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Families in Corporate Venture Capital

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Abstract

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JEL Classification: G24, G32, O32

Keywords: Corporate venture capital, Family ownership, investment, Performance

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1. Introduction

Since the aftermath of the dot-com bubble, the venture capital (VC) industry in the US has experienced a stunning growth. By the end of 2019, VC funds (VCs) invested a total of \$136.5 billion in US companies. While independent VC (IVC) is the most common type of VC, corporations have been increasingly active in funding technology ventures through their corporate venture capital (CVC) programs (Colombo and Murtinu 2017). Ma (2020) shows that CVC investments account for 15% of the whole VC industry in the US. This surge has motivated a growing literature aimed at understanding CVC programs (CVCs)' decision-making and their impact on portfolio companies.

Technological discontinuities tend to radically change the value-creation process behind products and services, and transform the business environment in ways that are difficult to grasp by large incumbents. CVC allows firms to escape the deterioration of internal innovation (Ma 2020) by scouting promising ventures and emerging technologies, enhancing demand (of products, services, licenses, etc.), diversifying risk, and building new skills and knowledge (Riyanto and Schwienbacher 2006). Different from IVC investors, which maximize financial returns from capital gains within relatively short time-frames, CVCs aim at spurring parent organizations' innovation and market value thorough strategic synergies (Hellmann 2002; Dushnitsky and Lenox 2006). Yet, CVC activities are notoriously risky, and there is a wide variation in the strategies enacted by CVCs and their ability to create value.

CVCs are typically structured as investment vehicles or business units of a parent organization. Scholars have argued that the differences in CVCs' strategies can be traced back to the parents' organizational characteristics, which influence the resources made available to the CVC program, the selection and management of investments, and the CVC's objectives (Da Rin

et al. 2013; Gompers et al. 2009; Hellmann 2002; Ivanov and Xie 2010). Despite these progresses, the literature so far has overlooked how a key attribute of parent organizations, i.e. their *ownership structure*, matters for CVC. Filling this gap, we study the presence of families as controlling owners of the parent organizations behind CVCs (which we label “family CVCs”).

Empirical evidence shows that many firms around the world are owned by families (Faccio and Lang 2002; La Porta et al. 1999). A notable feature of family owners is that they often hold undiversified portfolios as result of having concentrated their personal wealth on a single asset such as their family firm. Faccio et al. (2011) show that firms controlled by large undiversified investors make more cautious investment policies due to risk-avoidance concerns. Relatedly, Anderson et al. (2012) show that family firms prefer to invest in safer projects and, as a result, exhibit lower R&D and fewer patent citations than non-family firms. The “*risk mitigation*” perspective suggests that family owners will be more likely to adopt mechanisms that attenuate risk in their corporate venturing activities.

Existing works such as Bertrand and Schoar (2006) have argued that family investors maximize utility functions which encompass family traditions, stability and family involvement in executive positions. These features tend to lengthen investment horizons (Villalonga and Amit, 2010), which often stretch over multiple family generations, and raise commitment toward stakeholders (Mullins and Schoar 2016). Long payoff horizons and job stability are useful to increase executives’ tolerance for failure which, in turn, is a key driver of innovation (Manso 2011). In the VC context, Tian and Wang (2014) show that the tendency of funds to persist in investments over time improves the innovation performance of portfolio firms. Similarly, Barrot (2017) shows that VCs with a longer contractual horizon foster the patenting activity of portfolio firms. The “*time horizon*” perspective suggests that the stable involvement of families in their

companies and their desire to maintain control over time will make family CVCs better positioned to nurture entrepreneurial ventures, and thus outperform non-family CVCs.

Using a unique dataset containing rich information on the ownership and governance of CVC's parent organizations in the US from 2000 to 2017, we start by showing that family CVC is a prevalent phenomenon: around one third of all CVC deals in our sample (i.e. 2,516 out of 8,942) have a family-controlled parent organization behind. The total amount invested by family CVCs in our sample is \$12.4 billion (whereas non-family CVCs invested \$22.2 billion). Moving on, we explore the investment style and returns of family CVC.

First, we ask how families affect CVCs' investment strategies. Our results indicate that family CVCs are significantly more likely to syndicate than non-family CVCs: the likelihood of syndication is 3.1% higher for family CVCs. Moreover, we find that family CVCs join larger syndicates. Importantly, these findings (and all the subsequent ones) hold controlling for many sources of heterogeneity between family and non-family CVCs such as experience in external venturing, availability of financial resources, internal investment, capital structure, operating performance, and industry diversification.

The literature suggests that syndication helps mitigate risk exposure (Gompers and Lerner 2004; Lerner 1994) by means of a 'second opinion' on the ventures (Brander et al. 2002; Casamatta and Haritchabalet 2007), complementary resources across syndicating firms (Hochberg et al. 2007) and enhanced monitoring (Das et al. 2011; Tian 2012). As such, our results are consistent with the idea that family owners seek to minimize risk in their CVC activities. This perspective may also explain why family CVCs syndicate more with private equity firms, banks, insurance companies, angel investors and incubators - all actors who arguably possess specialized information on venturing activities.

Second, we ask where do family CVCs invest in comparison with non-family CVCs. Two dimensions feature prominently in the VC literature: geographic proximity and industry relatedness (e.g., Chen et al. 2010; Gompers et al. 2005, 2009; Hochberg et al. 2015). Our results indicate that family CVCs target ventures that are geographically closer to the parent organization and that operate in the parent's main industry. Proximity notoriously reduces asymmetric information (Sorenson and Stuart 2001) and facilitates monitoring activities (Bernstein et al. 2016). Therefore, our evidence supports the view that families engaged in CVC seek to mitigate venturing risk through a close oversight of their portfolio companies.

The higher likelihood of family CVCs to syndicate and invest in proximate targets is particularly large under information opaqueness, such as in the case of younger ventures. Early-stage ventures face a higher mortality risk than late ventures due to low asset tangibility, poor market legitimacy, demand and technical uncertainty, and resource and management ambiguities (Amit et al. 1990; Wu and Knott 2006). All these factors appear to strengthen the tendency of family CVCs to syndicate and target proximate ventures. Moreover, we find stronger results when the family parent is led by a family CEO, which makes the family able to exercise a more direct influence on corporate policies.

Third, we ask whether family CVCs add more value than non-family CVCs to their portfolio companies and to the parent itself. The risk mitigation perspective suggests that family CVCs which shy away from valuable investments perceived as too risky may face a more limited deal flow and be less able to reap the benefits of exploratory search. In contrast, the time horizon perspective suggests that family CVCs may be better positioned to establish stakeholder relationships and tolerate temporary failures, and thus nurture the innovation potential of portfolio firms. Empirically, we find that the more support the venture has received from a family

CVC, the *higher* the likelihood of successful exit. This finding maps into a long-term value effect: family CVC-backed ventures that went public display better market performance and more valuable patenting activities than other ventures following the IPO. Examining the drivers of this result, we find that the higher patenting value of family CVC-backed ventures is driven by the ability of to identify higher-quality innovation projects rather than a generalized increase in patent production. Moving to parents' performance, we find that family firms appear better able than non-family firms to derive shareholder value from their venturing activities.

Finally, we ask whether the presence of a family affects CVCs' propensity to invest during hard times. The 2008-10 financial crisis, regarded as one of the most severe since the Great Depression, has been fraught with massive uncertainty which froze corporate investment (e.g., Duchin et al. 2010; Campello et al. 2010). The crisis shook the VC industry too: the amount of funds invested in new ventures suddenly dropped, and many VCs made significant changes in the allocation of resources to portfolio firms (Conti et al. 2019). We test whether family CVCs were better positioned than their non-family counterpart to invest in entrepreneurial ventures during the crisis. Our differences-in-differences estimates indicate that family CVCs invested twice the amount of non-family CVCs and made more deals during the crisis. These results hold controlling for several observable characteristics as well as time-unvarying unobserved heterogeneity, and are not driven by diverging investment trends between family and non-family CVCs prior to the financial crisis. These findings suggest that families' desire to maintain control and their long-term horizon improve the responsiveness of their firms to hard times.

Our work provides two novel contributions to the literature. First, we expand prior research on venture investing. Several works in this field have analyzed how different types of venture capital (especially CVC versus IVC) differ in objectives and strategies (e.g., Ma 2020; Hellman

2002), and have parsed the effect of CVC on ventures' innovation (Chemmanur et al. 2014) and performance (e.g., Colombo and Murtinu 2017; Dushnitsky and Lenox 2006). Other works have explored how parent companies' corporate governance (Tian and Ye 2020) and innovation trajectories (Ma 2020) affect CVC investment decisions. Our key contribution to this literature is to show that the ownership structure of CVCs' parent companies – a neglected aspect so far – is a key determinant of how CVCs operate and perform.

Second, we expand the literature on family firms, which has shown how the idiosyncratic preferences of family owners affect a large array of corporate outcomes ranging from debt (Anderson et al. 2003) to internal investment (Anderson et al. 2012). We are the first to document that families play a significant role in CVC activities. Moreover, our results highlight how the presence of families makes CVCs undertake investment strategies that are systematically different from those pursued by non-family CVCs, and how those differences factor in financial results. Finally, our results on the higher investment activity of family CVCs during the 2008-10 financial crisis expand previous studies which show how family firms' long-term orientation makes them more prone to invest during uncertain times (Amore and Minichilli 2017) and provide jobs that are less sensitive to industry shocks (Thesmar and Sraer 2007).

2. Data and variables

2.1. Sources

We gathered information on VC deals from 2000 to 2017 from the Eikon dataset. Eikon (also known as Thomson One, VentureXpert, or Venture Economics) is the most popular database in existing VC research. It includes detailed venture- and deal-level information such as the age,

industry and location of portfolio companies, the number of rounds received, the identity and location of each investor in each round, and the amount invested by each investor in each round.

For the sake of our analysis, we kept all deals related to CVC (i.e., those categorized in Eikon “Corporate PE/Venture” as a Fund Investor Type) headquartered in the US. Then, we identified the corporation behind the CVC arm that has made the deal. Often, the name of the CVC arm overlaps with the name of the parent organization or can be easily associated with the parent organization (e.g., “Google Ventures” or “Qualcomm Ventures”). In other cases, the name of the CVC arm does not recall the name of the parent organization (e.g., Steamboat Ventures, which is the CVC initiative of The Walt Disney Company, or Sr One Ltd., whose parent organization is GlaxoSmithKline). In these latter cases, we conducted a manual search using the CVCs’ websites and Crunchbase to identify the parent organization.¹

Once we identified the parent organization, we checked whether it was listed in the US at the time of the deal. If so, we used corporate proxy statements (drawn from Edgar) to gather data on the ownership structure of the parent organization. Consistent with numerous studies in the US context (e.g., Anderson et al. 2012), we used a classification based on the fraction of equity shares in the hands of the family to distinguish between family and non-family CVCs. In particular, we defined a parent organization as family-owned if a family (founders or founders’ descendants) owns in a given year a 5% or greater equity stake. To identify founders and their subsequent lineage, we used multiple data sources including corporate proxy statements, company websites, financial newspapers, FundingUniverse.com, and ReferenceforBusiness.com.

¹ Crunchbase is increasingly used in the VC industry and has also become popular among scholars as a reliable source of information on start-ups’ activity and financing (e.g., Ewens and Townsend 2020).

Even with a lower percentage of equity, families may still exert significant control over firms' operations through control-enhancing mechanisms such as dual-class shares (e.g. Villalonga and Amit 2006). Thus, for firms that issue multiple share classes we followed Anderson et al. (2009) and used the controlling shareholders' total voting power as a measure of family influence. In these cases, we consider a parent organization as family-owned if the family maintains 5% or greater voting power in a given year.²

Importantly, if the parent organization was acquired by another firm (i.e., the parent organization became, for instance, a wholly-owned subsidiary), we considered the CVC as the arm of the acquiring firm. After the acquisition, the acquiring firm supervises and coordinates the CVC operations, and thus we considered the CVC arm as controlled by a family firm if the acquirer was family-owned.³ Instead, when two firms merge we considered the merged entity as family-owned if a family controls at least 5% of equity shares in the merged firm.⁴

The literature shows that a key source of heterogeneity among family firms arises from whether the family firm is led by a family member or a “professional” non-family CEO (e.g., Bandiera et al. 2018; Bennedsen et al. 2007; Mullins and Schoar 2016). To capture this difference,

² An example is Comcast Corporation, which is the parent organization of Comcast Ventures. Comcast Corporation was founded in 1963 by Ralph J. Roberts with his two business partners, Daniel Aaron and Julian A. Brodsky. In 2000 the founder, chairman and CEO Ralph J. Roberts and his son Brian L. Roberts (vice-chairman of the board) owned 3% of the shares but approximately 85% of the voting power of the two classes of the company's voting common stock combined. In our analyses, we considered Comcast Corporation as a family firm, and hence Comcast Ventures as a family CVC arm.

³ For example, CNET Networks Inc. was founded by Shelby Bonnie and Halsey Minor. As of 2007, Shelby Bonnie owned 7% shares of the company; thus, until 2007 we considered CNET Networks Inc. as a family firm. In 2008, the company was acquired by CBS Corp. for \$1.8 billion. CBS Corp., founded as Viacom by Sumner Redstone in 1971, was still controlled by the Redstone family. Thus, after the acquisition by CBS Corp, we still considered the parent organization of the CVC arm of CNET Networks Inc. to be a family firm.

⁴ For example, Tribune Ventures was the CVC arm of the media company Tribune Company. The latter was not family owned at the beginning of 2000. In June 2000, Tribune Company acquired Times Mirror Company in a US \$8.3 billion merger transaction. Notably, the Chandler/Otis family that ran Times Mirror Company since the 1890s controlled 24% of Times Mirror Company and had majority voting rights in 2000. Following the merger, the Chandler/Otis family ended up with about 20% of Tribune Company's stocks. Thus, after the merger we considered Tribune Ventures as controlled by a family firm.

we built a dummy variable *Family CEO* that equals one if the CEO at the time of the deal was a family member, and zero otherwise. Information about family membership was retrieved using surname affinity and media sources on the biographies of each CEO.

In the last step of the data-gathering process, we employed the Compustat dataset to obtain financial data for each (listed) parent organization in our sample.

2.2. Summary statistics

Our final sample comprises a total of 4,834 ventures involved in 8,942 CVC deals made by 306 listed US parent companies from 2000 to 2017.⁵ Panel A of Table 1 shows that 26.9% (64.7%) of ventures received funding exclusively from family (non-family) CVCs. The remaining 8.4% received funding from both family and non-family CVCs. Panel B shows that family owners represent 28.1% of deals and 36.6% of parent organizations in our sample.⁶ 35% of all parent companies (and 65.2% of family-owned parent companies) are led by a family CEO. Thus, almost one third of the entire CVC activity in the US during our sample period involved family-controlled firms.

[[[INSERT TABLE 1 HERE]]]

Figure 1 illustrates how family and non-family CVC activity (in terms of amount invested and number of deals) has evolved during the sample period. As shown, CVC investment exhibited a marked decline in the aftermath of the dot-com bubble and then a significant uptake from 2010 onward. Family CVC has become relatively more important over time: the proportion of deals involving a family CVC increased from less than 20% in 2005 to almost 40% in 2017. Next, we

⁵ The number of deals exceeds the number of ventures because each venture typically receives more rounds of financing (and is thus involved in more than one deal).

⁶ For the sake of comparison, Anderson et al. (2012) found that 38.1% of the 2,000 largest US companies between 2003 and 2007 were family-owned.

explore the industry distributions of family and non-family CVC investments. As Figure 2 shows, family CVCs are less present in younger and more dynamic industries (such as life science and biotechnology), and much more present in more consolidated industries (such as computers).

[[[INSERT FIGURE 1 HERE]]]

[[[INSERT FIGURE 2 HERE]]]

Table 2 presents summary statistics for the main variables used in the empirical analysis. In Panel A, we report venture-level characteristics. As shown, 22% of the ventures are located outside of the US, 28% are less than 19 months old (at the date of the first CVC investment round), and 15% have revenues (at the date of the first CVC investment round).⁷

In Panel B, we provide information at the deal level. The data show that around 28% of deals involve ventures in the same US state of the CVC's parent organization, and the average distance between the city of the parent organization and that of the venture is 3,049 kilometers (or 1,908 kilometers excluding non-US ventures). 37% of the deals involve ventures in the same industry of the CVC's parent organization. The vast majority of deals (88.4%) is syndicated, and the average syndicate is composed by four partners.⁸

In Panel C, we describe a set of parent firm's characteristics (at the year of the last investment). Specifically, we compute the logarithm of one plus the years since the first deal made by the CVC, and the logarithm of parent firm's revenues, which account for differences in network size and experience in corporate venturing. Then, we compute the ratio of cash and equivalent securities to total assets in order to account for differences in the availability of liquid holdings. Focusing on internal investment activities, we compute the ratio of capital expenditures

⁷ We consider ventures whose age is not available in Eikon as young ventures.

⁸ Following the literature, we define syndication as a joint investment by multiple VCs at the same date (Brander et al. 2002). For robustness, we have also used a measure of co-investment defined as the investment by multiple funds in the same year. Our results remain largely unchanged.

to total assets, and R&D intensity measured as the ratio between R&D expenditures and sales.⁹ To account for differences in capital structure, we compute financial leverage as the ratio of the book value of total debt to total assets, whereas we measure operating profitability by means of the return on assets (ROA), i.e. the ratio of earnings before interest and taxes to total assets (winsorized at the 2% level). Lastly, we measure a firm's industry diversification by means of the Herfindahl-Hirschman index of concentration of revenues across each 2-digit SIC industry (drawn from Compustat Segment). Using these variables as controls in our regression analysis is helpful to remove systematic differences between family and non-family CVC and thus ameliorate omitted factor concerns.

[[[INSERT TABLE 2 HERE]]]

In Table 3, we report the *t*-tests differences between family and non-family CVCs. Panel A shows that family CVCs are significantly less (more) likely to invest in foreign (young) ventures. The evidence about ventures' age seems also confirmed by the lower presence of revenue-generating ventures in family CVCs' portfolios. Panel B shows that family CVCs invest more in ventures that are geographically closer (i.e., located in the same state or at a lower physical distance), and that operate in the same industry of the parent firm. Family CVCs also join more often syndicated deals (with a higher number of partners), and invest a larger amount of money, on average, in a given deal. Finally, Panel C shows that family parent organizations are less experienced, smaller, less indebted, less profitable, less diversified, and hold more liquid assets; by contrast, there are no significant differences in internal investment and R&D intensity.

[[[INSERT TABLE 3 HERE]]]

⁹ Almost 34% of parent companies do not display R&D expenditures in Compustat; when the information on R&D expenditures was missing, we followed Koh and Reeb (2015) and used the 2-digit SIC industry average for the computation of R&D intensity. If no firms in the 2-digit SIC reported R&D expenditures, we consider R&D intensity equals to 0. Following again Koh and Reeb (2015), we also compute a dummy equal to one for missing R&D.

In unreported analyses, we tested whether family and non-family CVCs have a different likelihood to be lead investors in their deals, and we found no significant differences. We also compared the propensity of family and non-family firms to carry out CVC activities via a dedicated (external) vehicle or a unit internal to the main organization.¹⁰ Results indicate that family firms are slightly more likely to make internal CVC activities; when using a dedicated vehicle, they tend to locate it geographically closer to the parent company.

3. Results

3.1. How do family CVCs invest?

Existing works show that syndication is an effective strategy to obtain an ‘informative second opinion’ on a venture (Brander et al. 2002, Lerner, 1994) and access complementary assets, skills, and networks of syndicate partners (Hochberg et al. 2007). In this section, we test whether the syndication behavior of family CVCs is different from that of non-family CVCs.

We use as dependent variables: (i) a dummy that equals one if a deal was syndicated (zero otherwise), and (ii) a count variable measuring the number of syndicate partners. The key explanatory variable is the dummy *Family Firm* that equals one for family CVCs, and zero for non-family CVCs. As anticipated, we control for parent companies’ experience in CVC so as to remove potential differences between family and non-family CVCs in terms of networking and deal flow (Kaplan and Schoar 2005; Hochberg et al. 2007; Lindsey 2008), fundraising ability (Nahata 2008), and the nature of interactions with portfolio companies (Bottazzi et al. 2008). Moreover, we control for parent companies’ size, asset liquidity, capital expenditures, capital

¹⁰ Following Benson and Ziedonis (2009), we made this classification based on whether the fund name evokes a dedicated unit external to the parent’s organization (e.g., “Dell Ventures” or “Intel Capital”). In our sample, 47% of the parent firms have a dedicated unit.

structure, ROA, industry diversification, and R&D intensity in order to account for differences in a significant range of corporate policies (see the previous section for the construction of these variables). Finally, we control for year fixed effects, which capture time trends in syndication patterns; industry fixed effects at the level of the venture (as defined in Figure 2) because syndication is more common in certain industries; and state fixed effects at the level of the CVC's parent headquarter, because firms in certain locations might have a higher propensity to syndicate due to, for instance, geographic networks.

Table 4 presents the results of OLS (columns 1, 3, and 4) and Poisson regressions (column 2). As shown in column (1), family control increases the likelihood of syndication by 3.1 percentage points. This finding is consistent with our expectation that family firms have a higher propensity to share risk in their corporate venturing activities. Notably, our set of controls reduces the concern that this finding occurs due to family firms having a more limited CVC expertise (which raises the importance of tapping into syndicating partners' knowledge and resources). Column (2) shows that not only family CVCs are more likely to syndicate, but also that the number of syndicate partners is higher in deals that involve family CVCs.

In columns (3) and (4) we estimate the likelihood of syndication separately for young ventures (aged less than 19 months) and old ventures (aged more than 18 months). Results indicate that family CVCs are 7.2 percentage points more likely to syndicate (as compared to non-family CVCs) when investing in young ventures. When the target is a more mature venture, the higher likelihood of syndication by family CVCs shrinks to 2.2 percentage points.

[[[INSERT TABLE 4 HERE]]]

Next, we explore whether family CVCs tend to syndicate more with certain types of partners. In Table 5, we provide the frequency of syndication partners for family and non-family CVCs.

As shown, family CVCs syndicate significantly more with financial institutions (private equity firms, banks or insurance companies) as well as angel investors and incubators (who may arguably have more specialized information on the target ventures). Conversely, family CVCs syndicate less with governmental investors.

[[[INSERT TABLE 5 HERE]]]

Going beyond the raw comparison between family and non-family CVCs, in Table 6 we replace the *Family Firm* dummy with two dummies, *Professional CEO Family Firm* and *Family CEO Family Firm*, that equal one when the family parent is led by a non-family (professional) CEO or a family CEO, respectively. The reference category is represented by non-family firms. As shown, the syndication patterns of CVCs whose family parents' CEO is a non-family (professional) CEOs are not different from non-family firms. By contrast, when the family parents are led by a family CEO the likelihood of syndication is 4.9 percentage points higher. This effect increases (decreases) to +8.8 percentage points (4.4 percentage points) when the target venture is young (old).

[[[INSERT TABLE 6 HERE]]]

3.2. *Where do family CVCs invest?*

Previous studies have shown that geographic proximity to portfolio companies reduces moral hazard by means of improved monitoring and enhanced information exchange (e.g., Bernstein et al. 2016; Sorenson and Stuart 2001). In this section, we test the influence of families on the geographic selection of target ventures.

We start by using a dependent variable that equals one if the venture is headquartered in the same state of the CVC's parent company, and zero otherwise. Alternatively, we use: (i) the natural logarithm of one plus the distance in kilometers between the city where the CVC's parent

company is headquartered and the city where the venture is located, and (ii) a dummy that equals one for foreign ventures (located outside of the US). Table 7 presents the results.

[[[INSERT TABLE 7 HERE]]]

Column (1) shows that family CVCs are 4.9 percentage points more likely to invest in ventures located in the same state of the parent company. Column (2) shows that the distance between the CVC's parent company and the funded venture is 37.1% lower when the deal is made by a family CVC arm. Column (3) shows that family CVCs are 7 percentage points less likely to invest across the US border. In columns (4)-(9) we re-estimate these models separately for young and old ventures (i.e., below or above the 18 months cutoff) and find that family control has an economically stronger influence when informational opaqueness is higher, that is, in the case of younger ventures.

Similar to geographic proximity, investing in the same industry of the parent company is subject to lower information asymmetries (Eckbo et al. 2018) since CVCs can leverage on the industry-specific knowledge and expertise of the parent company to better assess the value of entrepreneurial ventures. For the analysis, we use as dependent variable a dummy that equals one if the venture operates in the same industry of the CVC's parent company (using the classification illustrated in Figure 1), and zero otherwise. Results are presented in Table 8.

[[[INSERT TABLE 8 HERE]]]

As shown in column (1), family CVCs are 24.4 percentage points more likely to invest in ventures operating in the same industry of the CVCs' parent companies. Columns (2) and (3) further show that this finding is slightly more pronounced for young ventures.

As in Table 6, we test whether having a family or a professional CEO matters. Results in Tables 9 and 10 show that the above findings on geographic and industry proximity are largely driven by CVCs whose parent company is both family-owned and led by a family CEO.

[[[INSERT TABLE 9 HERE]]]

[[[INSERT TABLE 10 HERE]]]

3.3. Family CVC and performance

Several works have analyzed the impact of CVC on ventures' performance (e.g., Chemmanur et al. 2014; Colombo and Murtinu 2017). A tenet of this literature is that being backed by a CVC grants access to parent companies' assets and resources, which are critical for the success of new ventures. In this section, we ask whether having a family behind the CVC arm is beneficial or detrimental to the performance of the venture. Following the existing literature (e.g., Gompers et al. 2009), we focus on the occurrence of an IPO or acquisition as a measure of successful exit. Our sample includes 4,413 ventures that received CVC funding in the period from 2000 to 2017.¹¹ Of those, 37% experienced a successful exit via IPO or trade sale.

The dependent variable is a dummy that equals one if the venture successfully exited, and zero otherwise. As explanatory variables, we adopt different measures of the extent to which a venture received family CVC funding. Specifically, in column (1) we use: (i) *Mix Family & Non-Family CVC*, i.e. a dummy that equals one if the venture received funding from both family and non-family CVCs, and (ii) *Only Family CVC*, i.e. is a dummy that equals one for ventures backed

¹¹ Since we cannot ascertain whether the ventures were backed by family- non non-family CVC before 2000, we exclude ventures that received CVC funding before 2000. This explains why the sample in this analysis contains 4,431 ventures rather than 4,834 ventures as described in Table 1. For companies funded by the same CVC in different years, we count the CVC investment only once. In an alternative test, we consider the number of times a CVC invested in a focal venture (rather than the unique number of CVCs that invested in the venture). Results are robust to this alternative measure. In very few cases, the CVC's parent company changes status from family to non-family. In these cases, we considered whether the CVC's parent was classified as family firm at the time of the first investment, though our results are robust to the exclusion of those cases.

by family CVCs only (the baseline category is represented by ventures backed by non-family CVCs only). In column (2), we use *Family Firm Major*, i.e. a dummy that equals one if at least half of the CVCs that backed the venture were family-owned. In column (3), we use *% Family Firm*, i.e. the ratio between family CVCs and all CVCs that backed the venture.

As control variables we include the logarithm of one plus the number of CVCs that invested in the venture during its life, the logarithm of one plus the venture's age (in months) at the date of the latest CVC financing round,¹² and the logarithm of one plus the total dollar amount received by the venture from all VCs during its life span. We further include year fixed effects (where the year is that of the latest VC financing round), industry fixed effects to control for time shocks and sectoral differences in exit, and state fixed effects to control for geographic heterogeneity.¹³

Results consistently indicate that family CVC is significantly associated with a higher likelihood of successful exit. An interesting result in column (1) is that being backed *only* by family CVCs increases the likelihood of success by 4.3 percentage points (as compared to the baseline category of ventures backed only by non-family CVCs).¹⁴

[[[INSERT TABLE 11 HERE]]]

Next, we focus on ventures' long-run performance, that is, in the years following an IPO. We obtain from Compustat financial data on 194 ventures which went public (out of the 4,431 ventures used in the previous analysis). Our dependent variable is the Tobin's Q (winsorized at the 2% level), which reflects market expectations on future earnings and is thus appropriate in

¹² When the age of the venture was not available in Eikon, we considered it to be zero. Our results are robust to the exclusion of ventures whose age is not available in Eikon.

¹³ Non-US ventures are grouped into a foreign dummy.

¹⁴ In the case of acquired ventures, we checked for the identity of the acquirer. As shown by Benson and Ziedonis (2010), a key motive for engaging in CVC activities is the identification of acquisition opportunities. We found that the parent companies of family CVCs are more likely to acquire their portfolio companies (though the difference with non-family CVCs is not statistically significant). We re-estimated the analysis in Table 11 excluding the ventures acquired by the CVCs' parent companies: our findings hold and are available upon request.

our setting. By contrast, measures of accounting performance are not ideal for newly listed firms, as they oftentimes incur in financial losses (in our sample roughly 70% of the venture-year observations have a negative ROA). We include the same explanatory variables as those in Table 11 plus the set of controls including the logarithm of sales, asset liquidity, capital expenditures, debt, ROA, industry diversification, and R&D intensity. Notice that we can now use these controls since they are available from Compustat but are often zero or missing in Eikon (i.e. the data source employed in Table 11). While our data for this analysis are longitudinal (i.e. they encompass, on average, five post-IPO years for each venture), we do not include firm fixed effects because the explanatory variables capture the cross-sectional reliance on family vs. non-family CVC at the time of the IPO. Standard errors are clustered at the firm level to adjust for both heteroskedasticity and firm-level serial correlation. Results in Table 12 show that - across all specifications - family CVC is associated with significantly higher ventures' post-IPO performance. For instance, the coefficient in column (1) indicates that exclusive family CVC funding is associated with a unit increase in Tobin's Q.

[[[INSERT TABLE 12 HERE]]]

One of the reasons why family CVC-backed ventures exhibit higher financial performances may be the family CVCs' longer time-horizon, which makes them better able to nurture ventures' innovation. To establish this relationship, we use as dependent variables the *value* and *number* of a venture's patents in the post-IPO years (i.e. using the same sample of Table 12 but dropping non-US firms for which data on patenting activities were not available). The data are sourced from Kogan et al. (2017), which contain a measure of "the present value of the monopoly rents associated with that patent" computed by using movements in a firm's stock price in the days after a patent is issued to the firm (see Kogan et al. 2017 for details). Since the patents' value

does not take negative values but has a density mass at zero (i.e., firms that did not file any patent in a given year) we follow Silva and Tenreyro (2006) and use Poisson regressions for both dependent variables. Standard errors are clustered at the firm level to adjust for both heteroskedasticity and firm-level serial correlation.

Results in Table 13 show that family CVC is positively associated with the *value* of a venture's patents post-IPO (columns 1-3) while it does not increase the *level* of patenting activity (columns 4-6). Collectively, these findings suggest that the higher value of family CVC-backed ventures' patent portfolios is driven by the ability of family firms to spur ventures' investment in higher-quality innovation projects (rather than pushing ventures to increase patent production).

[[[INSERT TABLE 13 HERE]]]

Having shown that family CVC spurs ventures' innovation and performance, we study the implications of CVC activities for the performance of the parent firm. We use the Tobin's Q of the parent company as dependent variable, and the main explanatory variables are the logarithm of one plus the number of CVC deals made in the focal year (*Ln N. deals*), and the logarithm of one plus the dollar value of the deals made in the focal year (*Ln Amount invested*). For this analysis we include the US listed firms with at least one CVC deal in the sample period. We have 306 firms which are observed for 13 years, on average (yielding around 4,000 observations). Since the sample is longitudinal and the explanatory variables of interest are time-varying, we can augment the regressions with parent-firm fixed effects. Standard errors are clustered at the parent firm level.

As shown in Table 14, the direct effect of CVC activities on parent firms' value ranges from insignificant to negative, possibly owing to the fact that CVC activities reflect the tendency of managers to engage in perks or in empire building (Tian and Ye 2020), or managerial hubris

(Benson and Ziedonis 2010). However, the interaction between CVC activity and the family dummy is positive and statistically significant at the 10% level. In other words, family firms appear to be slightly better able than non-family firms to generate shareholder value from their venturing activities.

[[[INSERT TABLE 14 HERE]]]

3.4. CVC investment during a financial crisis

Previous studies have shown that corporate investment plummeted during the 2008-10 financial crisis (e.g., Duchin et al. 2010; Campello et al. 2010). In this section, we use a differences-in-differences model to test whether family control influenced the extent of CVC activities during the financial crisis. The first explanatory variable for this analysis is the dummy variable *Crisis* that equals one for the years 2008-2010, and zero for the pre-crisis period of 2005-2007; the other is the dummy variable *Family Firm* that equals one for family parents, and zero for non-family parents. The interaction term between these two dummies will tell us whether having a family-controlled parent led to a different amount of CVC activities around the financial crisis (as compared to having a non-family parent). We use two alternative dependent variables: (i) the logarithm of one plus the number of CVC deals made in the focal year ($\ln N. deals$), and (ii) the logarithm of one plus the dollar value of the deals made in the focal year ($\ln Amount invested$). In addition to the standard firm-level controls, we include year and firm fixed effects in order to control for both time differences and corporate heterogeneity between family and non-family firms. Standard errors are clustered at the parent firm level.

[[[INSERT TABLE 15 HERE]]]

Results in Table 15 show that the estimated coefficient of *Crisis* is negative and statistically significant, confirming that the crisis made firms refrain from CVC investments. However, the

estimated coefficient of the interaction between *Family Firm* and *Crisis* is positive and statistically significant, and the coefficient of the interaction term is larger than the one of *Crisis*. These findings hold across the different specifications in Table 15.

A key concern for the causal interpretation of these findings is that family and non-family CVCs may have exhibited diverging investment trends prior to the financial crisis. To ameliorate this concern, we replaced the *Crisis* dummy with a placebo crisis variable that equals one in the three years before the financial crisis (i.e., 2005-2007), and zero in the former three years (i.e., 2002-2004). As shown in Table 16, the coefficient of the interaction between *Placebo Crisis* and *Family Firm* is not statistically different from zero. This lack of significance reassures us that family and non-family firms did not display diverging CVC investment patterns in the years leading to the financial crisis.

[[[INSERT TABLE 16 HERE]]]

4. Conclusion

In recent years, CVC has become an increasingly important funding source for entrepreneurial ventures. This trend has drawn the attention of many scholars who have studied how CVCs invest and nurture their ventures. Our key contribution has been to look beneath the surface of CVCs. In particular, we argued that an important yet overlooked source of influence on CVC activity is the presence of a family as controlling owner of the parent organization.

Using data on CVC activities in the US from 2000 to 2017, we provided a number of novel results to the literature. First, we documented that families matter for CVC: around one third of deals are made by CVCs that are controlled by families. Second, we showed that family CVC differs from non-family CVC in terms of investment strategy and ventures' selection. Family CVCs syndicate significantly more (especially when investing in young ventures), and invest

more in proximate ventures in terms of both geography and industry. Third, we showed that family CVC is positively associated with the likelihood of successful exits, as well as with ventures' post-IPO performance and innovation. Finally, we showed that family CVC is more resilient to a financial crisis: CVCs with a family behind the parent company invested significantly more than non-family CVCs during the 2008-10 financial crisis.

Connecting the literatures on corporate ownership and venture capital, our findings bring to light the pervasive implication of family control for corporate venturing activities. Further looking into the organizational attributes of CVCs' parent organizations represents a promising pathway to better understand some of the critical questions in the CVC literature, such as what determines the pursuit of strategic versus financial objectives, how do parent firms arrange CVC activities, and how do families structure syndicate networks.

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Figure 1. CVC activity over time

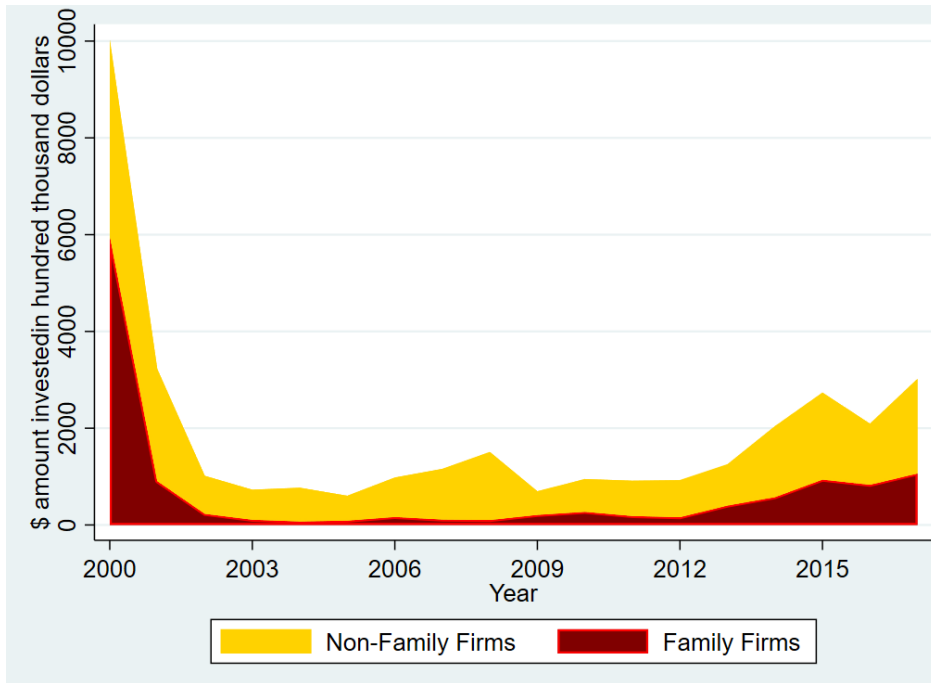
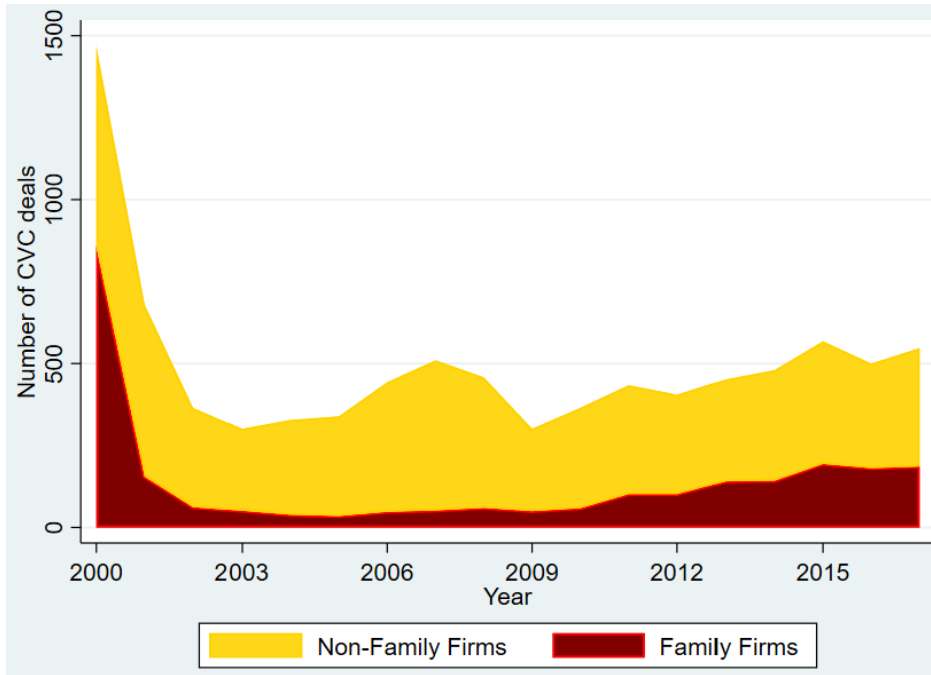


Figure 2. Industry distribution of CVC deals

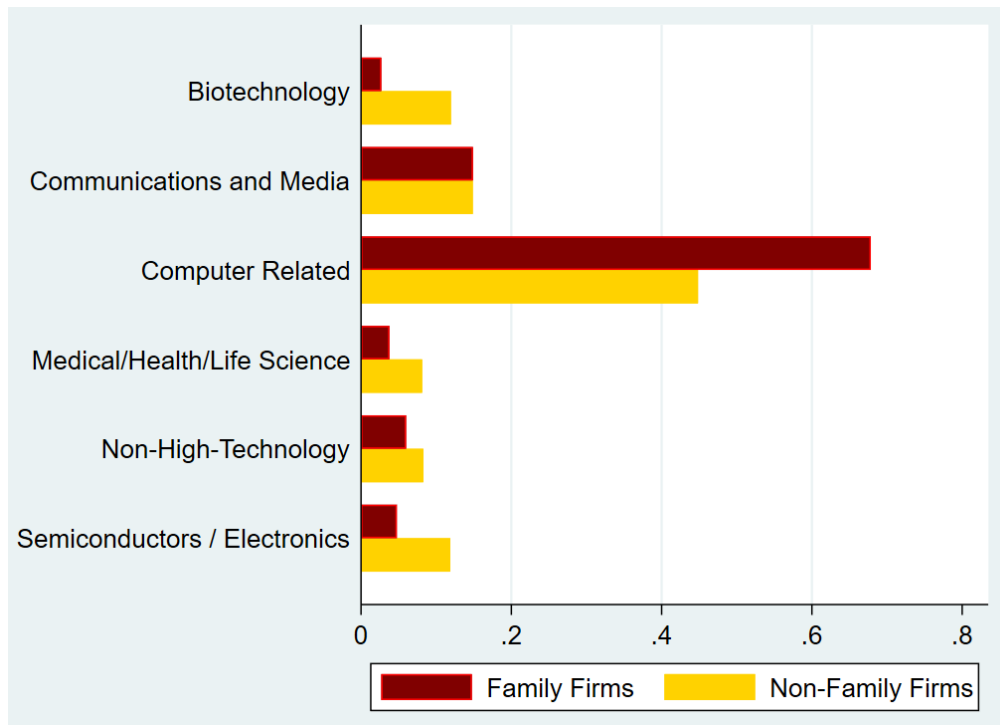


Table 1. Presence of families in CVC

<i>Panel A:</i>	Total	Both family and non-family	Only family	Only non-family
Ventures	4,834	406 (8.4%)	1,298 (26.9%)	3,130 (64.7%)

<i>Panel B:</i>	Total	Family	Non-family
Deals	8,942	2,516 (28.1%)	6,246 (71.9%)
Parent organizations	306	112 (36.6%)	194 (63.4%)

Panel A shows the total number of ventures (and relative percentages) that have received funding from both family and non-family CVCs, only family CVCs, and only non-family CVCs. Panel B shows the deals joined by and parent organizations behind family and non-family CVCs.

Table 2. Summary Statistics

<i>Panel A: Ventures</i>	N	Mean	s.d.	Median	min	max
Foreign Company	4,834	0.220	0.414	0	0	1
Ln (Venture Age)	4,834	3.288	1.468	3.638	0	7.299
Young Venture	4,834	0.281	0.449	0	0	1
Ln (Investment Round)	4,834	0.751	0.673	0.693	0	2.944
Company with Revenues	4,834	0.154	0.361	0	0	1

Summary statistics of CVC-backed ventures at the first CVC investment round. *Foreign Company* is a dummy that equals one if the venture is headquartered outside the US. *Ln (Venture Age)* is the natural logarithm of one plus the age (in months) of the venture at the time of the deal. When the age is not available in Eikon we consider it to be zero. *Young Venture* is a dummy that equals one if the venture's age was less than 19 months at the time of the deal. *Ln (Investment Round)* is the natural logarithm of one plus the number of financing rounds the venture has received. *Company with Revenues* is a dummy that equals one if the venture had revenues at the time of the deal. When the revenues are not available in Eikon we consider revenues to be zero.

<i>Panel B: Deals</i>	N	Mean	s.d.	Median	min	max
Same State	8,942	0.283	0.451	0	0	1
Distance	8,942	6.629	2.495	7.740	0	9.754
Same Industry	8,571	0.371	0.483	0	0	1
Syndication	8,942	0.884	0.321	1	0	1
N. Syndicating Partners	8,942	4.247	3.414	4	0	43
Ln (Amount Invested)	8,942	12.553	5.075	14.413	0	20.469

Summary statistics of CVC deals. *Same State* is a dummy that equals one if the venture is headquartered in the same state of the CVC's parent company. *Distance* is the natural logarithm of one plus the distance in kilometers between the city where the venture is located and the city where the CVC's parent company is headquartered. *Same Industry* is a dummy that equals one if the venture operates in the same industry of the CVC's parent company (parent companies whose two-digit SIC code is 99 have a missing value). *Syndication* is a dummy that equals one if the venture was funded at the same exact date by multiple VCs. *N. Syndicating Partners* is the number of VCs who joined the syndicated investment. *Ln (Amount Invested)* is the natural logarithm of one plus the US dollar amount provided by all VCs who join the deal.

<i>Panel C: Parent firms</i>	N	Mean	s.d.	Median	min	max
Ln (Experience)	306	1.860	1.116	1.946	0	3.912
Ln (Sales)	303	7.848	2.403	7.915	0	12.199
Cash/Assets	295	0.141	0.142	0.107	0	0.995
Capex/Assets	300	0.040	0.053	0.025	0	0.472
R&D Intensity	306	0.104	0.103	0.074	0	0.346
Unreported R&D	306	0.337	0.473	0	0	1
Debt/Assets	286	0.233	0.217	0.200	0	1.246
ROA	303	0.041	0.110	0.062	-0.225	0.253
H-Index	300	0.694	0.305	0.728	0.126	1

Summary statistics of the CVCs' parent companies at the year of the first CVC deal. *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry.

Table 3. Average differences

<i>Panel A: Ventures</i>	Family Firm	Non Family Firm	Difference: Family-Non Family
Foreign Company	0.118	0.246	-0.127*** (0.000)
Ln (Venture Age)	3.050	3.398	-0.347*** (0.000)
Young Venture	0.358	0.243	0.114*** (0.000)
Ln (Investment Round)	0.751	0.767	-0.016 (0.400)
Company with Revenues	0.130	0.167	-0.037*** (0.000)

<i>Panel B: Deals</i>	Family Firm	Non Family Firm	Difference: Family-Non Family
Same State	0.329	0.266	0.063*** (0.000)
Distance	6.215	6.791	-0.575*** (0.000)
Same Industry	0.482	0.326	0.156*** (0.000)
Syndication	0.915	0.871	0.044*** (0.000)
N. Syndicating Partners	4.481	4.155	0.326*** (0.000)
Ln (Amount Invested)	13.251	12.279	0.972*** (0.000)

<i>Panel C: Parents</i>	Family Firm	Non Family Firm	Difference: Family-Non Family
Ln (Experience)	1.562	1.989	-0.427*** (0.002)
Ln (Sales)	6.917	8.247	-1.329*** (0.000)
Cash/Assets	0.174	0.127	0.047** (0.010)
Capex/Assets	0.044	0.039	0.005 (0.454)
R&D Intensity	0.110	0.101	0.009 (0.481)
Unreported R&D	0.413	0.304	0.109* (0.064)
Debt/Assets	0.195	0.251	-0.055** (0.045)
ROA	-0.001	0.059	-0.060*** (0.000)
H-Index	0.765	0.664	0.101*** (0.008)

Foreign Company is a dummy that equals one if the venture is headquartered outside the US. *Ln (Venture Age)* is the natural logarithm of one plus the age (in months) of the venture at the time of the deal. When the age is not available in Eikon we consider it to be zero. *Young Venture* is a dummy that equals one if the venture's age was less than 19 months at the time of the deal. *Ln (Investment Round)* is the natural logarithm of one plus the number of financing rounds the venture has received. *Company with Revenues* is a dummy that equals one if the venture had revenues at the time of the deal. When the revenues are not available in Eikon we consider revenues to be zero. *Same State* is a dummy that equals one if the venture is headquartered in the same state of the CVC's parent company. *Distance* is the natural logarithm of one plus the distance in kilometers between the city where the venture is located and the city where the CVC's parent company is headquartered. *Same Industry* is a dummy that equals one if the venture operates in the same industry of the CVC's parent company (parent companies whose two-digit SIC code is 99 have a missing value). *Syndication* is a dummy that equals one if the venture was funded at the same exact date by multiple VCs. *N. Syndicating Partners* is the number of VCs who joined the syndicated investment. *Ln (Amount Invested)* is the natural logarithm of one plus the US dollar amount provided by all VCs who join the deal. *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Column (3) reports the *t*-tests on the differences between columns (1) and (2). *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4. How do family CVCs invest?

Dependent variables:	Syndication	N. Syndicating Partners	Syndication	Syndication
	Full sample		Young ventures	Old ventures
	(1)	(2)	(3)	(4)
Family Firm	0.031*** (0.001)	0.063** (0.011)	0.072*** (0.000)	0.022* (0.034)
Ln (Experience)	0.018*** (0.001)	0.021* (0.087)	0.015 (0.210)	0.017*** (0.004)
Ln (Sales)	0.009*** (0.001)	0.015** (0.024)	0.015** (0.024)	0.007** (0.016)
Cash/Assets	-0.007 (0.858)	-0.111 (0.256)	0.070 (0.409)	-0.028 (0.510)
Capex/Assets	-0.503*** (0.000)	-1.342*** (0.000)	-0.746*** (0.000)	-0.377*** (0.000)
R&D Intensity	-0.178*** (0.001)	-0.395*** (0.004)	-0.214* (0.076)	-0.150*** (0.009)
Unreported R&D	0.010 (0.446)	-0.049 (0.139)	-0.003 (0.929)	0.014 (0.349)
Debt/Assets	0.005 (0.852)	0.186** (0.016)	0.021 (0.771)	-0.003 (0.920)
ROA	-0.238*** (0.000)	-0.089 (0.529)	-0.032 (0.772)	-0.322*** (0.000)
H-Index	0.077*** (0.000)	0.137*** (0.000)	0.135*** (0.000)	0.065*** (0.000)
Observations	8,435	8,435	1,716	6,719
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes

Results are obtained by means of OLS (Columns 1, 3, and 4) and Poisson (Column 2) regressions. In Column (1), the dependent variable is a dummy that equals one if a deal is syndicated (i.e. if multiple VCs invested in the venture at the same date). In Columns (3) and (4), the dependent variables are dummies that equal one for syndicated deals targeting young ventures or old ventures (i.e., aged at least 19 months at the time of the deal), respectively. In Column (2) the dependent variable is the number of syndicating partners (i.e. the number of VCs that invested in the venture at the same date). *Family Firm* is a dummy that equals one if the parent company is family owned (i.e., if a 5% or larger share of the firm's equity are in the founder's and/or her heirs' hands). *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** *p*<0.01, ** *p*<0.05, * *p*<0.1

Table 5. Syndication partners

	Family Firm	Non Family Firm	Difference: Family-Non Family
Corporation	0.419	0.411	0.009 (0.456)
Private Equity	0.840	0.797	0.043*** (0.000)
Banks/Insurance	0.171	0.137	0.034*** (0.000)
Government	0.027	0.051	-0.025*** (0.000)
Individuals/Angel Investor	0.169	0.095	0.073*** (0.000)
Advisors/Investment Management	0.103	0.092	0.011 (0.102)
Incubator	0.032	0.019	0.012*** (0.000)

Corporation is a dummy that equals one if at least another CVC joined the syndicate. *Private Equity* is a dummy that equals one if at least one private equity firm joined the syndicate. *Banks/Insurance* is a dummy that equals one if at least one bank/insurance firm joined the syndicate. *Government* is a dummy that equals one if at least one government affiliated program joined the syndicate. *Individuals/Angel Investor* is a dummy that equals one if at least one individual or angel investor joined the syndicate. *Advisors/Investment Management* is a dummy that equals one if at least one private equity advisor or investment management firm joined the syndicate. *Incubator* is a dummy that equals one if at least one incubator firm joined the syndicate. Column (3) reports the *t*-tests on the differences between columns (1) and (2). *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6. How Do Family CVCs Invest? The role of CEOs

Dependent variables:	Syndication	N. Syndicating partners	Syndication	Syndication
	Full sample		Young ventures	Old ventures
	(1)	(2)	(3)	(4)
Professional CEO Family Firm	0.007 (0.562)	0.006 (0.844)	0.048* (0.070)	-0.005 (0.744)
Family CEO Family Firm	0.049*** (0.000)	0.108*** (0.000)	0.088*** (0.000)	0.044*** (0.000)
Ln (Experience)	0.019*** (0.000)	0.026** (0.041)	0.017 (0.167)	0.019*** (0.002)
Ln (Sales)	0.008*** (0.007)	0.012* (0.069)	0.014** (0.043)	0.006* (0.060)
Cash/Assets	-0.021 (0.579)	-0.155 (0.119)	0.039 (0.657)	-0.041 (0.343)
Capex/Assets	-0.500*** (0.000)	-1.320*** (0.000)	-0.743*** (0.000)	-0.368*** (0.000)
R&D Intensity	-0.182*** (0.000)	-0.399*** (0.004)	-0.222* (0.066)	-0.151*** (0.009)
Unreported R&D	0.012 (0.371)	-0.043 (0.196)	-0.003 (0.929)	0.017 (0.264)
Debt/Assets	0.015 (0.612)	0.209*** (0.007)	0.031 (0.667)	0.006 (0.844)
ROA	-0.212*** (0.000)	-0.032 (0.825)	0.003 (0.980)	-0.296*** (0.000)
H-Index	0.073*** (0.000)	0.127*** (0.001)	0.128*** (0.000)	0.060*** (0.000)
Observations	8,435	8,435	1,716	6,719
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes

Results are obtained by means of OLS (Columns 1, 3, and 4) and Poisson (Column 2) regressions. In Column (1), the dependent variable is a dummy that equals one if a deal is syndicated (i.e. if multiple VCs invested in the venture at the same date). In Columns (3) and (4), the dependent variables are dummies that equal one for syndicated deals targeting young ventures or old ventures (i.e., aged at least 19 months at the time of the deal), respectively. In Column (2) the dependent variable is the number of syndicating partners (i.e. the number of VCs that invested in the venture at the same date). *Professional CEO Family Firm* and *Family CEO Family Firm* are two dummies that equal one when a family-controlled firm has a professional CEO or a family member as CEO, respectively. *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 7. Where Do Family CVCs Invest?

Dependent variable:	Same State	Distance	Foreign	Same State	Distance	Foreign	Same State	Distance	Foreign
	Full sample			Young ventures			Old ventures		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family Firm	0.049*** (0.001)	-0.371*** (0.000)	-0.070*** (0.000)	0.114*** (0.000)	-0.778*** (0.000)	-0.119*** (0.000)	0.025 (0.121)	-0.245** (0.010)	-0.058*** (0.000)
Ln (Experience)	0.002 (0.734)	0.035 (0.382)	0.016*** (0.002)	-0.017 (0.265)	0.133 (0.159)	0.015 (0.224)	0.010 (0.191)	-0.004 (0.923)	0.016*** (0.008)
Ln (Sales)	-0.010** (0.011)	0.048** (0.029)	0.006** (0.033)	-0.003 (0.692)	0.004 (0.940)	-0.003 (0.628)	-0.012*** (0.008)	0.061** (0.012)	0.008*** (0.004)
Cash/Assets	0.148*** (0.009)	-0.391 (0.241)	0.075 (0.102)	0.401*** (0.002)	-2.317*** (0.004)	-0.164 (0.115)	0.068 (0.277)	0.224 (0.528)	0.132** (0.011)
Capex/Assets	-0.351*** (0.001)	1.606** (0.018)	0.503*** (0.000)	-0.525*** (0.007)	3.169** (0.017)	0.466*** (0.002)	-0.364*** (0.006)	1.749** (0.022)	0.589*** (0.000)
R&D Intensity	0.075 (0.331)	-0.062 (0.889)	0.403*** (0.000)	0.010 (0.954)	0.442 (0.674)	0.626*** (0.000)	0.112 (0.200)	-0.347 (0.478)	0.321*** (0.000)
Unreported R&D	0.040** (0.026)	-0.015 (0.890)	0.034** (0.024)	0.122*** (0.002)	-0.940*** (0.000)	-0.001 (0.966)	0.016 (0.421)	0.267** (0.025)	0.043*** (0.010)
Debt/Assets	-0.081** (0.036)	0.353 (0.122)	-0.032 (0.324)	-0.131 (0.169)	0.657 (0.284)	-0.007 (0.927)	-0.065 (0.122)	0.284 (0.241)	-0.036 (0.322)
ROA	0.024 (0.741)	-0.154 (0.725)	0.156** (0.010)	0.120 (0.448)	-0.253 (0.801)	0.268** (0.039)	-0.021 (0.797)	-0.031 (0.949)	0.122* (0.077)

Continued in the next table

H-Index	0.049** (0.017)	-0.336*** (0.004)	-0.094*** (0.000)	0.104** (0.023)	-0.836*** (0.002)	-0.112*** (0.004)	0.034 (0.145)	-0.192 (0.144)	-0.081*** (0.000)
Observations	8,435	8,435	8,435	1,716	1,716	1,716	6,719	6,719	6,719
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Results are obtained by means of OLS regressions. In Columns (1) and (3), the dependent variables are two dummies that equal one if the venture is located in the same state of the CVC's parent company, or outside of the US, respectively. In Columns (4) and (7), the dependent variables are two dummies that equal one for deals targeting young ventures or old ventures (i.e., aged at least 19 months at the time of the deal) located in the same state of the CVC's parent company, respectively. In Columns (6) and (9), the dependent variables are two dummies that equal one for deals in foreign young ventures or foreign old ventures (i.e., aged at least 19 months at the time of the deal), respectively. In Column (2), the dependent variable is the natural logarithm of one plus the distance in kilometers between the city where the venture is located and the city where the CVC's parent company is headquartered. In Columns (5) and (8), we use the above distance splitting the sample between young and old ventures respectively (i.e., ventures younger/older than 19 months at the time of the deal). *Family Firm* is a dummy that equals one if the parent company is family owned (i.e., if a 5% or larger share of the firm's equity are in the founder's and/or her heirs' hands). *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8. Where Do Family CVCs Invest?

Dependent variable: Same industry	Full sample	Young ventures	Old ventures
	(1)	(2)	(3)
	Family Firm	0.244*** (0.000)	0.253*** (0.000)
Ln (Experience)	-0.081*** (0.000)	-0.083*** (0.000)	-0.081*** (0.000)
Ln (Sales)	0.021*** (0.000)	0.025** (0.025)	0.020*** (0.000)
Cash/Assets	-0.037 (0.542)	0.062 (0.624)	-0.076 (0.269)
Capex/Assets	-0.973*** (0.000)	-0.772*** (0.000)	-1.205*** (0.000)
R&D Intensity	0.177* (0.061)	-0.178 (0.419)	0.240** (0.022)
Unreported R&D	-0.224*** (0.000)	-0.167*** (0.001)	-0.245*** (0.000)
Debt/Assets	-0.198*** (0.000)	-0.401*** (0.001)	-0.144*** (0.009)
ROA	-0.341*** (0.000)	-0.553*** (0.001)	-0.268*** (0.005)
H-Index	0.121*** (0.000)	0.131*** (0.009)	0.116*** (0.000)
Observations	8,064	1,651	6,413
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
State dummies	Yes	Yes	Yes

Results are obtained by means of OLS regressions. In Column (1), the dependent variable is a dummy that equals one if the venture operates in the same industry of the CVC's parent company. In Columns (2) and (3), the dependent variables are two dummies that equal one for deals in young ventures or old ventures (i.e., aged at least 19 months at the time of the deal) that operate in the same industry of the CVC's parent company. *Family Firm* is a dummy that equals one if the parent company is family owned (i.e., if a 5% or larger share of the firm's equity are in the founder's and/or her heirs' hands). *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 9. Where Do Family CVCs Invest? The impact of the CEO

Dependent variable:	Same State	Distance	Foreign	Same State	Distance	Foreign	Same State	Distance	Foreign
	Full sample			Young ventures			Old ventures		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Professional CEO Family Firm	-0.007 (0.694)	0.018 (0.875)	-0.018 (0.233)	0.051 (0.233)	-0.498* (0.050)	-0.085** (0.015)	-0.018 (0.400)	0.110 (0.380)	-0.005 (0.774)
Family CEO Family Firm	0.091*** (0.000)	-0.663*** (0.000)	-0.108*** (0.000)	0.155*** (0.000)	-0.962*** (0.000)	-0.141*** (0.000)	0.060*** (0.003)	-0.530*** (0.000)	-0.101*** (0.000)
Ln (Experience)	0.006 (0.333)	0.006 (0.877)	0.012** (0.020)	-0.012 (0.422)	0.112 (0.231)	0.013 (0.317)	0.013* (0.088)	-0.029 (0.512)	0.012** (0.044)
Ln (Sales)	-0.013*** (0.001)	0.068*** (0.002)	0.008*** (0.002)	-0.007 (0.429)	0.019 (0.704)	-0.001 (0.846)	-0.014*** (0.002)	0.081*** (0.001)	0.011*** (0.000)
Cash/Assets	0.113** (0.046)	-0.152 (0.649)	0.106** (0.022)	0.322** (0.013)	-1.965** (0.017)	-0.122 (0.269)	0.048 (0.449)	0.388 (0.281)	0.157*** (0.003)
Capex/Assets	-0.345*** (0.001)	1.561** (0.022)	0.497*** (0.000)	-0.516*** (0.008)	3.129** (0.018)	0.461*** (0.002)	-0.348*** (0.009)	1.626** (0.033)	0.571*** (0.000)
Debt/Assets	-0.058 (0.130)	0.198 (0.388)	-0.053 (0.107)	-0.105 (0.271)	0.541 (0.380)	-0.021 (0.788)	-0.050 (0.238)	0.157 (0.516)	-0.055 (0.132)
ROA	0.086 (0.240)	-0.583 (0.189)	0.099 (0.107)	0.210 (0.201)	-0.655 (0.529)	0.220* (0.094)	0.020 (0.814)	-0.363 (0.453)	0.072 (0.297)
H-Index	0.038* (0.067)	-0.259** (0.030)	-0.084*** (0.000)	0.086* (0.062)	-0.756*** (0.006)	-0.102*** (0.009)	0.026 (0.274)	-0.123 (0.353)	-0.071*** (0.000)

Continued in the next table

R&D Intensity	0.066 (0.394)	0.002 (0.997)	0.411*** (0.000)	-0.011 (0.947)	0.536 (0.609)	0.638*** (0.000)	0.111 (0.207)	-0.332 (0.497)	0.323*** (0.000)
Unreported R&D	0.045** (0.013)	-0.047 (0.671)	0.029* (0.051)	0.122*** (0.002)	-0.940*** (0.000)	-0.001 (0.966)	0.021 (0.303)	0.229* (0.054)	0.037** (0.027)
Observations	8,435	8,435	8,435	1,716	1,716	1,716	6,719	6,719	6,719
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Results are obtained by means of OLS regressions. In Columns (1) and (3), the dependent variables are two dummies that equal one if the venture is located in the same state of the CVC's parent company, or outside of the US, respectively. In Columns (4) and (7), the dependent variables are two dummies that equal one for deals targeting young ventures or old ventures (i.e., aged at least 19 months at the time of the deal) located in the same state of the CVC's parent company, respectively. In Columns (6) and (9), the dependent variables are two dummies that equal one for deals in foreign young ventures or foreign old ventures (i.e., aged at least 19 months at the time of the deal), respectively. In Column (2), the dependent variable is the natural logarithm of one plus the distance in kilometers between the city where the venture is located and the city where the CVC's parent company is headquartered. In Columns (5) and (8), we use the above distance splitting the sample between young and old ventures respectively (i.e., ventures younger/older than 19 months at the time of the deal). *Professional CEO Family Firm* and *Family CEO Family Firm* are two dummies that equal one when a family-controlled firm has a professional CEO or a family member as CEO, respectively. *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 10. Where Do Family CVCs Invest? The impact of the CEO

Dependent variable: Same industry	Full sample	Young ventures	Old ventures
	(1)	(2)	(3)
Professional CEO Family Firm	0.143*** (0.000)	0.127*** (0.003)	0.145*** (0.000)
Family CEO Family Firm	0.322*** (0.000)	0.338*** (0.000)	0.305*** (0.000)
Ln (Experience)	-0.072*** (0.000)	-0.073*** (0.000)	-0.074*** (0.000)
Ln (Sales)	0.015*** (0.000)	0.018 (0.110)	0.015*** (0.001)
Cash/Assets	-0.107* (0.076)	-0.108 (0.402)	-0.125* (0.070)
Capex/Assets	-0.968*** (0.000)	-0.751*** (0.000)	-1.188*** (0.000)
R&D Intensity	0.162* (0.089)	-0.206 (0.352)	0.235** (0.027)
Unreported R&D	-0.216*** (0.000)	-0.167*** (0.001)	-0.236*** (0.000)
Debt/Assets	-0.152*** (0.003)	-0.347*** (0.004)	-0.105* (0.059)
ROA	-0.232*** (0.005)	-0.367** (0.036)	-0.191** (0.048)
H-Index	0.099*** (0.000)	0.095* (0.064)	0.097*** (0.001)
Observations	8,064	1,651	6,413
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
State dummies	Yes	Yes	Yes

Results are obtained by means of OLS regressions. In Column (1), the dependent variable is a dummy that equals one if the venture operates in the same industry of the CVC's parent company. In Columns (2) and (3), the dependent variables are two dummies that equal one for deals in young ventures or old ventures (i.e., aged at least 19 months at the time of the deal) that operate in the same industry of the CVC's parent company. *Professional CEO Family Firm* and *Family CEO Family Firm* are two dummies that equal one when a family-controlled firm has a professional CEO or a family member as CEO, respectively. *Ln (Experience)* is the natural logarithm of one plus the years since the first deal made by the CVC. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 11. Impact of Family CVC on Exit Success

Dependent variable: Successful exit			
	(1)	(2)	(3)
Mix Family & Non-Family CVC	0.019 (0.535)		
Only Family CVC	0.043*** (0.007)		
Family CVC Major		0.039*** (0.009)	
% Family CVC			0.041*** (0.009)
Ln (Number CVCs)	0.045 (0.293)	0.035 (0.327)	0.043 (0.230)
Ln (Age)	0.043*** (0.000)	0.043*** (0.000)	0.043*** (0.000)
Ln (Total Funds)	0.013*** (0.000)	0.013*** (0.000)	0.013*** (0.000)
Observations	4,431	4,431	4,431
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
State dummies	Yes	Yes	Yes

Results are obtained by means of OLS regressions. The dependent variable is a dummy that equals one if the venture went public or was acquired. *Mix Family & Non-Family CVC* is a dummy that equals one if the venture received CVC funding from both family and non-family-controlled CVCs. *Only Family Firm* is a dummy that equals one if the venture received CVC funding from family-controlled CVCs only. *Family Firm Major* is a dummy that equals one if at least half of the CVCs that invested in the venture were family-controlled. *% Family Firm* is the ratio of family CVCs and all CVCs that backed the venture. *Ln (Number CVCs)* is the natural logarithm of the number of CVCs that backed the venture. *Ln (Age)* is the logarithm of the venture's age at the date of its latest CVC financing round. *Ln (Total Funds)* is the natural logarithm of one plus the US\$ amount received by the venture from all VCs. Regressions include year fixed effects, venture-level industry, and state fixed effects. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 12. Impact of Family CVC on Venture' Financial Performance Post-IPO

Dependent variable: Tobin's Q			
	(1)	(2)	(3)
Mix Family & Non Family CVC	0.532 (0.172)		
Only Family CVC	1.197*** (0.000)		
Family CVC Major		1.018*** (0.000)	
% Family CVC			1.152*** (0.000)
Ln (Number CVCs)	-0.792 (0.111)	-1.000** (0.035)	-0.831* (0.067)
Ln (Age)	-0.065 (0.771)	-0.073 (0.744)	-0.069 (0.755)
Ln (Total Funds)	0.036 (0.301)	0.032 (0.337)	0.032 (0.328)
Ln (Sales)	0.258*** (0.001)	0.252*** (0.002)	0.257*** (0.001)
Cash/Assets	1.262*** (0.007)	1.247*** (0.007)	1.263*** (0.006)
Capex/Assets	2.196 (0.362)	2.116 (0.382)	2.240 (0.351)
R&D Intensity	0.009 (0.555)	0.008 (0.593)	0.009 (0.571)
Unreported R&D	-1.029*** (0.001)	-0.929*** (0.001)	-1.005*** (0.001)
Debt/Assets	0.310*** (0.000)	0.318*** (0.000)	0.310*** (0.000)
ROA	-1.089** (0.017)	-1.090** (0.019)	-1.089** (0.017)
H-Index	0.552 (0.360)	0.584 (0.345)	0.645 (0.301)
Observations	1,006	1,006	1,006
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
State dummies	Yes	Yes	Yes

Results are obtained by means of OLS regressions. The dependent variable is Tobin's Q (winsorized at the 2% in each tail of its distribution). *Mix Family & Non-Family CVC* is a dummy that equals one if the venture received CVC funding from both family and non-family-controlled CVCs. *Only Family CVC* is a dummy that equals one if the venture received funding from family-controlled CVCs only. *Family CVC Major* is a dummy that equals one if the majority of CVCs that invested in the venture were family-controlled. *% Family CVC* is the ratio of family CVCs and all CVCs that backed the venture. *Ln (Number CVCs)* is the natural logarithm of the number of CVCs that backed the venture. *Ln (Age)* is the logarithm of the venture's age at the date of its latest CVC round. *Ln (Total Fund)* is the natural logarithm of one plus the amount received by the venture from all VCs (in million US\$). *Ln (Sales)* is the natural logarithm of one plus the parent company's sales (in million US\$). *Cash/Assets* is the ratio of cash holdings to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company; when R&D is missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year dummies, venture-level industry dummies, and parent-level state dummies. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 13. Impact of Family CVC on Ventures' Innovation Post-IPO

Dependent variable:	Patent value			Patent count		
	(1)	(2)	(3)	(4)	(5)	(6)
Mix Family & Non Fam	0.325 (0.430)			0.086 (0.761)		
Only Family Firm	0.807** (0.014)			0.212 (0.478)		
Family Firm Major		0.722** (0.018)			0.208 (0.449)	
% Family Firm			0.840** (0.014)			0.209 (0.477)
Ln (Number CVCs)	-0.605 (0.469)	-1.186** (0.038)	-0.683 (0.239)	0.520 (0.230)	0.434 (0.133)	0.505* (0.061)
Ln (Age)	-1.418*** (0.006)	-1.520*** (0.004)	-1.440*** (0.005)	-0.136 (0.597)	-0.195 (0.396)	-0.148 (0.540)
Ln (Total Funds)	0.090 (0.270)	0.110 (0.330)	0.089 (0.271)	-0.042*** (0.004)	-0.043*** (0.006)	-0.042*** (0.004)
Ln (Sales)	1.299*** (0.000)	1.297*** (0.000)	1.299*** (0.000)	1.129*** (0.000)	1.129*** (0.000)	1.130*** (0.000)
Cash/Assets	-1.089 (0.165)	-1.220* (0.087)	-1.112 (0.138)	-0.219 (0.680)	-0.261 (0.602)	-0.226 (0.665)
Capex/Assets	4.998** (0.029)	6.240*** (0.001)	5.152*** (0.007)	-3.588 (0.126)	-3.075 (0.132)	-3.498* (0.084)
Debt/Assets	-0.563 (0.392)	-0.510 (0.434)	-0.564 (0.388)	-1.616*** (0.001)	-1.611*** (0.001)	-1.615*** (0.001)
R&D Intensity	0.111*** (0.000)	0.112*** (0.000)	0.111*** (0.000)	0.092*** (0.000)	0.092*** (0.000)	0.092*** (0.000)
Unreported R&D	-18.242*** (0.000)	-18.333*** (0.000)	-18.166*** (0.000)	-16.151*** (0.000)	-16.794*** (0.000)	-16.503*** (0.000)
ROA	-1.845*** (0.001)	-1.845*** (0.001)	-1.849*** (0.001)	-1.705*** (0.000)	-1.715*** (0.000)	-1.710*** (0.000)

Continued in the next page

H-Index	4.287*** (0.007)	4.318*** (0.008)	4.287*** (0.007)	2.118** (0.044)	2.077** (0.049)	2.109** (0.045)
Observations	1,129	1,129	1,129	1,129	1,129	1,129
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes	Yes	Yes

Results are obtained by means of Poisson regressions. The dependent variables are the value of the patents filed in the year (columns 1-4), and the number of patents filed in the year. *Mix Family & Non-Family CVC* is a dummy that equals one if the venture received CVC funding from both family and non-family-controlled CVCs. *Only Family CVC* is a dummy that equals one if the venture received funding from family-controlled CVCs only. *Family CVC Major* is a dummy that equals one if the majority of CVCs that invested in the venture were family-controlled. *% Family CVC* is the ratio of family CVCs and all CVCs that backed the venture. *Ln (Number CVCs)* is the natural logarithm of the number of CVCs that backed the venture. *Ln (Age)* is the logarithm of the venture's age at the date of its latest CVC round. *Ln (Total Fund)* is the natural logarithm of one plus the amount received by the venture from all VCs (in million US\$). *Ln (Sales)* is the natural logarithm of one plus the parent company's sales (in million US\$). *Cash/Assets* is the ratio of cash holdings to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company; when R&D is missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 14. Effect of CVC activities on parent companies' performance

Dependent variable: Tobin's Q				
	(1)	(2)	(3)	(4)
Family Firm	-0.158 (0.253)	-0.136 (0.333)	-0.148 (0.280)	-0.123 (0.376)
Ln (N. deals)	-0.183*** (0.002)	-0.103* (0.059)		
Family Firm×Ln (N. deals)	0.193* (0.090)	0.171* (0.079)		
Ln (Amount invested)			-0.013*** (0.004)	-0.006 (0.124)
Family Firm×Ln (Amount invested)			0.015* (0.088)	0.013* (0.077)
Ln (Sales)		-0.175*** (0.003)		-0.178*** (0.003)
Cash/Assets		1.152*** (0.005)		1.150*** (0.005)
Capex/Assets		1.446 (0.163)		1.406 (0.173)
R&D Intensity		0.321 (0.576)		0.332 (0.564)
Unreported R&D		0.067 (0.612)		0.054 (0.681)
Debt/Assets		-0.052 (0.772)		-0.050 (0.781)
ROA		5.043*** (0.000)		5.075*** (0.000)
H-Index		0.349** (0.015)		0.355** (0.015)
Observations	4,173	3,833	4,173	3,833
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes

Results are obtained by means of OLS. The dependent variable is the Tobin's Q (winsorized at the 2% in each tail of its distribution). *Family Firm* is a dummy that equals one if the parent company is family owned (i.e., if a 5% or larger share of the firm's equity are in the founder's and/or her heirs' hands). *Ln (N. deals)* is the natural logarithm of one plus the number of deals made by the CVC in the year. *Ln (Amount invested)* is the natural logarithm of one plus the US\$ amount invested by the CVC in the year. *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, venture-level industry fixed effects, and state fixed effects at the CVC's parent company level. Standard errors are heteroskedasticity-adjusted. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 15. Family CVC Investment during a Financial Crisis

Dependent variable:	Ln (N. deals)	Ln (N. deals)	Ln (Amount invested)	Ln (Amount invested)
	(1)	(2)	(3)	(4)
Crisis	-0.065* (0.075)	-0.099*** (0.009)	-1.105** (0.017)	-1.478*** (0.003)
Family Firm	0.020 (0.858)	0.028 (0.805)	-0.395 (0.779)	-0.368 (0.806)
Family Firm×Crisis	0.142** (0.013)	0.162*** (0.007)	1.118* (0.077)	1.196* (0.070)
Ln (Sales)		0.077* (0.067)		0.927** (0.042)
Cash/Assets		0.010 (0.928)		0.611 (0.674)
Capex/Assets		-0.189 (0.620)		1.382 (0.735)
R&D Intensity		0.706* (0.077)		9.857** (0.040)
Unreported R&D		-0.135* (0.069)		-2.289* (0.066)
Debt/Assets		-0.080 (0.359)		-1.713 (0.148)
ROA		-0.251 (0.288)		-4.199 (0.138)
H-Index		-0.025 (0.813)		-0.608 (0.665)
Observations	1,458	1,341	1,458	1,341
Year dummies	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes

Results are obtained by means of OLS regressions. In Columns (1) and (2), the dependent variable is the natural logarithm of one plus the number of deals made by the CVC in the year. In Columns (3) and (4), the dependent variable is the natural logarithm of one plus the US\$ amount invested by the CVC in the year. *Crisis* is a dummy that equals one in the 2008-2010 years, and zero in the years 2005, 2006 and 2007. *Family Firm* is a dummy that equals one if the parent company is family owned (i.e., if a 5% or larger share of the firm's equity are in the founder's and/or her heirs' hands). *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, and firm fixed effects at the level of the CVC's parent company. Standard errors are clustered at the parent firm-level. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 16. Testing the Parallel Trend Hypothesis

Dependent variable:	Ln (N. deals)	Ln (N. deals)	Ln (Amount invested)	Ln (Amount invested)
	(1)	(2)	(3)	(4)
Placebo Crisis	0.101** (0.044)	-0.090* (0.082)	0.115 (0.845)	-0.063 (0.921)
Family Firm	0.160** (0.011)	0.159*** (0.009)	1.713** (0.042)	1.647** (0.039)
Family Firm×Fake Crisis	-0.062 (0.220)	-0.073 (0.154)	0.031 (0.962)	-0.022 (0.973)
Ln (Sales)		0.063** (0.049)		0.992** (0.012)
Cash/Assets		0.076 (0.571)		0.710 (0.718)
Capex/Assets		-0.117 (0.790)		-6.642 (0.294)
R&D Intensity		0.083 (0.814)		0.057 (0.990)
Unreported R&D		-0.017 (0.833)		-1.947 (0.312)
Debt/Assets		-0.115 (0.391)		-1.542 (0.337)
ROA		-0.132 (0.572)		-2.221 (0.531)
H-Index		-0.049 (0.550)		-0.504 (0.670)
Observations	1,575	1,461	1,575	1,461
Year dummies	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes

Results are obtained by means of OLS regressions. In Columns (1) and (2), the dependent variable is the natural logarithm of one plus the number of deals made by the CVC in the year. In Columns (3) and (4), the dependent variable is the natural logarithm of one plus the US\$ amount invested by the CVC in the year. *Fake Crisis* is a dummy that equals one in the 2005-2007 years, and zero in the years 2002, 2003 and 2004. *Family Firm* is a dummy that equals one if the parent company is family owned (i.e., if a 5% or larger share of the firm's equity are in the founder's and/or her heirs' hands). *Ln (Sales)* is the natural logarithm of one plus the sales (in million US\$) of the parent company. *Cash/Assets* is the ratio of cash holdings and equivalent securities to total assets. *Capex/Assets* is the ratio of capital expenditures and total assets. *Debt/Assets* is the ratio of total debt and total assets. *ROA* is the ratio of EBIT and assets (winsorized at the 2% in each tail of its distribution). *R&D Intensity* is the ratio of R&D expenditures and sales of the CVC's parent company. If the information on R&D expenditures was missing, *R&D Intensity* is the average of the (2 digits) industry winsorized at the 2% in each tail of its distribution. If no firms in the 2-digit SIC reported R&D expenditures, *R&D intensity* equals to 0. *Unreported R&D* is a dummy that equals one if the information on the R&D expenditures of the CVC's parent company was missing. *H-Index* is the Herfindahl-Hirschman index of a firm's industry diversification, computed as the sum of the squares of the sales market shares reported by the CVC's parent company in each 2-digit SIC industry. Regressions include year fixed effects, and firm fixed effects at the level of the CVC's parent company. Standard errors are clustered at the parent firm-level. *p*-values in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$