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PROFESSIONAL THESIS

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Corporate Venture Capital

Specific features and relative analysis against independent venture capital

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Under the supervision of

Prof. Aram Attar

❒ *PUBLIC REPORT* ❒ *CONFIDENTIAL REPORT*

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Abstract:

Corporate Venture Capital (CVC) has experienced a tremendous growth over the past decade. A peak in CVC funding has been observed in 2015 with more than $28B injected in young companies by CVC players around the world. With such large amounts, CVC definitely deserves attention, notably in Europe where CVC is still in a ramp-up phase.

This study focuses on CVC activity recorded between 2003 and 2017 in France. In a first part, we present the general context and history of CVC and explain why France represents a relevant focus for an analysis. We also summed up previous key results from the literature concerning CVC. In a second part, with public data collected from online databases on more than 2,000 deals related to investments in French startups, we were able to analyse CVC investment strategy, using several metrics such as investment duration, investment stage or exit strategies. We also compared these metrics to those of Independent Venture Capital (IVC) to identify specific features of CVC firms in the venture capital ecosystem. Finally, in a third part, we tried to organize and sum-up the results of on-field investigations and interviews to explain more qualitatively the quantitative results obtained in the second part. We notably questioned CVC firms' main objectives, involvement in startups, conflicts of interest, and employees' background.

Among our key results, we found that VC deals from 2003 to 2017 were by far dominated by IVC players, with more than 85% startups having conducted VC rounds without any CVC fund involved. However, simultaneously to the surge of CVC funds creation, the weight of CVC deals have constantly increased. The proportion of VC rounds with a CVC fund involved has increased from 5.3% in 2003 to 14.6% in 2017. We showed that CVC firms invested at a later stage on average than IVC firms and that CVC firms tend to lead more likely the startup funded towards IPO in comparison to IVC firms. In our sample, CVC firms also tend to liquidate their positions sooner than IVC firms.

In terms of qualitative feedbacks from our interviews, we established that the main objectives of CVC players were to establish strategic monitoring and partnerships with startups before looking specifically for financial return. Management of potential conflicts of interest appears as a key issue in an ecosystem where interaction between businesses, startups and investors themselves in an undeniable determinant towards success. Looking at French CVC firms' employees, it seems that French CVC players are mostly hiring experienced employees coming from the mother companies itself with often little experience in the investment and venture capital sector. However, it seems that - by looking at older CVC firms in the US, CVC players tend to professionalize themselves and to reinforce their independence year after year by shifting towards teams of professional investors rather than experienced corporate employees.

Key words: Corporate Venture Capital, Independent Venture Capital, investment duration, selection effect, stage of investment, exit strategy, synergies, conflict of interest

Thesis supervisor: Aram Attar

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1. CVC landscape and history

Introduction: how do big corporates boost their internal innovations efforts?

Innovation has always been key for a corporation to survive and thrive. However, the classic internal development process of new products or offers can sometimes be cumbersome. Alternative forms of innovation through external commitments have therefore gradually emerged. They can prove successful if well-implemented and monitored to drive the corporation towards short or long-term new growth opportunities. The tools companies can engage with other organizations are varied and can be classified into four big families.

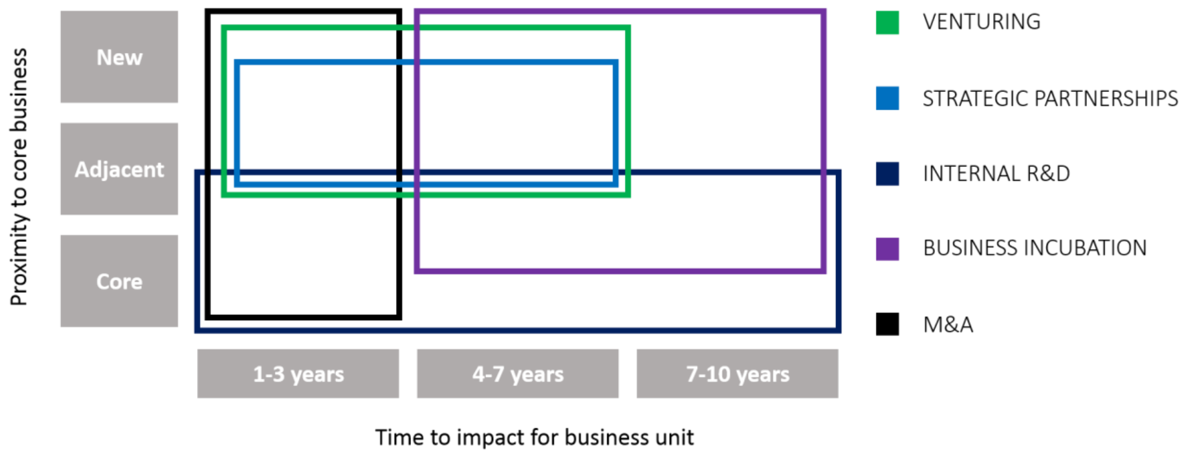
First, companies can favour **Mergers & Acquisitions** (M&A) transactions and therefore take benefit from developed companies and their well-established business to quickly boost innovation.

Second, companies can use **Strategic Partnerships** and **Joint Ventures** (JV), relying on cooperation to go forward more efficiently and drive incremental revenues. This category also encompasses all kinds of licensing agreements between the company and another one.

Third, leading groups can choose **Business Incubation**, assisting startups and early-stage projects in their pursuit of growth through dedicated incubators and accelerators

Finally, companies can – and this will be our focus in this study – bet on **Venturing** practices, deciding to take equity stakes in other companies, generally startups and therefore access new growth opportunities.

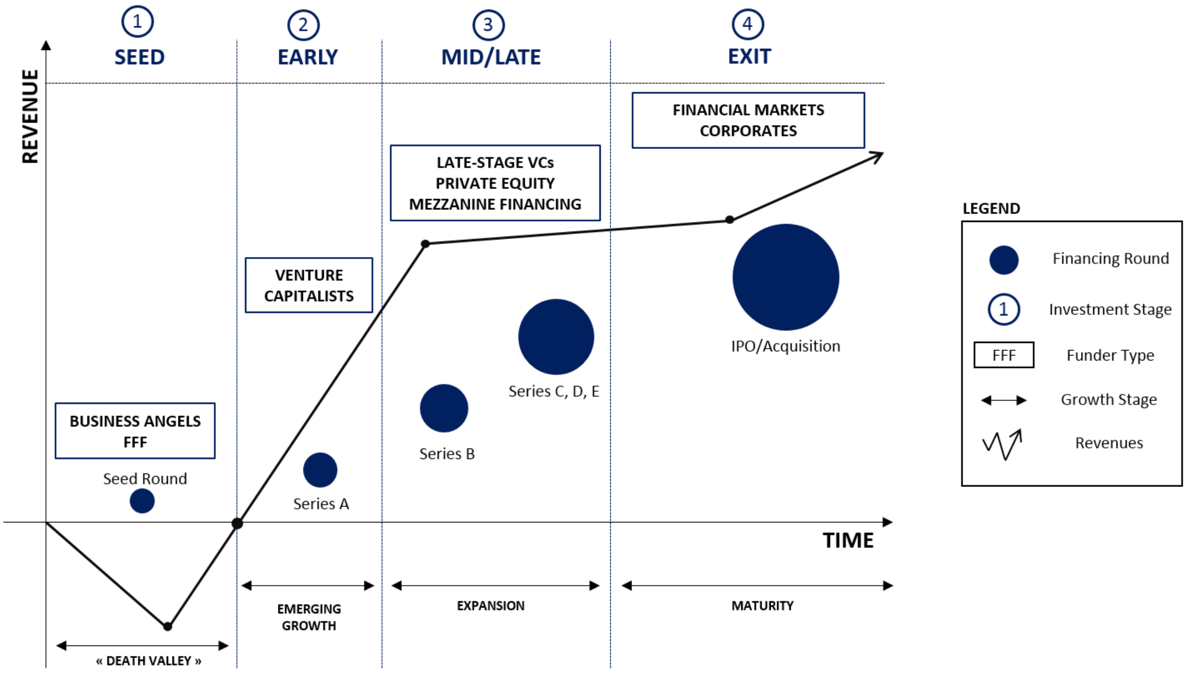
We drew the diagram above to illustrate this classification.



Inside venturing, specific tools can be distinguished. Venturing can be conducted indirectly through fund of fund strategies, which means the mother company accepts to fund an external and professional structure and team that will invest the money independently to buy equity. But venturing can also take an active form through direct equity investments from the company. These investments can be either conducted by the mother company itself or either made through a dedicated 100%-owned investment vehicle. This very last kind of structure is a specific form of **Venture Capital (VC)** which is often referred as **Corporate Venture Capital (CVC).**

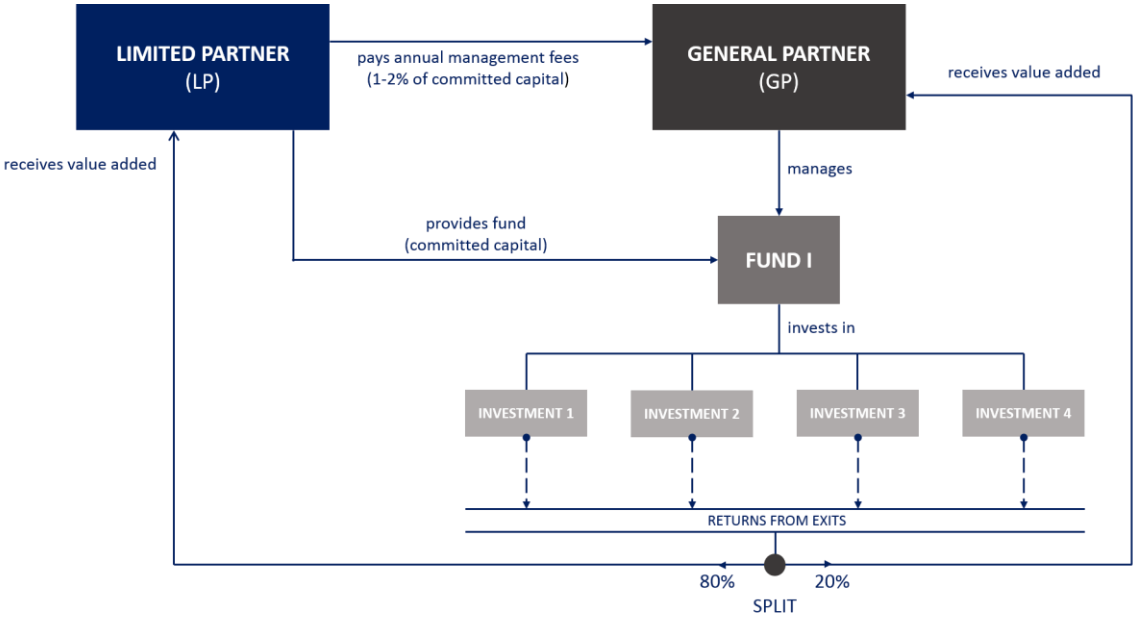
1.1 General presentation of Venture Capital?

Among private equity financing schemes, Venture Capital (VC) focuses on providing funds to small, early-stage and emerging companies that are presumed to bear high growth potential. Operating very early in the development phase of a startup, VC is a key player in the financing cycle of a young venture and represents a valuable source of money when capital markets are not accessible yet. In exchange for the funds brought, the company financed gives an ownership stake to the VC fund which henceforth bear a part of the risk. While risk is substantially higher for VC investors than for later-stage private equity investors, it is compensated by potentially above-average returns in the case the startup proves successful.



Usual Startup FInancing Cycle

VC firms are traditionally organized through a GP/LP model. Fund managers called General Partners (GPs) usually establish an investment vehicle (fund) by collecting money from institutions, investment banks, big corporates or wealthy individuals which are generically called Limited Partners (LPs). LPs serve as a primary source of capital into the venture fund and have a limited role in the day-to-day management of the investments made. Conversely, GPs manage the fund. They look for valuable investment opportunities, execute them and later on liquidate them through various forms of exits (usually between three to ten years). In most cases, VC firms charge management fees to the fund providers (1-2% of committed capital) and guarantee in exchange a minimum rate of return for LPs (hurdle rate). Proceeds coming from the final liquidation of the fund is also split between the GPs and the LPs when capital gains exceed the minimum level of return required by LPs. In the rest of this paper, we will denominate these traditional VC firms under the Independent Venture Capital (IVC) acronym.



When corporates use venturing with an indirect fund of fund approach, they will typically make a specific commitment into one fund and acts as a LP. However, as we mentioned earlier, corporations can also choose to follow partly this VC model on their own to establish an inner investment vehicle run by the company.

1.2 What is Corporate Venture Capital?

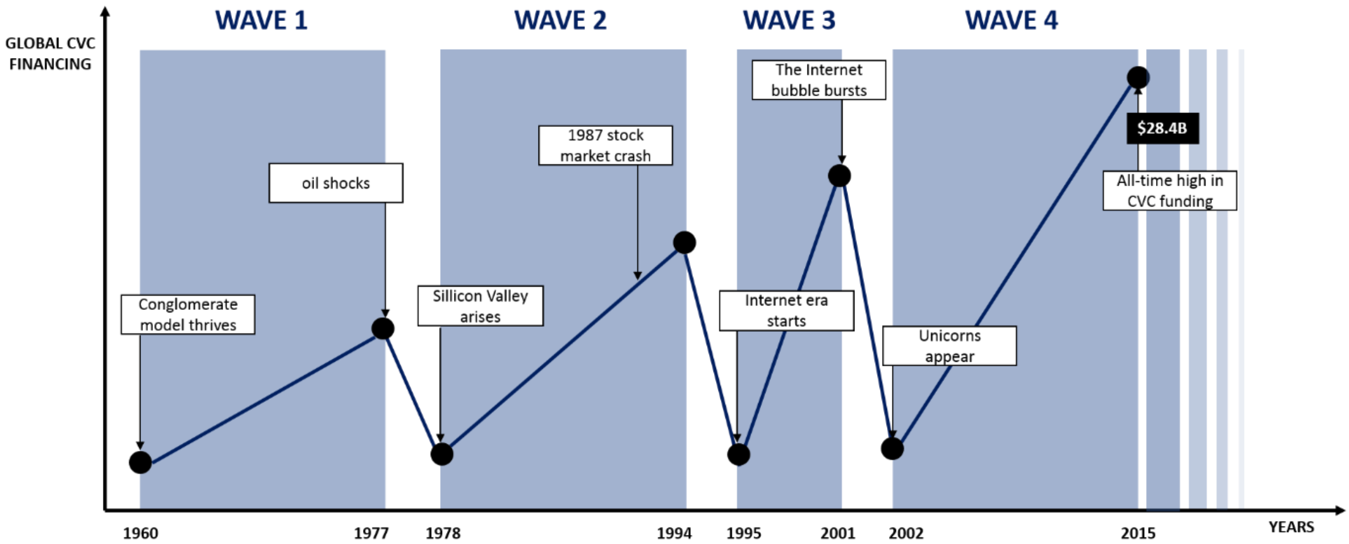
A. General Presentation

In parallel to IVCs, an alternative form of VC firms have gradually emerged. From the 60s to nowadays, an increasing number of powerful and deep-pocketed corporations from various industries have been attracted to taking minority stakes in young ventures. We saw previously that different forms of venturing existed. But some companies have gone a step further by establishing internal VC firms. Consisting in another source of funding for startups, these distinct VC firms are called Corporate Venture Capital (CVC) as they are in nearly all cases 100%-owned subsidiaries. By essence, they differ from IVCs by the fact that the primary source of money injected in the investment vehicle does not come from LPs but is constituted out of dedicated cash lines from the parent company itself. The CVC is also characterized by a relative monitoring power exerted from the parent company through required consultation and veto rights when investments decisions must be taken for instance. While IVCs final aim is to generate profits through largest capital gains possible, CVCs goals cannot be reduced to financial objectives. By nature, as industrial companies often act in a specific business and develop a given expertise, they are not meant and properly skilled to act as financial speculators. In this context, motivations for CVC creation and activity often includes strategic reasons.

B. The history of Corporate Venture Capital[1]

Corporate venture capital (CVC) history is tightly linked to the rise of private equity and more specifically to Independent Venture Capital firms (IVC). In fact, CVC development and decline phases have naturally been in with the great cycles the world economy experienced those past thirty years. Nonetheless, if CVC downturn periods are often correlated with a bad environment for investment generally speaking (bubble explosion, economic crisis), the reasons why they experienced periodic booming phases have been constantly evolving through the past decades.

Using the US as an accurate model to be exported globally, notably in Europe, four successive waves can be distinguished across the CVC history. The first wave appeared in the 60s. The conglomerate model was actually thriving in the US and CVC became an opportunity for big groups to diversify away in an environment where strict post-Great Depression anti-trust rules incentivized company to contemplate alternatives to vertical integration. Among CVC investors during this early period, several giants of the American industry stood out: Boeing, Dupont, Ford or GE. This first wave brutally ended in the early 70s mainly due to the massive economic downturn subsequent to the oil shocks and the stagflation crises. The IPO market was severely affected and with it, cash flows dedicated to CVC funding gradually vanished.



The second wave of CVC occurred in the early 80s. This revival was triggered mainly by the emergence of promising new technologies and especially the effervescence arising around the computer and the so-called Silicon Valley. The first bidders to take advantage of these new opportunities were IVCs with the amount dedicated to venture capital growing from \$2.5B to \$6.7B between 1977 and 1982. This trend was undoubtedly boost by the two successive new favorable tax regulations on capital gains voted in the US. If IVCs took the lead, CVCs rapidly followed the trend. 27% of the total \$6.7B invested by VC firms in 1982 originated from CVCs and internally managed CVC funds grew year after year in number with 76 CVCs registered in 1988 against 28 in 1982. AT&T, 3M or Xerox are examples of CVC funds developing in the 80s. The end of the 80s brought the end of the second wave: the 1987 stock market crash put a severe blow to the CVC ecosystem while the cancelling of the Xerox VC program - which was initially very successful - due to internal rivalry around compensation structure showed the limits of internally-embedded investment vehicles. Between 1987 and 1992, the number of companies conducting CVC programs fell by a third.

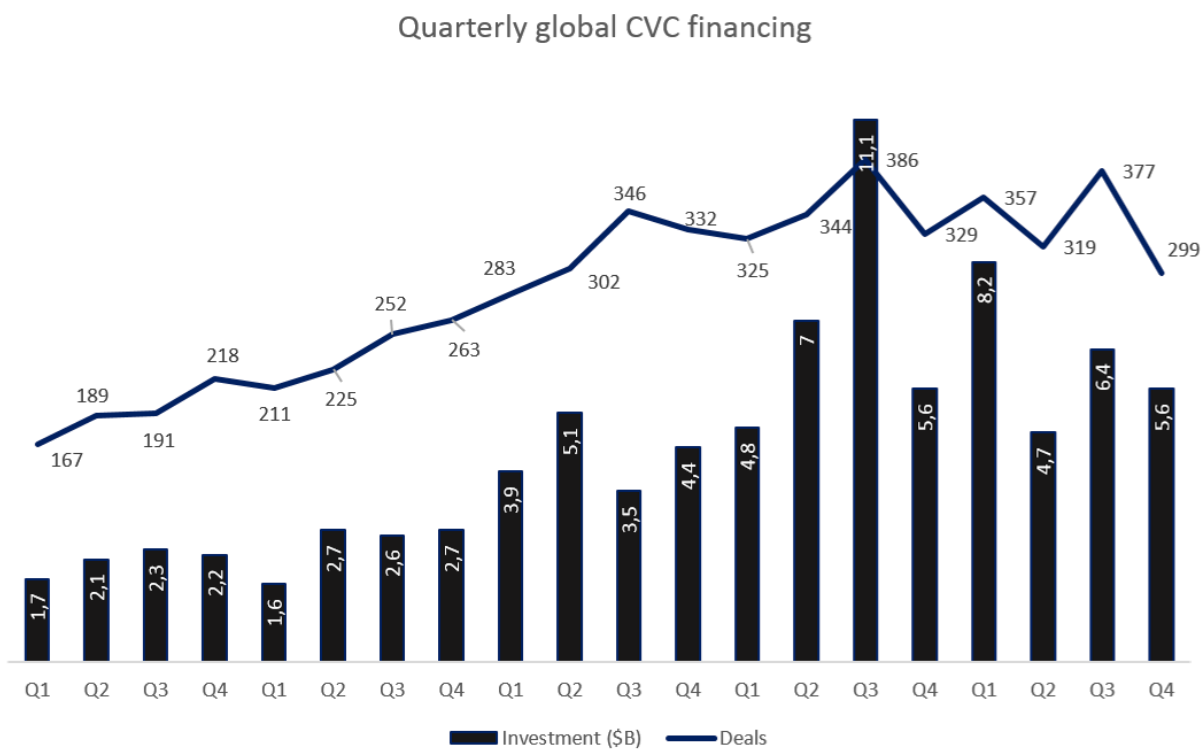
CVC experienced a new wave as soon as the mid-90s with the surge of internet-related companies. Netscape Communications and its outstanding IPO paved the way for what we usually call the dot com boom. The intensity of this third wave deviated from previous standards in terms of both size and scope.

[1] The History of CVC- CBInsights 2016

Between 1995 and 2011, nearly 100 CVC invested for the first time in startups while 2000 was a banner year for CVC with 20 new CVC entering the game and one fourth of VC-backed deals. Two reasons can describe this impressive wave. On the one hand, CEOs of big groups wanted to take a part in the huge upsides internet startups were generating, as success stories such as Yahoo or eBay were multiplying. On the other hand, the efficiency of central R&D started to be called into question. Corporates were realizing that small startups, much more agile, proved very competitive in comparison to slow internal programs. Between 1981 and 2009, the share of total R&D spending recorded from small firms increased by 20 points. Intel Capital or GE equity were remarkable players during this period, but companies without any R&D culture such as German media conglomerate Bertelsmann AG also started to establish their CVC programs. Unfortunately, with the burst of the internet bubble in 2000, this great momentum brutally ended. In 2001, write-downs related to venture losses amounted to $9.5B and several iconic companies such as Microsoft and AT&T shut down their CVC structures.

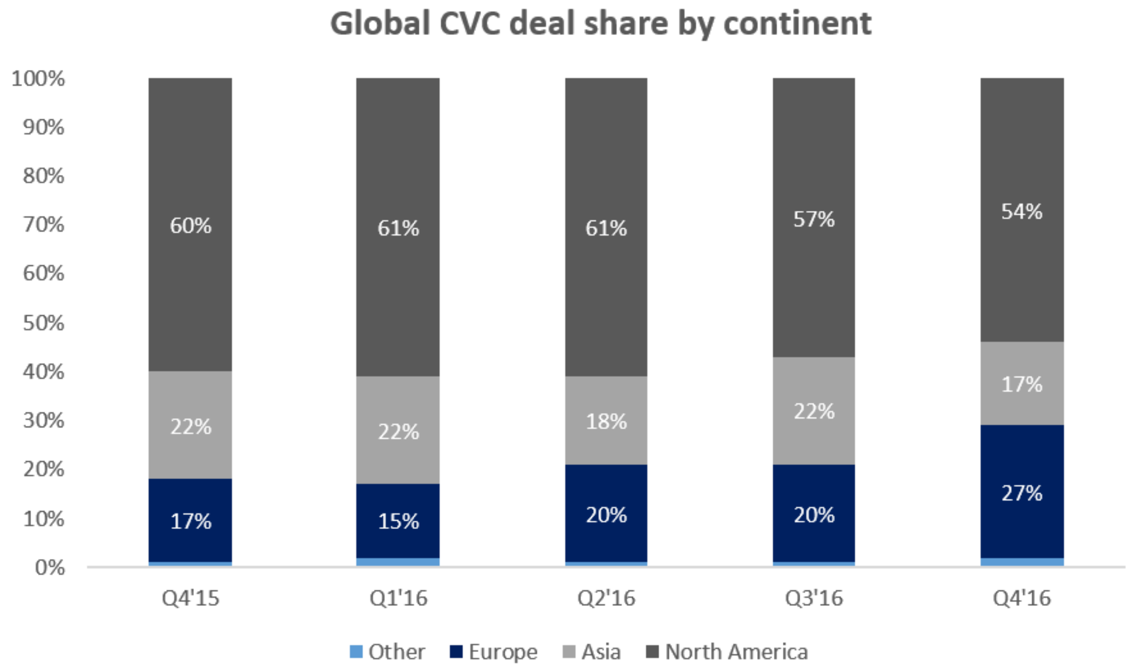
C. Recent CVC trends : an update on the fourth wave

If the burst of the dot com bubble put a very hard blow to the CVC dynamic, some companies, notably in the biotech and pharma sectors, managed to maintain their CVC programs. Boost by the emergence of billion-dollar startups called unicorns and the move towards more and more externalization of R&D through the new concept of open innovation, CVC ecosystem experienced a constant growth globally from 2003 to 2015. Even if a small hiatus is to be noticed in the late 2000s with the global economic crisis striking across the US and in Europe, total investment amounts followed an exponential increase with a $28.4B peak recorded and 1384 deals realized in 2015.

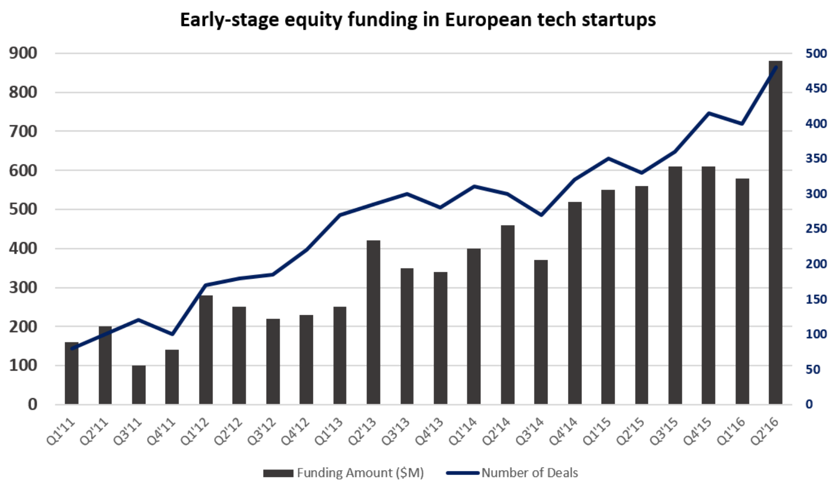


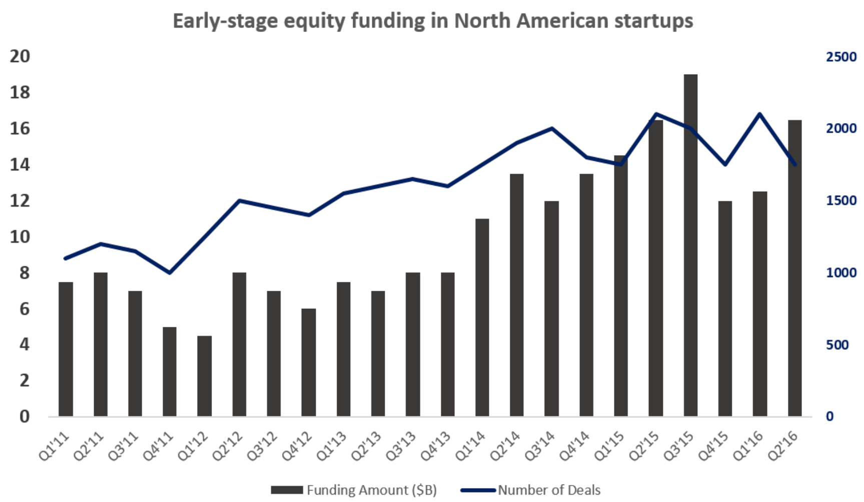
This trend has been confirmed looking at CVC creation statistics. While the number of CVC groups newly created in 2011 amounted to 35, it tripled in 2016 with 107 new CVCs recorded. However, looking at CVC financing trends in 2016, it is visible that CVC is actually declining with a 2% decrease over 2015. If these results can seem contradictory at first sight, there may be explained by opposite moves between the US and Europe. While Europe CVC deal share was 15% in Q1 2016, it increased impressively to 27% in Q4 2016. Meanwhile, North America CVC deal share went from 61% to 54%. European CVC is therefore gaining momentum while CVC in other regions and especially in the US is declining. In fact, 2016 full-year US CVC deal decreased by 12% over 2015 in the US. Looking at investment statistics for the first-half of

2016, European deals for Q2 2016 have increased to 385 corresponding to a 5% increase over Q1 2016. Meanwhile, the number of deals in North America fell by 8% at 1117 deals



This trend seems to be driven by particularly virtuous dynamics in VC funding towards tech and early-stage startups in Europe. During the Q1-Q2 2016 period, VC-backed tech deals declined in number by 12.5% in the US and by 16.7% in Asia. Meanwhile, they increased by 25% in Europe with around 500 VC-backed tech deals recorded. Cross-checking with investment amounts, the trend is confirmed at least in intensity. VC-backed tech deals total amount invested increased by 18% in Asia, 33% in the US and by 50% in Europe.





D. A focus on France : a new startup nation

If Europe seems to be hosting a great part of CVC momentum right now, most of the activity is actually captured by a little group of leading countries, the UK, Germany and France ahead. Among these hotbeds, the French case is particularly remarkable as the country operated an impressive U-turn in the past decade. From a country lagging behind, France has gradually become a new startup nation. Once again, it seems that tech deals were the key driver for this shift. Trying to support this finding, one can observe that the amount invested in tech companies has tripled between 2012 and 2016 reaching $2B. The number of tech deals also amounted to 484 versus 134 back in 2012. Full-year projections expected tech funding to go beyond the $2B threshold at $2.2B and that the number of deals could almost double over 2016 to 730.

This change was mainly supported by government programs such as the globally-recognized French Tech branding, or the enhanced investment power given to publicly-financed innovation funds such as Bpifrance. From 500 startups co-financed in 2012, this public initiative is now helping more than 3000 startups. Meanwhile, the average size of investment funds went from €80M to €140M. Another key signal is the amount raised by French startups. Since 2015, several companies such as OVH, Sigfox and Devialet have managed to go beyond the €100M threshold for a financing round. Long time lacking of billion-dollar companies, three unicorns were finally recorded in 2016 in France with $3B Vente Privée, $2.6B Criteo and $1.6B Blablacar. Finally, during Spring 2017, France inaugurated Station F, the world's biggest startup campus in Paris.

In this favourable context for VC financing, French CVC also experienced a booming period. Among investors in previously-quoted companies Sigfox and Devialet, CVC investors – such as Total Energy Ventures, Air Liquide Venture Capital or Engie New Ventures – were leading investors. Above all, the number of French CVC increased exponentially. If 11 new CVC were established between 2003 and 2013 in France, 11 new CVC were created during the 2-year 2015-2016 period alone. It is worth noting that this boom has been incentivized by the State itself through a specific fiscal measure set up in 2016. Thanks to it, investments made by corporate vehicles can be amortized over five years within the limit of 1% of the total assets of the mother company. This special measure can be applicable to minority investments only with a maximum threshold of 20% of the startup capital.

In this blossoming period for French CVC, it seemed particularly relevant for our study to focus on CVC activity in France. We notably aimed at confirming the strong momentum around CVC in France analyzing data related to VC-backed deals from 2003 to 2016, both in terms of number of CVC deals and in invested amounts. Characterizing stage of investments or investment duration also constituted part of our study to further understand the investment philosophy of active French CVC. Following this quantitative part, we tried to explain these results with feedback from CVC, IVC professionals and CVC-backed startups.

1.3 Literature review & Contribution of this study

In this part, we analysed the contribution of previous papers to the analysis of CVC, and following this analysis, we explain what the contribution of our paper to this subject is. Several key areas have been investigated so far. First, the overwhelming majority of VC investors, have an active role for the startup they have in portfolio. It is interesting to compare what CVCs and IVCs are providing to the startups they have in their portfolio, depending on their area of expertise. Second, the key specificity of CVCs is that they are controlled, in several respects, by a corporate company. The difference between the strategy of the corporate and that of the startup may result in conflict of interests. Third, the objective of CVCs and IVCs may differ. Synergies with startups in portfolio is a key component of CVCs investment rationale, whereas it is not applicable to IVCs. The importance of financial return on investment may differ between CVCs and IVCs. Fourth, analysing of exits is highly insightful. It is interesting to determine if CVCs invest in a startup with a view to acquiring it later. It is also relevant to analyse the proportion of IPO, acquisitions and liquidation depending on whether a CVC has invested or not. Fifth, research has been made on the specificity of CVC investment framework for corporates. It is relevant to know why corporates use the CVC framework or other frameworks to invest in innovation, and why corporates may shift. Finally, research has been made on the background of CVC investors, which has been evolving a lot over the past decades. Starting from internal hires from the corporates, companies are increasingly hiring former experienced VC investors. For each of these topics, we are describing the literature and we explain the contribution of our paper.

A. Comparative support of CVC and IVC funds to startups in portfolio

Chemmanur (2013) provided statistical evidence that CVC-backed firms in the US are more innovative, considering the number of patents granted, and the number of citation of these patents. Park & Steensma (2011) proved that CVC is beneficial for startups when they use parent company product development, manufacturing, legal, sales, distribution and customer service, to commercialize new products. New ventures that require high development costs benefit the most from this help. As far as they are concerned, IVC investors provide managerial advice, referrals to customers, alliance partners, management talent, and help to find other investors. CVC objectives are to find other suppliers or buyers, develop internationally, identify novel product that may replace theirs. Managerial contribution of CVC may be heterogeneous compared to IVC, depending on the CVC team experience.

In our study, we rank by order of importance the respective contribution of CVC and IVC investors to startups they have in portfolio. We interviewed CVC and IVC investors, as well as startupers backed by at least one CVC, to collect the corresponding data. We identified different patterns, differing between industries, which we analyse in the third part of this study. As French venture capital landscape has been booming in terms of number of investments and total amount invested, our study provides an up-to-date view of investor practices.

B. Potential conflicts of interest

According to Chemmanur (2013), CVC-backed firms may be subject to invasive corporate interventions that impede their development, and create conflicts of interests. Park & Steensma (2011) explain that the first type of conflict of interests happens when the startup cannot partner with a competitor of the CVC, or do business with a competitor of the parent CVC. The second type of conflict of interests occurs when the parent company products compete with those of the startup.

In our study, we analyse further the different types of conflict of interest and the context in which they arise, based on interviews with CVC, IVC investors and startupers. Although strategic interests of corporates and need for independence for startups are difficult to conciliate by nature, our study shows that CVCs have increasingly implemented procedures to avoid conflict of interest. Above all, CVC general partners, mainly former IVC investors, strongly advocate independence from the corporate parent, for the benefit of the startup.

C. Comparative objectives of CVC and IVC investors

Chemmanur (2013) suggests CVC investors have a greater tolerance for failure, measured by the amount of time that VC allow startups to have before stopping their investment, when their portfolio company is in difficulty. The paper posits that this greater tolerance for failure is due to the higher strategic focus of CVC funds, compared to IVC funds, for whom return of investment is the key objective. Guo, Lou (2015) provided similar conclusions in terms of tolerance for failure and investment duration. CVC-backed startups remain longer in portfolio, and CVC investors are more patient than IVC investors to realize financial returns. As a consequence CVC backed firms receive more funding before discontinuation of their activity. The paper suggest that IVC investors stop investing in a distressed company earlier, as their track record is important to raise their next funds.

In the second part of our study, we use up-to-date quantitative data to analyse CVC and IVC investment strategies. We built a database of 2,095 venture capital funding rounds, acquisitions and IPO, from 2003 to 2017. We compare stages of investment and investment durations between CVC and IVC investors. We complement this analysis in the third part with interviews from CVC and IVC investors.

D. Exit strategy

In terms of investment exit, Guo, Lou (2015) explain that longer investment duration increases the probability of a strategic acquisition, while more important funding increases the likelihood of an IPO. Future potential acquisition is not the main motivation of corporate parents as only 5% of CVC backed startups are acquired by the parent company. Dimitrova (2013) suggests that US corporates with lower level of innovation tend to acquire more startups in portfolio. For those firms, strategic acquisitions are a bad signal for markets, as they are interpreted as a bad prospect for parent company future innovation. When the number of CVCs co-investors increases, strategic acquisition are more likely to occur and earlier. When the level of uncertainty is high (low number of patents, low number of citation), CVCs tend to wait longer before an acquisition.

Using our database, we analysed startup exits in France between 2003 and 2017. The breakdown between acquisitions, IPO and liquidation differs depending on whether a CVC was part of the investment club. This analysis has several caveats, the main one being that some transactions are not disclosed publicly. Another caveat is that some acquisitions result from successful ventures, and others are acquisitions of distressed ventures. In the third part of our study, we give explanations of the difference observed in the exits of startups, depending on whether a CVC has invested or not.

E. Stability and long-term focus of the CVC practice

From the parent company perspective, Gaba & Dokko (2015) suggests that the CVC practice is unstable. US IT firms have experienced waves of adoption and abandonment of their CVC practice since 1990. The challenges facing CVC funds, are to attract experienced investors and to define long term objectives for the CVC. Explanations come from social theories, as corporates create CVC when their competitors do so, as a mimicry. Abandonment of the CVC practice comes when future performance of the portfolio is uncertain or when historical financial performance of the CVC has been below objectives. The background of CVC investment team has a significant influence on CVC stability. CVC practice is more likely to be abandoned when there is a high number of internal hires in the investment team, because they may lack specific skills for the job. By contrast, CVC practice is less likely to be abandoned when managers come from IVC, as they are more credible when defending the practice. Park & Steensma (2011) precise CVC main objectives: finding other suppliers or buyers, develop internationally, identify novel product that may replace theirs. Gompers & Lerner (2000) explain that CVC programs tend to be short-lived and instable, because first CVC are useful for the parent company during technological disruption period, and not outside these periods, secondly, key CVC managers may leave once they have established a track-record. CVC programs are also short-lived when there is not a strong strategic focus from the parent company.

In the first part of our study, we analyse CVC creations and abandonments in different industries until 2017, and the consistency of CVC strategies, using data from interviews with professionals. Even though creating a CVC has become very common for a corporate, mimicry effect and the lack of long term vision for CVCs is still rampant.

F. Background of CVC investors

Park & Steensma (2011) showed that managerial contribution of CVCs may be heterogeneous compared to IVC, depending on the CVCs team experience.

The composition of CVC investment teams has been evolving a lot over the past five years. In our study, we analyse the background of investors of the 63 CVC funds that invested in French companies between 2003 and 2017. In 2003, as CVCs were structured as a fully controlled subsidiary of the parent company, investment teams were primarily made of manager from the corporate, with little or no previous experience in VC. CVC has gradually turned into independent companies owned by the General Partners, and 100% funded by commitments from the corporate parent, which is the unique Limited Partner. As a consequence, corporates, which have the responsibility of choosing CVC investment teams, increasingly tend to use external hires. This has several implications. First, CVCs tend to bring an increasingly similar contribution to startup in portfolio to IVCs. Second, CVCs have a better footprint in the venture capital ecosystem, and consequently invest less as only investor, and more in investment clubs including IVCs.

2. French CVC deals data analysis

Goals and methodology

We built a database of 2,095 venture capital funding rounds, acquisitions and IPOs, from 2003 to 2017. The first objective is to have an up-to-date view of the venture capital ecosystem in France. We are motivated by the fact that venture capital investment has been growing tremendously in France over the past three years (62% CAGR 14-16 in amount invested, 31% CAGR 14-16 in the number of investments). The second objective is to base our comparative analysis between CVC and IVC on firm and quantitative grounds. However, numerical analysis and numbers themselves are not sufficient to understand what is driving the evolution of the CVC market. We will consequently complement this numerical analysis with a more qualitative part (III), based on data from interviews with CVC, IVC managers and startupers.

To build our database, we used data from Capital Finance (Les Echos), as primary source of information for French deals in venture capital. We focused on venture capital investments between 1st January 2003 and 1st January 2017, as explained in part (I). We only included investments in French companies, i.e. companies whose head office is located in France. For the purpose of our study, venture capital investments are defined as equity or quasi-equity[2] capital increase in companies that have never raised debt[3], and did not go IPO. For each investment, we have collected the date, the investment stage (Seed, Series A, Series B, Series C, Series D, and following rounds), the total amount invested, and the name of each investor in the financing round. Additionally, we have established a list of 63 Corporate Venture Capital funds that have invested in French companies between 2003 and 2017. To analyse investment duration and types of exits, we also used data from Capital Finance, but we selected IPO of French companies, and majority investments in French companies. For exits, we crossed-checked Capital Finance database with Merger & Acquisitions database from Thomson Reuters.

In summary, we find that of all CVC funds that invested in French targets over the period 2003-2017, approximately one fourth are foreign CVCs. CVC creation and amount invested has grown significantly between 2014 and 2017. In great majority, there is only one CVC in a startup capital. There can be more than one CVC investing in a given startup, but the underlying markets of the parent companies hardly ever overlap. The number of VC investments and the amount invested has boomed since 2014, and CVC is the fastest growing sub segment. The average amount invested per funding round is bigger when a CVC is involved, which we explain by the selection effect, as CVCs and IVCs do not target the same type of startups. In terms of investment stage, CVCs tend to invest at a later stage. From this perspective, two effects counteract. On the one hand, CVCs are not afraid of investing at high valuations, provided the synergies are high, and late stage investments are less risky CVCs. On the other hand, CVCs are increasingly acting as traditional IVCs, trying to invest in Seed or Series A, as they can get a higher participation with lower valuations, and a more exclusive relationship with the startup. In terms of exit, CVC backed startups are going more IPO than IVC backed startups, which we deem as a measure of better success, even if this reasoning has some limits. Finally, investment duration of CVC funds is on average one year lower than IVC funds. This result is related to investment strategies and stage of investment, as CVCs investing late stage often keep only one or two year their investment in portfolio before exit.

[2] In our study: preferred shares, convertible notes.

[3] In our study, debt is defined as any security that require a mandatory cash repayment (principal or interest) at a given maturity.

2.1 Corporate Venture Capital funds in France

A. 2003-2017 overview

41 Corporate Venture Capital funds have invested in French companies over 2003-2017. Among these 38 CVCs that invested in France, 17 (41%) are CVC funds of foreign corporates (5 from the USA, 3 from Germany, 3 from Japan, 2 from Switzerland, 1 from the Netherlands, 1 from Norvegia, 1 from Finland, 1 from Sweden[4]). In the array, French CVCs are in light grey and CVCs from foreign corporates are in dark grey.

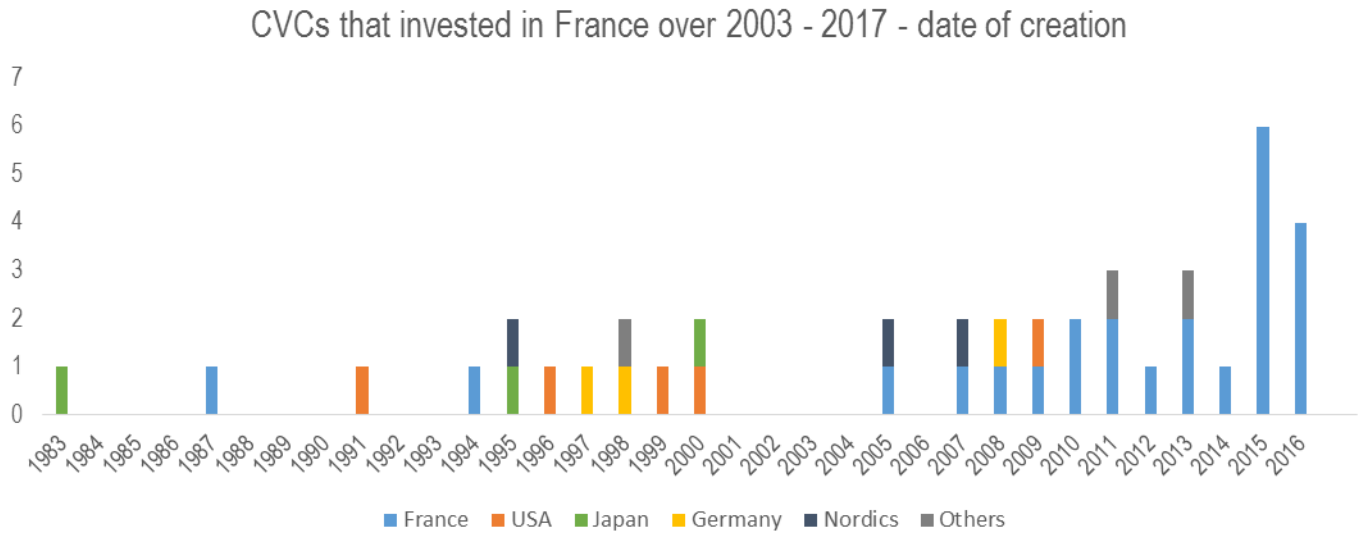
Corporate Venture Capital investors (2003-2017)			
Airbus Ventures	Edenred Capital Partners	Nokia Growth Partners	SFR Développement
Aliad	Engie New Ventures	Orange Digital Ventures	Sodexo Ventures
Arkéa Capital Investissement	Genzyme Ventures	Philips Venture Capital Fund	SoftBank Capital
Aviva France	Hi Inov (Norbert Dentressangle)	Qualcomm Ventures	Suez Ventures
Axa Strategic Ventures	Hitachi Venture	Robert Bosch Venture Capital	Thales Corporate Ventures
Bouygues Développement	Intel Capital	Safran Corporate Ventures	Via ID
Open CNP	Macif Innovation	Salesforce Ventures	Danone Manisfesto Ventures
Daiwa Corporate Investment	MAIF Avenir	SAP Ventures	Total Energy Ventures
Debiopharm Investment	Mérieux Développement	Schibsted Développement	
Deutsche Bank Venture	Motorola Ventures	SEB Alliance	
Deutsche Telekom Capital	Nestlé Health Science	SEB Ventures	

As precised in part I, we have defined CVC funds as investment vehicles set up by a corporate, whose investment team has been hired by the corporate, and whose majority Limited Partner is the corporate. In particular, these does not imply that the corporate is the majority shareholder of the CVC managing company. As an example, CVCs may be an investment company (SAS: Société par Actions Simplifiées), controlled by the investment team, but founded by corporate parent, and in which the corporate parent is the unique Limited Partner. By contrast, CVCs may be an investment company fully controlled by the corporate parent, and not by the investment team. Considering our definition, both of them are CVCs. However, it is worth noticing that a significant number of corporates invest directly minority stakes in startups, without setting a dedicated team and investment vehicle. By definition, we did not consider them as CVCs, but to a larger extent, corporate investment in innovation is another interesting topic of research.

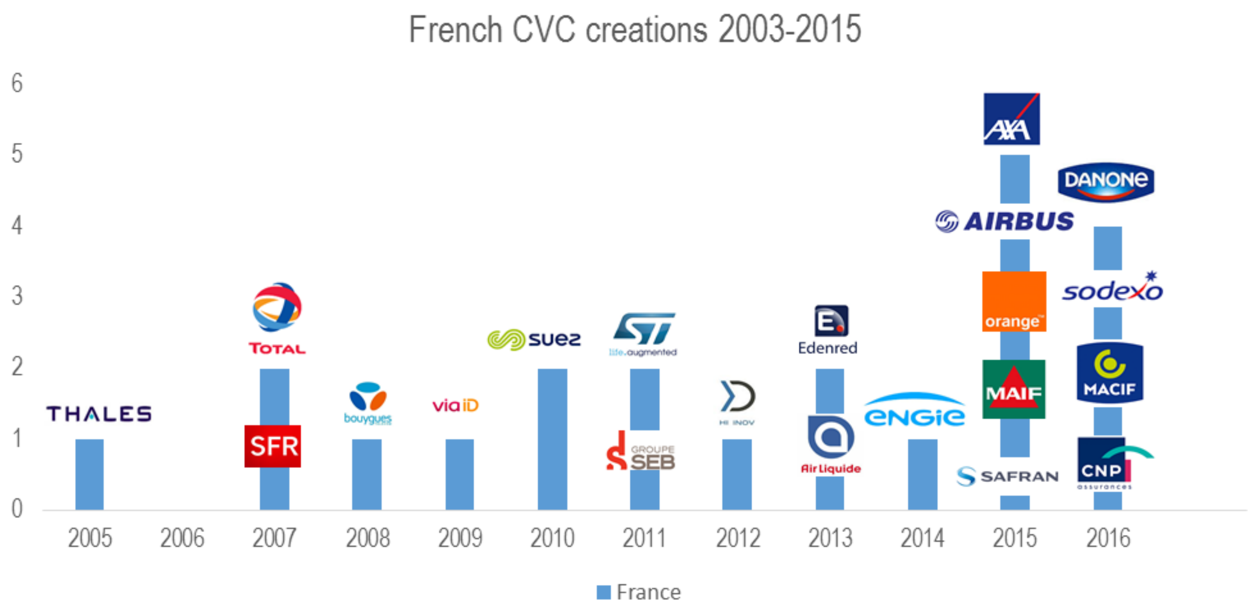
Our first remark is that the proportion of foreign CVCs is significant, almost half of all CVCs investing in French companies over the period. Unsurprisingly, countries that have a strong entrepreneurial culture, come on top, as the USA, where CVC activity has been existing since the 1960s. This analysis is also true for Japan, Germany and Nordics. It would be highly relevant to know the motivation of such CVCs to invest in foreign countries. For Nordics, and Japan it seems relatively clear, as big corporates may not find enough investment opportunities in their home country, and have become major globalized companies, like Nokia or Hitachi. For the USA, it seems less clear, as the domestic market itself is already huge in terms of investment opportunities. This could be the topic of another study.

[4] One should not mix SEB Ventures (Skandinaviska Enskilda Banken, a leading Swedish bank), and SEB Alliance (the large French consortium producing small appliances).

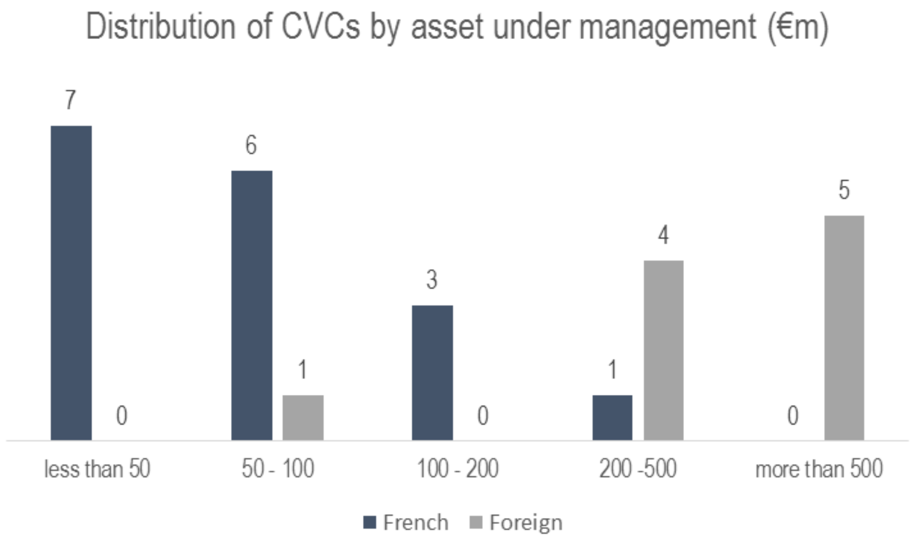
B. Ageing analysis



We found that 41% of CVCs that invested in French companies over 2003-2017 have a non-French parent company. However, we have to look more precisely at historical figures to understand this trend better. The graph here above shows the date of creation of each CVC that invested in France between 2003 and 2017, by country of origin. This graph gives a good insight into how CVC activity developed in each country. In terms of adoption, the CVC model seems to have been adopted first in the USA and Japan, then Germany and Nordics, and then in France. French CVC activity was very limited before 2005, the only two CVCs existing being Genzyme Ventures and Arkea Capital. Arkea Capital is a particular case, being the body of Crédit Mutuel Arkéa, one of the main French banking companies. It was created in 1987, but very much like an IVC, they were targeting financial return first, and there was limited strategic influence from the parent. As for Genzyme Ventures, they are operating in the very specific segment of biotechs, one of the oldest of venture capital. This analysis confirms the trend we assumed before, which is that French CVC creation has boomed since 2015.



When we look more closely at French CVC creations between 2003 and 2017, we see that 2015 was a landmark, since as many CVCs were created between 2015 and 2016 as over the ten previous years. We see that many different industries are represented (telecommunication operators, aerospace, high tech, mobility, transportation, insurance), but some are not (banking). In most cases, the leader was the first mover for the CVC creation. From this perspective, 2015 was a shifting point for the insurance industry, with four CVC creation over two years (AXA, Maif, Macif and CNP Assurances). Each industry follow a specific trend, and we will go deeper into this analysis in the third part (III) of this study, with feedback from professionals in different industries.



*of the 41 CVCs included in our study, asset under management is not publicly disclosed for 14 of them.

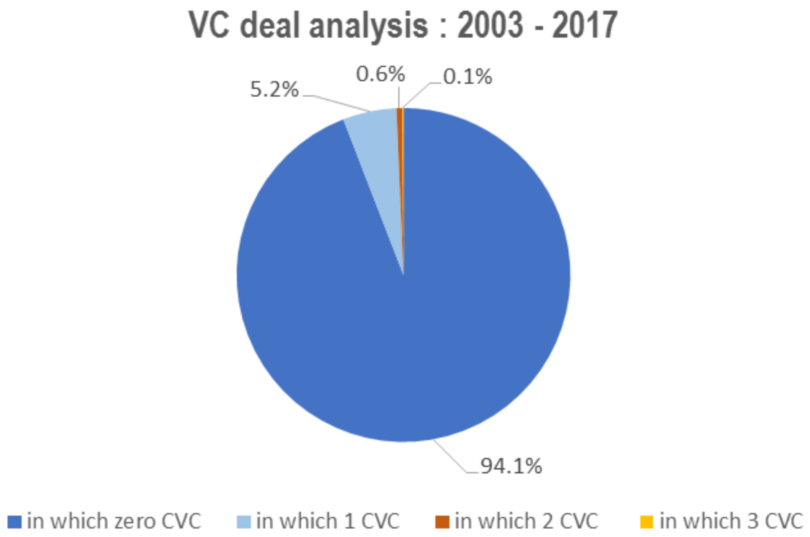
Looking at asset under management for both French and non-French CVCs, we can see two different patterns. The great majority of French CVCs have asset under management below 50 million euros, as opposed to non-French CVCs whose asset under management are in majority above 500 million euros. There are several limits to this analysis, first, asset under management is not available for some CVCs. Second, the biggest non-French CVCs are the most likely to invest outside their home country. Therefore, we cannot make a direct comparison between the two data series, as French CVCs are for most of them only investing in their home country.

Taking into account these limitations, the key insight is that French CVCs asset under management is limited compared to other CVCs in the world. French biggest CVC as of today is Axa Strategic Ventures, with 250 million euros under management. French corporate have not decided to invest massively in CVC as did SAP (Sapphire Ventures, 2.2 billion euros), Deutsche Telekom (2.0 billion euros) or Intel Capital (1.2 billion euros). Even more interestingly, some French CVCs seem to be of very limited size, like Orange Digital Ventures (20 million euros), and Macif (15 million euros). The underlying reason is that these CVC do not work like traditional VC investment vehicles. These 20 million euros and 15 million euros are commitments from the corporate that can be renewed once they have been used by the CVC. Usually, this is not the case, as private equity investment vehicles (FPCI in France), have clearly contractual periods (subscription, investment, divestment). These mechanism reflects the willingness for some French corporates to take less risks, and keep more control on the CVC, as the corporate can decide to continue or discontinue the CVC after looking at the performance of the first investments. The French CVC activity is on the rise, and is consequently deemed to evolve a lot over the next decade. However, it is not clear if French corporates would like to adopt the model of SAP, Deutsche Telekom or Intel, since a more than 1 billion euro VC fund is a business itself, and a strategic choice. Indeed, in a setup with significant asset under management, the CVC has to invest beyond his parent core business. We will answer this question in the part III of this study, using data from interviews with CVC professionals.

2.2 CVC investments over 2003-2017

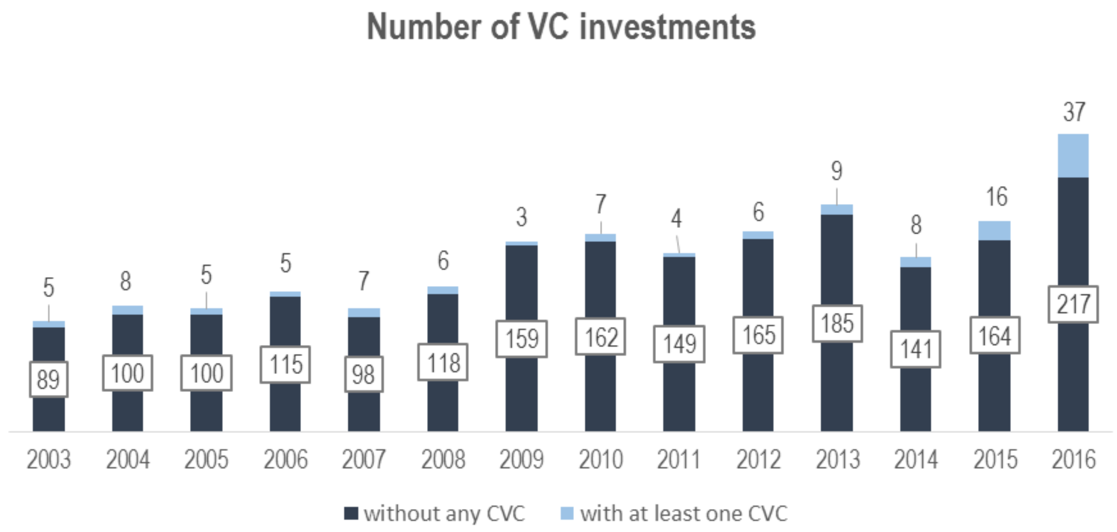
A. Number of investments

Between 1st January 2003 and 1st January 2017, 2,094 venture capital investments were closed, among which 5.9% (123 investments) included at least one CVC. 89% of the times, when a CVC invest in a company, he was the unique CVC. From the corporate side, this reflects the willingness to create a somewhat exclusive relationship with the startup. From the startup side, this imply the choice of the CVC that will answer the best to its financial and operational needs. We will elaborate on this trend in the third part of the study.

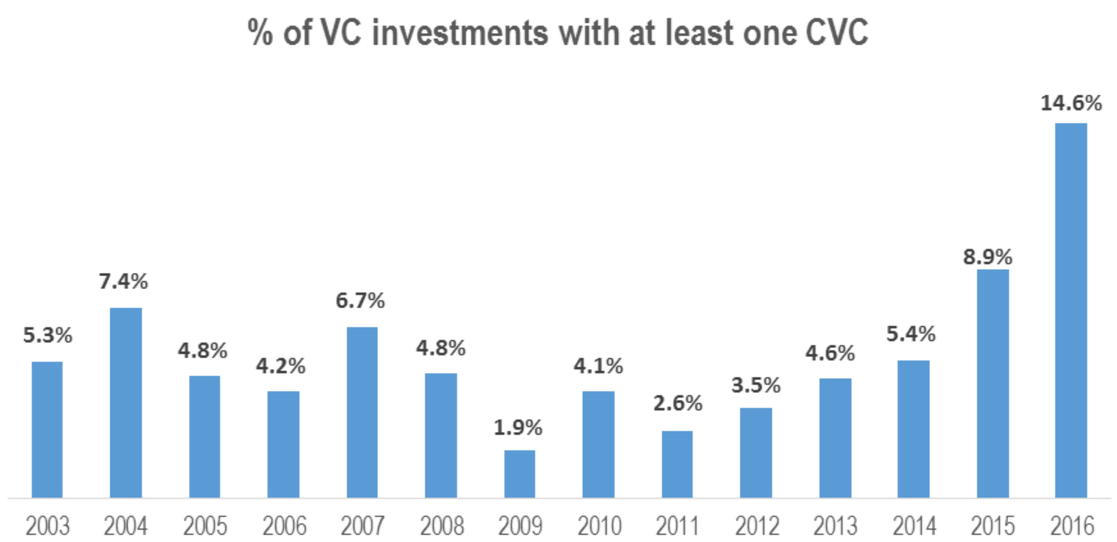


Between 2003 and 2015, only four deals included more than one CVC investor. In these situations, corporates involved in the deal were not direct competitors, in terms of product, and geography. For instance, DO Labs was invested by both Hitachi Ventures (Japan), and Thales Corporate Ventures (France). In the same way, Sequans Communication was invested by Alcatel-Lucent (France) and Motorola Ventures (USA). Criteo was invested by SAP Ventures (USA), and SoftBank Capital (Japan).

2015 marked a shift in investment strategies, with 10 investments with CVC co-investors between 2015 and 2017. The main novelty is that some startups are only financed by CVCs. For instance Symbio FCell has only two investors, Engie and Michelin. In the same way, Wynd closed a Serie B in November 2016 with Orange Digital Ventures and Sodexo Ventures. In all these cases, there is no overlap between CVCs underlying market, but these investments pose a challenge in term of governance and conflict of interests. From these perspective, a sound analysis of the governance clauses and liquidity clauses of the shareholder agreement would be highly insightful. The last revolution since 2015, is the rise of several French unicorns with all time high fundraisings for France. For instance Sigfox, which has raised 250 million euros since 2015, was invested by 15 different VCs among which 7 are corporate related (Intel Capital, Engie New Ventures, Eutelsat, Total Energy Ventures, Salesforce Ventures, NTT, SK Telecom and Telefonica). In this case, not only governance issues are key, but also the objective of each CVC in the deal. Indeed, it is worth determining the degree of involvement of each investor, and the way they interact with the startup without crippling down its development. Finally, cultural issues are central (investors are French, American, Japanese, South Korean and Spanish).

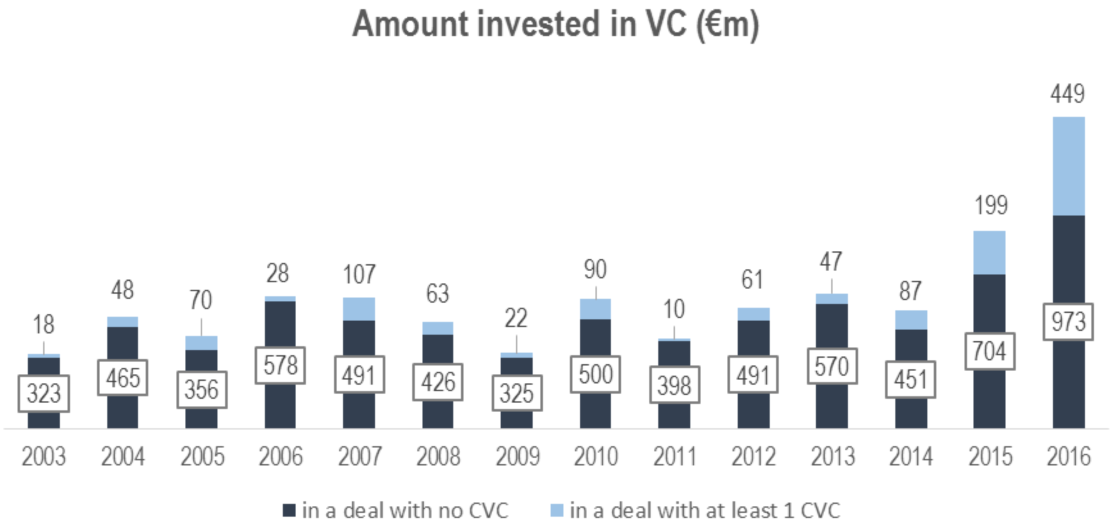


Venture capital investments in France have been growing steadily over the 2003-2016 period (8% CAGR 03-16). The share of CVC investments has followed different patterns over this period. Between 2003 and 2008, the share of Corporate Venture Capital has been stable with around 6% of all investments. 2009 was marked with a sharp decline of CVC activity, down to 1.9% of investments, which reflects the willingness from corporates to refocus on internal R&D and core activities. Finally, since 2011, CVC activity has been booming, and reached its all-time high with 14.6% of venture capital fundraisings in 2016. There are several possible explanations to this boom. GDP growth slowdown in Western Europe encourage corporates to look for alternative sources of growth, which wanted to find in startups. Besides, by externalizing R&D startups proved to offer to corporates a more agile path to innovation, albeit more risky. In parallel, there have been a tremendous development of the entrepreneurial ecosystem in France. The number of creation of new firms in France went from 239,000 in 2003 to 554,000 in 2016[5]. This movement was supported by strong incentives to create startups for French universities and Grandes Ecoles students (Paris Saclay Seed Fund, University incubators), the creation of private incubators and mentorship programs for startups (Station F, Agoranov, Partech Shaker, Microsoft Spark, in addition to Numa), and the development of public support (Bourse French Tech, prêts d'amorçage Bpifrance). We will elaborate further on this trend in the third part of our study.

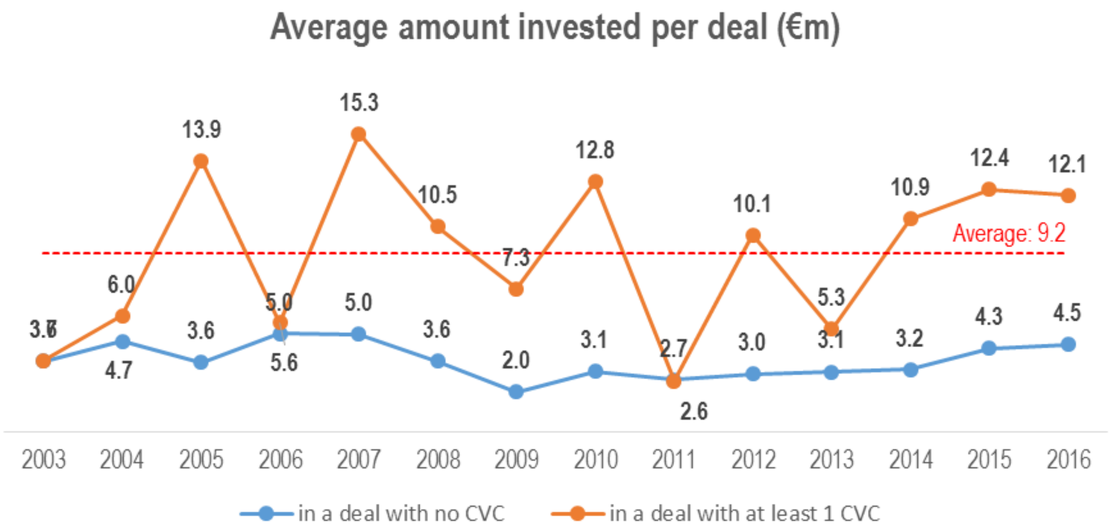


[5] INSEE, Nombre de créations d'entreprises - Ensemble - France.

B. Analysis of the amount invested in France



When it comes to value, the picture is slightly different. Total amount invested by Venture Capital funds over the period 2003-2014 has been stable around 500 million euros. But since 2014, this amount has almost tripled to 1.5 billion euros. More specifically, the amount invested by CVC funds was almost multiplied by 5. It is worth noticing the overall volatility of the amount invested by CVC funds, mainly due to the limited number of deals in France. In 2010 for instance, 80% of amount invested in deals including CVCs were in only two deals, Cerenis Therapeutics (40 million euros) and SuperSonic Imagine (35 million euros). This trend has kept going on since 2010, with the overall amount raised reaped by few startups. However, since 2014, France was witnessed the birth of new unicorns and the number of fundraising over 20 million euros has exploded. 2015 was namely marked by BlaBlaCar ($200m), Sigfox (100m€), Scality (45m€), Biom'Up (31m€) and Netatmo (30m€) fundraisings. In the same way, 2016 was marked by Sigfox (150m€), Deezer (100m€), MedDay (34m€), Acco (31m€), Drivy (31m€) fundraisings.



Albeit quite volatile, because of the limited number of deals, the average amount invested in deals including CVCs has always been higher (9.2 million € average), than deals without CVCs (4 million €). As we said above, booms and busts are mainly due to one or two startups reaping significant fundraisings every year. However, since 2014, deals including CVCs have been consistently larger. There are several possible explanations. Recently created CVCs have significant amount of new money to invest, with less diversification constraints than IVCs. As a consequence CVCs have a tendency to invest bigger tickets. Moreover, it important to keep in mind selection effect, as CVCs does not invest in the same type of companies as most IVCs. In general, CVCs target more mature companies, in very targeted sectors, that may have higher financing need. For instance, Sigfox, which has raised 250 million € over the past two years (namely from the following CVCs: Intel Capital, Engie New Ventures, Eutelsat, Total Energy Ventures, NTT, SK Telecom and Telefonica), face significant capex to develop its Internet of Things network over the world.

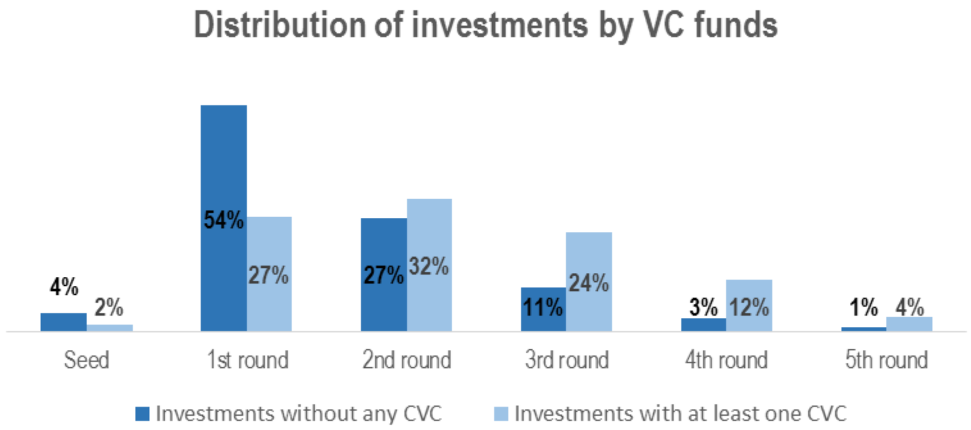
CVC investments (2015-2016)	Amount invested (€m)	Industry
Sigfox Wireless	150.0	Internet of Things (hardware and software)
Sigfox Wireless	100.0	
Biom'Up	31.3	Biotech
Drivy	31.0	Internet marketplace
Navya	30.0	Driverless and autonomous transportation
Wynd	30.0	Software (SaaS)
Actility	22.5	Internet of Things (hardware and software)
Cedexis	21.0	Software (SaaS)
Alkemics	20.0	Internet marketplace
Koolicar	18.0	Internet marketplace
Enterome	14.5	Biotech
Chronocam	13.8	Artificial vision (hardware and software)
Lendix	12.0	Fintech (internet marketplace)
Alan	12.0	MedTech (Internet marketplace)
MaaT Pharma	10.0	Biotech
Coorpacademy	10.0	Internet marketplace

When we look more precisely at the 16 biggest fundraising that make more than 80% of the total amount invested by CVCs over 2015-2016, we notice that selection effect is actually important. CVCs targeted deep technology industries with highly specialized assets, significant capex, that IVCs may be reluctant to invest in. For instance, we can highlight Internet of Things, Biotech, Autonomous Transportation and Artificial Vision. Chemmanur (2013) had identified that CVCs tended to invest in startups that required higher capex, and more R&D intensive than traditional IVCs. Our study confirms this pattern. However, CVCs are also increasingly investing in internet marketplace and SaaS, which were traditionally the sweet spot of IVCs (Drivy, Alkemics, Koolicar, Lendix, Alan, Coorpacacdemy).

The main limit of this analysis is the confidentiality over the amount invested by each investor in each fundraising. Indeed, we only have access to the total fundraising, and more than 85% of fundraisings that included a CVC included also IVCs. CVCs are mostly in minority compared to IVCs in such deals. As a consequence, it is not possible to determine if the higher amount invested in deals including CVCs is explained by CVCs investment strategy or by the specialized nature of the deal (selection effect). We will elaborate further on the selection effect in this part of the study.

C. Stage of investment

As we previously said, comparison between CVC and IVC figures may not be straightforward because of the selection effect. Specifically, in this section we analyse at which stage of development of the startup the CVC fund intervene, compared to investments in which only IVCs are present.



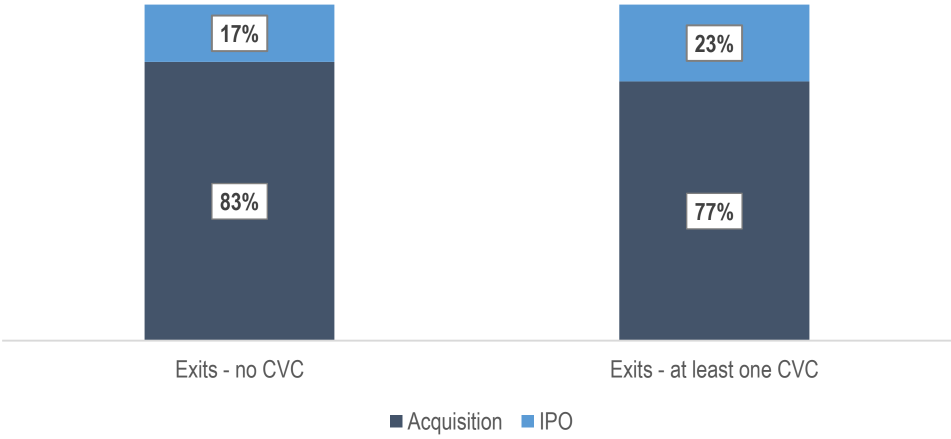
Analysing our deal database over 2003-2011, we can confirm that the distribution of stage of intervention is different, whether a CVC is involved or not. When it comes to IVC only deals, more than half (54%) of investments are made at a Series A stage. This distribution is not surprising as, most IVC funds arrive after a first seed round including business angels. IVCs invest in startups that already have a proof of concept or a proof of principle, as it is reducing the risk of their investment. On the other hand, IVCs do not want to invest too late, because it implies higher valuations, and sometimes higher commitments. In general IVCs invest at the 1st round, and keep a reserve to participate to the following rounds. Overall, the investment strategy of IVCs is dictated by the risk/return trade-off.

By contrast, CVCs tend to invest at a later, on average at the Series B stage. The distribution is more evenly spread over the development stages, from Seed to late stage. As opposed to IVCs, CVC investment strategy is not only dictated by financial return. First, CVCs may not be afraid of high commitments at a late stage if the strategic interest is high. For instance, considering Sigfox, corporates like Engie, Air Liquide, Eutelsat and NTT arrived at Series D. Second, historically, CVC investment teams were made of managers from the corporate parent with little or no experience in venture capital, which was detrimental to their ability to source deal at an early stage. We will elaborate on CVC investment team composition in part 3 of this study. Third, and related to the previous observation, CVCs are eager to invest in startups in which big names of IVC have already invested. For Drivy, Nokia Growth Partners arrived at Series B, after Index Ventures and Alven Capital invested in Series A.

On the other hand, this trend is clearly disappearing in France, as CVC investment teams are increasingly made of experienced VC investors, which are not reluctant to source deal themselves, and invest as lead investors at an early stage. For instance, in 2016, MACIF invested as sole and unique investor in Drust Series A (2.5 million €). In the same way, SNCF invested 3 million € as unique investor in Allocab Series A. At this point, it is worth noticing that CVCs are bringing to startups benefits that IVCs can traditionally not provide at an early stage. When it comes to technical development of products, IVCs usually have a lower level of skills than a specialized CVC. For instance, CVCs like Orange Digital Ventures or Engie New Ventures can perform more accurate due diligences on deep tech startups, and can bring a highly valuable technical expertise at a seed stage. Chemmanur (2013), had already identified that CVCs were starting to invest at earlier stage. Our study confirms that this trend has kept going on until 2017. We will elaborate further on the composition and the background of CVC investment teams in the third part of our study.

D. Exits

To compare the contribution of CVC and IVC teams to the startup they have in portfolio, analysing exits gives relevant insights. We can consider four different types of exits for a startup: IPO, successful acquisition, distressed acquisition and liquidation. The main caveat is that startups are usually not liquidated even if not successful. 90% of startups in the world are unsucessful[6], but most of them are still acquired at a discount by corporates that benefit from the team (acqui-hire), the technology, a customer base or other assets. From a statistical perspective, it is difficult to differentiate successful acquisitions and distressed acquisitions. By contrast, IPOs are a better measure of success of the startup, as retail investors would obviously not be attracted by a distressed company.



In our analysis, we did not make any difference between the different types of acquisitions, and the corresponding financial health of the startup. Looking at the result of our analysis, we see that startups in which a CVC had invested were more likely to go IPO (24% versus 17%). As we said, assuming that IPO is a measure of success, this result which suggests that entrepreneurial firms backed by CVCs perform better.

a. Focus on CVCs

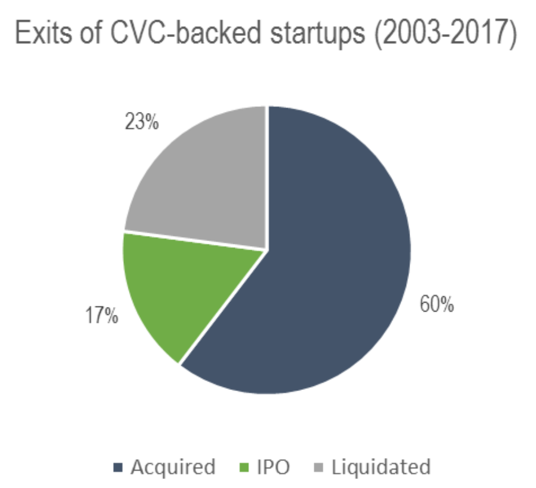
This analysis is too broad and needs to be refined. For each investment made between 2003 and 2017, we wanted to determined precisely if the startup was acquired, or liquidated or went IPO. IPO is a binary criterion, thus very easy to know. Successful acquisition is a bit less clear, as we said, since some acquisitions may be distressed, and the financial terms of the transaction are always confidential. When the VC did not communicate on the exit, we considered that the startup was liquidated, i.e. the equity stake of the VC in the startup was totally written off. We categorize this situation with the label "failure" in our study, even if the startup is usually not liquidated and most often taken over by another investor, and keeps existing.

For example, in 2008, three VC funds invested in Supertec, a startup that built a sensor system to track customers in store. The startup was put in a safeguard procedure in May 2013, and the equity stake of the three VC funds have been 100% written-off. This example illustrated the information asymmetry problem, since VCs communicate a lot on successes, but no information is released on failures. For the example of Supertec, we have been aware of the equity write-off because one of the VC is OTC Asset Management, which invests through FCPI ("Fonds Communs de Placement dans l'Innovation").

Therefore, as LPs are retail investors, the GP has an obligation of publicity. However, most VCs, and especially CVCs, are using investment vehicles that are not opened to retail investors. As a consequence, there is no obligation of public reporting. Over our analysis scope (2003-2017), more than 4000 investments were made by VC funds, and we decided not to check by hand, on by one, the status of each of these investments, as is it highly time consuming (we need to check reports of the commercial court). However,

[6] CBInsights

for the 114 investments in which a CVC was involved between 2003 and 2017, we did check the status of each investment individually. When we look at the numbers, 49 of these investments were exited, and 65 are still in portfolio. If we focus on the types of exits for the 49 startups that did so, we have the following breakdown:



The key learning point of this analysis is that CVC-backed startups seem to be more successful compared to IVC only backed startups, as 77% of investments ends in an IPO or a successful acquisition, and only 23% in liquidation. We will try to understand the underlying mechanism behind these numbers in part III, using with interviews from CVC investors. At this point, there are several limitation we have to keep in mind. First, selection effect is influential. As we saw in the previous subpart, CVC target later stage investments compared to IVC, thus with less risks. Second, 58% of all investments of CVCs over 2003-2017 are still in portfolio, and we may argue that startups that fail remain longer in portfolio, because of the disposition effect[7]. We could argue that we underestimate the proportion of failures because some of them are still in portfolio, whereas successful startups are already exited.

b. Future acquisition by the corporate

Another insightful metric concerning CVC is the percentage of startups they invested in which are acquired by the corporate. Indeed, if a corporate tends to acquire massively startups in which its CVC has invested in, it means that CVC is a first step in the external growth strategy of the corporate. Guo, Lou (2015) showed that only 5% startups in which a CVC has invested is acquired by the corporate later. In our case, over the 114 investments of CVCs in French startups over 2003-2017, we found that the corporate parent of the CVC never acquired the startup so far. The limit of this analysis is that our statistical sample only includes French startups, and is thus quite limited. Still, the key learning point is that CVC does not come as substitution to external growth, and has its own usefulness.

In our database, some examples are interesting. First, even when a CVC is the only investor in a startup at a seed stage, it does not mean that the corporate is going to acquire the startup later. For instance, Motorola Ventures invested in UDCast in 2006 as a unique VC, and the startup was acquired five years later by OneAccess. In the same way, Hi Inov, the CVC of the French transportation company Norbert Dentressangle (XPO) invested in Mensquare in 2013 and the startup was acquired by Le Figaro, three years after. These observations indicates that even when the CVC is the only investor, the startup keeps a significant level of independence. We will investigate further on the potential for conflict of interests in the

[7] Taylor, Luke, 2000 : disposition effect is described in behavioural finance as a tendency to sell assets whose value has increased, and to keep those whose price has dropped, hoping that they will recover.

third part of our study. The trend of CVCs acquiring minority stakes in startups as unique VC is on the rise, with SFR Developpement, Salesforce, MAIF or Malakoff Médéric also adopting this strategy.

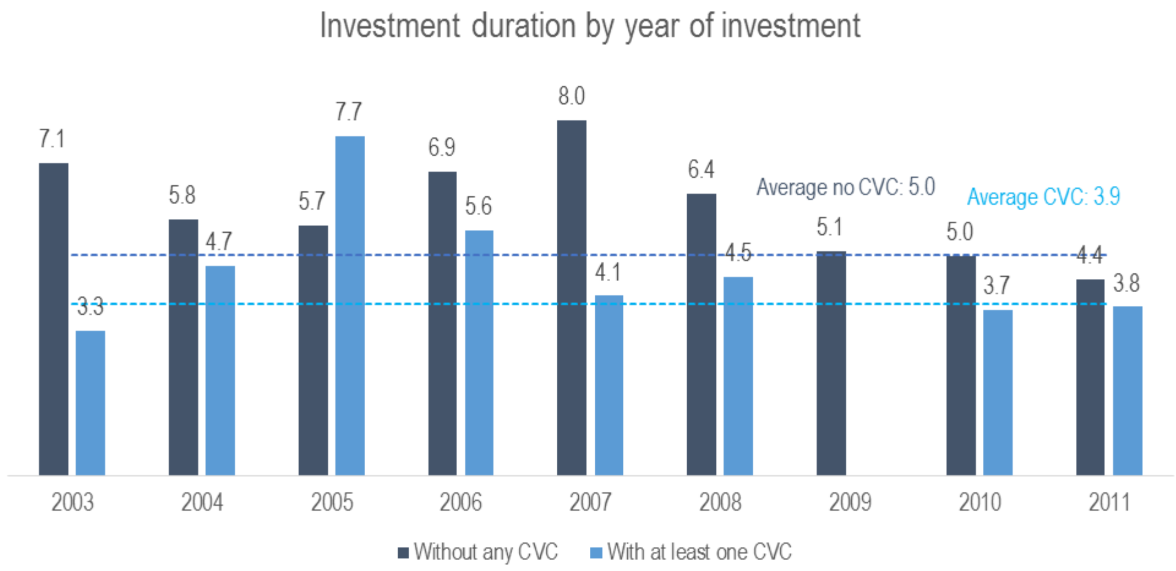
Coming back to the existing literature, Dimitrova (2013) showed in the US market that when more than one CVC had invested in startup, the likelihood of a future acquisition by one of these CVC increased. Looking at the data for French companies, no such trend can be seen, as even there are no case of acquisition by a CVC investor, even when more than one CVC had invested. However, co-investments by CVCs is a recent trend, a most startup in such cases have not exited yet. For instance, it would be interesting to follow the case of Wynd, which was invested by Orange Digital Ventures and Sodexo Ventures in 2016, or Sigfox, which was invested by 7 corporate-related VC funds.

Nonetheless, the overall trend observed in the U.S in other papers is confirmed, as we see that the great majority of CVCs do not invest in startup with a view to acquiring the company later.

E. Investment duration

a. Comparison between CVCs and IVCs

To understand the difference in the way CVCs and IVCs manage their investments in startups, we looked at the duration of each investment. For all exists that were publicly disclosed, we calculated the investment duration, and we made statistics for CVC investments and IVC investments separately.



Statistics are based on the year of investment, so we only took into account exits between 2003 and 2017, but only for investments made before 2011. Otherwise, we would have introduced a biais in our analysis, because most recent investments may not be exited yet. To calculate the investment duration, we consider as starting point the first investment of the VC fund in the startup, not the additional rounds in which the VC fund participate for the same startup.

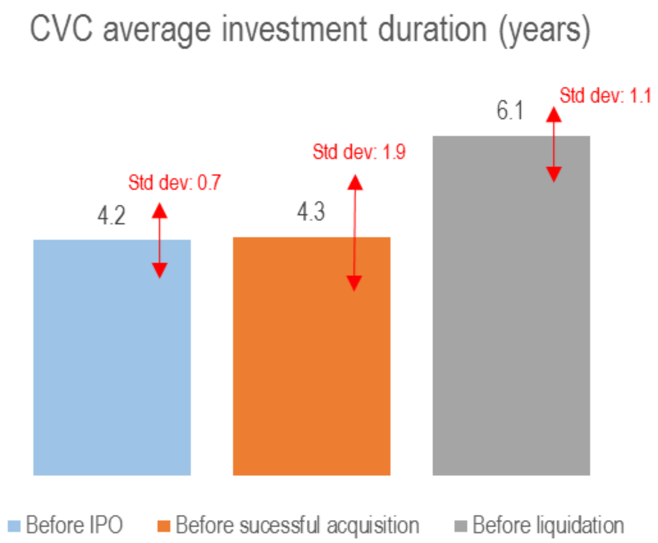
Analysing our results, the first remark is that figures for CVC investments are more volatile than those of IVC. This is mainly due to the fact that less deals are made by CVCs. For instance, we do not have any figure for CVCs in 2009, because the only investments made by CVCs this year are additional equity injection in a startup they already had in portfolio. In 2009, Qualcomm Ventures participated to an additional fundraising in Streamezzo, SFR Développement did the same in Digitick, and idem for Motorola and Alcatel in Sequans Communications.

The main result is that CVC investments remained shorter in portfolio, on average 3.9 years over 2003-2017, compared to IVC only investments, which have an average of 5 years in portfolio. This result seems to be counterintuitive, as Guo, Lou (2015), based on US statistics, found that CVC-backed businesses remained longer in portfolio, as CVC investors had long term strategic goals, and were more patient to realize financial return. Several explanations exist for this discrepancy. First, we only analysed data from investments in France targets. Investment strategies may not be comparable to those of VC funds in the US. As we explained in part I and II, CVC boom occurred later in France than in the US. And CVC investment teams have progressively shifted from internal hires from the corporate parent, to former IVC professionals. Therefore, CVC teams with little or no previous experience in VC had a tendency to invest at a later stage (Series C and D), as investment opportunities were easier to source, and investments less risky. Moreover high valuations at late financing rounds were not a problem for CVC which had substantial dry powder, and lower financial return targets than IVC. From this perspective, it is very insightful to analyse liquidity clauses, as VC funds usually exit all at once, regardless of the fact they are a CVC or an IVC, and despite the fact that they have different investment horizons. We will dive deeper in this analysis the third part of the study.

b. Disposition effect

In this subpart, we would like to determine if CVCs are subject to disposition effect, i.e. if CVCs are waiting longer to liquidate a bad investment compared to a successful investment. Chemmanur (2013) suggests CVC investors have a greater tolerance for failure, measured by the amount of time that VC allow startups to have before stopping their investment, when their portfolio company is in difficulty. Contrary to the study here above, we are not going to compare the difference in the amount of time CVCs and IVCs spend before liquidating a company in difficulty. We prefer to compare, only for CVCs the difference in the investment duration between successful investments and failures.

Analysing the results, the main takeaway is that CVCs wait on average 2 more years before liquidating an unsuccessful investment compared to successful investments. Standard deviation of investment duration are roughly the same, except for acquisition. We can easily explain the higher standard deviation for successful acquisition because this type of exit can happen at any time after the VC has invested. A most recent example is Finsquare, which was acquired by Lendix in 2016, just one year after Aviva France, Edenred Capital Partners and Virtual Network invested. This variability is much less likely for IPOs and liquidations.



In conclusion of this part, we find that CVC activity boomed between 2014 and 2017 in France. Over the world, and especially in the US, CVC investments have been going on for 50 years. This activity has been subject to booms and busts, especially during financial crisis. The situation of France is different, as there was a lag in the adoption of this investment model. CVC activity in France has been stable until 2014, and between 2014 and 2017, both the number of investments of CVC funds and the amount they invested has been multiplied by five. Foreign CVCs were not subject to this lag, as American CVCs, namely

Intel, Motorola, Qualcomm and SAP started to invest in France as early as 2009. The boom of CVC between 2014 and 2017 in France was dragged by mega investments like Sigfox, in which CVCs were highly involved. On average, funding rounds are bigger when a CVC is involved, which can be explained by the selection effect. CVCs target startups that have specialized assets, and often high capital expenditures requirement. In this situation, CVC role is complementing that of IVC, as they can replace IVCs that are afraid of high cash burning rate, and create synergies with the target. Sigfox is a perfect example. We cannot rule out the fact that newly created CVCs since 2014 had substantial dry powder, which encouraged them to invest higher tickets. As for the stage of investment, CVCs arrive on average later on the startup capital. CVCs do not only focus on financial return, therefore, they are not afraid of entering the capital at high valuations, provided the strategic fit is important. Then, late stage investments in a proven business model are less risky. However, the composition of investment teams is changing, as former VC professionals are progressively replacing internal hires of corporates. Finally, CVC investments have a tendency to more IPO than those of IVCs, and to remain for a shorter amount of time in portfolio. The latter is highly related the stage of investment, as a lot of CVC investments remain only one or two years in portfolio before exit, as the CVC arrived at a late stage.

In the third part of our study, we will explain the results of our quantitative analysis using data we collected from interviews with CVC, IVC investment team members, and startupers. Quantitative analysis of VC investments does not make sense if we do not relate it to CVC and IVC investment strategies, relationships between startups and their investors, and the background of VC investment teams. We will try to confirm the tentative explanations we gave in part 2.

3. On-field investigations : an attempt to corroborate qualitatively CVC specific features

Goals and Methodology

In part 2, we observed different metrics on investment by CVCs and IVCs. In part 3, we will substantiate the quantitative analysis with on ground data from VC investors. Our previous analysis was based on various features: the number of CVC investing in France, the number of deal made and the amount invested, the average amount invested by deal, the exit type, the stage of investment and the investment duration.

In part 3, we are first going to explain the boom of CVCs in terms of number of investments and amount invested, analysing the CVC creation strategy by big corporates. To do this, we are going to use data from interviews with CVC, IVC investors and startupers. Second, we are going to analyse how CVC and IVC complement each other, and how they envision their relationship with startup, and possible conflict of interest. This will support our analysis our previous analysis on investment club composition in VC deals. Thirdly, we are going to dive deeper in CVCs and IVCs investment strategies, how they source and choose investments and what they bring to startups in portfolio. This analysis will support the results we obtained in part II on the stage of investment and the selection effect. The final subpart will be about the analysis of CVC investment teams over time. We mainly want to confirm the shifting pattern from corporate internal hires to VC experienced professionals. This analysis will support the results we obtained in part II on the stage of investment.

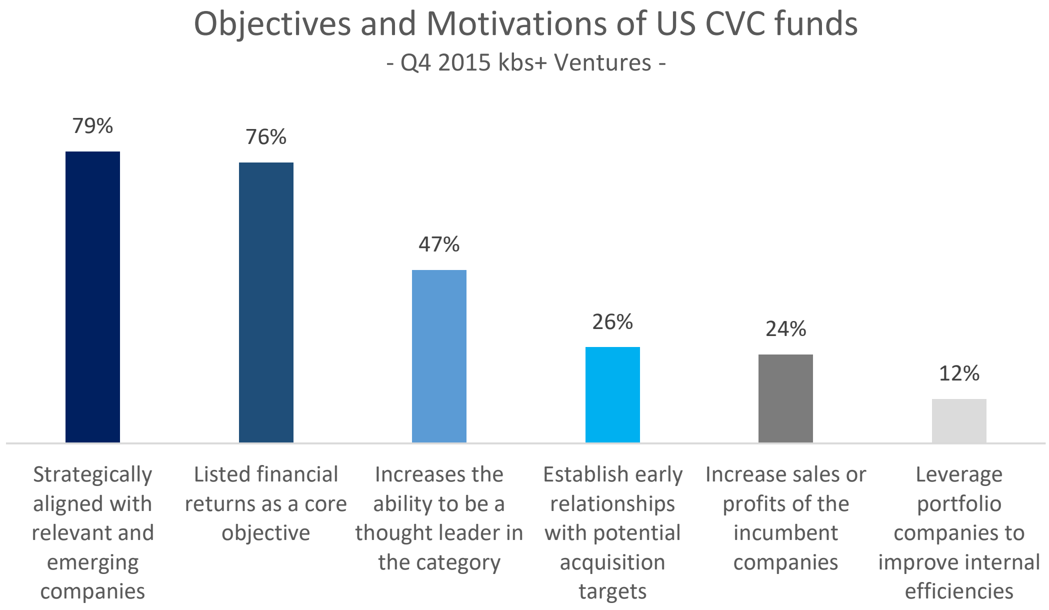
In terms of methodology, we interviewed professionals from 20 different structures including CVC firms, IVC firm and startups whose investors comprise a CVC investor. We selected players in different industries to have as comprehensive a view as possible: Insurance, Banking, Energy & Utilities, Aerospace & Defense, Digital. For each question we asked during our interviews we ranked order of importance each item of the answer of the interviewee. In this part, we will quote entrepreneurs and investors on a no-name basis, for matter of confidentiality. The examples we use are only illustrations from our database, and do not come from our interviews.

3.1 Understanding CVC firms motivations

A. A strategic step towards more open innovation

The starting point to better assess CVC investment philosophy, strategy and performance and the results obtained in part 2 is to understand what are CVC funds raisons d'être. In 2016, a study by Jaideep Raje from luxresearch[8] and conducted through the US showed that the main objective of American CVC managers were to be enable the group to be **strategically aligned with relevant and emerging companies** while they admitted as second motivation that **financial returns were a core objective**.

[8] CVC 2.0 – Demosntrating Added Value to the Corporate Bottom Line



This assessment proves to be corroborated with the testimonies we got from our interviews. In fact, a key motivation for corporates to create a CVC is to screen new disruptive trends as early as possible. Some industries, like Banking and Insurance have witnessed the outbreak of new paradigms: fintech, blockchain and uberization.

- CVC1: *"We created a CVC because we wanted to spot new technologies early, we did not want to be outpaced by a new trend, as was BNP Paribas with Compte-Nickel".*

- CVC2: *"We did not know how to assess the impact of the sharing economy. More precisely, we wanted to know how fast the insurance market was going to be uberized. If people use BlaBlaCar instead of owning their car, this represents as many insurance contract that we won't sell".*

Compte-Nickel is a French startup founded in 2014, which offers consumers bank-less accounts that can be opened in French convenience stores, with only and ID and a phone number. The service includes a credit card, a web interface to manage the bank account, and costs 20 euros per year. Compte-Nickel was acquired by the French bank BNP Paribas in 2017. Interestingly, Compte-Nickel was supported by one angel, *"Confédération des Buralistes"* and one IVC, Partech Ventures, but no CVC. In France, the four biggest retail banks, BNP Paribas, Société Générale, Crédit Agricole and BPCE, do not have any CVC. They have chosen to manage innovation and R&D internally, with multibillion investments for internal innovation programs[9], and acquire startup if needed, when they prove to be successful. This choice is really specific to the banking and insurance industry, in which players have a massive investment power.

As for the uberization, insurance market is a case in point. For insurers, creating partnerships with car-sharing platform is key, because this new consumer habit is a clear source of loss of revenues for insurers. As a consequence, we can see that Allianz partnered with Drivy, Axa partnered with Ouicar. MAIF Avenir went a step further by investing Koolicar and TravelerCar.

- CVC3: *"For our company, which makes several billion profit every year, investing 10 million euros in a promising business is pretty much nothing".*

- CVC4: *"Most retail banks, especially in Spain, acquired a lot of startups at a late stage. This is a very low cost for them, and marginal on their balance sheet".*

[9] « We are going to invest 3 billion euros between 2017 and 2020, mainly for digitalization; this is the right time to accelerate", Jean-Laurent Bonnafé, CEO, *Les Echos 02/07/2017*

BNP Paribas made 8.1 billion euros net income, Société Générale made 2.9 billion euros net income. Therefore, spotting disruptive startups early and creating a dedicated structure like a CVC, to invest little money at low valuations is not a priority.

On the other hand, in industries where profitability and cash generation is more strained, setting up a CVC is the preferred way of optimizing investments.

- CVC5: *"In our CVC, we have people very good at spotting startups at an early stage. This is good for us, because we can spend little money while having a significant control on the startup".*

Setting up a CVC managed by VC professionals is good way to source deals early, and to enter startups at a low valuation. This substantiates the results we obtained in part II, on the stage of investment of CVCs. Before 2011, corporate investments in startups were mostly late stage acquisitions, but corporates are increasingly hiring experiences VC professionals to investment in startups early. Another obvious motivation of early investment for CVC is to obtain an exclusive relationship. We will elaborate further on this point later in the second subpart.

At this point, it important to precise that CVCs are not the only way for corporates to increase their awareness on their market. There is a different set of complementary tools, which do not necessarily imply equity injection.

- CVC6: *"We have set-up an accelerator, bootcamps, mentorship programs, to increase the awareness of our company on the market. These programs are the best suited to early stage startups. Then for Series A, Series B, we proceed to much focused investments for digitalization".*

Even if spending a lot of money in late stage acquisitions is not a constraint for most retail banks and insurance groups, it appears that having more refined tools addressing all maturity stages forces these groups to have a clearer innovation strategy.

B. The holistic approach : structuration of both ecosystem and value chain

A key learning point during our interviews is that CVCs do not only invest in startups in order to secure business with them, or in order to acquire them later. The second key motivation is to structure their market and the ecosystem, in a 2nd order reasoning.

- CVC7: *"In the Insurancetech, a lot of young startups come up with disruptive ideas, but they lack financing, mostly because traditional IVCs do not have the level of expertise to understand their value proposition. We want to support this very young ecosystem"*

- CVC8: *"Our objective is not to secure business with all of our startups in portfolio. We only work directly with 15% of them"*

We will elaborate further on the independence issue of startups in which CVCs have invested. At this point, we have to keep in mind that some CVCs have a strong degree of independence with the corporate parents. This is the case when the investment team of the CVC owns the capital of the CVC. In this situation, the corporate parent is only a LP, often the unique one, which dictates the investment strategy and is consulted as a strategic advisor, but does not have veto rights on investments of the CVC. In such a case, the CVC does not have strong incentives to create business with the startup, as the former wants to let the startup develop business independently, and maximize his financial return.

Besides, some ecosystems need to be structured and supported, to create a virtuous circle between VCs, Universities, Incubators and companies. This is what has been done in London for fintech for the past 5 years, and what Paris wants to achieve for fintech and insurancetech now.

- IVC1: *"Our LPs are five big corporates* [editor's note: all working in the same industry]. *They gave us the mission to support our supplier's ecosystem by making investment in startups and SMEs, because the reliability of suppliers is key for the business of our LPs.*

- IVC2 : *"Our mission is also to consolidate the network of suppliers. Today, our LPs have more than one hundred of suppliers. In the end, they expect to have only a dozen".*

This quotes illustrate the fact that corporates are not using only one tool to invest in startup. Most of them are also investing indirectly as LPs in IVCs. This may be a first step before the creation of a CVC, as indirect investment does not require the same level of knowledge of investment processes. More importantly, in this example, some big corporates do not want to invest directly in suppliers. The first reason, is strategic, as acquiring companies on all parts of the value chain may not necessarily be the best move for corporates.

Our study is not about the choice of the best tool for corporates to invest in innovation, as this is a topic of research in itself. Overall, CVC creation is motivated by two reasons: increasing the awareness of the parent company on new disruptive trends, and structuring an ecosystem. CVC is often not the unique tool that corporates use to invest in innovation. But this form of investment brings the advantage of setting up an independent investment team, and letting an indispensable independence to startups in portfolio. This is the topic of the following part.

C. Is the rationale that clear and sustainable?

Part of the investment industry – IVC funds ahead – sees under a quite unfavourable light the role and purpose of CVC funds. Skeptics often blame CVC for its lack of professionalism or its poor investment philosophy. In 2012, Mahendra Ramsinghani, author of *The business of Venture Capital*[10], stated[11] : "CVCs are notoriously fickle – either its strategy du jour or change of the guard. Its misalignment of financial interest or lack of accountability – at times, CVC even invest in competing portfolio companies to gain access to technologies". Even if this kind of quotation cannot be generalized to all the CVC ecosystem, we found some players with few confidence on describing a clear and long-term strategy for their fund.

- CVC9: *"We started investing in many early-stage companies but we are reorienting us towards more mature, revenue-generating startups. The corporate direction has been quite unclear at the beginning about the key criteria to motivate the choice of an investment as strategic investments can encompass many different realities.*

It was clear during our investigations that part of the CVC ecosystem rely on quite weak foundations with CVC firms somewhat created to surf on an upward wave in the startup ecosystem. Mahendra Ramsinghani has also questioned the legitimate creation of CVC funds, blaming them for being market followers only. "If corporates are getting back in the market, it's a market top! They are usually not great market timers in that they get in at the top, then get frustrated and sell a the bottom. That is historical pattern of most corporate VCs.

- CVC10: *"By facts, we are following a learning-by-doing approach and, step by step, we are finally finding the ideal investment philosophy for the group mistakes, as if we were a young venture ourselves. But to be 100% honest, no one in the company knows if our CVC will be sustainable over the long-term and which criteria will the corporate direction take into account for keeping it or shutting it down"*

Critics against CVC funds may be heard but it seems hazardous to generalise them. Through our investigations and discussions, it appears that this alleged lack of professionalism from CVC funds is often unjustified, especially looking at the dynamism of large US CVC funds. Moreover, doubts could be mitigated simply by the fact CVC is new for companies – for French ones ahead as the phenomenon has appeared

[10] *The Business of Venture Capital: Insights from Leading Practitioners on the Art of Raising a Fund, Deal Structuring, Value Creation, and Exit Strategies,* Mahendra Ramsinghani. 2011

[11] *Down with CVC ? Yeah, You Know Me! ,* PE Hub. May, 31 2012 by Mahendra R.

later in Europe. With time passing by, these structures may gain in experience and establish themselves more clearly as efficient and valuable investment players in the ecosystem. This aspect would be studied in the last par through the specific angle of employees' professional background.

3.2 The potential for conflict of interests between CVCs and startups

When a CVC fund enters the capital of a startup, there is a clear potential for conflicts of interest. According to Chemmanur (2013), CVC-backed firms may be subject to invasive corporate interventions that impede their development. Park & Steensma (2011) explain that the first type of conflict of interest happens when the startup cannot partner with a competitor of the CVC, or to business with a competitor of the parent CVC. The second type of conflict of interest occurs when the parent company products compete with those of the startup. Overall, corporates do not like to see other competitor investing in the same startup. On the other hand, for startup, each partnership and each client is a very precious assets. The ability to remain independent is thus crucial. These two motivations may collide.

A. Conflict of interests and investment strategies of CVCs

- IVC3: *"Conflict of interests are obviously a key issue. Some entrepreneurs may refuse to let a CVC in for an early round, because they are afraid of exclusive relationships. Negotiation of clauses in the shareholder agreement is key".*

The issue highlighted in the previous quote is that startupers are afraid of being categorized as exclusively tied to a corporate. This is an issue for future financing rounds, and for the overall development of the business. We can link this statement to the quantitative results we obtained part 2. As a reminder, we found that, on average, CVCs invested later than IVCs. To explain this result, we posited that CVCs were more risk-averse than IVCs and less experienced to source deals at an early stage. Another explanation can be found on the startup side, as entrepreneurs may not want to be tied to a corporate at early stage. In fact, entrepreneurs themselves are aware of the issue.

- STARTUP1: *"While raising funds abroad, we realized that some IVC funds were reluctant on funding us because we already have a CVC fund in our capital. They feared our product development will be oriented exclusively towards the satisfaction of the corporate partner and that we would eventually lack of scalability. They also thought the exit scenario was too much reduced to an acquisition by the corporate"*

With this kind of issues, shareholder agreement is a key document, as it contains clauses on exclusivity, governance, and liquidity at exit. A very interesting topic of research, which is not that of our study, would be the analysis of shareholder agreements between, startups, CVCs and IVCs.

On the other hand, we see another counteracting trend. Some startups make the choice of opting for a CVC at a seed stage, and live with any problem of exclusivity and categorization.

- STARTUP2: *"Our CVC is our unique shareholder, and entered at a seed stage. We have an exclusivity if our CVC, and because of the concentration of our industry, we have not plenty of choices anyway"*

- CVC11: *"For a CVC, the advantage of investing at a seed stage is that startups will always accept your money"*

From the CVC point of view, the clear advantage of entering at a seed stage is to invest small tickets at a low valuation. As we said in the previous subpart, some CVCs made the clear choice, of hiring experienced investors capable of sourcing deals at a very early stage. Overall, the investment strategy of CVCs, is influenced by many different factors. From the startup side, we have to take into account the willingness of the entrepreneur to remain independent, but on the other hand the necessity to find financing at an early stage. From the CVC point of view, the degree of risk-aversion of the CVC concerning early stage investments is a decisive factor, but on the other hand, CVCs want to tie relationships early with startups for strategic reasons, and they want to enter at low valuations. All these factors are central during negotiations, and the shareholder agreement formalizes the outcome of the negotiations.

B. Composition of the investment club

- CVC12: *"When a CVC fund is already shareholder, usually it bothers a lot other CVC funds whose parents compete on the same market"*

- CVC13: *"We ask for exclusivity in our industry in terms of shareholder and partnerships. In terms of clients, we are opened, since it is in the best interest of the startup. When it comes to a CVC fund which works in a different industry, the startup is totally free"*

Some practices are well-established in the CVC world. When the parents of two CVCs compete on the same market, they will usually not invest in the same startup, even minority stakes. As an illustration (and only), Axa and Allianz would not probably be co-investors in a startup Series A. Even in terms of partnerships, that do not imply equity ownership, most CVCs ask for exclusivity in their industry.

Then each setup is different. For instance, if the clients of a startup are competitors of a CVC that invested in this startup, the latter may be more open-minded. Our interviewees are more eager to let as much freedom as possible, as it is in the best interest of the startup development.

Another setup is the situation when two CVCs from different industries invest in the same startup. For this point, we can refer to part 2 results, when we found that 85% of CVC deals only included one CVC. Using our deal database, a very interesting example is the Series B of Koolicar in April 2016, which had only two investors, MAIF Avenir and PSA Peugeot Citroen. This is a typical example when more than one CVC is involved, because two different industries, automotive and insurance are impacted by a new consumption habit, peer-to-peer car rental. The other typical example where more than one CVC invests in a funding round is when parent company of the CVC have their core business in different geography. The typical example is Sigfox, which has significant capex and is developing very specialized and technical infrastructure assets over the world. As a consequence, it made sense for telco operators to invest through their CVC (Telefonica and SK Telecom), but also CVCs that had interest in IoT to a larger extent (Intel, Air Liquide, Engie).

- CVC14: *"The startups we have in portfolio have a strong degree of independence. By no means would the corporate force exclusivity. Some of our startups have already built partnerships with our two main competitors".*

- CVC15: *"This is in line with our governance structure, as our CVC is owned by the investment team. Our main objective is financial return. The number one objective is revenue growth. There is no conflict of interests."*

After 2015, most newly created CVC firms have adopted a governance structure in which the CVC is owned by the investment team, with a strong degree of independence from the corporate parent. This form of structure is prevalent when the corporate does not necessarily want to acquire the startup, but more to structure the ecosystem, or increase its awareness. In this case, CVC investors behave as if they were an IVC in terms financial goals, as they have similar compensation scheme, with their own carried interest. There is hardly any risk of conflict of interest in this situation.

- CVC16: *"Do not believe that CVCs are rookies, they behave professionally, and they have clear procedures for conflict of interests"*

Finally, most conflicts of interest are addressed in a preventive way, in the shareholder agreement, with clear procedures. Clauses about competition, partnerships and exclusivity are explicitly. Exit is another important topic for entrepreneur, and a potential source of conflict of interests. For instance right of first offer and right of first refusal may prevent entrepreneurs from maximizing their financial return, as a corporate whose CVC is already a shareholder has an incentive to push the valuation of the startup down at exit. Once again, the use of such clauses would be another very interesting topic of research.

In summary, in the venture capital world, there is a clear potential for conflicts of interests between CVCs and startups. They occur mainly when it comes to negotiating exclusivity with the corporate, in terms of customers, partnerships and competition. The second source is the negotiation of exit conditions. From our analysis, we can conclude that relationships between CVCs and startup may either be strongly exclusive, with a CVC being the only investor at an early stage in a fully committed startup, or very loose, with a CVC very independent from the corporate parent, that give a lot of freedom to the startup to develop its business. Finally conflicts also exist between CVCs that want to invest in the same startup. From what we have seen, CVCs with an identical underlying market will never invest together, but complementarities are increasingly common when CVCs from different industries or different geographies are impacted by a same disruptive model.

3.3 CVCs and IVCs investment strategies

A. The contribution to startups in portfolio

Chemmanur (2013) provided statistical evidence CVC-backed firms in the US are more innovative in terms of patents. Park & Steensma (2011) proved that CVC firms create synergies with startups when the latter use parent company product development, manufacturing, legal, sales, distribution and customer service, to commercialize new products. New ventures that require high development costs benefit the most from this help. As far as they are concerned, IVC investors provide managerial advice, referrals to customers, alliance partners, management talent, and help to find other investors. CVC objectives are to find other suppliers or buyers, develop internationally, identify novel products that may replace theirs.

As we indicated previously, the investment strategy of CVCs has been changing a lot over the past three years and when the literature we make reference to here above was released. In this subpart, we are going to analyse how CVCs help develop business of startups in portfolio, and how it has evolved since 2014. To each professional we interviewed, we asked to rank by order of priority their key inputs in the startup – VC relationship.

- STARTUP3: *"Our CVC contributes to the development of our business at every level. They share their capabilities and we co-develop our products, data sharing. To write a long story together, you need to have an equity stake in the startup, a partnership is not enough".*

Some startups opt for CVCs as unique investors at a seed stage. In those situations, the startup is quasi-integrated to the business of the parent corporate. Both parent corporate and the startup benefit from significant synergies. The startup benefits from the experience of the corporate and his knowledge on the market. For instance, corporates collect a lot of data, which is very valuable for startups. In addition to that, for the entrepreneur we met, the CVC was sharing its distribution network and providing a significant help for marketing. Mentorship works in both ways, as working sessions are scheduled between the entrepreneurs and managers of the corporate. These interactions enable the corporate to increase its awareness on the market, and learn best practices from entrepreneurs. As we previously stressed previously, this setup is very engaging for the startups, which could probably not survive without the corporate. This dependence is formalized in the shareholder agreement, and is a conscious choice from entrepreneurs we met. As the entrepreneur says above, having an equity link, instead of a loose partnership is very important, because it is a guarantee of long standing collaboration and of alignment of interests. Investments where CVCs invest alone in early stage startups have become very common since 2015, with for instance OnePark (Keolis), Ignilife (Malakoff Mederic), Koolicar (MAIF Avenir, PSA), or Wynd (Orange Digital Ventures, Sodexo Ventures).

- CVC17: *"For startups we have in portfolio, a partnership with the corporate is not mandatory, but we think this is a big support. We organize meetings regularly between the managers of the corporate and entrepreneurs. We help our startups for all financing-related topics".*

Synergies between the corporate, and the startup is the first reason why CVCs invest in a startup. Even for CVCs that have a high degree of independence with the parent corporate, as the one we quote above, partnerships and meetings between the entrepreneurs and corporate executives is highly sought-after. The main explanation is the following. Even if the corporate is not the controlling shareholder of the CVC, the corporate is the unique Limited Partner of the fund. At this point, we need to keep in mind that Limited

Partners first negotiate the contract signed when he buy shares of the Fund. Being the only LP, it has a significant bargaining power when the investment strategy is defined. This includes the investment opportunities eligible, and the governance issues between startups and the CVC. Then LPs are member of the strategic committee of the CVC, and there are consulted before every investment of the CVC. In practice, this is almost a veto right on investments. For all these reasons, and however independent a CVC may be from his corporate parent, synergies with the corporate is the first reason why an investment is made.

- CVC18: *"We first bring cash. Then we bring our 80 years of experience in our market, startups enjoy the seniority of our corporate comex members. Then having more than 10 startups in portfolio, we not only create synergies between startups and the corporate but also between startups themselves, by creating an ecosystem".*

From the two latest quotes from CVCs above, a key learning point is that the second main contribution of a CVC is a help for all the financing-related topics. They first bring cash. The CVC we quote here above even stressed that they targeted early stage investments, because entrepreneurs were likely to accept any investor, on condition that they bring cash.

Synergies between startups in portfolio is another big contribution of CVCs, as most of the CVCs created since 2014 have invested in more than 10 startups. CVCs try to foster collaboration, and sharing of best practices between entrepreneurs. This is mostly done through incubators in addition to the equity investment. Usually, this is more a feature of IVCs, which develop themselves incubators as Partech Ventures with the Partech Shaker, or Bpifrance with le Hub. Corporates have adopted later this form of support to startups, as PSA in 2016.

Symmetrically, CVC unable to provide startups with effective synergies sometimes fail to maintain a long-term relationship.

- CVC19: *"Due to political reasons within the group, we were unfortunately unable to provide the startup with the business we had initially planned to develop hand in hand. Unfortunately, the startup was no longer finding in the relationship what it had looked for at first place, meaning a business case. In 6 months, our links got weaker and we had finally to disinvest"*

- STARTUP4: *"To me, this only interest to get financed from a CVC is to launch a co-development project with the fund. Having a business case formalized is key".*

From the startup point of view, this aspect is also paramount as the choice towards a CVC can be made precisely to benefit from synergies.

B. How CVCs and IVCs complement each other

In our quantitative analysis part 2, we saw that in 2016, 15% of VC deals included at least one CVC, a figure that grew up from 5% in 2014. On the other hand, in 2016, 21% of deals that included a CVC included only one CVC. Therefore, most VC fundraising include a mix of IVCs, CVCs and also government related funds (Bpifrance and regional funds). We saw in the previous part the rising trend of CVCs investing alone early stage. However, VC funds and startups look for complementarity in investment clubs.

- IVC4: *"We help companies that we have in portfolio when it comes to external growth, and strategic decisions. What CVCs are offering that we cannot, is the find the right person to whom they can speak in big, complex organizational structures of corporates".*

Financial advisory for external growth and fundraising seems to be the domain of expertise of IVCs, where CVCs bring less to startups. On the other hand, CVCs give to startups a better access and a better understanding of the organigram of corporates, which is key in certain industries. For instance in Aerospace & Defense, most startups are suppliers of big corporates as Airbus, Safran or Thales. As a consequence, building the right connection is essential. In the end, even if CVCs role and input is becoming increasingly similar to those of IVCs, they still remain complementary. This analysis is a good explanation why the percentage of VC investments with CVCs has been increasing to 15% as of 2016, but 85% of the deals with a CVC, only includes one CVC.

Complementarity can also be understood with the selection effect, the fact that CVCs and IVCs will not target the same opportunities. We saw in part two that CVCs emanating from large industrialists had, as expected, a clear tendency to invest in startups developing specialized assets in their own industry (IoT, Biotech, Embbeded networks). And CVCs and startupers we interviewed clearly indicated that CVCs are most welcomed by startups developing capital intensive and very specialized assets, as CVCs understand much better the potential of the startup. To illustrate this complementarity, ekWateur is an alternative electricity provider that raised 2 million euros in a seed round early 2017 from Aster Capital, BNP Developpement and Bouygues Telecom Initiatives. In this investment club, BNP Developpement is a traditional IVC with a financial expertise, Bouygues Telecom Initiatives is a CVC with a deep technical expertise in networks, and finally Aster Capital is an IVC with a hybrid structure, as its LPs are Schneider Electrics, Alstom and Solvay. Finally, we have to keep in mind that even IVC are targeting different types of investment opportunities, depending of their domain of expertise. From this perspective, CVCs are nothing but VCs with a very focused domain of expertise.

3.4 Background of CVC employees

Earlier in this study, we saw that CVCs tend to invest at a later stage than typical VCs, as the former are targeting series B financing on average. Among the various explanations that could be found, one could think that CVC look for more mature projects so as to guarantee immediate synergies or business cases to their groups. However, we wondered if this feature could be also explained looking at CVC employees background. In fact, we made the hypothesis that this aversion to early ventures may be explained by employees being less used to the world of venture capital and startup and having fewer experience in the early-stage funding.

A. Methodology

To further elaborate around this assumption, we reviewed in details the background of 186 employees currently working for CVC and VC funds. For each profile, we focus on their experience before joining the CVC. To do so, we use the public information available on the internet through social network LinkedIn. We looked for experience in the fields of investment banking and finance (PE, M&A), within VC firms, in startups or in specific structures nurturing the innovation ecosystem (incubators) and finally, in the mother company of the CVC they are working for or in industrial groups which core business is directly or indirectly linked to the mother company business of the CVC fund (competitor, supplier).

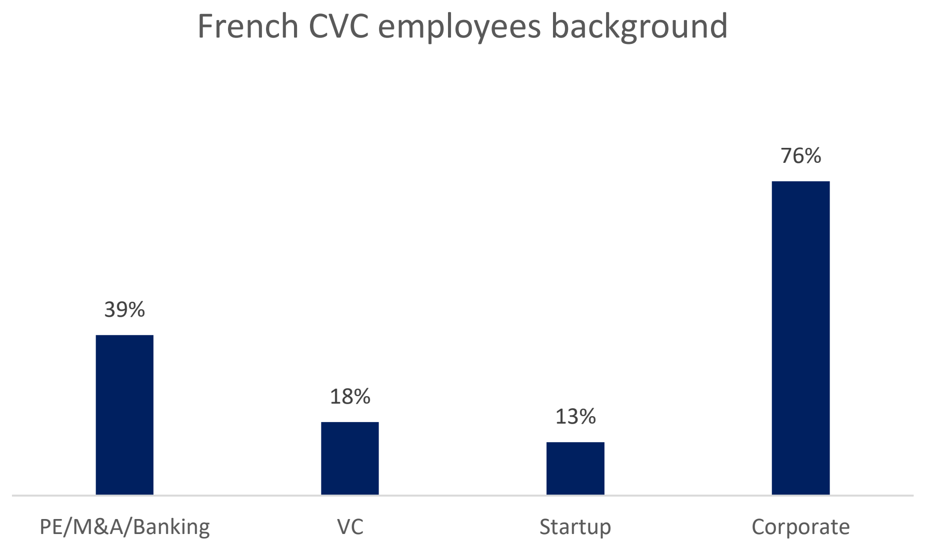
For each category of experience (finance, VC, startup, corporate), we analyse the number of years of experience to add further depth to the analysis. For each profile, only the previous experience – before entering the CVC fund – were taken into account. If a profile had worked in another CVC before entering the CVC he is currently working for, we considered it as an experience in VC, not in corporate. We also considered that being in the board of a startup could not be labelled as an experience in startup. Only employees having founded or worked for a startup in the past have been granted years of experiences in this category.

For the people working for French VC funds, any experience in a group which was not operating in the finance, banking or consulting sector, was considered as corporate experience.

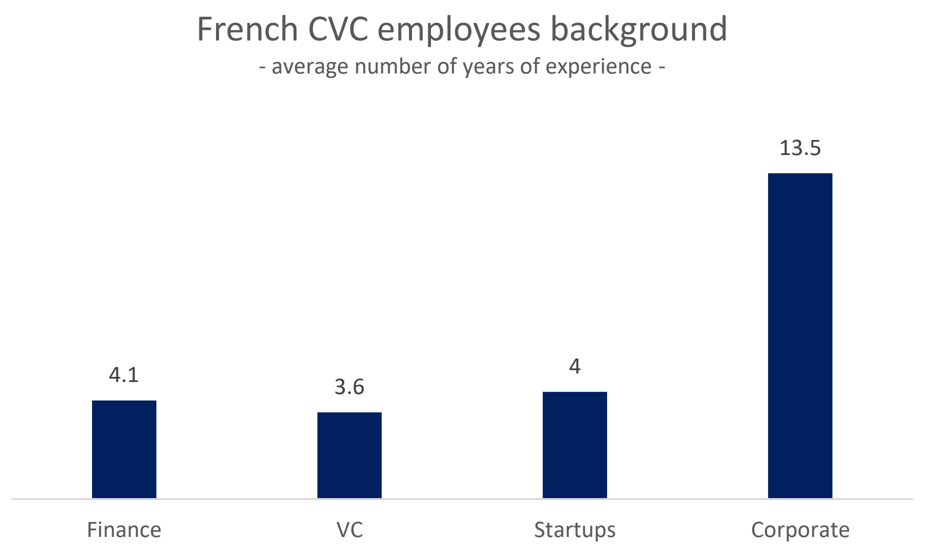
Among the 186 profiles reviewed, 62 were people currently working for a French CVC fund, 62 for a foreign CVC fund and 62 for a French VC fund. Using this split, we could compare efficiently the background of French CVC employees to VC employees first and to foreign CVC employees in a second analysis.

B. Profile of the French CVC funds employees

Reviewing the background of 62 talents working in French CVC, we found that CVC employees are more corporate employees that VC investors. In fact, 76% of CVC employees have a significant in corporate – meaning in an industrial group related to the CVC fund's mother company or in the mother company itself– while only 18% of them know the world of VC. More strikingly, only 13% of CVC employees have experienced a startup project. Quite interestingly, 39% of French CVC employees have worked in financial positions in the past.

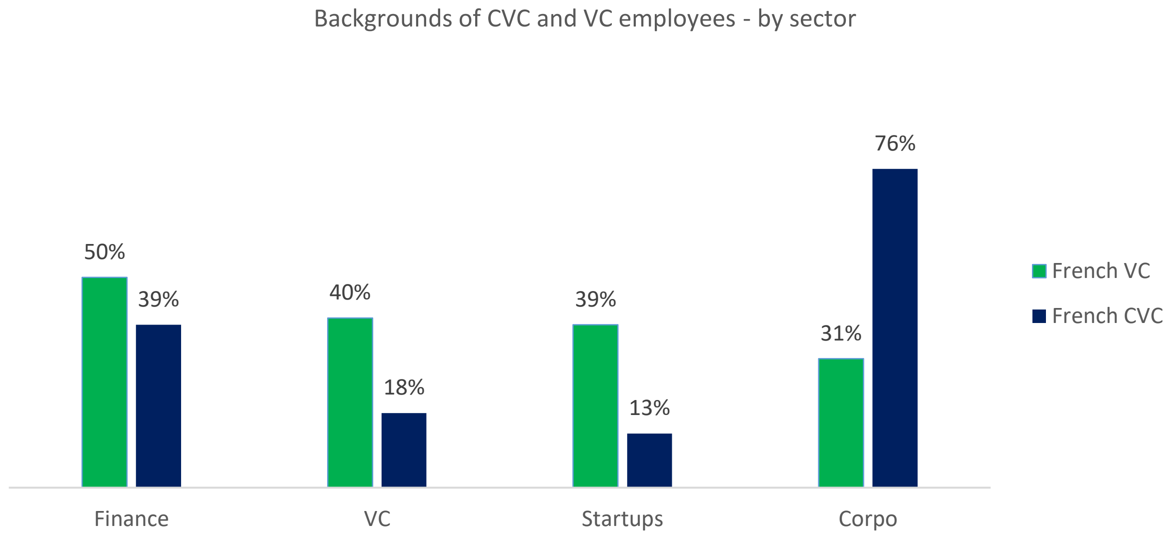


Looking now deeper into the profiles, we saw that talents with past corporate experiences have worked 13,5 years in average for big groups. Meanwhile, the talents who have had previous VC experiences only have worked 3,6 years in average for the VC funds. The average number of years of experience for startups and financial positions are quite similar with 4 and 4,1 years. This second analysis strenghthens further the idea that French CVC employees are more corporate workers than VC investors or startup-friendly profiles.

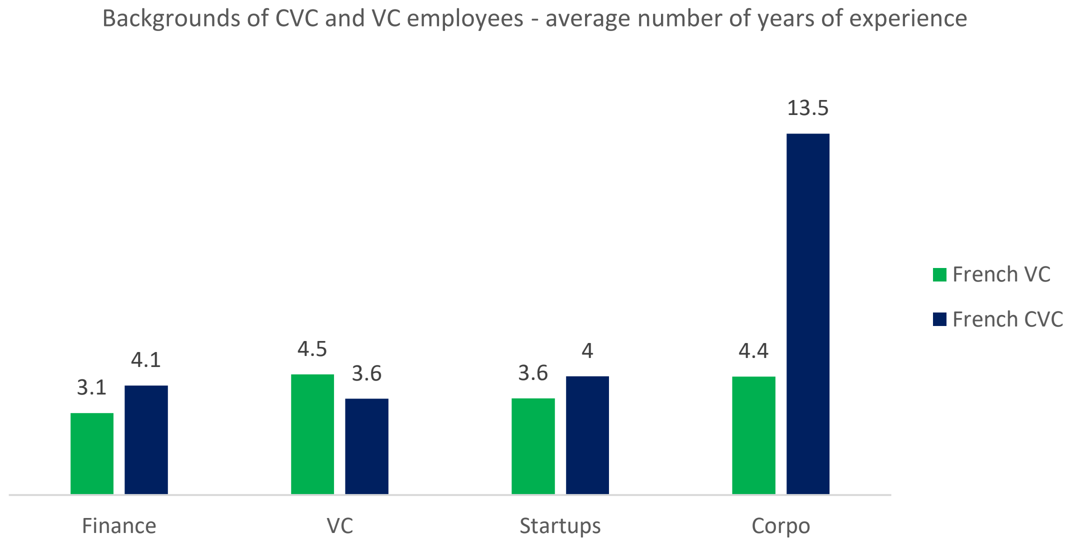


C. French CVC employees vs French VC employees

As a second step and to further elaborate our analysis, we analysed 62 extra profiles but from French classic VC, so as to compare them with the 62 French CVC talents we analysed previously.



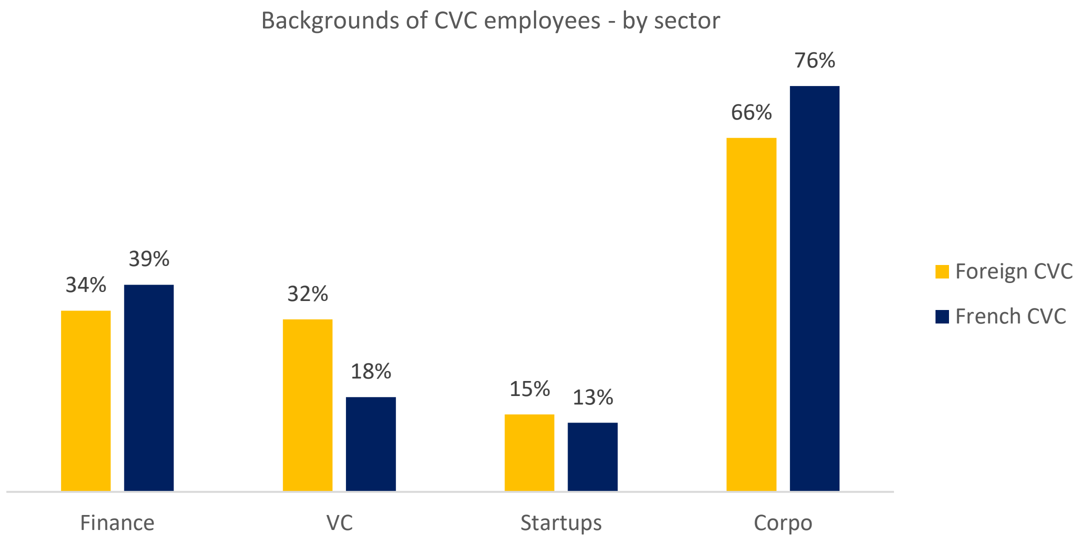
It is striking how different French VC and French CVC employees differ from background. While 76% of French CVC employees have a corporate background, only 31% of French VC employees have so. Reversely, with our sample, French VC employees are 39% and 40% to have a past experience in a startup or in another VC before joining their current VC firm while only 18% and 13% of French CVC employees are in this situation. It is also worth noting that half of the French VC employees have had a working experience at a financial position while this is slightly lower – 39% - for our sample of French CVC employees.



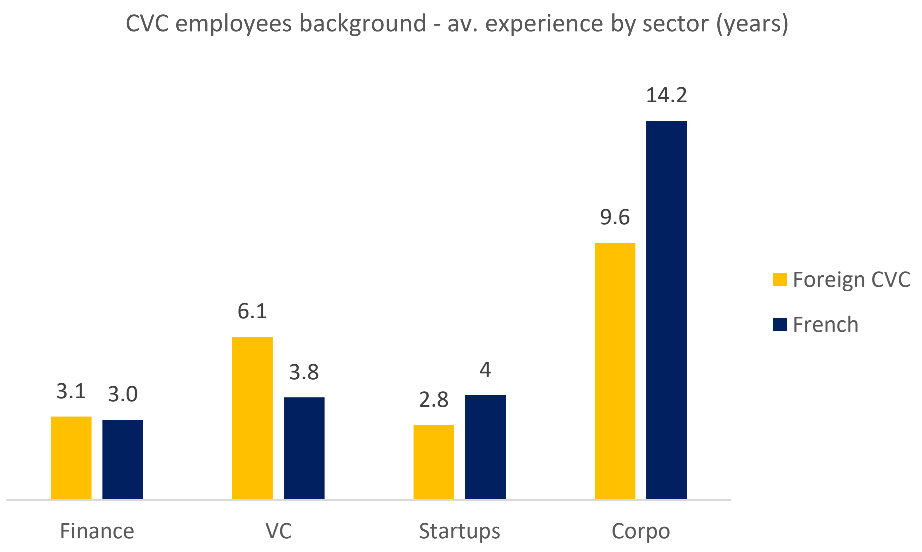
This result is confirmed looking at the average number of years of experience for each category. French VC employees have only 4,4 years of experience in average in a industrial group whereas this figure hits a 13,5 level for French CVC employees. However, for the other category, whether it is a French CVC employee or a VC employee with background in finance, VC or startups, it seems that their number of years of experience are quite similar around 4 years roughly.

D. French CVC employees vs Foreign CVC employees

We also decided to check if French CVC employees differ by background from foreign CVC employees. Quite interestingly, French CVC employees are more corporate than foreign ones and foreign CVC employees know significantly better the world of VC than French ones.



Foreign CVC employees with VC background amount to 32% while only 18% of French CVC employees have had previous experiences in VC. And only 66% of foreign CVC employees have a corporate profile while it reaches 76% for French CVC employees. French CVC seem to hire more easily people coming from the corporate itself than people with experience in VC or in startup.



This result is even clearer looking at the average number of years of experience by sector. Foreign CVC employees with VC background have on average 6,1 years of experience in VC firms while the few French CVC employees knowing the VC world only totalize an average 3,8 years of experience in this field. Reversely, looking at experience within industrial companies, French CVC employees are more likely to be veterans from the group with more than 14 years of experience. It seems that French CVC value a lot corporate profile with significant experience in the corporate itself when foreign CVC tend to hire people with strong background in VC funds. One explanation to this result could be explained by the level of maturity of CVC firms. With CVC firms which are generally older - our sample have a lot of American CVC funds – foreign companies may tend to have professionalized through the years hiring more and more professional investors through the years and recruiting less for the mother company (corporate) itself. In France, where CVC funds are still young, big groups may favour internal recruitments with corporate profiles.

Conclusion:

VC activity has experienced a massive boom around the world over the past two years, in terms of number of deals, and amount invested. France especially is a fast growing market, supported by the rise of several unicorns and sucessful startups, namely BlaBlaCar, Sigfox, Biom'up, Drivy or Frichti. Among all VC investments, Corporate Venture Capital (CVC) is a fast growing segment. Amounts invested in French startups by CVCs has been multiplied by 5 since 2014, and around 15% of VC investments in French investments include at least one CVC in the investment club.

As opposed to France, CVC activity had already been strong since 1990 in the US, Japan, German and Nordics. In those countries, CVCs generally have several hundred million euros under management, and thus adopted a cross-border investment strategy. In this respect 41% of CVCs that invested in French companies since 2003 are not French. In France, CVC creation has been booming since 2015, with 9 Corporate Venture Capital fund creations. To a larger extent, CVC momentum is very much related to corporate investment in startups, which comprises other strategies, namely direct investment or funds of fund.

CVCs were present in 15% of investments in startups in 2016, but represented 32% of amount invested. Therefore CVCs average investment ticket is higher than that of IVCs. This is due to two main factors. First, CVCs tend to invest at a later stage than IVCs. As a consequence, they need to invest more money to own a given stake of the startup capital. Second, CVC target companies in very specific industries, often with high capex requirement, and thus high funding needs (namely IoT, Virtual Reality, Biotech or Autonomous transportation). Contrary to what we could expect, CVC do not invest in startups with a view to ease a future acquisition by the corporate parent. It has never been the case for French startups since 2003. Finally, we found that investment duration of CVCs is 1.1 year lower than for IVCs. This result is due to the fact that CVCs arrive on average at a later stage, while in most cases, all investors exit at once for liquidity purpose. In terms of exit, we find that a greater proportion of CVC-backed startups are going IPO, compared to IVC only backed startup, which we consider as a clear measure of success for CVC. From this perspective though, we have to keep in mind the aforementioned selection effect.

Our qualitative analysis shows that CVCs are primarily looking for a strategic fit and synergies, contrary to IVCs, that are looking for financial return. For a startup, CVCs give access to the whole network of the corporate parent, from the R&D to the client, and collaboration is key. As a consequence, for a given startup, CVCs and IVCs are complementing each other. 88% of CVC investments since 2003 included only one CVC, but we are witnessing an increasing number of startup with 2 or 3 CVCs, provided that they are operating in different industries or geographies. Sigfox is a case in point. Looking at the background of CVC investment teams in France, around 75% of CVC investors have a corporate background, with a significant experience (13 years on average). As a comparison, only 31% of IVC investors have a corporate background, and more than 50% worked in finance before. The same analysis for foreign CVCs shows the same tendency for CVCs to hire internally, but background distribution is more evenly spread.

CVC investment strategy has been fast moving over the past years. CVCs are increasingly hiring former experienced VC investors, and more and more acting as traditional IVC investors. They are increasingly trying to spot early stage investments, looking for lower valuations, and a more exclusive relationship with the startup. Besides, some CVCs are not trying to secure exclusive relationships with startups in which they invested, but more to support an innovation ecosystem in their very specific industry. Of all startups in which they have invested, some prove to be a source of disruption for the industry, but others will just be seen as financial investments. CVCs are differing a lot when it comes to tackling conflicts of interests. Some are implemented clear procedures to avoid such conflicts, and are giving a lot of independence to startups when it comes to securing business with clients, and partnerships. However, other CVCs try to invest at a very early stage to secure highly exclusive relationships, and work on a co-development mode with the corporate parent. In this situation, partnerships, client and exit strategy are a clear source of conflict of interest. Finally, we have to keep in mind that CVC development in France is still recent, and that most CVC investments are still in portfolio. For this reason, a similar study in few years would be highly insightful.

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