

France, Germany, Italy, Spain and the United Kingdom

»» Building Momentum
in Venture Capital across Europe



Imprint

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**France, Germany, Italy, Spain and
the United Kingdom**

**Building Momentum
in Venture Capital across Europe**

Greetings

“Europe's economy is about the same size as that of the US, but our capital markets are only half their size. Our corporate bond market is a third of the size; our venture capital markets a fifth. US SMEs get about five times more funding from capital markets than in Europe.” (Lord Hill speaking at the Bruges European Business Conference on 18 March 2016).

These figures only partially describe the challenges facing the European Union today. The tightening of banking regulations affects traditional lending to SMEs. The weak balance sheets of some financial institutions, the ageing population, growing competition in the area of innovation, the shortening of investment cycles, and the emergence of new competitors around the world are just a few of the issues we face.

National Promotional Banks and Institutions have for many decades played an important role in financing start-ups. As a result, we have acquired considerable insight into our respective markets and have closely followed their developments. Part of this is brought together in this report in order to benefit from each other's experience.

Having done so, we hope to contribute to the Venture Capital debate taking place within the European Commission, but also within other EU institutions and in our respective countries. What can be done to overcome the large fragmentation of the Venture Capital market in the EU? What are the success factors for Venture Capital funds in the EU in comparison to those in North America? And not least, to what extent can national and EU financial instruments help EU start-ups to rise to innovation and growth challenges? These and many other questions have been addressed in this joint study.



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Foreword

Innovation is changing the world, producing new opportunities to which we must continually adapt if we are to play a key role in the global economy. If Europe is to be successful in developing the significant technologies of the future and realising their benefits in global markets, our capacity for innovation needs to increase and the skill level of our workforce must improve.

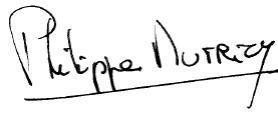
Strengthening the foundation of innovative, growth-oriented start-ups and providing the best conditions for their development is, therefore, more necessary than ever. Access to venture capital is an important success factor for these enterprises. However, the size and depth of European venture capital markets lag behind those of other leading global economies. For instance, the amount of venture capital provided by US investors to start-ups amounts to 0.211 % of GDP per annum on average – more than seven times the EU average. Within Europe, venture capital markets in individual countries also vary greatly in terms of their size and stage of development.

Public interventions significantly contribute to the functioning of European venture capital markets and play an important role in helping them develop into more stable and liquid markets, increasing their positive effects on the wider economy. As we can learn from US pioneer experiences, this is a long-term mission.

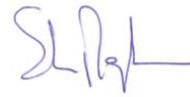
This report on the national venture capital markets in Europe is the second cooperative research project by the promotional banks of the four largest Euro area economies – Bpifrance, KfW Bankengruppe (KfW), Cassa Depositi e Prestiti (CDP) and Instituto de Crédito Oficial (ICO). This year, the British Business Bank, the UK's national development bank has joined the group, providing first-hand knowledge and experience regarding Europe's largest VC market. The Business Development Bank of Canada (BDC) also contributed its insights into North American venture capital markets.

As promotional banks for our respective countries, improving finance for innovation is a common key priority and we consider promoting venture capital to be an important factor for the development and growth of innovative businesses. Innovation systems and venture capital markets in each of our countries are very diverse. We have compiled this report in order to learn from each other's knowledge of domestic venture capital markets and identify ways of tackling common market challenges.

Young innovative companies will shape Europe's future. If Europe is to catch up with the most successful and competitive regions of the world, it needs stronger venture capital markets. As promotional banks, we share our understanding and commitment to support venture capital markets and to increase Europe's capacity for innovation and competitiveness in the future.



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General Part

1.1 Venture capital: what it is and why it is important

How venture capital works

Technological changes are reshaping the global economy. Promoting innovation is thus, more than ever, a priority for business leaders and governments. New technologies and innovative business models improve efficiency and productivity, ultimately fostering economic growth. This has increased the attention paid to innovative companies and the ways of promoting their development.

There is a consensus in economic literature that young innovative companies face important financial constraints, especially with regard to debt financing.¹ These companies possess high growth potential but are also susceptible to failure due to their higher technology and market risks. Their chances of success are therefore difficult for lenders to assess (information asymmetries). As their income prospects are highly uncertain and they typically lack collateral, young innovative companies are more likely to be affected by credit rationing.

Venture capital (VC) is a chance for young innovative companies to overcome these challenges. As equity holders, VC investors participate directly in the increasing business value of successful companies. Unlike lenders, they are thus able to weigh their higher risks against increased opportunities. Furthermore, VC investors are able to mitigate information asymmetries by closely screening and monitoring investee firms:

- VC firms employ highly skilled specialists with expertise in the business sector of their investment targets (industry's economic environment, existing technologies, competition etc.).
- Once they have invested in a company, VC investors usually have seats on the companies' boards and are often involved in the firm's daily operational life, i.e. they manage their portfolio companies "hands-on".
- VC investors frequently disburse funds in stages, with additional funding being contingent on the achievement of operational and financial objectives. This "staging" process allows them to reduce information asymmetries and to align the interests of the VC firm and the founders of the company they have invested in.

VC is generally provided by VC funds, which rely on two types of actors:

- "Limited Partners" (LP) who provide almost all of a funds' capital. These investors are mostly large financial institutions (e.g. pension funds, banks, insurance companies, funds of funds), family offices (managing the assets of wealthy individuals) or public institutions.
- "General Partners" (GP) who provide a marginal share of a funds' capital (often 1%)², but who together with their management team, are the funds' decision makers. They make the investments and monitor the investee companies. GPs own a VC firm, often managing several funds at once.

VC funds generally have a fixed maturity (about ten years) and follow a classic investment pattern: they invest their funds over a 3–5 year period, after which they monitor their portfolios and eventually make follow-on investments in the most promising companies. In the final years of the investment term, VC firms have to divest in order to generate a financial return for their investors. Potential buyers of their investment portfolio include other funds (exit via secondary sale), industrial firms which for example, are seeking to acquire and develop a new technology (exit via trade sale), or public markets by listing on a stock exchange (exit via IPO). However, given the high level of risk involved, the most common outcome for a VC-backed company is failure (meaning a negative return up to total loss). Return-oriented VC firms need to compensate for these losses by aiming to make very high returns on a small number of their most promising investments.

These institutional VC firms co-exist with informal investors, such as business angels. Angel investors are typically wealthy individuals and/or former business leaders who invest their own personal resources in young innovative companies and in addition provide their own management expertise to the investee companies. These investors are complementary to VC firms because they generally focus on the earliest stages of a company, invest smaller amounts, and can have other motives than just financial returns, such as altruistic reasons or the desire to create new businesses. Therefore, angel investors can bring new companies to the level of development where they become interesting investments for VC firms.

¹ See e.g. Hall (2002) for theoretical arguments.

² See Mulcahy et al. (2012).

Compared with other sources of finance, the VC market is very narrow. For example, according to Invest Europe, VC funds in the five countries considered in this report (France, Germany, Italy, Spain, and the United Kingdom) had EUR 39 bn in assets under management in 2015, while the total amount of outstanding loans in these countries amounted to EUR 3,500 bn as reported by the ECB. Kraemer-Eis et al., (2016), pointed out that VC is not a “substitute for traditional, mainly bank-centred, SME financing instruments”; instead, it should be seen as a specific financial instrument for young innovative companies.

The importance of VC

The availability of VC funding is considered to be a crucial element for the survival and development of high potential companies and their ability to overcome the so-called “valley of death”. This “valley of death” represents the shortage of financial resources and the lack of business development knowledge that characterises start-up projects.³ To overcome these obstacles, VC firms provide not only funds, but also various types of expertise (e.g. human resources, finance, legislation, business strategy, or intellectual property) and access to their networks. The participation of a VC firm can also help to improve a company’s reputation and lead to an increase in confidence on the part of other investors, initiating a virtuous circle between VC investment and performance.

Empirical studies support this view: they show that VC-backed companies exhibit higher growth in sales, employment and productivity.⁴ Despite the narrowness of the VC market, studies find a positive correlation between VC activity and innovation at the industrial and country level.⁵ Thus, the positive stimulus of VC on the growth of young companies translates into increased growth and innovation at the macroeconomic level, not only in the countries where these companies are located but also in the countries in which they and the VC firms operate. Particularly cross-border deals can stimulate such diffusion. Prior to the financial crisis, cross-border deals accounted for a third of the total number of deals worldwide.⁶

³ See Savaneviciene et al. (2015).

⁴ See the reviews of Da Rin et al. (2011), Savaneviciene et al. (2015), Tykvová et al. (2012) or Kraemer-Eis et al. (2016).

⁵ See Kortum and Lerner (2000) and Popov and Roosenboom (2009).

⁶ See Schertler and Tykvová (2009).

The positive correlation between VC and innovation is a well-established fact.⁷ However, causality can go both ways: On the one hand, VC activity can contribute to the launch of new products on the market. On the other hand, VC activity is driven by the occurrence of investment opportunities and expectations regarding the technological development.⁸

1.2 The EU venture capital market

- The EU VC market has raised EUR 40 bn since 2007, government agencies being the most important contributor.
- VC firms located in the EU financed more than 28,000 young companies within nine years providing a total of EUR 35 bn in venture capital.
- UK accounts for a quarter of the EU VC market. The long-term impact of the “Brexit” on the VC market is unknown and will depend on how the VC industry responds to the new economic conditions.

Development of the VC market

According to Invest Europe’s VC market activity data (see Box 1), VC firms in the EU raised funds of about EUR 40 bn between 2007 and 2015. In 2007, more than EUR 7 bn of funding was raised. However, in 2008 fundraising slumped to below EUR 5 bn, falling further to its post crisis low of about EUR 3 bn in 2009 and 2010 (Figure 1). Then, in 2011 fundraising recovered to more than EUR 4 bn. This was due to a catch-up effect by investors who held off investing during the most critical phase of the financial crisis. However, in 2012 fundraising fell back to below EUR 4 bn before climbing to about EUR 5 bn in 2015.

⁷ See Tykvová et al.(2012) or Da Rin et al. (2011) for a review.

⁸ Arqué-Castells (2012) shows that VC funds select firms that are already innovative, accelerating the market launch of these firms’ products. Bernstein et al. (2015) shows that active monitoring by VC managers leads to a positive impact on innovation and the probability of an IPO.

Box 1: VC market activity data of Invest Europe

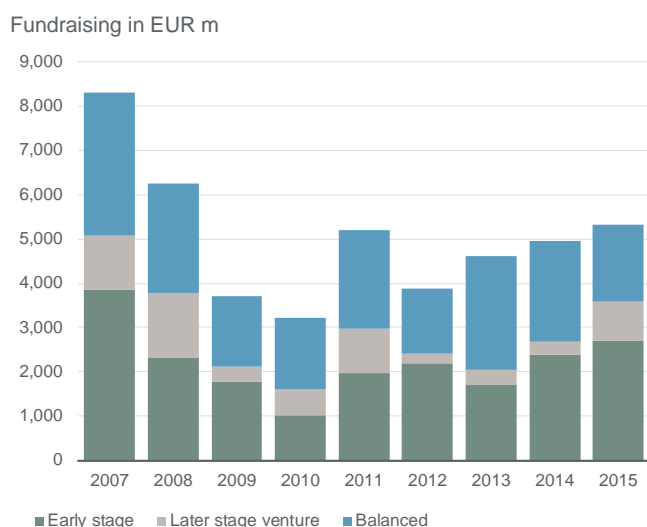
As VC firms are not obligated to inform about their activities, there are no official VC statistics. All VC data sources available are based on voluntary declarations of VC firms or on the market monitoring of data providers. Thus, VC activity differs depending on the data source used.

The data used in this report was supplied by Invest Europe (before 1 October 2015 known as European Venture Capital Association, EVCA). Invest Europe is an association for Europe’s private equity, venture capital and infrastructure sectors, as well as their investors. Invest Europe supplies industry and market data for all European countries, thus providing a consistent data base. Industry statistics show investments of VC firms located in Europe; the market statistics present VC investments in European companies. The industry statistics thus include the investments of European investors in non-European countries while excluding the investments of non-European investors in Europe

Data on private equity fundraising, investment and divestment by more than 1,800 private equity firms in Europe is gathered via PEREP_Analytics, which is a joint Pan-European statistics platform owned by Invest Europe and several European private equity associations. According to Invest Europe, the 2015 statistics cover 91% of the roughly EUR 560 bn capital under management in the European market.

Source: www.investeurope.eu

Figure 1: Fundraising of VC firms in the EU hit hard by financial crisis

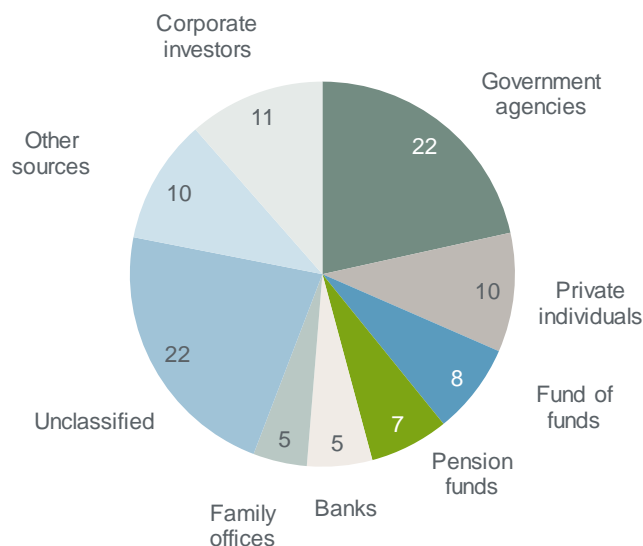


Source: Invest Europe/PEREP_Analytics

Most of the EUR 40 bn raised since 2007 was dedicated to be invested in companies which are at an early stage of development (i.e. seed or start-up stage, 46%).⁹ About every tenth Euro was assigned to be invested in later stage ventures (12%), while no specific target stage was assigned to 42% of the funds.

Figure 2: Government agencies most important source of VC funds in Europe

Sources of VC fundraising in per cent, average 2007–2015



Note: The numbers refer to the whole of Europe including Norway, Switzerland and the Ukraine, because it is not possible to extract numbers only for the EU on the basis of the available information.

Source: Invest Europe/PEREP_Analytics

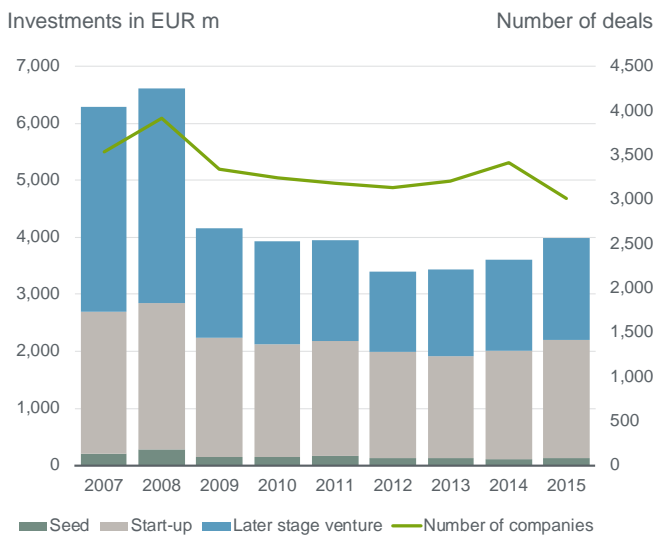
Government agencies play an important role in European VC fundraising. Since 2007, they have contributed more than a fifth of the total funds committed to VC firms in the EU (Figure 2). No other investor provides that amount of VC funding. Corporate investors and private individuals provide about 10% each, i.e. together roughly the amount that government agencies contribute. Other private investors such as banks, insurers or pension funds provide only small portions of the overall funding. This shows that stimulating private VC funding is one of the most important challenges the European VC market faces. By comparison, in the United States, public authorities are of minor importance and pension funds are the most significant source of VC funding.¹⁰

⁹ See Appendix Table 2 for stage definitions.

¹⁰ See Brigl and Liechtenstein (2015) who compared the European and US VC investor landscapes in 2014. However, in their analysis of VC investors’ contributions, they neglect unclassified funds in the European data. Doing so, they presume inherently that the unclassified funds distribute identically to the funds assigned to an investor group which is a bold assumption. It is rather to be supposed that e.g. public funds are fully classified, thus indicating that the authors underestimated private sources like pension funds. Furthermore; they report a share of US government contributions to VC funds of zero. However,

Since 2007, VC firms located in the EU have financed more than 28,000 companies with about EUR 35 bn. Annual investments reached EUR 5–6 bn in both 2007 and 2008 (Figure 3). Then in 2009, when the financial crisis became evident, VC investments plunged to about EUR 3.5 bn a year and remained at this level until 2011. In 2012 and 2013 VC funding fell to a temporary low of slightly more than EUR 3 bn, but gradually recovered to 2011 levels by 2015. At the beginning of the period being considered, EU VC firms financed as many as 4,000 deals. Thereafter, however, the number fell to about 3,000 deals a year, stagnating at this level until 2013. In 2014 the number rose, but then dropped significantly to below 3,000 deals in 2015.

Figure 3: Venture investments by VC firms located in the EU almost halved after 2008



Source: Invest Europe/PEREP_Analytics

Of the EUR 35 bn invested from 2007 to 2015 VC firms provided 4% to companies in the very early seed stage. These firms used the capital for activities like research or for developing an initial concept.¹¹ Start-up ventures, which need financing for product development and initial marketing, and later stage ventures, which want to trigger their first expansion, received the bulk of the capital in almost equal parts (47% and 49%).

US public authorities provide funds to so called registered 'Small Business Investment Companies' (SBICs) via the Small Business Administration (SBA) and within the framework of the State Small Business Credit Initiative (SSBCI), see Box 3 for details.

¹¹ See Appendix Table 2 for stage definitions.

Box 2: The financial performance of VC funds

The “2013 Pan-European Private Equity Performance Study” shows remarkable differences in the performance of private equity funds dependent on the funds’ investment focus, vintage year but also location.¹² It is based on a total sample of 1,455 international independent funds set up between 1980 and 2013, which were recorded in the ThomsonOne database in June 2013.

Firstly, the study shows that on average, VC funds are less profitable for investors than buyout funds. Overall, from their inception to end of 2013 the funds reached a net-pooled internal rate of return (IRR)¹³ of 9.24%, whereas VC funds performed clearly worse (1.68) than buyout funds (11.41). Accordingly, the Total-Value-to-Paid-In-multiple for VC funds is 1.1 compared to 1.42 for buyouts funds.

Secondly, the performance of the VC funds is highly dispersed. By the end of 2013, the pooled IRR for the top-quarter VC funds was 18.51 and for the top-half 11.28. Many VC funds were thus able to generate significant returns for their investors; however, given the median IRR of -1.30, the majority of VC funds exhibit negative returns.

This dispersion can be related to differences in the vintage years of the funds. Pooling cash flows of all VC funds hides the fact that some funds are at the beginning of their investment cycle (and therefore have not distributed to their LPs yet so their returns are computed on an estimated value), while others are mature or even terminated (their financial returns are thus realised). The study shows, thirdly, that VC funds of older vintage years (1980–1994) exhibit higher returns than funds of more recent vintage years. In contrast, buyout funds yield considerable returns up to vintage year 2004.

Finally, the study shows that European VC funds generate lower returns than US VC funds. European VC funds exhibit continually lower horizon IRRs than US VC funds, regardless how many previous years (one, three, five or ten) are considered: the average 10-year IRR¹⁴ of European VC funds by the end of 2013 is 0.84 for European VC funds, compared to

¹² EVCA (2014).

¹³ The “pooled” IRR is based on all funds’ cash flows since inception and their residual value, which are aggregated in one pool.

¹⁴ A fund’s 10-year horizon IRR for example by the end of 2013 is based on its residual value at that time, its net asset value by the end of 2003, and its cash flows in between.

5.03 for US VC funds. In contrast, EU buyout funds performed slightly better (10-year IRR: 10.46) than their US counterparts (9.64).

The VC performance gap between the United States and Europe has not been fully resolved. However, the fact that European VC markets are much younger than the US VC market seems to be one explanation: VC firms and entrepreneurs are less experienced, VC is not firmly established as an asset class for investors, and exits are more difficult. This hypothesis might be confirmed by the most recent development. Hence, the 5-year rolling IRR for European VC shows a slight improvement. In 2013, the figure was the highest since the burst of the dot-com bubble.

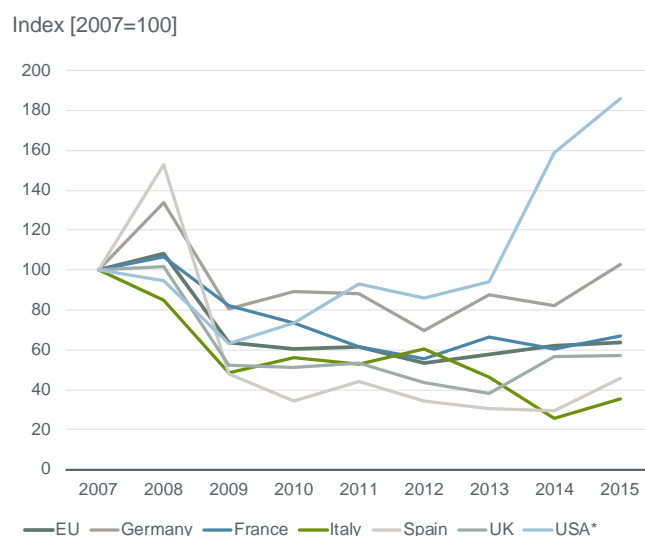
VC investors are focused on EU innovative young companies within three main sectors: life sciences, computer & consumer electronics and communications. These sectors attract about 60–70 % of total VC each year. Since 2007, about 25–35 % of VC has flowed into life sciences companies, whereas the sectors computer & consumer electronics (20%) and communications (15–20%) have received up to a fifth each. Until 2012, 10–16%, a significant part, of VC investments flowed into the energy & environment sector. However, its importance has decreased significantly, so that it only gained 4 % of VC investments in 2016.

EU VC market is highly fragmented

The European aggregate hides the fact that VC markets in individual European countries are very diverse in terms of development stage, size and trends. Diverging national legal and regulatory regimes as well as innovation systems have led to highly fragmented and diverse VC markets. Figure 4 shows the divergent development in the five largest EU countries (as measured by GDP) France, Germany, Italy, Spain and the UK since 2007. As mentioned above, VC investments in the EU fell by almost two-fifths in 2009 and have remained at roughly this level.

Of the European countries considered in this survey, VC investments in Germany developed best, reaching the 2007 level by 2015. In comparison, VC investments in Spain and Italy were hit hard over the last few years falling to approximately 40 % of their pre-crisis levels. In France and the UK, VC investments developed similarly to the European average in 2015 – reaching 60 % of 2007 levels. These developments stand in sharp contrast to the dynamics of the US market, where VC investment tripled by 2015 after its setback in 2009.

Figure 4: Divergent development of VC investments in selected countries



* See Note Figure 5 for different VC definitions.

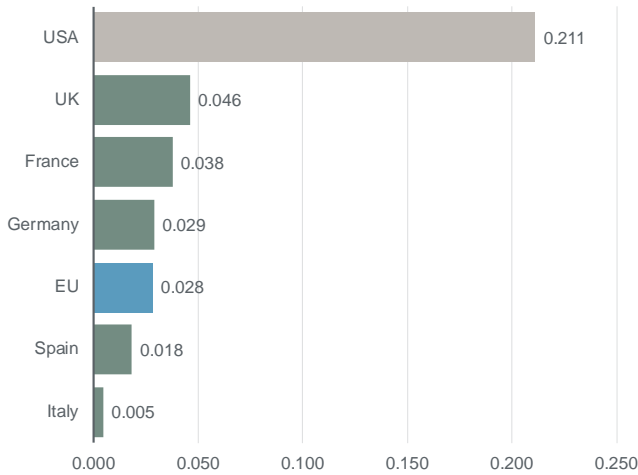
Source: Invest Europe/PEREP_Analytics, own calculations.

Since 2007, VC investments in the EU have an average equivalent value of around 0.028 % of GDP per year (Figure 5). In the UK and France, VC investments reach a level of 0.046 and 0.038 % of GDP per annum. Germany shows VC investments of 0.029 % of GDP every year and is only slightly above the EU average. Spain and Italy, where companies receive VC corresponding to 0.018 and 0.005 % of GDP, have the lowest relative share of GDP in comparison with the other countries listed. Compared to the US VC market, these European numbers appear small. US investors provide VC for companies accounting for 0.211 % of GDP per annum on average – more than sevenfold the EU average. Because the US VC market experienced an additional boom in the last two years (see Box 3), its GDP share in 2015 was almost fourteen times higher than that in the EU.

The high level of US VC relative to GDP is out of reach for most European countries. Closest to the United States, but still far behind, is the UK VC market, which forms a significant proportion of the EU VC market: it accounts for a quarter of all EU VC fundraising and investments (Figure 6). The result of the UK's referendum on EU Membership has increased economic uncertainty in the short and medium term. The long-term impact of the decision to leave is unknown at this stage and will depend, to some extent, on what the "Brexit" looks like. It will be important to closely monitor how the VC industry responds to the new economic conditions and to ensure that young, growing companies across Europe are able to access the venture capital financing they need.

Figure 5: VC investments rates in the United States far ahead of EU countries

VC investments in per cent of GDP, average 2007–2015

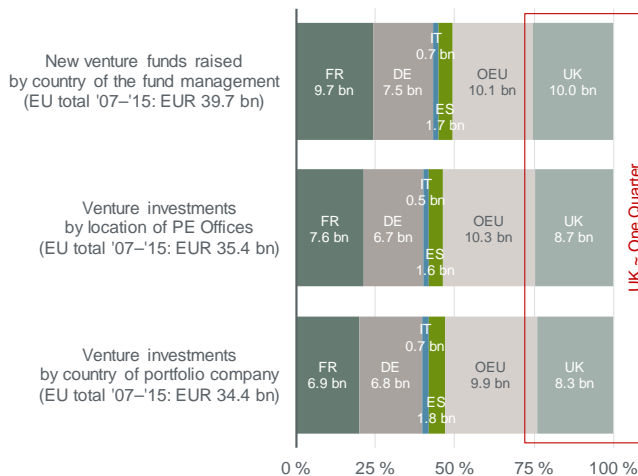


Note: Invest Europe and NVCA apply different VC definitions. For the EU countries, the numerator of the yearly VC investments rates represents the aggregated investment volumes of seed-, start-up and later stage venture capital in each year reported by Invest Europe. The numerator of the US-rates includes seed stage, early stage, expansion stage and later stage financings reported by NVCA. See Appendix Table 2 for a comparison of VC definitions by Invest Europe and NVCA.

Source: Invest Europe/PEREP_Analytics, PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q2 2016, US Bureau of Economic Analysis, own calculations.

Figure 6: UK accounts for a quarter of the EU VC market

Market share in EUR

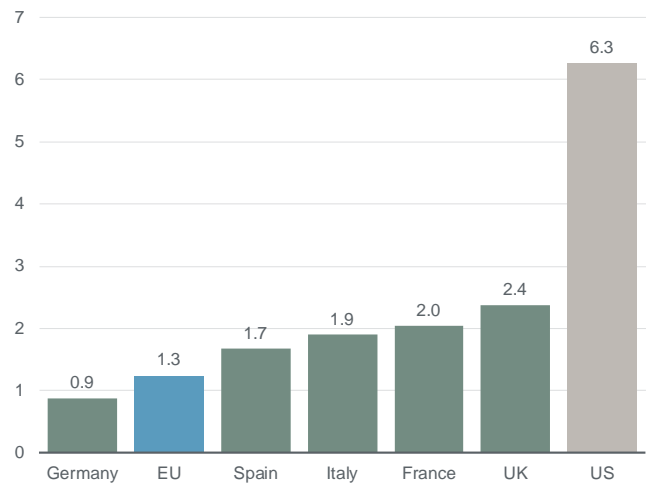


Note: FR=France, DE=Germany, IT=Italy, ES=Spain, UK=United Kingdom, OEU=Other EU-countries

Source: Invest Europe/PEREP_Analytics, own calculations.

Figure 7: Average VC-backed US company receives five-times more VC than its EU counterpart

Mean deal size* in EUR m, average 2007–2015



* Deal size per financing round

Note: The value for Germany includes financings by Mittelständische Beteiligungsgesellschaften which provide a high number of smaller financings (see German country chapter for details).

Source: Invest Europe/PEREP_Analytics, PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q2 2016, own calculations.

EU VC markets differ not only in relative and absolute sizes, but also in size of investments. On average, VC firms invest EUR 1.3 m in companies located in the EU during in each funding round. In the countries considered, German companies are backed by the lowest amount, receiving EUR 900,000 (see note of Figure 7). Spanish (EUR 1.7 m), Italian (EUR 1.9 m), French (EUR 2.0 m) and British (EUR 2.4 m) companies receive a higher amount. Also, average VC deal size in the EU is significantly smaller than that in the United States where VC-backed companies receive an average of EUR 6.3 m in each financing round. The larger size of the US capital market may explain some of this difference. The fact remains, however, that the potential of US companies to push their business model, technology and market penetration (i.e. market share) is much better.

Box 3: The North American VC market – a benchmark comparison

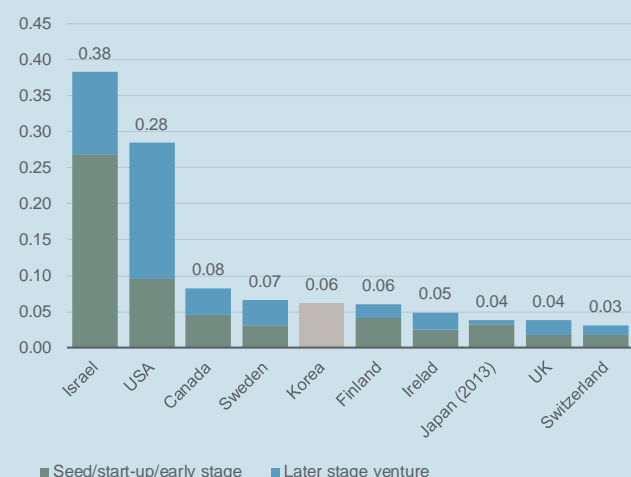
Pierre Cl roux, Vice President, Research and Chief Economist
Business Development Bank of Canada (BDC)

An American Success Story

The United States is by far the largest VC market in the world. In 2015, 4,380 deals totalling USD 59.1 bn were made, half of which were attributable to California alone. In comparison, 3,006 deals were concluded in Europe, for a total of USD 4.4 bn. As a percentage of GDP, the volume of US VC investment ranks second only to that of Israel (Figure 8), but the average deal size in the United States surpassed that in the “start-up nation” by USD 5 m (Figure 9).

Figure 8: VC investment in Top 10 OECD VC markets by stages of investment, 2014

VC investments as share of GDP in per cent



Source: OECD, “Entrepreneurship at a Glance 2015”, OECD iLibrary.

Figure 9: Breakdown of average VC deal size, 2015

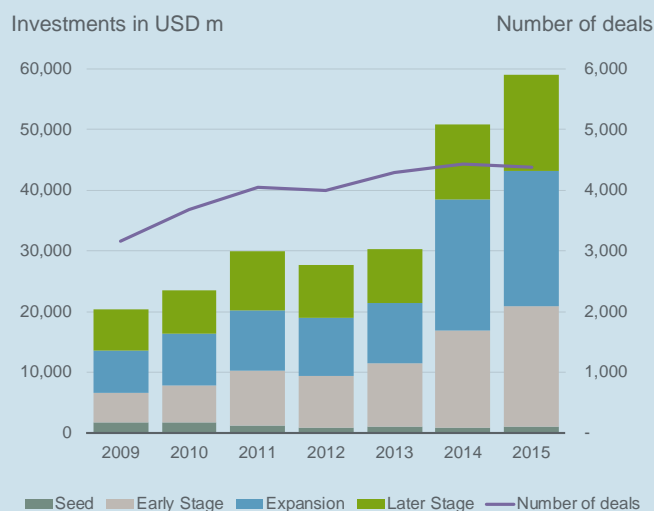
Average deal size in USD m



Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q2 2016, IVC.

The US VC market experienced phenomenal growth after the low reached in 2009. VC investment grew at a compound annual growth rate of 19% over that period, while the number of deals jumped by 38% (Figure 10).

Figure 10: Venture capital invested at company level by stage and number of deals



Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q1 2016.

Breakdown by region and industry

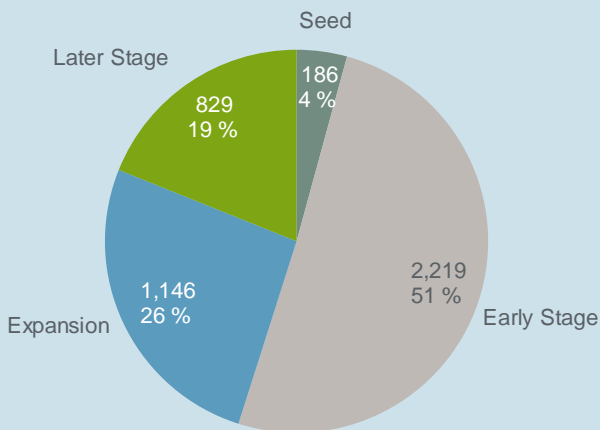
Three states account for 77.5% of the total VC invested in 2015: California, Massachusetts and New York. As mentioned previously, California alone accounted for more than 57% of the market, most of it driven by Silicon Valley, home of the largest technology ecosystem in the world.

By sector, the majority of investment occurred in software (40%), life sciences (19%) and other ICT, excluding software (11%).

Investment by stage

In 2015, the majority of VC investment went into expansion and later stages (64%), while the early and seed stages accounted for 34% and 2%, respectively. However, a closer look at the number of companies funded by stage reveals that the majority of deals (2,405 or 55%) were at the seed and early stages (Figure 11). Of those, 1,444 raised VC for the first time, which led the NVCA to affirm that the US VC industry remains focused on the next generation of “great” US companies.¹ In comparison, more than half of European VC money went to the early stage (Figure 12).

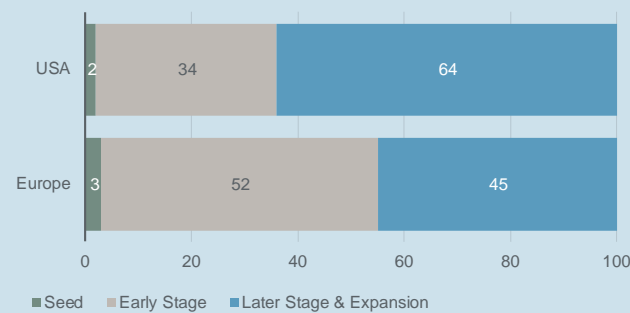
Figure 11: Number of VC deals in the United States by stage, 2015



Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q1 2016

Figure 12: VC investment by stages, USA and Europe, 2015

Share of stages in per cent



Source: PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q1 2016 and Invest Europe/ PEREP_Analytics.

Economic Impact

Three out of the five largest US public companies based on market capitalization – Apple, Google and Microsoft – received VC at the early stage. Moreover, 42% of all public companies founded after 1974 were venture-backed. Together, these companies represented 63% of the capitalization and 85% of all R&D spending by public companies formed since 1974.ⁱⁱ

Success factors

- **The United States has large VC funds.** There were a total of 1,224 funds in existence in the USA by 2015, with an average size of USD 135 m. The larger the fund, the easier it is to raise capital, develop expertise in a specific technology niche, and fund large deals. There can also be economies of scale from operating larger funds as the administration costs (i.e. overhead) of operating an office represent a smaller percentage of the total capital committed.

- **The US capital market offers VC-backed companies opportunities to exit via IPOs.** In 2015, 18% of exits were through IPOs in the United States. As a general rule, IPOs are more lucrative than trade sales.

- **US venture capitalists are very experienced and focus on later stages.** Many have run a start-up themselves and know how to scale up a business. Thus, they favour investment in companies that have proven markets.

Role of the Public Sector

Public sector involvement has played a major role in shaping the US VC industry, as shown by Lerner (2009). The pioneers of Silicon Valley benefited from public funding of universities and defence at the beginning of the 20th century. This public spending continues to support the innovation process of the US economy, even nowadays, by fostering the demand for VC.

The federal government’s Small Business Investment Companies (SBIC) program is the principal policy tool for supporting VC in the United States. The government does not invest in promising small businesses directly; instead, it offers loans to SBICs. SBICs – privately owned and managed investment funds – then use their own capital and government-backed loans to invest in the equity and debt of qualifying small businessesⁱⁱⁱ, like Apple in 1978.^{iv}

For each dollar an SBIC raises from private investors, the federal government commits up to USD 2 of debt, up to a maximum of USD 150 m per SBIC. From 2011 to 2015, the SBIC program helped secure a total of more than USD 21 bn in financing for about 5,800 small businesses.^v

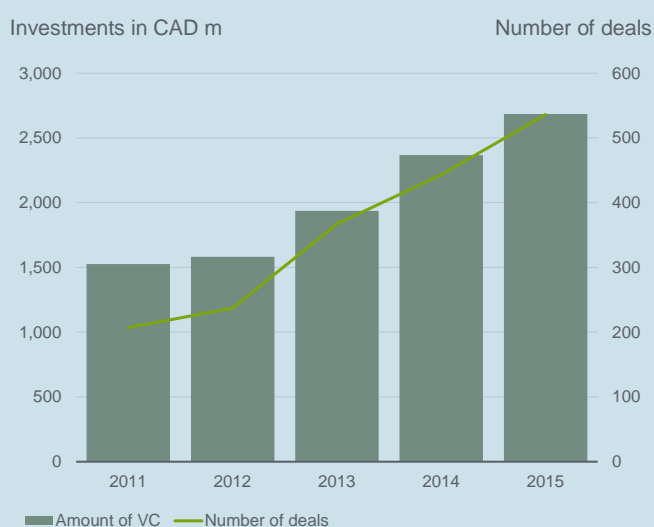
At the state level, the Obama administration introduced the State Small Business Credit Initiative (SSBCI) as part of the Small Business Jobs Act of 2010. The USD 1.5 bn initiative aims to strengthen VC programs.^{vi} Some states allocated the money to existing VC initiatives, while others created new VC programs. Those initiatives mainly consisted of direct investment funds or funds of funds initiatives.

Mobilising private VC by public funds of funds: Canada^{vii}

Overall, the Canadian venture capital (VC) market is well established and has been growing both in terms of the number of deals and the amount of money invested; however, the average deal size is small compared to that in the United States. In 2015, a total of CAD 2.7 bn in venture capital was invested in Canadian companies, the best result since 2002. According to the OECD, the volume of Canada’s VC investment as a percentage of GDP ranked third amongst other developed nations – at 0.08 % of GDP – only behind Israel (0.38 %) and the USA (0.28 %), the homes of more mature VC markets (Figure 8).

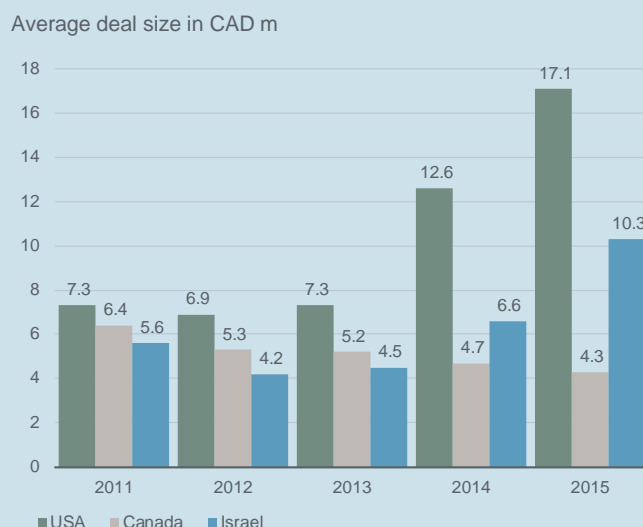
The Canadian VC market came out of the 2008–2009 global economic crisis well. Both the number of deals and the size of the financing have boomed over the last five years (Figure 13). VC investment grew at an average rate of nearly 18 % between 2011 and 2015, while the number of deals went from 207 in 2011 to 536 in 2015, up 159 %. However, average deal size fell 33 % over the same period, from CAD 6.4 m in 2011 to CAD 4.3 m in 2015. By comparison, both the USA and Israel have expanded the amount of capital per investment – by 135 and 83 % respectively – providing greater resources for growth (Figure 14). This was not the case with Canada, where most VC money went to earlier stages of investment at the expense of later stages.

Figure 13: Venture capital invested at company level and number of deals



Source: CVCA.

Figure 14: Breakdown of average VC deal size over the last 5 years



Source: CVCA, PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q1 2016, IVC.

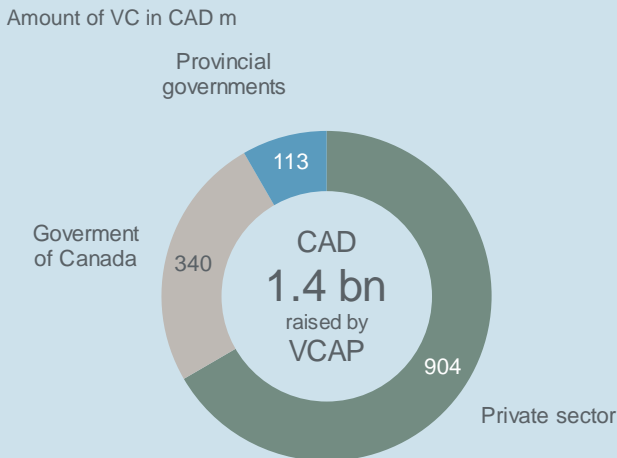
By sector, firms in information and communication technologies (ICT) have captured the largest share of VC investment in Canada (63 %), followed by life sciences (29 %) and clean technologies (6 %). The majority of VC investment occurs in early-stage growth (51 %), while 42 % occurs in the expansion or later stage of the business life cycle. The remaining 7 % of investment consists of seed or start-up capital.^{viii}

The Role of Public Institutions

The public sector plays an important role in the Canadian VC market. In 2013, the federal government launched the Venture Capital Action Plan (VCAP), a CAD 400 m initiative to support the Canadian VC ecosystem. This initiative aims to draw private sector capital back into this asset class by investing in four large-scale funds of funds led by the private sector with the participation of institutional investors, corporate strategic investors, high net worth individuals and interested provinces. For every dollar invested by the public sector, private sector partners committed CAD 2 to the funds of funds. The Business Development Bank of Canada manages the VCAP program.

VCAP has been successful. As of 18 May 2016, the program has attracted CAD 904 m in private sector money back into this asset class. Overall, CAD 1.4 bn has been raised with government commitments accounting for one third of this amount (Figure 15).

Figure 15: Total amount rose by VCAP funds of funds



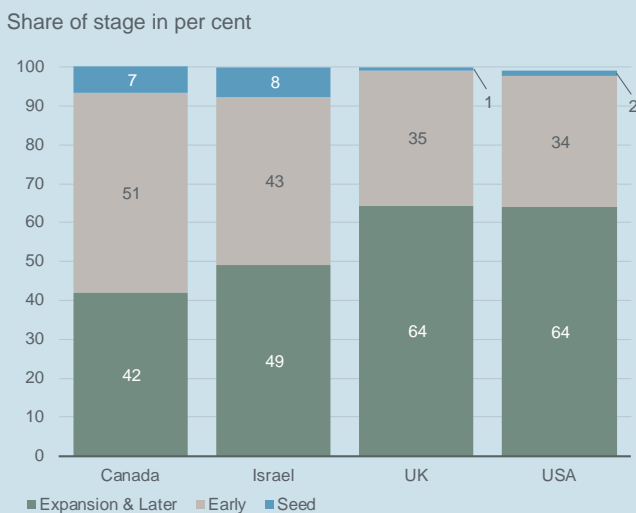
Note: As of May 18, 2016. It excludes the Government's CAD 50 m to existing, high-performing funds, which were all closed as of March 31st 2015.

Source: BDC.

Specific Challenges

The Canadian VC market has difficulty supporting firms in the scaling-up phase of the business life cycle. In fact, Canadian investors tend to allocate less capital to later stages of growth, with close to 42% of total funds invested in that category, compared to 64% in the USA and the United Kingdom, 49% in Israel (Figure 16) and 45% in Europe (Figure 12).

Figure 16: Breakdown of total VC funds invested by stage, in per cent, 2015

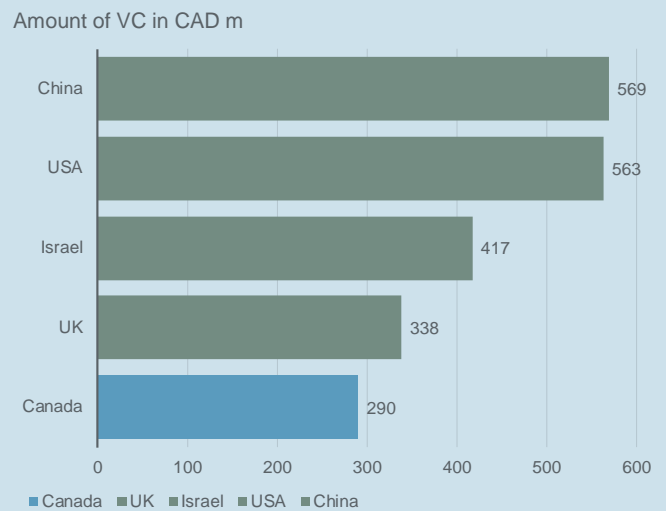


Note: Stages of investment depend on national categorization. For Canada, the "Other" category was folded into "Expansion & Later".

Source: CVCA, PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q1 2016, Invest Europe/PEREP_Analytics

As a result, the average annual exit size of bigger deals^{ix} in Canada was CAD 290 m between 2011 and 2015, which was nearly half of the US average, also trailing that of other major countries (Figure 17). Given the small size of the Canadian domestic market – there are fewer funds in Canada overall with less available capital to invest compared to other economies – Canada has to rely on foreign investors to secure financing at later stages. Historically, close to half of all VC raised at that stage came from foreign investors, mostly from US investors.^x

Figure 17: Annual average exit size for deals above CAD 100 m, 2011–2015



Source: CVCA, Pitchbook

ⁱ PricewaterhouseCoopers/National Venture Capital Association (2016).

ⁱⁱ See Strebulaev (2015).

ⁱⁱⁱ The U.S. Small Business Administration. "SBIC Program Overview", online: <https://www.sba.gov/sbic/general-information/program-overview>

^{iv} Mazzucato, M. (2015).

^v Dilger (2016).

^{vi} U.S. Department of the Treasury, "State Small Business Credit Initiative (SSBCI)", online: <https://www.treasury.gov/resource-center/sb-programs/Pages/ssbci.aspx>

^{vii} Brigl and Liechtenstein (2015).

^{viii} For Canada, the "Other" category was included in "Expansion & Later". Source: CVCA.

^{ix} Only deals above CAD100 m were considered for calculating the average.

^x Data compiled for the 1986–2016 period. Later stages include Series D, E, F, and G. Sources: BDC.

1.3 Fostering the European VC market

The role of public intervention

Because of the positive effects of VC activity on innovation and economic growth (see part 1.1), governments promote various policies in order to develop their national VC markets. Indeed, economic literature identifies several mechanisms through which public intervention can foster the development of VC markets.¹⁵

First, the VC industry does not develop spontaneously. In his famous book in which he reframes public interventions aiming at developing the VC market, Lerner (2009) describes how, in its infancy, Silicon Valley also benefited from various actions taken by the US government, beginning with defence contracts and public procurement and followed by the Small Business Investment Companies program (SBIC). As Lerner shows, creating a viable ecosystem for VC is a learning process, both for entrepreneurs and investors: it requires the creation of new specialized actors (such as business angels, incubators, or intermediaries), the dissemination of a risk-taking culture and knowledge diffusion about investment opportunities. As a sign of this learning process, Giot et al. (2014) show that the performance of private equity funds tends to increase with their experience, especially during the early stages.

In particular, a common challenge for governments is to attract private investors into the VC market, since this segment implies large risks and does not yield sufficient short term financial returns (given the learning process described above). One way of attracting private investors to the VC segment consists in sharing the risks with them through a “fund of fund” approach: the government and private investors co-invest in VC funds, which in turn invest in young innovative firms. The goal of this approach is to demonstrate the viability of the VC ecosystem for private investors: in that regard, the invested funds pursue the objective of maximizing financial performance and the government remains a minority investor.

The second justification for public intervention lies in the fact that private investors might not cover all the needs of the economy. In particular, economic literature identifies three reasons for which public intervention might improve global welfare:

- First, some projects do not yield high financial returns, but nevertheless have great social value

(health improvement, increase in human capital, reduction of air pollution). Since private investors do not take these “externalities” into account, a case can be made for the government to invest in companies which might create such social benefits directly.

- Second, despite the availability of private funds, some specific projects might continue to suffer as a result of information asymmetries between entrepreneurs and investors. For example, since it is costly for private investors to collect information about investment projects, they might refuse to consider projects which do not reach a certain investment threshold level. In the same way, they might exclude some emerging sectors from their investment strategy, because they are not yet able to generate a sufficient dealflow. Start-ups at the seed stage are most affected by the private investors’ reluctance. By bearing risks that private investors are not willing to take, public investors play an important role: without their commitment many entrepreneurs would not succeed to start-up and later stage dealflow for private investment would probably run dry.

- Third, the VC industry is cyclical:¹⁶ fundraising and investment flows quickly react to macroeconomic indicators and to market expectations regarding investment opportunities. As witnessed during the 2008/2009 crisis, investments in the VC segment tend to collapse in times of economic recession. This situation can leave some promising young companies without any possibility of external funding. In this context, direct public intervention can be a useful counter-cyclical policy.

Governments can respond to these “market failures” with government-owned VC funds. This “direct” intervention is complementary to the “fund of fund” approach, in the sense that funds of funds do not allow governments to act in a counter-cyclical way and/or to select projects with lower financial but higher social return.

Although there are several economic justifications for public intervention, the efficiency of this intervention greatly depends on its design. In particular, it is important that this type of intervention is effectively targeted on market failures and that its dimension is well chosen, in order to avoid adverse effects like a crowding out of private sector VC funds.

¹⁵ See Kraemer-Eis et al. (2016) for a brief review.

¹⁶ See the review of Gompers et al. (2008).

Contribution of the National Promotional Institutions (NPIs)

Because of the fragmentation and diversity of the European VC market, common measures which strengthen the EU market as a whole as well as precise actions targeting the specific challenges of the national markets are needed. This is why national development banks such as Bpifrance, KfW, CDP, ICO and the British Business Bank have developed instruments that respond to country-specific issues in order to support their respective VC markets (see country chapters for more details):

Bpifrance covers all segments on the French VC market (seed, early and late stage) and intervenes both through several funds of funds and direct investments. Since the end of the 1990s, more than 10 funds of funds have been launched and managed by Bpifrance, mostly dedicated to VC funds: they have invested almost EUR 2 bn in more than 130 VC funds, jointly with other private investors. More recently, Bpifrance increased its direct investment activity, in order to respond to specific needs of companies in a more reactive way. In 2014, new direct investments represented about 50 companies and EUR 150 m.

KfW supports the German VC market with both direct and indirect VC investments. Via its own privately managed VC fund “Coparion”, KfW invests in innovative German companies directly. Coparion is a syndication fund which only invests in a company if a private lead investor provides at least the same amount of capital on the same financial terms (“pari passu”). Further, KfW is invested in the High-Tech Start-up Fund (HTGF). It is a privately managed seed-fund set up as a public-private partnership between KfW, the Federal Ministry for Economic Affairs and Energy, and established private companies. Via its promotion program “ERP-Venture Capital Fund”, KfW invests in selected German and European venture capital funds focussed on start-up or early growth (second round) financing. Via ERP-VCF, KfW acts as the cornerstone investor attracting private VC funds to the market.

CDP is committed to substantially increasing the pace of development of the Italian VC market. For this reason, CDP currently plays a leading role in the market mainly through Fondo Italiano di Investimento SGR SpA (FII). Since 2010, FII has invested in five VC funds for a total commitment of about EUR 80 m, supporting nearly 60 companies. Under CDP’s direction, FII launched two funds-of-funds (FoF), namely FOF VC and FII Venture in 2014 and 2016

respectively. To date, FoF VC has already committed EUR 45 m to four funds and, by acting as anchor investor, it plans to leverage up to EUR 500–600 m. Finally, according to its new Business Plan 2016–2020, CDP is also expected to increase its current commitment in VC by launching relevant initiatives in the technology transfer (ITAtch) and accelerators (AccelerateIT) industries. Under the umbrella of the Industry 4.0 Plan¹⁷, ideally these initiatives aim at matching private investment with resources from the Juncker Plan.

ICO interventions on the VC market are realized through Axis, a separate company wholly-owned by ICO. Axis, the oldest VC firm in Spain, has invested more than EUR 879 m in the growth of around 160 companies and funds since its creation in 1986. In connection with VC, Axis mainly operates via three vehicles. The first one is Fond-ICOpyme, with an allocation of EUR 250 m (70 % for expansion capital and 30 % for start-ups) which may be invested through investments in capital, participating loans or a combination of both. Another instrument is the Isabel La Católica Fund-EAF Spain, that provides equity to business angels and other non-institutional investors for the financing of innovative companies in the form of co-investments (this fund is promoted by Axis and the EIF but it is managed by the EIF). The third and currently main vehicle by which Axis can intervene in the VC market is Fond-ICO Global, which was launched in March 2013 as the first public fund of funds created in Spain. It has EUR 1.5 bn under Axis management and its main aim is to support the creation of new VC funds managed by private managers; Fond-ICO Global operates through public tenders to private agents: after the last tender (the 7th) it has so far allocated EUR 256 m to funds focused on the first stages with a minimum settlement of investment of EUR 793 m in Spain in said first stages.

The British Business Bank’s main objectives are to increase the supply of finance to smaller businesses in areas where markets do not work well and to help create a more diverse financial market for smaller businesses with greater choice of options and providers. By the end of December 2015, the British Business Bank’s current venture capital programmes had supported 634 businesses with approximately GBP 2.7 bn of equity funding.

¹⁷ The „National Plan for Industry 4.0“ was launched in September 2016 by the Italian Government to promote technological change as a pillar of Italian industrial policy.

Strengthening the VC market through the Capital Markets Union

Investments in Europe rely heavily on financing through the banking system. However, investments stagnated over the past years and many SMEs suffered from limited access to financing and worse financing conditions in several Member States. According to the estimates of the European Commission (EC), European SMEs collect five times less financing from capital markets than their US counterparts; if European VC markets were as deep as the US market, more than EUR 90 bn would have been available to finance companies from 2009 to 2014.¹⁸

In the attempt to complement bank financing with stronger and more integrated capital markets, the EC launched the “Capital Markets Union” (CMU) project. One goal of the CMU is to enable capital to move more freely within Europe, where liquidity is available but does not match investment opportunities perfectly. By facilitating cross border-investments, more integrated capital markets would enable entrepreneurs to raise capital from a wider range of sources, regardless of their location.

In the belief that more integrated capital markets would lead to efficiency gains and support the EU’s ability to fuel growth, the EC increased its efforts to establish a framework for a genuine single capital market in the EU. The “Action Plan on Building a Capital Markets Union” sets out a programme of 33 actions and related measures, which aim to establish the building blocks of an integrated capital market in the European Union by 2019. Among these measures are some, which implicitly or explicitly refer to VC and which can thus play a key role in reviving VC markets in Europe.

As part of the package of measures to support and stimulate Private Equity (PE) investments in general and VC investments in particular, the European Commission proposes several measures:

1. The development of a Pan-European VC fund-of-funds combining EU budgetary resources with greater volumes of private capital,
2. The promotion of best practices on tax incentives for VC to foster investment in companies.

¹⁸ Commission communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Action Plan on Building a Capital Market Union, COM(2015) 468, 30.09.2015, p. 4.

3. A revision of the regulatory framework, with a specific focus on the European Venture Capital Funds (EuVECA)¹⁹ and the European Social Entrepreneurship Fund (EuSEF)²⁰ legislation.

As far as the first two measures are concerned, the Commission is currently at a preliminary stage: under scrutiny is how national tax incentives for VC and business angels can foster investment in companies. In the second half of 2016, the EC is also expected to publish a call for private sector asset managers to express their interest in managing the fund-of-funds. The creation of a Pan-European fund-of-funds is particularly relevant and is designed to attract private investors to the EU VC asset class and to overcome fragmentation, which is currently one of the main obstacles for the development of VC investment in Europe²¹.

Regarding the revision of the regulatory framework, in July 2016 the EC presented a legislative proposal to amend the EuVECA and EuSEF legislation. Both regulations, creating a capital raising passport for managers authorised to use these labels, were adopted and came into force in 2013. The initiative was an attempt to establish the appropriate regulatory conditions for a successful EU VC market, making it easier and more attractive for savers to invest in unlisted SMEs. The results of this regulatory legislation are surely positive, although probably insufficient to significantly revive the market (especially the one for EuSEFs): since it came into force²², only 70 EuVECA and just 4 EuSEF have been notified by ESMA (European Securities and Market Authority)²³. As a consequence, on 30 September 2015, parallel to the presentation of the “Action Plan on Building a Capital Markets Union”, the EC launched a public consultation²⁴ to ask whether, according to the respondents, targeted changes to the two regulations

¹⁹ Regulation (EU) No. 345/2013 of the European Parliament and of the Council of 17 April 2013 on European venture capital funds, OJ L 115, 25.4.2013, p.1.

²⁰ Regulation (EU) No. 346/2013 of the European Parliament and of the Council of 17 April 2013 on European social entrepreneurship funds, OJ L 115, 25.4.2013, p.18.

²¹ At EUR 60 m, the average European VC fund is only half the size of that in the US. Furthermore, 75% of venture capital funds are smaller than EUR 82 m.

²² 22nd July 2013.

²³ Official figures July 2016.

²⁴ Consultation Document (EC), Review of the European Venture Capital Funds (EuVECA) and European Social Entrepreneurship Fund (EuSEF) Regulations.

could enhance the success of these legislative initiatives.

Building on the outcome of the consultation, the EC proposes

- to extend the eligibility criteria for marketing and managing EuVECA and EuSEF funds to include larger operators (passports currently apply only to those operators managing an overall portfolio of assets below EUR 500 m),
- to expand EuVECA eligible assets to allow investment in small mid-caps and SMEs listed on SME growth markets (this measure would not only translate into a larger number of companies benefitting from EuVECA investments but would also lead to a greater diversification of risk) and
- to abolish fees among Member States, simplifying the registration process.

To sum up, the intention of the proposal is rather straightforward: widening both the spectrum of market participants and the range of eligible assets as well as prohibiting cross-border fees could potentially increase the number of EuVECA and EuSEFs and, in turn, revive the VC market.

Reviving the European VC market by means of EU financial instruments

Among EU financial instruments channelling VC into SMEs, one of the most successful was the Competitiveness and Innovation Framework Programme (CIP), which ran from 2007 to 2013. This mobilised more than EUR 2.3 bn in equity investments through its equity financing facility (the High Growth and Innovative SME facility or GIF). Building on the positive experience of the CIP, some new initiatives were launched: the InnovFin SME Venture Capital within the Horizon 2020 programme together with the EU programme for the competitiveness of SMEs (COSME).

InnovFin SME Venture Capital provides seed and venture capital to early-stage research and innovation driven enterprises focusing on life sciences, ICT and innovation in general. It operates through financial intermediaries including investment funds, venture capital funds or vehicles that provide co-investment facilities for business angels or cooperate with business angels.

COSME, an EU-programme running from 2014 to 2020, aims to enhance access to loans and equity financing for SMEs by means of two financial

instruments: the Loan Guarantee Facility (LGF) and the Equity Facility for Growth (EFG). Thanks to a planned budget of EUR 2.3 bn, it is estimated that the initiative will leverage up to EUR 25 bn in financing from financial intermediaries. Although many of them will constitute PE funds, a relevant portion will be allocated to VC. The two facilities are managed by the European Investment Fund (EIF) in cooperation with financial intermediaries in EU countries.

As part of the Investment Plan for Europe, EIF launched a series of initiatives aimed at supporting capital markets in general, including the VC segment. Among these initiatives is the EIF-NPI Equity Platform, a new collaborative project launched in 2016 under the umbrella, but not limited to the scope of operations, of the SME Window Equity product of the European Fund for Strategic Investment (“EFSI SMEW Equity”). The platform promotes knowledge sharing and best practices among the EIFs and the NPIs in the EU Member States. Its ultimate goal is to enhance access to funding for SMEs and Midcaps in their seed, early and growth phases; support integration of equity markets; and guide EIF and NPIs in implementing equity investments, including EFSI-related activities. The main characteristic of this platform is NPI membership in the multilateral General Forum dedicated to defining concrete opportunities for enhanced collaboration with the EIF or amongst the NPIs.

1.4 Recommendations for building momentum in the venture capital markets in Europe

European VC markets lack scale compared to those in the United States. The average size of funds in Europe is smaller and returns are lower compared to both VC funds in the United States and all other asset classes (see Box 2). This makes it more difficult for European VC funds to attract private investors.

Bigger VC funds allow fund managers to realize economies of scale with regard to costs and diversification, additionally allowing them to make larger (follow-on) investments. Thus, the problems in raising sufficient funds are, in turn, a cause of lower performance – a vicious circle that must be broken.

It is important to stress that the current situation in the European VC industry is far different than it was during the crisis of 2007/2008. That crisis resulted in a sharp decline in liquidity, which resulted in a lower supply of VC funding. Now, funding is more readily available in general. The challenge is thus to increase the number of investors allocating funding to the VC market and to increase the size of those VC allocations.

Since the beginning, National Promotional Institutions (NPIs) have been important actors in European VC markets, addressing market failure and helping the markets to emerge (see country chapters for further detail). NPIs will continue to play a significant role in developing these markets. Also, the EU and national governments are key players for ensuring that policy and regulatory developments promote, rather than hinder, VC markets across Europe. Considering the findings of this report, there are four areas where further actions on national and EU levels are needed in order to build the necessary momentum in the European VC markets.

Increase the supply of funds for VC investments

Encouraging the development of larger funds would enable EU VC funds to provide the multiple rounds of funding required for the full development of high growth firms. Larger funds will then be able to “stand ready to write large cheques – fast”²⁵ where appropriate, the same as US VC funds are able to do. Additionally, larger funds should be more attractive for institutional investors who have large minimum investment sizes.

Increasing a fund’s size can also enable better performance because fund size is empirically positively correlated with fund performance. Despite the poor average performance of EU VC funds, there are a number of high-performing funds. It is important to emphasise these in order to demonstrate the opportunities available to potential investors.

Reducing fragmentation within European VC markets

“It is likely that the [European VC] industry has not reached a critical mass, because of the relatively high level of fragmentation.”²⁶ Due to diverging legal and regulatory regimes in different EU countries, VC funds and LPs are likely to focus on their host countries when they invest. Promising investment opportunities abroad may be missed, and fundraising from foreign investors impeded. This limits the ability of European VC funds to utilise economies of scale.

Fragmentation of the EU VC market, therefore, contributes to poor performance. Reducing the fragmentation of VC markets in the EU and helping the industry to reach a ‘critical mass’ may be the most important steps for breaking through this vicious circle.

Introducing a more standardized regulatory VC framework is a crucial step for reducing fragmentation.²⁷ This would also support the development of a common ecosystem of lawyers, accountants, advisors, consultants or analysts who are experienced in VC. Ensuring that regulation does not put unnecessary barriers in the way of institutional investors, such as pension funds and insurance companies, which could deter them from investing in VC would also be a step forward.²⁸

Cross-border funds help to reduce fragmentation by generating experience and knowledge spillovers about different legal and regulatory schemes among fund investors, fund managers and investee companies. Pan-European funds of funds open to public and private investors would also fuel the supply of VC. The EIF-NPI Equity Platform could be a basis for such collaboration schemes. It would also facilitate VC firms to raise funds or young companies to expand abroad.

Perpetuating high-quality VC dealflow by increasing the demand for VC investment

In some VC markets within the EU, VC firms want to invest more but lack promising investment opportunities. Facilitating cross-border investments is one approach to overcoming this obstacle; however, inducing a permanent high-quality dealflow is also a requirement.

Increasing the information available to small businesses about how to obtain equity financing would also help. This could take many forms, from on-line information or working with business advisers through facilitating networking events where VC managers could meet start-ups.

In the United States, public sector demand was a key driver in the evolution of the VC industry, as it encouraged continuous development of new technologies, which in turn were the basis for new innovative companies to commercialise them (see **Box 3**). Such a virtuous circle could be put into operation by

- spending more on basic R&D and implementing an innovation system that provides companies with the complementary assets they need to translate new knowledge into marketable innovative technology. The United States demonstrated how such investments lay the foundation for new technologies and ideas and

²⁵ See Brigl and Liechtenstein (2015).

²⁶ See Kelly (2011).

²⁷ See Tykvová et al. (2012).

²⁸ See Kaya (2016).

were crucial for a number of innovative start-ups which are now dominant global players. Many EU countries lag far behind in the share of R&D expenditures as a percentage of GDP – they, in particular, need to raise their R&D investment levels.

- promoting spinoffs from universities and scientific institutions that commercialise R&D results. This can unleash innovative market opportunities, especially in countries where researchers at public universities have legal difficulties starting their own companies.
- improving the opportunities for young innovative companies to benefit from public procurement policy. This would help young innovative companies show the practicability of their products and also create growth opportunities for them.
- anchoring entrepreneurial issues in business education programmes. This long-term approach could result in a larger number of entrepreneurs in the future.
- stimulating private donations to endowments at universities, which fund basic research or invest in start-ups.

Improve exit routes for VC investments

For a self-sustaining VC market, it is essential to have not only a sufficient, high-quality potential dealflow, but also viable exit routes. Successful exits are usually accomplished via trade sale or IPO. Trade sale is the most widely used exit channel, while IPO is less frequent – even if it is the most profitable. However,

both channels need to be strengthened if a deeper and more efficient market is to develop. To increase the likelihood of IPOs, stock markets with sufficient liquidity to absorb IPOs from technology companies are essential. Creating larger VC funds would indirectly improve the liquidity of the market, since larger funds enable firms to scale-up more and demonstrate their potential ahead of an IPO. Regarding trade sales, strategic industrial investors should be encouraged to be more open for acquiring young, VC-backed companies. In general, more publicity about successful exits would also help to raise awareness about potential options for exit.

IPOs are supported by the assessments made by financial analysts. Some stock markets currently lack sufficient experts who are able to give an appropriate assessment of technology validation and market value for young VC-backed companies. This lack of expertise makes these companies' stocks more volatile and this implied volatility can reduce their attractiveness for investors.

This outline shows the challenges ahead for fostering VC markets. Building momentum in VC in Europe will require activities on both the EU as well as the national level. The aim should be to strengthen national innovation systems, taking into account their individual differences, as well as to reduce fragmentation within Europe.

Country Reports

2.1 France

Alexandre Gazaniol and Baptiste Thornary (Bpifrance)

- Although the French VC market suffered during the economic crisis of 2008–2009, fundraising has significantly risen since and investments are expected to increase in the coming years.
- In order to develop a viable ecosystem for VC investors, Bpifrance has implemented a “fund of fund” strategy over the last decades, which has contributed to the professionalization of VC funds and an increase in their size. Bpifrance also manages direct funds, in order to cover industries or company development stages for which the supply of private funds is still insufficient.
- Today, the French VC market is well structured and competitive but still faces some important challenges: financial performance of funds, attractiveness for private / foreign investors, consolidation of actors and emergence of larger funds.

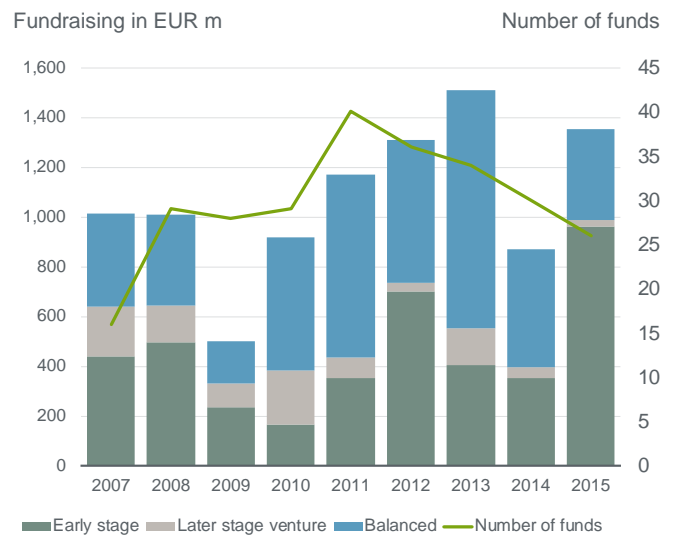
2.1.1 Development of the VC market

The French VC market emerged at the end of the 1990s, through public action. These actions aimed to both develop private funds specialized in the VC segment and to stimulate entrepreneurship, leading to a progressive increase in fundraising and investment over the last two decades.

Before the economic crisis, VC fundraising reached about EUR 1 bn in 2007 (Figure 19). Fundraising experienced a large decline in 2009, but not as

significant as that observed in other segments of the private equity market (LBO particularly). After this decline, VC fundraising soared between 2010 and 2013. This rapid increase reflects the appearance of many new VC funds in the market, thanks both to the emergence of new LPs (corporate investors and private individuals among others) and to the expansion of existing LPs in the VC segment. According to Invest Europe, during the period 2010–2013, the average number of funds raising money reached 34 funds per year, as opposed to 24 funds during the period 2007–2009. A large part of these new funds came from government agencies, in particular the French public bank of investment (Bpifrance) (see Figure 18).

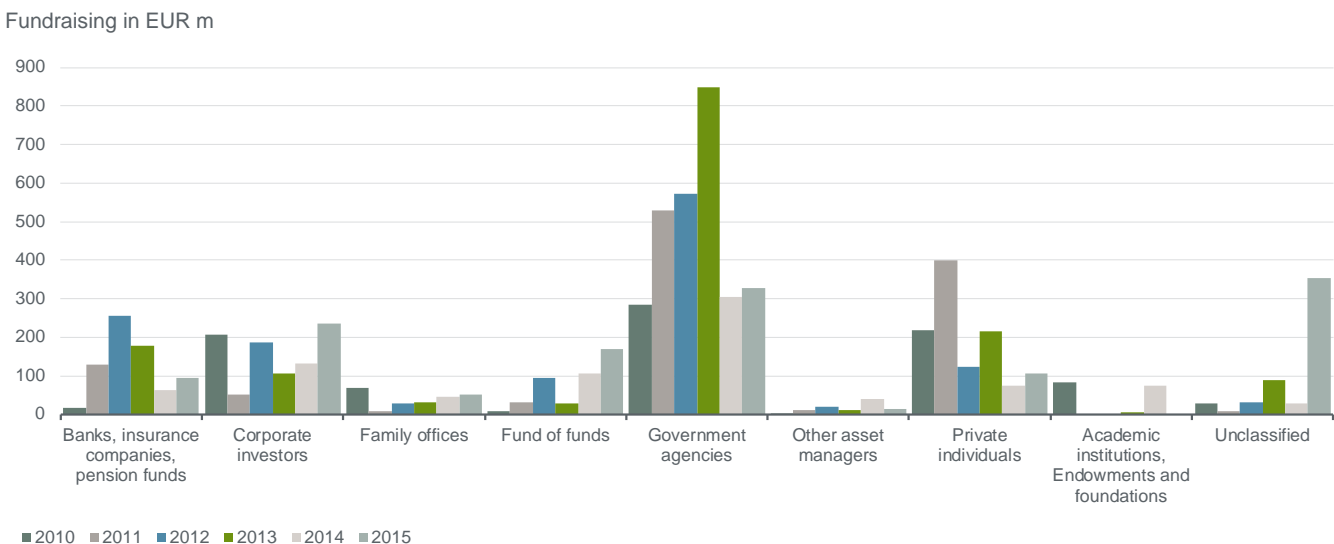
Figure 19: Less French funds raise more capital



Source: Invest Europe/PEREP_Analytics

While French VC funds raised significant amounts of money between 2010 and 2015 (EUR 7.1 bn in total

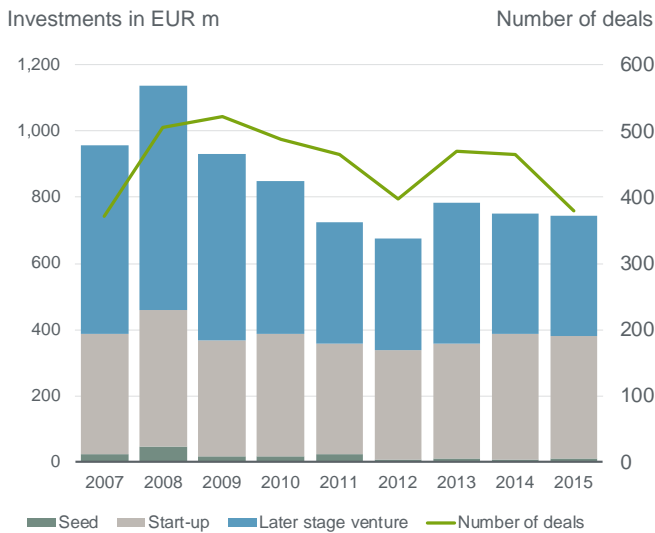
Figure 18: Amounts invested in French VC funds by investor type



Source: Invest Europe/PEREP_Analytics

over this period), their total investment was relatively stable over the same period and amounted to EUR 4.5 bn, suggesting that these funds have an important “dry powder”. Therefore, their investments are expected to increase in the coming years. This increase already appears in the statistics of the French association of private equity (AFIC), according to which investments of French VC funds increased by 21 % in 2015, while the number of investees rose by 14 %²⁹.

Figure 20: Investments by French VC firms



Source: Invest Europe/PEREP_Analytics

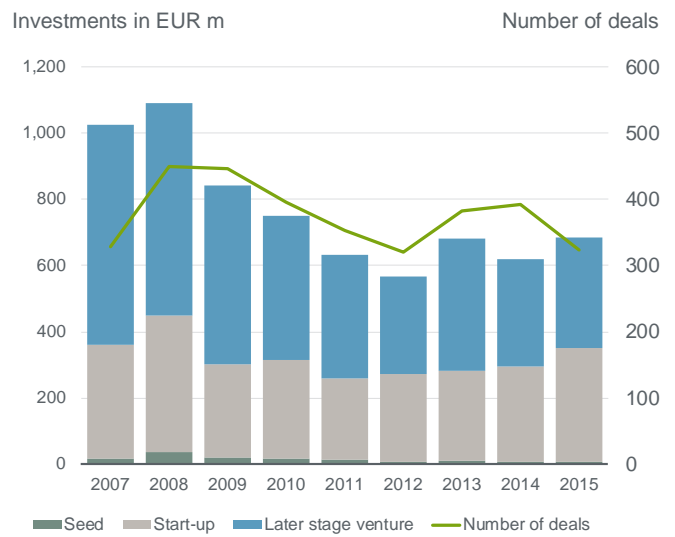
VC funds (whether they are French or foreign³⁰) have invested in nearly 400 French companies each year since 2007 on average. All in all, French companies raised EUR 6.9 bn from VC funds between 2007 and 2015.

Both in terms of number of companies and investment amounts, the main sectors invested in are computer and consumer electronics (26% of invested amounts in 2015), life science (25.5%) and communications (16.5%). All together, these three sectors roughly represented the same share of investments in 2007. Other main sectors invested in include consumer goods and retail (7% of invested amounts in 2015), business and industrial products (6%) and energy and environments (5.5%)

²⁹ Which differs from the 2015 figure displayed by Invest Europe as the perimeter can be slightly different, especially the coverage of small regional funds which can invest in a substantial number of firms each year.

³⁰ But registered by the European VC association.

Figure 21: Investments in French companies



Source: Invest Europe/PEREP_Analytics

2.1.2 Role of public institutions

During the last 20 years, the French financial institution “Caisse des Dépôts et Consignation”, and today Bpifrance, have played an important role in structuring the VC industry. Through their intervention, these public institutions pursue multiple objectives:

- Dealing with market failures in SME finance markets, especially for innovative companies at the beginning of their lives;
- Funding projects which do not generate high financial returns, but have high social value (e.g. reduction of air pollution, benefits for health);
- Encouraging private/institutional investors to pursue investments in the VC market through risk-sharing mechanisms;
- Taking direct action in some strategic and/or emerging economic sectors, with high potential of added-value and competitiveness.

Bpifrance uses two different mechanisms to develop the VC market. **First, Bpifrance manages several funds of funds:** these funds invest in VC funds, which in turn invest in young companies. The goal of these funds is to attract private investors to VC funds by sharing the associated risks, and to help LPs to constitute funds with a sufficient size. Bpifrance always keeps a minority position in the invested funds and enjoys the same rights as other investors (“pari passu”). This leverage allows Bpifrance to reach many more companies than would be possible with a “direct” investment strategy.

More than 10 funds of funds were launched and have been managed by Bpifrance since the end of the 1990s, mostly dedicated to VC funds (later stage venture and balanced stage). Two programs were exclusively dedicated to seed funds (only one is active today, see focus). Thus, government agencies are the biggest investors in French VC funds. Bpifrance invested almost EUR 2 bn in more than 130 VC funds (around 50 seed funds and 80 later stage and balanced funds), jointly with other private investors.

This “fund of fund” strategy has significantly contributed to the structuration, the professionalization and the strengthening of private equity in general, and the VC ecosystem in particular. In the VC segment, Bpifrance invested in *first time* teams of LPs and *first time funds*. Except for retail funds which gather funding from private individuals who fund and then benefit from a special tax credit, a large number of French VC funds have raised money from Bpifrance.

Box 4: Focus on the “Fonds national d’amorçage”

In order to create a private VC industry in the seed segment, the French state decided to create a EUR 600 m “fund of fund” program, dedicated to financing seed VC funds, in 2011. This fund of fund, called “Fonds national d’amorçage” (FNA), is managed by Bpifrance and has the same objectives as a similar programme launched in 1999.

At the end of 2015, the fund had already invested around EUR 400 m in 21 individual funds. The program has a significant leverage effect: on average, other investors contributed one euro for each euro invested by Bpifrance. The selected funds invested in more than 230 companies, all in strategic economic sectors (health & life sciences, IT, environment, clean energy etc.).

Bpifrance also manages “direct” funds, which intervene in the VC segment. In 2014, new direct investments consisted of about 50 companies and EUR 150 m. These funds invest directly in companies to be able to respond in a more efficient and reactive way. In particular, they allow Bpifrance to cover some emerging sectors for which the supply of VC funds is still insufficient, and/or to compensate for the lack of private funds able to invest large amounts in the late stage phase:

- The main sectoral funds are specialized in biotechnologies and life sciences (four funds), in IT (one fund) and in clean technologies (two funds);

- The largest generalist fund (“Large venture”, with EUR 600 m) was created to close the gap between the start-up and growth phase fulfilling the vital equity needs of high growth start-ups, with the ability to accompany companies after they go public. Another large fund was created in order to invest in sizeable industrial projects with large corporates (fund “SPI”, EUR 700 m).

2.1.3 Specific challenges and needs

The first challenge of the French VC market is to increase the size of VC funds. Companies have essential equity requirements, especially in some sectors such as biotechnology, and significant growth rates, so they need several rounds of funding over a long period of time. That is why a fund’s ability to reinvest in the successive rounds is crucial. The size of the VC funds is, as a consequence, decisive for the development of the VC market and enables companies to be competitive in the global markets. Several VC actors have launched funds that are bigger than EUR 200 m and Bpifrance recently launched a EUR 600 m fund, able to make deals of up to EUR 10 m (“Large Venture”, see above).

Figure 22: Performance of French VC funds since origin



Source: AFIC, Performance nette des acteurs français du capital-investissement à fin 2015. The figure displays the evolution of the global multiple (Total Value to Paid-In – TVPI) of French VC funds since their inception. The TVPI ratio has two components: the Distributed Value to Paid-In (DVPI) and the Residual Value to Paid-In (RVPI). DVPI is the ratio of distributed cashflows over cash flows paid in to the fund, while the RVPI is the ratio of net asset value (at the time of calculation) over cash flows paid in to the fund.

The second challenge of the French VC market is to improve the financial performance of the segment. This is one of the key issues of VC ecosystem development. According to the last available statistics, French VC funds (especially the recent ones) performed better in 2015 than they did in previous

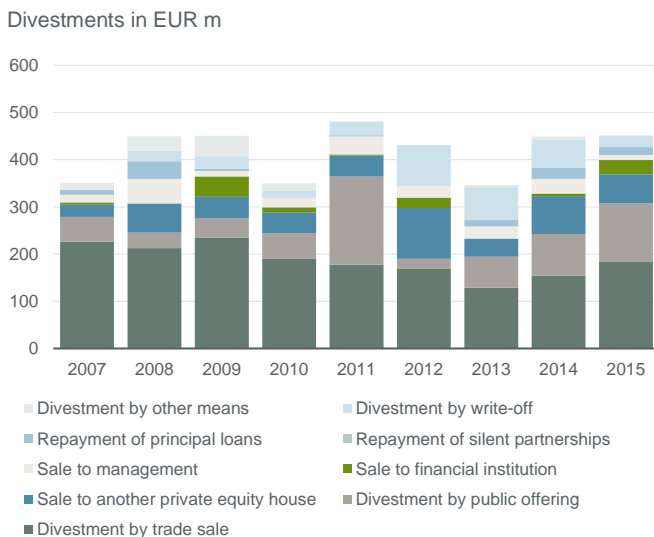
years, Over the 20-year span of the development of the French VC market, VC firms gained experience and saw their performance increase.³¹ The VC industry has demonstrated the ability to generate positive returns but more has to be done to attract private investors. In particular, the performance of French VC funds is still inferior, on average, to the performance of British and US funds.

Figure 23: Evolution of divestments in the French VC sector (number)



Source: Invest Europe/PEREP_Analytics

Figure 24: Evolution of divestments in the French VC sector (amounts)



Source: Invest Europe/PEREP_Analytics

The financial performance and attractiveness of French VC funds depend on various parameters:

- Existence of promising projects and ability for LPs to select excellent projects and to assist entrepreneurs in developing their businesses;
- Long term investment: investors have to be patient and able to reinvest several times before they realise a return on their investment;
- Capacity of secondary market to absorb companies when VC funds sell their portfolio.

Over the past few years, the number of divestments through public offerings or trade sales has increased, which is a positive and encouraging trend. Overall, 75% of divestments correspond to trade sales, public offerings or sales to a private equity house.

2.1.4 Policy recommendations

The actions initiated by Bpifrance have already contributed to the professionalization of VC funds and to the increase in their size. However, the creation of a viable ecosystem for VC is a learning process that will take several decades and efforts must be made to improve the financial performance of the VC segment and its attractiveness for private investors. To this end, Bpifrance will continue to adapt its “direct” and “fund of fund” strategies, according to the needs of the market.

³¹ See Bpifrance (2014).

2.2 Germany

Georg Metzger and Vivien Lo (KfW)

- VC-investments of German investors peaked in the year 2000 but promptly hit rock bottom in 2003. Investments recovered until 2008, however, they did not reach half of their previous maximum.
- Government intervention prevented the early-stage VC market from running dry in the mid-2000s
- In 2015 German companies received the most VC of any year after 2008, however, the market fails to provide bigger later-stage investments.

In 2015, a mere EUR 780 m in venture capital was invested in German companies – a small sum in relation to the country’s economic power. For comparison: in the United States, on average, about seven times more VC is invested in relation to gross domestic product (see Figure 5). VC investment is also higher in European industrial nations such as the UK or France. So, the German VC market has a great deal to catch up on.

2.2.1 Development of the VC market

Traditionally, equity financing hardly played a role in the German financial system. A significant market for over-the-counter equity emerged for the first time in the second half of the 1990s, in the course of the new economy boom. Fundraising and investments in German VC firms soared by the year 2000. However, the post-millennium new economy crisis hit the German

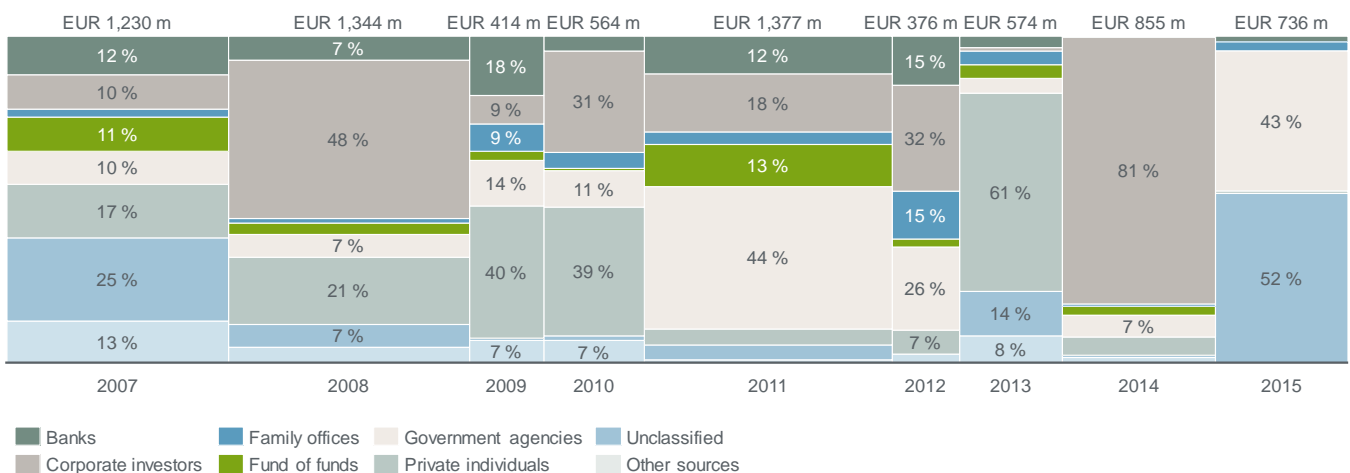
VC market hard. Fundraising and investments slumped by 2003. They recovered by 2008, but still lagged far behind the peak.

VC firms raised more than EUR 1.2 bn in funds in both 2007 and 2008 (Figure 26). With the onset of the worldwide financial crisis, fundraising again plunged to levels of EUR 400–600 m, only recovering to EUR 700–900 m recently. The more or less slow recovery which set in afterwards was interrupted in 2011 when VC fundraising suddenly skyrocketed to nearly EUR 1.4 bn – about EUR one billion of it specifically for early-stage VC investments. A bigger part of this one-time effect was due to the decision to endow the High-Tech Start-up Fund – a seed capital fund set up as a private public partnership – with fresh capital (Figure 25). While fundraising with regard to amount of capital improved over the last few years, the number of funds that raised capital was in free fall. The number fell from 39 in 2007 to 19 in 2009 and further to 5 in 2012 where it has remained ever since.

The High-Tech Start-up Fund plays a crucial role in providing seed capital for companies. In the aftermath of the new economy crisis, new venture capital transactions in the very early stage had almost vanished by 2005. It was not until the High-Tech Start-up Fund and the ERP Start-up Fund were launched by the German Federal Government and KfW that the situation for seed and start-up financing eased again.

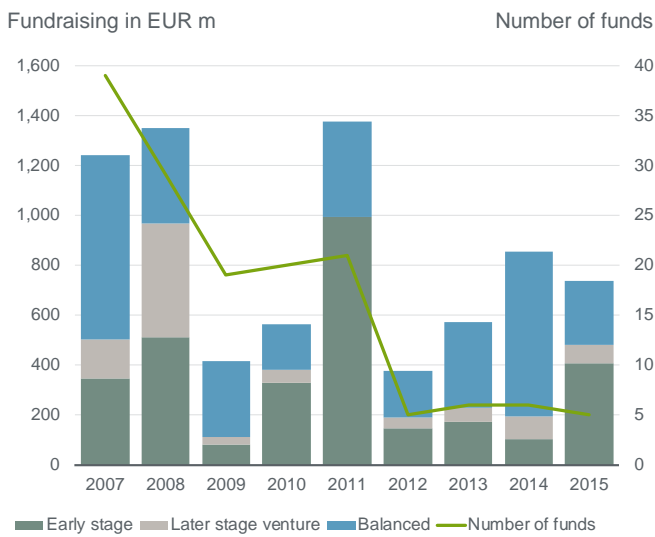
Figure 25: Government, corporates and private individuals fund the German VC market

Fundraising sources of German VC investors



Source: Invest Europe | PEREP_Analytics

Figure 26: Fundraising of German VC firms



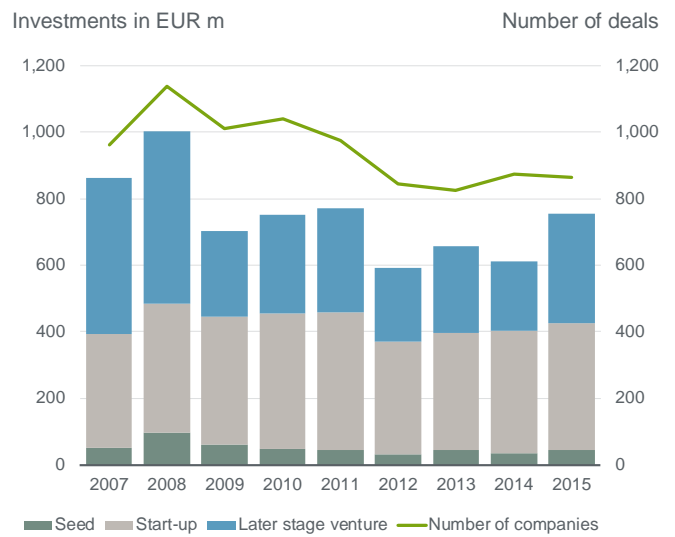
Source: Invest Europe/PEREP_Analytics

Investments of German VC firms were less depressed by the financial crisis than their fundraising. After providing more than EUR 800 m in 2007 and EUR 1 bn in 2008 they reduced their investments to less than EUR 800 m from 2009 to 2011 and further to less than EUR 700 m from 2012 to 2014 (Figure 27). Most recently, investments have recovered slightly. In 2015 about EUR 760 m of VC was invested by German VC firms. One reason for the reduction in investment was that fewer companies were financed. In 2008, about 1,150 companies were financed, a record high. Since 2012 their number has remained in the range of 800–900. Additionally, however, German VC firms have reduced the average amount of capital that they provide to companies. While an average start-up was backed with almost EUR 900,000 in 2007 and 2008, the average company got only EUR 700,000–800,000 in the years that followed. In 2015 the average investment rose to EUR 900,000 again.

The industry statistic includes investments of German investors abroad while neglecting investments of foreign investors in Germany. This shortcoming is addressed by the market statistic. It reflects equity investments in German firms and is, thus, more appropriate when it comes to assessing Germany's attractiveness for equity capital providers.

A comparison of industry and market statistics shows that differences are small and ambiguous. In 2008, roughly 1.050 companies in Germany received about EUR 1.1 bn capital from foreign and domestic VC firms (Figure 28). So, German companies were attractive for foreign investors that year because the market gained a net VC inflow. This changed when the financial crisis occurred. Investments in German companies fell

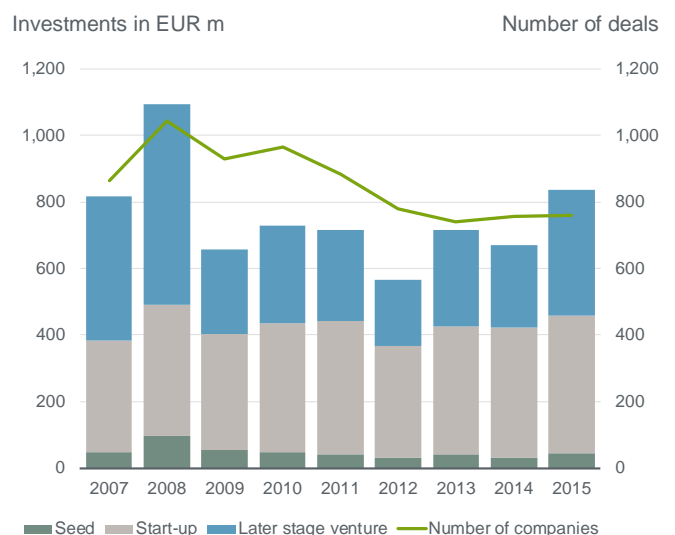
Figure 27: Investments by German VC firms



Source: Invest Europe/PEREP_Analytics

to a level of EUR 600–700 m in the years 2009 to 2012. Thus, during these years, German VC firms invested more capital than German companies received, meaning a net VC outflow abroad. In recent years this has changed once again. With investments of about EUR 700–800 m, the German market gained a net VC inflow. It is striking that this net inflow was attracted by a smaller number of companies than were financed by German investors. So, only a few German companies benefited from this foreign VC investment.

Figure 28: VC investments into German companies

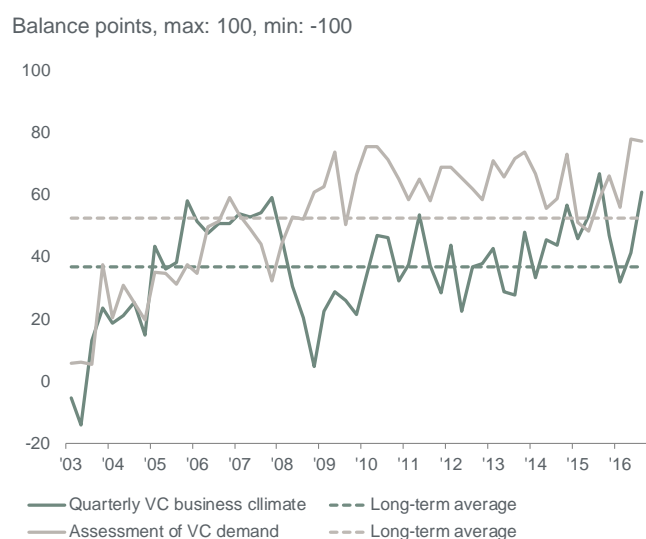


Source: Invest Europe crisis occurred. Investments in German companies fell/PEREP_Analytics

Three sectors have been the top recipients of VC since 2007: communications, life sciences, and computer & consumer electronics. Companies in these sectors attract 60–70% of all VC each year, with communications and life sciences alternating as top recipient.

The economic and financial crisis in 2009 not only led to a temporary slump in VC investments but also had a long lasting effect on the business climate in the German VC market. This is shown by the German Private Equity Barometer, a joint survey conducted by KfW and BVK (Figure 29). It was not until 2015 that the business climate fully recovered from the drastic slump in sentiment and reached a new peak. The good news is that the investment activity of German VC investors is more stable than their sentiment.

Figure 29: Development of business climate and demand in German VC market



Note: The indicators reflect the weighted balances between 'good' and 'bad' reports by participating BVK members.

Source: German Private Equity Barometer.

2.2.2 Role of the national development bank

After the new economy crisis, when the VC market in Germany was down, it became clear just how important the public supply of VC is for the survival of the German VC market. When seed capital investments almost vanished, public authorities stepped into the breach for private investors to maintain minimum VC availability for companies: the High-Tech Start-up Fund (HTGF) and the ERP Start-up Fund (ERP-SF) were established. Providing public venture capital is particularly important, precisely because it can mobilize VC from private equity providers (crowding-in). Founders of high-technology enterprises, in particular, can be motivated by the prospect of obtaining VC. More companies are founded when the supply of VC improves. A public supply of VC is therefore crucial to the development of a sustainable start-up scene.

High-Tech Start-up Fund

HTGF focuses on young high tech companies which are still in their seed-phase (up to one year after foundation) having maximum annual turnover of up to

EUR 50 m. It finances working capital, i.e. capital endowment to set up and run a small and innovative enterprise, but no buy-out, restructuring or secondary transactions. The initial seed investment of HTGF takes place as a convertible loan of up to EUR 600,000. For follow on investments, at least one further private investor is needed (private investor test) with which up to EUR 1.4 m can be invested. HTGF is set up as a public private partnership with the Federal Ministry for Economic Affairs and Energy, KfW and 17 established private companies as its shareholders. HTGF is notified by the EU Commission.

ERP Start-up Fund/Coparion

ERP-SF, administered by KfW on behalf of the Federal Ministry for Economic Affairs and Energy, supplied VC to technology oriented companies for R&D or market entry financing. However, ERP-SF operated passively, i.e. at the request of a lead-investor whose investment was mirrored *pari passu*. In order to strengthen its opportunities, this instrument was reorganized and launched anew as the co-investment fund "Coparion" in March 2016. As a separate company led by an experienced management team, Coparion will, however, be able to act in a more market-oriented way, faster and more flexibly than the ERP-SF was able to react. It invests directly in innovative companies and young technology companies. However, the fund adheres to the proven principle of only investing in a company if a private lead investor provides at least the same amount of capital on the same financial terms. With a volume of EUR 225 m, Coparion is the largest VC fund in Germany. Through cooperation with all the market players, Coparion provides important stimulus for the further development of the venture capital market in Germany and mobilises significant additional private capital for German companies.

ERP-Venture Capital Fund

Since April 2015 KfW has also started to help meet the shortfall in follow-on and expansion financing available to young innovative technology companies. It is just businesses like these – high-tech companies working in the areas of clean technology, life sciences and med-tech, as well as e-commerce platforms and other "digital" companies – which need a substantial amount of capital to enable them to develop and grow. To support them in this process, KfW, in collaboration with the Federal Ministry for Economic Affairs and Energy has introduced a new promotional instrument onto the market, the ERP-Venture Capital Fund (ERP-VCF). KfW is using this instrument to invest in young German technology companies indirectly via selected German and European venture capital funds focussed on start-up or early growth (second round) financing. ERP-VCF

will invest up to EUR 400 m in first closings and in first time funds over the next five years. Acting as the cornerstone investor, a total of EUR 2 bn of private VC is going to be leveraged, further improving the development of the VC market. Endowing existing funds with more capital will enable bigger deals to be made.

2.2.3 Specific challenges and needs

Equity capital plays only a secondary role in the broad SME sector in Germany. The "business survey" conducted jointly by KfW Research and industry associations shows that it is much less important than internal financing, bank loans, supplier loans and leasing.

Venture capital seekers are young, innovative and technology-oriented

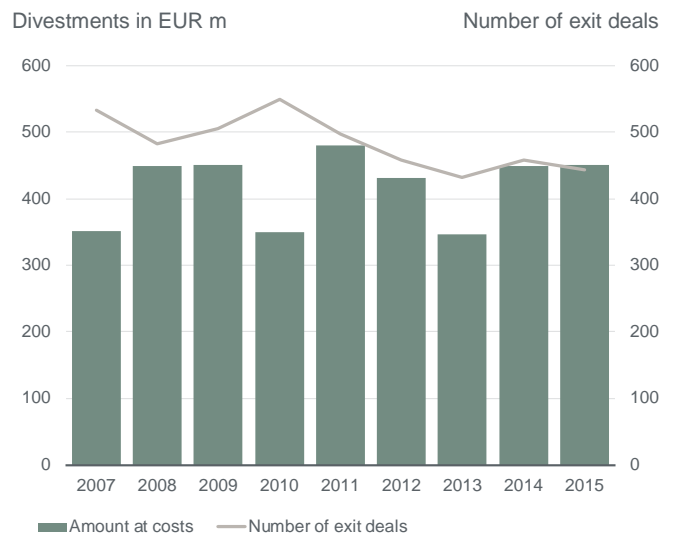
The more innovative and the younger an enterprise, the more important venture capital is. Debt capital providers often consider the absence of a company history, insufficient collateral and the high uncertainty of success of the innovations of young innovative companies to be unsurmountable information deficits. Accordingly, VC is more important for these types of companies. While only 8% of all enterprises regard equity capital as important, this proportion is 13% among research-intensive and younger enterprises. This is also reflected in the external financing of companies. The findings of the KfW/ZEW Start-up Panel show that of the total amount of external financing provided to start-ups only 5% is equity capital. This share is 13% in high-tech manufacturing companies and as high as 35% in high-tech companies in the services sector.

VC providers keep an eye on exit channels

There is demand for venture capital in Germany (Figure 29). Several reasons for the short supply are being discussed, including not only the legal and tax environment, but primarily the exit prospects. After all, the incentive to invest is all the higher, the better the chances of achieving a high return when exiting an investment.

Exit activity developed ambiguously in Germany between 2007 and 2015. While the number of exit deals peaked in 2010, the amount of exit at cost remained at a level of EUR 400–500 m for the most part, showing drops to around EUR 350 m in 2007, 2010 and 2013 (Figure 30). The difference between the levels of exits in amount and number was particularly large in 2010. There appear to have been a significant number of divestments of minor participations that year.

Figure 30: Development of exit activity



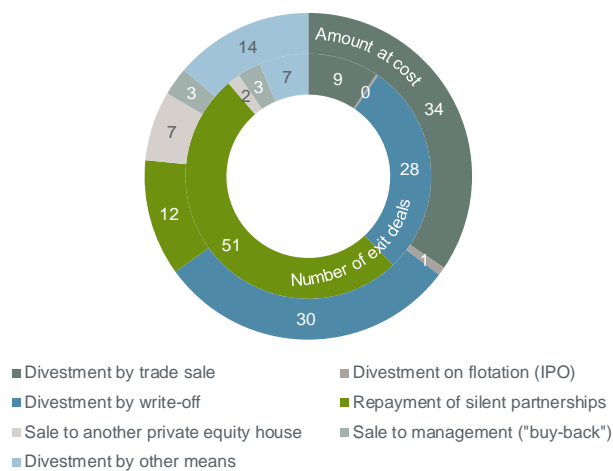
Source: Invest Europe/PEREP_Analytics

It is difficult to say which exit route is most important in Germany because the structure of exit deals in amount at cost and number varies (Figure 30). On the one hand, from 2007–2015 more than half of all exit deals (51%) were repayment of silent partnerships, while the amount at costs was only 12%. On the other hand, a third of the exit amount at costs was divested via trade sales, (34%) which correspond to only 9% of all exit deals. Write-offs were nearly balanced accounting for 28% of exit deals and for 30% of exit amount at costs.

This pattern is a result of the financing activity of the so called Mittelständische Beteiligungsgesellschaften (MBGs) which are a peculiarity of the German private equity market. These financial institutions were founded in the 1970's by the industry as self-help organisations. Shareholders of the MBGs are chambers, trade associations of all sectors, credit institutions, insurers and the development banks of the federal states. The aim of the MBGs is to strengthen the equity capital basis of the companies they finance. The most common way by which they do this is to contract silent partnerships in the amount of EUR 300,000–500,000. The pattern of exit routes shown in Figure 31 is thus not merely a map of how investors decide to exit a partnership, it actually depends heavily on the instruments they used to invest: a silent partnership has to be repaid or written-off and is not to be exited via trade sale, buy-back or IPO.

Figure 31: Exits by sale of silent partnerships dominate and write-offs account for 80 % of deals

Exit routes in per cent, average 2007–2015



Source: Invest Europe/PEREP_Analytics

However, real equity investors can achieve the best returns by means of a successful initial public offering (IPO). The problem in Germany is that, after the New Economy bubble burst and the New Market collapsed at the beginning of the millennium, this exit channel was virtually blocked. The German IPO market has not (yet) recovered from the downturn. Even before the New Market was established, the number of IPOs was many times higher than it is today. Besides, it will likely take more time for the recently improved climate for IPOs in Germany to translate into a higher number of IPOs of VC-financed enterprises.

Although IPOs are the most profitable exit channel, they are not suitable for every start-up because of the substantial effort they require. The most important exit channel for equity participations is thus trade sales, i.e. the sale of a participation in the enterprise to a strategic investor, for example an industrial firm from the same industry sector. The "secondaries" industry, which involves selling equity on to another private equity firm, also plays a significant role.

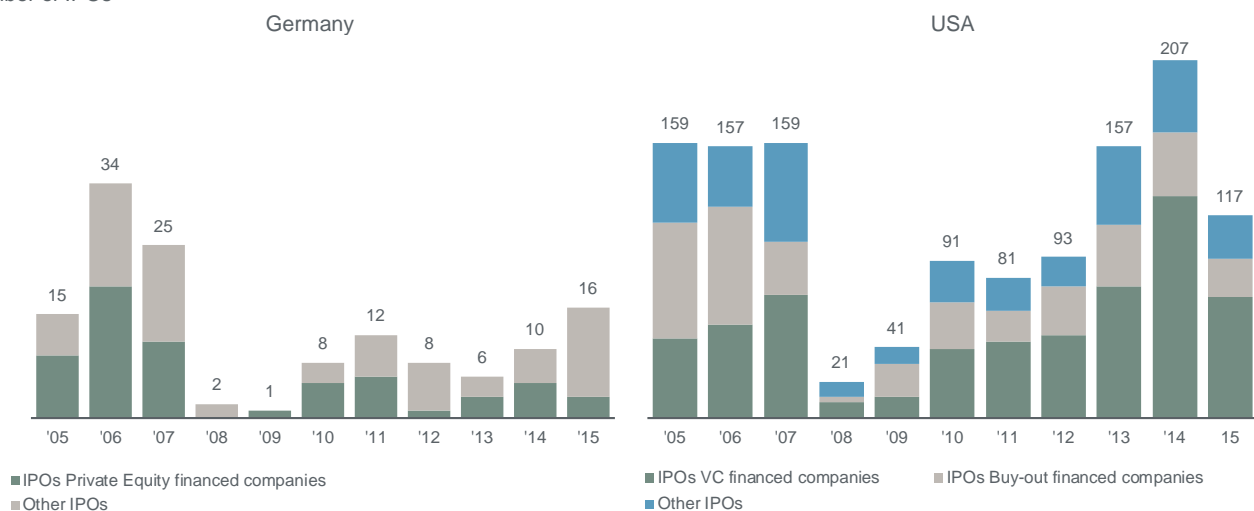
US IPO Market livelier

In the United States, IPOs of companies are an established element of the stock market landscape. During the financial crisis, the US IPO market slumped temporarily but recovered quickly. In 2014 alone, some 120 VC-financed enterprises went public there while in Germany there were only a handful (see Figure 32).

Having a stock market which is able to absorb large-volume exits, VC investors may be more willing to make larger investments. The more lively IPO activity can thus be a reason why deal sizes in the US VC market are, on average, seven times higher than investments in German companies (remember Figure 7). US companies are fuelled with nine times more VC at the seed stage, meaning that they can do their proof-of-concept or even proof-of-market faster than their German rivals (Figure 33). At the start-up stage they are backed by five times more VC, which is why they can unfold their potential to a higher degree. When it comes to expansion in the later stage, US companies are pushed with seven times more VC so

Figure 32: Post-crisis IPOs in Germany still few, while IPOs in the US recovered fast

Number of IPOs



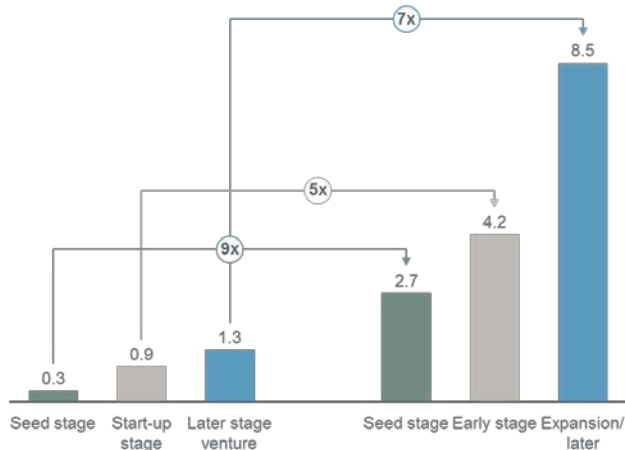
Note: Since 2007 statistics show the categories later-stage venture capital and growth capital but no longer expansion capital. We added up later-stage venture capital and growth capital in order to perpetuate the expansion capital time series from 2007 onwards.

Source: BVK (2016) for Germany, Ritter (2016) for the USA.

they can reach a high market penetration very quickly and win market leadership quite easy.

Figure 33: US companies fuelled with significantly more VC – at every development stage

Mean deal size* in EUR m, average 2007–2015



Note: The average deal size is calculated as the relation of VC investments and number of deals. The values for Germany include financings by Mittelständische Beteiligungsgesellschaften which provide a large number of smaller financings. US VC investment values were converted into euro based on annual average exchange rates.

Source: BVK, PricewaterhouseCoopers/National Venture Capital Association MoneyTree™ Report Q2 2016, ECB, own calculations.

Growth financing is becoming more important in the digital economy

The big-ticket items being made available to US companies appear to be a crucial advantage, particularly in the global growth environment of the digital economy. The business models of digital companies are fundamentally different from those of classic technology companies. In many cases, they need only a relatively small amount of start-up financing (seed capital) in order to develop a "digital" business idea. So they face lower hurdles to entering the market.

If such companies want to remain globally competitive, however, they will quickly have to attract many customers (increase market share) and establish a lead in brand recognition. In other words, what is crucial to them is not the high cost of developing a technically mature product prototype, but the speed at which they introduce it into the market.

The classic VC financing process, which involves several rounds of financing in which the amounts increase every time a milestone is reached, is hardly suitable for this type of strategy. Rather, what is important after the provision of relatively low-volume start-up financing is large-volume follow-up financing to enable growth and market penetration. The venture capital scene in the United States has adapted to these special needs of companies in the digital economy. This development should be followed in Germany as well.

2.2.4 Policy recommendations

Overall, a gap can be observed in the supply of venture capital in Germany, particularly in follow-up financing for enterprises that are in the start-up and growth phases. This is addressed by the reorganized KfW equity financing instruments. Beyond that, the options for exiting deals through IPOs have not reached their potential either. Experts have already discussed whether start-up enterprises should undergo specific training to prepare them for going public, as is the case in the UK. Some actors in the private equity market have also suggested reintroducing a specific segment of the stock exchange in order to generate greater awareness and visibility among investors. Recently Deutsche Börse took steps to address these issues. In 2015 it started a networking platform on which young, growth oriented companies and international investors could be brought together in order to initiate funding rounds and to organise training events.³² Based on this platform it recently started a service which seeks to directly match the preferences of participating investors and companies in order to make the funding process more efficient.³³ Furthermore, the latest news is that Deutsche Börse will introduce a new exchange segment for smaller and medium-sized enterprises in March 2017.³⁴ An index representing the companies listed there is being developed. Something is happening in the German VC market –it appears to be going in the right direction.

³² See Deutsche Börse press release „Deutsche Börse launches Venture Network to fund young growth companies“, 11 June 2015.

³³ See Deutsche Börse press release „Deutsche Börse Venture Network launches service for financing rounds“, 6 September 2016.

³⁴ See Deutsche Börse press release „New SME-segment to facilitate access to growth capital for enterprises“, 21 November 2016.

2.3 Italy

Claudio Bruno and Gino del Bufalo (CDP)

- An international comparison shows that the Italian VC market still lags behind. Nevertheless, while investment in Italian start-ups has not recovered yet, fundraising has improved in the last three years.
- International investors' appetite for Italian assets is growing. However, the availability of investment vehicles and/or securities is still inadequate.
- As the national promotional institution, CDP is committed to reviving and boosting the development of the Italian VC market, among other things, by structuring suitable financial instruments that can appropriately match investors demand.

Playing a marginal role in the Italian financial system, the Italian venture capital (VC) market still lags behind if compared with other markets.

The small size of the Italian market is probably the result of simultaneously concurring factors, both on the demand and on the supply side. As far as demand is concerned, the negative economic environment led to an actual decrease in the number of start-ups in the last few years. This, coupled with the Italian corporate culture, traditionally made up of family-run businesses biased against external equity investors, as well as marked regional imbalances, depressed demand even further. On the supply side, limited exit-strategy options have an adverse effect on the Italian VC market's appeal. The contribution of the public sector can therefore become a key factor in developing the market.

In an attempt to fill the gap between the demand for and the supply of VC funds, Cassa Depositi e Prestiti S.p.A. (CDP) entered the still underdeveloped Italian VC market in 2010, through "Fondo Italiano di Investimento SGR" (FII), one of its core equity investments. Moreover, with the new Business Plan 2016–2020, CDP emphasizes its strategic goal of augmenting its current role as Italy's leading VC operator, thus encouraging the creation of start-ups and intensifying its support for innovation and the development of enterprises.

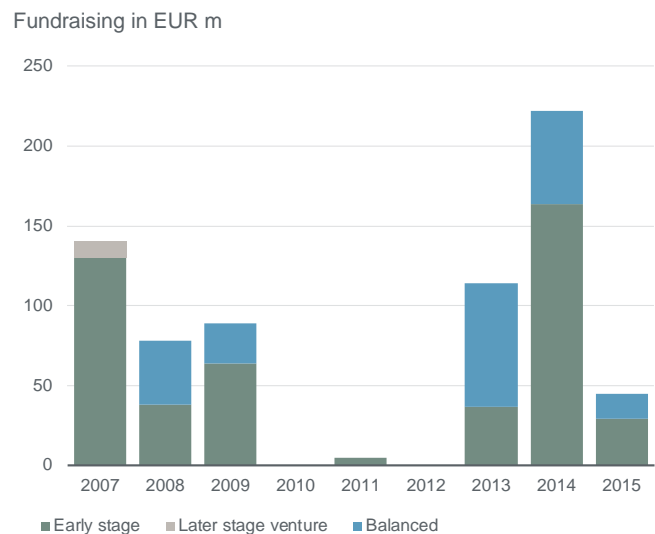
Although the modest size of the Italian VC market could be seen as a huge problem, it also clearly represents an important growth opportunity for the Italian economy with significant and positive

externalities for SMEs and innovation. Firstly, a clear, definite, stable regulatory and fiscal framework is needed. Secondly, the participation of all types of investors, particularly pension funds and corporates needs to be enhanced. Lastly, it is of utmost importance to professionalize the VC market in Italy by investing in funds with adequate dimensions and governance inspired by international best practices.

2.3.1 Development of the VC market

Since its origin, the Italian VC market has always struggled to reach high volumes. In 1986, the Italian Private Equity and Venture Capital Association (AIFI) was founded. Nonetheless, only in the second half of the 1990s did a valuable VC market emerge, reaching its peak at the beginning of the new millennium. Then, following the burst of the New Economy bubble, the Italian VC segment declined steeply until 2005. After a recovery in 2006/2007, the market continued to drop (Figure 34).

Figure 34: Fundraising of Italian VC firms



Source: Invest Europe/PEREP_Analytics

In 2015, total VC fundraising reached EUR 44.5 m³⁵, one fifth of the level achieved in 2014 and the lowest level in the three years prior to that. Although fundraising for early-stage focused funds decreased more than proportionately by 82% to EUR 29.5 m, it still represented more than two thirds of the total market in 2015.

Volumes remain relatively low compared to those of other European VC markets. Major efforts are needed in order to reallocate a larger part of the investments of

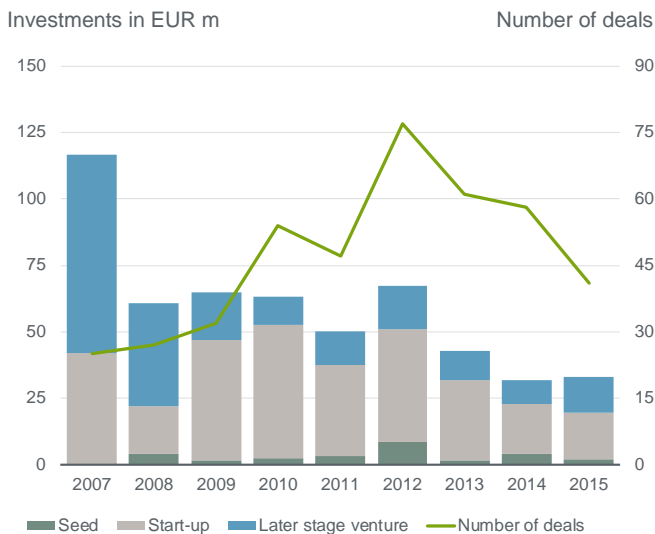
³⁵ This amount refers to funds raised by Italian advisory teams that manage the funds, regardless of the funds' origin.

banks, corporate investors, funds of funds and insurance companies towards the Italian VC market. Furthermore, pension funds, which have historically played a marginal role in the Italian VC sector, should be encouraged to actively participate in the market.

As far as VC investments are concerned, both industry and market statistics should be considered. In fact, industry statistics, namely investments made by Italian VC firms regardless of the location of the portfolio company, are a proxy for Italian investors' attitude towards the whole VC market. On the other hand, market statistics, investments in Italian companies regardless of the location of the VC firm, are a key factor in assessing the attractiveness of Italian companies to equity capital providers.

Industry statistics indicate that Italian investors allocated roughly EUR 33 m in domestic and foreign markets, broadly in line with VC investments in 2014. This implies that Italian investors are still showing a rather low level of interest in the VC market.

Figure 35: Investments by Italian VC firms



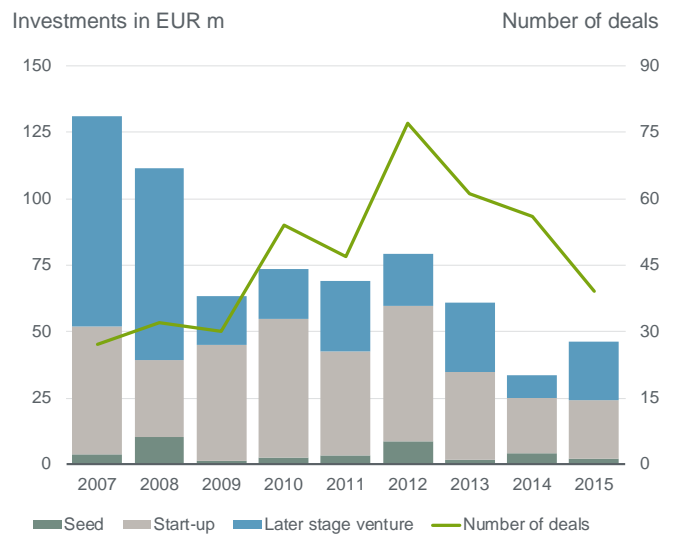
Source: Invest Europe/PEREP_Analytics

Market statistics provide relevant information about the real appetite that investors from all over the world have for Italian start-ups in search of capital. In 2015, Italian companies attracted investments of roughly one twelfth of the European average in relation to GDP. The total amount of VC investment in Italian companies reached EUR 46 m and 39 companies were venture-backed that year.

The total amount of VC investment in Italian companies in 2015 was almost 40% higher than total investment in 2014, but it is still the second lowest amount in 8 years. Later stage investments roughly constitute half of

VC activity (49%), immediately followed by start-up investments (47%), which involve the largest number of companies (26 out of 39). Seed investments almost halved with respect to the levels reached in 2014 and just 7 companies were venture backed at this stage of their development. The lack of interest in this segment is probably symptomatic of a modest level of willingness and propensity to invest in companies from the very first stage of their life-cycle, before the business has actually reached the start-up phase. Increasing investment at this stage is key.

Figure 36: VC investments into Italian companies



Source: Invest Europe/PEREP_Analytics

The analysis of the sectoral distribution of VC investments shows that, in 2015, the financial services sector was the main target attracting over a third (37%) of the total VC investments. Other relevant sectors were: life sciences (27%), communications (13%) and consumer goods and retail (7%). In terms of number of companies, the sectors attracting most of the investments were communications (12), consumer goods and retail (10) and life sciences (8).

Looking at Figure 35 and Figure 36 it can be noticed that industry statistics and market statistics broadly follow the same trend over the years. An in-depth look reveals that investments calculated by market statistics were constantly higher, meaning that foreign investors' appetite for Italian companies does exist. A friendlier environment for foreign VC investors would definitely contribute to significant market expansion.

Despite a 40% increase in investment with respect to 2014, data for Italy is particularly worrying for two main reasons:

1. Italy started from relatively low investment levels (significantly lower than those of its European peers)
2. The Italian economy is currently characterized by a long-standing contraction of bank credit³⁶ which has disproportionate effects on SMEs' financing conditions in the bank-oriented Italian financial system. Although VC financing has a substantially different scope than bank lending, a contraction of the latter makes VC financing a precious alternative to traditional channels. Hence, a small dimension of this market can have particularly severe consequences. In such a scenario, the contribution of the public sector can become a key factor.

2.3.2 Role of public financial institutions

By partially filling the gap between the demand for and the supply of VC funds, hence addressing a long-standing market failure, CDP plays a leading role in the Italian VC market.

In 2010, together with the Italian Ministry of Treasury and Finance, the Italian Industrial Association, the Italian Banking Association and other "Sponsor Banks"³⁷, CDP launched "Fondo Italiano di Investimento SGR" (FII), a company which, through managed funds, aims to support small and medium-sized Italian companies at every stage of their life cycle. In November 2010, the Fund completed its first closing, in the amount of EUR 1.2 bn, and CDP participated, contributing EUR 250 m. Since 2010, FII has taken part in the financing of 21 private equity and VC funds for a total commitment of about EUR 440 m, of which EUR 80 m dedicated to venture capital operations supporting nearly 60 companies.

However, it was not until 2014, when the situation became particularly critical due to a persistent credit crunch, that CDP became a pivotal operator in the Italian VC market. As a matter of fact, in 2014, following a period which had witnessed low levels of fundraising, CDP decided to massively intervene in the VC market. On its initiative, two new funds-of-funds (FoF) were launched within FII, one for the venture capital market and the other for the private debt market for Italian companies. The "Fund of Funds Private Debt" (FoF PD) and the "Fund of Funds Venture

Capital" (FoF VC) started their activity on 1 September 2014, with an initial size of EUR 250 m and EUR 50 m respectively; both commitments were entirely subscribed by CDP³⁸. Thanks to this unprecedented contribution, CDP is now the largest domestic VC operator.

To date³⁹, the FoF VC has already committed EUR 15 m in Innogest Capital II⁴⁰, a VC fund operating at all venture stages; EUR 10 m in Sofinnova Capital VIII⁴¹, a fund particularly focused on red biotech; EUR 3 m in Oltre II, a fund focused on impact investing; and EUR 17 m in Barcamper Ventures, a fund operating in seed capital. Moreover, the Technical Committee of the Fund backed an additional investment of EUR 17 m, subsequently endorsed by SGR's Board of Directors. The subscription of this investment is expected to be completed during the second half of 2016. Thanks to this decision of the board, FII's commitment to VC in Italy is now expected to rise to an overall sum of EUR 142 m.

By attracting private finance to invest together with FII in VC funds, FoF VC acts as anchor investor with the final intention of helping funds to achieve a critical mass. Through the FoF VC, which now amounts to EUR 80 m and is expected to achieve EUR 150 m in the near future, FII aims at leveraging up to EUR 500–600 m. This seems rather relevant if considering that yearly total market investments were, on average, no more than EUR 80m over the past seven years.

Moreover, on 5 April 2016, FII approved the partial proportional demerger of "Fondo Italiano d'Investimento" into three different investment vehicles, one of which, Fondo Italiano d'Investimento FII Venture, with an initial capital endowment of EUR 91 m, is exclusively focused on indirect investment in other venture capital funds or vehicles. This last operation further confirms FII's increasing interest in the VC market.

³⁶ The total amount of new loans granted in January 2016 to non-financial firms was EUR 32.8 bn, EUR 2.3 bn less than loans granted in January 2015 (Source: Bank of Italy).

³⁷ UniCredit Group SpA, Intesa Sanpaolo SpA, Banca Monte dei Paschi di Siena SpA.

³⁸ The "FoF Private Debt" focuses on funds active in the private debt market (mini-bond and other debt instruments) to support Italian SMEs; the "FoF Venture Capital" focuses on start-ups and growth capital funds investing in high-tech companies.

³⁹ 5 September 2016.

⁴⁰ The overall commitments in Innogest Capital II amounted to EUR 64.6 m (data at 31 December 2015).

⁴¹ The overall commitments in Sofinnova Capital VIII amounted to EUR 298.6 m (data at 31 December 2015).

Lastly, with the launch of the new Business Plan 2016–2020, CDP confirmed its intention to consolidate its role as a leading Italian VC operator, encouraging the creation of start-ups and intensifying its support for innovation and the development of enterprises. CDP's ambition is to be present at every stage of the development of new enterprises, by increasing the current commitment in support of existing VC funds (i.e. FoF VC) and launching relevant initiatives in the technology transfer (ITAttech Platform) and accelerator (AccelerateIT) industries under the umbrella of the "Industry 4.0 Plan"⁴². ITAttech is an investment platform with the aim of catalysing and accelerating the commercialisation of Intellectual Property with technological content. The platform, which will be co-invested by CDP and EIF and possibly benefit from the resources of the Juncker Plan, is expected to crowd-in other private investors. AccelerateIT is a business acceleration programme providing capital, mentorships and training to start-ups. The programme will gather the contributions, financial and non-financial, of several partners such as EIF, public institutions, private actors and business angels.

To conclude, public initiatives are surely needed in order to partially reduce the gap between the demand for and the supply of VC funds and to address, to a certain extent, the existing market failure in the VC scene. Although such initiatives are certainly to be welcomed, they cannot represent a long-standing and definitive solution to the problem. This report intends to identify some possible solutions or policy recommendations to mitigate the problem. In order to do that, the main challenges characterizing the Italian VC market are presented in the next paragraph.

2.3.3 Specific challenges and needs

According to market data, the VC market is smaller and less developed in Italy than it is in other European countries. The interpretation is that a unique concurrence of causes, both on the demand and supply side, contributed to the limited expansion of the Italian market.

Demand side factors are influenced by both the cultural context and the economic situation. Indeed, a large number of small Italian companies are family-owned and do not typically appreciate external interference in their business and the negative economic environment

led to a factual decrease in the number of start-ups in the last few years.

Furthermore, the marked regional imbalances characterizing the Italian scenario, in part, account for the gap that exists between the Italian VC market and the VC markets in other countries. Regional imbalances in Italy are indeed so pronounced that, according to data provided by the Italian Association for Private Equity and Venture Capital (AIFI), in 2015 the number of private equity and VC investments in the North of the country was more than 4 times the number of investments registered in the Centre and almost 8 times larger than the number of investments in the South of the country.

Another demand-related barrier hindering the expansion of the market in Italy is an actual decrease in the number of new firms in the country during the period 2011–2014⁴³. Over this period, the challenging Italian economic environment pushed new entrepreneurs to settle in more fertile countries with a friendlier business environment. There is in fact clear evidence of an increasing number of start-ups that from 2011 to 2014 "migrated" to the UK, where more developed capital markets exist⁴⁴. In this regard, 2015 appears to be signalling a reversal of fortune as for the first time after 4 years, an increase in the number of new firms was registered, potentially driven by an improvement in the economic conditions of the country and a friendlier regulatory environment for new businesses. Since 2012, Italy has indeed endowed itself with a powerful arsenal of legislation aimed at strengthening the national start-up ecosystem. The tangible improvements were recognized: Italy ranked second in Europe in "The 2016 Start-up Nation Scoreboard", which measures a country's political determination to provide policy support to start-ups⁴⁵.

On the supply side, as is the case with the demand side, cultural factors are particularly relevant. Italian investors typically have a longstanding risk aversion, mainly driven by their lack of experience in dealing with capital markets and equity investments. Italian investors have, in fact, historically invested in Italian sovereign debt bonds which have typically rewarded them quite generously.

⁴² The „National Plan for Industry 4.0“ was launched in September 2016 by the Italian Government to promote technological change as a pillar of Italian industrial policy. By means of both debt and equity instruments, CDP will play a key role in this plan.

⁴³ Cerved (2016). Osservatorio sulla imprenditoria in Italia #2.

⁴⁴ The UK market's attractiveness is not only driven by the copious number of investments, but also by the ease with which a company can be established and managed as well as by more favorable taxation.

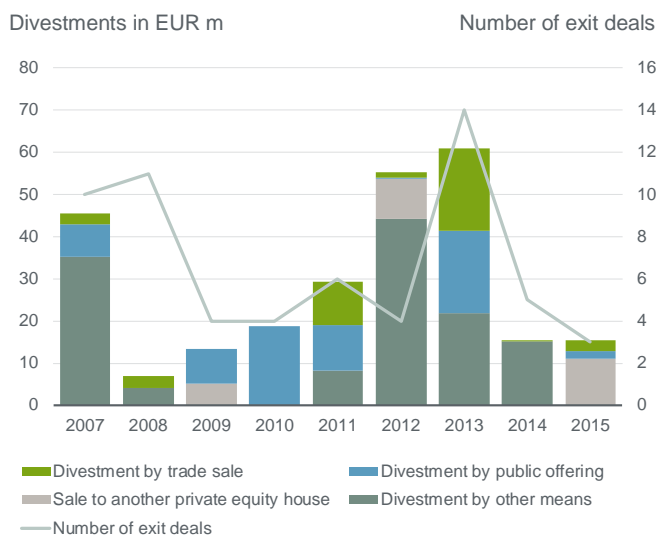
⁴⁵ European Digital Forum (2016). The 2016 Startup Nation Scoreboard.

Among supply side factors, exit prospects are particularly relevant as they deeply affect a national VC market's appeal. A dynamic and bustling market, historically characterized by a large number of divestments, is certainly more attractive than a static one with less opportunity to divest. Consequently, a small number of divestments is often associated with a low level of investment. As a matter of fact, just 3 venture-backed companies, representing a former equity investment of EUR 15.4 m, were divested in Italy in 2015 (Figure 37).

Historically, trade sale, namely the sale of company shares, and sale of listed equity are quite common in the Italian scenario compared to other exit routes. By contrast, no company has been divested through IPO since 2010.

A successful initial public offering (IPO), a favourable sale of a company's shares to the public for the first time by listing the company on the stock exchange, is arguably the most remunerative exit strategy for an investor. The absence of any venture backed IPO in the last 5 years and the fact that only 3 venture-backed companies have been divested through an IPO in the last 8 years is a clear sign of the Italian VC market's current struggle.

Figure 37: VC divestments by exit route



Note: Divestment by other means includes: repayment of silent partnerships, repayment of principal loans, write-off, sale to financial institutions, sale to management, etc.

Source: Invest Europe/PEREP_Analytics

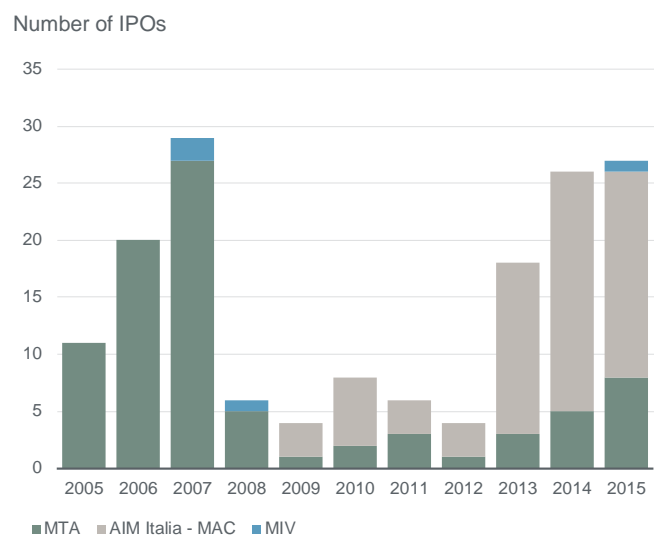
Overall IPO activity⁴⁶ reached its peak in 2007 with 29 IPOs. After the crisis, the Italian equity market suffered as a result of significantly weak IPO activity; an

⁴⁶ Regardless of whether the company is venture backed.

average of 5 IPOs per year took place in the period 2008–2012. However, public offerings recovered in 2014 and 2015 with 26 and 27 IPOs respectively.

The above considerations are indicative and simplified, but the take-home concept is that if exit values are so low, Italian VC firms will consequently keep their valuations low in order to achieve adequate returns and shareholders will therefore be unlikely to sell part of their businesses to VC investors.

Figure 38: IPOs at Borsa Italiana



Note: MTA is the Italian Market dedicated to medium and large-size companies, AIM Italia is the market specifically created for small and medium-size Italian enterprises. MIV is Borsa Italiana's regulated market created with the scope to provide capital, liquidity and visibility to investment vehicles.

Source: Borsa Italiana

To sum up, there is no empirical evidence indicating whether the problem is supply or demand driven. On the contrary, it is very likely that demand and supply factors feed each other in a vicious circle. In order to develop the Italian VC market, it is therefore key to identify the most efficient ways of matching supply and demand. The desirable outcome is that the vicious circle turns into a virtuous self-reinforcing circle in which demand drives supply and vice versa with positive externalities for SMEs and innovation.

To conclude, the low level of divestment represents the major obstacle on the supply side. However, looking at Figure 34, it appears evident that fundraising in the last three years was relatively abundant. It is likely that the low level of investments in the last three years was a result of close-to-zero fundraising in 2010–2012. The effects of the increased level of fundraising in 2013–2015 on investments will probably materialise from 2016 onward.

2.3.4 Policy recommendations

Although the modest size of the Italian VC market could be seen as a huge problem, it also clearly represents an important growth opportunity for the Italian economy with significant and positive externalities for SMEs and innovation. The latter is particularly true in the current low interest rate scenario which can boost VC investments. Revitalizing the VC market can be a blessing for the Italian economy overall. In this respect, in our opinion, some important steps must be taken.

Firstly, creating a clear, definite, stable regulatory and fiscal framework for domestic and foreign operators and strengthening the alignment of the regulation to that of the main European countries are surely two key preconditions for the development of the market. In recent years, policy makers in Italy have enabled the adoption of regulatory and fiscal measures to encourage the creation of innovative start-ups, in order to promote sustainable growth, technological development and youth employment. Innovative start-ups and SMEs can benefit from two important measures in favour of technological innovation:

(i) a fiscal benefit of up to 50% for investments in R&D, and (ii) the so-called “Patent Box⁴⁷” which permits companies to exclude 50% of income derived from the commercial use of intangible assets (copyrights, industrial patents, and commercial brands) from taxation. Political and policy determination in creating a friendlier business and innovation ecosystem is surely to be appreciated and further encouraged.

Secondly, looking at Figure 38, it becomes clear that the overwhelming majority of IPOs over the last seven years were registered on AIM Italia. AIM Italia⁴⁸ is the Italian Stock Exchange’s market, specifically designed to enable small and medium-size Italian enterprises with high growth potential to access capital markets. AIM Italia is expected to offer both a faster and a more

flexible procedure for listing and protecting investors, thanks to an efficient regulatory system that meets the needs of small businesses and specialized investors. A dynamic and bustling market can surely increase the interest of VC funds in investing in Italian companies.

Thirdly, it is key to enhance the participation of all types of investors in fundraising for VC funds. Pension funds and other categories – such as big corporations – have historically played a marginal role, not only in Italy but throughout Europe. On the contrary, in the US, these types of investors are particularly important and make up a large share of the market. Policy measures, such as the current one under scrutiny by the government, that call for tax relief for companies investing in start-ups younger than 5 years of age, are welcome. In 2016, four big international corporations (Amazon, Intel, Microsoft and Cisco) invested in the VC fund “Italian Venture I”. That shows how Italy continues to gain the confidence of international investors. Hence, facilitating international investors’ access to the Italian VC market is a critical success factor for its development.

Dealing with intense competition and high valuations in their home markets, foreign investors are indeed eager to diversify their investment portfolio. UK venture capitalists, in particular, have demonstrated their interest in the Italian market and a more massive involvement by these operators should be advocated.

Lastly, the number of operators is still too small. Scaling-up business angels and other small operators to VC operators with critical mass can be an appropriate solution. “Caravella”, a joint project under scrutiny by FII and the European Investment Fund (EIF) has the objective to foster investments of small VC operators (like business angels) by matching and eventually doubling their commitments.

⁴⁷ Introduced by the Budget Law 2015, art. 1, paragraphs 37–45.

⁴⁸ Created on March 1st, 2012 through the merger of two markets (AIM Italia and MAC)

2.4 Spain

Miguel Fernández Acevedo and Blanca Navarro Perez (ICO)

- In Spain, the private equity market is less developed than it is in other European countries. This shortfall is primarily due to three factors: the unique structure of Spanish companies, which are, on average, small; the suboptimal average size of private equity firms in Spain, which restricts their ability to invest properly and to grow; and the culture of debt financing.
- The factors mentioned above traditionally led to an increased reliance on the banking sector as compared to the private equity industry for financing. A well-developed private equity sector has proved to be very positive in other countries; accordingly, the growing awareness of the advantages a large and well-developed private equity market would provide has led to some initiatives to promote the development of this sector: the creation of Fond-ICO Global is the main one among them.
- Despite the difficulties, private equity as a whole and venture capital in particular were growing until the arrival of the global financial crisis that interrupted the growth trend in this sector. This growth trend resumed slightly in 2014 when the Spanish economy began to grow again, but 2015 figures were still well below pre-crisis levels.

2.4.1 Development of the VC market

The origin of venture capital in Spain can be placed in the mid-1980s, more specifically in 1986, when the Spanish Government approved a set of rules designed to monitor this sector⁴⁹ and a specific state owned instrument (AXIS⁵⁰) was created to operate there. During the late 1980s and, especially, during the 1990s, the VC sector developed rapidly, but as this report will show, the development of this sector has not reached the level of that in countries like the United States or the United Kingdom.

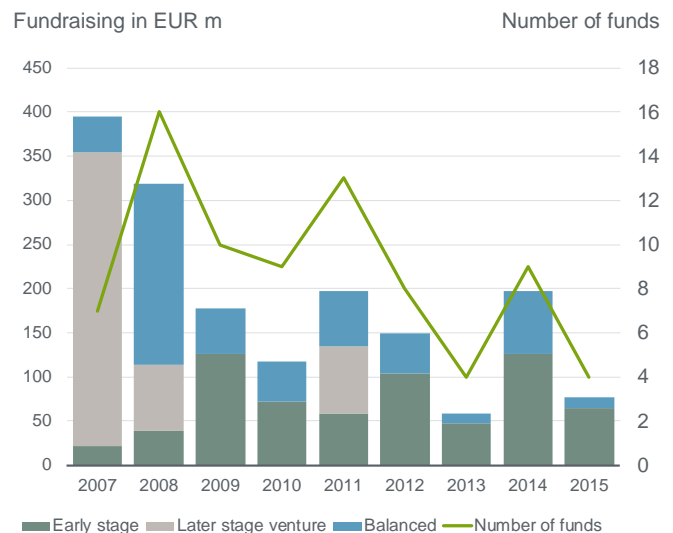
Venture capital has been severely affected by the economic and financial crisis. This is clearly visible in all statistics, including those about fundraising. As can be observed in Figure 39, the overall volume of VC funds raised began to fall in 2007 and 2008 and the volume remained low until 2015. In 2014 the amount of

⁴⁹ Real Decreto Ley 1/1986

⁵⁰ Axis Participaciones Empresariales is ICO's branch in charge of the managing of Fond-ICO Global

VC raised increased to EUR 197 m, but the first estimate for 2015 is EUR 77 m, slightly above the minimum amount of EUR 58 m in 2013. Early-stage operations have been the main focus of this new money raised over the past few years. In terms of the number of funds, the development is quite similar to the amount raised.

Figure 39: Total funds raised by Spanish VC firms



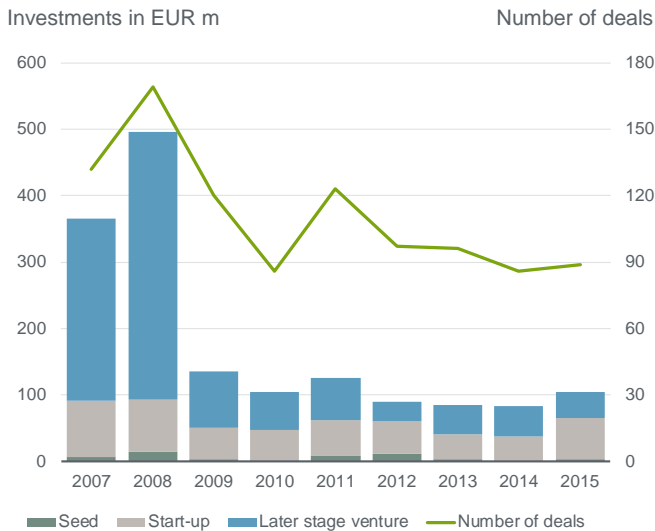
Source: Invest Europe/PEREP_Analytics

A quite similar development can also be observed in effective investments in companies (in terms of industry). The investment volume before the crisis (e.g. 2007) had not been reached by 2015. Figure 40 shows that after 2008 the volume of investment by VC firms fell sharply from EUR 500 m to around EUR 100 m. Three years later it had fallen to around EUR 80 m of investment (2012, 2013 and 2014), in 2015 the EUR 100 m level had once again been exceeded (EUR 105 m), but is in any case still far from its pre-crisis level. In terms of the number of companies VC firms invested in, that number has remained quite stable in the last four years, between 86 and 97 companies per year, but well below the 169 companies which received investment funds in 2008.

Continuing with investments, let us look at the number of investments in companies in terms of market (see Figure 41). The overall amount in these terms is slightly higher than in industry terms because of the importance of foreign actors in the Spanish market. Otherwise, the trend is quite similar to the one in terms of industry, but in this case, the overall amount of investment made in 2015 was the highest it had been since 2009 (EUR 156 m in 2015). This volume is well below the maximum reached in 2008 (EUR 523 m). The biggest part of these investments went to Spanish companies that were at the start-up stage (EUR 92 m

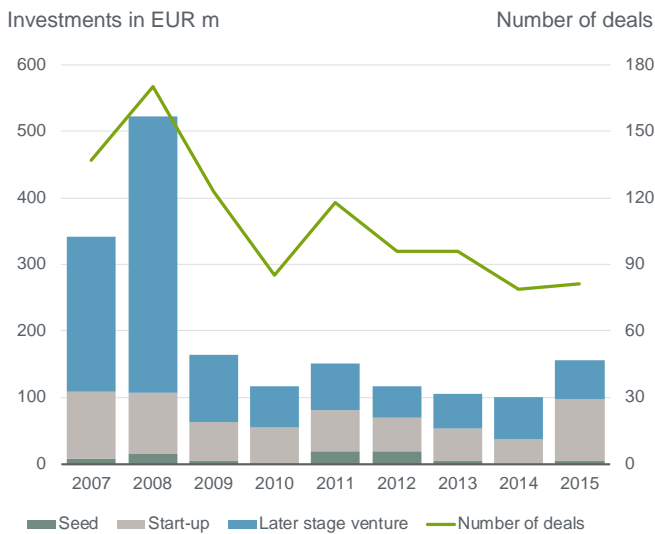
in 2015). In terms of the number of companies that received investment in 2014 and 2015 the final data listed around 80 companies – around half of the 170 companies that received investments in 2008.

Figure 40: Investments by Spanish VC firms



Source: Invest Europe/PEREP_Analytics

Figure 41: VC investments into Spanish companies



Source: Invest Europe/PEREP_Analytics

In terms of sectoral breakdown, in 2015 almost half of all the investments made (in terms of market) went to Life Sciences (EUR 75 m), followed by the Communications sector (EUR 45 m) and Computer and Consumer electronics (almost EUR 14 m). In 2014, these three sectors also came in first, but in a different order: the first was Communications, followed by Computer and Consumer electronics and then Life Sciences.

2.4.2 Public policies in VC

The weaknesses of the Spanish VC sector were well known even before the crisis, but the severe credit restrictions that emerged, especially from 2008 onward, were the starting point for some changes in public policies. One relevant change was the new plan of support for entrepreneurs approved by the Spanish Government in February 2013. Among many other measures,⁵¹ its main purpose was to support the banking disintermediation and private equity, including the creation of a new Fund of funds charged with investing in private equity firms, especially to support projects related to the internationalization of the Spanish economy and to encourage productivity gains. So, the Spanish focus was wider than the narrow focus on venture capital only, trying to promote the development of private equity as a whole, including venture capital.

Despite the other instruments, discussed in section 2.4.1 (Fond-ICO pyme and Isabel La Católica), that ICO implemented in the VC market, it is worth focussing the analysis on Fond-ICO Global. It was created during the spring of 2013 with the aim of supporting the creation of new funds (establishing new VC funds, both Spanish and international, with the main aim of investing in Spain), in the form of a fund of funds. The funds of funds structure was chosen because it is, e.g. according to Kraemer-Eis et al. (2016), an efficient public-private VC scheme. Although the objective is private equity as a whole, venture capital has played a very important role from the very beginning. So, Fond-ICO Global, after hardly three years of existence, has reached a remarkable position in the VC market.

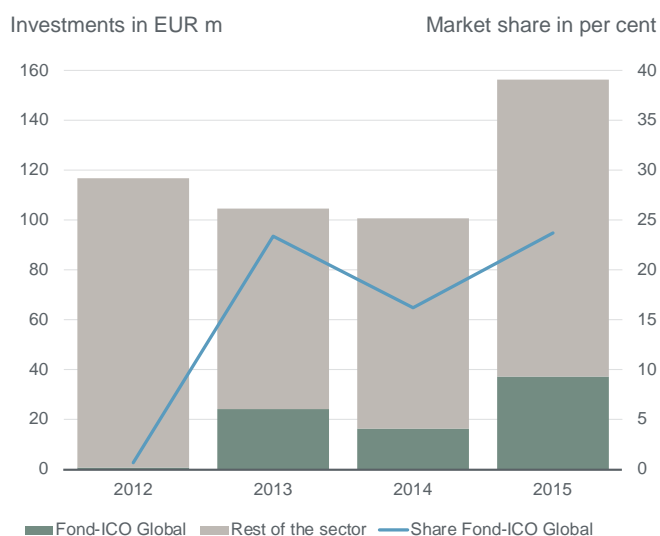
Focusing on Fond-ICO Global's achievements in VC⁵², the main conclusion is that Fond-ICO Global has been fundamental for the development of the sector. Fond-ICO Global's investments (see Figure 42) amounted to more than EUR 24 m in 2013 (23.3 % out of all VC investments made in Spain). In Spain, its investment dropped to EUR 16 m in 2014 (16.2 % of all VC investments made in Spain).⁵³ Finally, in 2015, Fond-ICO Global's investments grew to EUR 37 m (23.7 % of all investments made in the Spanish VC sector). Accordingly, Fond-ICO Global investments have remained a very relevant investor in the Spanish VC sector.

⁵¹ A VAT reform or investment incentives were the most important ones.

⁵² VC corresponds to the Fond-ICO Global categories of VC, Incubation and Technology Transfer

⁵³ Global investments of Fond-ICO Global (including investments carried out in other countries) were EUR 24 m in 2013 and 2014, and EUR 55 m in 2015

Figure 42: Investments of Fond-ICO Global and of other investors in the Spanish VC market



Source: Invest Europe/PEREP_Analytics

The ordinary mechanism of Fond-ICO Global begins with the public tendering processes to select general partners who then establish new VC funds. Under some conditions, Fond-ICO Global invests in a partnership with other limited partners in the selected funds. Fond-ICO Global finished its 7th tender in October 2016. These seven public tenders attracted great attendance of private equity general partners (many of them coming from outside Spain): more than 150 candidates (they are not all different because some of them participated again even if they were not selected the first time) participated to be one of the 48 funds selected to receive an overall investment of more than EUR 1.1 bn. Fond-ICO Global's assets total EUR 1.5 bn, so Fond-ICO Global will continue with its public tenders until it has allocated the whole amount. The breakdown of the EUR 1.1 bn already allocated shows that EUR 256 m is the maximum amount authorized for VC so far.

Public tendering processes aim to select VC funds, incubation and technology transfer funds, and growth funds. Nevertheless, to provide VC is Fond-ICO Global's main objective in terms of the number of funds selected.

Following the tenders and after an established period to formalise the compromise between Fond-ICO Global and the general partner, Fond-ICO Global formalises its compromise of investment alongside all the other limited partners. Generally speaking, Fond-ICO Global will always be a limited partner while the general partner will be a separate private company. Fond-ICO Global only invests in funds with a minimum compromise of investment in Spain: accordingly, the

already approved EUR 1.1 bn that Fond-ICO Global will invest in private equity as a whole have so far generated a compromise of investment of at least EUR 4.1 bn by the selected funds in Spain. Moving on to VC, the EUR 256 m approved by Fond-ICO Global to be invested in the VC sector have so far generated a compromise of investment in Spain of EUR 793 m⁵⁴.

2.4.3 Specific challenges and needs

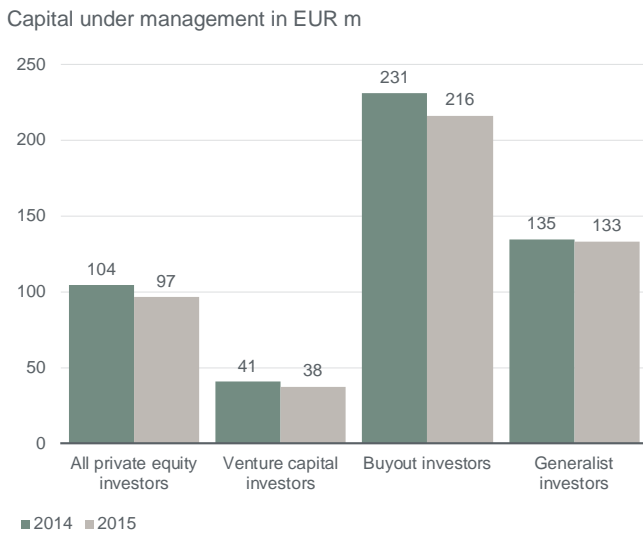
As previously pointed out, according to official data, the main challenge facing the Spanish Private Equity market (including the VC segment), is to substantially increase in size. Compared to its main Spanish economic competitors, the VC sector is relatively small, so some measures have to be taken in order to help develop this sector.

Several factors account for the relatively small size of the Spanish VC sector. One possible reason is the small size of Spanish companies; the comparatively small number of medium-size companies and their focus on specific sectors has been argued⁵⁵ as a reason to justify this underdevelopment. Another factor is the configuration of the Spanish private equity operators; according to Invest Europe data, in 2014 there were 137 private equity operators (135 in 2013) and 76 of them were focused on venture capital. In 2015 the number had increased to 142 (all the growth has been in the VC funds sector, because the number of funds has gone from 76 to 81). The Spanish difference was not the number, but its average size; according to Invest Europe, the average size of a Spanish private equity firm was EUR 104 m in 2014, declining to even EUR 97 m in 2015 (volume of capital under management), which is almost a third of the EUR 278 m EU- average (in 2015). The difference is smaller in the case of the VC sector, with an average capital of EUR 38 m under management in the case of Spanish VC firms as compared to the EUR 71 m (in 2015) of the average VC firm in the EU (see Figure 43).

⁵⁴ In July 2016 ICO signed a loan agreement with the European Investment Bank for EUR 250 m that will allow the EIB to intervene as a co-investor in Fond-ICO Global. EIB will co-invest in the funds selected by Fond-ICO Global with ICO, increasing the money available and thus the liquidity of the VC market.

⁵⁵ E.g. El capital riesgo en España: evolución y retos. La aparición de Fond-ICO Global. Blanca Navarro, Carlos Gómez and Miguel Fernández. Anuario de Capital Riesgo 2014, Madrid 2015

Figure 43: Average fund size of Spanish private equity companies



Source: Invest Europe/PEREP_Analytics

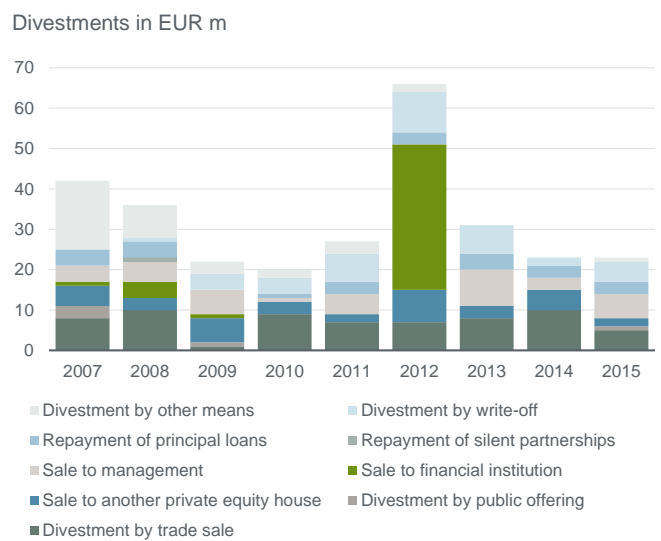
The above mentioned factors (size of companies and insufficient structure in the private equity sector), may be reasons for the intensive use of banks to finance operations. As a consequence, some needs for this sector may be enounced: the main one would be strengthening the current operators and encouraging the establishment of new ones. As illustrated in the previous section, some measures have been taken along these lines by the public sector: public entities have created new instruments to support the private equity sector in Spain and the regulations have been adapted in order to respond to the needs of this sector. Additionally, legislative reforms have been introduced to encourage the creation of new funds.

Another relevant challenge according to the main actors in the Spanish market⁵⁶ is to strengthen the market as a whole. The market needs time to develop naturally in a range of areas, one of which is divestment structure. It is very important to ensure that there is enough of a market to reabsorb the companies, in order to allow VC firms to invest in new projects. In this sense, the economic crisis has pointed out that the market in Spain is not as deep as it should be to allow VC firms to divest easily.

Figure 44 and Figure 45 show how divestments fell dramatically during the economic and financial crisis (both are market statistics, because the disaggregation of VC divestments in industry terms is not available).

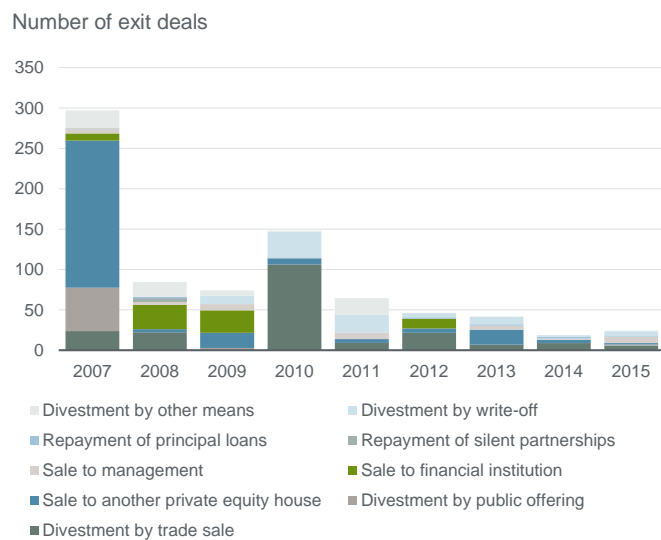
This is especially visible in terms of amounts: the total amount of divestment reached EUR 297 m in 2007 and since then the annual amount of divestment has remained well below that. The best year was 2010 (EUR 148 m), but 2014 (EUR 18 m) and 2015 (EUR 24 m), show that the market is still far from recovery. The breakdown of these amounts shows that in the last years the biggest amounts came from trade sales followed by write-offs and sales to another private equity house. In any case, these sales to other private equity houses have dramatically diminished compared with the total amount of sales in 2007

Figure 44: Volume of VC divestments in Spain



Source: Invest Europe/PEREP_Analytics

Figure 45: Number of VC divestments in Spain



Source: Invest Europe/PEREP_Analytics

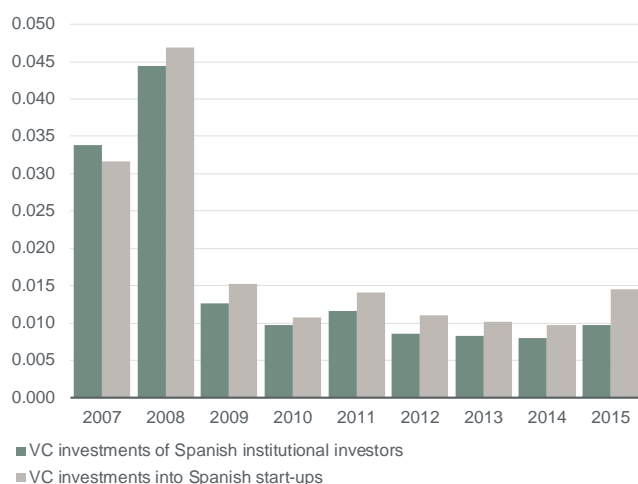
⁵⁶ This report of a Spanish Venture capital website is a good example of the common views on the sector: https://www.webcapitalriesgo.com/descargas/5715_10_14_96715569.pdf

The number of divestment operations follows quite a different trend. From the 40 divestment operations in 2007, the number of operations fell to around 20 in 2009. In 2012, sales to financial institutions helped to push the number up to 66 operations, but in 2014 and 2015 the number of operations remained slightly above 20. It is noticeable that there have been no IPOs since 2007 and, on the contrary, the majority of operations are trade sales, write-offs and sales to management.

Coming back to the point we made earlier, the main challenge is to foster the development of the VC sector after some difficult years. Figure 46 shows the percentage of VC over GDP in the last years. Even though this percentage was quite small in 2007 or 2008, it dropped in 2009 and has not recovered since then. In 2015, market statistics showed some recovery due to the entrance of foreign investors, but it is still far from pre-crisis levels.

Figure 46: VC investment rate fell to a low level

VC investments in per cent of GDP



Source: Invest Europe/PEREP_Analytics, own calculations.

More generally, these figures illustrate the need for intensifying public policies in order to strengthen this sector and at least be at similar levels compared to the EU average.

2.4.4 Policy recommendations

Although the measures already in place are showing positive signs, it is necessary to deepen the current line of work to strengthen the Spanish private equity sector (and specifically VC activities) with the aim of providing an alternative and reliable source of financing for Spanish firms. Accordingly, some specific policy recommendations should be made:

- Track the legislative reforms already in place (especially the Entrepreneurs Act and the fiscal policies) to be able to reform and improve the framework for venture capital. In this sense, it would be advisable to make the transfer of basic research into VC easier.
- Maintain the public sector effort to promote the development of Spanish Private Equity, especially in all the initial stages of Private Equity and with more attention to sectors like nanotechnology and biotechnology. The last objective is to reinforce the private VC sector, accordingly, provided that current efforts (especially Fond-ICO Global) have positive results, these efforts should be maintained and even reinforced in order to continue acting as a catalyst for Spanish private VC sector.

The Spanish VC sector lacks funds that are large enough. Accordingly, the public efforts already in place must be maintained or even reinforced, increasing coordination within the public sector.

2.5 United Kingdom

Matt Adey and Dan van der Schans (British Business Bank)

- Venture capital (VC) is well established in the UK. The UK is Europe's largest VC market, receiving 22.6% of all VC investment in 2015.
- Total VC fundraising in the UK reached a nine year high in 2015 (EUR 1.7 bn) driven by increases in fund raising for later stage VC funding.
- UK VC markets in 2015 showed some signs of softening as deal numbers fell by 38% compared to 2014. Investment value was broadly similar to 2014, indicating larger deals, especially for later stage VC deals.

Equity finance is an important funding source for business start-up and business with the potential for very high growth, but only a small proportion of UK businesses (around 1%) have used equity funding in the previous three years. Equity finance is therefore beneficial for businesses that are too risky or lack security for debt finance, and in these cases, equity finance is often the most suitable source of funding available.

Venture capital (VC) is well established in the UK and the UK is Europe's largest VC market. The UK received the largest proportion of venture capital (VC) funding in Europe, receiving 22.6% of all VC investment in 2015. UK companies received EUR 858 m of VC funding, forming 0.033% of GDP, ahead of the European average of 0.024%, but behind Finland, Switzerland, Sweden and Ireland. Levels of VC investment in the UK are also significantly behind US levels. Research suggests the US market is more developed than that in the UK with a greater number of funds and greater fund specialization leading to greater levels of funding for US companies.⁵⁷

Whilst the UK performs relatively well in creating new businesses, it is less effective at growing them compared to other countries.⁵⁸ Equity finance can benefit scale up companies which are important for increasing productivity and growth.

⁵⁷ <http://british-business-bank.co.uk/wp-content/uploads/2016/02/british-business-bank-small-business-finance-markets-report-2015-16.pdf>

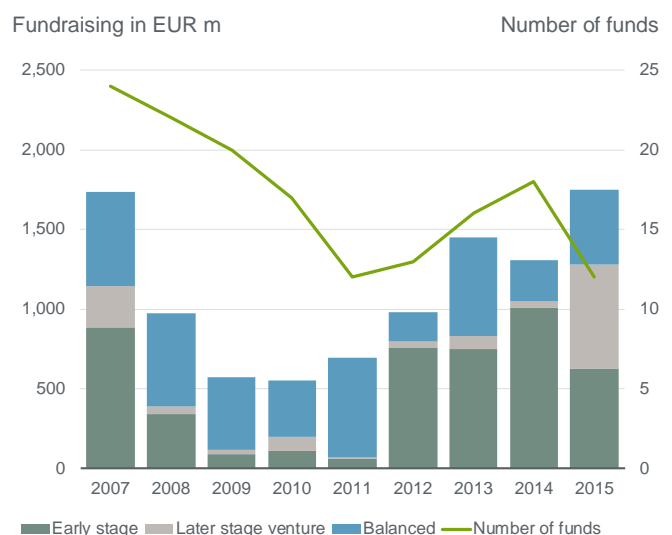
⁵⁸ <http://british-business-bank.co.uk/wp-content/uploads/2016/02/british-business-bank-small-business-finance-markets-report-2015-16.pdf>

2.5.1 Development of the VC market

VC is a well-established funding source for UK businesses, with the establishment of VC funds dating back to before the 1980's.⁵⁹ Venture capitalists are the most active type of equity investor in UK equity markets, but there is a diverse range of other types of equity investors including business angels, private investors and more recently crowd funders providing funding to support growing businesses.⁶⁰

UK VC markets experienced a large decline in fund raising during the financial crisis of 2008, with VC fund raising falling by 67% between 2008 and 2010 (Figure 47). The crisis had a large impact on investor confidence and liquidity; which led to private investors moving towards safer and more liquid investments. Since 2011 VC markets have picked up, especially for funds focused on early stage VC. In 2015, total VC fundraising in the UK reached EUR 1.7 bn, a nine year high surpassing 2007 levels, driven by large increases in fund raising for later stage VC funding. However, this increase in later stage VC funding is due to the fund raising activities of one fund rather than a reflection of wider improvements in later stage funding. The number of VC funds successfully closing their fundraising in 2015 is 12, down from 18 in 2014. Funds raised for VC formed 7.8% of all PE fundraising in 2015.

Figure 47: Venture capital Funds raised per year by fund stage focus



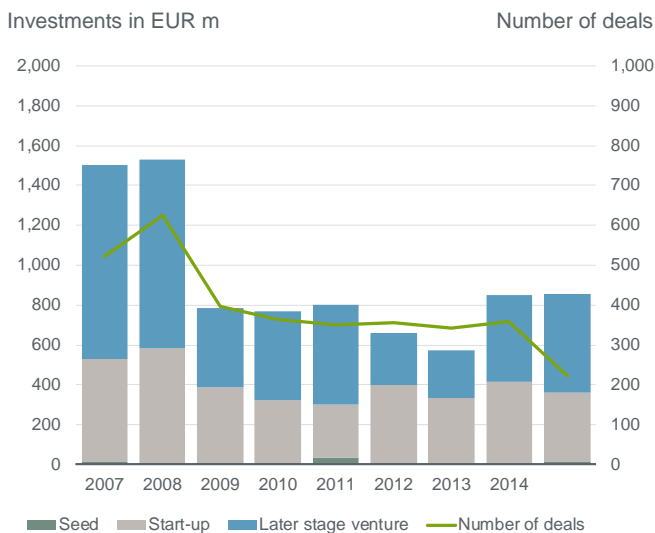
Source: Invest Europe / PEREP_Analytics

⁵⁹ <http://www.bankofengland.co.uk/archive/Documents/historicpubs/qb/1984/qb84q2207211.pdf>

⁶⁰ <http://british-business-bank.co.uk/wp-content/uploads/2016/05/97-Small-Business-Equity-Investment-Tracker-Report.pdf>

In 2015, 224 UK companies received VC funding to the value of EUR 858 m (Figure 48). Deal numbers fell by 38%, compared to 2014 whilst investment value was broadly similar to 2014 increasing by just 1%. This indicates larger deals, especially for later stage VC deals. UK VC markets showed signs of softening in 2015 as investors became more cautious due to global uncertainty. In terms of long run trends, 2015 investment figures were considerably down from the market peak in 2008 when deal numbers were 64% higher and investment values were 44% higher, but deal numbers were relatively flat between 2010 and 2014. Investment value figures increased in 2014, and were maintained in 2015.

Figure 48: VC investments into UK companies

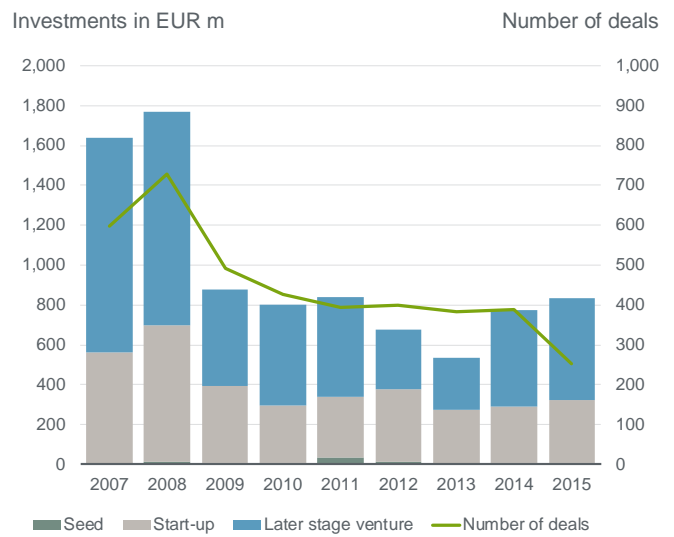


Source: Invest Europe/PEREP_Analytics

The majority of VC investments (60%) occurred at the start-up stage, with just 5% at the seed stage in 2015. 38% of investments were at the later stage in 2015, a similar proportion to 2014, but higher than 2012 and 2013 levels when it was around 30%.

Industry statistics showing investments made by UK VC funds regardless of where portfolio companies are based show a similar trend over time to the market statistics (Figure 49). The number of deals invested in by UK funds is higher than the market figures, suggesting a net balance of UK funds investing outside of the UK. It is also worth noting that the US provided around 10% of capital to UK Private Equity backed companies in 2015, showing that equity markets are international.

Figure 49: VC investments by UK VC firms (funds)



Source: Invest Europe/PEREP_Analytics

Sectoral distribution of VC investment by value in 2015 (Market statistics) shows that companies in the life science sector received the greatest amount of funding (EUR 246 m) forming 29%, but computer and consumer electronics (22%) and Communications (19%) also received large amounts of funding in 2015. These sectors also formed the three largest sectors in terms of number of investments. Around 40% of investments can be classified as high-technology (30% by value).

2.5.2 Role of the national development bank

The British Business Bank is a Government owned financial institution established to support economic growth by bringing together public and private sector sources of capital to create more effective and efficient finance markets for smaller businesses in the UK. The British Business Bank received State Aid clearance from the European Commission to operate as a Government owned financial institution in October 2014. The British Business Bank has four strategic objectives:

1. To increase the supply of finance to smaller businesses in areas where markets do not work well.
2. To help create a more diverse finance market for smaller businesses with a greater choice of options and providers.
3. To help ensure better provision of information in the market, connecting smaller businesses and finance providers.
4. To manage taxpayers' resources efficiently.

The Bank does this by working through partner organisations like banks, venture capital funds, finance platforms, etc. and by using these organisations' existing distribution networks, rather than having its own branch network or making funding directly available to SMEs. Equity funds supported by the British Business Bank's programmes combine private and public money to make commercially focused equity investments in businesses with high growth potential. The British Business Bank's venture capital programmes are focused on supporting a vibrant and diverse venture capital market to support early stage and high-growth firms in the UK, in line with the Bank's overall objectives to increase the supply of financing and to support a more diverse finance market.

As of the end of December 2015, the British Business Bank's current venture capital programmes had supported 634 businesses with approximately GBP 2.7 bn of equity funding (Table 1). Based on the number of visible investments within the Beauhurst database, British Business Bank programmes are estimated to have supported around 6% of all equity deals with these deals forming around 9% of the overall invested equity amount.

Table 1: British Business Bank Programme investments (As at Q4 2015)

	Number of unique SMEs funded	Total investment
Enterprise Capital Funds (ECF)	249	GBP 330 m
VC Catalyst	35	GBP 105 m
UKIIF	289	GBP 2.2 bn
Angel Co Fund	61	GBP 145 m
Total	634	GBP 2.7 bn

Source: British Business Bank Management Information (Includes overseas investments)

The rationale for the bank's equity programmes is based on addressing market failures affecting the supply of equity finance. There are long-standing structural market failures in the provision of venture capital to smaller businesses, which are commonly known as the "equity gap" and are most acute for businesses seeking smaller amounts of equity finance. The high costs of due diligence, relative to value of the investment deal size, make smaller equity investments commercially difficult, with venture capitalists focusing on fewer, larger investments in more established businesses. This leads to a lower supply of venture capital to early-stage and growing SMEs.

The British Business Bank venture capital programmes seek to stimulate this part of the market by encouraging private sector investment at an earlier-stage, and by supporting the development of a long-term market for angel investment. **Enterprise Capital Funds (ECFs)** were established in 2006 and are the bank's main programme for early stage venture capital targeted at addressing the equity gap. Government funding is used alongside private sector investment to establish funds operated by private sector fund managers targeting investments of up to GBP 5 m in SMEs that have the potential to provide good financial returns. Government provides up to two thirds of funding (up to GBP 50 m) for each ECF fund, which is matched by at least one third private sector investment.

The funds are an approved State Aid and, following changes to the terms of EU approval, these arrangements apply to funds raised from January 2014 onwards. The previous maximum ECF deal size was GBP 2 m, and the increased limit reflects the increasing size of the equity gap over time. The structure of HMG investment means that private sector investors will see a slightly greater loss on funds which do not perform, but they are granted a larger share of profit from successful funds to incentivise their involvement. The ECF programme is a rolling programme with a small number of new funds established each year. There are now 19 ECFs with total investment capacity of GBP 666 m.

In addition to ECFs, the **Business Angel Co-fund** was launched in 2011 to improve the functioning of the market. It is a GBP 50 m fund that invests alongside Business Angel Syndicates. The fund will only invest where three or more business angels are investing and where there is evidence of appropriate due diligence. The Co-fund provides matched funding of between GBP 50,000 and GBP 1 m in investment rounds ranging from GBP 200,000 upwards. The fund co-invests alongside lead Business Angels who are responsible for sourcing investments, carrying out appropriate due diligence and submitting an investment paper for approval by the Co-fund investment committee.

The process of undertaking innovation or the creation of new products often generates wider benefits for other agents in the economy. Due to the divergence of private and social benefits, there is an under supply of equity finance to innovative high growth potential businesses more generally.

The UK Innovation Investment Fund (UKIIF)

established in 2009 supports the creation of viable equity funds targeting UK high growth technology-based businesses. GBP 150 m was committed by the UK government to two underlying funds of funds, which in turn invested in underlying VC funds, capable of making GBP 2.2 bn of investment capital available to companies. UKIIF acted as a cornerstone investor and helped sustain VC markets at a time when they were vulnerable. It also addresses long-term structural issues in the funding of high technology businesses. The UK Government has invested on a *pari passu* basis with private investors and as a result, funds are able to make larger investments than other British Business Bank funds to enable the scaling up of businesses.

Additionally, later-stage venture capital markets - which used to be well served by institutional investors, have struggled for liquidity in recent years (2008–2013). Greater uncertainty in the market combined with investors' lower risk appetite mean that it has become more challenging for commercially viable funds to close. The British Business Bank addresses this cyclical market impediment through the **VC Catalyst Fund** by making commercial investments in viable venture capital funds that might otherwise fail to reach a satisfactory "first close". This enables funds to commence investing sooner than they otherwise could have done. The programme usually invests between GBP 5 m to GBP 10 m in funds nearing first close.

2.5.3 Specific challenges and needs

Whilst the UK VC market performs relatively well compared to markets in Europe overall, there are a number of challenges which reduce the effectiveness of the market in meeting the funding needs of growing UK businesses.

- **Regional differences in equity use:** Equity finance is heavily concentrated in London, the UK's capital city. Beauhurst data shows that regions outside of London are under-represented in terms of their share of investments. In 2015, companies located in London received 47% by number and 57% by value of all equity investment, despite 21% of the UK's high growth businesses being located in London. This demonstrates the potential to encourage more equity investment in high growth businesses in other parts of the UK.⁶¹

⁶¹ <http://british-business-bank.co.uk/wp-content/uploads/2016/02/british-business-bank-small-business-finance-markets-report-2015-16.pdf>

- **Sustainable financial returns given the risk profile.** Venture capital returns have improved in recent years due to the strong exit environment with an increased number of IPO and trade sales, but British Venture Capital Association figures show the 10 year IRR is 4.6%.⁶² This is lower than the 7.6% return from investing in publicly quoted shares, which are lower risk. Low financial returns will reduce the attractiveness of VC as an asset class for institutional investors.

- **Increasing smaller business awareness and demand for equity finance:** Demand side issues combine with supply side issues to impede the effectiveness of equity markets for SMEs. Small businesses lack awareness of different finance options available to them, and as a result many SMEs do not know who to approach or how best to seek equity finance. For instance, 60% of SMEs are aware of venture capitalists but only 22% are aware of a specific venture capitalist to approach.⁶³

2.5.4 Policy recommendations

UK equity markets continue to perform strongly but there are a number of improvements the UK could address to enable its venture capital markets to become even more effective at meeting the funding needs of fast growing businesses:

- **Increase the availability of equity finance to businesses outside of London.** The supply of VC is uneven in the UK. Whilst there are benefits to clustering, the location of VC and PE fund managers does not fully reflect the incidence of high growth businesses in the wider business population, which may constrain their ability to grow. The British Business Bank has recently created the Northern Powerhouse and Midlands Engine investment funds to specifically increase equity finance available outside of London.⁶⁴

⁶² <http://www.bvca.co.uk/Portals/0/library/documents/Performance%20Measurement%20Survey/2014%20Performance%20Measurement%20Survey.pdf>

⁶³ <http://british-business-bank.co.uk/wp-content/uploads/2016/02/Business-Finance-2015-SME-survey-report.pdf>

⁶⁴ <http://british-business-bank.co.uk/ourpartners/midlands-engine-investment-fund/> and <http://british-business-bank.co.uk/ourpartners/northern-powerhouse-investment-fund/>

- **Increase access to later stage funding to enable scale-up companies to succeed:** The amount of later stage VC funding has lagged behind start-up funding in recent years⁶⁵, which may have held back the number of successful scale up companies. Of the 166 unicorn⁶⁶ businesses in existence today, the UK has 5. Even when differences in GDP are taken into account, this significantly lags behind the United States (96). One factor holding back the availability of later stage funding may be fund size. British Business Bank analysis of

Prequin⁶⁷ shows US funds are on average 1.6 times larger than UK funds, which contributes to US companies receiving nearly twice as much funding as UK companies. A recent report⁶⁸ suggests differences in deal sizes between the UK and the United States are most apparent in later funding rounds. A lack of later stage funding results in businesses finding the process of raising equity finance difficult and time consuming, which can impede their business growth. ■

⁶⁵ Invest Europe market figures show later stage VC funding has been relatively weak from 2009 onwards, with lower investment values figures than start-ups in 2012 and 2013.

⁶⁶ Unicorn businesses are defined as private companies valued at USD 1bn and above. CB Insights: <https://www.cbinsights.com/research-unicorn-companies> (Accessed 08/06/2016)

⁶⁷ <http://british-business-bank.co.uk/wp-content/uploads/2016/02/british-business-bank-small-business-finance-markets-report-2015-16.pdf>

⁶⁸ https://www.home.barclays/content/dam/barclayspublic/docs/BarclaysNews/2016/April/Scale%20up%20UK_Growing%20Businesses_Growing%20our%20Economy.pdf

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Appendix

Table 2: Venture capital investment stage definitions by Invest Europe and NVCA

Invest Europe	NVCA
Seed Financing provided to research, assess and develop an initial concept before a business has reached the start-up phase.	Seed This stage is a relatively small amount of capital provided to an inventor or entrepreneur to prove a concept. This involves product development and market research as well as building a management team and developing a business plan, if the initial steps are successful. This is a pre-marketing stage.
Start-up Financing provided to companies for product development and initial marketing. Companies may be in the process of being set up or may have been in business for a short time, but have not sold their product commercially.	Early stage financing This stage provides financing to companies completing development where products are mostly in testing or pilot production. In some cases, product may have just been made commercially available. Companies may be in the process of organizing or they may already be in business for three years or less. Usually such firms will have made market studies, assembled the key management, developed a business plan, and are ready or have already started conducting business.
Later stage venture Financing provided for the expansion of an operating company, which may or may not be breaking even or trading profitably. Late stage venture tends to be financing into companies already backed by VCs, therefore they would be C or D rounds of financing .	Expansion stage financing This stage involves working capital for the initial expansion of a company that is producing and shipping and has growing accounts receivables and inventories. It may or may not be showing a profit. Some of the uses of capital may include further plant expansion, marketing, working capital, or development of an improved product. More institutional investors are more likely to be included along with initial investors from previous rounds. The venture capitalist's role in this stage evolves from a supportive role to a more strategic role.
	Later stage financing Capital in this stage is provided for companies that have reached a fairly stable growth rate; that is, not growing as fast as the rates attained in the expansion stages. Again, these companies may or may not be profitable, but are more likely to be than in previous stages of development. Other financial characteristics of these companies include positive cash flow. This also includes companies considering IPO.

Source: Invest Europe and NVCA Yearbook 2015, following OECD (2015).