest in building up their firm's reputation, which determines their present actions by consideration of their future impact, which is not necessarily in line with the limited partners' present interests. The VC fund's limited lifetime and the fact that fund managers often manage several funds simultaneously can distort general partners' behavior. The pressure of being obliged to have exited the investments by the end of the fund's lifetime and the allocation of resources to new funds can lead to premature exits. Further, VC funds' performance-based compensation creates important incentives for VC fund managers. Fund managers' satisfaction with current fund performance is likely to influence the exit decision. In this context, prospect theory provides a useful theoretical framework (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992), since it provides the basis for VC firm's risk perception, influenced by performance issues.

To test the influence of VC-related factors on the exit extent, we use a unique dataset of 292 U.S. IPOs from 1991 to 2008 for which we have detailed data. We concentrate on VC-backed IPOs since the decision to fully or partially exit an investment through other exit types is often not solely the venture capitalists'. For example, VC firms have to negotiate the exit type, timing, and extent with the company's founding team, current management, and potential acquirers. In the case of IPOs, the situation is different. Once the lockup period expires, usually no direct negotiations with other parties, for example, the portfolio company's management team, co-investors, underwriters, or potential acquirers, are necessary and the general partners are free to decide whether to cash out immediately or to retain shares for longer. Thus, the sale of shares in this setting mainly reflects the fund managers' mere decisions. Since our distinctive data include information on exit timing, board participation, and the exact cash flows between the portfolio company and the VC fund, our study allows for novel empirical insights into the determinants of VC fund decisions of full versus partial exits of IPO investments. Our proprietary data of VC funds' deal-level data allows us on the one hand to determine the exact exit timing and on the other hand to compute the distinctive performance of the VC funds, which covers measures not being publicly available elsewhere. Within our analysis, we control for market- and portfolio company-related factors that might affect the decision.

The results show that VC firm reputation and fund dynamics have a substantial influence on exit decisions. In particular, if a VC fund is a

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