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Progress toward understanding tensions in corporate venture capital: A systematic review

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ABSTRACT

We systematically review the past four decades of research on tensions in corporate venture capital (CVC) and inductively identify three main tensions: (1) multiple stakeholders championing CVC-based exploration versus core business-focused exploitation, (2) CVC programs simultaneously belonging to the corporate parent versus the startup/venture capital (VC) world, and (3) startups and VCs viewing CVC programs as a threat versus an opportunity. By combining the understanding of the CVC phenomenon with that of the paradox literature, we expand our understanding of why, how, and when contradictory goals and multiple stakeholder expectations result in tensions and how these tensions can be managed.

1. Executive summary

Corporate venture capital (CVC)—equity investments made by established firms in entrepreneurial startups—is an important phenomenon that is rife with tensions. Despite the accumulation of research on CVC, the progress made toward understanding these tensions has not been reviewed. Reviewing this research is important because it adds to our understanding of why, how, and when contradictory goals and multiple stakeholder expectations influence stakeholders’ behaviors and CVC performance and how these tensions can be managed to produce positive outcomes. We conducted a systematic review of the CVC literature from 1981 to 2019 and identified a large number of tensions examined in the literature, which we further distill into three main tensions: (1) multiple stakeholders championing CVC-based exploration vs. core business-focused exploitation, (2) CVC programs simultaneously belonging to the corporate parent vs. the startup/venture capital (VC) world, and (3) startups and VCs viewing CVC programs as a threat vs. an opportunity. We further reviewed the literature on how these tensions can be managed. To address the limitations identified in our review and to facilitate continued progress in the understanding of the tensions in CVC, by drawing on insights from the paradox literature, we discuss the paradoxical nature of the main tensions and propose avenues for future research. We advance the research on tensions in CVC by identifying the main tensions in CVC, examining the progressive understanding of these tensions, and drawing on the paradox perspective to propose avenues for future research.

2. Introduction

Corporate venture capital (CVC) refers to direct minority equity investments made by established firms in privately held young and
entrepreneurial startups (Dushnitsky and Lenox, 2005b). CVC investments are generally made through dedicated CVC programs of established firms and are often syndicated with independent venture capital (VC) firms. Because CVC investments occur in interfaces among established firms, startups, and VC investors who have different perspectives, objectives, and practices, CVC is a complex phenomenon that is prone to contradictions and tensions. In the past four decades of research on CVC, a large number of tensions have been discussed at different levels and from different perspectives.

Although the CVC phenomenon is rife with tensions due to the commonly pluralistic objectives of CVC (e.g., strategic and financial goals (Dushnitsky and Lenox, 2006; Siegel et al., 1988)) and multiple stakeholders’ involvement at various organizational levels (e.g., Dokko and Gaba, 2012; Keil et al., 2008a; Maula et al., 2009; Souitaris and Zerbinati, 2014; Weber and Weber, 2011), the CVC literature has stagnated by using “tension” or “paradox” thus far only as a label without considering the potential insights that might be drawn from the paradox literature. A paradoxical tension, or paradox, is parsimoniously defined as a “persistent contradiction between interdependent elements” (Schad et al., 2016: 10). The paradox literature finds that the mismanagement of paradoxes can cause ambivalence, chaos, collapse, conflict, and organizational decline, whereas effective engagement with paradoxes results in ambidexterity, creativity/innovation, effectiveness, learning, legitimacy, sustainability, and long-term performance (Lewis and Smith, 2014; Schad et al., 2016). Furthermore, the paradox literature provides insights into how to identify paradoxes, how and why they arise, when they become salient or remain latent, how they can be managed, and what their outcomes are (Schad et al., 2016). Thus, it is important to systematically review the tensions in the CVC phenomenon and to draw on insights from the paradox literature because this contributes to the understanding of why, how, and when contradictory goals and multiple stakeholder expectations result in tensions and how such tensions influence stakeholders’ behaviors and CVC performance and can be managed to produce positive outcomes.¹

The purpose of this paper is to address this gap by identifying the main tensions in the CVC phenomenon, evaluating the progressive understanding of these tensions, and drawing on the paradox perspective to propose directions for future research through a systematic review of the CVC literature from 1981 to 2019. In our review of the literature on the tensions in CVC, we introduce the paradox lens (e.g., Cunha and Putnam, 2019; Lewis, 2000; Putnam et al., 2016; Schad et al., 2016; Schad et al., 2019; Smith and Lewis, 2011) to the CVC literature, thereby enriching the theoretical base of the CVC literature and paving the way for novel contributions in both the CVC and paradox literature. In particular, we expect this review and the identified future research directions to facilitate continued progress in the understanding of tensions in CVC.

The rest of the paper is structured as follows. In the next section, we introduce the multiple interfaces and levels of the CVC phenomenon and explain how paradox theory can be useful for identifying and reviewing the tensions in CVC. Thereafter, we elaborate on the methods we used to select our corpus of CVC articles and systematically and inductively identify the tensions in the CVC phenomenon. Then, we review the tensions that we identified in the CVC phenomenon. Finally, by drawing on insights from the paradox literature, we discuss the paradoxical nature of the main tensions in CVC and propose avenues for future research.

3. CVC phenomenon and the paradox theory

To identify the key areas of tension in CVC, it is first helpful to consider the CVC phenomenon and the many interfaces that a CVC program has with other parts of the corporate parent and with the VC and startup communities. As noted in the introduction, CVC investments are minority equity investments made by established firms in entrepreneurial firms (Dushnitsky and Lenox, 2005b). These investments have implications for CVC parent corporations, portfolio companies, and their stakeholders.

Within the parent corporation, CVC is often organized as a dedicated program, and multiple levels of managers are involved in the CVC decision-making process. In many CVC programs, investment committees composed of senior and business unit (BU) managers oversee CVC activity and approve changes in the investment charter (Bleicher and Paul, 1987; Hill and Birkinshaw, 2014; Weber and Weber, 2011; Winters and Murfin, 1988). BU, R&D, and corporate development managers discuss the technology roadmap of the parent firm and the strategic priorities of the CVC program; they support the CVC activities by taking part in the due diligence processes and the activities of monitoring, advising, or managing portfolio startups (Basu et al., 2016a; Bleicher and Paul, 1987; Hill and Birkinshaw, 2014; Winters and Murfin, 1988). It has been observed in prior research that multiple levels of managers involved in the CVC decision-making process have pluralistic interests, goals, and perspectives (e.g., Keil et al., 2008a), which can trigger various types of tensions. For example, it has been noted that CVC programs often face internal resistance from mainstream units while emulating the practices and structures of VCs (e.g., Basu et al., 2016a).

CVC programs actively make investments in startups and often coinvest with VCs (Basu et al., 2016a; Hill and Birkinshaw, 2014; Weber and Weber, 2011). A large majority of CVC programs have pluralistic goals and invest in startups not only to gain financial returns but also to achieve strategic benefits, which include (i) learning about new technologies, markets, and business models, (ii) creating complementary demands for their core products/services and building ecosystems, and (iii) using VCs as stepping-stones for future alliances and acquisitions (Basu et al., 2016b; Dushnitsky, 2006; Maula, 2007). CVC programs’ pursuit of strategic goals often clashes with the financial goals of the VCs and the desire for ownership and control of portfolio startups (e.g., Katila et al., 2008;}

¹ For recent reviews of the CVC literature, see Dushnitsky (2006), Maula (2007), Basu et al. (2016b), and Keil et al. (2016). Additionally, the CVC literature has been discussed as part of the broader literature, such as the entrepreneurial equity financing literature (Drover et al., 2017), VC literature (Da Rin et al., 2013), and corporate venturing literature (Narayanan et al., 2009). In our review of the research on the tensions in CVC, we do not primarily focus on tensions among scholarly works; instead, we primarily focus on identifying and addressing the tensions in the phenomenon or practice of CVC.
In particular, startups frequently weigh the potential value-added they could receive from CVC investors as a part of the investment against potential risks (Maula et al., 2009) and safeguard their position by building investment syndicates consisting of both independent VCs and other CVC investors (Hallen et al., 2014). Thus, multiple stakeholders in CVC have contradictory interests and objectives, which can lead to many different types of tensions.

To identify and review the tensions in the CVC phenomenon, it is also important to understand the relevant definitions and theory on such tensions. Paradox theory is a meta-theory that offers a lens through which the tensions in organizations resulting from contradictory goals, multiple stakeholder expectations, and pluralistic missions can be understood (Schad et al., 2016; Schad et al., 2019). The exploration-exploitation tension, which many organizations seek to manage through organizational ambidexterity, is an example of an organizational tension that has been widely researched using the paradox lens in the areas of entrepreneurship and strategy research (e.g., Andriopoulos and Lewis, 2009; Maclean et al., 2020; Smith and Tushman, 2005).

In paradox theory, tensions are seen as the starting point (Putnam et al., 2016: 68, Schad et al., 2019: 109). When such tensions are characterized by contradictions between simultaneously existing elements, they are considered to be paradoxical (Cameron and Quinn, 1988; Schad et al., 2016; Schad et al., 2019). The concept of paradox was formally defined by Smith and Lewis (2011: 382) as "contradictory yet interrelated elements that exist simultaneously and persist over time," with slightly different definitions and interpretations existing in the rapidly growing literature on organizational paradoxes, as well as related concepts such as tensions, contradictions, dilemmas, and dialectics, as reviewed by Schad et al. (2016) and Putnam et al. (2016). In the related literature (e.g., Lewis, 2000; Schad et al., 2016; Smith and Lewis, 2011) and in our paper, paradoxes are also referred to as paradoxical tensions.

Different strands of paradox research have assumed paradoxical tensions to be either inherent (i.e., existing within the system, such as the need for firms to explore and exploit (Raisch et al., 2009, Smith, 2014)) or socially constructed (i.e., created by actors’ cognition or rhetoric (Schad et al., 2019; Smith and Lewis, 2011)). These differences in ontological assumptions lead to different available solutions for addressing paradoxes in organizations. Although for some tensions, choosing among competing alternatives could offer a short-term solution, the paradox perspective argues that “long-term sustainability requires continuous efforts to meet multiple divergent demands" (Smith and Lewis, 2011: 381). Generally, in addition to the “either-or” solutions (e.g., prioritizing one of the two opposite poles) suggested by contingency theory, the paradox literature has found that organizational members can cope with paradoxes by using “both-and” strategies, in which both poles of a tension are treated as inseparable and interdependent (e.g., balancing between opposite poles through structural or contextual ambidexterity) (Lewis and Smith, 2014) or “more-than” coping strategies that connect opposite poles by moving outside of them or situating them in a new relationship (Cunha and Putnam, 2019; Putnam et al., 2016). Given that paradoxical tensions occur and become salient at different organizational levels, the paradox literature has also considered potential responses at different levels as both collective and individual approaches (Schad et al., 2016). At the macro- and meso-levels, a paradox can be managed not only by accepting and learning to live with it (Cameron and Quinn, 1988) but also by situating the contradictory elements in separate levels or locations, at different times, or finding a novel solution that considers both paradoxical elements (Poole and Van de Ven, 1989; Schad et al., 2016). At the micro-level, a paradox can be managed through paradoxical, discursive, or integrative thinking or through the use of coping skills such as irony or humor (Schad et al., 2016).

The extant paradox literature has identified four generic types of organizational paradoxes (Lewis, 2000; Schad et al., 2016; Smith and Lewis, 2011): learning (e.g., old vs. new), belonging (e.g., collective vs. individual identities), organizing (e.g., rigid vs. flexible), and performing (e.g., internal vs. external demands). However, it has been warned that adopting an a priori category-based system could lead to ignoring other types of paradoxes that do not fit neatly in the four-part classification (Cunha and Putnam, 2019). Consequently, we take an inductive approach to identify and review the tensions in the CVC phenomenon. In this review, we combine the understanding of the CVC phenomenon with that of the paradox literature to evaluate how the understanding of the tensions in the CVC phenomenon has progressively developed, taking into account multiple stakeholders’ perspectives at various organizational levels.

4. Methods

To ensure rigor, we sought to follow the recent guidelines on designing and implementing rigorous and systematic literature reviews (e.g., Bacq et al., 2021; Simsek et al., 2021). To conduct our systematic review of the CVC research covering the period from 1981 to 2019, we sought to identify relevant CVC articles in leading peer-reviewed journals because they are considered to be validated knowledge that has a large impact on scholarship (Podsakoff et al., 2005). To identify relevant CVC articles, we searched for terms such as “corporate venture capital,” “corporate entrepreneurship,” “corporate investor,” and “external corporate venturing.” We first read the title, abstract, and keywords of the searched articles to identify articles relevant to tensions in CVC and to exclude irrelevant articles. If it was unclear whether the article was relevant for our review based on the information above, we read the full article to confirm its relevance. To identify relevant peer-reviewed CVC articles, we used several search strategies as described below.

Economics, Review of Financial Studies; and (4) a management information systems journal: Information Systems Research.\textsuperscript{2} If the search of an FT50 journal resulted in zero CVC articles, we did not include the journal in the above list.

Then, as we noticed that many influential CVC articles have been published in journals outside the FT50, to ensure comprehensive coverage of CVC research, we employed the snowball approach and collected additional relevant articles in the references of the articles we previously identified. We also searched for additional high-quality CVC papers from the Web of Science SSCI database and Google Scholar.\textsuperscript{3} These approaches resulted in 31 additional CVC articles published in the following peer-reviewed journals that frequently publish CVC papers: Journal of Banking & Finance, Financial Management, Journal of Financial Intermediation, Small Business Economics, Journal of Economics & Management Strategy, Journal of Product Innovation Management, Long Range Planning, Journal of Business Research, and Venture Capital: An International Journal of Entrepreneurial Finance. As the systematic review focuses on peer-reviewed primary studies, we excluded books, book chapters, and other non-peer-reviewed publications from the corpus of the review (Podsakoff et al., 2005). For the same reason, we also excluded introductory articles to special issues, review articles, and commentaries from the corpus (e.g., Busenitz et al., 2003).\textsuperscript{4} Altogether, this process resulted in 111 peer-reviewed CVC articles. Table 1 below shows the number of articles by journal.

For the 111 articles, we coded the research question, theoretical background, sample, dependent variable, independent variables, key hypotheses, main findings, and CVC tensions of each article. By adopting the paradox lens, we further analyzed the tensions; we identified the actor(s) experiencing the tensions; the type and paradoxical characteristic of the tensions; why and how the tensions arise; the interface and level at which the tensions occur; and how the tensions can be managed or coped with (Andriopoulos and Gotsi, 2017; Schad et al., 2016).

To review and synthesize the prior literature, given the limited number of studies focusing on any particular tension in CVC, instead of using an aggregative synthesis approach such as meta-analysis, which focuses on quantitatively synthesizing effect sizes from multiple homogenous primary studies, we opted for a more interpretative synthesis approach (Briner and Denyer, 2012; Rousseau et al., 2008). Although we did not limit the review to case studies, we largely followed a meta-synthesis approach (Hoon, 2013; Tranfield et al., 2003), which is an inductive research design in which primary studies are synthesized to gain further insights.\textsuperscript{5} This approach can add objectivity to the synthesis of the prior research as part of the systematic review.

To add rigor and transparency to the review when inductively distilling a large number of identified tensions into a smaller number of main tensions, we applied the Gioia data structure, which is part of the Gioia methodology for enhancing qualitative rigor in inductive studies (Gioia et al., 2013).\textsuperscript{6} While using this type of data structure as a tool has its origins in grounded theory research methods, it has been found to be useful in a wide variety of contexts, including in paradox research (e.g., Andriopoulos and Lewis, 2009; Calabretta et al., 2017; Foeger et al., 2019; Pamphile, 2021; Smith, 2014) and systematic literature reviews (Kerr and Coviello, 2019). In our systematic review, we aggregated the tensions identified for each article (i.e., first-order concepts) up to higher levels (i.e., second-order themes) and finally classified them under aggregate dimensions. The resulting data structure is presented below in Fig. 1. Along with the data structure, we visualized the interfaces and levels of the CVC phenomenon in Fig. 2. In the following section, we discuss the results of our review.

5. Review of tensions in the CVC literature

Our review of the literature on CVC results in the following three main tensions: (i) CVC-based exploration vs. core business-focused exploitation (multiple stakeholder perspective); (ii) CVC as part of a parent corporation vs. a VC/startup community (CVC program perspective); and (iii) CVC as a threat vs. an opportunity (VC/startup perspective).

First, the “CVC-based exploration vs. core business-focused exploitation” refers to the tensions related to CVC programs struggling to champion and justify CVC activity as an important strategic exploration tool, whereas decision-makers focusing on core businesses emphasize exploitation and often perceive CVC as a costly and risky noncore activity that needs to be reduced or even divested, especially when the financial situation calls for cost cutting. As shown in Fig. 2, this championing process is influenced by external stakeholders such as (1) shareholders and financial analysts, whose interests or perspectives are voiced to management, or (2) peer corporations, whose behaviors and performances are benchmarked by management and investors. Additionally, the CVC championing process involves internal stakeholders such as (3) senior managers, BUs, R&D units, and corporate development units.

Second, the “CVC as part of a parent corporation vs. a VC/startup community” refers to the tensions related to the CVC program...
simultaneously belonging to the two uncoordinated worlds of the corporate parent and the VC/startup community; the CVC program has to balance its position between the two worlds, as seen in Fig. 2 interface (4).

Third, the “CVC as a threat vs. an opportunity” concerns the tensions related to corporate investors posing a threat by behaving opportunistically versus providing an opportunity as a valuable partner to startups or coinvestors, which leads to complex issues when forming CVC investment relationships and managing them. The CVC program has to manage its relationships with (5) the existing portfolio companies, (6) potential new portfolio companies (i.e., deal flow), and (7) independent VCs (i.e., current and potential coinvestors) (refer to Fig. 2).

A summary of our systematic review of the literature on the tensions in CVC is presented in Table 2. To analyze the progressive understanding of CVC tensions, we conducted a heat map analysis by taking the first-order tension as the unit of analysis, as shown in Fig. 3. Each cell shows the frequency of the first-order tension for each year. In the last two columns, for each first-order tension, we show the total number of first-order tensions aggregated over all of the years and its percentage; in the last two rows, we show the total number of first-order tensions for each year and its percentage. In the following sections, we elaborate on the progressive understanding of tensions in CVC and how such tensions can be managed.

5.1. CVC-based exploration vs. core business-focused exploitation (multiple stakeholders)

A crucial tension of CVC within corporations is the prevalent opposing views of CVC as a valuable strategic exploration tool that is worthy of investment and of management attention versus a costly and risky noncore activity that should be reduced and divested to focus on core activities and pursue exploitation. This CVC-context specific tension relates to the broader organizational exploration-exploitation tension (Andriopoulos and Lewis, 2009; Lavie et al., 2010), in which companies simultaneously have to explore new businesses through innovation, search, experimentation, and variation and exploit to enhance the productivity and efficiency of the existing core businesses through refinement, choice, execution, and variance reduction (March, 1991). Hence, the existence of a CVC program and its investment activities must be continuously championed and justified to external and internal stakeholders, such as analysts, shareholders, and BU managers. Because many of these tensions exist and make CVC difficult to manage and justify, CVC programs have often been short-lived (Rind, 1981) and cyclical (e.g., (Allen and Hevert, 2007, Da Gbadji et al., 2015). The earlier literature examined how CVC investments are perceived by corporate decision-makers as a valuable strategic tool as opposed to a costly and risky noncore activity (e.g., Allen and Hevert, 2007; Dushnitsky and Lenox, 2006). Later, the literature began to more extensively examine when tensions become latent or salient (e.g., Basu et al., 2011; Dushnitsky and Lenox, 2005b). More recently, the literature has also considered how various external or internal stakeholders partake in and influence the process of championing CVC-based exploration vs. core business-focused exploitation (e.g., Gaba and Dokko, 2016; Keil et al., 2008a). Among the three main

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Because we used the tension as our unit of analysis, each article can be related to two or more main tensions and even no main tension. Among the 111 articles in the corpus, 94 articles fall under one main tension, 14 articles fall under at least two main tensions, and 3 articles do not fall under any of the three main tensions and are related to different types of tensions. These classifications are marked in Appendix 1.
<table>
<thead>
<tr>
<th>1st order concepts</th>
<th>2nd order themes</th>
<th>Aggregate dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVC is a tool to foster long-term growth and innovation, and to raise financial returns</td>
<td>CVC as a strategic and financial tool vs. a risky and costly tool (Corporate perspective)</td>
<td></td>
</tr>
<tr>
<td>Specific industry and firm characteristics help justify CVC</td>
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<td></td>
</tr>
<tr>
<td>Risk of financial loss, risk of inconstant CVC operations because of employee turnover, change in strategic focus, economic downturn, and cost cutting</td>
<td>Pressure to adopt CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability (External stakeholder perspective)</td>
<td></td>
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<tr>
<td>Markets require future growth and CVC is a tool to explore future growth opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry peer firms enact peer pressure to adopt CVC</td>
<td>CVC as a complementary and essential tool vs. a disruptive and risky tool (Internal stakeholder perspective)</td>
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<tr>
<td>Shareholders and financial analysts often demand short-term financial results</td>
<td></td>
<td></td>
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<tr>
<td>Industry peer firms enact peer pressure to abandon CVC</td>
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<td></td>
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<tr>
<td>CVC can offer support for BUs, complement R&amp;D, alliances, and acquisitions, and work as long-term innovation tool to senior managers for stakeholder satisfaction</td>
<td>CVC as part of a corporate parent vs. a VC/startup community (CVC program)</td>
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<tr>
<td>CVC can be difficult to manage disrupting BUs, substituting internal R&amp;D or alliance and acquisition activities, posing employment/compensation risks to senior managers</td>
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<tr>
<td>Legitimacy of the CVC program within the parent corporation</td>
<td>CVC as a threat vs. an opportunity (VC/startup)</td>
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<tr>
<td>Recruiting corporate executives and R&amp;D professionals in the CVC program</td>
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<tr>
<td>Legitimacy of the CVC program in the startup/VC community</td>
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<tr>
<td>Recruiting VC professionals in the CVC program</td>
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<tr>
<td>VC compensation with carried interest</td>
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<tr>
<td>CVC program autonomy</td>
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<tr>
<td>Corporate salary policies</td>
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<tr>
<td>Corporate parent’s control and integration of the CVC program</td>
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<tr>
<td>CVCs could add value to portfolio companies through their R&amp;D resources, manufacturing capability, distribution channels, and brand, and offer strategic guidance and managerial advice</td>
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<td></td>
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<tr>
<td>CVCs could misappropriate the IPRs of the fledgling portfolio companies; stifle innovation and/or inhibit growth by intervening in startup management and/or limit partnering opportunities with other corporations</td>
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<tr>
<td>Corporations can be valuable coinvestors bringing complementary resources and capabilities to the syndicate</td>
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<tr>
<td>CVCs could be slow, bureaucratic, and opportunistic coinvestors</td>
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Fig. 1. Data structure.
tensions, this tension has been most extensively studied, accounting for 55% of all CVC tensions (see Fig. 3).

5.1.1. CVC as a strategic and financial tool vs. a risky and costly tool (corporate perspective)

Implicitly taking the corporate decision-makers’ perspective, one stream of literature has considered the tensions between perceiving CVC as a tool that brings strategic benefits and financial returns as opposed to a tool that is costly, risky, and inconstant (Allen and Hevert, 2007; Dushnitsky and Lenox, 2006; Ma, 2019; Maula et al., 2013; Rind, 1981; Riyanto and Schwienbacher, 2006). Additionally, taking an implicit corporate decision-makers’ perspective, another stream has suggested that CVC is increasingly adopted when it is viewed as a tool that is more beneficial than costly and when the previous tensions become latent in the face of increasing technological change, uncertainty, and competition (e.g., Basu et al., 2011; Kim et al., 2016; Ceccagnoli et al., 2018); when the corporate investor is operating under weak intellectual property protection (IPP) regimes and well-developed financial markets (e.g., Da Gbadji et al., 2015; Dushnitsky and Lenox, 2005a; Dushnitsky and Lenox, 2005b); and when the corporate investor holds important complementary assets (e.g., Dushnitsky and Lenox, 2005b). Whereas the first stream of the literature preceded that of the second, the latter stream has grown more extensively, especially in the recent two decades.

The tension on “CVC as a strategic and financial tool vs. a risky and costly tool” has been the most studied second-order tension in the CVC literature, accounting for 35% of all tensions (see Fig. 3). Moreover, the literature has suggested that this tension can be dealt with by the CEO and top management team communicating their commitment to CVC and enlightening every stakeholder in the organization to understand the motivations, goals, benefits, risks, and costs of setting up a CVC program (Bleicher and Paul, 1987; Rind, 1981), CVC programs sharing their progress with stakeholders who are skeptical about the CVC programs (Winters and Murfin, 1988), CVC programs making repeated investments and staffing former venture capitalists (Gaba and Dokko, 2016), CVC programs reducing the risk and keeping their goals intact by forming syndicates with co-investors (Rind, 1981), or corporations learning to build external corporate venturing capabilities (Keil, 2004).

5.1.2. Pressure to adopt CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability (external stakeholder perspective)

In the past decade, CVC research has begun to recognize that various stakeholders outside the organization such as peer firms, institutional shareholders, or financial analysts create pressure or provide legitimacy to champion CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability and better focus on the core. One stream of the literature has suggested that peer firms act as social referents and that their behavior or performance influences the legitimacy of CVC programs (Gaba and Dokko,
<table>
<thead>
<tr>
<th>Aggregate dimensions</th>
<th>2nd order themes</th>
<th>1st order concepts</th>
<th>Illustrative quotes</th>
<th>Representative studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CVC as a useful tool in the face of technological change, uncertainty, competition, weak IPP, well-developed financial markets, when the corporate investor holds important complementary assets</td>
<td></td>
<td>• “In industries with rapid technological change, existing products and technologies are rapidly rendered obsolete as new products and technologies are created. Firms in these industries need to continuously develop new resources as new sources of value creation and appropriation […] The option value of these [CVC investment] initiatives can be high in technologically dynamic industries because breakthrough products or technologies are often developed by new ventures … the rate of technological change in a firm’s primary industry will increase its incentives to form new CVC partnerships” (Basu et al., 2011: 155)</td>
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<td></td>
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<td>• “ Corporations based in entrepreneurial environments with entrepreneur friendly conditions that promote high-growth ventures are more likely to run VC programs because doing so offers more attractive investment opportunities. These conditions include ‘financial’ conditions, such as a developed market for early-stage financing, good exit routes, and ‘regulatory’ conditions (e.g., low personal bankruptcy costs)” (Da Gbadji et al., 2015: 1219)</td>
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<thead>
<tr>
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<td>Pressure to adopt CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability (External stakeholder perspective)</td>
<td>Pressure to adopt CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability</td>
<td>• “Because of the monitoring and rewarding of institutions on a quarterly basis, these firms pursue short-term gains; as such, the management of the firms in which they hold stock receive pressure to adopt a short-term focus. Relatedly, research has suggested that institutional investors prefer corporate investment strategies that favor growth over the internal development of new products and R&amp;D because of the longer time necessary to obtain gains” (Anokhin et al., 2016: 4746)</td>
<td>• “proximity [to CVC adopters] facilitates ‘sensemaking’ within communities of practice, fuels pressures for mimetic adoption” (Gaba and Meyer, 2008: 984)</td>
<td>Smith and Shah (2013) Van de Vrande (2013) Rind (1981) Anokhin et al. (2016) Guo et al. (2019)</td>
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<td>Legitimacy to champion CVC vs. focus on the core based on peer firm performance or behavior</td>
<td>Shareholder and analyst pressure to achieve short-term profitability vs. fostering long-term growth and innovation through CVC</td>
<td>• “These management teams find themselves weighing the potential gains and losses of exploring versus maintaining the status quo, particularly in terms of risks to their own employment and compensation […] Top managers may be inclined to avoid risk associated with the search for new technologies, potential acquisitions, or investing in complementary businesses […] However, in a fast changing environment, the slightest delay in seeking out emerging technologies can negatively affect market return in the long run, displeasing stakeholders.” (Sahaym et al., 2016: 1216)</td>
<td>Bina and Dokko (2016) Titus et al. (2020) Bleicher and Paul (1987) Winters and Murfin (1988) Biniari et al. (2015) Anokhin et al. (2016) Sahaym et al. (2016) Titus and Anderson (2018)</td>
<td>Gab and Meyer (2008) Gaba and Bhattacharya (2012) Gaba and Dokko (2016)</td>
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<td>CVC as a risky tool vs. a long-term innovation tool helping satisfy stakeholders for senior managers</td>
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<td>• “These management teams find themselves weighing the potential gains and losses of exploring versus maintaining the status quo, particularly in terms of risks to their own employment and compensation […] Top managers may be inclined to avoid risk associated with the search for new technologies, potential acquisitions, or investing in complementary businesses […] However, in a fast changing environment, the slightest delay in seeking out emerging technologies can negatively affect market return in the long run, displeasing stakeholders.” (Sahaym et al., 2016: 1216)</td>
<td>Winters and Murfin (1988) Keil et al. (2008a) Basu and Wadhwa (2013)</td>
<td>Dushnitsky and Lenox (2005a)</td>
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| CVC as a tool for exploration vs. a costly noncore activity that disrupts BUs’ exploitation | CVC as a complementary and essential tool vs. a disruptive and risky tool (Internal stakeholder perspective) | • “BUs are usually managed for efficiency that may not allow them to look beyond their existing business logic. We found that BUs, which focused on their established business logic, often viewed CVC as a waste of time and money” (Keil et al., 2008a: 1496) | • “Firms are required to strategically allocate their innovation spending between | (continued on next page)
Table 2 (continued)

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<th>Aggregate dimensions</th>
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<td>traditional R&amp;D and external channels such as CVC. The arguments for CVC, predicated on the value of explorative knowledge and flexibility, can be extended to further predict that firms will explicitly shift funds from internal R&amp;D to CVC as a response to competition “(Kim et al., 2016: 265)</td>
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<td>• “Because creating a CVC unit reallocates internal resources (to identify and integrate externally generated technologies), internal R&amp;D and business units may resist such initiatives” (Gaba and Bhattacharya, 2012: 181)</td>
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<td>• “Industry R&amp;D investments create a capacity within the industry to identify and exploit technology from CVC targets” (Sahaym et al., 2010: 376)</td>
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<td>CVC as a complementary vs. substitutive tool for corporate development</td>
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<td>• “Managers should take into account the potential trade-offs between CVC, alliances, and perhaps other types of interfirm relationships when seeking to internalize resources owned by other firms or to leverage their own firms’ internal resources.” (Dushnitsky and Lavie, 2010: 41)</td>
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<td>• “Both CVC investments and technology alliances are mechanisms designed for exploration of knowledge with a focus on emerging technologies...Despite the benefits they can bring, geographically diversified portfolios that combine technology alliances with CVC investments may lead firms to face resource constraints and increased complexity of knowledge-sourcing that are likely to hamper effective learning.” (Belderbos et al., 2018: 24)</td>
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<td>CVC as part of a corporate parent vs. a VC/startup community (CVC program)</td>
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<td>VC capabilities and networks vs. corporate capabilities and networks (CVC program perspective)</td>
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<td>Legitimacy within the corporation vs. in the startup/VC community</td>
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<td>• “CVC organizing practices can be explained by competing institutional forces from their two environments” (Souitaris et al., 2012: 501)</td>
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<td>Recruiting VC professionals vs. corporate executives and R&amp;D professionals in the CVC program</td>
<td>• “CVC managers with career experience in IVCs should be oriented toward financial goals, as they are both knowledgeable about how to attain financial goals and conditioned to value those goals” (Dokko and Gaba, 2012: 567)</td>
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<td>Rind (1981) Winters and Murfin (1988) Kell et al. (2008a) Dokko and Gaba (2012) Soutsaris et al. (2012) Gaba and Dokko (2016)</td>
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<td>• “Internally hired CVC managers should be more likely to modify practices to fit an adopting organization. Understanding a CVC unit’s genesis and how it relates to the corporation’s overall business strategy, culture, and existing power structures will lead these managers to customize the goal orientation and operational strategies of their CVC unit… they are more likely to modify investment goals to be oriented toward strategic goals instead of financial goals” (Dokko and Gaba, 2012: 568)</td>
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<td>Rind (1981) Sykes (1986) Siegel et al. (1988) Dushnitsky and Shapira (2010) Hill et al. (2009)</td>
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negative impact, as they are disconnected from the expertise of the parent company and its accumulated technological knowledge and network resources.” (Lee et al., 2018: 142) • “The most important obstacle related to the venture activity itself is [...] the lack of authority to make independent decision, the inability of corporations to attract qualified venture managers, and a pervasive concern by entrepreneurs that their ventures will be subverted to satisfy the corporation’s objectives. Once again, the responses reflect frustration with the inability to make decisions without corporate interference, and an inability for the corporation to understand even as it is interfering” (Siegel et al., 1988: 239) • “This tension between very attractive resources and high misappropriation risks is what we term the ‘sharks dilemma.’” (Katila et al., 2008: 296) • “We find that start-up stage entrepreneurs who operate in the same industry and who are ideal targets of such CVC investment, are less likely to seek CVC backing. We refer to this as the paradox of corporate venture capital.” (Dushnitsky and Shaver, 2009: 1059) • “While the contribution of CVC to firm innovative output is directly related to the quality of the funded ventures, high-quality ventures may shun corporate investors in order to prevent leakage of their valuable knowledge (especially in weak IP regimes)” (Dushnitsky and Lenox, 2005a: 950) • “Entrepreneurs can distrust corporate investors because they will control their ventures to satisfy corporate objectives at the expense of the ventures’ well being” (Hellmann (2002) citing Block and MacMillan (1993))
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| CVC as a value-adding coinvestor vs. a bureaucratic and opportunistic coinvestor (VC perspective) | Corporations can be valuable coinvestors bringing complementary resources and capabilities to the syndicates vs. they can be slow, bureaucratic, and opportunistic | • “There can be a CVC–VC conflict of interest over a start-up’s optimal development strategy. A CVC may oppose promising product development in areas that directly compete with the CVC’s parent and support development of less profitable products that complement the CVC parent’s products or services. A CVC parent can also use its knowledge about a start-up’s technology, products and services to develop competitive products and services of its own at the start-up’s expense.” (Masulis and Nahata, 2009: 603)  
• “CVC conflicts with VCs can also be rooted in disagreement over the optimal exit strategy, which can have an adverse financial impact on VC investments. For example, CVCs can support early acquisitions that accelerate the commercialization of a start-up’s complementary products and services at the cost of lower acquisition prices.” (Masulis and Nahata, 2009: 603)  
• “Syndication might have a beneficial effect on portfolio firms’ performance, because it allows the combination of the financial and nonfinancial resources of syndicate members and closer monitoring of portfolio firms. However, syndication also entails agency and transaction costs […] syndicate members may ‘have different objectives which can result in principal–principal conflicts of interests among members of a VC syndicate.’ Because IVCs and CVCs often have different objectives, these conflicts are likely in mixed IVC-CVC syndicates.” (Colombo and Murtinu, 2017: 40) | Masulis and Nahata (2009)  
Kell et al. (2010)  
Park and Steensma (2013)  
Colombo and Murtinu (2017)  
Galloway et al. (2017) |
### Fig. 3. Evolution of the CVC tension literature

*A darker shade corresponds to a higher frequency, whereas a lighter shade refers to a lower frequency. The numbers correspond to the frequency of the first-order tension for each year.*
is a necessary innovation tool that serves stakeholders’ needs by sourcing emerging technologies that will become highly disruptive.

More recently, another stream of literature has begun to consider shareholders’ and financial analysts’ pressure on managers to adopt CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability (Anokhin et al., 2016; Guo et al., 2019). Anokhin et al. (2016) found that institutional shareholders put pressure on parent corporation management to achieve short-term quarterly earnings by focusing on core business activities and reducing CVC, which is perceived as a long-term innovation tool that brings strategic benefit but does not affect short-term financial returns. Guo et al. (2019) found that in addition to pressuring managers to achieve short-term financial returns, financial analysts efficiently communicate information on the innovation value of the firm to the market and thus promote CVC activity.

The “pressure to adopt CVC for long-term innovation and growth vs. abandon CVC to achieve short-term profitability” second-order tension accounts for a very small fraction of the research on CVC tensions (4%), which suggests that it has been largely overlooked (refer to Fig. 3). The research has not yet considered how to manage and cope with this tension.

5.1.3. CVC as a complementary and essential tool vs. a disruptive and risky tool (internal stakeholder perspective)

The CVC literature has recognized that various internal stakeholders such as senior managers, BUs, R&D units, or alliance and acquisition units perceive “CVC as a complementary and essential tool vs. a disruptive and risky tool.” In the last two decades, most studies have focused on the functional roles of alliances, acquisitions, or internal R&D with respect to CVC, whereas more recently, an emerging stream of studies has considered the roles of BUs and the tensions faced by senior managers. First, the literature has examined the tension on “CVC as a complementary vs. substitutive tool for corporate development.” The literature has noted that while alternative corporate development tools (e.g., licensing, alliances, acquisitions) require a high level of irreversible commitments but result in immediate competitive actions, CVC provides flexibility but has strategic benefits only in the long term (e.g., Van de Vrande et al., 2009). Assuming a substitutive relationship, a stream of literature has taken a real options perspective and found that CVCs are preferred over alternative corporate development tools under an increased level of uncertainty or technological change (Basu et al., 2011; Ceccagnoli et al., 2018; Tong and Li, 2011; Van de Vrande and Vanhaverbeke, 2013; Van de Vrande et al., 2009). Other streams of research have suggested a conditional complementary relationship between strategic alliances and CVCs (e.g., Belderbos et al., 2018; Colombo et al., 2006; Dushnitsky and Lavie, 2010), for example, because alliances provide resource complementarity and facilitate network resource visibility up to a certain limit (Dushnitsky and Lavie, 2010). Concerning the relationship between CVCs and acquisitions, Benson and Ziedonis (2009) found that learning and information gained from CVCs help corporate investors improve the performance of acquiring non-portfolio startups at a diminishing rate, which suggests conditional complementarity, whereas Benson and Ziedonis (2010) found that shareholder value is destroyed when corporate investors acquire their own portfolio startups, which suggests substitution.

Second, the literature has considered the tension on “CVC as a complementary vs. substitutive tool for internal R&D” on producing innovation outcomes. Taking a complementary perspective, one strand of this literature has suggested that internal R&D helps corporate investors not only absorb knowledge from their portfolio companies but also search, identify, and exploit future opportunities for knowledge sourcing and thus complements CVC programs (Covin and Miles, 2007; Dushnitsky and Lenox, 2005a; Gaba and Bhattacharya, 2012; Ma, 2019; Sahaym et al., 2010). Taking a substitutive perspective, another strand of this literature has found that CVC partially replaces internal R&D when a firm faces competition because CVC has advantages relative to internal R&D by speeding up product innovation, providing stronger incentives for portfolio companies to innovate based on arm’s length investment relationships, and keeping portfolio companies out of the hands of their competitors (Fulghieri and Sevilir, 2009; Kim et al., 2016).

Third, while CVC has often been seen as an effective vehicle for the exploration of future technological opportunities (Maula et al., 2013; Schildt et al., 2005; Van de Vrande et al., 2011), it has also been occasionally considered a costly noncore activity that distracts BUs’ exploitation efforts (Keil et al., 2008a; Winters and Murfin, 1988). For example, Keil et al. (2008a) found that because of their established business logic, BUs may lack the cognitive capability to recognize the practical implications of a portfolio company’s technology, which can hamper the process of knowledge sourcing. In contrast, Basu and Wadhwa (2013) suggested that the CVC program’s exploration does not disrupt BUs’ exploitation efforts because CVC is mandated to fill in the deficiencies of BUs, requires relatively low resource commitment, and needs support from mainstream BUs to justify its existence.

Fourth, most recently, the literature has noted that senior managers face tensions in viewing “CVC as a risky investment vs. a long-term innovation tool to help satisfy stakeholders” (e.g., Anokhin et al., 2016; Sahaym et al., 2016). On the one hand, in the short term, CVC is a risky tool that poses a high risk to senior managers’ employment and compensation. On the other hand, in the long term, CVC is a necessary innovation tool that serves stakeholders’ needs by sourcing emerging technologies that will become highly disruptive and profitable when existing technologies become obsolete (refer to Table 2 for a sample quote).

The second-order tension on “CVC as a complementary and essential tool vs. a disruptive and risky tool” for various internal stakeholders has been developing in the last decade and accounts for 16% of all CVC tensions (see Fig. 3). The literature has suggested that this tension can be managed by taking the following approaches. First, the tension can be managed by CVC programs complementing the internal stakeholders. These tension management strategies include CVC programs avoiding taking a competitive posture with other organizational units (e.g., emphasizing small size and low power, not investing in substitutes for internal technologies) (Basu et al., 2016a; Basu and Wadhwa, 2013); CVC programs simultaneously building new capabilities for the corporate
parent and helping leverage existing capabilities (i.e., pursuing ambidexterity) (Hill and Birkinshaw, 2014); CVC programs employing CVC agents who are socially embedded in both startups and BU and who can translate knowledge between the two worlds to break down cognitive barriers between BU and startups’ new cognitive frameworks (Keil et al., 2008a).

Second, the literature has suggested that the tension can be managed by setting up structures and incentives that help internal stakeholders and CVC programs cooperate as follows: corporations setting up a formal subsidiary dedicated to CVC to let internal stakeholders know that they are committed to CVC (Winters and Murfin, 1988); corporate decision-makers aligning internal stakeholders’ incentive structures to enable them to be involved in and support CVC decision-making processes (e.g., due diligence, liaison, investment charter, overseeing investment decisions) (Bleicher and Paul, 1987; Weber and Weber, 2011; Winters and Murfin, 1988); the CEO and top management team making long-term commitments to CVC programs to enable the programs to be embedded in the organization and adapt to internal resistance (Belanger and Paul, 1987); CVC programs learning how to handle relations with corporate decision-makers (Siegel et al., 1988).

5.2. CVC as part of a parent corporation vs. a startup/VC community (CVC program)

CVC programs face the tension of belonging to the corporate parent vs. the startup/VC community. Souitaris et al. (2012: 479) recognized this contradictory institutional pressure by noting that “since the CVCs belong simultaneously to two uncoordinated environments [their parent and the VC industry], the competing forces are unlikely to eventually resolve...” This tension results from the role of CVC programs as “knowledge brokers” that source external knowledge from the startup/VC communities to the corporate parents (Keil et al., 2008a; Weber and Weber, 2011). This tension has implications for the configuration of CVC programs (Biniari et al., 2015), with many studies considering whether and when CVC programs should draw from the capabilities and networks of the parent corporation or the VC/startup community and whether and when they should follow the policies and structures of the corporate parent or the VC/startup world. Both streams of literature developed sparsely in the 1980s but have gained momentum since 2008, with many new studies focusing on these tensions. Among the three main tensions, this tension is the least studied, accounting for 14% of all CVC tensions (see Fig. 3).

5.2.1. VC capabilities and networks vs. corporate capabilities and networks (CVC program perspective)

As a CVC program has to belong to both the parent corporation and the startup/VC community to be viable, the capabilities and networks of the individuals working in the CVC program are rarely ideally suited for both worlds, and the composition of the CVC team must be carefully considered to ensure that it performs well in both worlds. A stream of literature has discussed the tensions faced by CVC programs when drawing on capabilities and networks from corporate parents (i.e., internal hires) vs. VC/startup communities (e.g., external hires) (e.g., Dokko and Gaba, 2012; Souitaris et al., 2012). CVC programs face a trade-off in such a choice because internal hires have a deeper understanding of the parent firm’s strategy and can collaborate and coordinate with other units based on their pre-existing social ties (i.e., firm-specific experience) (Gaba and Dokko, 2016). By comparison, external hires from VCs/startups have a deeper understanding of the VC market, are more skilled in making and managing VC investments, and are better networked within the VC/startup community (i.e., job-specific experience) (Gaba and Dokko, 2016).

This second-order tension accounts for 7% of all CVC tensions (refer to Fig. 3). The literature has suggested that this tension can be managed by CVC programs recruiting boundary-spanning CVC managers who can interface investment opportunities with corporate strategy (e.g., recruiting members with high internal social capital, strong functional experience, or network endorsement) (Keil et al., 2008a; Winters and Murfin, 1988), by CVC programs combining internal and external hires because their various backgrounds and experience can help CVC programs broker knowledge between the VC/startup community and the corporate parent (Keil et al., 2008a; Rind, 1981), or by corporate decision-makers structuring CVC programs to follow either the norms of the VC world or the corporate parent and respectively adopt either an organic or a mechanistic organizational structure (Dokko and Gaba, 2012; Gaba and Dokko, 2016; Souitaris et al., 2012).

5.2.2. VC rules of the game vs. corporate policies and structures (CVC program perspective)

Another tension arises from the contradictory practices of CVC programs following corporate policies and structures versus playing by the VC rules of the game (e.g., Dushnitsky and Shapira, 2010; Hill et al., 2009). For instance, one stream of literature has examined the tension arising from compensating CVC managers based on the high-powered financial incentives that are common in the VC industry (e.g., ‘carried interest’, a share of the fund profits) versus a generic corporate compensation scheme. Studies have explicitly recognized this tension by suggesting that although adopting VC incentive schemes can motivate CVC managers to invest in profitable yet risky startups and increase firm performance, these schemes face parent firm institutional constraints and resistance from other organizational units due to the lack of equity, and they can motivate CVC managers to overly focus on financial returns instead of strategic benefits (Dushnitsky and Shapira, 2010; Hill et al., 2009). In contrast, studies have suggested that following a generic corporate compensation scheme enhances the sense of internal equity within the corporation, helps the CVC program gain support from other organizational units, and simplifies the administrative process, thereby contributing to achieving strategic benefits (e.g., Dushnitsky and Shapira, 2010; Hill et al., 2009).

Another stream of CVC research relates to the tension arising from the choice between allowing CVC program managers to be autonomous versus senior managers exerting control over decisions related to CVC. Although autonomy can promote flexibility, innovative thinking, and seizing entrepreneurial opportunities, it can backfire by inducing managers to engage in opportunism and a fragmented implementation of organizational goals, which increases the need to control managerial behavior by monitoring and intervening (e.g., Hill et al., 2009; Shimizu, 2012). Rather than examining the tension arising between CVC and senior managers with
regard to autonomy versus control, this stream of literature has generally focused on the benefits or drawbacks of CVC autonomy. Early studies found that autonomy helps CVC managers make flexible and speedy investment decisions without corporate interference when faced with a rapidly changing business environment, leading to a higher return on investment (Rind, 1981). Later, studies found that CVC program autonomy leads to increased learning by enabling the program to attract talented external hires, to make investment decisions not subject to a short-term corporate agenda, and to carry out exploration (Keil, 2004; Lee et al., 2018). At the same time, such autonomy can backfire by resulting in less exploitation because of the difficulty in accessing the corporate parents’ resources (Lee et al., 2018).

This second-order tension accounts for 7% of all CVC tensions. In the past decade, only two studies have focused on this tension. In particular, the literature has been silent on how to manage tensions on “high-powered incentives vs. generic corporate compensation” or “autonomy vs. control.” This literature has mostly taken a one-sided perspective, suggesting that emulating VC compensation and decision-making would lead to better performance, leaving out discussions related to following the norms and practices of the corporate parent.

5.3. CVC as a threat vs. an opportunity (startup/VC community)

As a CVC program makes and manages CVC investments, it interacts with the startup/VC community. Because corporate investors often pursue strategic returns and can be opportunistic, stakeholders in the startup/VC community often perceive them as a threat, while at the same time, corporate investors can offer valuable corporate resources that are perceived as an opportunity (e.g., Katila et al., 2008). By taking the startup perspective, over the past two decades, one stream of literature has extensively examined the tension between the provision of valuable resources by corporate investors (i.e., opportunity) versus the escalated misappropriation risk that startups might face (i.e., threat) in the CVC investment relationship (e.g., Hallen et al., 2014; Katila et al., 2008). In the past decade, by taking the VC perspective, another stream of literature has discussed the tension between CVCs being perceived as value-adding coinvestors (i.e., opportunity) versus opportunistic coinvestors (i.e., threat) (Keil et al., 2010; Masulis and Nahata, 2009). Among the three main tensions, this tension is the second most studied, accounting for 31% of all CVC tensions (see Fig. 3).

5.3.1. CVC as a value-adding investor vs. risk of misappropriation (startup perspective)

When raising funding from corporate investors, startups face the tension concerning accessing attractive corporate resources, such as financing, complementary assets, and endorsements, versus being exposed to misappropriation risk because one of the common goals of CVC is technological learning, which could result in the misappropriation of the intellectual property rights (IPRs) of startups (e.g., Hallen et al., 2014; Katila et al., 2008). Katila et al. (2008: 296) called this “tension between very attractive resources [provided by corporate investors] and high misappropriation risks [also posed by corporate investors]” the “sharks dilemma.”

Initially, this stream of research implicitly assumed that corporate investors have stronger bargaining power in the investment tie formation process when the benefits of accessing corporate investors’ resources outweigh the costs of misappropriation faced by startups (Dushnitsky and Lenox, 2005a; Dushnitsky and Lenox, 2005b). Subsequent studies began to acknowledge that startups can also have bargaining power. For instance, Dushnitsky and Shaver (2009) found that tie formation between CVC investors and startups increases when there is a strong IPP regime and great industry overlap but decreases under a weak IPP regime with great industry overlap. Dushnitsky and Shaver (2009: 1046) concluded that the more likely corporations are to learn about portfolio companies’ novel and potentially substituting inventions through CVC, the less such entrepreneurs are likely to seek CVC backing from them. These scholars labeled this tension the “paradox of corporate venture capital.”

This tension on “CVC as a value-adding investor vs. risk of misappropriation” is the second most studied second-order tension in the CVC literature, accounting for 26% of all CVC tensions (see Fig. 3). The research has examined how startups can manage this tension by setting up various defense mechanisms, including enforcing trade secrets, accepting later-stage funding, limiting corporate investors’ ownership stakes and board seats (Colombo and Shafi, 2016; Katila et al., 2008; Masulis and Nahata, 2009; Maula et al., 2009), and obtaining investments from central or reputable VCs prior to accepting CVC investments (Colombo and Shafi, 2016; Hallen et al., 2014; Hellmann, 2002; Katila et al., 2008; Masulis and Nahata, 2009; Maula et al., 2009). Additionally, the research has found that startups can be more aware of the opportunistic tendency of corporate investors if they have established social ties at the individual level with corporate investors (Kim et al., 2019).

Because of the sharks dilemma, corporate investors can face a tension between learning new technologies from startups and staying attractive to potential portfolio startups (Hallen et al., 2014). Extensive research has suggested that corporate investors can manage this tension by taking the following approaches. First, attractive corporate resources can be provided; to gain access to high-quality deal flow, CVC programs can provide attractive complementary value-added services to portfolio companies (Maula et al., 2005); CVC programs can build reputations and endorse their portfolio companies by networking with top-tier independent VCs, making indirect investments in various VC funds, joining industry associations, and recruiting experienced external VC/startup personnel to the CVC program (Braune et al., 2021; Hill et al., 2009; Keil et al., 2016; Wadhwa and Basu, 2013).

Second, effective structures can be set up; corporations can set up formal CVC subsidiaries to signal a long-term commitment to CVC

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8 Katila et al. (2008) assumed that the “sharks dilemma” occurs during the corporate investor-startup tie formation decision. While we use the same terminology, “sharks dilemma,” as coined in the literature, we propose that this tension between attractive resource provision and misappropriation risk faced by startups should be understood as an ongoing “paradoxical tension” that persists even after the investment tie is formed with the CVC investors and that must be managed over time.
and to relieve the misappropriation concerns of entrepreneurs (Winters and Murfin, 1988); corporations can set up separate organizational units, in which one unit nurtures portfolio companies and the other unit takes care of strategic benefits (Rind, 1981); CVC programs can reduce deal complexity by responding quickly to investment opportunities (Winters and Murfin, 1988), closing the deal faster, and reducing the terms and conditions (Basu et al., 2016a).

Third, collaborative tools and channels can be set up and managed between corporate investors and startups. CVC programs can develop collaborative blueprints with startups by creating business agreements during investments and nominating relevant personnel as board observers (Basu et al., 2016a; Sykes, 1990; Wadhwa and Basu, 2013). CVC programs can communicate about needs and interests with portfolio companies and build long-term relationships (Sykes, 1990); CVC programs can develop relation-specific assets and knowledge-sharing routines with portfolio companies (Weber et al., 2016; Weber and Weber, 2011).

Fourth, CVC programs can protect portfolio companies’ interests by safeguarding startup’s IP, avoiding competing investments of the portfolio company (Basu et al., 2016a), investing in startups with sufficient resource complementarities (Hellmann, 2002; Maula et al., 2009; Riyanto and Schwienbacher, 2006), and focusing on market-level learning from the aggregate deal flow by syndicating with high-status VCs rather than learning specific technologies from the corporate investor’s own portfolio companies (Maula et al., 2013). The literature on how to manage this tension has developed primarily by taking a corporate investor perspective, with relatively few studies taking a startup perspective.

5.3.2. CVC as a value-adding coinvestor vs. a bureaucratic and opportunistic coinvestor (VC perspective)

In the past decade, a stream of literature taking the VC perspective has noted that a corporate investor can be perceived as a valuable coinvestor who brings complementary resources and capabilities into the syndication (i.e., opportunity). However, corporate investors can pose a threat by pursuing strategic benefits and being slow and bureaucratic and, thus, can conflict with the VCs’ goals of increasing financial returns (Keil et al., 2010; Masulis and Nahata, 2009; Paik and Woo, 2017; Park and Steensma, 2013). The research on this tension is quite recent and understudied, accounting for 5% of all CVC tensions (see Fig. 3).

The literature has examined how corporate investors can manage such tensions when syndicating with VCs by acquiring central positions in VC syndication networks, providing access to unique corporate resources, and making greater R&D or CVC investments (Keil et al., 2010); CVC programs building reputations by joining industry associations, co-investing with other VCs, and recruiting experienced external VC/startup personnel to the CVC programs (Rind, 1981); corporate decision-makers formulating investment charters to ensure that the intentions of CVCs and VCs are clearly understood in a syndicated investment (Bleichner and Paul, 1987); and corporations setting up formal CVC subsidiaries that signal the corporations’ long-term commitment to CVC and their ability to respond quickly to investment opportunities with minimal bureaucracies and that help them become accepted within the VC community (Winters and Murfin, 1988).

6. Discussion

6.1. Summary

Given the competing goals in CVC (e.g., strategic and financial objectives) and multiple stakeholders’ expectations, CVC is a complex phenomenon that is rife with tensions. In this paper, we have reviewed the progress made in the CVC literature toward understanding these tensions in CVC over the past four decades. Through this systematic review, we identified a large number of tensions examined in the literature, which we further distilled into three main tensions: (1) CVC-based exploration vs. core business-focused exploitation (multiple stakeholders), (2) CVC as part of a parent corporation vs. a startup/VC community (CVC program), and (3) CVC as a threat vs. an opportunity (startup/VC community). We further reviewed the literature on how these tensions can be managed.

In terms of the research progress in the literature (refer to Fig. 3), we found that the early literature highlighted the promise and problems of CVC as a strategic exploration tool for corporations, with the justification for CVC activity from the corporate perspective often being questioned (e.g., Rind, 1981). This healthy skepticism toward CVC was evidenced by the cyclical and spotty track record of early CVC programs. Nevertheless, a large volume of CVC research has continued to focus on the potential strategic and financial benefits of CVC, building an evidence-based foundation for championing CVC.

Subsequently, because of an increased understanding of CVC programs, these programs have become more successful (Souitaris and Zerbinati, 2014), and the focus in the CVC literature has shifted, at least partially, from the tensions stemming from “CVC-based exploration vs. core business-focused exploitation” to when such tensions become salient or latent and influence CVC investing decisions. Furthermore, the research has increasingly focused on the perspectives of external stakeholders such as portfolio startups, independent VCs, peer corporations, shareholders, and financial analysts, and internal stakeholders such as senior managers, BUs, R&D units, and other corporate development units (e.g., alliance and acquisition units). With this shifting attention, the development of new theories, and the availability of additional data sources, our understanding has rapidly evolved with regard to the identity and behavior of CVC programs in the complex interfaces between the corporate parent vs. startup/VC worlds as well as the potential opportunities vs. threats posed by CVC programs to startups and coinvestors. We expect that this developing literature will help further our understanding of many different types of tensions and how to manage or cope with such tensions. Nevertheless, the complexity of the CVC phenomenon, the changing operating environment, and the application of a paradox lens guarantee that there will be important opportunities for future research on CVC to enrich our understanding of the many identified tensions, to explore heretofore unidentified tensions, and to contribute to the theoretical understanding of paradoxical tensions in organizational phenomena. Next, by drawing on the paradox literature, we first discuss the paradoxical nature of the main tensions in CVC and then propose avenues for
future research.

6.2. Evaluation of the main tensions in CVC as paradoxes

Our review shows that the literature on tensions in CVC has largely focused on the “contradictory” characteristics of the main tensions in CVC and how the tensions can be managed. This approach limits our understanding of why, how, and when contradictory goals and multiple stakeholder expectations result in tensions and how these tensions influence the behavior of stakeholders and the performance of CVC as well as how they can be managed to produce positive outcomes. We suggest that adopting a paradox perspective can be beneficial in deepening our understanding of these tensions (Schad et al., 2016).

According to the paradox perspective, a tension can be understood as a paradox when it meets the four criteria of a paradox—contradictory, interdependent, simultaneous, and persistent (Andriopoulos and Gotsi, 2017). A tension is contradictory when it has opposing elements (e.g., goals, interests, perspectives, identities, etc.). For instance, exploration and exploitation have opposing routines, structures, and cultures (e.g., Smith and Tushman, 2005). A tension is interdependent when element A and element B are related to each other. For example, exploration and exploitation are interdependent when exploration becomes the input of exploitation and vice versa or when exploration and exploitation jointly influence firm performance (e.g., Lavie et al., 2010). A tension is simultaneous when the opposing elements exist at the same time. A tension is persistent when the opposing elements persist over time.

Here, we discuss how the main tensions in CVC meet the four criteria of a paradox and propose to understand these tensions as paradoxical tensions (Schad et al., 2016).

6.2.1. The paradoxical nature of the “CVC-based exploration vs. core business-focused exploitation” tension

The literature on this tension has focused on the “contradictory” perspectives of championing CVC-based exploration vs. core business-focused exploitation. These studies have taken the perspectives of multiple decision-makers who allocate corporate resources to a CVC program versus core business activities. Although none of these CVC studies have adopted the paradox theory or explicitly identified all paradoxical elements, such elements can nevertheless be found in the literature. For instance, the contradictory perspectives are “interdependent” because according to the logic of ambidexterity, synergy is created when CVC investing is championed to explore and the core business activity is emphasized to exploit, and both are needed to achieve long-term firm performance and survival (Hill and Birkinshaw, 2014). These contradictory perspectives exist “simultaneously” to pursue innovations through CVC-based exploration and to increase efficiency by focusing on exploitation through core business activities (Hill and Birkinshaw, 2014). The need to increase exploration by championing CVC investments and to improve efficiency by focusing on the exploitation of core businesses is “persistent”; therefore, the tension cannot generally be solved easily, at least for the long term, as evidenced by the observed cyclicality of CVCs (e.g., Allen and Hevert, 2007; Da Ghadjii et al., 2015; Ma, 2019). Although it has not yet been studied using the paradox perspective, we suggest that the “CVC-based exploration vs. core business-focused exploitation” tension has all the key elements of a paradox and can be understood as one.

6.2.2. The paradoxical nature of “CVC as part of a corporate parent vs. a startup/VC community” tension

The literature on this tension has mainly considered the “contradictory” institutional pressures faced by a CVC program when it is part of a parent corporation, adopts its norms, capabilities/networks, and policies/structures versus when it is part of the VC/startup community and adopts its norms and practices. Although the literature has not applied paradox theory or explicitly identified the elements that make this tension paradoxical, the research suggests that this tension is interdependent, simultaneous, and persistent. For instance, this tension fundamentally arises from the dual objectives of CVC programs, namely, achieving strategic vs. financial goals and whether they will focus on one over the other (Dokko and Gaba, 2012). CVC programs that identify more with corporate parents are likely to recruit outsiders, adopt generic corporate compensation schemes, and curb CVC autonomy, which promotes equity and collaboration between CVC programs and other units, leading to greater achievement of strategic goals. In contrast, CVC programs that identify more with the VC/startup community tend to recruit outsiders, follow high-powered VC incentive schemes, and allow greater CVC autonomy, which leads to achieving greater financial performance. A recent meta-analysis study found that the pursuit of strategic goals leads to the achievement of greater financial performance, which suggests the “interdependent” nature of CVC programs that pursue dual objectives (Huang and Madhavan, 2021). Thus, we expect that achieving dual objectives by aligning the capabilities/networks and policies/structures with both the parent corporation and the startup/VC community would lead to greater performance. Moreover, studies have recognized that as CVC programs belong to both the corporate parent and the startup/VC community, contradictory institutional pressures exist “simultaneously” and “persist” over time (Souitaris et al., 2012). Although the literature has focused only on the contradictory characteristic of this tension, we suggest that this tension meets all the key elements of a paradox and can be perceived as one.

6.2.3. The paradoxical nature of “CVC as a threat vs. an opportunity” tension

The literature has thus far focused on the “contradictory” strategies that can be adopted by VCs/startups when they engage with CVC programs; they can perceive CVC as a threat because of the potential corporate opportunism and set up tools to protect their own interests by limiting CVC involvement, whereas they can perceive CVC as an opportunity to access valuable corporate resources and invite greater CVC involvement. This tension has typically been conceptualized and understood in the literature as a “sharks dilemma,” where VCs or startups face a competing choice between engaging with corporate investors on CVC deals or walking away from them, as both choices have advantages and disadvantages (e.g., Katila et al., 2008). However, by analogously applying the “paradox of openness” logic (e.g., Poege et al., 2019; Niesten and Stefan, 2019; Ritala and Stefan, 2021), we propose that this tension can be
### Table 3
Potential avenues for future research on the tensions in CVC.

<table>
<thead>
<tr>
<th>Potential future research avenue</th>
<th>Possible research questions</th>
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<td><strong>Existing streams of tensions in CVC</strong></td>
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</table>
| 1. Taking approaches from the paradox lens to study when and how the paradoxes become salient or latent (e.g., plurality, scarcity, change). | • How and when do plurality, scarcity, or the change initiative trigger the CVC-core paradox to become salient or remain latent?  
• How do the plural perspectives of corporate investors and startups arising from operating in different countries, cultures, industries, or sectors influence the salience or latency of the threat-opportunity paradox?  
• How does the level of learning intent of corporate investors exacerbate the threat-opportunity paradox faced by startups?  
• How do the pluralistic goals and perspectives of coinvestors of CVCs elevate threat-opportunity paradoxical tensions?  
• How does the resource scarcity or a lack of bargaining power in startups influence the salience or latency of the threat-opportunity paradox? How would startups having access to multiple alternative entrepreneurial financing sources, such as VCs, angels, and crowdfunding, as opposed to those with limited alternatives, influence the salience or latency of the threat-opportunity paradox? |
| 2. Learning from applications of the paradox lens in analogous organizational phenomena (e.g., exploration-exploitation paradox on the CVC-core paradox, multiple institutional logics paradox on the parent-venture paradox, trust-opportunism paradox and the paradox of openness on the threat-opportunity paradox). | • How can the CVC-core paradox be managed by adopting differentiation and integration practices on the opposite poles across various CVC stakeholders?  
• How does structurally separating a CVC program in two teams (investing/knowledge sourcing) and integrating them with coordination mechanisms help manage parent-venture tensions?  
• How and when do the centrality and compatibility of multiple institutional logics lead the parent-venture paradox to become salient or remain latent?  
• How can CVC managers manage the parent-venture tensions by engaging with and learning from CVC managers from peer firms who are navigating similar tensions?  
• At both the interorganizational and individual levels, how does the trust-but-verify approach, which embraces the paradox but also fosters relationalism, help cope with the threat-opportunity paradoxes?  
• How can layered collaboration schemes or the various differentiation and integration practices between promoting and limiting corporate investor involvement be established by the startups to manage the second-order tensions on “CVC as a value-adding investor vs. risk of misappropriation”? |
| 3. Taking approaches from the paradox lens to study how the paradoxes can be managed (e.g., differentiating levels, locations, or time, synthesis/integration with new perspectives) or coped with (e.g., paradoxical thinking, humor, irony). | • At the individual or team levels, how can the CVC-core paradox be coped with or embraced by using paradoxical cognition and thinking or by using discursive means (e.g., irony, humor) or dialogic activities (e.g., intervention, learning, or sensemaking sessions)?  
• How can structurally separating the CVC program from the parent corporation by establishing a subsidiary or allowing distinctive autonomy, incentive, and culture help manage the threat-opportunity tension? How can geographically separating the CVC program from the parent corporation help manage the threat-opportunity tension?  
• When and why have many CVC programs changed their names to distance themselves from the parent company? Can such name changes help manage the threat-opportunity tension?  
• What processes do various stakeholders employ to cope with the CVC-core paradox that evolves over time as the legitimacy of the CVC program changes within the organization? |
| 4. Taking a longitudinal and dynamic approach to understand the evolution of paradoxes. | (continued on next page) |
understood as a paradox, given the following characteristics. The tension between greater CVC involvement vs. limiting CVC involvement strategies is “interdependent” because to be successful, VCs/startups require both greater CVC involvement in the relationship to create value (e.g., Alvarez-Garrido and Dushnitsky, 2016; Chemmanur et al., 2014; Park and Steensma, 2013) and limited CVC involvement to curb opportunistic behaviors (e.g., Masulis and Nahata, 2009; Maula et al., 2009). This tension is “simultaneous” because threat and opportunity arise at the same time. Furthermore, this tension “persists” over time because corporate investors are generally driven by strategic initiatives (Dushnitsky and Lenox, 2006), whereby threats and opportunities constantly arise.

6.3. Avenues for future research

As noted above, the main tensions in CVC can be understood as paradoxes because they are not only contradictory but also interdependent, simultaneous, and persistent, thereby meeting all criteria for being considered as paradoxes. However, while the CVC phenomenon is rife with paradoxical tensions, thus far, the related CVC literature has stagnated by only using “paradox” as a label rather than drawing on the paradox lens to understand the tensions in CVC. To address the limitations identified from our review and facilitate continued progress in the understanding of tensions in CVC, we suggest that future research systematically leverage the
existing and rapidly evolving paradox research and frameworks (Hargrave and Van de Ven, 2017; Lewis, 2000; Poole and Van de Ven, 1989; Putnam et al., 2016; Schad et al., 2016; Waldman et al., 2019). The paradox literature can guide directions for future research on tensions in CVC by suggesting at which levels paradoxes surface; how paradoxes should be classified; when and how paradoxes become salient or latent (e.g., plurality, scarcity, change); how paradoxes can be managed (e.g., differentiating levels, locations, or time, synthesis/integration by using new perspectives) or coped with (e.g., paradoxical thinking, humor, irony); and what the outcomes of such paradoxes are (Schad et al., 2016). In the following, we first consider research opportunities that could extend the understanding of the main tensions that have already been studied in the reviewed body of the CVC literature. Next, we identify novel opportunities to make progress in understanding unexplored paradoxes in CVC as well as to use CVC as a context to create a new theoretical understanding of paradoxes in organizational research. A summary of potential avenues for future research and possible research questions on tensions in CVC is provided in Table 3.

6.3.1. **Future research in the existing streams of literature on tensions in CVC**

We propose that future research apply insights from the paradox literature to the existing streams of literature on tensions in CVC as follows.

6.3.1.1. **CVC-core paradox.** Although the literature on “CVC-based exploration vs. core business-focused exploitation” (CVC-core) tension has been most extensively discussed among the three main tensions in CVC, accounting for 55% of all CVC tensions, we consider that there are still ample opportunities for scholars to develop it further by drawing on insights from the paradox literature, as subsequently described. First, our review suggests that the CVC-core paradox is characterized by multiple stakeholders’ pluralistic demands and perspectives, competition for scarce resources, and change initiatives, which are common triggers for making paradoxes salient (Smith and Lewis, 2011). However, to date, the literature on tensions in CVC has not examined these triggers, which are promising avenues for future research. We suggest that future studies examine how the variety or number of stakeholders who participate in the CVC decision-making process, the scarcity of resources that must be allocated among those stakeholders, or the change initiatives pursued at different levels can influence the salience of the CVC-core paradox. This research avenue, using the paradox lens to better understand when and how paradoxes become salient or remain latent, is listed in Table 3 as the first avenue for future research.

Second, our review shows that the literature on tensions in CVC has suggested various ways to manage CVC-core tensions. We expect that many paradox studies on exploration vs. exploitation can provide novel insights into this literature and help further our understanding of how to manage CVC-core paradoxes. At the organizational level, Andriopoulos and Lewis (2009) found that new product design firms cope with the exploration-exploitation paradox by (i) differentiating through diversifying between more routine, profitable projects and high-risk, breakthrough projects, temporally separating project constraints and freedom, and temporally and structurally separating work modes and (ii) achieving integration by developing a paradoxical vision, improvising purposefully, and nurturing paradoxical work identities by socializing. We suggest that future research examine how the CVC-core paradoxes can be managed by adopting differentiation and integration practices on the opposite poles across various CVC stakeholders (avenue 2 in Table 3).

Third, the paradox lens suggests that various approaches could be considered when managing tensions (e.g., differentiating levels, locations, or time, synthesis/integration with new perspectives) or coping with them (e.g., paradoxical thinking, humor, irony), as noted in avenue 3 in Table 3. For instance, we expect that more micro-level qualitative studies at the team or individual levels could provide new insights into managing these CVC-core tensions (Fairhurst and Putnam, 2019; Schad et al., 2016). For example, Smith and Tushman (2005) emphasized the top management team’s paradoxical cognition (e.g., articulating a paradoxical frame, cognitive differentiating and integrating) in dealing with the contradictions in exploration and exploitation. We suggest that future research examine how the CVC-core paradoxes can be coped with by using paradoxical cognition and thinking (Lusch and Lewis, 2008) at various managerial levels. Future research building on topic modeling (Hannigan et al., 2019) and other novel computer-based language processing techniques could facilitate further advancements in the literature, which has thus far used relatively limited measures of top management cognition (e.g., Maula et al., 2013). We also propose that future research examine how the use of discursive means such as irony or humor (Gylfe et al., 2019; Kwon et al., 2020; Putnam et al., 2016) can help managers embrace CVC-core paradoxes that arise at individual levels (Waldman et al., 2019; Zhang and Han, 2019). Moreover, various dialogic activities (e.g., intervention, learning, or sensemaking sessions) can support multiple stakeholders in approaching opposite poles equally and innovating codveloped meanings that may also serve as potential avenues for future research with regard to managing these paradoxes (Putnam et al., 2016: 129).

Fourth, the literature on tensions in CVC has not considered dynamic perspectives, as noted in avenue 4 in Table 3. We suggest that future research on the CVC-core paradoxes take a longitudinal and dynamic process perspective from the paradox literature to obtain a more detailed understanding of the processes through which individuals and organizations cope with paradoxical tensions in CVC (Schad et al., 2016). For example, taking a paradox perspective, Raisch and Tushman (2016) showed that when scaling up, exploratory business units within established corporations initially integrate with the corporate parent while differentiating from their peer units.

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9 Plurality, which refers to the diverse perspectives, interests, and objectives of multiple actors, gives rise to competing goals, conflicting processes, and uncertainty, thus leading to paradox salience (Smith and Lewis, 2011). The paradox literature also suggests that resource scarcity elevates the tensions between actors with competing needs with regard to securing resources (Smith and Lewis, 2011). Change initiatives cause conflict between current practices and future opportunities, which, for example, often make the exploration-exploitation tensions salient.
but that later, they shift to integrating with peer units and differentiating from the corporate parent. Future studies on the CVC-core paradoxes can examine the processes that multiple stakeholders employ to cope with paradoxical tensions that evolve over time as the legitimacy of the CVC program changes within the organization.

Fifth, we call for more attention to be given to understudied and incompletely identified paradoxes, such as the tensions that arise among actors’ interests or objectives in CVC-core paradoxes (avenue 5 in Table 3). For example, the “CVC as a complementary and essential tool vs. a disruptive and risky tool (internal stakeholder perspective)” second-order tension involves interactions with various internal stakeholders such as BUs, R&D units, and other corporate development units. However, the literature has mostly focused on whether these stakeholders complement or substitute CVC programs rather than discussing the tensions that arise between CVC programs and stakeholders (e.g., Kim et al., 2016). Prior research suggests that the different objectives or interests of these organizational units can cause tensions with CVC programs and thus may affect the performance of CVC programs. For example, CVC programs and internal R&D units have persistent contradictory interests because they compete for the same pool of organizational resources (e.g., technical/business support from BUs, the attention of senior management, capital). At the same time, they have continuing interdependent interests in pursuing common organizational innovation goals. Future research could examine when and how such paradoxical tensions between CVC programs and internal R&D units become salient and can be managed to produce positive outcomes.

6.3.1.2. Parent-venture paradox. Among the three main tensions, the “CVC as part of a parent corporation vs. a startup/VC community (parent-venture)” tension has been the least studied, accounting for 14% of all CVC tensions. We suggest that future research draw insights from the paradox literature to extend our understanding of parent-venture tension as follows. First, by analogously applying insights from studies on how exploration-exploitation tension is managed (as listed in avenue 2 in Table 3) (e.g., Andriopoulos and Lewis, 2009), future studies can examine how CVC programs manage the parent-venture paradox by (i) structurally separating a CVC program into two teams, in which one team draws capabilities/networks and follows the structures/policies of the corporate parent to experiment with or recombine the knowledge sourced from the portfolio startups to the BU operations and the other team draws on capabilities/networks and follows the rules of the VC/startup community to focus on investing activities and (ii) integrating those two teams by housing them under the CVC program and setting up adequate coordination mechanisms. By combining insights from the institutional logics and paradox literature (Besharov and Smith, 2014; Pant and Ramachandran, 2017; Perkmann et al., 2019), we suggest that future research examine how and when the centrality and compatibility of multiple institutional logics lead the parent-venture paradox to become salient or remain latent. Furthermore, future research could examine how CVC managers can manage parent-venture tensions by engaging with and learning from CVC managers from peer firms who are navigating similar tensions (Pamphile, 2021).

Additionally, whereas paradoxical tensions often involve the competing demands of two stakeholders with conflicting but persistent interests, the research on the “VC rules of the game vs. corporate policies and structures” second-order tension has focused only on the competing demands of one party’s perspective rather than considering the perspectives of the two actors on both sides of the tension. For example, the literature on CVC program autonomy has taken a one-sided CVC manager’s perspective, assuming that CVC autonomy is either beneficial or detrimental. However, the autonomy vs. control literature suggests that the drawbacks of CVC autonomy, such as CVC managers’ opportunism or the fragmented implementation of organizational goals, increase the need to control CVC managers’ behavior through senior managers’ monitoring and intervention (e.g., Shimizu, 2012). Taking the paradox perspective, as noted in avenue 5 in Table 3, future research could examine the CVC program autonomy vs. corporate parent control tension by considering both the CVC and senior managers’ perspectives and inquiring how and under what conditions the paradox becomes salient, how it can be managed, and what the potential outcomes are.

6.3.1.3. Threat-opportunity paradox. Among the three main tensions, the “CVC as a threat vs. an opportunity (threat-opportunity)” tension has been the second most studied, accounting for 31% of all CVC tensions. We propose that the understanding of this tension can be deepened by drawing on the paradox literature in the following ways. First, our review shows that the “CVC as a value-adding investor vs. risk of misappropriation” second-order tension has been extensively studied, especially with regard to how it should be managed by taking the corporate investor’s perspective. Nevertheless, there are many opportunities to extend this research by drawing on insights from the paradox literature. For instance, in addition to accepting and learning to live with a paradox as one potential approach to managing paradoxes, Poole and Van de Ven (1989) suggested paying attention to the levels or locations of analysis, temporal dimensions, or new perspectives as alternative approaches (see avenue 3 in Table 3). At the organizational level, future research can examine the impact of structurally separating the CVC program from the parent corporation by establishing a subsidiary or allowing distinctive autonomy, incentive, and culture to manage this tension; geographically separating the location of the CVC program from that of the parent corporation can also be considered to manage this tension. Along this line of research, the narrative approaches in managing paradoxical tensions (e.g., Maclean et al., 2020) could enhance the understanding of when and why many

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10 Although not building on the paradox literature, in an inductive study, similarly, Burgelman et al. (2021) discussed this form of a CVC program as a “hybrid CVC.”
CVC programs have, for instance, changed their names to distance themselves from the parent company.\textsuperscript{11} Moreover, as noted in avenue 2 in Table 3, at both the interorganizational and individual levels, we suggest that future studies draw on insights from the trust-opportunism paradox literature (Lado et al., 2008) and examine the effect of the trust-but-verify approach, which embraces the paradox but also fosters relationalism, on coping with threat-opportunity paradoxes.

Second, the literature on how to manage the “CVC as a value-adding investor vs. risk of misappropriation” second-order tension from the startup’s perspective is underdeveloped and deserves more attention, especially by drawing on insights from the “paradox of openness” literature, as suggested in avenue 2 in Table 3. For example, to address the paradox of openness, Rogers (2011) suggested establishing varying levels of collaboration schemes, such as adding a licensing agreement with partner firms. Foege et al. (2019) proposed that differentiation between knowledge sharing and protection and their integration are needed to manage the paradox of openness. For instance, they suggested that knowledge providers use formal practices such as patent thicketing (differentiation), patent pending (integration), and nondisclosure agreements (differentiate) and informal practices such as selective revealing (integration), solution black-boxing (differentiation), controlling complementary assets (differentiation), and intermediary bypassing (integration). Additionally, employee training on intellectual property modularity can help manage the paradox (Salter et al., 2014). We suggest that future studies examine how layered collaboration schemes or the various differentiation and integration practices between promoting and limiting corporate investor involvement can be established to manage the second-order tensions on “CVC as a value-adding investor vs. risk of misappropriation” faced by startups. Furthermore, taking a dynamic perspective (avenue 4 in Table 3), future research can study how the salience of the second-order tension changes over time and how such salience influences performance outcomes (Schad et al., 2016).

Third, prior literature has suggested that the threat-opportunity tension can become salient under a weak IPP regime and when there is greater technological overlap between corporate investors and startups (e.g., Dushnitsky and Shaver, 2009). As noted in avenue 1 in Table 3, we propose that future studies draw on the paradox literature, which suggests that plurality, change, or scarcity can impact the salience of a paradox (Smith and Lewis, 2011). For example, future studies can examine how the plural perspectives of corporate investors and startups arising from operating in different countries, cultures, industries, or sectors can influence the salience of the threat-opportunity paradox (e.g., Niesten and Stefan, 2019). Relatedly, future research can examine how having multiple co-investors with pluralistic goals and perspectives in a syndicate with corporate investors could elevate paradoxical tensions. In particular, the literature has suggested that young startups with few resources face heightened tensions when dealing with large established firms (Diestre and Rajagopalan, 2012). We suggest that future scholars explore how resource scarcity or a lack of bargaining power in startups increases the salience of the threat-opportunity paradox (e.g., Niesten and Stefan, 2019). For example, how would startups having access to multiple alternative entrepreneurial financing sources, such as VCs, angels, and crowdfunding, as opposed to those with limited alternatives, influence the salience of the threat-opportunity paradox? Additionally, interesting inquiries can be made regarding how the level of learning intent of the corporate investor exacerbates the threat-opportunity paradox (e.g., Niesten and Stefan, 2019).

6.3.1.4. All three main paradoxes. Common to all three main paradoxes, few studies have examined the consequences of tensions in CVC (e.g., Basu et al., 2016a; Hill and Birkinshaw, 2008; Hill and Birkinshaw, 2014). Therefore, we suggest that another fruitful area for future research is the positive and negative outcomes of each paradox (Schad et al., 2016) (avenue 6 in Table 3). Although tensions can be problematic (e.g., BUs being concerned about cannibalization when CVC programs invest in disruptive startups), they can also be a source of learning within corporations and lead to future competitive advantage. Additional research is warranted to improve the understanding of how and when tensions among multiple actors can be managed to produce positive or negative outcomes.

6.3.2. Future research in the novel streams of literature on tensions in CVC

In addition to studying the main paradoxes we proposed in CVC, we suggest that future studies further draw on insights from the evolving paradox research as well as the CVC practitioner literature to identify and pursue novel research opportunities as follows. First, the paradox literature has suggested that paradoxes are often nested and knotted and occur at multiple levels (Putnam et al., 2016; Schad et al., 2016), and we suggest that future studies on tensions in CVC adopt such perspectives (avenue 7 in Table 3). For example, the three main paradoxes in CVC we proposed are clearly interdependent; the way in which the “CVC as part of a corporate parent vs. a VC/startup community” paradox is managed affects the paradoxes related to “CVC-based exploration vs. core business-focused exploitation” and “CVC as a threat vs. an opportunity.” Structuring a CVC program in such a way that it is closer to the corporate parent could make the CVC-core paradox less salient but the threat-opportunity paradox more salient. Additionally, while we know that there are multiple internal and external stakeholders involved in CVC decisions, we know little about how the cognitions, motivations, and perceptions of stakeholders at different levels and interfaces become ‘socially aggregated’ when working with tensions in CVC (Schad et al., 2016), which is another promising avenue for future research. Embracing and studying such nested and knotted paradoxes is one of the novel research directions for paradox theory (Cunha and Putnam, 2019: 102).

Second, insights from the practitioner literature (e.g., CB Insights, 2018; Chesbrough, 2002; Global Corporate Venturing, 2020; Lerner, 2013) indicate that future studies should explore new interfaces, actors, and related paradoxes in the CVC phenomenon (see

\textsuperscript{11} Although the majority of CVC program names closely resemble the parent corporation’s name (e.g., Intel Capital of Intel), many CVC programs have distanced themselves from the corporate parent through distinct naming early on (e.g., S.R. One of Glaxo Smith Kline and ZX Ventures of Anheuser-Busch InBev) or by changing their names afterward (e.g., NGP Capital of Nokia, which used to be Nokia Growth Partners; GV of Alphabet, which used to be Google Ventures of Google; and M12 of Microsoft, which used to be Microsoft Ventures).
avenue 8 in Table 3). For example, while accessing complementary corporate assets has been discussed as one of the motivations for startups to strike CVC deals with corporate investors (e.g., Katila et al., 2008), most of the CVC literature has overlooked the actors, such as the legal, marketing, and supply chain functions, that manage these complementary assets inside the corporate parent and how CVC programs interact with them. For example, access to large-scale distribution channels of corporate parents can be attractive for startups, whereas BUs may be reluctant to share their distribution channels with CVC portfolio companies, which is a potential area for future research. For another example, while there are various internal stakeholders, such as BUs, corporate development units, and senior managers, who are involved in the CVC-core paradox, the role of internal corporate venturing units has not yet been examined. Future studies can examine the tensions arising between internal corporate venturing units and CVC programs when they compete for a common pool of organizational resources and collaborate with each other to achieve organizational innovation goals.

Third, new models used to research paradoxes have highlighted different approaches, such as the dialectical perspective (Hargrave and Van de Ven, 2017; Putnam et al., 2016), which can be employed to manage the contradictions in organizations and have suggested that more attention be given to the political, institutional, and social contexts of contradictions,12 various practices used for managing conflicts, and the potentially dynamic nature and transformation of paradoxes (Hargrave and Van de Ven, 2017). For instance, while early studies in CVC highlighted many apparent tensions in CVC, through learning over time, CVC activity has evolved, and some of the paradoxes have disappeared or been transformed. For example, while the short-termism of corporate investors used to be a major problem when interacting with VCs and entrepreneurs who require a long-term commitment, many CVC programs have found adequate structural mechanisms (e.g., inviting external coinvestors to a CVC fund) to ensure the long-term commitment of CVC, thereby transforming the initially problematic paradox. We suggest that future studies on tensions in CVC take dialectic perspectives and examine how the salience of paradoxes can change over time in political, institutional, or social contexts and can be transformed (avenue 9 in Table 3).

Fourth, many underexplored tensions in CVC could also learn from the many applications of the paradox lens in other analogous organizational settings (avenue 10 in Table 3). For example, CVC investing has the dual objectives of achieving strategic benefits and financial returns (Dushnitsky and Lenox, 2006), where tensions can arise between achieving short-term profitability and long-term strategic goals. Future studies on managing such tensions could draw insights from nuanced parallel research on managing the tensions between profitability and corporate sustainability (e.g., Hahn et al., 2018; Hahn et al., 2015). For example, insights from the literature on tensions in sustainability (e.g., Hahn et al., 2018; Hahn et al., 2015) suggest combining short- and long-term objectives by implementing compensation packages that integrate financial and strategic performance criteria to help manage the dual objectives tension in CVC.

6.4. Concluding remarks

Motivated by the increasing scholarly interest in CVC and the complex nature of the phenomenon that is full of tensions, we conducted a systematic review to assess the progress made toward understanding the tensions in CVC and to identify avenues for future research. In doing so, we contribute to the literature by introducing the paradox lens (Lewis, 2000; Putnam et al., 2016; Schad et al., 2016) to the research on CVC, which as a context, is full of tensions. The paradox lens and related approaches used in this research can improve the understanding of various tensions that occur at multiple levels and interfaces in CVC, how they can be analyzed, managed, and coped with, and what the outcomes are. By drawing on insights from the paradox literature, we propose the identified tensions to be evaluated as paradoxes and highlight opportunities for future research on the tensions in CVC that we identified and those that are still underexplored. Finally, our study highlights CVC as a promising and fruitful context for the further development of the theoretical understanding of tensions and paradoxes in organizational research. We expect that the insights from our study of the tensions and paradoxes in CVC can also facilitate an improved understanding of tensions in other organizational contexts, such as internal corporate venturing, that also face multiple tensions.

CRediT authorship contribution statement

Euiju Jeon: Conceptualization, Methodology, Investigation, Formal analysis, Data curation, Visualization, Writing – original draft, Writing – review & editing. Markku Maula: Conceptualization, Methodology, Formal analysis, Visualization, Writing – original draft, Writing – review & editing.

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12 For example, while most CVC studies have been based on the US and Europe, corporate investors in Asia, especially Chinese investors, represent the largest CVC deals in terms of value and number in the past decade (Global Corporate Venturing, 2020). Asia could be a promising setting for examining the influence of political, institutional, and social heterogeneity on the evolution of CVC paradoxes.
Appendix 1. A list of peer-reviewed CVC articles in the corpus

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Article Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen and Hevert</td>
<td>2007</td>
<td>Venture capital investing by information technology companies: did it pay?</td>
</tr>
<tr>
<td>Alvarez-Garrido and Dushnitsky</td>
<td>2016</td>
<td>Are entrepreneurial venture’s innovation rates sensitive to investor complementary assets?</td>
</tr>
<tr>
<td>Anokhin et al.</td>
<td>2011</td>
<td>Exploitation-exploration tensions and organizational ambidexterity: managing paradoxes of innovation</td>
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<td>Anokhin et al.</td>
<td>2012</td>
<td>Pattern of corporate venture capital investments and technological performance: geographic diversity and the interplay with</td>
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<tr>
<td>Arruda et al.</td>
<td>2013</td>
<td>Gaba and Dokko (2016)*</td>
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<tr>
<td>Basu and Wadhwa</td>
<td>2013</td>
<td>Gaba and Meyer (2008)</td>
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<td>2011</td>
<td>Galloway et al. (2017)</td>
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<td>Dushnitsky and Shapia</td>
<td>2010</td>
<td>Nason et al. (2015)</td>
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</table>

† Articles that fall under more than two main tensions identified in this paper.
* Articles that fall under the three main tensions identified in this paper.

References


