

## **A Review and Roadmap of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding and Accelerators**

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**ABSTRACT**

Equity financing in entrepreneurship primarily includes venture capital, corporate venture capital, angel investment, crowdfunding and accelerators. We take stock of venture financing research to date with two main objectives: a) to integrate, organize and assess the large and disparate literature on venture financing; and b) to identify key considerations relevant for the domain of venture financing moving forward. The net effect is that organizing and assessing existing research in venture financing will assist in launching meaningful, theory-driven research as existing funding models evolve and emerging funding models forge new frontiers.

**Keywords:** Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, Accelerators, Equity Financing, Entrepreneurship

## **A REVIEW AND ROADMAP OF ENTREPRENEURIAL EQUITY FINANCING RESEARCH: VENTURE CAPITAL, CORPORATE VENTURE CAPITAL, ANGEL INVESTMENT, CROWDFUNDING AND ACCELERATORS**

Entrepreneurs pursuing high-growth potential ventures usually secure financial capital to help fuel their endeavors. While young ventures often rely on a mixture of debt and equity financing, the literature on high-growth potential startups has largely focused on outside equity finance, such as venture capitalists (VCs), corporate venture capitalists (CVCs), angel investors, crowdfunding and/or accelerators. Across several disciplines, venture financing continues to provide fertile ground for proposing and testing theories within a number of important areas across the individual, organizational, and market levels of analysis.

In light of both the substantial body of research and the emerging trends taking place in the field, much is to be gained from an examination of entrepreneurial equity financing in consideration of future research needs. As such, the first objective of this paper is to organize and review the equity venture financing literature, placing particular emphasis on articles from 2004 forward. Second, we seek to provide a platform from which to pursue new inquiry and future research that facilitates theoretically grounded work in the face of the dynamic entrepreneurial financing landscape. Doing so, we begin by offering an overview of the key funding mechanisms that comprise the modern equity funding landscape, followed by a brief review of the earliest phases of venture financing research starting in the early 1980s through 2003. We then focus on the research that has emerged on the different funding mechanisms since 2003. Finally, we give significant attention to future research opportunities associated with each source of funding and their growing interconnectedness.

### **THE EQUITY FUNDING LANDSCAPE**

Entrepreneurial equity investments by VC, CVC, angel investors, and more recently crowdfunding and accelerators represent the key sources of capital that fuels innovation and

development. Such investments usually entail significant risk but also have the potential for substantial upside. While equity investors trade capital for a portion of company ownership, several types of equity funding are based on the stage of investment focus, amounts invested, strategic objectives, geographic concentration, and the nature of involvement beyond the provision of capital. Given this distinctiveness, we offer a brief overview of each and then review and assess research on these key forms of equity funding.

First, VC tends to be the most widely recognized form of equity financing, despite only funding a small fraction of startups. VCs raise funds from a set of limited partners (university endowments, pension funds, etc.), and seek to provide a return to these investors through selective investments into a portfolio of young, innovative companies (Gompers & Lerner, 2000). VC firms are typically small, geographically-clustered entities, often working closely with the ventures in which they invest to provide guidance and value beyond capital (Sapienza, 1992; Sørensen, 2007). VCs mainly participate in deals mid to late-stage, recently averaging \$6.4 million per first-time investment (NVCA, 2016), and continue drifting to larger and later-stage investments (Hellman & Thiele, 2015). Because VCs provide returns to their limited partners within 10 or so years, there is often a focus on realizing timely exits via an acquisition or IPO. While exhibiting cyclical ebbs and flows since arising in the 1960s, VCs are currently averaging investments of about \$32 billion annually (NVCA, 2016).

Second, CVC denotes the systematic practice by established corporations of making equity investments in entrepreneurial ventures. CVC is distinct from traditional VC in that funds are invested by arms of corporations as extensions of their primary focus—e.g., Google and Samsung. Corporate investors are usually looking to bring long-term value to their firms and focus more on early to mid-stage ventures. During the latest cyclical uptick, CVC arms have grown from 625 to 1,100 between 2010 to 2014 (Venture Beat, 2014) and provided \$7.7 billion

into 930 rounds in 2015 (NVCA, 2016). These corporate investors have had a significant impact on investee companies by providing capital, complementary assets, shared industry knowledge, and access to customers as well as in shaping innovation strategies for their own firms.

Third, angel investors are accredited individuals who invest their own personal capital into young ventures. Angels are often former entrepreneurs who seek to fund and add value/guidance to investee firms in their area of expertise. Such individuals tend to take a less formal approach to investing, particularly with regard to the level of due diligence conducted and the formality of contracts and control involved. Most recently, angels have heightened their impact by forming angel investor groups (Kerr et al., 2014) and by providing platforms, both online and in person, for individual angels to evaluate and invest in high-potential deal flow collectively (e.g., Tech Coast Angels). While historically a highly independent and fragmented market, the angel investing landscape is trending toward more centralized angel networks and groups across the globe. Often investing at the earliest stages of the venture lifecycle, angels were estimated to have invested \$25 billion into over 70,000 young ventures in 2015 (Sohl, 2015).

Finally, and most recently, crowdfunding and accelerators are two emerging forms of equity funding mechanisms. Equity crowdfunding is where a large volume of online investors contribute smaller amounts for fractions of company ownership (Vulkan et al., 2016). While equity crowdfunding initially faced significant legal challenges, it is experiencing rapid growth as legal barriers are being relaxed in many countries (Ahlers et al., 2015). Accelerators are cohort-based programs that trade a configuration of mentorship, work space, and/or funding, often in exchange for equity. The capital provided typically runs from \$25k-\$150k and is offered at the very earliest stages. At its core, entrepreneurs apply for an opportunity to develop (or “accelerate”) their concepts on site during a fixed time period (3-6 months). Those accepted are provided with an immersive experience that equips entrepreneurs with many of the essential

tools required to succeed (Hathaway, 2016). Cohorts conclude with a “demo day,” where concepts are pitched to potential investors and stakeholders. Accelerators (e.g., Y-Combinator) are proliferating across the globe, increasing from 1 in 2005 to over 500 in 2015 (Shane, 2016).

Together, the above represents the modern entrepreneurial equity funding landscape. We next turn to reviewing the growing body of academic literature that has evolved in this space.

## **REVIEW FRAMEWORK AND METHODS**

To review venture financing research, we searched for articles focusing on VC, CVC and angel investment. While equity crowdfunding and accelerators are also of recently growing interest, there is not enough research at this juncture to constitute a meaningful review; we address these in the future research section. The time frame for this study is published research from 1980-present. We restricted the boundaries of our word search to the title and abstract for specific key words. For VC, we searched for the terms “venture capital,” “venture capitalist(s)” and “VC.” For CVC, we searched “corporate venture capital” and “CVC.” For angel investment, we searched for “angel” and “informal venture capital.”

We searched for the relevant articles in leading management, entrepreneurship, finance and sociology journals. These included: *Academy of Management Journal (AMJ)*, *Academy of Management Review (AMR)*, *Administrative Science Quarterly (ASQ)*, *American Journal of Sociology (AJS)*, *American Sociological Review (ASR)*, *Entrepreneurship Theory and Practice (ETP)*, *Journal of Business Venturing (JBV)*, *Journal of Finance (JOF)*, *Journal of Financial Economics (JFE)*, *Journal of Management (JOM)*, *Journal of Management Studies (JMS)*, *Management Science (MS)*, *Organization Science (OS)*, *Review of Financial Studies (RFS)*, *Strategic Entrepreneurship Journal (SEJ)* and *Strategic Management Journal (SMJ)*. Thus, our analysis of venture financing research includes an interdisciplinary set of 16 leading journals.

Our search yielded 418 article classifications. Given the size and timespan of the paper set, and the variation in equity funding mechanisms, we divided the articles in three key ways. First, greater weight is placed on the more recent research. In doing so, we divided the 418 articles into two tranches—1980 to 2003 and 2004 to present. The 1980-2003 block covers the venture financing field during its time of emergence. We focus the majority of our attention on articles from 2004 forward. This allows for a more thorough assessment of the current trends that began taking shape in the early 2000s. Second, in offering a more in-depth review of articles published from 2004 forward, we divided the review sections by funding models of VC, CVC and angels. Third, nested within each funding mechanism, or section, we classified articles across three units of analysis: The *individual level*, the *organizational level* and the *market level* (See Table 1).

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### **VENTURE FINANCING RESEARCH: 1980-2003**

The modern landscape for entrepreneurial finance began emerging in the 1950s and 1960s as new technologies became available for commercialization and entrepreneurs started pursuing high-growth potential ventures. As equity funding started to gain a foundation by the early 1980s, scholars began to take note and started to probe the nature of equity financing and how it differed from the more traditional sources of capital. Over the last several decades, this research has become increasingly prevalent and sophisticated, regularly appearing in a set of leading journals that span several disciplines. This section provides an overview of the earlier stages of this work by highlighting many of the impactful articles that appeared in the period from 1980-2003. Notably, aside from a small handful of CVC and angel investment articles, research on VC comprises the vast majority of this early research—thus constituting the majority of our focus.

Early articles on VC were often descriptive of how the process works, the role of key players, and some of the important concepts and frameworks that proved foundational for this developing stream of research (e.g., Bygrave, 1988; Elango et al., 1995; Florida & Kenney, 1988; Gorman & Sahlman, 1989; Robinson, 1988). Most of this early research relied heavily on primary field research complemented by Venture Economics' secondary data. Tyebjee and Bruno (1984) characterized VC deals as being methodical and identified five sequential steps of deal origination, deal screening, deal evaluation, deal structuring and post-investment activities. They also modeled expected returns based on market attractiveness and product differentiation as well as perceived risk based primarily on the capabilities of the management team and environmental threats (Tyebjee & Bruno, 1984).

MacMillan et al. (1986, 1987) also made some important early contributions by identifying the criteria that VCs use in evaluating prospective investments to distinguish between successful and unsuccessful ventures. MacMillan et al. (1989) examined how VCs remain involved in their funded investments. Similarly, Timmons and Bygrave (1986) highlighted the non-financial or managerial contributions that VCs bring to the funded ventures, demonstrating that backing a venture was just as much or more about managing and providing valuable input to the entrepreneurs as about providing financial capital. In a complementary article, Gorman and Sahlman (1989) asked "What do venture capitalists do?" and noted among other things that VCs spend about half of their time monitoring approximately nine portfolio ventures. In the most-cited VC article from this era, Sahlman (1990) described the structure and governance of VCs. Given the fledgling nature of VC organizations, they were compared and contrasted with mainline public corporations as well as with leveraged buyout organizations. Barry and colleagues (1990) also brought attention to the specialized investments of VCs, highlighting their



role in shaping and governing funded ventures. These articles delineated how VCs approach the potential funding of a new venture and how they help develop the ventures in which they invest.

Linkages were also made between VC funding and economic growth. Timmons and Bygrave (1986) characterized VC investments as encouraging high-technology ventures, suggesting that such investments were an engine of innovation and high growth in the US. Another important article with market-level implications was Bygrave's (1987) work on syndicated investments by VCs. This work brought significant attention to the extensive networks that VCs use to share information on potential deals as well as to manage their financial risk by co-investing.

Early work on CVC also tended initially to be descriptive. Winters et al. (1988) offer a general survey of the CVC industry, and an overview of why and how corporations might benefit from CVC. Rind (1981) describes the evolution and state of CVC, and discusses the implications associated with several types of CVC strategies: new ventures division, wholly-owned ventures, new-style joint ventures, direct VC and outside partnerships. Additional studies also explored various approaches and outcomes of CVC investment activity, recommending solutions for improving investment success (Siegel et al., 1988). Early research on angel investment follows a similar path, covering the general angel market, discussing its scale, efficiency and patterns (Harrison & Mason, 1992; Wetzel, 1987), as well as profiling investor attributes, attitudes and behaviors (Aram, 1989; Fiet, 1996; Freear et al., 1994). Surveying angel investors, Haar et al. (1989) also address the general market, but also explore screening criteria, noting key similarities and differences from formal VC investors.

As the domain of venture financing continued its evolution, more theory-driven work emerged—particularly with VC research. The principal-agent framework, for example, emerged as a common way to characterize the investor-entrepreneur relationship (Amit et al., 1990; Fiet, 1995; Sapienza & Gupta, 1994; Van Osnabrugge, 1998). Elitzur and Gaviols (2003) modeled

moral hazard issues that arise as entrepreneurs, angels and VCs interact. Further examinations of the contractual arrangements between VCs and entrepreneurs became a fruitful stream of research (e.g., Black & Gilson, 1998; Gompers, 1995; Kaplan & Strömberg, 2003; Sapienza & Gupta, 1994). Related work continued to establish theoretical foundations for understanding the extent to which VCs add value and professionalize portfolio companies beyond that of financial contributions (Hellman & Puri, 2002; Sapienza, 1992; Sapienza et al., 1996).

When VCs get involved, there is a certification effect that lessens the cost of going public and increases the net proceeds to the offering firm (Megginson & Weiss, 1991). Complementary to the insights provided on the certification role of VCs and the networking of VCs to invest through syndication (Bygrave, 1987), important work emerged on the inter-organizational networks of young companies and VCs (Sørensen & Stuart, 2001). Entrepreneurial ventures often benefited by endorsements from reputable exchange partners as reflected in reaching IPO more quickly and obtaining higher valuations than firms without such endorsements (Stuart et al., 1999). Founders who have relationships that provide access to additional resource endowments and investors, it was quickly understood, are more likely to receive funding (Shane & Stuart, 2002). Of course, some relationships matter more than others, and they likely vary by the types of uncertainty (Gulati & Higgins, 2003). Additional work leveraged theory to open up the decision-making processes of investors, acknowledging the irrational and often biased nature of such decisions (Shepherd, 1999; Zacharakis & Meyer, 1998; Zacharakis & Shepherd, 2001).

Through this overview of some of the early research, it is clear that important foundations were laid. Building from these works, we now address how researchers have pushed forward with this important frontier.

## **VENTURE FINANCING RESEARCH: 2004-PRESENT**

Research from 2004 to the present expands upon the work above, diving deeper into VC while channeling greater attention to additional types of funding. This research includes a total of 263 paper classifications. We now turn to VC, CVC and angel research within this time period, reviewing research at the individual, organizational and market levels. Further, financing mechanisms are reviewed in this order, paralleling the scholarly impact (indicated by citation count and article volume) of articles falling within each.

## **VENTURE CAPITAL**

VCs—professional investors funding portfolios of potentially high-growth ventures—have had a transformative impact on the modern entrepreneurial landscape. Thus this component of the financing landscape has drawn more research attention than any other form of equity financing; a robust body of research has examined topics across the individual, organizational and market levels, with the greatest attention being paid to the organizational level. In total, VC research represents over three-fourths of the papers under consideration.

### **VC Individual Level**

From the VCs' perspective, individual-level research largely focuses on the ways investors evaluate prospective deals. Related research takes the perspective of the entrepreneur and focuses on why some ventures are funded while others are not. A third stream of research focuses on the VC-entrepreneur dyad and how both parties interrelate.

**VCs.** Investigations into how VCs evaluate prospective opportunities have attracted significant attention. Early research in this stream established self-reported criteria that VCs use to make decisions (e.g., management team, market characteristics). In painting a more nuanced picture, research has since progressed to draw attention to the subjective, interactive and contingent nature of VC evaluations that defy rational formulas and rigid approaches (Kirsch et al., 2009; Petty & Gruber, 2011). For example, underscoring the importance of individual-level

difference considerations, novice VCs tend to focus on the qualifications of individual venture team members, while more experienced VCs emphasize broader team cohesion (Franke et al., 2008). Other research evaluates the perceived motivations of the entrepreneurs—entrepreneurial passion—and the preparedness of the team, indicating that preparedness more positively impacts decisions to invest than did passion (Chen et al., 2009). Further, Matusik et al. (2008) demonstrate that a VC's values influence evaluations of the management team, while other advances delineate tradeoffs between perceived control and the prestige of the management team, suggesting that VCs are more willing to accept less control as the prestige of the management team increases (Drover et al., 2014a). Extant research also highlights VC decision making from a longitudinal vantage point, where the importance of decision criteria varies across evaluative stages (e.g., preliminary screening, due diligence, etc.) (Petty & Gruber, 2011).

Overall, progress in this area emphasizes that VCs utilize multiple, interacting data sources and commonly rely on inferential logic more than on the planning documents produced by the entrepreneurial team (Kirsch et al., 2009). Promising advances are coming from models probing cognitive processes that capture the subjective, contingent and multi-faceted nature of VC decision making.

**Entrepreneurs.** VC research has also probed interesting angles involving individual entrepreneurs. Kaplan et al. (2012) examines the general ability and the execution skills of CEOs in privately funded ventures and finds both types of human capital positively related to subsequent performance. Schwienbacher (2007) categorizes entrepreneurs into three types—lifestyle, serial and pure profit-maximizing—and finds the category of entrepreneur to affect the source of financing pursued. Ueda (2004) considers the characteristics and trade-offs associated with the entrepreneurs' pursuit of VC versus banks, where factors such as strength of intellectual property and collateral emerge as important considerations. Ethical perceptions of entrepreneurs

have also garnered some attention: Entrepreneurs' perception of a prospective investor's ethical reputation impacts their willingness to partner, indicating that entrepreneurs become increasingly tolerant of less ethical VCs as the need for funding becomes more severe (Drover et al., 2014b). Moreover, in selecting a VC, it has also been shown that entrepreneurs are willing to pay a premium to partner with more reputable VCs by way of a discounted valuation (Hsu, 2004).

**The Investor–Entrepreneur Dyad.** In addition to the above, the relationship between VCs and the entrepreneurs that they fund also holds important implications for venture outcomes. From a funding standpoint, Franke et al. (2006) find that VCs tend to look more favorably on teams that have training and professional experience similar to themselves. Bruns and colleagues (2008) find that similarities between the specific and general human capital of the funding agent and the entrepreneurs are both significant indicators of funding. In a similar vein, Bengtsson and Hsu (2015) find that co-ethnicity between the entrepreneur and VC partner increases the likelihood of VC investments. However, they also find that shared ethnicity results in less desirable financial outcomes. Murnieks et al. (2011) examine the way entrepreneurs and VCs “think” as reflected in their decision-making processes and find that VCs tend to favor new investment opportunities led by entrepreneurs who think in ways similar to themselves. Accordingly, it seems that investors are attracted to entrepreneurs who are like them in some important ways. Clearly the influence of similarity biases is important for understanding how VCs decide whether to invest in specific deals.

### **VC Organizational Level**

VC research at the organizational level is a central area of inquiry in the entrepreneurial finance literature. A significant portion of this focus centers on VCs mitigation of risk, the effects of VC firm intermediation on portfolio companies, and the certification role VCs provide.

**VC Risk Mitigation Strategies.** Given the high potential of goal conflicts between investors and entrepreneurs, coupled with possible adverse selection, VCs regularly utilize risk mitigation strategies to manage their investments (Cumming, 2008; Hellman, 2006; Kaplan & Strömberg, 2004; Tian, 2011). Much of the literature addressing agency concerns from the perspective of the VC explores various cash flow rights, control rights and incentives, given that such mechanisms are increasingly used when risks and complexity are higher (Kaplan & Strömberg, 2004).

In volatile environments with asymmetric information, VCs regularly utilize multi-stage investment vehicles (i.e., providing capital in a series of allocations over time, versus one lump sum) (Grenadier & Malenko, 2011; Li, 2008; Tian, 2011). In so doing, VCs can limit their exposure to both agency and developmental risks, deciding whether to continue investing, withdraw or even renegotiate terms/valuation at various stages (Guler, 2007; Li & Chi, 2013; Tian, 2011). The structure and approach to staging can vary; for example, VCs tend to invest through more rounds in smaller increments when there is greater geographic distance between a VC firm and the investee firm (Tian, 2011). That said, due to intraorganizational politics as well as pressure from co-investors and limited partners (escalating commitment) (Guler, 2007) VCs do not always terminate poor performing investments.

VCs regularly utilize other contractual mechanisms, such as stock options (Arcot, 2014), covenants (Bengtsson, 2011), convertible securities (Hellman, 2006), board representation (Wijbenga et al., 2007), and active monitoring of the management team post-investment (Yoshikawa et al., 2004). Recent work on security design in VC contracts emphasizes the need for more context-specific research into the ways various types of securities are utilized by investors (Burchardt et al., 2016). While it is suggested that differences in tax regimes and institutional practices explain some of these differences, related research also predicts that the use of convertible preferred equity can reduce information asymmetries about entrepreneurial

abilities and better align entrepreneur-investor interests (Arcot, 2014). When fixed payoffs are higher, investors often utilize contractual covenants to try to control behaviors (Bengtsson, 2011); still, the enforceability of these contracts is contingent upon either investor's reprisal abilities (Lu et al., 2006) or the institutional environment in which the investor is operating (Li & Zahra, 2012). Overall, it is often recognized that VC control tends to decrease as the investee company performance improves over time.

VCs also use syndication as a way to mitigate risk (Manigart et al., 2006). Here, multiple VCs invest alongside one another to form a syndicate (Gu & Lu, 2014; Keil et al., 2010). Through syndication, access to investment opportunities are shared and often jointly vetted (Hochberg et al., 2007), and thus VCs can spread their investment risks across a larger pool of promising deals as opposed to investing larger amounts into a smaller number. Syndication has well-documented performance consequences—particularly with regard to one's network position (Hochberg et al., 2007; Sørensen and Stuart, 2008).

**VC Intermediation.** A robust stream of work investigates important questions regarding the role of VCs in selecting and adding value to portfolio companies (e.g., strategic guidance), and exploring important contingencies therein (Chemmanur et al., 2011; Dimov & Shepherd, 2005; Sørensen, 2007). It is widely recognized that VC investments are inherently a two-sided matching process: high-quality VCs search for high-quality portfolio companies (Sørensen, 2007). The impact and outcomes of VC involvement on portfolio companies, though, varies.

The effectiveness of VC intermediation activities on new ventures appears to vary based on how outcomes are measured. Fitza et al. (2009) estimate that VCs contribute about 11% to variance in inter-round *valuation* changes of the portfolio companies in which they invest. They also find no evidence of VCs' ability to select ventures with higher potential valuation, but do note that the influence of VC intermediation activities on firm valuation is more pronounced

during the early investment period. Related research reports that VCs more likely select firms with higher growth potential and that VC intermediation activities increase the growth of factor productivity in firms by 18% (e.g., revenue growth—Chemmanur et al., 2011; Croce et al., 2013). Importantly, this research also estimates that even firms that were not originally backed by VCs would have experienced approximately 5% increase in factor productivity growth had VCs invested in the ventures (Chemmanur et al., 2011). At the same time, other research reports that VC-backed firms achieve higher levels of revenue growth, but not necessarily higher levels of profitability (Puri & Zarutski, 2012). Puri and Zarutskie (2012) observe that VC-backed ventures experience more rapid growth and are more likely to survive for 5 years as opposed to non-VC-backed firms, but beyond 5 years, this survival likelihood appears to reverse.

Extant research also zooms in on contingent relationships, where a meta-analysis of 76 samples (36,567 VC-backed firms) suggests that positive performance effects largely hinge on situational factors such as stage of development and industry (Rosenbusch et al., 2013). Another contingency accounting for variation in performance is heterogeneity across VC firms (Dimov and Shepherd, 2005; Kaplan & Schoar, 2005; Sørensen, 2007). The abilities of VCs to evaluate potential investment targets and add value are not always equal; Sørensen (2007) reveals that VC firms with greater experience are more likely to realize IPO exits than their lesser-experienced counterparts—through selection *and* influence (though to differing degrees). Adopting a human capital approach, Dimov and Shepherd (2005) find that VC firms comprised of higher levels of general human capital had a positive impact on portfolio company IPOs, while surprisingly the specific human capital of VCs did not impact venture outcomes.

Other work establishes that both high- and low-reputation VC firms influence portfolio firm efficiency, but cast differential effects (Chemmanur et al., 2011). Moreover, scholars have also focused on contingencies associated with the investee firm: The value VCs provide may be



greater among lower-quality ventures (Baum & Silverman, 2004). Although team makeup and capabilities play a key role in attracting VC funding (Beckman et al., 2007), the value of VCs may be greater for firms with incomplete teams. The number of investee companies (portfolio size) is also likely to influence the constructive coaching and value provided by VCs given the division of time, attention and resources (Fulghieri & Sevilir, 2009).

Other studies point to a less-positive or mixed view of the value that VCs bring (Busenitz et al., 2004; Baum and Silverman, 2004); Busenitz and colleagues (2004), for example, tracked the performance of VC-backed companies over a ten-year period and report that the strategic guidance provided by VCs plays no role in increasing the odds of a successful exit. Taken together, significant attention has been paid to disentangling the relative value provided by VCs.

**Certification.** Although much research revolves around the VC impact and value-added services on portfolio firm performance, other studies explore the certification value of VC ties on portfolio company performance—especially during exit events like IPOs (Pollock et al., 2010). Backing by higher-reputation VCs is related to more favorable exits, and the share prices of these companies is frequently higher than non-VC-backed companies (Nahata, 2008). The certification effects of VC ties also appear to enhance the formation of alliance networks both among VC firms and among portfolio companies (Gu & Lu, 2014; Hoehn-Weiss & Karim, 2014; Lindsey, 2008). Additional research suggests these firms are subject to underpricing as a result of VC grandstanding (Lee & Wahal, 2004), which may positively affect future VC deal flow, but generally reduces the gains to the original owners. Clearly, VC involvement can communicate important social signals, but the complexities of such activity are still being teased out.

## **VC Market Level**

VC market-level research falls broadly into two categories. One group focuses on exogenous (market) factors that shape VC organizational level decisions and outcomes, and so related to the themes raised in the prior section. Another examines country level outcomes associated with VC.

**Exogenous (market) factors and organizational level action.** VC investment decisions are shaped by where others are investing (Hochberg et al, 2010; Inderst & Muller, 2004; Nanda & Rhodes-Kropf, 2013; Sørensen & Stuart, 2008), as well as the presence of government funding, though in ways that vary by country (e.g., Guerini & Quas, 2016; Munari & Toschi, 2015). Additionally, the development of the legal environment impacts deal screening and syndication behavior (Cumming et al., 2010). The institutional context also affects syndicate patterns (Gu & Lu, 2014) and the amounts and timing of investments (Dai et al., 2012), as well as post-investment governance decisions (e.g., Cumming et al., 2010).

In terms of outcomes, cultural and institutional distance can negatively affect successful exits (Li et al., 2014) and network ties can ameliorate negative effects associated with cultural and geographic distance (Jaaskelainen & Maula, 2014). Other work (in Asia) indicates that investments that have both foreign and local VCs are more likely to have successful exits than those with only domestic or foreign firms (Dai et al., 2012), while the type of equity investment and associated levels of retained equity can affect IPO performance in different institutional contexts. Bruton et al. (2010) find that VC-retained equity in the UK context is positively related to IPO valuations, while angel-retained equity is positively associated to IPO valuations in France, suggesting the legal traditions of these two countries account for such differences.

Overall, the level of activity in a market and formal institutions conducive to markets generally have positive effects on VC entry, involvement, and outcomes (Sørensen & Stuart, 2008; Nanda & Rhodes-Kropf, 2013; Cummings et al., 2010), while cultural and institutional distance are generally negatively related to successful outcomes (e.g., Li et al., 2014).

Foreignness and relative level of institutional development in a VC's home country may affect VC decisions on where and how to invest (Gu & Lu, 2014), and different forms of risk capital may be optimal in different institutional contexts (Bruton et al., 2010). Additionally, syndication between home and host country VC firms generally yields positive outcomes, especially in contexts with weaker formal institutions (e.g., Jaaskelainen & Maula, 2014).

**Country level outcomes** Government incentives, formal institutions, and informal institutions can shape VC investment patterns at the country level of analysis. Extant work on incentives has examined government initiatives aimed at providing VC. For example, Cumming and MacIntosh (2006) find evidence that a Canadian government venture vehicle crowds out private venture money. On the other hand, the government-run IIF program in Australia, which is somewhat unusual relative to other government incentives in that it focuses on government-private sector investments, has largely been successful (Cumming, 2007). Overall, results from seeding the VC market with government funds are mixed.

Recent research on formal institutions finds that institutions that enable economic integration in the form of a common market and currency positively relate to cross-border VC flows in these countries (Alhorr et al., 2008) and that formal institutions as represented in the World Governance Index (e.g., rule of law, IP protection, political stability, accountability, control over corruption) have a positive effect on country-level volume of VC investment (Li & Zahra, 2012). Further, developed VC markets may attenuate the negative effect that stringent bankruptcy laws have on entrepreneurship levels (Lee et al., 2007).

The reality that strong formal institutions can be lacking, especially in emerging economies, has led to work that highlights how networks can act as substitutes for strong formal institutions in some country contexts, encouraging VC activity (Ahlstrom & Bruton, 2006). Further, patterns of migration between countries can affect cross-border investment levels (Iriyama & Madhavan,

2010), and the nature of social networks can shape funding patterns of early-stage ventures and governance of those ventures (Bruton et al., 2005), reinforcing the role that informal social relationships can play in driving VC investment across borders.

Moreover, informal institutions in the form of values and norms affect country-level VC patterns. Uncertainty avoidance, for example, moderates the role of formal institutions on country levels of VC investment (Li & Zahra, 2012), and the value placed on entrepreneurship can shape funding patterns of early stage ventures and their governance (Bruton et al., 2005).

The findings at the country level indicate that government incentives yield mixed results, while market-based formal institutions and personal connections positively affect VC investment levels. Further, theoretical work suggests that while many macro-level efforts have been aimed at developing risk capital markets as a means of generating robust entrepreneurial ecosystems, such efforts are insufficient if they are not also accompanied by contributory factors such as novel ideas, role models, leadership, and access to large markets (Venkataraman, 2004). Though this theoretical work conceptualizes VC market activities as a separate factor in entrepreneurial ecosystem development, the legitimacy and value placed on entrepreneurship may actually be a necessary condition for the development of VC markets themselves (e.g., Bruton et al., 2005).

## **CORPORATE VENTURE CAPITAL**

The impact of CVC investing—where existing corporations seek minority equity stakes in young ventures—has triggered a growing body of research. Scholars have investigated a number of important topics in this emerging space, predominately at the organizational level. Across venture financing papers identified as part of our article set, CVC accounts for around 10%.

### **CVC Individual Level**

Only a handful of CVC studies exist at the individual level. The lacuna of work is partially due to limited data and partially due to the focus on organization level dynamics prevalent in the

corporate setting. Dokko and Gaba (2012) as well as Hill and Birkinshaw (2014) discuss CVC personnel and their career backgrounds while Souitaris and colleagues (2012, 2014) bring qualitative insights into CVCs' mindsets and investment rational. Moreover, Dushnitsky and Shapira (2010) document individual compensation schemes and their impact on subsequent investment practices.

### **CVC Organizational Level**

Research at the organizational level falls into four main categories: studies examining antecedents to CVC decisions, those that examine the structure of the CVC unit itself, those that look at CVC outcomes, and finally studies that examine CVC from the perspective of the firm receiving the investment.

**Antecedents.** The decision to engage in VC investment is affected by both economic and behavioral considerations. Dushnitsky and Lenox (2005a) view CVC investment as part of a firm's optimal innovation strategy in which firms weigh the marginal innovative output of CVC activity against that of internal R&D. They find that industry-level factors (i.e., technology ferment and patenting activity, role of complementary assets, and IP regime) as well as firm-level resources (i.e., absorptive capacity, cash flow availability) stimulate CVC activity.

Additional work confirms the role of the aforementioned industry and firm-level factors and points to a subtle interaction among the two (Basu et al., 2011); while industry technological ferment and resource-rich firms are two factors associated with higher CVC activity, resource-rich firms are less—rather than more—likely to pursue CVC in industries that experience ferment. Relatedly, a firm is more likely to undertake CVC, rather than M&A activity, in the face of high exogenous uncertainty (i.e., when market uncertainty is high) (Tong & Li, 2011).

There are also behavioral drivers of these venturing activities. CVC practices have diffused via contagion from VC firms and then within an industry population (Gaba & Meyer, 2008).

Additionally, when innovation performance is above aspiration levels, a firm is less likely to initiate or continue existing CVC activities and is also less likely to launch a CVC unit when performance is below aspirations (Gaba & Bhattacharya, 2012).

**CVC Unit.** CVC activity is situated within a part of the corporate organization. Extant work studies four facets of this unit's activity: objectives, structure, staffing, and salary. The objective of corporate investors received significant attention in early studies. Some firms pursue CVC to secure financial gains in a manner similar to independent VC funds while many CVC units pursue strategic benefits for their parent firm. These may take the form of exposure to novel technologies, access to complementary products and services, entry to new markets and geographies and so on (Chesbrough, 2002; Keil, 2004; Keil et al., 2008a).

CVCs also vary by the structure of the unit (Dushnitsky & Shaver, 2009; Hill et al., 2009), the personnel it employs (Dokko & Gaba, 2012; Souitaris et al., 2012; Souitaris & Zerbinati, 2014), and incentives offered (Dushnitsky & Shapira, 2010; Hill et al., 2009). First, there is substantial variation in CVC structures (Hill et al., 2009). Some CVC units follow VC funds. They are structurally separated from the parent corporation, manage a dedicated pool of capital, and have full investment discretion. Others are embedded within a business unit and request approval and funding on a deal-by-deal basis. The former structure is associated with greater success in realizing financial objectives, whereas the latter is associated with strategic gains.

Second, human resource strategies vary. As a corporate in-house VC arm, some units are staffed by long-term corporate employees. These units commonly pursue fit with internal stakeholders (e.g., business units) (Souitaris et al., 2012; Souitaris & Zerbinati, 2014), and their portfolio companies are likely to be acquired and assimilated by the parent firm (Dokko & Gaba, 2012). Other units hire career VCs. Accordingly, they seek legitimacy with external stakeholders

(i.e., independent VCs), and their portfolio companies are more likely to achieve financial returns. Taken together, the past career of CVC personnel shapes their views and practices.

Third, incentive schemes are important (Dushnitsky & Shapira, 2010). VCs often share in the financial success of their portfolio companies. They can expect windfalls in the millions of dollars through carried interest; however, pressures to maintain pay-equality across the corporation imply that many corporate ventures capitalists receive little more than straight salary. Consequently, incentive schemes are often adopted with little regard to CVC objectives or staffing. This can lead to conservative investment practices (Dushnitsky & Shapira, 2010) and undermines the performance of the unit as a whole (Benson & Ziedonis, 2010; Dushnitsky & Shaver, 2009; Hill et al., 2009).

**Outcomes of CVC investment.** CVC investments interact with a firm's alliance and acquisition activities and can affect its innovation outcomes and financial performance. Strategic alliances and joint ventures—as well as CVC—yield the greatest innovation contribution when targeting partners in related industries (Keil et al., 2008b). Moreover, a comparison of CVC-investing firms to non-investing peers reveals that the former produces higher rates of innovation (Dushnitsky & Lenox, 2005a). Along these lines, evidence from the medical device industry illustrates that parent-firms' products incorporate innovations from their portfolio companies (Smith & Shah, 2013). Also, the contribution of CVC activity to patenting rates increases linearly with the depth of involvement of the CVC with its portfolio companies (Wadhwa & Kotha, 2006), and exhibits an inverted U-shape relationship to the overall diversity of the portfolio (Wadhwa et al., 2016). CVC relationships are also associated with timely attention to emerging technological discontinuities (Maula et al., 2013).

Hill and Birkinshaw (2014) found success to be dependent on a unit's ability to build strong relationships internally (i.e., with senior executives as well as business unit managers) and

externally (i.e., with independent VC funds). There are also direct relationships between VC firms and CVCs. These relationships facilitate access to favorable investment opportunities and afford learning of investment practices (Hill et al., 2009; Souitaris & Zerbinati, 2014), but the resources of CVC firms can substitute for their lack of prior centrality and allow them rapidly to gain central positions in VC syndicates (Keil et al., 2010).

Further, CVC investments can affect strategic alliance formation. For example, an inverted U-shaped relationship exists between a firm's CVC investments and its alliance formation (Dushnitsky & Lavie, 2010). In addition, a prior CVC relationship between a corporation and a start-up increases the likelihood the two will subsequently enter a strategic alliance (Van de Vrande & Vanhaverbeke, 2013). Mathews (2006) advances an alternative view and predicts that a CVC investment will follow, rather than lead to, a strategic alliance.

CVC also affects acquisition activity. Interestingly, Benson and Ziedonis (2010) find that based on acquisition premia, acquirers can be worse off when acquiring startups they have previously funded. They also find a positive contribution to the firm's overall M&A strategy. Specifically, they find a positive CVC-M&A association which is strengthened for firms with (a) a dedicated CVC unit, or (b) an intense CVC budget relative to internal R&D.

Finally, CVC may have an impact on financial performance. The performance of the CVC unit varies with a large number of units experiencing substantial negative returns and only some delivering top-tier returns (Allen & Hevert, 2007). Firms that engage in CVC for strategic objectives contribute more to overall parent firm financial performance. In contrast, those that pursue VC-like objectives can erode the parent's performance (Dushnitsky & Lenox, 2006). Additionally, there is evidence of a U-shaped relationship between CVC portfolio diversity and corporate financial performance (Yang et al., 2014).



**Startup's Perspective & Performance.** To understand fully the CVC phenomenon, one has to consider the startup's perspective. Dushnitsky and Shaver (2009) note that the decision to undertake an investment from an industry incumbent is not a trivial issue. On the one hand, a corporate investor may offer multiple benefits. On the other hand, the corporation may imitate the invention. As a result, entrepreneurs may forego CVCs altogether and pursue funding from a VC. Indeed, Dushnitsky and Shaver find that CVC investment is less likely in the face of heightened imitation concerns, namely when (a) the two are prospective competitors in the same industry and (b) the industry IP regime is weak. A survey of startup CEOs further corroborates these dynamics (Maula et al., 2009). A startup is more likely to interact with its corporate investor, and less likely to adopt relationship safeguards, when the pair pursues complementary (rather than potentially competing) offerings.

There is also some evidence as to the impact on startup's ultimate performance. CVC-funded startups perform at least as well as their VC-backed peers. The positive CVC effect is strongest when the startup is well-positioned to take advantage of corporate complementary assets. When that is the case, CVC-backed startups are more likely to go public (Park & Steensma, 2012), less likely to experience underpricing at IPO (Wang & Wan, 2013), and are more likely to exhibit a higher rate of innovation output (Garrido & Dushnitsky, 2016; Chemmanur et al., 2014).

### **CVC Market Level**

CVC research at the market level focuses on the trends and broader outcomes of CVC investment activity. Research suggests that over the past 50 years, CVC exhibits highly cyclical patterns, both in terms of total investment amounts as well as in terms of the number of firms that engage in CVC. Studying CVC at the aggregate level, scholars have found, for example, that an increase in the total R&D expenditures within an industry is associated with a greater number

of CVC investments in that industry (Sahaym et al., 2010). Notably, CVC is increasingly becoming a global phenomenon with many impactful CVC investors outside the USA or Europe.

Next, and equally importantly, the adoption of CVC practices is part of a broader transition in corporate R&D strategies, shifting away from an exclusively internal effort and towards embracing external sources of innovations (also known as Open Innovation). Put differently, many established firms pursue CVC not merely as a way to generate high financial returns, but rather as a critical vehicle to engage and nurture a relationships with an external community: that of innovative entrepreneurial ventures. Indeed, there is evidence that a firm's CVC activity is associated with its allocation of resources towards innovation input (i.e., R&D spending) as well as its innovation outputs (i.e., patenting output; Dushnitsky and Lenox (2005b)). Because focus is strategic rather than financial, it is therefore not surprising that a notable number of CVC units have persisted across several cycles of boom-and-bust in the VC industry.

Institutions and regulations that affect innovation-oriented entrepreneurship play a role in driving Fortune Global 500 to adopt CVC (Da Gbadji et al., 2015). Companies in countries with a developed market for early-stage investments are more likely to engage in CVC, while costly personal bankruptcy regulations are associated with lower uptake of CVC practices. Interestingly, local conditions have little impact on the degree of internationalization (i.e., investment in startups based in foreign innovation hubs). Also, as noted earlier, proliferation and success of VC funds is an important factor in firms' adoption of CVC (Gaba & Meyer, 2008), and startups may forego CVC and opt for VC in institutional contexts when imitation concerns are heightened (Dushnitsky & Shaver, 2009; Maula et al., 2009).

### **ANGEL INVESTMENT**

Angel investors—individuals investing their own capital independently or through angel groups—are playing an increasingly important role in funding young, high-growth-potential

ventures offering some of the earliest stages of funding. While the influence of angel investment is substantial, it has attracted only minimal research attention (Huang & Pearce, 2015; Wiltbank et al., 2009). Studies investigating angel investment represent just under 10% of the articles in our paper set. Kerr et al. (2014, p. 21) argued that “Angel investors have received much less attention than venture capitalists, despite the fact that some estimates suggest that these investors are as important for high-potential startup investments as are venture capital firms ....”

### **Angel Individual level**

Angel research has taken an interest in individual investor decisions, in particular the internal processes and approaches of angel investment decision making (Wiltbank et al., 2009). Maxwell et al. (2011) found that angels utilize cognitive processes that tend to be stage-dependent: First, heuristic shortcuts are employed to pare down the large number of prospective opportunities (elimination by aspects), and a more in-depth and systematic evaluative approach is then utilized to assess a smaller subset of ventures. Huang and Pearce (2015) argued that angels rely on intuition, heuristic-based reasoning, and that intuitive evaluations more accurately led to selecting higher-success investments. Investigations into the role of individual-level investor characteristics have begun to show that these characteristics influence the interpretation of evaluative criteria (Mitteness et al., 2012). Additional research links the angel’s approach to investment outcomes, finding that an investor emphasizing control logic (i.e., attempting to control the future) versus prediction logic (i.e., attempting to predict the future) in evaluations negatively correlates with an angel’s investment losses (Wiltbank et al., 2009). These studies together advance the nexus of investment opportunities under evaluation and the corresponding cognitive processes that comprise the investor’s assessment.

The entrepreneurs in the angel funding context have received limited attention. Inquiry here has sought to understand both economic and behavioral motives that drive the entrepreneurs’

pursuit of angel capital. Fairchild (2011) explores the tradeoffs that entrepreneurs face between pursuing angel and VC funding, considering the consequences therein. Other research takes a dyadic approach, simultaneously exploring both individual angel and entrepreneur interactions. Such work establishes that conflict influences each party's intention to exit (Collewaert, 2012), and the innovation levels that result (Collewaert & Sapienza, 2014). Bammens and Collewaert (2014) explore intra-team trust perceptions between individual angels and lead entrepreneurs, establishing that such perceptions play a role in shaping performance evaluations.

### **Angel Organizational Level**

Angel research at the organizational level examines both angel investment organizations (i.e., angel groups) as well as the entrepreneurial organizations that receive angel funding. Angel group research, while only recently emerging, has begun exploring group decision criteria. Carpentier and Suret (2015) articulate some differences between the processes and criteria utilized by angel groups and individual angels, finding angel groups tend to focus more on risks associated with market/execution than on agency risks and are more concerned with exit. Other research investigates the gender composition of angel groups, delineating ways in which variations in group composition influence investment likelihood (Becker-Blease & Sohl, 2011). Angel group research also examines the impact of angel group involvement on investee organizations. This research indicates that funding from certain angel groups can influence venture performance. For example, Kerr et al. (2014) found that organizations that sought and received angel group funding (versus ventures that sought funding, but were narrowly rejected) tend to exhibit superior performance. In a related vein, Dutta and Folta (2016) explored how an organization's innovation activity and exit is impacted differently by angel group versus VC involvement, offering a first comparison of effects resulting from angel group involvement and

other established players. They found, for example, that VC-backed ventures produce higher levels of innovation and commercialize faster.

Relatedly, considering the investee organization, Bruton et al. (2010) demonstrate that angel investors provide “value-enhancing effects” that are manifest in IPO performance (Bruton et al., 2009). Regarding organizational slack resources, angel involvement can positively impact the relationship between certain slack resources and performance (Vanacker et al., 2013).

### **Angel Market Level**

Angel research at the market level compares and contrasts angel markets with other mechanisms, such as VCs, in an effort to understand how these markets differ as well as interact with one another. Hellman and Thiele (2015), for example, argue that the angel and VC markets are “friends,” where angels provide VCs with a source of deal flow, while VCs provide needed follow-on funding. Still, these markets are simultaneously “foes” in that angel and VC collaborations often clash around valuations, value-add, etc. Other research examines how broader social factors impact angel markets. Here, research investigates gender differences in the supply of angel capital, noting the existence of systematic differences in how male and female angels both allocate funds and network with others within the marketplace (Harrison & Mason, 2007). Ding et al. (2015) examine country-level differences in social trust, finding that countries with higher levels of social trust reflect heightened levels of angel investment.

## **FUTURE RESEARCH**

The dynamic nature of venture financing continues to challenge existing paradigms and create new research opportunities. Following the above review outline, we now discuss promising research opportunities, starting with VC.

### **Directions for Future VC Research**

Although VC research is the most mature segment of research in the equity financing literature, important questions remain. The inherent uncertainty of VC decision-making has led multiple researchers to probe VC decision processes and evaluation criteria. While important advancements have been made in this area, much of this progress focuses on decision processes of individual VCs or individual VC firms. However, in practice, VCs generally share risk by syndicating investments and VC decision making tends to be a collective effort. Thus, a more socialized perspective *both within and across VC firms* is merited.

Within firms, how are existing assumptions about individual VC decision making challenged or changed when viewing the process as a collection of interacting decision makers? Funds commonly utilize investment committees to make final decisions regarding potential investments. Decision-by-committee can help decision-makers offset the negative influences of individual biases. However, just as decisions to terminate an investment are influenced by political dynamics (Guler, 2007), social influences may also impact initial funding decisions and subsequent interactions with portfolio companies. This leaves open questions about how VCs vary in their group decision-making processes, internal social dynamics, and behavioral risk-taking and how this shapes the identification and development of portfolio companies. Across partnering VC firms, how do syndicate dynamics influence VC investment decisions? At a minimum, social dynamics within syndicates can affect follow-on funding, and the prevalence of investment syndicates suggests social dynamics across firms deserve much greater attention.

Future research needs to move beyond the under-socialized perspective represented in many existing studies. Drawing on perspectives involving team mental models/schemas (e.g., Mohammed et al., 2010) group decision processes (e.g., Barsade, 2002), social cues (Banerjee, 1992) or more theory on teams, groups, and social dynamics is needed for a better understanding of VC decision making. The VC setting can also be useful in testing boundary conditions

associated with these team, group, and social dynamics theories, many of which have largely been examined within a firm's boundaries; in the VC context, these interactions occur both within and across firm boundaries.

Relatedly, despite the central role of power dynamics established in other relational dyads, few articles have explored the role of power in shaping VC investment activities. Although research has explored how the bargaining power of VCs influences both their relationship with firms and firm valuation, venture financing research is just starting to explore how power and political influences shape the functioning and structure of VC syndicates (Ma et al., 2013). Power dynamics likely influence both access to VC syndicates, the allocation of shares across syndicate partners, and how lead VCs and other parties sanction or reward syndicate partners. The role of power dynamics is also likely to increase in importance as VC investing becomes more international and crosses institutional and cultural boundaries (Batjargal, 2007). In addition, though social theory tends to define power negatively, the use of power by investors and entrepreneurs does not always generate conflict, but instead can produce favorable outcomes for both parties (Hallen et al., 2014) and can be utilized in a variety of ways (Fleming & Spicer, 2014) such as in providing social defenses for nascent firms. Thus, a pluralistic approach in future research to interorganizational power extending beyond resource or power dependence approaches, exploring both the negative and positive uses of power (e.g., soft power – Santos & Eisenhardt, 2009), are important topics.

The widespread use of syndication networks suggests multiple agency issues that VCs face as well as the potential for knowledge transfer among the companies *within* a VC's portfolio and/or the portfolio of syndicate partners. The implications of these issues for follow-on funding, ways the VC interacts with portfolio companies that are increasing or decreasing in value relative

to other investments, and opportunities for the portfolio company to obtain new sources of knowledge and funding are important topics that deserve further consideration.

Next, because VCs are firms comprised primarily of knowledge assets, they present a rich context in which to examine boundary conditions of existing strategy theory that has been developed based on firms with a portfolio of knowledge assets as well as tangible assets. While several studies have used this context to reevaluate the corporate effects (e.g., Fitza et al., 2009) and diversification (Matusik & Fitza, 2012) literature and findings, many opportunities remain for using this context better to refine strategy theory.

One major trend within the VC arena we discussed is the increasing internationalization of VC investment activity. While both formal and informal institutional environments influence the VC activities (Gu & Lu, 2014), much more research is needed to disentangle the influences of formal and informal institutional factors on VC investment activities, particularly in developing contexts. Much of this work largely assumes there is an optimal configuration of formal and informal institutions conducive to VC investment; Bruton et al. (2010) indicate that this is not the case. Different institutional contexts may require different types of investors and investor behaviors. Instead of focusing on how closely the institutions in different countries align with those in the dominant VC market (i.e., the U.S.), there are opportunities to identify alternative configurations for risk capital markets that may fit with different institutional heritages.

Additionally, complex institutional environments create an interesting set of opportunities and challenges that have not been widely explored. Unique formal and informal institutional arrangements around the world increase the complexity of managing global VC activities. Additionally, VCs are carriers of institutional logics (cf. Almandoz, 2014), so VC actions can shape how entrepreneurial ecosystems evolve and develop with consequential implications for country-level economic growth. Along these same lines, often the category-breaking outlier



firms funded by VCs play a role in disrupting and creating novel institutional arrangements. How VCs engage in institutional work to complement these efforts to create, sustain, and disrupt institutional arrangements remains an open question. Certain VCs are public figures and actively utilize their visibility not just to promote portfolio companies, but to challenge the prevailing institutional consensus openly and envision alternative institutional arrangements. These activities are worthy of further attention.

### **Directions for Future CVC Research**

CVC research has the potential to advance our understanding of key issues in entrepreneurship and strategy. A notable feature of CVC—versus other players in the market for entrepreneurial finance—is that it is part of very large (and often global) corporations. As such, the study of CVC brings together theories across the fields of strategy, entrepreneurship and finance. This affords unique insights into the micro-foundations of strategy and the management of innovation and technology as well as corporate strategy and governance.

To date, much of the CVC work is focused on answering the narrow question of the impact of CVC investing on firm patenting output (often, with some contingencies around CVC existing portfolio). Going forward, CVC research may generate deeper insights into the antecedents of CVC as well as the consequences to the parent firm and other key stakeholders (e.g., startups and independent VCs). First, CVC work can also draw on—and contribute to—theories on corporate strategy and governance. Why do large firms choose to invest in external startups directly, rather than empower their shareholders to do so independently? How and why should they organize their corporate venturing activities? More research is needed to explore why structural differences exist across CVC firms and funds. Whereas independent VC funds are largely homogeneous in structure and objective, that is not the case with CVCs. Future work should shed light on both the rationale behind and consequences of these differential structures.

Second, and along these lines, there is room to expand our conceptualization of CVCs' overall strategic objective. Whereas exposure to novel technology is an important strategic objective, it is not the only one, and firms likely engage CVC investments to accomplish a broad range of strategic objectives. More research is needed to explore these different objectives and to understand both when CVCs choose to invest in other firms and when they choose to terminate these investments. Doing so can offer significant insights into the emerging management of technology and innovation.

Third, the practice of CVC is no longer the prerogative of a handful of West-Coast based corporations. Today, corporate investors are active in almost every continent, including areas that have not traditionally been considered as innovation hubs. As CVC becomes more international, the same challenges we highlight above stemming from institutional complexity will undoubtedly influence these outcomes.

Finally, management scholars have been increasingly exploring the microfoundations of strategy and competitive advantage (Felin et al., 2015). At the heart of the microfoundations conversations are debates regarding the role of human resources in strategic management processes (Felin et al., 2015). CVC provides an intriguing setting to explore these questions since CVC phenomena extend firm-level innovation strategies beyond the boundaries of a firm to source new ideas through investment in other organizations. CVC activities also influence the nature and scope of a firm's alliance strategy. At the same time, emerging evidence suggests that the background characteristics (Dokko & Gaba, 2012; Hill & Birkinshaw, 2014) and mindsets/investment rationales of CVCs influence these activities. Thus, in a sense, CVC practices expand the scope of the firm to engage in knowledge-sourcing strategies that expand the firm beyond its traditional boundaries, and individual-level variables likely play a significant

role in these decisions. More research is needed to explore how these firm boundaries decisions are enacted, and individual-level variables will clearly be important to these studies.

### **Directions for Future Angel Research**

Despite an impact that closely rivals or even exceeds formal VC and CVC in the field, research on angel investing remains comparatively sparse (Huang & Pearce, 2015; Kerr et al., 2014). It follows that many opportunities exist for scholars to bolster our understanding of this lesser-studied area of venture financing. Doing so, it is first important to highlight a point of distinction that often goes overlooked in existing research. Angel investors are generally clustered together, but in practice, different types of angel investment exist. These differences bring with them important theoretical and empirical considerations. For instance, independent angels invest on their own, but they can vary from being a novice to fairly sophisticated. Some angels make only a handful of investments while others are much more advanced (“super” or “serial” angels) making hundreds of investments. Moreover, angel groups are also growing rapidly, introducing yet another dimension for possible inquiry. Thus, we see that the motivations for investing, approaches to investment decisions, managing portfolios, and potential for value-add are just a few areas where inherent differences are likely to manifest across angel investors. Key to productive and meaningful advancements is consistent recognition and appreciation of inherent differences across sources of angel funding.

Bearing this in mind, several opportunities exist within this dynamic area of investment. Research on independent angel investment decisions continues to identify how angel investors make decisions and the criteria with which they evaluate potential deals. What makes this area so interesting is that extant research indicates that given the paucity of concrete data to rely on at the venture’s earliest stages, angels are more likely to use intuitive decision-making processes (Huang & Pearce, 2015). Heuristic-based reasoning is most observable and perhaps most

effective when embedded within executive control (cognitive) systems that are largely formed through prior experiences (Mitchell et al., 2005). Additionally, angels have multiple motives and broad experiences that influence their decision-making. More explicit attention to these issues and how they affect decision making is warranted.

Additionally, *angel groups* are proliferating across the globe. Looking at investment decisions within angel groups is likely to involve additional paradigms. Multiple investors are often making evaluations in concert, bringing a host of critical social structures and dynamics absent in independent angel evaluations. As noted with VC decision-making, a more socialized approach may also have relevance for angel groups. How interactions across group members, or a collective approach, shapes angel group investment decisions is critical to advancing decision making in this emerging space. Moreover, structural and strategic differences among angel groups are also important to consider. Finally, researchers could begin to model variables that account for variance in group performance: virtual vs. in-person groups, group-level measures of members (collective experience or prestige), geographic proximity, due diligence and syndication patterns. Linking different configurations of angel group characteristics, behaviors, and processes to longitudinal return performance remains a critically important line of inquiry.

The dearth of angel research at the market level also provides many opportunities to examine the implications of recent changes in the angel landscape. For instance, the supply of in-person angel financing has tended to be geographically concentrated (e.g., 75%-80% of angel group investments are within their home region) (Halo Report, 2015), but the rapid year-over-year proliferation of in-person groups in new areas brings funding to locations that have been traditionally lacking. Also, the growth in online angel platforms challenges long-held geographic boundaries of in-person investing, and deals are receiving angel funding that cross borders in new ways. Together, the evolving dynamics of in-person and online angel funding are

profoundly shifting access to such capital. Research that probes the institutional forces and social networks (syndication) that govern these evolving funding sources should be beneficial. Market data is also needed that captures performance across different types of angel investment activity.

### **Directions for Emerging Financing Mechanisms**

VC has historically dominated venture finance research, despite VCs funding less than ¼ of 1% of all new ventures (Kaplan & Lerner, 2015). As new forms of entrepreneurial financing, such as equity crowdfunding and accelerators are emerging, greater attention to other funding sources is important for a fuller understanding of high-growth potential financing. While such inquiry is likely to become vital, we urge scholars to build from what we have already learned from 30+ years of venture financing research. As our review makes clear, a rich tradition of research has generated key insights around the funding process. Existing theories and approaches, such as agency theory, information economics, network theory, social dynamics and cognition, can aid in informing emerging funding sources. More explicitly, how do emerging sources complement or challenge existing theories and assumptions, such as traditionally held geographic assumptions and value-add dynamics? Advances are sure to be accelerated when studying emerging sources within the larger landscape of existing venture financing research.

**Equity Crowdfunding.** With regard to crowdfunding, our focus here is on the equity side. Emerging platforms are beginning to have a significant impact, thus creating important research opportunities (Agrawal et al., 2016; Ahlers et al., 2015; Vulkan et al., 2016). Notably, equity crowdfunding changes the dispersion of ownership from that of traditional venture investing: equity crowdfunding shifts power to the entrepreneur by replacing a handful of larger outside investors with a multitude of many smaller ones. Both finance and management scholars have expressed concern about the tradeoffs of ownership dispersion in a variety of organizational settings (e.g., access to a wider pool of financing but with greater agency costs). In our view, the

dispersion of ownership via crowdfunding are likely to advance both theory and practice. Traditional agency theoretic approaches to corporate governance and incentive alignment may be challenged, with important implications for long vs. short term orientations, innovation behaviors, and capability development. Related management research explores how the role of structural embeddedness enables governance mechanisms to work to mitigate opportunism in complex network environments (Jones et al., 1997). The role of structural embeddedness, however, is unclear in equity crowdfunding environments as the coalitions of funding agents are more *ad hoc* and temporary. Exploring alternative governance mechanisms in equity crowdfunding stands as an important avenue for future research.

A central component of crowdfunding is that it takes place in virtual settings. Prospective investors typically watch pitch videos and elect to invest over the internet (Mollick, 2014). This raises important questions about the differences and parallels to other classes of investors and how they evaluate opportunities. Many platforms explicitly utilize social proof or other signaling mechanisms to establish the legitimacy of new ventures. Since due diligence can be difficult and limited in virtual environments, are there key differences in how these signals function, such as highly visible contagion effects or herding behaviors? From the perspective of the entrepreneur, what role do aspects of communication, such as video design and structure, play in shaping investor behavior? Theories of attentional control and communication will likely be useful lenses through which to view and understand such behaviors. In addition, new methodological approaches from fields such as information management (e.g., eye tracking software) may offer new windows into the underpinnings of visual dynamics and investment likelihood.

Further, for equity crowdfunding investors, how do their motives affect the application of traditional theory related to portfolio diversification and risk management? To this point, crowdfunding tends to come from funders who are within the network of those seeking funding.

As equity crowdfunding grows, how will the increase of investors with more traditional financial motives alter these early norms? Furthermore, given the newness of crowdfunding, the decision practices among crowdfunders is still opaque and probably evolving as less sophisticated investors move up this new learning curve.

**Accelerators.** The rapid emergence of accelerators also presents new research opportunities. Accelerators are an organizational innovation with several attractive features (Shane, 2016; Hathaway, 2016). The study of accelerators would be aided by research conducted at various levels. For example, at a more macro-level, accelerators seem to exert a powerful regional impact: “We see a shift in funding for startups in accelerator-treated regions: more deals, more dollars, and more local investment groups. This applies to startups that attend the accelerator and those that do not” (Hochberg & Fehder, 2015, p.1202). Further unpacking the positive and negative regional and economic impact of accelerators could be very beneficial.

Study of accelerators as organizational forms is needed as well. The structures and approaches most effective in influencing startup performance, as well as the distinct decision processes that go into optimizing cohort selection, are important future avenues of research. Moreover, what are the metrics for success? How do inter-startup dynamics (within cohorts) and networks influence startup development and success? In addition, acceleration is unlikely to benefit all entrepreneurs equally. Drawing on human capital theory (cf. Dimov & Shepherd, 2005), it is plausible to theorize that variations across entrepreneurs will influence the efficacy of the acceleration process. For example, do less experienced entrepreneurs reap more performance-related benefits from accelerators than their more experienced counterparts?

The acceleration process offers a unique window into the process of entrepreneurial learning. Entrepreneurial learning scholars have noted the need for a much better understanding of the dynamic relationships between mind, environment, and entrepreneurial action and have called

for research to probe the interactions of different variables of cognitive interest across levels of analysis (Grégoire et al., 2011). Yet, collecting data for such research often proves difficult.

Accelerators offer an accessible, natural lab setting to study entrepreneurial learning in action.

### **Directions for Future Research Across Forms of Financing**

**Venture Financing Methodology.** The study of venture financing calls for a fundamental re-evaluation of theory and research methodology. Venture investments do not often evenly yield significant investment returns, and data suggest only a few investments generate the lion's share of industry returns (e.g., Cochrane, 2005). Understanding outcomes of entrepreneurial financing, then, revolves around identifying rare events and events that have extreme outcomes. The widespread use of correlational methods designed to estimate "average returns" can, however, yield misleading results since the average across a sample is influenced strongly by the extreme outliers. Whereas the tendency to remove extreme outliers in OLS models might aid researchers in finding significant results, much of the information of interest to equity financing researchers is represented by the outliers. Altering both our conceptual models and methodological tools to account for extreme outcomes is an important task for future research.

There have been multiple calls for scholars to consider the distributions of the events they are studying in order to better model and draw conclusions from their work (e.g., Starbuck, 2016; Sornett & Ouillon, 2012), considering, for example, power laws or Pareto distributions when examining rare and impactful events. With such an approach, scholars studying investment decisions, for example, may change how they view investment decision making—becoming less about the criteria that maximize returns of one opportunity and more about the evaluative strategies used to realize a small handful of wins in the midst of a larger, inevitable tranche of losses. The notion of affordable losses in effectuation theory (Dew et al., 2009) might provide useful conceptual tools for understanding investor decision-making. Adopting such an approach,



versus a focus on isolated investment criteria, challenges and has the potential to advance theory that can improve empirical modeling and our understanding of VC investment activities.

**Interconnectedness Among Funding Sources.** The growth of funding alternatives has several implications when considered alongside one another. Most studies consider funding sources in isolation, but as the landscape evolves, considering their interconnectedness becomes increasingly important. That is, shifting research designs and theoretical perspectives from isolated focus on one mechanism to considering the interrelated or simultaneous presence of others stands as an important shift going forward. Entrepreneurs have historically had few options for high-growth funding, but their increasing choice set has important implications: The growing options may give more power to entrepreneurs to select, negotiate and manage ongoing relations with investors. How the entrepreneur's expanding choice set challenges and changes traditional assumptions, dynamics and theories remains an understudied area of inquiry.

Moreover, the emergence of different entrepreneurial funding sources presents situations in which participants can be friends and/or foes (cf. Hellman & Thiele, 2015). We view it as an important undertaking to deconstruct further the nuances of these relational dynamics. For example, regarding complementary relations (e.g., friends), some extant work suggests that accelerator activity increases subsequent VC activity (Hochberg & Fehder, 2015), and higher volumes of reward-based crowdfunding investors or the investment of a reputable angel group can result in more favorable VC evaluations (Drover et al., 2017). Such findings begin shedding light on the various ways in which funding sources may work together, potentially serving as new avenues of deal flow and certification for later-stage investors. Thus, research is needed to identify how earlier-stage funding mechanisms communicate positive signals to other prospective investors and stakeholders (Ahlers et al., 2015). On the other hand, in regard to adversary relationships (or foes), other work suggests funding models may compete or challenge

one another: “The data show that equity crowdfunding will likely pose great challenges to VC and business angel financiers in the near future” (Vulkan et al., 2016, p. 1). The evolving relations are complex and conditional, but the implications within and across funding models introduce an important frontier; central to understanding the modern funding landscape is its increasingly interconnected nature. Emerging research on co-opetition in strategy (e.g., Gnyawali & Park, 2011) may prove useful in understanding the evolving equity financing process.

### **CONCLUDING REMARKS**

The capitalization of new ventures is one of the most foundational issues of entrepreneurship and the launch of high-growth ventures. In a manner consistent with the variability and importance of attaining funding, an impressive number of studies have explored a multiplicity of aspects and outcomes of venture financing over the past several decades. While much of this work has focused on VC; models from this work are increasingly spilling over into the study of angel investment, CVC, crowdfunding and accelerators. Together, this body of work is growing and we see many opportunities for future work. This review has brought attention to the largely under-socialized perspective represented across this literature, and we encourage researchers to identify and study important sources of heterogeneity among equity investors, as well as important interactions across these different categories of investors. Emerging forms of equity financing, such as crowdfunding and accelerators, underscore the criticality of broadening our scope of inquiry to understand the entrepreneurial financing landscape in its entirety—parceling out where established theory is still relevant and where new theory needs to be forged. Going forward, careful theorizing accompanied by well-designed empirical studies are essential to probing how changes in practice and our theoretical understanding of this domain can co-evolve.

## REFERENCES

- Agrawal, A., Catalini, C., & Goldfarb, A. 2016. Are Syndicates the Killer App of Equity Crowdfunding? *California Management Review*, 58: 111-124.
- Ahlers, G. K., Cumming, D., Günther, C., & Schweizer, D. 2015. Signaling in equity crowdfunding. *Entrepreneurship Theory and Practice*, 39: 955-980.
- Ahlstrom, D., & Bruton, G. D. 2006. Venture capital in emerging economies: Networks and institutional change. *Entrepreneurship Theory and Practice*, 30: 299-320.
- Alhorr, H. S., Moore, C. B., & Payne, G. T. 2008. The Impact of Economic Integration on Cross-Border Venture Capital Investments: Evidence from the European Union. *Entrepreneurship Theory and Practice*, 32: 897-917.
- Allen, S. A., & Hevert, K. T. 2007. Venture capital investing by information technology companies: Did it pay *Journal of Business Venturing*, 22: 262-282.
- Allison, T. H., Davis, B. C., Short, J. C., & Webb, J. W. 2015. Crowdfunding in a prosocial microlending environment: Examining the role of intrinsic versus extrinsic cues. *Entrepreneurship Theory and Practice*, 39: 53-73.
- Almandoz, J. 2014. Founding teams as carriers of competing logics when institutional forces predict banks' risk exposure. *Administrative Science Quarterly*, 59: 442-473.
- Amit, R., Glosten, L., & Muller, E. 1990. Entrepreneurial ability, venture investments, and risk sharing. *Management Science*, 36: 1233-1246.
- Aram, J. D. 1989. Attitudes and behaviors of informal investors toward early-stage investments, technology-based ventures, and coinvestors. *Journal of Business Venturing*, 4: 333-347.
- Arcot, S. 2014. Participating convertible preferred stock in venture capital exits. *Journal of Business Venturing*, 29: 72-87.
- Bammens, Y., & Collewaert, V. 2014. Trust between entrepreneurs and angel investors exploring positive and negative implications for venture performance assessments. *Journal of Management*, 40: 1980-2008.
- Banerjee AV. 1992. A simple model of herd behavior. *The Quarterly Journal of Economics*, 107: 797-817.
- Barry, C. B., Muscarella, C. J., Peavy, J. W., & Vetsuypens, M. R. 1990. The role of venture capital in the creation of public companies: Evidence from the going-public process. *Journal of Financial Economics*, 27: 447-471.
- Barsade, S. G. 2002. The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, 47: 644-675.
- Basu, S., Phelps, C., & Kotha, S. 2011. Towards understanding who makes corporate venture capital investments and why. *Journal of Business Venturing*, 26: 153-171.
- Batjargal, B. 2007. Network triads: transitivity, referral and venture capital decisions in China and Russia. *Journal of International Business Studies*, 38: 998-1012.
- Baum, J. A., & Silverman, B. S. 2004. Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing*, 19: 411-436.
- Becker-Blease, J. R., & Sohl, J. E. 2011. The effect of gender diversity on angel group investment. *Entrepreneurship Theory and Practice*, 35: 709-733.
- Beckman, C. M., Burton, M. D., & O'Reilly, C. 2007. Early teams: The impact of team demography on VC financing and going public. *Journal of Business Venturing*, 22: 147-173.
- Bengtsson, O. 2011. Covenants in venture capital contracts. *Management Science*, 57: 1926-1943.
- Bengtsson, O., & Hsu, D. H. 2015. Ethnic matching in the US venture capital market. *Journal of Business Venturing*, 30: 338-354.

- Benson, D., & Ziedonis, R. H. 2010. Corporate venture capital and the returns to acquiring portfolio companies. *Journal of Financial Economics*, 98: 478-499.
- Black, B. S., & Gilson, R. J. 1998. Venture capital and the structure of capital markets: banks versus stock markets. *Journal of Financial Economics*, 47: 243-277.
- Bruns, V., Holland, D. V., Shepherd, D. A., & Wiklund, J. 2008. The role of human capital in loan officers' decision policies. *Entrepreneurship Theory and Practice*, 32: 485-506.
- Bruton, G. D., Fried, V. H., & Manigart, S. 2005. Institutional influences on the worldwide expansion of venture capital. *Entrepreneurship Theory and Practice*, 29: 737-760
- Bruton, G. D., Chahine, S., & Filatotchev, I. 2009. Founders, private equity investors, and underpricing in entrepreneurial IPOs. *Entrepreneurship Theory and Practice*, 33: 909-928.
- Bruton, G. D., Filatotchev, I., Chahine, S., & Wright, M. 2010. Governance, ownership structure, and performance of IPO firms: The impact of different types of private equity investors and institutional environments. *Strategic Management Journal*, 31: 491-509.
- Burchardt, J., Hommel, U., Kamuriwo, D. & Billitteri, C. 2016. Venture capital contracting in theory and practice: Implications for entrepreneurship research. *Entrepreneurship: Theory and Practice*, 40: 25-48.
- Busenitz, L. W., Fiet, J. O., & Moesel, D. D. 2004. Reconsidering the venture capitalists' "value added" proposition: An interorganizational learning perspective. *Journal of Business Venturing*, 19: 787-807.
- Bygrave, W. D. 1987. Syndicated investments by venture capital firms: A networking perspective. *Journal of Business Venturing*, 2: 139-154.
- Bygrave, W. D. 1988. The structure of the investment networks of venture capital firms. *Journal of Business Venturing*, 3: 137-157.
- Carpentier, C., & Suret, J. M. 2015. Angel group members' decision process and rejection criteria: A longitudinal analysis. *Journal of Business Venturing*, 30: 808-821.
- Chemmanur, T. J., Loutskina, E., & Tian, X. 2014. Corporate venture capital, value creation, and innovation. *Review of Financial Studies*, 27: 2434-2473.
- Chemmanur, T. J., Krishnan, K., & Nandy, D. K. 2011. How does venture capital financing improve efficiency in private firms? A look beneath the surface. *Review of Financial Studies*, 24: 4037-4090.
- Chen, X. P., Yao, X., & Kotha, S. 2009. Entrepreneur passion and preparedness in business plan presentations: a persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 52: 199-214.
- Chesbrough, H. W. 2002. Making sense of corporate venture capital. *Harvard Business Review*, 80: 90-99.
- Cochrane, J. H. 2005. The risk and return of venture capital. *Journal of Financial Economics*, 75: 3-52.
- Collewaert, V. 2012. Angel investors' and entrepreneurs' intentions to exit their ventures: A conflict perspective. *Entrepreneurship Theory and Practice*, 36: 753-779.
- Collewaert, V., & Sapienza, H. J. 2014. How Does Angel Investor–Entrepreneur Conflict Affect Venture Innovation? It Depends. *Entrepreneurship Theory and Practice*, 40: 573-597.
- Croce, A., Martí, J., & Murtinu, S. 2013. The impact of venture capital on the productivity growth of European entrepreneurial firms: 'Screening' or 'value added' effect? *Journal of Business Venturing*, 28: 489-510.
- Cumming, D. J., & MacIntosh, J. G. 2006. Crowding out private equity: Canadian evidence. *Journal of Business Venturing*, 21: 569-609
- Cumming, D. 2007. Government policy towards entrepreneurial finance: Innovation investment funds. *Journal of Business Venturing*, 22: 193-235.
- Cumming, D. 2008. Contracts and exits in venture capital finance. *Review of Financial Studies*,

- 21: 1947-1982.
- Cumming, D., Schmidt, D., & Walz, U. 2010. Legality and venture capital governance around the world. *Journal of Business Venturing*, 25: 54-72.
- Da Gbadji, L. A. G., Gailly, B., & Schwiendbacher, A. 2015. International analysis of venture capital programs of large corporations and financial institutions. *Entrepreneurship Theory and Practice*, 39: 1213-1245.
- Dai, N., Jo, H., & Kassicieh, S. 2012. Cross-border venture capital investments in Asia: Selection and exit performance. *Journal of Business Venturing*, 27: 666-684.
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. 2009. Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing*, 24: 287-309.
- Dimov, D. P., & Shepherd, D. A. 2005. Human capital theory and venture capital firms: exploring “home runs” and “strike outs”. *Journal of Business Venturing*, 20: 1-21.
- Ding, Z., Au, K., & Chiang, F. 2015. Social trust and angel investors' decisions: A multilevel analysis across nations. *Journal of Business Venturing*, 30: 307-321.
- Dokko, G., & Gaba, V. 2012. Venturing into new territory: Career experiences of corporate venture capital managers and practice variation. *Academy of Management Journal*, 55: 563-583.
- Drover, W., Wood, M. S., & Payne, G. T. 2014a. The effects of perceived control on venture capitalist investment decisions: A configurational perspective. *Entrepreneurship Theory and Practice*, 38: 833-861.
- Drover, W., Wood, M. S., & Fassin, Y. 2014b. Take the money or run? Investors' ethical reputation and entrepreneurs' willingness to partner. *Journal of Business Venturing*, 29: 723-740.
- Drover, W., Wood, M. S., & Zacharakis, A. 2017. Attributes of angel and crowdfunded investments as determinants of VC screening decisions. *Entrepreneurship Theory and Practice*. doi: 10.1111/etap.12207
- Dushnitsky, G., & Lenox, M. J. 2005a. When do firms undertake R&D by investing in new ventures? *Strategic Management Journal*, 26: 947-965.
- Dushnitsky, G., & Lenox, M. J. 2005b. When do incumbents learn from entrepreneurial ventures?: Corporate venture capital and investing firm innovation rates. *Research Policy*, 34: 615-639.
- Dushnitsky, G., & Lenox, M. J. 2006. When does corporate venture capital investment create firm value? *Journal of Business Venturing*, 21: 753-772.
- Dushnitsky, G., & Shapira, Z. 2010. Entrepreneurial finance meets organizational reality: comparing investment practices and performance of corporate and independent venture capitalists. *Strategic Management Journal*, 31: 990-1017.
- Dushnitsky, G., & Lavie, D. 2010. How alliance formation shapes corporate venture capital investment in the software industry: a resource-based perspective. *Strategic Entrepreneurship Journal*, 4: 22-48.
- Dushnitsky, G., & Shaver, J. M. 2009. Limitations to interorganizational knowledge acquisition: the paradox of corporate venture capital. *Strategic Management Journal*, 30: 1045-1064.
- Dutta, S., & Folta, T. B. 2016. A comparison of the effect of angels and venture capitalists on innovation and value creation. *Journal of Business Venturing*, 31: 39-54.
- Elango, B., Fried, V. H., Hisrich, R. D., & Polonchek, A. 1995. How venture capital firms differ. *Journal of Business Venturing*, 10: 157-179.
- Elitzur, R., & Gaviious, A. 2003. Contracting, signaling, and moral hazard: a model of entrepreneurs, ‘angels,’ and venture capitalists. *Journal of Business Venturing*, 18: 709-725.
- Fairchild, R. 2011. An entrepreneur's choice of venture capitalist or angel-financing: A behavioral game-theoretic approach. *Journal of Business Venturing*, 26: 359-374.
- Fiet, J. O. 1995. Risk avoidance strategies in venture capital markets. *Journal of Management*

- Studies*, 32: 551-574.
- Fiet, J. O. 1996. Fragmentation in the market for venture capital. *Entrepreneurship Theory and Practice*, 21: 5-21.
- Felin, T., Foss, N. J., & Ployhart, R. E. 2015. The microfoundations movement in strategy and organization theory. *The Academy of Management Annals*, 9: 575-632.
- Fitza, M., Matusik, S. F., & Mosakowski, E. 2009. Do VCs matter? The importance of owners on performance variance in start-up firms. *Strategic Management Journal*, 30: 387-404.
- Fleming, P., & Spicer, A. 2014. Power in management and organization science. *The Academy of Management Annals*, 8: 237-298.
- Florida, R., & Kenney, M. 1988. Venture capital and high technology entrepreneurship. *Journal of Business Venturing*, 3: 301-319.
- Franke, N., Gruber, M., Harhoff, D., & Henkel, J. 2006. What you are is what you like—similarity biases in venture capitalists' evaluations of start-up teams. *Journal of Business Venturing*, 21: 802-826.
- Franke, N., Gruber, M., Harhoff, D., & Henkel, J. 2008. Venture Capitalists' Evaluations of Start-Up Teams: Trade-Offs, Knock-Out Criteria, and the Impact of VC Experience. *Entrepreneurship Theory and Practice*, 32: 459-483.
- Freear, J., Sohl, J. E., & Wetzel, W. E. 1994. Angels and non-angels: are there differences? *Journal of Business Venturing*, 9: 109-123.
- Fulghieri, P., & Sevilir, M. 2009. Size and focus of a venture capitalist's portfolio. *Review of Financial Studies*, 22: 4643-4680.
- Gaba, V., & Meyer, A. D. 2008. Crossing the organizational species barrier: How venture capital practices infiltrated the information technology sector. *Academy of Management Journal*, 51: 976-998.
- Gaba, V., & Bhattacharya, S. 2012. Aspirations, innovation, and corporate venture capital: A behavioral perspective. *Strategic Entrepreneurship Journal*, 6: 178-199.
- Garrido, E. Á., & Dushnitsky, G. 2016. Are entrepreneurial venture's innovation rates sensitive to investor complementary assets? Comparing biotech ventures backed by corporate and independent VCs. *Strategic Management Journal*, 37: 819-834.
- Gnyawali, D. R., & Park, B. J. R. 2011. Co-opetition between giants: Collaboration with competitors for technological innovation. *Research Policy*, 40: 650-663.
- Gompers, P. A. 1995. Optimal investment, monitoring, and the staging of venture capital. *The Journal of Finance*, 50: 1461-1489.
- Gompers, P., & Lerner, J. 2000. Money chasing deals? The impact of fund inflows on private equity valuation. *Journal of Financial Economics*, 55: 281-325.
- Gorman, M., & Sahlman, W. A. 1989. What do venture capitalists do? *Journal of Business Venturing*, 4: 231-248.
- Grégoire, D. A., Corbett, A. C., & McMullen, J. S. 2011. The cognitive perspective in entrepreneurship: An agenda for future research. *Journal of Management Studies*, 48(6): 1443-1477.
- Grenadier, S. R., & Malenko, A. 2011. Real options signaling games with applications to corporate finance. *Review of Financial Studies*, 24: 3993-4036.
- Gu, Q., & Lu, X. 2014. Unraveling the mechanisms of reputation and alliance formation: A study of venture capital syndication in China. *Strategic Management Journal*, 35: 739-750.
- Guerini, M., & Quas, A. 2016. Governmental venture capital in Europe: Screening and certification. *Journal of Business Venturing*, 31: 175-195.
- Gulati, R., & Higgins, M. C. 2003. Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. *Strategic Management Journal*, 24: 127-144.
- Guler, I. 2007. Throwing good money after bad? Political and institutional influences on

- sequential decision making in the venture capital industry. *Administrative Science Quarterly*, 52: 248-285.
- Haar, N. E., Starr, J., & MacMillan, I. C. 1989. Informal risk capital investors: investment patterns on the East Coast of the USA. *Journal of Business Venturing*, 3: 11-29.
- Hallen, B. L., Katila, R., & Rosenberger, J. D. 2014. How do social defenses work? A resource-dependence lens on technology ventures, venture capital investors, and corporate relationships. *Academy of Management Journal*, 57: 1078-1101.
- Halo Report. 2015. 2015 Annual Report. Retrieved from <http://www.angelresourceinstitute.org/research/halo-report.aspx>.
- Harrison, R. T., & Mason, C. M. 1992. International perspectives on the supply of informal venture capital. *Journal of Business Venturing*, 7: 459-475.
- Harrison, R. T., & Mason, C. M. 2007. Does gender matter? Women business angels and the supply of entrepreneurial finance. *Entrepreneurship Theory and Practice*, 31: 445-472.
- Hathaway, I. 2016. What startup accelerators really do. *Harvard Business Review*. <https://hbr.org/2016/03/what-startup-accelerators-really-do>
- Hellmann, T., & Puri, M. 2002. Venture capital and the professionalization of start-up firms: Empirical evidence. *The Journal of Finance*, 57: 169-197.
- Hellmann, T. 2006. IPOs, acquisitions, and the use of convertible securities in venture capital. *Journal of Financial Economics*, 81: 649-679.
- Hellmann, T., & Thiele, V. 2015. Friends or foes? The interrelationship between angel and venture capital markets. *Journal of Financial Economics*, 115: 639-653.
- Hill, S. A., Maula, M. V., Birkinshaw, J. M., & Murray, G. C. 2009. Transferability of the venture capital model to the corporate context: Implications for the performance of corporate venture units. *Strategic Entrepreneurship Journal*, 3: 3-27.
- Hill, S. A., & Birkinshaw, J. 2014. Ambidexterity and survival in corporate venture units. *Journal of Management*, 40: 1899-1931.
- Hochberg, Y. V., Ljungqvist, A., & Lu, Y. 2007. Whom you know matters: Venture capital networks and investment performance. *The Journal of Finance*, 62: 251-301.
- Hochberg, Y. V., Ljungqvist, A., & Lu, Y. 2010. Networking as a barrier to entry and the competitive supply of venture capital. *The Journal of Finance*, 65: 829-859.
- Hochberg, Y. V., & Fehder, D. C. 2015. Accelerators and Ecosystems. *Science*, 348: 1202-1203.
- Hsu, D. H. 2004. What do entrepreneurs pay for venture capital affiliation? *The Journal of Finance*, 59: 1805-1844.
- Hoehn-Weiss, M. N., & Karim, S. 2014. Unpacking functional alliance portfolios: How signals of viability affect young firms' outcomes. *Strategic Management Journal*, 35: 1364-1385.
- Huang, L., & Pearce, J. L. 2015. Managing the unknowable the effectiveness of early-stage investor gut feel in entrepreneurial investment decisions. *Administrative Science Quarterly*, 60: 634-670.
- Inderst, R., & Müller, H. M. 2004. The effect of capital market characteristics on the value of start-up firms. *Journal of Financial Economics*, 72: 319-356.
- Iriyama, A., Li, Y., & Madhavan, R. 2010. Spiky globalization of venture capital investments: The influence of prior human networks. *Strategic Entrepreneurship Journal*, 4: 128-145.
- Jääskeläinen, M., & Maula, M. 2014. Do networks of financial intermediaries help reduce local bias? Evidence from cross-border venture capital exits. *Journal of Business Venturing*, 29: 704-721.
- Jones, C., Hesterly, W. S., & Borgatti, S. P. 1997. A general theory of network governance: Exchange conditions and social mechanisms. *Academy of Management Review*, 22: 911-945.
- Kaplan, S. N., & Lerner, J. 2015. Venture Capital Data: Opportunities and Challenges. In *Measuring Entrepreneurial Businesses: Current Knowledge and Challenges*. University of Chicago Press.

- Kaplan, S. N., & Strömberg, P. 2003. Financial contracting theory meets the real world: An empirical analysis of venture capital contracts. *The Review of Economic Studies*, 70: 281-315.
- Kaplan, S. N., & Strömberg, P. E. 2004. Characteristics, contracts, and actions: Evidence from venture capitalist analyses. *The Journal of Finance*, 59, 2177-2210.
- Kaplan, S. N., Klebanov, M. M., & Sørensen, M. 2012. Which CEO characteristics and abilities matter? *The Journal of Finance*, 67: 973-1007.
- Kaplan, S. N., & Schoar, A. 2005. Private equity performance: Returns, persistence, and capital flows. *The Journal of Finance*, 60: 1791-1823.
- Keil, T. 2004. Building external corporate venturing capability. *Journal of Management Studies*, 41: 799-825.
- Keil, T., Autio, E., & George, G. 2008a. Corporate venture capital, disembodied experimentation and capability development. *Journal of Management Studies*, 45: 1475-1505.
- Keil, T., Maula, M., Schildt, H., & Zahra, S. A. 2008b. The effect of governance modes and relatedness of external business development activities on innovative performance. *Strategic Management Journal*, 29: 895-907.
- Keil, T., Maula, M. V., & Wilson, C. 2010. Unique resources of corporate venture capitalists as a key to entry into rigid venture capital syndication networks. *Entrepreneurship Theory and Practice*, 34: 83-103.
- Kerr, W. R., Lerner, J., & Schoar, A. 2014. The consequences of entrepreneurial finance: Evidence from angel financings. *Review of Financial Studies*, 27: 20-55.
- Kirsch, D., Goldfarb, B., & Gera, A. 2009. Form or substance: the role of business plans in venture capital decision making. *Strategic Management Journal*, 30: 487-515.
- Lee, P. M., & Wahal, S. 2004. Grandstanding, certification and the underpricing of venture capital backed IPOs. *Journal of Financial Economics*, 73: 375-407.
- Lee, S. H., Peng, M. W., & Barney, J. B. 2007. Bankruptcy law and entrepreneurship development: A real options perspective. *Academy of Management Review*, 32: 257-272.
- Li, Y. 2008. Duration analysis of venture capital staging: A real options perspective. *Journal of Business Venturing*, 23: 497-512.
- Li, Y., & Chi, T. 2013. Venture capitalists' decision to withdraw: The role of portfolio configuration from a real options lens. *Strategic Management Journal*, 34: 1351-1366.
- Li, Y., & Zahra, S. A. 2012. Formal institutions, culture, and venture capital activity: A cross-country analysis. *Journal of Business Venturing*, 27: 95-111.
- Li, Y., Vertinsky, I. B., & Li, J. 2014. National distances, international experience, and venture capital investment performance. *Journal of Business Venturing*, 29: 471-489.
- Lindsey, L. 2008. Blurring firm boundaries: The role of venture capital in strategic alliances. *The Journal of Finance*, 63: 1137-1168.
- Lu, Q., Hwang, P., & Wang, C. K. 2006. Agency risk control through reprisal. *Journal of Business Venturing*, 21: 369-384.
- Ma, D., Rhee, M., & Yang, D. 2013. Power source mismatch and the effectiveness of interorganizational relations: The case of venture capital syndication. *Academy of Management Journal*, 56: 711-734.
- MacMillan, I. C., Siegel, R., & Narasimha, P. S. 1986. Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business venturing*, 1: 119-128.
- MacMillan, I. C., Zemann, L., & Subbanarasimha, P. N. 1987. Criteria distinguishing successful from unsuccessful ventures in the venture screening process. *Journal of Business Venturing*, 2: 123-137.
- MacMillan, I. C., Kulow, D. M., & Khoylian, R. 1989. Venture capitalists' involvement in their investments: Extent and performance. *Journal of Business Venturing*, 4: 27-47.
- Manigart, S., Lockett, A., Meuleman, M., Wright, M., Landström, H., Bruining, H. & Hommel, U. 2006. VCs' decision to syndicate. *Entrepreneurship Theory and Practice*, 30: 131-153.



- Mathews, R. D. 2006. Strategic alliances, equity stakes, and entry deterrence. *Journal of Financial Economics*, 80: 35-79.
- Matusik, S. F., George, J. M., & Heeley, M. B. 2008. Values and judgment under uncertainty: evidence from venture capitalist assessments of founders. *Strategic Entrepreneurship Journal*, 2: 95-115.
- Matusik, S. F., & Fitza, M. A. 2012. Diversification in the venture capital industry: leveraging knowledge under uncertainty. *Strategic Management Journal*, 33: 407-426.
- Maula, M. V., Autio, E., & Murray, G. C. 2009. Corporate venture capital and the balance of risks and rewards for portfolio companies. *Journal of Business Venturing*, 24: 274-286.
- Maula, M. V., Keil, T., & Zahra, S. A. 2013. Top management's attention to discontinuous technological change: Corporate venture capital as an alert mechanism. *Organization Science*, 24: 926-947.
- Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. 2011. Business angel early stage decision making. *Journal of Business Venturing*, 26: 212-225.
- Meggison, W. L., & Weiss, K. A. 1991. Venture capitalist certification in initial public offerings. *The Journal of Finance*, 46: 879-903.
- Mitchell, J. R., Friga, P. N., & Mitchell, R. K. 2005. Untangling the intuition mess: Intuition as a construct in entrepreneurship research. *Entrepreneurship Theory and Practice*, 29: 653-679.
- Mittens, C., Sudek, R., & Cardon, M. S. 2012. Angel investor characteristics that determine whether perceived passion leads to higher evaluations of funding potential. *Journal of Business Venturing*, 27: 592-606.
- Mohammed, S., Ferzandi, L., & Hamilton, K. 2010. Metaphor no more: A 15-year review of the team mental model construct. *Journal of Management*. 36: 876-910
- Mollick, E. 2014. The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, 29: 1-16.
- Munari, F., & Toschi, L. 2015. Assessing the impact of public venture capital programmes in the United Kingdom: Do regional characteristics matter? *Journal of Business Venturing*, 30: 205-226.
- Murnieks, C. Y., Haynie, J. M., Wiltbank, R. E., & Harting, T. 2011. 'I like how you think': Similarity as an interaction bias in the investor-entrepreneur dyad. *Journal of Management Studies*, 48: 1533-1561.
- Nahata, R. 2008. Venture capital reputation and investment performance. *Journal of Financial Economics*, 90: 127-151.
- Nanda, R., & Rhodes-Kropf, M. 2013. Investment cycles and startup innovation. *Journal of Financial Economics*, 110: 403-418.
- NVCA, 2016. 2016 NVCA Yearbook. Retrieved from <http://nvca.org/research/stats-studies/>.
- Park, H. D., & Steensma, H. K. 2012. When does corporate venture capital add value for new ventures? *Strategic Management Journal*, 33: 1-22.
- Petty, J. S., & Gruber, M. 2011. In pursuit of the real deal: A longitudinal study of VC decision making. *Journal of Business Venturing*, 26: 172-188.
- Pollock, T. G., Chen, G., Jackson, E. M., & Hambrick, D. C. 2010. How much prestige is enough? Assessing the value of multiple types of high-status affiliates for young firms. *Journal of Business Venturing*, 25: 6-23.
- Puri, M., & Zarutskie, R. 2012. On the life cycle dynamics of venture-capital-and non-venture-capital-financed firms. *The Journal of Finance*, 67: 2247-2293.
- Rind, K. W. 1981. The role of venture capital in corporate development. *Strategic Management Journal*, 2: 169-180.
- Robinson, R. B. 1988. Emerging strategies in the venture capital industry. *Journal of Business Venturing*, 2: 53-77.

- Rosenbusch, N., Brinckmann, J., & Müller, V. 2013. Does acquiring venture capital pay off for the funded firms? A meta-analysis on the relationship between venture capital investment and funded firm financial performance. *Journal of Business Venturing*, 28: 335-353.
- Sahaym, A., Steensma, H. K., & Barden, J. Q. 2010. The influence of R&D investment on the use of corporate venture capital: An industry-level analysis. *Journal of Business Venturing*, 25: 376-388.
- Sahlman, W. A. 1990. The structure and governance of venture-capital organizations. *Journal of Financial Economics*, 27: 473-521.
- Santos, F. M., & Eisenhardt, K. M. 2009. Constructing markets and shaping boundaries: Entrepreneurial power in nascent fields. *Academy of Management Journal*, 52: 643-671.
- Sapienza, H. J. 1992. When do venture capitalists add value? *Journal of Business Venturing*, 7: 9-27.
- Sapienza, H. J., & Korsgaard, M. A. 1996. Procedural justice in entrepreneur-investor relations. *Academy of Management Journal*, 39: 544-574.
- Sapienza, H. J., & Gupta, A. K. 1994. Impact of agency risks and task uncertainty on venture capitalist-CEO interaction. *Academy of Management Journal*, 37: 1618-1632.
- Sapienza, H. J., Manigart, S., & Vermeir, W. 1996. Venture capitalist governance and value added in four countries. *Journal of Business Venturing*, 11: 439-469.
- Schwiebacher, A. 2007. A theoretical analysis of optimal financing strategies for different types of capital-constrained entrepreneurs. *Journal of Business Venturing*, 22: 753-781.
- Shane, S. 2016. Why are business accelerators increasing in number? *Small Business Trends*. <http://smallbiztrends.com/2016/06/business-accelerators-increasing.html>
- Shane, S., & Stuart, T. 2002. Organizational endowments and the performance of university start-ups. *Management Science*, 48: 154-170.
- Shepherd, D. A. 1999. Venture capitalists' assessment of new venture survival. *Management Science*, 45: 621-632.
- Siegel, R., Siegel, E., & MacMillan, I. C. 1988. Corporate venture capitalists: Autonomy, obstacles, and performance. *Journal of Business Venturing*, 3: 233-247.
- Smith, S. W., & Shah, S. K. 2013. Do innovative users generate more useful insights? An analysis of corporate venture capital investments in the medical device industry. *Strategic Entrepreneurship Journal*, 7: 151-167.
- Sohl, J. 2015. *The angel investor market in 2015: A buyer's Market*. Center for Venture Research.
- Sørensen, M. 2007. How smart is smart money? A two-sided matching model of Venture Capital. *The Journal of Finance*, 62: 2725-2762.
- Sørensen, O., & Stuart, T. E. 2001. Syndication networks and the spatial distribution of venture capital investments<sup>1</sup>. *American Journal of Sociology*, 106: 1546-1588.
- Sørensen, O., & Stuart, T. E. 2008. Bringing the context back in: Settings and the search for syndicate partners in venture capital investment networks. *Administrative Science Quarterly*, 53: 266-294.
- Sornette, D., & Ouillon, G. 2012. Dragon-kings: mechanisms, statistical methods and empirical evidence. *The European Physical Journal Special Topics*, 205: 1-26.
- Souitaris, V., & Zerbinati, S. 2014. How do corporate venture capitalists do deals? An exploration of corporate investment practices. *Strategic Entrepreneurship Journal*, 8: 321-348.
- Souitaris, V., Zerbinati, S., & Liu, G. 2012. Which iron cage? Endo- and exoisomorphism in corporate venture capital programs. *Academy of Management Journal*, 55: 477-505.
- Starbuck, W. H. 2016. 60th anniversary essay how journals could improve research practices in social science. *Administrative Science Quarterly*. doi: 0001839216629644
- Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly*, 44: 315-349.

- Tian, X. 2011. The causes and consequences of venture capital stage financing. *Journal of Financial Economics*, 101: 132-159.
- Timmons, J. A., & Bygrave, W. D. 1986. Venture capital's role in financing innovation for economic growth. *Journal of Business Venturing*, 1: 161-176.
- Tong, T. W., & Li, Y. 2011. Real options and investment mode: Evidence from corporate venture capital and acquisition. *Organization Science*, 22: 659-674.
- Tyebjee, T. T., & Bruno, A. V. 1984. A model of venture capitalist investment activity. *Management Science*, 30: 1051-1066.
- Ueda, M. 2004. Banks versus venture capital: Project evaluation, screening, and expropriation. *The Journal of Finance*, 59: 601-621.
- Van de Vrande, V., & Vanhaverbeke, W. 2013. How prior corporate venture capital investments shape technological alliances: A real options approach. *Entrepreneurship Theory and Practice*, 37: 1019-1043.
- Van Osnabrugge, M. 1998. Do serial and non-serial investors behave differently?: An empirical and theoretical analysis. *Entrepreneurship Theory and Practice*, 22: 23-25.
- Vanacker, T., Collewaert, V., & Paeleman, I. 2013. The relationship between slack resources and the performance of entrepreneurial firms: The role of venture capital and angel investors. *Journal of Management Studies*, 50: 1070-1096.
- Venkataraman, S. 2004. Regional transformation through technological entrepreneurship. *Journal of Business Venturing*, 19: 153-167.
- VentureBeat. 2014. *Corporate venture & innovation initiative (CVI), j. thelander consulting release most comprehensive corporate venture capital (CVC) compensation report*. Retrieved April 15<sup>th</sup>, 2016 <http://venturebeat.com/2014/09/25/>
- Vulkan, N., Åstebro, T., & Sierra, M. F. 2016. Equity crowdfunding: A new phenomena. *Journal of Business Venturing Insights*, 5: 37-49.
- Wadhwa, A., & Kotha, S. 2006. Knowledge creation through external venturing: Evidence from the telecommunications equipment manufacturing industry. *Academy of Management Journal*, 49: 819-835.
- Wadhwa, A., Phelps, C., & Kotha, S. 2016. Corporate venture capital portfolios and firm innovation. *Journal of Business Venturing*, 31: 95-112.
- Wang, X. A., & Wan, W. P. 2013. Explaining the variance in underpricing among venture capital-backed IPOs: A comparison between private and corporate VC firms. *Strategic Entrepreneurship Journal*, 7: 331-342.
- Wetzel, W. E. 1987. The informal venture capital market: Aspects of scale and market efficiency. *Journal of Business Venturing*, 2: 299-313.
- Wijbenga, F. H., Postma, T. J., & Stratling, R. 2007. The influence of the venture capitalist's governance activities on the entrepreneurial firm's control systems and performance. *Entrepreneurship Theory and Practice*, 31: 257-277.
- Wiltbank, R., Read, S., Dew, N., & Sarasvathy, S. D. 2009. Prediction and control under uncertainty: Outcomes in angel investing. *Journal of Business Venturing*, 24: 116-133.
- Winters, T. E., & Murfin, D. L. 1988. Venture capital investing for corporate development objectives. *Journal of Business Venturing*, 3: 207-222.
- Yang, Y., Narayanan, V. K., & De Carolis, D. M. 2014. The relationship between portfolio diversification and firm value: The evidence from corporate venture capital activity. *Strategic Management Journal*, 35: 1993-2011.
- Zacharakis, A. L., & Meyer, G. D. 1998. A lack of insight: do venture capitalists really understand their own decision process? *Journal of Business Venturing*, 13: 57-76.
- Zacharakis, A. L., & Shepherd, D. A. 2001. The nature of information and overconfidence on venture capitalists' decision making. *Journal of Business Venturing*, 16: 311-332.

**Table 1**  
**Summary of VC, CVC and Angel Research**

	Primary Contributions	Sample Studies at Each Level	Paper Classification Count
<b>Venture Capital</b>			
Individual	Investors evaluation of prospective deals and the subjective judgment in VC decision-making processes.  The entrepreneur's decision to seek venture capital.	Dimov & Shepherd (2005) MacMillan, Siegel, & Narasimha, (1986) Franke, Gruber, Harhoff, & Henkel, (2006) Drover, Wood & Zacharakis, (2017) Murnieks, Haynie, Wiltbank, & Harting (2011)	47
Relationship between VCs and the entrepreneurs (i.e. entrepreneur-VC dyad)			
Organizational	Alleviating problems with asymmetric information in financial markets.  The value added by VC and performance outcomes for entrepreneurial firms.  Mitigating risk and contact mechanisms (e.g., multi-stage investment vehicles mechanisms, stock options, covenants, types of securities).	Sahlman (1990) Megginson & Weiss (1991) Gompers (1995) Stuart, T. E., Hoang, H., & Hybels (1999) Hochberg, Ljungqvist, & Lu (2007) Kaplan & Strömberg (2004) Hsu (2004) Baum & Silverman (2004) Sørensen (2007)	201
Market	How macro level factors shape actions and outcomes (e.g., market entry, screening processes, syndication patterns, financial performance).  The role of government incentives, formal institutions, and informal institutions in shaping country level differences in VC markets.	Inderst & Müller (2004) Ahlstrom & Bruton (2006) Lee, Peng, & Barney (2007) Cumming, Schmidt, & Walz (2010)	93
<b>CVC</b>			
Individual	CVC personnel and mindset.  Individual compensation of CVC decision-makers.	Dushnitsky & Shapira (2010)	1
Organizational	Economic and behavioral antecedents of CVC. The CVC unit within a given firm.  CVC performance outcomes.  Considerations and performance outcomes from the entrepreneurial firm's perspective.	Dushnitsky & Lenox (2005a) Park & Steensma (2012) Benson & Ziedonis (2010) Kanter, North, Bernstein, & Williamson (1990)	35
Market	Trends in CVC investment activity.  CVC as part of broader changes in R&D strategies.	Chemmanur, Loutskina, & Tian (2014) Sahaym, Steensma, & Barden (2010)	7
<b>Angel Investment</b>			
Individual	Individual angel investor's decisions to invest.  Motivations for entrepreneurs to pursue angel capital.	Freear, Sohl, & Wetzel (1994) Maxwell, Jeffrey, & Lévesque (2011) Maxwell & Lévesque (2014)	16
Organizational	Decision making within angel groups.  Value added and performance of entrepreneurial firms receiving angel capital.	Carpentier & Suret (2015) Kerr, Lerner, & Schoar (2014)	10
Market	Comparing and contrasting angel markets with other mechanisms (e.g. VC).	Hellmann & Thiele (2015) Carpentier, L'her, & Suret (2010).	8