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The interplay between capital providers for entrepreneurial ventures

An analysis of the relations between diverse sources of funds

Supervisor
Ch. Prof. Elisa Cavezzali

Graduand
Luca Cavalet
Matriculation Number 887972

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INTRODUCTION

It is widely recognized that a florid entrepreneurial ecosystem is paramount for the progress of society. In particular new ventures are considered the engine of innovation, and the fuel of this engine is capital, without which they can't grow and proliferate. Hence the relevance of entrepreneurial finance studies, which investigate the way in which start-ups are funded, is evident. This area of research has grown considerably in the last few decades as a consequence of the increasing difficulties for these firms in raising capitals. The growing echo that entrepreneurial finance is taking is due to the concern that, due to inefficiencies and not well-developed capital markets in some areas, innovative projects which can have future benefits on the community will not be funded (N. Berger & F. Udell, 1998).

Venture capitalists have generally been considered the most suitable source of funds for new risky businesses, being the only ones deemed to be able to deal with their particular characteristics. Also business angels have always been crucial in this market, even if their role has often been underestimated. However, in the last decades a multitude of alternative sources of capital for these companies has emerged, along with the evolution of traditional ones, reshaping the whole entrepreneurial finance ecosystem and challenging previous findings of the literature. Examples include crowdfunding, accelerators, incubators, angel groups and networks, and funds affiliated to other entities such as universities, corporates, banks and public institutions (e.g. regional development agencies). Moreover, thanks to the expertise accumulated, institutional investors have increasingly by-passed intermediaries, directly investing in the capital of start-ups (Bonini & Capizzi, 2019).

Each of these actors displays different features and behaviours, widening the spectrum of possible choices for entrepreneurs. In this context the new challenge for scholars is to understand when and why entrepreneurs choose different funding options and comprehend the complex dynamics and intertwinings between them: which ones are complement and which ones substitutes? New prominent avenues of research are being explored by entrepreneurial finance academics, and many recent findings need confirmation. The aim of this thesis is to contribute to this fast developing stream of literature by analysing the possible relations between the main capital providers for young entrepreneurial ventures and the outcomes of these interplays.

The first chapter begins with the illustration of the peculiarities of this segment of capital markets, along with a brief description of the Italian scenario; the most important theories in the literature which attempted to delineate the role of different sources of funds for this kind of

firms are exposed right away. Subsequently, the three most important players in this market, namely venture capitalists (VCs), business angels (BAs) and (equity) crowdfunding (CF), are deeply described, highlighting their main features and their importance in this delicate ecosystem. While VCs and BAs constitute traditional capital providers for start-ups, crowdfunding is one of the most recent inventions in this field, with an impressive fast-growing relevance. The chapter concludes with a brief illustration of other sources of funds, namely incubators, accelerators and corporate venture capital (CVC).
The second chapter focuses on the interplay between the investors outlined before. The quick evolution of the entrepreneurial finance landscape has opened several lines of inquiry which are still undercovered and need further deepening. In particular, the analysis of the intertwining between crowdfunding and traditional equity providers represents a promising avenue of research. Also the interactions between angels and VCs, notwithstanding their longer existence, are still underresearched and require more thorough investigation. The section closes with some hints on other relations between investors which do not represent the main focus of this thesis.
The last chapter is dedicated to an empirical analysis based on Italian companies, whose aim is to deepen the understanding of the complex relations between business angels and venture capitalists. Specifically, following the most recent contributions on the matter, an investigation of the features of business angels which increase the likelihood of raising follow-on venture capital for the focal firm is performed. The outcomes corroborate the findings of previous studies and produce interesting hints which can be grasped and explored by upcoming research. After the presentation and discussion of results, a brief conclusion sums up the key concepts outlined in the present work and closes the thesis.

1. THE SOURCES OF CAPITAL FOR START-UPS

1.1 SMALL BUSINESS FINANCE

1.1.1 Characteristics of small business finance

The market for funds for new (and small) enterprises is very different from the one for large corporations; for instance, usually capital markets for small businesses offer more complex and structured instruments compared to the generic contracts of public exchanges (N. Berger & F. Udell, 1998). Hence, the theories and assumptions usually adopted to describe major companies, such as the agency theory (Jensen & Meckling, 1976) and resource-based views (Penrose, 1959)(Barney, 1986), cannot be employed in the same way.

The differences are mainly caused by the nature of the entity being funded: indeed young and small ventures are "informationally opaque", compared to the more transparent large corporations (N. Berger & F. Udell, 1998). Consequently, the distinction between high and low quality projects is hindered, resulting in adverse selection problems which cause the reduction of the overall quality of the market. Higher information asymmetries also lead to an increase of moral hazard risk, which is represented by the chance that the entrepreneur receiving funds acts against the interest of the investor to favour its own; in turn, agency costs to align the objectives of the principal (the investor) with the ones of the manager (the entrepreneur or the management team of the firm) increase. As a consequence of these two problems, capital is allocated inefficiently and there is often a "funding gap" between demand and supply of funds for this kind of ventures, as shown by many studies in different economic systems (Bonini & Capizzi, 2019).

The informational opacity of small businesses arises from several factors: they don't have audited financial statements, they don't have a track record of payments or results, they don't have many tangible and easily evaluable assets, they don't issue publicly traded securities which are continuously priced by the market, and they don't enter into contracts widely publicised by the press. Consequently, they have difficulties in conveying their real value (N. Berger & F. Udell, 1998).

1.1.2 The Italian capital market for SMEs

The Italian economy is based on SMEs, which dominate the business landscape: they account for 99.9% of all firms, generate about 2/3 of turnover and valued added of the country and

occupy about 80% of the industrial and service labour force (OECD, 2014)(OECD, 2020). Therefore, entrepreneurial finance assumes a crucial relevance in this context: ensuring the access to capital to these firms is paramount for the development of the whole Italian economy. However, the Italian market for funds is not so healthy, being characterized by some deficiencies which have often been highlighted; moreover, the recent financial crises have contributed to the worsening of this scenario, heightening the already present issues of this ecosystem.

Italy is known to be a bank centric country, where banks dominate the financing of firms, and a stable relationship with them is fundamental to survive. In this context, companies who are not able to receive bank loans, which is the case for many start-ups, have serious difficulties in finding alternative sources of capital. Consequently, their growth is severely hampered, damaging the whole innovation engine of the country (Micucci & Rossi, 2017)(Vacca, 2013). Many SMEs have indeed substantial difficulties in raising external debt due to high transaction costs in relative terms, especially for young and innovative firms and the ones located in remote areas, and the increased risk-aversion of financial institutions as a result of recent financial crises (Battaglia et al., 2022); in particular, the sovereign debt crisis in 2011 exacerbated the problems in obtaining credit (OECD, 2014). The need to strengthen the capital structure of these ventures and decrease their reliance on the banking system is a long-standing Italian problem, which appears more urgent than ever (Battaglia et al., 2022).

A positive feature of the Italian economy is its entrepreneurship: nearly a quarter of the workforce is self-employed and small businesses tend to be young; there is indeed a quite high share of companies aged less than 3 years. Nonetheless, the rate of "high-impact firms", which are the ones with the strongest influence in terms of economic growth and job creation, falls short compared to other OECD countries (OECD, 2014).

The main problems arise in the expansion stage of business, where heavy administrative and tax burdens hamper the growth of firms; specifically, the complexity and the high rates of the tax system and the delays in contractual enforcement, which needs to be efficient and quick, are considered major hurdles. Indeed, almost 95% of Italian businesses are micro firms, employing less than 10 people, while only 0,5% are medium-sized (50-249 employees), a share well below many developed economies. Micro-enterprises are characterized by low productivity levels, also caused by the smaller economies of scale, hence their inability to grow endangers the whole economy of the country (OECD, 2014).

Besides the legal and fiscal issues, a stumbling block for Italian enterprises is the lack of a solid external equity market, which mainly affects high-impact companies and medium sized ones.

The Italian equity market is one of the smallest among OECD countries in relative terms (measured as venture capital investments as a percentage of GDP). The problems are both on the supply side, characterized by a limited number of capital providers, and on the demand side; as concerns the latter, the diffused loan culture and the reluctance of family-owned firms to welcome external stakeholders, caused by the fear of losing control of the business, represent the main issues (OECD, 2014).
However, it seems that the situation is gradually improving: in the last few years all the external equity markets have exhibited substantial growth trends, as discussed in the next chapters. In this process the role of public institutions has been crucial: new laws have been paramount in ensuring the right conditions which have favoured the development of capital markets, and several new instruments and programmes have been established to address the aforementioned issues. To make some examples, Minibonds were created to reduce the bank-centrism of firms, while on the equity side the Elite Programme helped them to be ready for quotation in the AIM market (dedicated to small businesses), which has displayed a substantial development in the decade (OECD, 2014). Public bodies, or public-private ones resulting from partnerships, have encompassed a primary role in many investment deals; for instance, the National Innovation Fund and the Venture Capital Support Fund were established with the 2019 Budget Law to acquire minority stakes in start-ups and innovative SMEs (OECD, 2020). Moreover, business regulation has improved considerably in the last decade and now procedures to create enterprises are quite simple: as of today, a sole proprietorship can be opened in just one day (OECD, 2014). Lastly, Italy also has a well-established Credit Guarantee Fund to tackle creditworthiness issues and reduce the cost of debt (OECD, 2014).
However, there are still many shortcomings which need to be addressed: Italy doesn't have a public SME agency to deal with the issues of these firms and more can be done to protect intellectual property, in order to foster innovativeness; moreover, regional disparities represent a persistent problem, which requires targeted measures (OECD, 2014).

1.1.3 The Pecking Order Theory

There have been many attempts to describe which sources of finance are available to start-ups along their growth path and which ones are preferred by the entrepreneur in different scenarios. (Myers & Majluf, 1984) proposed the Pecking Order Theory, arguing that the cost of funds increases with information asymmetries, thus entrepreneurs consider insider finance as their first choice because it's not subject to these asymmetries. When internal funds are exhausted,

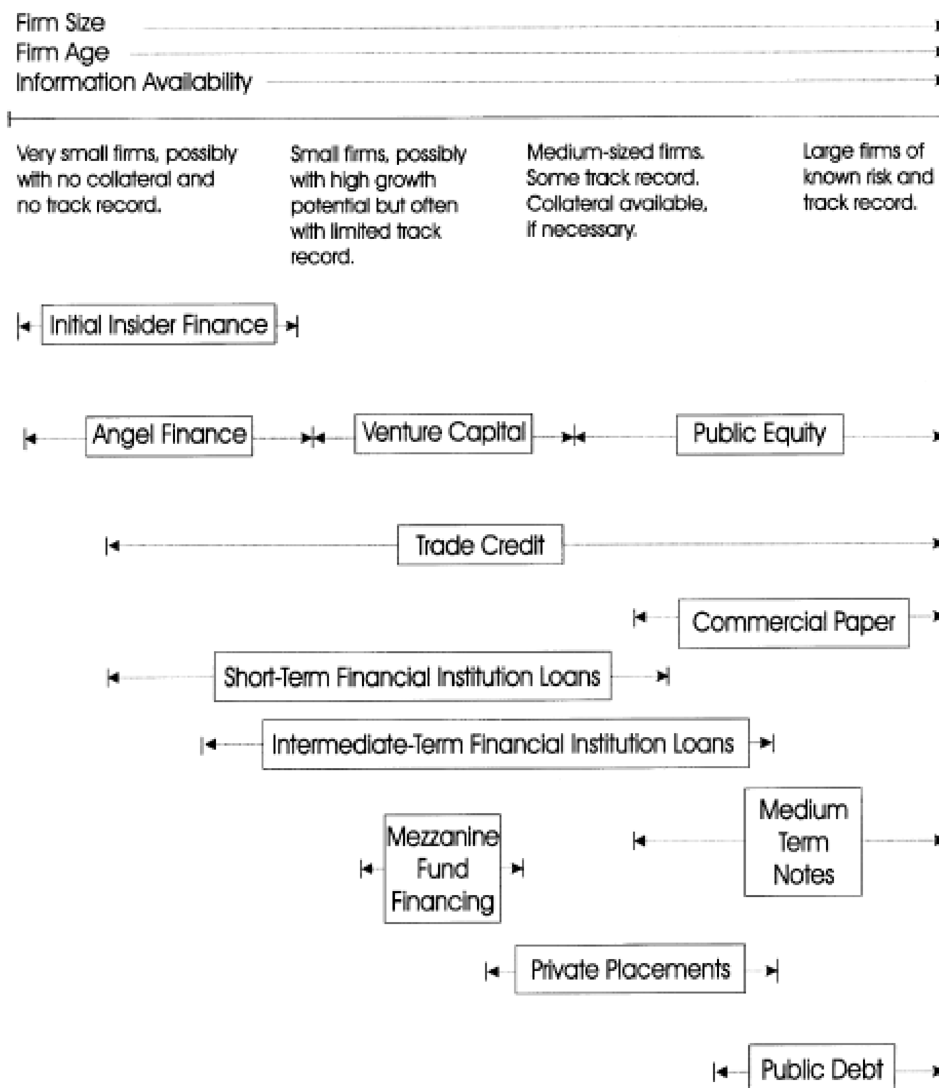
new ventures seek external debt, while external equity represents the last resort. The latter is indeed associated with the highest level of information asymmetries, since investors' returns depend on the value-creation ability of the entrepreneur, while debt only requires pre-established payments at fixed times, which are less uncertain (Walthoff-Borm et al., 2018).
(Colombo et al., 2007) verified this theory in the Italian market: they found out that personal capital is the most important source of funds for the majority of start-ups, as expected. Debt financing is used only by the minority of the companies analysed, and the pool of firms able to raise external equity is really small, coherently with the high costs of this financing form. Consistently with the financing hierarchy proposed by the Pecking Order Theory, entrepreneurs seek external debt when insider finance is exhausted. However, in the literature has frequently been argued that the access to the former is often constrained to newly created ventures due to their characteristics: besides the heightened adverse selection and moral hazard problems described above, the general absence of tangible collaterals and the typically negative cash flows hamper the repayment of the loan. Consequently, the presence of a solid ecosystem of equity providers able to deal with the particularities of this kind of firms is paramount for their survival.
The study of (Colombo et al., 2007) confirmed that start-ups usually suffer from credit rationing: the amount which they are able to borrow is low, and often insufficient with respect to their needs. This is a huge problem in bank-based financial systems, such as the Italian one, in which capital markets are underdeveloped and banks are the main source of external finance for firms: in this situation indeed, the credit rationing along with the difficulties in accessing external equity can seriously put at the risk the survival of many companies due to capital constraints.
More recently some scholars argued in favour of a Reverse POT (Pecking Order Theory), according to which entrepreneurs prefer external equity to external debt. This theory applies when the investor's skill, knowledge, and consulting services are highly valued by the founders of the venture (Garmaise, 2007)(Walthoff-Borm et al., 2018). This is the case for the two most important equity providers in the start-up market, namely venture capitalists and business angels. As deeply discussed in the next chapters, their value-added services outside capital represent a key factor to explain their ability to succeed in such a risky and opaque environment. The argument is debated as regards more recently developed source of capital too, in particular crowdfunding: while some authors claimed that even equity CF is considered as a last resort by entrepreneurs, just like traditional equity providers (Walthoff-Borm et al., 2018), others (Bellavitis et al., 2017) argued that it may distort the pecking order, even if it's not able to

provide the same non-monetary contributions of VCs and BAs. Indeed, there are other factors which can justify the reversal of the POT. First, the possibility for founders to retain more power and control of the venture, thanks to the sale of equity shares to a large and ill-coordinated group of investors (Walthoff-Borm et al., 2018). Second, the marketing impact and the access to network: according to a survey among entrepreneurs carried out by (Décarre & Wetterhag, 2014) these two are among the main motives to engage in a CF campaign.

1.1.4 The Financial Growth Cycle paradigm and the funding gap issue

Relying on the Pecking Order Theory, (N. Berger & F. Udell, 1998) proposed the paradigm of the Financial Growth Cycle, according to which the suitable sources of capital change according to the different informational problems that the start-up has, which usually mutate with size and age (Figure 1). Initially only insider finance is available; then, as the firm grows, it becomes less informationally opaque, gaining access to a wider set of sources. The first supporters of the venture are equity providers, such as business angels (first) and venture capitalists (later), which are the only ones able to operate in such a risky environment; typically debt comes later, when more tangible assets are available and cash flows are positive and steady. Moreover, moral hazard risks are heightened when debt is high compared to equity, hence the presence of these capital providers is often fundamental to access loans (N. Berger & F. Udell, 1998).

Figure 1: The Financial Growth Cycle



Source: (N. Berger & F. Udell, 1998)

As discussed previously, a main concern in this market is the gap between demand and supply which hampers capital infusions for new ventures. In particular, the primary funding gap, which refers to the money needed to develop the first product and bring it to the market, usually involves an amount of money which is below the investment threshold of venture capitalists, which prefer to invest in more developed firms with larger capital needs. The fixed costs that the selection and evaluation processes require are indeed too high for such small investments (Bonini & Capizzi, 2019).

Business angels have always been crucial in fullfilling the capital needs of companies in their seed phase and guide them towards the venture capital stage; however, the focus of BAs is

shifting towards later steps of the start-up's life, as a result of the rise of several types of angel's organizations. In this context, alternative sources of capital, such as crowdfunding, incubators and accelerators, are deemed to have the potential of filling the void left by BAs and VCs, enhancing the efficiency of capital markets; however, their role with respect to traditional sources of equity is debated, and the comprehension of their true impact on the entrepreneurial ecosystem is still fallacious.

1.2 VENTURE CAPITALISTS

Venture capitalists (VCs) have always dominated entrepreneurial finance studies: they have been the most analysed player in the young venture financing industry, and the first one to be considered in the ‘80s. However, in numerical terms their relevance can be questioned, arguing that in the universe of small businesses only a few are able to collect funds from venture capitalists: start-ups largely rely on insider finance (from the 4F, i.e. founder, family, friends and fools, and from retained earnings) and external debt, mainly in the form of bank loans [1] (Fenn & Liang, 1998). Moreover, according to several studies (e.g. (Fenn et al., 1997)(Gaston, 1989)(C. M. Mason, 2006)(Wong et al., 2009)(OECD, 2011)(Wiltbank et al., 2009)(Hellmann & Thiele, 2015)) other players, such as business angels, represent a higher share of financed firms among external equity providers.

Why has venture capital received so much attention then? The interest it elicits in scholars should be explained with a qualitative and not quantitative point of view. First, VCs do not target the whole universe of small businesses, but only highly-innovative ones, characterized by a high growth potential but also a high risk: for them debt sources of finance are not suitable, given the lack of cash flows and collaterals, and the inherent uncertainties about their future; hence, external equity, in particular in the form of venture capital, it’s a fundamental source of funds, without which many of them cannot survive (Fenn & Liang, 1998). Second, of the firms which reach the aspired goal of an IPO, only a few manage to do that with external debt and internal funds: a great share of these companies is supported by venture capitalists (Fenn & Liang, 1998). Hence, the importance of venture capital derives from its ability to fuel the growth of the most innovative and successful businesses, the ones which push the progress of the whole society. Finally, the greater attention around VCs compared to other equity providers, such as business angels, is due to their higher visibility, thanks to the fact that they are formal organizations, which results in an easier gathering of data about them. Moreover, several among the biggest American companies (e.g. Amazon, Apple, Microsoft, Instagram, Uber, Airbnb, SpaceX) received venture capital funds in their early-stage growth, heightening the attention and interest towards this phenomenon (Grilli et al., 2019).

Notwithstanding the increasing number and importance of alternative sources of finance for start-ups, venture capital does not seem to risk being considered obsolete. Its skills and

[1] The use of bank loans seems to contradict traditional wisdom according to which external debt sources are not available to start-ups; however, usually these loans are guaranteed by the personal wealth of the entrepreneur and issued evaluating his creditworthiness, thus they can be related to insider finance sources (N. Berger & F. Udell, 1998).

knowledge are unique, and it is really difficult to substitute them. Therefore, it is and probably will remain a fundamental source of funds for entrepreneurial ventures (Bonini & Capizzi, 2019). Other forms of funding can be really useful to complement it during the growth of the firm, in particular in earlier stages, usually not targeted by VCs. Moreover, these sources can be an alternative for companies rejected by VCs, helping to reduce funding gaps and boosting the growth of florid entrepreneurial ecosystems.

1.2.1 Definition and characteristics

According to the EVCA (European Private Equity & Venture Capital Association) definition: "Venture Capital is, strictly speaking, a subset of Private Equity and refers to equity investments made for the launch, early development, or expansion of a business" (Zaby, 2017). However, this denotation doesn't help to understand the real nature of VCs and what they actually do. (Zaby, 2017) proposed a definition which highlights the type of firms targeted by VCs and the kind of contribution they provide: "Venture Capital is an integrated concept for the allocation of capital, know-how and other vital benefits among start-ups at the frontier of technological development". As underlined by this demarcation, venture capital is not only a matter of money: the knowledge VCs provide to the company through their advice is crucial in explaining their success.

After some initial variability, venture capital funds have evolved towards a consolidated organizational model, a limited partnership with a closed-end structure, which is nowadays the most diffused way of operating this activity (Gompers & Lerner, 2001)(Grilli et al., 2019). However, considering venture capital firms too homogeneous is a common mistake: the heterogeneity of these organizations should not be underestimated given the important consequences that it has on the results of studies (Grilli et al., 2019). For instance, a distinction between captive, governmental and independent funds can be outlined. Captive VCs are the ones created and hence tied to another organization, such as a corporate or a bank; they are thus dependent on resources provided by the parent company. Independent funds instead gather capitals on the market, while governmental ones are backed by a public institution. The difference it's important since it can affect their objectives, ways of operating and decision-making processes. Firms targeted, duration and size of the investments, and exit strategies are probably the aspects in which they differ more. For instance (Bottazzi et al., 2008) found out that independent funds are more active in managing their portfolio, which results in better performances for their firms. On the other hand, funds backed by banks or financial institutions

present greater financial capacities, which lead to larger and longer investments, since they don't have the rush to pay back investors and collect new capitals. As a consequence, entrepreneurs have to trade-off the higher value-added services of independent funds versus the larger funding capacity of captive ones (Andrieu & Groh, 2012)(Vacca, 2013).
Moreover, to properly assist funded firms a high level of expertise is required, thus VCs usually specialize by industry, region or stage of development of the venture (Fenn et al., 1997). In this way they can offer more valuable consulting services, enhancing the performance of target companies, and therefore their own (Cressy et al., 2014)(Gompers et al., 2009). However, also the diversification of risk is fundamental, hence they usually don't specialize too much, investing also outside of their main target area (Vacca, 2013). VCs usually focus in the mid to later phases of start-ups growth, leaving the seed and early stages to other players; hence they are mainly interested in the commercialization step, not on the product development. Moreover, in the last few years their focus has increasingly shifted to later stages, as shown by (Hellmann & Thiele, 2015)(Drover, Busenitz, et al., 2017).

1.2.2 History of venture capital

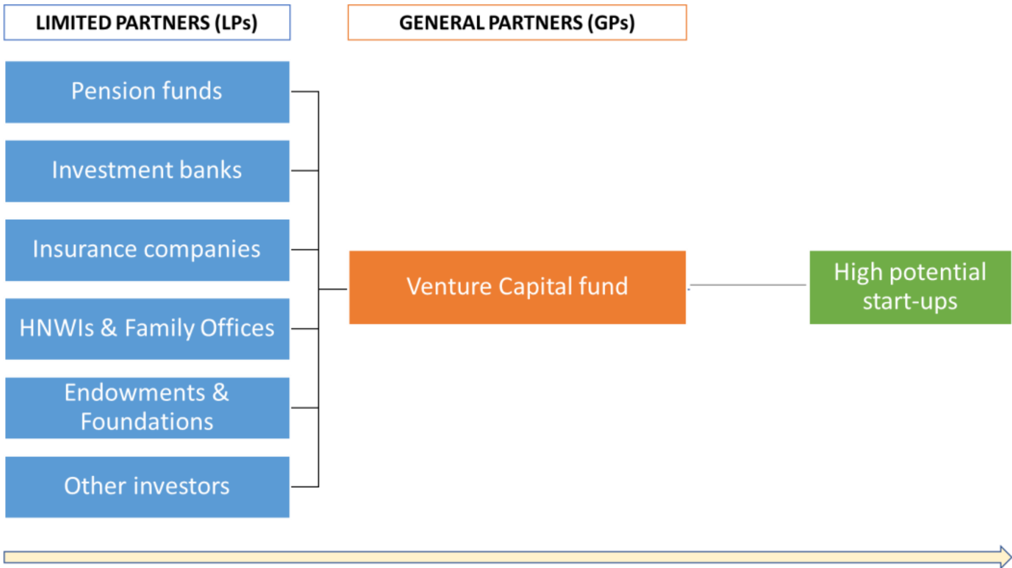
The organized private equity (PE) market diffusion started in the aftermath of WWII, with the first venture capital funds: specifically in 1946 the first VC fund was created by two university professors and a few businessmen (Grilli et al., 2019)(Gompers & Lerner, 2001). Their aim was to propose a private sector solution to the lack of financing for new enterprises (Fenn et al., 1997). The industry started to grow thanks to the economic boom, which pushed entrepreneurs to pursue high-growth ventures commercializing new technologies, mainly developed during the war (Drover, Busenitz, et al., 2017). However, until the 70's the majority of equity investments in firms were carried out directly from investors, without intermediation. Starting from the '80s, the importance of intermediated funds run by professional managers rose steeply, soon overwhelming direct investments. At the end of the 90's, 80% of PE investments were performed by intermediaries, while only 20% directly (Fenn et al., 1997).
The success of these funds was mainly due to the diffusion of the limited partnership organizational model, which is an efficient way of structuring the PE activity. The first VCs, in the '50s and '60s, were mainly publicly traded close-end funds. From the '70s, many professional managers started to create limited partnerships to centralize and professionalize private equity activities. They wanted to address problems of compensation, since before they couldn't receive stock options, hence their salary was remarkably low compared to the profit

they generated for investors. Moreover, they wanted to attract funders more sophisticated than retail shareholders: it was perceived the need for greater participation of institutional investors in the PE market, but direct investments present several problems which make them inefficient, as explained below (chapter 1.2.3) (Fenn et al., 1997).
In the '80s venture capital, and in particular limited partnerships, boomed as a result of a series of tax and regulatory changes at the end of the previous decade. Among them, the most influential one has surely been the variation in the interpretation of the prudent man rule, which represented the turning point for this industry: it allowed pension funds to invest in venture capital, which was considered too risky before. These investors were attracted by the high returns of venture capital in the previous decade, compared to the low ones of the public market. Nowadays they are the larger investor in VC funds, and have been fundamental for its steep growth (Fenn et al., 1997). Since then, the overall venture capital activity has expanded substantially, exhibiting however a cyclical growth path, mainly following the most important recent economic crises (Grilli et al., 2019).

1.2.3 Organizational model

(Sahlman, 1990) described the functioning of a limited partnership in the VC context: "Venture capital (VC) is the professional asset management activity ('the general partners', GPs) that by rising money from wealthy individuals and institutional investors ('the limited partners', LPs), invest into new ventures with risky ideas, but also with a high potential to grow" (Figure 2).

Figure 2: Limited partnership structure

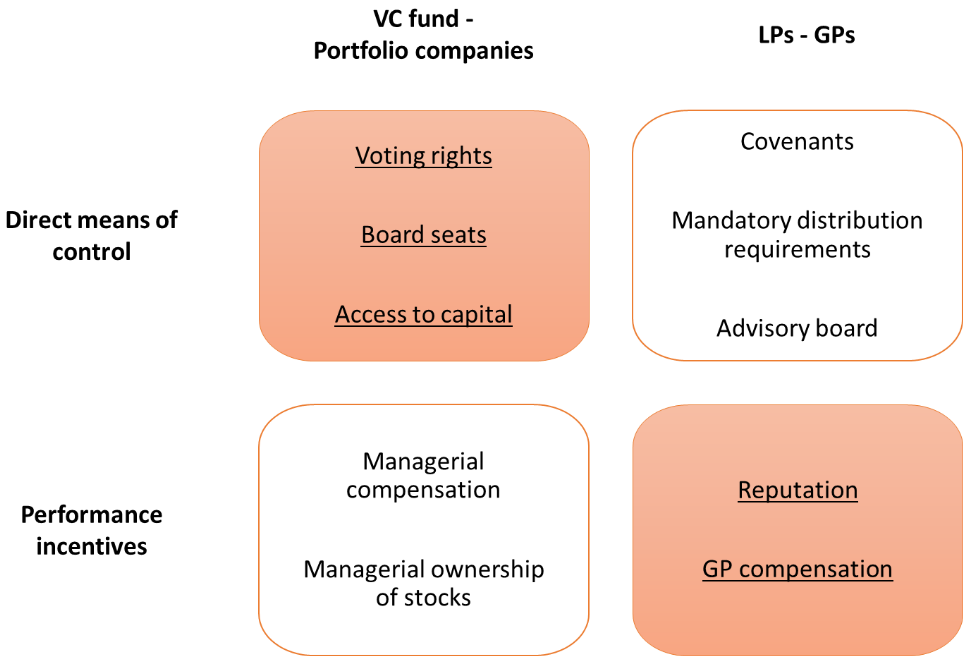


Source: personal elaboration of the author

Limited partnerships succeeded because they efficiently solve the two main issues of PE investments: sorting problems and incentive problems. Sorting problems refer to the selection of potentially rewarding deals, which is made difficult by the extreme informational asymmetries of this context, while incentive problems refer to possible moral hazard risk caused by the fact that the receiver of funds can enact behaviours which favour its own interest and not the investor's one. To address these issues, a great amount of due diligence is required ex-ante, and an intense monitoring and control ex-post. These activities are not performed well by a multitude of investors, because they require expertise and a lot of time; therefore, their delegation to a specialized intermediary is efficient, considering that the exposure to a lot of deals increases its experience in the evaluation of firms and the knowledge that it can provide to them, helping to boost their growth. Thanks to their know-how and the substantial stake of ownership acquired in the companies they invest in, venture capitalists are indeed able to actively contribute to start-ups' development, controlling and steering their expansion. Moreover, intermediaries can specialize by industry or region, widening their knowledge in that field; this is not possible for institutional investors since it hampers diversification, increasing risk. Lastly, the access to a substantial deal flow is essential to practice this activity, in order to be able to select the best opportunities; specialized intermediaries are indeed exposed to a great deal flow amount, while institutional investors are not (Fenn et al., 1997).
The success of limited partnerships seems paradoxical, since they raise the cost of fundraising for firms and the cost of the investment for funders, as a result of the compensation fees owed to the fund managers; moreover, with this setup institutional investors invest in illiquid assets in which they have no control. However, if this organizational structure has become the dominant model in the venture capital industry it's because it benefits all the parties involved in the transaction. Limited partnerships success results from their ability to align the interests of opposing parties in the two types of relations present in venture capital investments: the one between limited partners and general partners of the fund, and the one between the manager of the fund and the ones of the firms being funded (Fenn et al., 1997).
The methods VCs use to line up objectives are mainly of two kinds: direct oversight and control mechanisms, and performance incentives (Figure 3). While the formers are more important to manage the firm-fund relation, the latter are paramount to align incentives of LPs and GPs (Fenn et al., 1997). Compensation arrangements and reputation constitute the most important performance incentives. Reputation in particular is essential for VC funds since they need to periodically raise new capitals to stay in business, and without a solid track record of returns this can be difficult and costly; indeed, fundraising is an expensive activity, but less for

reputable VCs. The compensation of GPs is generally composed by a management fee, usually around 1-3% of capital committed to the fund (or sometimes capital invested), and the carried interest, which is typically 20% of the fund's returns. Tying compensation to the results obtained favour the convergence of the objectives of GPs and LPs, reducing the likelihood of opportunistic behaviours of the formers. This is fundamental since LPs have weak mechanisms to control the activities of GPs, because direct monitoring is inefficient and doesn't have sense given the purpose of this relation, as explained before. Examples of direct control mechanisms in this relation include covenants that restrict the GPs from engaging in certain activities, mandatory distributions requirements, and ways in which the LPs can have a limited oversight over the fund managers, such as an advisory board which can approve exemptions from the covenants (Fenn et al., 1997).

Figure 3: Mechanisms through which the partnership lines up the interests of the parties



Source: (Fenn et al., 1997)

1.2.4 The investment process

The investment activity of VCs is constrained by the duration of the fund, which usually spans from 7 to 10 years, after which money must be returned to the limited partners, along with their remuneration. During this period of time, the activities of the general partners are mainly divided into four phases: selection of the businesses in which to invest in; structuring of the

deals; management of the portfolio, by monitoring and mentoring the companies in it; exiting from the investments (Grilli et al., 2019)(Fenn et al., 1997).
The first step includes the screening, evaluation and selection of firms to finance. A substantial deal flow is fundamental for VCs: it represents the number of potential investments with whom the fund gets in touch, and it's fed by the network of the VC. The pool of potential deals is huge, but only a few ventures manage to be funded. They have to pass through increasingly thorough screening processes, and the ones which reach the last steps are subject to a deep due diligence. Several studies addressed the decision-making process of VCs and the criteria they employ to select deals. The main factors which they usually evaluate are the quality of the management team and the viability of the product (Fenn et al., 1997).
In the second stage the general partners structure the investments and negotiate the contracts with the selected companies. The most important aspects to establish are financial, mainly related the percentage of equity of the venture sold to the fund, and governance matters; the latter include incentives to the management of the firm, such as stock options and the type of shares sold to the investor, and direct means of control, like board representation and other clauses which can restrict the behaviour of managers (Fenn et al., 1997).
Contractual clauses used by VCs have been analysed extensively in the last decades; they are fundamental for the venture capital activity, since they protect the fund from moral hazard risks and agency problems. Among the most common clauses there is the staging of the investment, which means that the deployment of capitals is spread across time and made contingent on the achievement of performance targets; this acts as a motivational tool for the entrepreneur and limits the losses of the fund in case of disappointing results (Fenn & Liang, 1998). The syndication of the investment is also an important aspect to consider: VCs often cooperate and invest together in the same deal. There are several reasons behind this practice: the chance to finance projects which require an amount of capital too high for a single VC; the possibility to reduce the amount invested in a single deal, hence being able to better diversify the portfolio and reduce risk; to obtain a validation of judgment from another competent entity, which can reassure about the quality of the firm; for a geographic rationale, when another VC is closer to the company and can better monitor it. Moreover, cooperation increases the deal flow for the operators involved (Fenn et al., 1997). On the other hand, syndication could lead to conflicts of interest and coordination problems between investors, hence VCs usually avoid investing with a large number of partners (Bonini et al., 2018). Another contractual clause to consider is the security design: convertible securities are usually preferred, because they reduce risk and act as an incentive mechanism for the entrepreneur (Fenn & Liang, 1998).

The subsequent stage consists in the intense monitoring of funded firms and their coaching/mentoring, to assist them with the experience and know-how of general partners. In the last phase VCs implement the disinvestment of their participation, gathering the fruits of their work, and pay back their capital providers (the limited partners). Large VC firms often manage multiple funds, each one being in different stages of this cycle (N. Berger & F. Udell, 1998).
The last step is fundamental for VCs, and its importance has often been underestimated. Since the structuring phase, venture capitalists create some boundaries about the time and mode of the exit from the financing (N. Berger & F. Udell, 1998). The best-case scenario it's the exit through an IPO, which brings the company public. The effects that VCs have on IPOs have been studied but results are still contradictory. Firms going public are still subject to problems of information asymmetries (although not at the same level as in earlier stages of their development), which are mitigated by the market with its own mechanisms, such as underpricing and price stabilization. Some studies argued that the reputation of VCs, which act as a certificate of quality, and their value-added services can mitigate the opacity of firms; this reduces the negative effects of these mechanisms, resulting in less underpricing at the time of the IPO and better long run performance. Venture capitalists can also help in choosing the optimal moment to list the venture, which can be crucial (N. Berger & F. Udell, 1998)(Fenn et al., 1997).
It has to be considered however, that only a small portion of funded start-ups manages to go public; nonetheless, gains from these investments represent the greatest part of the overall return of the fund. Another way of exiting the deal is a trade sale to another company, usually in the same industry. When results are disappointing, usually firm's shares are sold back to their owner or, in the worst case, the venture is liquidated (N. Berger & F. Udell, 1998).

1.2.5 Role in the market and impact on the firm

As explained earlier, the access to capital often represents a critical challenge for young entrepreneurial ventures, due to market failures, mainly caused by information asymmetries, which hinder their financing from external investors. Moreover, start-ups need patient capital providers, disposed to commit their funds for the long term without continuous demands; indeed, given the typical absence of cash flows in the early-stage development of firms, dividends are absent, and the only form of remuneration will be the capital gain after a long

period of time and with high uncertainty; in these conditions the borrowing of money is difficult (Zaby, 2017).
Venture capitalists are often deemed to be the most capable of providing funds to these companies, thanks to their unique characteristics which permit them to match the specific needs of new businesses, mitigate information asymmetries and invest in risky projects (Zaby, 2017)(Grilli et al., 2019). Specifically, their expertise allows a better evaluation of intangible capital and of the potential of new products, tackling adverse selection issues, and their active involvement, in the form of monitoring but also mentoring, permits them to control and steer the evolution of the start-up project, reducing moral hazard concerns (Grilli et al., 2019).
Several studies have investigated the influence of venture capital activities on the economy of a country or a region: notwithstanding some contradictions, overall the empirical evidence indicates a positive impact both at the micro and macro level. It is argued that a florid ecosystem of VCs can increase entrepreneurship rates, employment and aggregate income (Grilli et al., 2019). Nowadays these capital providers are considered a pivotal component of any advanced entrepreneurial economy, explaining the efforts of several governments to push the creation of a solid venture capital industry (Grilli et al., 2019).
The impact of VCs has been extensively analysed also at the micro-level, and results demonstrate their positive effect on the growth and innovativeness of financed firms. For instance, (Hellmann & Puri, 2002) found out that they fasten the commercialization of products and foster the professionalization of the management of the start-up (Zaby, 2017).
As stressed several times, these investors contribute not only financial resources to funded companies, but also know-how crucial for their development. This feature represents a key factor in differentiating VCs from other sources of funds and allows them to successfully operate in such a risky environment. Specifically, they help start-ups with their consolidated management experience, and their degree of involvement can be at the strategic level but also at the operational level. Often new enterprises are run by technicians such as engineers or scientists, who lack of business knowledge; hence, the venture capitalist’s expertise in functions such as finance, control, human resources, marketing and business organization can be vital. Indeed, they are often critical in the development phase of the firm in which the product has to be commercialized, a step in which business knowledge is crucial (Zaby, 2017). Another useful contribution provided by these investors is networking, which can be really valuable for the company, helping it to get in touch with potential suppliers, customers, partners and future funders.

1.2.6 The venture capital market

Venture capital has always been a US-centric phenomenon, notwithstanding the manifold attempts to expand it internationally which have often been unsuccessful, except for a few countries such as the UK, Sweden and Israel (Grilli et al., 2019). The reasons behind this uneven diffusion have been extensively studied, by analysing the impact of several formal and informal institutions on the establishment of a solid VC industry; however, results are still inconclusive as of today (Grilli et al., 2019).

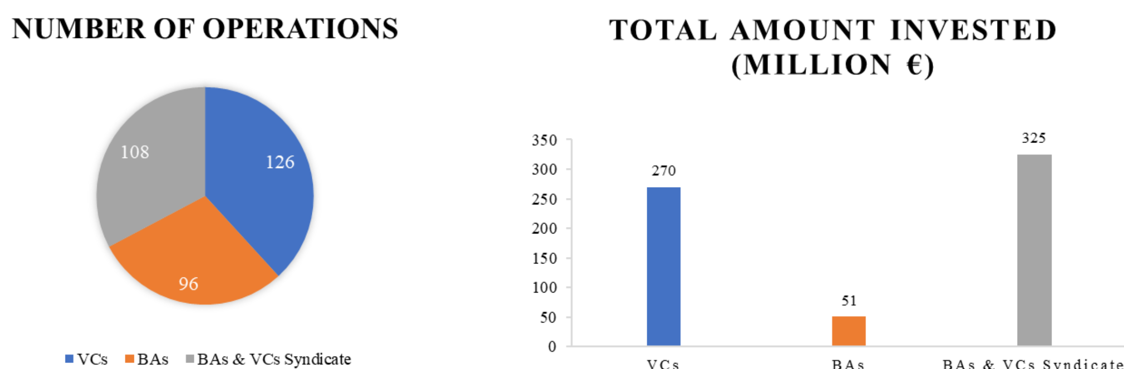
Venture capital has a strong geographical component, since proximity to the target firm is required to assist and control it successfully. Hence, a problem of VCs is that they are mainly concentrated in technological hubs, such as the Silicon Valley, leaving peripheral areas underfunded (Grilli et al., 2019). VCs also have a precise industry focus, mainly being active in innovative and technologically advanced sectors like IT and biotech, even if they are increasingly widening their scope (Grilli et al., 2019).

The Italian venture capital market

Italy is surely a tough place for VCs: it is known to be a bank centric country, where banks dominate the financing of firms. A 2009 report of the Bank of Italy highlighted the underdevelopment of the venture capital industry in the country, underscoring also low levels of investors' expertise and less sophisticated contracts (Banca d'Italia, 2009)(Vacca, 2013). Notwithstanding a substantial growth in the last few years, both in terms of number of players and volumes, as of today this market is still insufficiently developed compared to similar countries. A fundamental needed step is the increase in the number of funds: in 2020 they were only 25 against an average of 150 in other European nations. Consequently, the overall capitals managed need to expand too (Venture Capital Monitor – VeM, 2021).

In 2020 venture capitalists in Italy concluded 126 operations for an amount of €270 million, displaying an increase in the number but a substantial decrease in the volume compared to 2019, during which 95 deals for a value of €366 million were recorded (considering only operations performed by VCs alone or syndicates of VCs). The main reason is probably the steep rise of syndicated deals between VCs and BAs, which more than doubled in terms of number of operations (108 vs 53) and substantially grew in the amount (€325 million vs €230 million) from 2019 to 2020, becoming the most relevant type of operation in the early stage Italian capital market with reference to funds deployed (Figure 4) (Venture Capital Monitor – VeM, 2021).

Figure 4: Early stage Italian equity market in 2020



Source: (Venture Capital Monitor – VeM, 2021)

(Vacca, 2013) deeply analysed the Italian PE market, focusing in particular on VC. Venture capital is more developed in the North of the country, in particular the most active regions are Lombardy, Tuscany and Friuli-Venezia Giulia. The average duration of investments is 2.4 years (considering also failed firms which reduce the average), which is low compared to other countries. The mean amount of capital deployed is €2.7 million, with banks-related funds exhibiting higher average investments compared to the other subgroups, as expected given their greater financial capacities. A surprising finding is the mean age of target firms, which is 7.4 years; they are also large with respect to the typical size of small enterprises. Therefore, the investments of Italian VC funds are often not consistent with the definition of venture capital; this is true in particular for banks-related funds, which usually invest in wider and older companies. The degree of specialization by industry is low, since they generally invest in 2-3 sectors, and this is valid especially for larger funds. This can be the cause of their lower expertise compared to the VCs of other countries. There are however some exceptions, in particular with small highly-specialized funds active in advanced sectors, such as high-tech services and manufacturing (Vacca, 2013).

Turning to the impact of VCs on firms, (Granturco & Miele, 2011) claimed that many targeted businesses present a weak financial situation. The intervention of the fund, however, doesn't help to improve their conditions: companies are usually unprofitable both at the beginning and at the end of the investment, and their financial structure doesn't show significant changes, highlighting again the inability of Italian VCs to properly assist the venture. External equity usually replaces forms of non-bank debt; therefore it seems to have only a financial value,

missing the mentoring and consulting functions which typically characterize venture capital in other nations (Vacca, 2013).
In summary, the Italian VC market is underdeveloped, and it represents a small portion of the overall PE market. Moreover, funds invest considerable resources in non-advanced technology sectors and in more mature businesses, which do not belong to the traditional target of venture capital. They are also not very specialized, with a few exceptions, and this is a possible cause of their low expertise level. Consequently, they are often unable to positively impact the growth of funded firms, hence undermining their own returns and hampering the development of the whole market (Vacca, 2013).

1.3 BUSINESS ANGELS

The major alternative to the formal and organized venture capital market have always been business angels (BAs), which are the main actor of the so-called informal capital market. This kind of investor has always existed, and it is argued that it has played, and continues to play, a key role in the financing of newly created ventures, being as important as venture capitalists or even more. The angel market is estimated to be larger than the VC market in terms of total amount invested and number of firms funded in many countries, as highlighted by several studies (e.g. (Fenn et al., 1997)(Gaston, 1989)(C. M. Mason, 2006)(Wong et al., 2009)(OECD, 2011)(Wiltbank et al., 2009)(Hellmann & Thiele, 2015)).

Notwithstanding their importance, the hidden and anonymous features of angels' activities have led to a low level of consideration by scholars and the public opinion compared to the attention dedicated to the venture capital market. However, in the last few decades the situation has changed, and the angel market has become increasingly visible and considered by entrepreneurial finance literature. Nowadays the fundamental role of business angels, in particular in the earlier stages of venture financing, is widely acknowledged. The merit must mainly be recognized to the rise of different types of angel organizations which have pushed the formalization and professionalization of this market. Angel groups can also target later stages of the venture growth, directly competing with venture capitalists in their financing range. Hence, this kind of players is one of the most interesting to study.

Research on BAs is a growing field, given the recent relevance that the argument has acquired. Previous literature can be divided into three main thematic areas: BAs characteristics, BAs market and BAs investment process (Tenca et al., 2018). However, research on BAs presents several challenges. Their anonymous behaviour and the absence of disclosure requirements, which often make them "invisible", render problematic the collection of significant samples and the estimation of the "true population" (Tenca et al., 2018)(OECD, 2011); this also leads to an underestimation of their importance, which in turn results into lower consideration by policy-makers (OECD, 2011). Moreover, differences in legislation and the absence of cross-border data are the main reasons for which studies are usually country-specific; this, added to their heterogeneous nature, hampers the generalizability of findings (Tenca et al., 2018). Recently, thanks to the rise of angel organizations, data availability about BAs and their investments has increased; however, angels which are not part of these organizations are still invisible (Capizzi, 2015).

1.3.1 Definition and characteristics

Business angels have existed for centuries, but only in the last few decades their activities have become object of interest for the public. Defining who business angels are is not really straightforward: their heterogeneity renders difficult having a comprehensive definition which suits for all the BAs; indeed, different studies often use diverse denotations, hampering the comparability of findings (Capizzi, 2015).

A report commissioned by the EU in 2017 defined business angels as follows: "Business angels are high-net-worth individuals (HNWIs) who make direct investments with their own money, either with others or on their own, in unquoted businesses with which they have no family connection" (European Commission, 2017). The key difference between BAs and VCs is that the formers are not intermediaries, they invest their own money directly, as highlighted by this definition. Another key element is the absence of personal connections with the entrepreneur, which distinguishes them from investments made by the so-called FFF (family, friends and fools).

Even if they are highly heterogeneous, an attempt to describe the most common features of a business angel can be done. Typically they are former entrepreneurs, hence they have business experience. They usually invest in the industry in which they are experts and in start-ups which are geographically close to their residence, in order to better assist the ventures they fund. Their motivations for investing are usually not purely financial, as highlighted by previous studies: often they want to "give back to the community" by helping young entrepreneurs (OECD, 2011).

They are defined as informal capital providers, since they are not tied to the complicated contractual formalities of venture capitalists, and their investments are usually performed with a less rigorous decision-making approach: they often rely on their "gut" instinct and feelings (OECD, 2011). Like venture capitalists, business angels are very selective and present high rejection rates, and they mainly evaluate the human capital of the entrepreneurial team in the selection of deals.

They often acquire a small stake in the ownership of the target company, around 10-20%, in order to leave the control to the entrepreneur and in prevision of following financing rounds from other investors (OECD, 2011). Angels traditionally invest in the early-stages of a company life, even if recently the boundaries of their activities have become more blurred: later-stage angel investing has become more common, thanks also to the formation of angel groups and super angels with higher funding capacity.

It is often argued that the most important contribution of angels is not financial: they indeed usually take an “hands-on” approach in their investments, by helping the entrepreneur with their experience, strategic and managerial skills, and network of contacts. The active involvement of BAs in the target company is a key characteristic which they share with venture capitalists, and which distinguishes these equity providers from other sources of finance and it’s essential for their success. However, contributions from angels and VCs are usually different, considering that the latter are formal and complex organizations while the formers are single individuals (or a multitude of individuals still less organized than a VC fund). Moreover, angels typically adopt a “soft monitoring” approach to control the entrepreneur: they rely on the trust built through personal relationships, and not on contractual clauses, which are preferred by VCs.

Figure 5: Key differences between BAs and VCs

	BUSINESS ANGELS	**VENTURE CAPITALISTS**
Funding source	Angel’s own money	Investors
Company stage	Seed/Early stage (increasingly shifting to later stages)	Later/Expansion stage
Industry focus	Prefer industries they know	Often focus on one or two industries
Decision maker	Individual angel	Committees of professionals
Personal attributes	Experienced entrepreneur, 50 years old	MBAs, 40 years old
Analysis/due diligence	Minimal, informal, subjective, judgment	Extensive, formal, analytical, spreadsheets
Investment structure	Simple, common stock, no complex contractual arrangements	Complex contractual clauses, convertible preferred stock
Involvement	Hands-on	Strategic, board seat
Investment horizon	Longer, 5+ years	Shorter, 3-5 years
Exit strategy	Not scheduled, less important	Pre-scheduled, important, IPO or M&A
Expected ROI	Not pre-determined	Critical criteria to invest
Motivations to invest	Not purely financial, also personal	Purely financial
Monitoring approach	Soft-monitoring, based on personal relations	Based on contractual clauses

Source: adapted from (Morrissette, 2007)

1.3.2 Angel organizations and super-angels

Recently interest has arisen around new types of organizations in the angel market: angel groups, networks and associations. Each of them brings together several individual angels, and the terms are often confused or used interchangeably; thus, a proper distinction needs to be made.

Angel groups (or syndicates) consist entirely of investors, who evaluate and invest together in entrepreneurial ventures; they pool their capitals and competencies in order to make larger investments and increase the managerial skills they can offer (OECD, 2011)(*European Business Angel Network (EBAN)*, n.d.)(*Angel Capital Association (ACA)*, n.d.). The concept of angel group arose in the United States in the '90s and they have become increasingly important in filling the funding gap between the typical investment range of individual angels and the one of VCs (OECD, 2011).

Co-investment between angels is quite common nowadays, since it has several benefits: it allows individual angels to invest lower amounts of money in a single deal, thus increasing their possibility of diversification and reducing risk (Bonini et al., 2018); it favours the sharing of different know-how, helping younger BAs to learn from more experienced ones and allowing investments in a larger spectrum of industries; it permits investors to share the fixed costs of the angel activities: screening, due diligence, contracting and monitoring (Bonini et al., 2019). Co-investing does not only benefit investors, but also the venture being financed: the set of skills, networks and expertise offered by multiple angels is wider, and the amount of money which can be obtained is higher, allowing the increase of the scale of projects and fastening the company's development; this leads to a greater growth potential and higher probabilities of survival (Bonini et al., 2019). However, (C. Mason et al., 2016) argued that angel groups allow many passive investors to join, raising questions about the real behaviour of the group in the post-investment phase.

Business angel networks (BANs) are also composed of non-investors, such as service-providers. Their aim is to facilitate the matchmaking between angels and entrepreneurs; they don't make any investment or investment decision themselves (OECD, 2011). Members are responsible for their own choices, and they often co-invest with other angels in the deals promoted by the BAN, sharing costs on a deal-by-deal basis (Bonini et al., 2018). According to (Bonini et al., 2018), investments performed by BAN members (even when they invest alone) should be more informed and efficient, thanks to the knowledge and information sharing effect of the organization; in turn, this reduces the perceived risk, leading to an increase in the overall

capitals invested by the angel in new ventures; it also reduces the amount of soft monitoring needed, thanks to the information produced by the network. BAN members also enjoy a larger deal flow and given the increase in opportunities to invest they reduce their equity stake in each company, widening the diversification of their portfolio (Bonini et al., 2018). Sometimes BANs also offer internal academies for new angels and entrepreneurs (Bonini et al., 2019).

Angel associations (or federations) neither invest nor play a match-making role: their aim is to support the development of angel investing in their region or country and raise awareness about it, in particular towards policy makers (OECD, 2011).

A particular category of players, often argument of debate, is the one of super-angels, which are "serial entrepreneurs with very deep pockets who can fund start-ups at the same levels as venture capitalists" (OECD, 2011). They regularly invest more than 500,000 per deal and their presence has been increasingly observed in many markets, in particular in more developed ones (EBAN, 2021). Often they create their own funds, investing also other people's money; hence, it's often debated if they can be deemed angels, or they are just micro-VC funds. They are considered important because they have the potential of filling the gap between the typical investment range of individual angels and the one of VCs, like angel groups (OECD, 2011).

The steep rise of all these organizations has drastically changed the angel market, and also the behaviours and investment processes of individual investors. This shift should be reflected also in the research methods used in studies about BAs. However, as highlighted by (C. Mason et al., 2016), the change is often not recognized by scholars and not considered in sampling and methodologies used. (C. Mason et al., 2016) also questioned the validity of previous findings about characteristics, investment approach and impact on firms of angels in light of the raise of groups and networks, which exhibit different features from individual investors.

Nonetheless, in the last few years new studies about the impact of angel organizations and co-investment between angels have begun to emerge, and they mostly agree on the benefits which these changes can bring to angel investing. A key example concerns the scrutiny procedures of BAs: as explained before, individual investors often act instinctively, sometimes without even undertaking a proper due diligence; angel groups and networks help to increase the formalization of screening and investment processes, promoting the professionalization of the angel market. According to several studies (e.g. (Wiltbank et al., 2009)), this leads to better investment choices and enhances the returns of angels' investments (OECD, 2011).

1.3.3 Role in the market and impact on the firm

The activity of business angels is fundamental in fostering growth and innovation in many economies: they are indeed crucial in filling the funding gap left by VCs and banks between the demand and supply of early-stage capital for start-ups (Capizzi, 2015)(OECD, 2011). Additionally, thanks to their hands-on involvement, they fill the experience and reputational gaps typical of new ventures, which is also critical for their growth and survival (Capizzi, 2015). Thanks to their high heterogeneity, angels also have a broader coverage than VCs, both in terms of industry sector and geographical location (OECD, 2011). Thus, BAs are fundamental in non-technologically advanced sectors and in peripheral areas not reached by VCs, which are typically located in core regions (C. Mason et al., 2016).

Previous studies have often tried to understand if business angels have an impact on the ventures they fund, in terms of future performance and success and also follow-on funding. Given their heterogeneous nature, the effects of their intervention differ a lot according to the individual characteristics and investment behaviour of each BAs, which can have diverse influences depending on the features of the firm being funded and on the context. Education and experience (sometimes distinguishing between investment and entrepreneurial experience) have been used in many studies as proxies of the human capital of the angel, while the intensity of monitoring and coaching have often represented the investment behaviour. For instance (Croce et al., 2021) found out that a tight monitoring hampers the development of fast-growing ventures with high potential (gazelles), but positively influences slow-growing firms with high resilience (ponies); they also demonstrated that the entrepreneurial experience of the angel is useful for gazelles but not for ponies. These findings highlighted the importance of a fit between the angel and the firm's attributes. (Bonini et al., 2019) claimed that a trust-based involvement of the angel in the company, in the form of coaching and consulting, is beneficial for the future growth and survivorship of the start-up, while a high degree of monitoring (in the form of company visits for instance), destroys the trust between investor and entrepreneur, negatively influencing the venture's future performance.

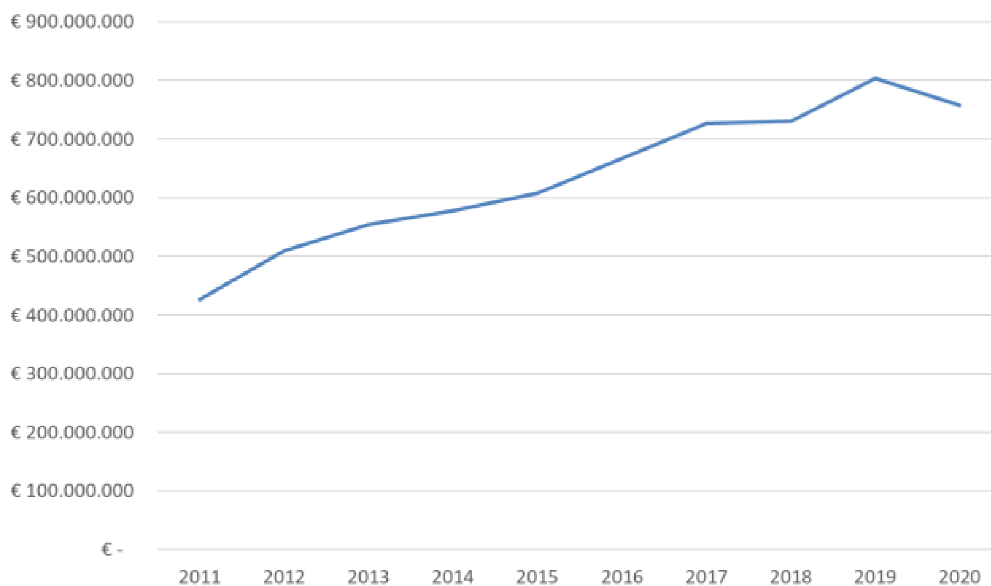
Angel groups and their impact have recently become an area of interest in research, as a consequence of their sharp rise. For instance (Kerr et al., 2014) found out that angel groups not only engage in an efficient screening process which selects the ventures with the higher growing potential, but they also have a positive impact on the future performance of the firms they fund. Their beneficial influence was confirmed by (Lerner et al., 2018), which extended the results to a wider set of 21 countries, claiming that the impact of the group is independent from the

level of venture capital activity in the region and from the entrepreneur-friendliness of the environment. Also (Bonini et al., 2019) showed that co-investment between angels increases the growth potential and probability of survival of the target company.

1.3.4 The angel market

As seen for venture capital, the US is dominant in terms of volume of angel activity: investments for $25.3 billion were estimated in 2020 (J. Sohl, 2021)(EBAN, 2021). However, a lot of countries are developing faster and faster: angels can be fundamental particularly in nations where organized capital markets are underdeveloped, hence the activities of VCs are limited.
According to the last EBAN report, after ten years of growth in 2020 the European angels' activities exhibited a contraction, caused by the Covid-19 pandemic (Figure 6). The visible part of the market recorded investments for an amount of €767 million, while in 2019 the amount was of €804 million. The observable population of angels counted about 32.200 members, mainly associated with networks or national associations. However, these data represent only the visible portion of the market, which is a minimal part of it: the overall angel industry was estimated to be 10 times larger (CSES, 2012), including approximately 322.000 investors closing deals for an amount of €7.67 billion in 2020. They probably constitute the main part of the European early-stage equity market, which was estimated to amount about €13.21 billion in 2020 (the other main players being early-stage VC funds and equity crowdfunding platforms) (EBAN, 2021).
The number of BANs in Europe is quite stable since 2013, floating around 400 units. They usually are non-profit associations, mainly funded through membership fees. Other sources of financing are sponsorship, parent-company funds, fees for events and government or EU funds; they typically do not charge target firms. An often highlighted problem, which can hamper their long-run sustainability, is the lack of resources caused by their inability to monetize the fruits of their work. The issue should not be underestimated since BANs represent the main deal source for angels of the old continent, hence their existence is paramount for the whole market (EBAN, 2021).

Figure 6: Visible angel market in Europe



Source: (EBAN, 2021)

The Italian angel market

Just like many angel markets around the world, the Italian one faces problems of lack of data and identification due to the invisible nature of its participants. The IBAN (Italian Business Angels Network) has been fundamental for the collection of data for many studies: it's the national association including individual angels, angel groups, regional BANs, and business incubators, and it's the only one recognized at the regulatory level. Each year the IBAN undertakes a survey to analyse the Italian BAs market and organizes also networking and training activities for its members (Capizzi, 2015).

According to a report from (Venture Capital Monitor – VeM, 2021), in 2020 in Italy 96 operations of business angels were recorded (without considering activities on equity CF platforms and syndicated deals with VCs) for a total amount of about €51 million. The market managed to resist to the Covid-19 pandemic, confirming the resilience of angels in pursuing their investments notwithstanding changes in the macroeconomic environment: the same indeed was observed in the aftermath of the 2008 crises; in these moments their role is more crucial than ever, considering the typical decrease of VCs' activities (Capizzi, 2015). The majority of deals were made in co-investment between angels (69 operations), confirming the increasing importance of this approach. As regards the geographical distribution, 74% of target ventures were located in the North of the country, with Lombardy alone accounting for 45% of the deals. The most important industry sector was the ICT one, with a share of 30% of the

operations. The net worth of the average Italian angel usually ranges from €500.000 to €2 million, of which less than 10% dedicated to angel investing, and he usually has less than four ventures in its portfolio (Venture Capital Monitor – VeM, 2021).
It is often argued that the development of a sounder ecosystem of BANs in Italy is crucial since they are the major source of deal flow for angels. However, as highlighted for European networks, Italian BANs lack of organization, financial resources and legislative recognition; these problems hamper their match-making role, damaging the whole angel market (Capizzi, 2015).

1.4 EQUITY CROWDFUNDING

In the last decades several new ways of raising capitals for young entrepreneurial ventures have emerged. The so-called alternative finance market is made-up by all the players outside traditional financial intermediaries, such as banks and VCs (Yasar, 2021). The increasingly heightened problems of raising funds for start-ups, mainly due to the recent economic crises and the continuous credit crunches, have pushed the development of these new sources of capital, which has also been favoured by the diffusion of online communication tools, on which many of them are based (Yasar, 2021). Their impact has increased swiftly, and they have become pivotal financing mechanisms for many SMEs (OECD,2020)(Yasar, 2021). The alternative finance market has indeed exhibited a substantial growth trend in recent years, reaching the overall volume of $113 billion worldwide in 2020 (Cambridge Centre for Alternative Finance (CCAF), 2021).

1.4.1 Definition and types of crowdfunding

Probably the most diffused and known alternative way of raising funds is crowdfunding (CF), born from the merging of crowdsourcing and microfinance concepts (Yasar, 2021)(Bradford, 2012). Defining crowdfunding is not simple considering that it's still a new and growing phenomenon, whose nature is continuously evolving and re-shaping. Hence, in the definition it's important to encompass possible evolutions of the concept, and the one of (Mollick, 2014) is probably the more suitable: "Crowdfunding refers to the efforts by entrepreneurial individuals and groups - cultural, social, and for-profit - to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the Internet, without standard financial intermediaries."

There are many types of crowdfunding and the boundaries between them are often blurred, considering that new and mixed typologies are continuously created: so far 16 different categories have been identified (Cambridge Centre for Alternative Finance (CCAF), 2021). Traditionally in the literature scholars recognize four main macro-categories of crowdfunding, based on what the backer receives in exchange for his contribution: reward-based CF, equity CF, lending-based CF and donation CF; however, mergers between these typologies have become increasingly common.

Donation-based crowdfunding is the simplest model, in which the supporter does not receive any return for his contribution: he just wants to embrace humanitarian, artistic or social causes (Mollick, 2014). In reward-based CF the backer receives a reward for his support, such as the

possibility to meet the creator of the project or some gadgets; when it's used to collect funds for entrepreneurial projects, the reward can also be the possibility to receive the product which is being developed in advance, resembling a pre-selling (Mollick, 2014). Lending CF allows backers to lend money to the entrepreneur, expecting capital to be repaid with interests. Lastly, in equity CF funders effectively become shareholders of the company, investing in its stocks or similar securities; hence their returns vary with the performance of the venture. There are also other investment-based models in which the funder does not become shareholder of the firm but the returns from the investment are still tied to the results of the business, such as profit-sharing and real-estate investment models (Mollick, 2014).

As of today, the absolute majority of the crowdfunding market is composed by debt-based models, but the relevance of equity crowdfunding is growing steadily: it's considered a promising way of financing new ventures for the near future, raising an increasing attention by regulators, scholars and professionals (Yasar, 2021). Its two main interesting features, which distinguish it from traditional sources of finance, are the disintermediation and democratization of capital markets. Disintermediation because it eliminates traditional financial intermediaries, allowing direct investments in target companies, with the help of a platform which acts as a matchmaker. Democratization because it permits also retail non-professional investors to fund innovative companies: considering the small amount which can be invested and the simplicity of the process, basically everyone can participate in crowdfunding campaigns (Yasar, 2021).

1.4.2 The equity crowdfunding campaign: how it works

Crowdfunding is based on platforms whose aim is to match investors with entrepreneurs seeking funds. Entrepreneurs, called "founders", start campaigns in which they publicly expose their firm in the platform; then investors, called "funders" or "backers", can decide to finance projects based on the information provided. Not everyone can use equity CF to raise funds: public companies, listed on stock exchanges, are forbidden to do that (Yasar, 2021); moreover, every platform has its own criteria to decide who can launch campaigns. This is a key aspect for the future of the market: the diffusion of low quality projects can endanger the trust of investors towards this financing mechanism, hampering its diffusion.

Some platforms also have a pre-launch phase, in which the campaign is "private" and only selected individuals can provide contributions. This can have various purposes: to allow family and friends to invest first, or to verify that the project already has some backers in order to

ensure its seriousness; for instance sometimes only campaigns which reach a certain investment threshold in the pre-launch stage are permitted to go public (Yasar, 2021).
Entrepreneurs must set a funding goal, based on the amount of capital they need. This is a key step since it can be crucial in deciding the sort of the campaign and the future of the company: if it's too low, it can be insufficient to develop the project, but if it's too high it lowers the probability of a successful fundraising operation, as shown by several studies (e.g. (Li et al., 2016)(Vulkan et al., 2016)(Piva & Rossi-Lamastra, 2018)). Moreover, the achievement of the funding goal can be a compulsory requisite to collect the money provided by backers, depending on the model the platform adopts: in the "all or nothing" one funds are provided to founders only if the target is reached, otherwise they are given back to investors, while in the "kept it all" model funds are always granted to the firm regardless of the target achievement (Yasar, 2021). The amount of equity offered is important as well, not only for the success of the fundraising activity but also for the future of the firm and the likelihood of receiving follow-on financing (see chapter 2.3.2). The duration of the campaign must also be chosen, usually ranging from 30 to 60 days, and also this aspect can influence its outcomes, with different views on the argument (Yasar, 2021).
When campaigns are rapidly successful and reach their target before the deadline, there are two possibilities: one is to follow the first-come-first-served principle, which means that investors can buy stocks only until there are some of them available, hence when shares are over the campaign stops; the other possibility is to wait until the deadline and collect all the offers, and then there are two ways to select to which investors the securities are sold: an auction mechanism in which who has offered more take them, or let the entrepreneur choose from who to take funds (Schwienbacher, 2019)(Yasar, 2021). If the latter applies, this choice is important considering the different intake that backers can provide to the firm; experienced and professional ones are usually preferred in light of the wider set of non-monetary contributions they can offer.
At the end of the campaign, in case of successful outcome, the platform usually takes care of contract signature (online) and settlement of payments, often keeping a percentage of what is raised as a fee (Yasar, 2021). As regards the delivery of voting rights to new shareholders (when they are offered), there are two ways in which it can be handled: by creating a vehicle in which to pool contributions together and invest as a single shareholder, or by giving voting rights directly to individual investors; as discussed in the second chapter (section 2.3.2), this aspect can be crucial in determining the likelihood of follow-on funding for the company (Yasar, 2021).

Some platforms continue to follow and assist ventures and backers for long time after the end of the campaign, providing them different types of services and eventually also assistance for exiting the investment when needed. Some studies argued that this has positive effects, increasing the annual funding success rate of matchmakers (Yasar, 2021).

1.4.3 Advantages and potential benefits

Given its nature and characteristics, equity crowdfunding is believed to have the potential of filling the persistent funding gaps of early-stage capital markets, widened by the recent financial crises which have led to a decline of traditional intermediaries (Yasar, 2021). However, its role with respect to classical financing forms is still debated: some authors claim that it is complementary to them given its gap-filling potential and its usefulness for VCs in evaluating the prospects of new ventures, acting as a stamp of approval (Yasar, 2021); others argue that it hampers future financing from long-established players, in particular VCs, and that it's a substitute of BAs in early-stage financing. The question is deepened in the second chapter (section 2.3.2).

Crowdfunding is also deemed to lower the cost of access to capital for several reasons. First, the improved matching between projects and people interested in them leads to a reduction of search costs, also favoured by the online channels (which reduce communication costs too) (Yasar, 2021). Second, the increase in the information conveyed to investors, such as hints about other investors' interests, market potential for the product and future possible modifications of it, reduces information gathering costs (Agrawal et al., 2014)(Yasar, 2021). Finally, the possibility to deliver additional rewards in addition to equity returns, mixing it with the reward-based model, decreases the cost of capital (Yasar, 2021). (Cholakova & Clarysse, 2015) investigated mixed type campaigns in which investors can pledge and invest at the same time in a project, and they found out that individuals are likely to pledge in the same campaign in which they invested in equity. This explains the rise of mixed type platforms and their success, providing hints on the positive effects of bundling different types of returns, which can widen the set of possible strategies for founders (Cholakova & Clarysse, 2015).

Another possible advantage of CF is the overcoming of geographical constraints, typical of VCs and BAs: thanks to the online communication channels, backers can fund projects from everywhere. However, some studies argued that investors still prefer firms closer to their residence, hence the argument is still debated.

Lastly, crowdfunding can also help the venture with non-monetary contributions, even if of a different kind compared to the ones of VCs and BAs: for instance it can be really useful in evaluating the market sentiment and the potential demand of a product. Investors can provide useful feedback, give advice and introduce the entrepreneur to their network. The main strength point is that contributions come from many different people, with different expertise and backgrounds, allowing founders to benefit from a wider set of competencies (Yasar, 2021).

1.4.4 Risks and challenges

Equity crowdfunding also presents some risks to be aware of and some challenges to overcome in order to become an effective and diffused way of raising finances for new ventures.
As concerns the investor's side, the first one to consider is the risk of fraud or running of fake campaigns. However, in the last years platforms have developed sounder systems of screening and control, also due to increased regulation. Moreover, reputation turns out to be a fundamental mechanism to address this problem (Yasar, 2021)(Liang et al., 2019). Another risk for investors is the failure of the start-up being financed, which means they lose all the money invested. Of course this is a risk for every kind of equity investment and not only crowdfunding, but in this context the problem is exacerbated by several factors: first, the typical ventures which run campaigns belong to the seed and early-stage category of investments, thus they are intrinsically riskier and present higher failure rates; second, the ease of accessing this source of finance increases the presence of incompetent creators; lastly, the unprofessional and often unexperienced nature of backers reduces their ability to evaluate projects (Yasar, 2021). As regards the last point, it has been demonstrated that the typical equity crowdfunding investor does not conduct an adequate due diligence before investing, due to its high costs compared to the amount invested and the lack of expertise to perform it (Ahlers et al., 2015)(Agrawal et al., 2014)(Vismara, 2016). In a study on loan-based CF, (Pierrakis & Collins, 2013) showed that on average crowdfunders dedicate only 15 minutes to due diligence processes before investing (Décarre & Wetterhag, 2014). All of these factors lead to an increase in the number of low quality ventures funded, putting at risk the survival of the whole system (Yasar, 2021). Again, reputation turns out to be a key mechanism to address this issue: to survive, platforms need to demonstrate to be the cuddle of high quality projects, increasing the trust of the public in investing; hence, they are pushed to enhance their screening and selection procedures. In the last few years, noteworthy improvements have been made in this field and many platforms have enhanced their due diligence processes and have created several new mechanisms to foster

investors' trust (e.g. reputation rankings, syndicated deals with professional funders, co-investing with backers) (Yasar, 2021)(Liang et al., 2019).
Another risk for backers is the illiquidity risk, considering the thinness of the secondary market in which shares can be sold. As equity crowdfunding diffuses the problem is increasingly less worrying, considering the higher number of investors in the market. However, it's still an issue as of today: several initiatives have been put in place to address it, but none has been particularly successful. Lastly, the risk of failure of the platform needs to be contemplated (Yasar, 2021).
On the side of the entrepreneur a problem to consider is imitation, caused by the public disclosure of information on the product being developed; this is a concern in particular for more innovative ventures (Yasar, 2021). Furthermore, raising small amounts from a high number of individuals creates difficulties in managing a large pool of shareholders. This has also important consequences for the future of the company: having a dispersed ownership base can discourage VCs to invest in the firm, making follow-on financing harder (see chapter 2.3.2) (Yasar, 2021). Another risk to appraise is the reputational one in case of failure to reach the target of the campaign, which can threaten the survival of the firm itself (Walthoff-Borm et al., 2018). Crowdfunding also lacks the non-monetary contributions usually provided by VCs and BAs, which often turn out to be fundamental for the growth of the business. Additionally, the effective contribution of CF outside capital outlined before (mainly information on market demand and product development) is debated: the potential of receiving help from a multitude of investors is hampered by the fact that not everyone actively participate after taking part in the investment; indeed, previous studies found out that only a minority (about a third) of non-professional investors are likely to actively help firms which they fund, and the degree of interaction is much lower compared to angel and VC investing, due to only online communication via the platform (Décarre & Wetterhag, 2014)(Belleflamme et al., 2013). As explained by (Dorff, 2014) this is probably a consequence of the small amounts typically invested which do not justify large time expenditures (Décarre & Wetterhag, 2014).

1.4.5 Literature on equity crowdfunding

Crowdfunding is still a recent and developing phenomenon, hence literature about it is still narrow and results are often contradictory, having limited empirical evidence. Moreover, legislative and cross-platform differences hamper the generalizability of findings. The importance of quality signals, factors for campaigns' success, post-campaign outcomes, and the

analysis of motivations which guide investors represent the main topics which have been investigated as of today (Yasar, 2021).

Signals of quality

Efficient capital markets are the ones able to convey capitals to firms which make a better use of them. In the financing of new enterprises this is a key concern, since ventures which receive funds are more likely to survive and succeed; hence ensuring that the ones with higher quality are funded is essential to enhance progress and innovation, benefitting the whole society. Consequently, many studies have been performed on traditional financing sources for start-ups, such as VCs and BAs, to evaluate their efficiency in selecting good quality ventures. Given the absence of directly observable indicators to assess the value of a firm, due to the lack of information, investors need to use indirect signals to infer it. The study of which signals they rely on and if they really are good predictors of ventures' quality has been of scholars' interest for many years. The stepping stone of this research stream is the signalling theory (Micheal Spence, 1973)(Michael Spence, 2002), which states that effective signals share two characteristics: they must be observable, which means visible and understandable from investors, and costly to produce, so that only high-quality agents, for which payoffs are higher, have incentives to send them and dishonest signals are not rewarded (e.g. education is costly to acquire, but less costly for high-quality agents, hence it's a good signal) (Piva & Rossi-Lamastra, 2018)(Ahlers et al., 2015). In order to be effective and fill the informational gaps of receivers, signals also have to fit with the characteristics and needs of the latter; moreover, they must not be ambiguous, hence need to be clear and not open to multiple interpretations, to make easier their understanding (Piva & Rossi-Lamastra, 2018).

Crowdfunding has been subject to the same research question, but given the novelty of this financing source, answers are still debated. The ability of the crowd to pick out quality ventures has often been explained using the concept of "wisdom of the crowd" according to which "*Large groups of people are smarter than an elite few, no matter how brilliant – better at solving problems, fostering innovation, coming to wise decisions, even predicting the future (Surowiecki, 2005)*" (Décarre & Wetterhag, 2014). Many studies claimed that group decision-making processes are more effective than individual ones (Ray, 2006)(Howe, 2008)(Budescu & Chen, 2015), hence some scholars argued that the overall mass of crowdfunders is efficient in selecting the most promising projects to support (Décarre & Wetterhag, 2014).

On the other hand, critics of crowdfunding asserted that CF investors do not perform an adequate individual due diligence, acting as free riders on the screening and selection processes of others. In this situation the mechanism behind the “wisdom of the crowd” does not work, since backers just adopt a herding behaviour instead of relying on their personal evaluation; they do not respond to signals of quality, using irrational motives to decide which ventures to fund (e.g. just looking at projects with more backers). Therefore, according to this view crowdfunding it’s an inefficient source of capital which leads to frauds and misuse (Décarre & Wetterhag, 2014)(Bogost, 2012)(Mollick, 2014)(Agrawal et al., 2014)(Hornuf & Schwienbacher, 2014).

However, as explained in the next paragraph (see also section 2.3.1), several studies demonstrated that CF investors are good in selecting the correct hints in which to rely on to infer the quality of a venture, even in a context with extremely high information asymmetries. Signals are even more important in this situation, given that deep analysis and due diligence to assess ventures’ quality are too costly compared to the typical small amount invested, and too difficult to perform for unprofessional investors (Ahlers et al., 2015); moreover, the early-stage context and the small cost of access to this financing source, which increase the likelihood of low-quality ventures applying for it, reinforce the importance of relying on the right clues to evaluate projects’ quality (Piva & Rossi-Lamastra, 2018).

Another theory used to explain which kind of information investors use to take decisions is the ELM (Elaboration Likelihood Model) proposed by (Petty & Cacioppo, 1986) and employed in several fields. This framework distinguishes between two routes through which the information receiver can be persuaded: the central route, which considers the true merit of the information (hence it’s directly correlated to quality) and the peripheral route, based on cues and inferences (not logically related to quality) (Li et al., 2016). (Li et al., 2016) argued that both types of signals are used by investors in an equity CF context, but the central route has a stronger impact on fundraising performance, hence confirming that funders are able to infer the venture’s quality from hints which really represent it.

Factors for campaigns’ success

Which are the signals used by the crowd to infer the venture’s quality has been of great scholarly interested in the last decade. The presence of these signals is associated with better fundraising performance, hence they are the factors which lead to campaigns’ success. The most important and debated are the ones related to three typologies of capital: human, intellectual and social.

(Ahlers et al., 2015) found out that equity crowdfunding investors use human capital as the main proxy to evaluate ventures' quality, like professional investors, such as VCs and BAs. This was confirmed by several subsequent studies, for instance by (Li et al., 2016) in the Chinese market and by (Piva & Rossi-Lamastra, 2018) in the Italian one. The last study went deeper in the analysis, showing that in particular business education and previous entrepreneurial experience are good predictors of fundraising success in equity crowdfunding, because these signals are not ambiguous and better fit the informational needs of investors (Piva & Rossi-Lamastra, 2018).

The role of intellectual capital as a signal of quality has been debated, and findings have often been contradictory. (Ahlers et al., 2015) argued that it has no significant influence, but subsequent studies presented mixed results. (Battaglia et al., 2022) tried to shed light on the issue analysing the Italian context and using different proxies for intellectual capital, compared to previous works which mainly focused on patents. They showed that all the measures of intellectual capital they employed (patents, R&D expenditures and entrepreneurial team education level) have a strong positive impact on the fundraising performance, highlighting its validity as a credible signal of quality for investors.

The last main signal analysed is social capital, defined by the OECD as "networks together with shared norms, values, and understandings that facilitate co-operation within or among groups" (OECD, 2018), and often proxied by the social network connections of founders (Battaglia et al., 2022). Larger network connections are considered to have a positive impact on fundraising performance in reward-based crowdfunding, but results for the equity model are again mixed. (Ahlers et al., 2015) argued that it has little influence, but their findings were contradicted by subsequent studies. Specifically, in the Italian context both (Piva & Rossi-Lamastra, 2018) and (Battaglia et al., 2022) claimed that it is positively related to fundraising performance, while (Vismara, 2016) had the same result in the UK market.

In a risky and opaque context such as the equity crowdfunding one, when making investment decisions potential backers do not only evaluate the quality of the project they are analysing: other criteria are important as well, such as the level of uncertainty which surrounds the investment proposal; investors prefer projects with lower level of uncertainty and risk, hence the less opaque ones, for which more information is available. As shown by (Ahlers et al., 2015), providing detailed information about risk (specifically financial projections) and retaining a higher share of equity (signal that the entrepreneur believes in the quality of the project, and he's willing to bear its risks) can reduce information asymmetries and so the perception of uncertainty of investors, increasing the funding probability. (Battaglia et al.,

2022) verified the validity in the Italian context of these findings, while (Li et al., 2016) confirmed that backers value a higher level of detail about the project, such as updates during the campaign and video on it, also in the Chinese market. The impact of equity retention on the success of the campaign was also corroborated by the findings of (Vismara, 2016) with a sample of UK firms.

Lastly, the role of other investors' behaviour has been investigated by several studies, and it's considered to have a strong influence on investment decision-making in the CF context. The importance of a lead investor can be linked to the intersection of different funding sources, which is discussed in the second chapter (section 2.3.1).

Post-campaign outcomes

Another interesting area of research is the investigation of the impact of equity crowdfunding on the performance of the ventures collecting funds. Some authors have tried to identify which characteristics of campaigns can lead to different outcomes, influencing the future of the firm in different ways; however, the number of studies is limited, due to the lack of data caused by the novelty of this financing mechanism. (Décarre & Wetterhag, 2014) argued that larger campaigns, in terms of number of investors, are positively related to sales and profit growth, as a result of the enhanced visibility of the company which leads to an expansion of the customer base. The features of the campaign can also have a strong impact on the likelihood of receiving follow-on funding, but this aspect is analysed in the second chapter (section 2.3.2).

Motivations to invest

Lastly, the motivations for investing in CF campaigns have been examined. This is a tough area of research because the majority of CF backers are unprofessional investors, which makes information gathering difficult (Piva & Rossi-Lamastra, 2018).

Traditional wisdom suggests that in equity CF investors are driven mainly by financial reasons, unlike other models of crowdfunding in which different motives can impact. (Cholakova & Clarysse, 2015) confirmed that backers are guided almost only by financial rationales in the equity model, and other motivations have no significant influence. However, (Feola et al., 2021) argued about the existence of distinct segments of investors driven by different reasons to invest and characterized by dissimilar investment behaviours; the authors were able to cluster the Italian market into four groups of backers with diverse characteristics. Their findings can foster the use of marketing segmentation techniques on the CF market: entrepreneurs and platforms

can divide potential investors in groups on the basis of relevant variables and adopt targeted marketing strategies (Feola et al., 2021).

To conclude, it's good to remind that divergences in findings from different studies can be caused by variations in the country and time period analysed: indeed crowdfunding, being a new phenomenon in rapid development, is highly heterogeneous and continuously changing. Differences in legislation, culture, economic and financial panorama and state of development of CF can lead to contradicting outcomes for studies performed in diverse nations. The same holds for the time period considered, even if it's only a few years different: for instance, when CF was still emerging, the knowledge of investors was limited and information asymmetries higher, hence probably the role of signals was more evident (Piva & Rossi-Lamastra, 2018).

1.4.6 The crucial role of legislation

Equity-based crowdfunding is, unlike the other models, a way in which people can invest in companies, sharing the risk of the project; hence, information asymmetries are higher since investors need to evaluate the ability of the company to create equity value and not only the ability to deliver a product, like in reward-based models (Agrawal et al., 2014)(Yasar, 2021). Additionally, amount pledged and campaign goals are usually higher, moving greater amounts of money (Yasar, 2021)(Vulkan et al., 2016). Consequently, equity crowdfunding needs to be carefully regulated just like traditional investments, since investors bear the same kind of risks. Moreover, these risks are amplified by the intrinsic higher uncertainty of new ventures and by the typically non-professional nature of investors; hence, the regulation of equity CF is a crucial but also delicate matter.
As already discussed, legislation is a defining element of the nature and impact of equity crowdfunding in a country. As of today, differences between nations are still relevant, highlighting an extremely fragmented picture. This is not beneficial for crowdfunding, since it hampers cross-border investments and the diffusion of this source of finance. It also renders difficult for platforms to grow internationally, making unlikely for them to become global leaders. Larger platforms can better spread fixed costs, becoming cheaper and in turn increasing the diffusion of equity CF (Schwienbacher, 2019).
Legislative choices on CF represent a trade-off between the protection of investors with more restrictive rules and the stimulation of innovation, which requires to leave the matter less regulated (Tuomi & Harrison, 2017). Some key points can be analysed to understand the

orientation of a country: the existence of a specific crowdfunding regulation (not all countries explicitly regulate it, relying on traditional equity emission regulation); requisites for platforms, such as registration or specific authorizations, anti-laundering rules, duty to verify issuers and allowance to advertise campaigns; requisites for firms to launch campaigns, like capital requirements, provision of a formal prospectus (like the one of public markets), provision of an audited financial statement and risk declarations; requirements for investors, such as maximum investment limits (per deal or annual), requisites to invest (e.g. accreditation) and limits on the sale of shares (Tuomi & Harrison, 2017).
The role of legislation in the growth of equity CF has been one of the main concern of scholars, who have tried to suggest policy improvements. (Tuomi & Harrison, 2017) argued for the elimination of restrictions on the types of shares which firms are allowed to sell during equity CF campaigns: indeed preferred shares or convertible bonds are more suitable to avoid excessive dilution of the company's ownership in prevision of follow-on funding. They also argued in favour of the "all-or-nothing" model, to protect people from overoptimistic bets and to avoid them losing money in projects which don't have enough funds to be undertaken; moreover, it also pushes founders to set more realistic goals. Additionally, (Tuomi & Harrison, 2017) suggested the elimination of aggregated investment limits, since they reduce the possibilities of diversification, increasing the risk for the investor. Lastly, the provision of training from the platform on how to value a business was encouraged (Tuomi & Harrison, 2017). (Palin, 2016) proposed the adoption of insurance levies and the use of the pooled approach, collecting all the contributions in an investment vehicle, in order to decrease risk (Tuomi & Harrison, 2017).
To conclude, also platforms and their rules have a strong impact on the diffusion of equity crowdfunding: they can indeed fill gaps left by the legislation and test new solutions before they are transposed into laws.

EU and Italy regulation

As concerns the EU, the lack of common rules has hampered for years cross-border investments, increasing compliance and operational costs for platforms and hindering the scale-up of their services provision. This has slowed the growth of the market which is now underdeveloped compared to other areas, such as the UK and US (*European Commission*, n.d.). In 2021 finally entered into force the "Regulation on European Crowdfunding Service Providers (ECSP) for business" (Regulation (EU) 2020/1503), which uniformed rules about

investment and lending-based CF models across the EU, allowing platforms to offer their services in all the EU territory with a single authorisation. The aim of this regulation was to foster the use of this alternative form of funding and reduce the dependence of firms from the banking system. Moreover, investors protection was uniformed and enhanced with clearer rules on information disclosure requirements (for both platforms and founders), governance and risk management, and supervisory powers of national authorities (*European Commission*, n.d.).
Italy was the first country in the world to issue a specific regulation on equity crowdfunding, in 2012 (Law 221/2012); however, it was too restrictive and hampered the development of the market in the following years. Initially only innovative start-ups, firms with specific requirements identified by the Italian regulation and enrolled in a special section of the Companies Register, were allowed to collect funds through equity crowdfunding; with sequential laws the spectrum of authorized companies was widened, and with the 2017 Budget Law all Italian SMEs (following the definition of the EU recommendation no. 2003/361) were permitted to run campaigns (Law 232/2016). The market is supervised by the CONSOB, the Italian Financial Market Supervisory Authority, which holds a special register of online portals authorized to operate as equity crowdfunding platforms (Register of Platforms). The latter are continuously monitored by the CONSOB and are prohibited to perform investment services and payments services (the transfer of funds must be made by banks or investment companies). The value of shares offered in the campaign cannot exceed €5 million, and at least 5% of the securities must be subscribed by professional investors, banks or incubators. Each start-up is responsible for the reliability, truthfulness, and accuracy of the information about the project provided on the platform, since it's not subject to the approval of the CONSOB (Battaglia et al., 2022).
The 2017 regulatory update was fundamental for the diffusion of this fundraising method in the Italian market, dominated by SMEs: besides widening the spectrum of companies allowed to raise funds in this way, it reduced the cost of fundraising, and it included business angels in the definition of professional investors, in order to facilitate the achievement of the 5% threshold. Indeed, after this reform the Italian equity CF market has exhibited an exponential growth, as described in the next paragraph (Battaglia et al., 2022).

1.4.7 The equity crowdfunding market

The alternative finance market is dominated by lending-based CF, who represents more than 90% of the global volumes of the former, although its growth is slowing down in favour of the

rise of investment-based models. Focusing on equity crowdfunding, it represented only about 1% of the total alternative finance market in 2020; however, its relevance has grown steeply in the last few years: from a total volume of about $1 billion in 2019 it rose to $1.5 billion in 2020, a 50% increase. One of the first equity crowdfunding market to develop was the UK, and nowadays it's the largest one in the world. In 2020 it reached the value of $549 million, accounting for about a third of the whole global volumes alone. The US and Canada exhibited the steepest increase between 2019 and 2020, more than doubling capitals invested (from $142 million in 2019 to $331.5 million in 2020). Also the European market (without considering the UK) grew in the period (from $224 million to $280 million) (Cambridge Centre for Alternative Finance (CCAF), 2021).

Although the growth of the Italian market has been small compared to other countries, such as the US and UK, noteworthy improvements have been made in the last few years (Battaglia et al., 2022). The number of successful equity crowdfunding campaigns has displayed an exponential growth in the last decade: from just 4 in 2014, it reached the impressive number of 169 funded projects in 2021. The greatest laps took place between 2017 and 2018 (from 47 to 103), thanks to the changes in the legislation, and between 2020 and 2021 (from 122 to 169) probably due to the recovery after the Covid-19 pandemic, which slowed but didn't stop the growth (122 funded companies in 2020 vs 119 in 2019). As regards the overall capitals gathered, a similar path can be observed: from just €1.3 million in 2014, the market rose to the amount of over €90 million in 2021, nearly doubling 2020 (€47 million). Almost 17.000 investors participated to equity CF campaigns in 2021, while in 2014 they were only 134. The average amount collected by companies in 2021 was of €534.000, and the mean number of investors per campaign was 99, with an average amount invested of €5.200 (*Crowdfunding Buzz*, n.d.).

As of today in the CONSOB register there are 28 equity CF platforms enrolled (not including only real estate ones) in the ordinary section, plus 2 in the special one (one international with the MiFID passport) (*Crowdfunding Cloud*, n.d.). The first Italian equity crowdfunding platform was SiamoSoci, established in 2011. Following the issuance of the first regulation on the matter, requiring the inscription on a special register and requisites to reduce operational and legal risks, in particular of litigation and fraud, the platform started to change its activity. In 2014 it created Mamacrowd, which is nowadays one of the most important Italian portals along with Crowdfundme (*Crowdfunding Buzz*, n.d.)(Battaglia et al., 2022).

1.5 OTHER SOURCES OF CAPITAL FOR START-UPS

Incubators and accelerators

One of the first supporter of start-ups in the very early stages of their life cycle are incubators. They were first created in the US in the '50s and nowadays they are diffused worldwide, providing both financial and non-financial resources to young entrepreneurial ventures. Recent studies estimated around 7,000 incubators globally (*The International Business Innovation Association (INBIA)*, 2017)(Mian, 2021). Finding a comprehensive definition of incubators has always been challenging for scholars due to their highly heterogeneous nature. Their aim is to accelerate the growth of young companies by providing them resources and services, such as physical space, networking, mentoring, capital or access to it. They can be both for profit or non-profit organizations, and this distinction influences the way in which they intervene in the company and their aims: the ones seeking profit are more likely to acquire equity stakes in the firm to benefit from its future growth, while non-profit ones typically require a fee for their services. Their work is beneficial for the whole society since it facilitates the diffusion of new technologies and the growth of the entrepreneurial ecosystem of the region in which they operate. As a consequence, they are often used by policymakers to promote the development of the economy of the country; for instance the Italian government has a list of certified incubators which are guaranteed fiscal and legal incentives [2]. Many of them, in particular in Europe, are the result of a private-public partnership or stem from public bodies such as universities; in the US instead they are usually associated with VC funds (*The International Business Innovation Association (INBIA)*, 2017)(Mian, 2021)(OECD, 2020).

Accelerators represent one of the newest incubation models: the first one was created in 2005 in the Silicon Valley (Y-Combinator). Their aim is to fasten the scale-up process of young ventures, typically lean and digital-oriented. Their distinguishing feature is that the acceleration process takes place in a fixed time period (usually 3-6 months) unlike other incubation models in which there is no predetermined time frame for the exit. Entrepreneurs are immersed in an intense cohort-based program in which they get in touch with other entrepreneurs and professional players of the entrepreneurial ecosystem such as business angels and VCs, and it provides them know-how which can usually be acquired in years; typically the program ends with a "demo-day" in which start-ups are presented to potential investors, hence facilitating the

[2] Website of the Italian Ministry of Economic Development (Ministero dello Sviluppo Economico): https://www.mise.gov.it/index.php/it/impresa/competitivita-e-nuove-imprese/start-up-innovative/incubatori-certificati

access to follow-on capital. Moreover accelerators often provide capital themselves by directly investing in the company. Their support is more targeted and focused on management skills compared to the one of other incubators, which is typically more comprehensive. According to several studies, their impact on the economy of the country is extremely positive, favouring the development of the whole entrepreneurial ecosystem and increasing VC activities in the region; moreover, they are useful for scholars to easily observe entrepreneurial learning and start-ups growth (Hochberg, 2016)(Mian, 2021)(Drover, Busenitz, et al., 2017)(OECD, 2020)(Hochberg & Fehder, 2015).

Figure 7: Key differences between incubators and accelerators

	INCUBATORS	**ACCELERATORS**
Objective	Support business creation and development	Accelerate start-ups growth
Space provision	Usually performed	Occasional, more emphasis on business support services
Training seminars	Comprehensive, entrepreneurship skills	Focused, management skills
Mentoring	Business model and initial strategy	Intense, focus on growth strategy
Other services	Networking Access to capital Business services (e.g. accounting) Specialized equipment	Networking Access to capital Demo-day to present start-ups to potential investors
Service provision	On-demand	Mandatory, structured programme
Lenght of support	Up to 3-4 years, or more	Fixed, 3-6 months
Selection criteria	Admissions are on-going, selection based on the incubator entry policy	Admissions in cohorts through a competitive selection process
Business model	Mostly non-profit, costs covered by rental fees Often subsidized	Mostly for profit, direct investment in companies

Source: adapted from (Mian, 2021)(OECD, 2020)

Corporate venture capital

Many large corporations are entering the venture game by directly investing in the equity of innovative start-ups: this form of financing is known as corporate venture capital (CVC). Companies undertake these investments to widen their R&D strategy by including also external

sources of innovation (open innovation); the aim indeed is to facilitate the assimilation of new technologies, the entry in new markets or secure future strategic alliances with promising ventures (Drover, Busenitz, et al., 2017).
As regards the target firm, being financed by a large corporate investor can bring several benefits such as industry knowledge, access to customers and complementary assets; moreover, they usually have huge financial capabilities compared to other sources of equity. On the other hand, the risk of imitation is heightened, in particular when the funder belongs to the same industry sector of the venture (Drover, Busenitz, et al., 2017).

Non-equity investors

The panorama of potential start-up capital providers is completed by non-equity financing investors: banks in particular, notwithstanding the predictions of many theories in the literature, represent a key player in the financing of these firms, as confirmed by recent studies. This is particularly true in bank-centric countries with underdeveloped capital systems, such as Italy. Also public players, such as regional development agencies or other kind of agencies (e.g. EASME – EU Executive Agency for SMEs) are often important in stimulating the growth of the entrepreneurial ecosystem through their direct or indirect intervention in the capital of start-ups.

2. THE INTERPLAY BETWEEN DIVERSE SOURCES OF CAPITAL: HOW CAPITAL PROVIDERS INTERACT IN THE MARKET

2.1 THE COMPLEXITY OF RELATIONS BETWEEN INVESTORS

2.1.1 The new entrepreneurial finance landscape

In the last few years the development and professionalization of capital markets have led to a substantial increase in the amount of data and to an improvement in their level of detail, allowing more deep and precise analyses. As a consequence, several pillars of entrepreneurial finance research have been questioned by new findings, which defied existing theoretical foundations and traditional wisdom. The role of external debt, in particular of bank loans, which were previously deemed inaccessible to start-ups, have been reconsidered: several studies demonstrated that it represents an essential source of funds for many young ventures, also among the ones backed by professional equity providers (Robb & Robinson, 2014). Also the importance of internal funds and bootstrapping techniques, which were often deemed insufficient, is being revaluated (Winborg & Landstrom, 2001)(Baker & Nelson, 2005)(Bellavitis et al., 2017). Financial bootstrapping "refers to the use of methods for meeting the need for resources without relying on long-term external finance from debt holders and/or new owners" (Winborg & Landstrom, 2001)(Bellavitis et al., 2017). Many studies revealed the relevance of this practices to small ventures: for instance (Moritz et al., 2016) argued that a third of SMEs in the EU rely exclusively on internally generated funds. An ECB survey suggested that the reliance on these financing forms is not usually caused by difficulties in accessing credit, as it was thought in the past, but on strategic choices of entrepreneurs to avoid equity dilution and loss of control on the governance of the firm, as also argued by other researchers (European Central Bank, 2019)(OECD, 2020)(Grichnik et al., 2014)(Winborg, 2009)(Bellavitis et al., 2017).

Moreover, technological change has pushed the raise of a set of new players in this field, which have twisted and re-shaped the whole ecosystem, challenging previous equilibriums: entrepreneurs can access these sources, such as crowdfunding and accelerators, in different points of the life cycle of the venture, developing different strategies (Bellavitis et al., 2017). A consequence of the widened spectrum of choices for firms is that they have the chance to leverage scarce resources: for instance with reward-based CF they can sell products without the funds to produce them and use the revenues to start the production (Bellavitis et al., 2017).

Doing “more with less” is also possible thanks to the reduction of the cost of doing business, in particular of communication and transportation, favoured by the progress of technology (Bellavitis et al., 2017). Also the way in which resources are valued is different compared to the past: for instance the evaluation of intangible capital, in particular intellectual property, has drastically changed (Bellavitis et al., 2017). In this scenario the power of entrepreneurs has increased: the presence of a multitude of players in the market has heightened competition between capital providers, leading to higher valuations of target firms; this has generated the phenomenon of unicorns, which are start-ups whose shares reach a market value of $1 billion (Bellavitis et al., 2017)(Drover, Busenitz, et al., 2017).
In this context the traditional view of a straightforward fundraising cycle, which considers new businesses mainly homogeneous and the set of possible financing sources limited, clearly appears to be outdated. Nowadays, with the emergence of a variety of new players in the capital market for start-ups, this paradigm is considered oversimplified and the study of all the possible funding paths for newly created ventures is emerging as a promising research area. Indeed, it’s now widely recognized that the heterogeneity of these firms can lead to very different financing patterns, hence universal rules are often inadequate (Bonini & Capizzi, 2019). What distinguishes different enterprises is their growth potential, which depends on their features. It is often a matter of “scalability”, which identifies how much the company can grow without significant changes in its business model. Also the willingness and motivation of the entrepreneur and the geographical focus play a role (Bonini & Capizzi, 2019).
Among the main characteristics which represent this new landscape there is the fundamental role of legitimacy, which is the “generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate, within some socially constructed system of norms, values, beliefs, and definitions” (Mark Suchman, 1995). The likelihood of receiving external capitals is based on the legitimacy that the venture is able to gain among potential investors, and novel streams of the literature address issues such as how to gain legitimacy and the role which other funders have in it (Bellavitis et al., 2017).
New questions have arisen for founders seeking capitals, in order to find a balance among all the possible solution: is it better to stay with the same kind of investor over time or to change? Is the presence of multiple shareholders beneficial or dangerous? On one hand, several investors in the ownership base can reduce the dependence of the firm from each of them, decrease information asymmetries thanks to the stronger certification effect, and increase the amount of funds and non-monetary contributions collected; on the other hand, it can also raise transaction

costs and agency costs, as a result of the multiple interests at stake which heighten the likelihood of conflicts (Bellavitis et al., 2017).
This tangled panorama also offers several challenges for scholars, since many traditional theories cannot be applied as before; for instance, the ownership dispersion and the almost exclusively virtual communication of crowdfunding defy the classical agency theory and the incentive alignment which it foreseen (Drover, Busenitz, et al., 2017). Altogether, all these changes have opened multiple avenues of research, increasing the complexity but also the charm of entrepreneurial finance studies.

2.1.2 The evolution of the literature and the concept of funding trajectory

Traditionally entrepreneurial finance studies focused on one agent at a time, and literature about co-investments only considered intra-group deals between players of the same kind; consequently, also policies to stimulate capital markets had the same approach, differentiating initiatives by funding source (Harrison & Mason, 2000)(Wallmeroth et al., 2018). However, the need for a more comprehensive view was highlighted, and some studies which analysed the relations between BAs and VCs started to emerge. Subsequently, as a result of the increasingly complex entrepreneurial finance panorama, pullulating of several new sources of funds, scholars began to be interested in the interplay between these new players and traditional ones; the focus of studies was therefore widened to the multiple interactions which a new set of capital providers brought to life. The key factor is their heterogeneity, which can generate additional value or result in heightened conflicts of interest. As of today, many studies are focused on pair relations, analysing the sequential intervention of different players, their co-existence in the same moment or their possible incompatibility. However, a holistic approach is probably more suitable, considering the variety and complexity of possible choices that a new venture can undertake. Relations between shareholders are tangled and highly contingent on the whole context (Drover, Busenitz, et al., 2017); indeed, the concept of funding trajectory has been developed to describe the path of the start-up in terms of investors accessed.
The study of which impact different funding trajectories have on the venture represents a new promising research area which is developing fast (Bellavitis et al., 2017)(Wallmeroth et al., 2018). In a pioneer study in this stream, (Bessière et al., 2020) analysed the funding pattern of a young technology venture which was able to successfully combine different external equity providers, in order to give some cues on the interactions between diverse groups of investors. They argued that a consistent funding trajectory is the key to succeed, thus single events should

be observed in the context of the overall funding path and not isolated in order to understand their true impact; for instance VCs do not value the certification effect of an equity crowdfunding campaign per se, but they appreciate it if it's coherent with the other fundraising choices of the venture. This starting point can be helpful to explain contradicting outcomes of different studies and to understand which variables really determine the impact that a single financing source can have (Bessière et al., 2020).

2.1.3 The fundamental role of signals

Along the life cycle of the firm many investors of various kinds can join the ownership base. Each of them has its unique features, objectives, investment behaviour, risk/return profile and influence on the venture. They interact not only with the entrepreneur but also with each other, trying to impose their willingness and to shape the future of the start-up. Providing capital to young entrepreneurial ventures indeed is not just a matter of money: investors usually increase the value of the firm with know-how and human capital, fostering its growth and strongly impacting its future performance, as stressed several times. Therefore, when deciding about a potential investment, each capital provider needs not only to evaluate the venture itself and the original entrepreneurial team, but also the presence and influence of other shareholders; their characteristics and behaviour can reduce uncertainties and send strong signals which are often seriously considered by new potential investors.

As discussed in the first chapter indeed (section 1.4.5), signals of quality play a key role in the entrepreneurial finance context. Each potential funder relies on these hints in its deal selection and screening processes, even if in different ways and with different criteria. They indeed convey information, which can be crucial in the highly uncertain environment of start-up financing. Among them, the ones sent by other investors are increasingly capturing the interest of scholars and professionals, considering the growing complexity of the entrepreneurial finance landscape. These signals are called "certifications" from other investors, and they are defined as "social cues that flow from actions taken by a third party that implicitly or explicitly favourably attests to the value of or approves of an organization and its activities in the mind of the perceiver" (Drover et al., 2017). As foreseen by the signalling theory, these actions are costly, since funders risk losing their capital or having no returns if they finance low-quality firms. Their role can be crucial in helping the venture to gain legitimacy among potential investors and in allowing it to access new sources of funds, therefore the investigation of which types of capital providers can influence others has been the focus of several recent studies.

2.1.4 The governance of the venture

The presence of other investors in the shareholder base can also increase bargaining difficulties and control capacities, strongly affecting the governance of the venture. Corporate governance is "the set of mechanisms that govern the behaviour of the top managers" (Charreaux, 1997)(Bellavitis et al., 2017), and shareholders have different levers to shape it. These mechanisms can have disciplinary or cognitive functions: the formers' aim is to mitigate conflicts of interest, as foreseen by the traditional agency theory proposed by (Jensen & Meckling, 1976), while the latter are used to enhance organizational learning by mentoring and resolution of knowledge gaps, as explained by resource and knowledge based views (Forbes & Milliken, 1999)(Zahra & Filatotchev, 2004). Usually VCs are more oriented towards disciplinary functions: they are mainly concerned with preventing possible conflicts which can hamper their returns, thus they impose discipline through monitoring and incentives; however, they do not neglect cognitive functions, through their consulting services. On the other hand, angels typically adopt a "relational governance" approach, grounding their control on the relation with the entrepreneur: their mechanisms are more cognitive oriented and focused on mentoring and coaching (Bessière et al., 2020).

As regards equity crowdfunding, it typically allows entrepreneurs to retain much more control of their ventures compared to traditional equity providers: a large number of small funders, which are usually ill-coordinated and less willing to play a part in the governance of the firm, have far less influence than a few large investors such as angels and VCs (Drover, Busenitz, et al., 2017). Nonetheless, the effective impact of equity CF investors is contingent on the way in which the investment is organized by the platform: when shares are directly handled by backers usually their influence on the governance is low considering the small amount invested and the low incentives to actively contribute, but when contributions are gathered into a financial vehicle, managed by the matchmaker, the potential power of crowdfunders substantially increases; however, the actual impact depends on the platform and its effective willingness to intervene (Bessière et al., 2020).

Notwithstanding the considerations outlined so far, recent studies highlighted that the governance levers used by each investor are not fixed and only based on its features but change over time with the growth of the venture. What really determines which levers are used it's the whole funding pattern of the firm: which kind of capital providers participated at it and which ones are on board at the moment (Bessière et al., 2020). Therefore, to understand the actual

contribution of each player to the governance of the start-up, the focus should be on the whole financing history of the company. These levers indeed are not only used to shape the relation with the entrepreneurial team but also with other shareholders, in order to tackle possible conflicts of interest with them (Bessière et al., 2020).
Altogether, the whole governance of the venture is shaped by its funding trajectory: the interplay between different types of shareholders, along with previous funding events, determines the type of mechanism which prevails. Usually with complexity the need for more disciplinary control emerges to solve agency conflicts, which arise not only with the entrepreneur but also between different categories of investors. These dynamics are influenced by the attitude of the managerial team, whose collaborative approach can lead to a weakening of disciplinary functions in favour of cognitive ones (Bessière et al., 2020).

To conclude, governance related matters and signals of quality represent the main aspects considered in the study of the interplay between different sources of finance for young entrepreneurial ventures, which is an intricate and complex topic.

2.2 THE LONG-STANDING RELATION BETWEEN BUSINESS ANGELS AND VENTURE CAPITALISTS AND ITS EVOLUTION

Business angels and venture capitalists are the most longevous players in the entrepreneurial finance field, hence they have been analysed more extensively compared to newly born sources, such as crowdfunding. The relation between them was the first one to be considered and examined by scholars, and it's still the one about which the literature is more developed. However, our understanding of their interplay is still fallacious, and several avenues of research are open to new findings.

As mentioned before, the Financial Growth Cycle paradigm foresees a sequential relationship between them, in which angels act in the early stages of the firm growth, while venture capitalists typically invest later. Therefore, several studies have tried to understand which are the variables which affect this relationship, aiming to shed lights on the certification effect of angels and the relevance of this signal for VCs. However, as already explained, the straightforward cycle view has been questioned by new findings, and the spectrum of possible relationships to analyse has been widened. In one of the first studies in this research stream, performed in the UK market, (Harrison & Mason, 2000) showed that relations between these two types of investors are common and take place in different forms: not only sequential investments, but also co-investments, deal referrals and provision of capital by business angels to VC funds. The authors also argued that relationships between them have several advantages for all the parties involved, generating economic benefits for the whole society.

In particular, the analysis of the settings in which co-investing between angels and VCs in the same financing round is likely to happen and the impact of this practice on the venture has been of interest to scholars recently. It's indeed debated if the coexistence between these two heterogeneous investors increases their value-added potential, benefitting the company, or leads to heightened conflicts of interest, undermining the performance of the firm; the understanding of the variables which determine the outcome represents a still developing research stream (Wallmeroth et al., 2018).

Additionally, the rise of angel groups is redefining the relationship between angels and VCs. As stated earlier, their higher funding capacities, which have led to a shift of angels' focus to later stages, and their more formal investment processes increase their resemblance with venture capitalists (C. Mason et al., 2016)(J. E. Sohl, 2007)(J. E. Sohl, 2012); it's still debated if these similarities lead to a better alignment of interests between the parties, hence facilitating cooperation and co-investment, or to competition, caused by their focus on the same pool of

target firms. The comprehension of their role is evolving, and the changes they have brought to angel investing are still not considered in many studies which do not differentiate between individual angels and members of groups and networks, undermining the validity of their findings (C. Mason et al., 2016).

2.2.1 Sequential investing: when angel funding precedes venture capital

Based on the Financial Growth Cycle view, sequential investing is the most typical kind of relation between angels and VCs, hence it's the one analysed more extensively in the literature. (Bonnet & Wirtz, 2011) explained the reasons behind this sequentiality using a cognitive approach: they highlighted the main differences between these two players in terms of economic incentives and cognitive abilities (mindset, skills, experience). They argued that cognitive gaps represent the main reason for which VCs typically invest in later stages: their mindset is too different from the one of entrepreneurs, hence communication of strategic opportunities and choices between them is difficult. Angels instead represent a middle point between founders and VCs, having knowledge of both the entrepreneurial and financial world: their role is to bridge cognitive gaps and act as a translator of the ideas of the entrepreneur into the financial language of VCs, represented by a business plan. Therefore, the angel's presence facilitates the attraction of future VC financing, thanks to its certification and connection impact (Bonnet & Wirtz, 2011).

(Hellmann & Thiele, 2015) argued that angels and VCs are both friends and foes at the same time and investigated the factors which determine the overall relation between them. At the aggregate level the output of the angel market is the input of the VC one, hence they are complementary in the growth cycle of start-ups: VCs rely on the work of angels, who prepare firms for the VC stage; at the same time, angels need VCs since they don't have enough funding capacity to support the development of the company alone. On the other hand, by abusing their market power, venture capitalists can squeeze angels out of the company, offering them unfairly low valuations; this risk pushes angels to search for alternative exit routes, creating a substitute relationship with VCs (parallel path). Overall, the kind of relation they have (substitutes or complements) depends on the bargaining dynamics: several factors influence them, among which the role of legal protection for angels and the competitiveness of the venture capital market play a pivotal role (Hellmann & Thiele, 2015).

In one of the most recent studies in this research stream, (Hellmann et al., 2021) deepened the analysis of the relation between VCs and BAs employing a sample of Canadian firms. They

found out a strong persistence with the same kind of investor for target firms, thus highlighting a substitute relation between capital providers: start-ups which obtain angel funding are less likely to get subsequent venture capital financing, and vice versa. Additionally, they argued that this outcome is the result of a selection effect, driven by the characteristics of the company and not by the ones of the investors: these two players cater distinct types of ventures. However, the differences between target firms and the reasons behind this diverse focus are still unknown: divergences in objectives, approach to the investment, networks (which are the source of deals), and methods of evaluation of companies represent the main hypotheses as of today. The authors concluded that BA and VC financing represent two "parallel streams" which the start-up can undertake, and not sequential steps of the same path, as argued by the Financial Growth Cycle. A possible explanation of these findings is the shift of angels' activities to later stages, also pushed by the rise of angel groups, which offer the possibility to finance follow-on rounds without the need of a VC (Hellmann et al., 2021).

Business angels are highly heterogeneous, as stressed several times, hence differences in personal attributes and approach to the investment could lead to divergent outcomes. Many studies have tried to understand which features and behaviours of angels are predictors of future venture capital financing. (Drover, Wood, et al., 2017) examined the certification effect of different seed investors on the willingness of VCs to conduct due diligence on the target firm. As regards angels, they analysed the impact of reputation, proxied by experience and group membership: they indeed claimed that groups' reputation, which results from their rigorous screening processes, "spills over" onto their members. The authors found out both experience and group association to have a positive influence on the willingness of VCs to perform due diligence on the focal company. According to their analysis, VCs look at angels as certifiers of the financial solidity of the venture (Drover, Wood, et al., 2017). Also (Harrison & Mason, 2000) emphasized the role of BANs in connecting the informal and formal venture capital markets, acting as matchmakers and certifiers of angels' quality to venture capitalists; reputation and experience of BAs are indeed key discriminants for VCs to choose partners, since amateurs angels can hamper the evaluation of businesses due to overpayment at the seed stage (Harrison & Mason, 2000).

(Croce et al., 2018), in a cross-country and cross-industry context, deepened the analysis of angels' investment experience, a proxy of human capital typically employed in many entrepreneurial finance studies. They found out that the stage of growth of the firm in which the angel's deals are focused has a strong impact on follow-on funding from VCs: BAs with experience in early-stage companies increase the likelihood of a subsequent venture capital

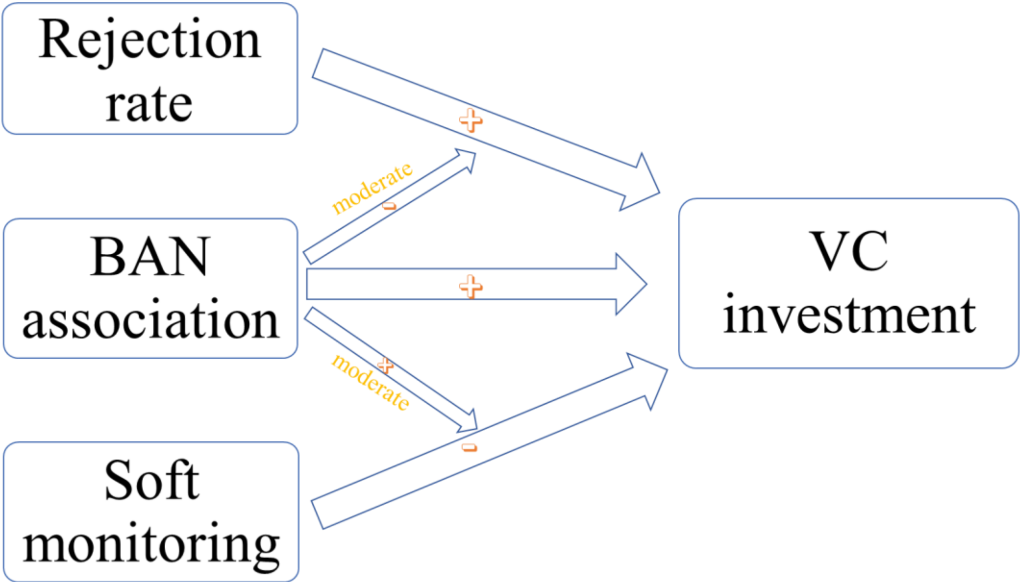
financing for the start-up, while the ones with more experience in later-stage deals reduce this probability but at the same time boost the chances of a successful exit through an IPO or M&A. The formers are representative of the Financial Growth Cycle view in which angels are complementary to VCs in the growth path of the start-up, investing in earlier stages, while the latter act as substitutes of venture capital and confirm the shift of angel investing to later stages. Therefore, entrepreneurs need to carefully evaluate angels' characteristics when choosing which investors to take on board, being aware of their strong influence on the future of the firm (Croce et al., 2018).

(Capizzi et al., 2022) analysed the Italian market to shed lights on the impact of other features of BAs on the likelihood of receiving follow-on venture capital for the firm (Figure 8). The selectivity of angels, measured by their rejection rate (percentage of refused deals on the total investment proposals received) is a good indicator in this regard: indeed more selective investors (the ones with higher rejection rates) usually earn higher average returns on their deals, as shown by prior studies (Capizzi, 2015). The reason is probably their greater ability to select ventures with larger potential to grow, thanks to their more thorough screening and selection processes. VCs positively perceive this signal and start-ups funded by more selective angels have greater chances of receiving additional funds. However, this effect is valid only for investors which do not belong to BANs: the association with these organizations indeed means that the due diligence performed by the angel is supported and partially replaced by the network, hence the individual rejection rate becomes less informative for VCs (Capizzi et al., 2022). As stressed several times, the selection and investment procedures of BANs are more formal and rigorous compared to individual angels' ones, leading to more efficient and precise decisions. BAN's association does not only act as a moderating factor, but it also has an effect on its own: indeed the affiliation of the angel to a network increases the likelihood of receiving follow-on venture capital for the companies he backs (Capizzi et al., 2022). These findings corroborate the statement of (Drover, Wood, et al., 2017), who argued that the reputation of BANs spills over onto their members.

Another feature of angels which has an impact on the probability of receiving sequential venture capital funding for targeted companies is the intensity of monitoring on the venture. The soft monitoring approach typically adopted by angels is based on the building of a trust relation with the entrepreneur, in order to control him and be able to prevent opportunistic behaviours. If, on one hand, this means that there are less burdensome contractual rights which need to be negotiated when the VC joins the firm's ownership, on the other hand a higher level of monitoring is indicative of a greater involvement of the angel in the company; hence the BA

could be able to strongly influence strategic decisions of the entrepreneur, thanks to the close relation with him. Therefore, agency costs for the VC increase, considering that his objectives are usually different from the ones of the angel, as mentioned earlier. For this reason, higher levels of monitoring lead to a lower likelihood of obtaining follow-on venture capital for funded firms (Capizzi et al., 2022). In this case, BAN's membership reinforces the validity of this signal for venture capitalists: as highlighted by previous studies indeed (Bonini et al., 2018), the information-sharing effect of the BAN leads to less informationally opaque investments, reducing the need for monitoring by the investor; moreover, typically contracts set up by angel groups are more complex and similar to the ones adopted by VCs, requiring less control. Therefore, the need for a high level of soft monitoring is seen as a negative signal, since it could represent a riskier investment, a lack of trust or the presence of conflicts with the entrepreneur (Capizzi et al., 2022).

Figure 8: Angel's attributes which influence future VC investments



Source: personal elaboration of the author from the results of (Capizzi et al., 2022)

The impact of angel groups was also examined by (Lerner et al., 2018) in a cross-country analysis, which revealed that these organizations are often pivotal in enabling start-ups to obtain follow-on finance from VCs. This finding contrasts with previous studies: (Kerr et al., 2014) argued that in the US angel groups have no impact on the likelihood of receiving future venture capital. The differences in results can be caused by the level of development of capital markets:

the US market is well-developed, hence for firms can be easier to access funds, while in other countries a certification from angels can be crucial (Lerner et al., 2018). Moreover, groups, just like individual angels, are highly heterogeneous and operate in different stages of the life cycle of start-ups and with different functions according to the country to which they belong and their dimension. Larger groups, such as the ones analysed by (Kerr et al., 2014), probably act as a substitute of VCs, being able to provide funds to sizeable deals by themselves; some authors argued that these groups are acting more and more like VCs (C. Mason et al., 2016). On the other hand, smaller groups in less-developed countries presumably still focus on earlier stages, hence needing the intervention of a VC to sustain the development of the start-up.

Lastly, (Grilli, 2019) tried to shed light on the role of angels analysing the Italian market at the aggregate level: he claimed that BAs funding is more likely in areas in which there is a solid ecosystem of VCs and banks; hence, he argued about a complementarity of these players throughout the life of the firm (Grilli, 2019).

Summarizing, the relationship between these two players is more complex and tangled than it was thought in the past and trying to find a universal certification effect of angels can be misleading. Their heterogeneity and the contextual differences are probably key factors to explain the contradicting outcomes of many studies, which are usually country specific. More developed capital markets and the shift of angels' focus to later stages of the firm's growth, mainly caused by the evolution of groups and networks, are probably the main reasons behind the substitute patterns between BAs and VCs found out by some authors. On the other hand, samples based on lonely angels, smaller groups and the ones in less developed countries, whose focus is still on earlier stages of the start-up's life, resemble more the traditional sequential investing pattern in which BAs precede the venture capital injection. Additionally, the human capital and individual characteristics of these players are often key discriminants in determining the relations with other investors and with the entrepreneur, remarking the importance of these features besides financial capital in the entrepreneurial finance environment.

2.2.2 Co-investment between angels and venture capitalists

The frequency of co-investments between BAs and VCs in the same financing round and the outcomes of this phenomenon are highly debated topics, with opposite views advocated by different authors. (Harrison & Mason, 2000) argued that this kind of relationship has several advantages for all the parties involved: the angel benefits from higher quality opportunities and reduction of risk thanks to the more formal and organized due diligence and monitoring

processes of the VC, while the latter can exploit the network and the knowledge of the angel, often industry-related, who coaches the venture through his role in the board of directors; this reduces the effort and time that the VC needs to devote to these activities. However, the authors recognized that differences in mindset and objectives, combined with the complexity of decision-making processes caused by split control-rights, can hamper the successful outcome of these partnerships; personal chemistry between shareholders is therefore a key factor (Harrison & Mason, 2000). The relevance of the cognitive features of investors was emphasized also by (Bonnet & Wirtz, 2011), who argued that these players co-invest in ventures with large capital needs, not reachable by angels only, but that still have cognitive gaps which hinder the investment by VCs alone; in these settings, the presence of both players increases the speed of growth of the company (Bonnet & Wirtz, 2011).

(Goldfarb et al., 2013) supported a negative view about co-investments, arguing that large deals financed only by VCs experience superior outcomes (in terms of successful exit) compared to large deals with BAs and VCs co-investing (the same does not hold for smaller deals). According to their analysis, angels and founders usually form a coalition because their interests are generally more closely aligned compared to the ones of VCs: angels indeed are more patient backers, associated with longer resolutions in their investments, while VCs are tied to the life cycle of the fund. Moreover, the angel-entrepreneur trust-based relationship facilitates the creation of stronger boundaries between them; this is confirmed by the fact that angels usually require weaker contractual rights, since their closer ties with the founder lead to less conflicts of interest, hence requiring lower protection. In this situation, frictions between venture capitalists and the angel-founder coalition are likely to arise, hampering the growth of the firm. This is particularly prone to happen when control rights are evenly balanced: in this situation indeed nobody can firmly control the venture, hence conflicts between shareholders could undermine its performance (Goldfarb et al., 2013). Also (C. Mason et al., 2016) claimed about an incompatibility between these two capital providers: angels are reluctant to co-invest with VCs, since the latter have different objectives, in particular when exiting the investment, and employ contractual instruments which render angels vulnerable. These findings remark the fundamental role that contractual clauses and control rights have in shaping relations between investors, therefore strongly affecting the governance of the venture and its performance.

In contrast with other studies which found out that syndicated investments are common, in the sample used by (Hellmann et al., 2021) co-investments between angels and VCs in the same round are rare, but persistent: when a company undertakes this path, it's likely to continue to receive funds from syndicated deals. This is in line with the selection effect argument proposed

by the authors, who asserted that these players cater different types of companies (hence syndication is rare), but the persistence of these deals can point out that complementarities between them exists.
Lastly, (Croce et al., 2018) found out a positive influence of syndicated deals on several aspects, such as the likelihood of additional VC financing and the start-up ultimate success (IPO or M&A). Therefore the authors argued in favour of the complementarity between these capital providers: they can indeed exploit the respective control mechanisms, enhancing the overall monitoring and mentoring effectiveness (Croce et al., 2018).
Summarizing, the analysis of co-investments represents a research stream which needs further deepening, since results are contradictory so far. It's probably misleading trying to find a universal impact of co-investing, because the outcome is highly contingent on the context and on the characteristics of the investors involved: while in some settings the heterogeneity of these players can be highly beneficial, acting as a value added factor, sometimes their differences lead to misunderstanding and misalignment of interests, undermining the growth of the firm. Using a cognitive approach can probably help to shed lights on which are the attributes of these capital providers which facilitate cooperation and which ones are incompatible. Moreover, the features of the venture, such as its stage of growth, and the role of contractual clauses constitute pivotal variables too, which can mitigate or enlarge affinities and conflicts between investors. Lastly, the country considered and the level of development of its capital markets are probably key factors in determining the likelihood of co-investments, since these elements strongly influence the stage of growth of the venture in which each capital provider mainly focus.

2.3 THE INTERPLAY BETWEEN CROWDFUNDING AND PROFESSIONAL INVESTORS

Since the early phases of its diffusion, equity crowdfunding has been praised because it "democratizes" the PE market, allowing retail investors to access this segment of capital markets dominated by institutional investors. However, in the last few years it has been observed that more and more professional players are taking part in CF campaigns, and their contributions often overwhelm the ones of the crowd: several studies have demonstrated that successful campaigns are anchored on large backers who are fundamental for their success, highlighting the skewed nature of this funding source (Tuomi & Harrison, 2017); consequently, the democratizing role of equity CF has been questioned.

Recently some studies have started analysing the impact of professional investors, such as business angels and venture capitalists, during and after campaigns and their interplay with the crowd. Results mainly claim that their presence increases the efficiency of this chaotic market, thanks to the signals they provide to other funders. For instance, in the case study examined by (Bessière et al., 2020), the BA took the lead of the equity CF financing round, undertaking the due diligence process and negotiation, and then shaping the governance of the firm after the campaign. His presence was fundamental since his due diligence and his equity investment certified the quality of the venture to the crowd (Bessière et al., 2020).

Vice versa, a successful crowdfunding campaign can have a certification effect on professional investors and facilitate sequential BA and VC financing, thanks to the hints it can provide about market sentiment and potential demand of the product. (Décarre & Wetterhag, 2014) argued that crowdfunding increases the attractiveness of the venture for potential investors; indeed, firms are likely to raise additional funds after the campaign. On the other hand, having a disperse shareholder base can hamper follow-on financing from professional capital providers, who don't like to share the control of the company with the crowd. (Tuomi & Harrison, 2017) claimed that in the equity CF context failure emerges earlier compared to other sources of external equity, as a consequence of the greater difficulties in raising additional finance; they hence stressed that the success of a CF campaign is not an automatic stamp of approval (Tuomi & Harrison, 2017).

Altogether, post-crowdfunding trajectories are highly heterogeneous and the impact of the campaign is contingent on its position on the overall funding pattern of the firm (Bessière et al., 2020). Considering the thinness of a secondary market in which crowdfunders can sell the shares acquired, attracting new investors is often fundamental for backers to realize their

returns; hence, if the company it's not able to raise additional capitals, its shareholders can be severely endangered, and in the long run the whole system is at risk if this situation systematically happens. Therefore, understanding which characteristics of campaigns are the discriminants which determine follow-on financing is crucial to help entrepreneurs to decide their strategy, and favour the diffusion of CF as an established source of funds for young ventures.

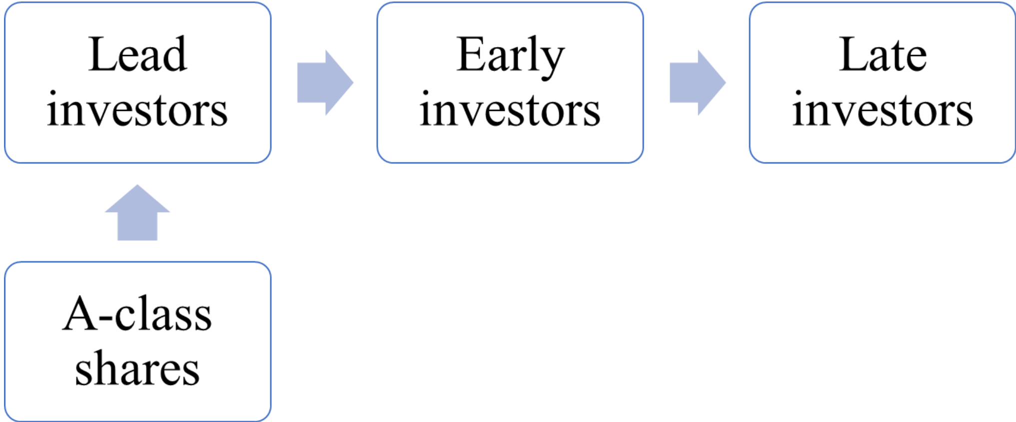
2.3.1 The role of lead investors in equity crowdfunding campaigns

The analysis of (Vismara, 2018), who examined the role of "information cascades" in equity CF campaigns, represents a pivotal study in this research stream. "Information cascades" refer to the role that the decisions of other investors have on the choices of each individual, and they are present, and have been examined, in many contexts: for instance during IPOs it has been observed that early investors influence the valuation of later ones. Scholars are interested in the impact of this phenomenon in crowdfunding campaigns because of the particularities of this market: the heightened visibility of other investors' features and behaviours increases the possibility to rely on this kind of signal, which is probably essential for many funders who don't have other information sources. Indeed, crowdfunding lacks the crucial activities of screening and due diligence typically carried out by classical intermediaries, and investors cannot rely on third-party certifications, such as the ones published by financial analysts, which are often fundamental to address adverse selection problems; moreover, they cannot undertake a proper due diligence process themselves, due to geographical distance, limited communication with the venture and lack of skills and competencies to perform it (Vismara, 2018). Therefore, the opportunity to observe the behaviour of other investors often turns out to be crucial in offsetting the heightened information asymmetries typical of CF, reducing the perceived level of uncertainty which surrounds projects (Li et al., 2016)(Kim & Viswanathan, 2019).
(Vismara, 2018) found out that early investors in CF campaigns attract later ones, and specifically each of the formers on average attracts four of the latter. Going deeper into the analysis, he claimed that not every kind of early investor is equal: the ones who have a public profile on the platform (which allows to see their CV and their track record) are more sophisticated and informed, with greater educational capital and experience, and typically invest early in campaigns; they have a stronger influence in attracting other early investors, highlighting the relevance of the identity of the signal sender. Hence, for the success of campaigns, it's crucial to attract these "lead investors", who are able to allure other early

backers, who in turn bring with them several later funders (Figure 8). The reason why the formers invest earlier is that they are able to access and process information at a lower cost (Rock, 1986), hence they are less doubtful and have less incentives to wait. On the opposite, other individuals prefer to wait and observe more sophisticated ones to reduce their uncertainty (Vismara, 2018).

Lead investors are typically professionals, such as business angels and venture capitalists, hence they want to be able to actively control and steer the development of the venture. However, the presence of a multitude of unprofessional shareholders in the ownership base of the firm can hamper their involvement, as discussed in the next section (chapter 2.3.2); therefore, in such conditions they can be reluctant to invest. A possible solution to attract these sophisticated backers is the issuance of different kind of shares: A-class shares with voting rights, which require a minimum investment threshold to be acquired, and B-class shares without voting rights; in this way professional investors can divide the control of the firm only with the founders (Vismara, 2018).

Figure 9: Information cascades in equity crowdfunding campaigns



Source: (Vismara, 2018)

(Wang et al., 2019) deepened the analysis of the identity of “lead investors”, focusing in particular on business angels. They found out that high-contribution pledges increase the amount subsequently pledged by other investors, but this effect is stronger if the pledge is performed by a business angel compared to the ones made by the crowd; furthermore, angels’ pledges are even more influential towards other angels, increasing their future contributions. These findings not only confirm the relevance of the identity of the signal sender but also highlight the importance of the receiver’s characteristics: indeed, angels’ signals have a stronger

effect on their peers. This is related to the way in which people decode signals, which is affected by individual features such as beliefs, education and social status; people tend to be more influenced by information conveyed by individuals they perceive as their similar, as confirmed by this study (Wang et al., 2019)(Connelly et al., 2011)(Brack & Benkenstein, 2012)(Rogers, E.M., Bhowmik, 1970). Furthermore, the authors also found out that high-contributions pledges of angels have a stronger positive influence when they are made in large campaigns compared to small ones, because they are more costly and risky in the formers; this is line with the signalling theory, which argues that signal costliness is a fundamental characteristic for its effectiveness (Wang et al., 2019).

Altogether, the results of (Wang et al., 2019) highlight a complementarity between these two sources of external equity: angels are fundamental for the success of large campaigns, thanks to their higher contributions and the beneficial influence on later investors; on the other hand, the crowd is crucial to close the gaps left by angels in large campaigns and for the success of small ones, often not considered by BAs. Hence, it can be said that crowdfunding helps to democratize entrepreneurial finance by filling the gaps left by professional investors, and the participation of the latter in campaigns is not a threat but an opportunity to enhance the efficiency of this market (Wang et al., 2019).

In a study on the Chinese market, (Li et al., 2016) examined the role of different signals which can influence the crowd, among which the role of a lead investor in the campaign. They analysed platforms which adopt a leader-follower model, in which the role of the lead investor is formally recognized and bears some responsibilities. Many platforms are adopting this framework, acknowledging the relevance of these players in campaigns. For instance, on AngelList investors can create a "syndicate" in which they decide which ventures to fund and invite the crowd to back their investments (Agrawal et al., 2016). According to the authors, the signals sent by lead investors are part of the peripheral route (following the ELM by (Petty & Cacioppo, 1986)), hence they are cues not directly related to the value of the project and the crowd relies on them when indications of the real quality are absent (Li et al., 2016). Their results indicate that the identity certification of the leader plays an important role, increasing his credibility and leading to a higher number of followers; instead, the percentage of equity of the firm that he's acquiring is negatively related to the volume of backers: they could indeed think that he's colluding with the entrepreneur, investing a lot to allure the crowd. Lastly, the experience of the leader and his behaviour during the campaign, such as positive comments on the venture or its team, enhance the fundraising performance. Hence, to increase the rate of

success of their campaigns, platforms should require a higher certification level for lead investors and limit the percentage of their contributions (Li et al., 2016).

In a study on a mobile application market, (Kim & Viswanathan, 2019) confirmed that experienced backers invest early and they influence the decision of later ones. The authors went deeper into the analysis and found out that different types of experience possessed by early investors have distinct influential effects. Their findings confirm that crowdfunders are selective in choosing the signals in which to rely on and do not follow other backers irrationally, stressing the need for a fit between the signal and the informational needs of the receiver. Moreover, the analysis of the post-campaign performance of firms showed that experienced investors are indeed good at choosing quality ventures; thus, the crowd is capable of selecting the right signals in which to rely on. Therefore, the presence of lead investors in campaigns benefits the crowd and also quality ventures, enhancing the efficiency of this market. These “leaders” do not have third-party certifications or a publicly known reputation, they only have a visible track record on the platform; hence, without this visibility their role as signal senders would be compromised, stressing the importance of this feature of crowdfunding (Kim & Viswanathan, 2019).

(Décarre & Wetterhag, 2014) argued that firms which don’t have any professional investor on board before the campaign are likely to raise at least one of them during it. However, the presence of these professional backers has a negative impact after the campaign on several variables, such as sales and employee growth and press attention. Probably the reason is that they usually try to regulate the development of the firm, in order to avoid an uncontrolled expansion, typical of new ventures, which can lead to failure. They want to optimize the growth and make it sustainable in the long run; indeed, their presence has a positive effect on the profit increase of the venture. Moreover, the industry experience of investors favours the development of new products (Décarre & Wetterhag, 2014).

Among the post-campaign effects of the participation of professional investors in equity crowdfunding, their influence on the governance of the venture should not be underestimated. The presence of large, organized and professional capital providers among the crowd reduces the power of the entrepreneur, which is usually sizeable when shares are divided among a multitude of non-professional funders. Angels and VCs can help to protect the interest of investors by enhancing monitoring mechanism and strongly influencing the governance of the firm. Lastly, also (Signori & Vismara, 2018) analysed the post-campaign outcomes of equity crowdfunding, arguing that the participation of professional backers in the campaign strongly increases the likelihood of survival of the firm in the long run.

All the studies performed so far are on the same tune: they demonstrated that the use of signals sent by other investors is not a symptom of the irrationality of the CF market, but it's a tool employed by the crowd to mitigate risk in absence of other cues to infer the value of a project. The crowd is careful and selective when choosing the signals in which to rely on and has demonstrated to be able to pick out quality ventures. The recognition of the positive outcomes which derive from the participation of professional investors in CF campaigns is nowadays widely diffused among scholars, who argue for the formalization of the role of these capital providers in order to enhance the efficiency and effectiveness of their contributions. The presence of these backers turns out to be essential to reduce the flaws of crowdfunding, leading to enhanced due diligence processes and increasing the volume of deals closed. Moreover, it should not be forgotten that one of the main shortcomings of equity crowdfunding, compared to traditional sources of equity capital, is the lack of many of the non-monetary contributions typically provided by the latter, which often turn out to be crucial for the survival and growth of the venture. The intervention of professional investors in CF campaigns could alleviate this problem. Therefore, crowdfunding and other sources of finance are unlikely to crowd out each other: their complementarity instead can offer economic and societal benefits (Schwienbacher, 2019)(Tuomi & Harrison, 2017).

2.3.2 The follow-on funding of crowdfunded firms

The interest of scholars in the sequential relation between crowdfunding and other providers of external equity has emerged in the last decade, along with the diffusion of this alternative source of funds. (Signori & Vismara, 2018) examined the UK market, one of the most developed, and found out that a significant share of companies raising funds through equity CF manages to collect additional capitals later on. Among the determinants of post-campaign outcomes, the number of backers is a relevant variable: the higher it is, the lower the probability of issuing additional equity; hence, campaigns which seem really successful sometimes hamper the future of the firm. Rapidly successful fundraising operations often lead to a return to the platform to launch another equity issuance; also younger businesses tend to use CF more than once, while ventures which deliver voting rights to the backers are less likely to do so, to avoid further equity dilutions (Signori & Vismara, 2018). These findings confirm that crowdfunding does not hinder the future financing of the company, but the management of a wide shareholder base with dispersed voting rights represents a key issue.

(Moedl, 2021) confirmed that a larger number of backers negatively influences the likelihood of future VC financing, contrasting its enlarged marketing effect. A scattered ownership structure can indeed strongly influence the governance of the venture, hampering the control of the firm which VCs require. The author highlighted the importance of choosing the correct features for equity crowdfunding contracts: the majority of VCs surveyed agreed that they are a key criterion when deciding about investments in companies already backed by crowdfunders. Specific covenants have different impacts on the VC's evaluation: usually cash flow rights, standardized reporting duties and tag-along clauses (the right of minority shareholders to sell at the same conditions of majority ones) do not represent a problem, while voting rights, individual information rights, the absence of a drag-along clause (the right of majority shareholders to force the sale of minority ones at their same conditions), redemption rights (the possibility to sell back shares to the firm, implying a cash exit from the latter) and upward dilution protection (which allows crowdfunders to retain their initial share of ownership in the company without having to contribute additional funds, regardless of capital injections of subsequent investors) constitute pivotal concerns; venture capitalists are quite homogeneous in this regard, and angels appear to be even more restrictive about contractual clauses, probably because they are not used to deal with pre-investors (usually they are the first backers of the venture) and they have less powerful financial and organizational instruments for legal disputes. The main stumbling block, however, arises when backers directly hold securities of the company: the pooling of crowd investors in a single investment vehicle appears to be essential to access follow-on funding (Moedl, 2021). Contractual compatibility is therefore crucial for a complementary relation between equity CF and professional investors.
In the already cited article of (Drover, Wood, et al., 2017), which analysed the certification effect of seed investors on the willingness of VCs to undertake a due diligence process, the reputation of the platform and the overall investors' volume in the campaign were used as variables for crowdfunding. The authors found out that the track record of the portal is positively related to the likelihood of future VCs' screening, confirming that the ones which have the reputation of attracting successful projects provide a stronger certification effect. Therefore, for platforms is essential to enhance their screening and due diligence processes, in order to increase the quality of the ventures launching campaigns on them and foster their reputation (Drover, Wood, et al., 2017). The positive effect of the volume of crowdfunders was demonstrated only for the reward-based model, while for the equity one results were not significant; the authors argued that this is due to the fact that reward-based pledgers act more like customers, evaluating the product and not the firm, thus their behaviour is more indicative

of the potential market demand than the one of equity backers. Indeed, the certification effect of CF is different from the one of angels (who certify the financial viability of the venture, as explained before), and more related to the market sentiment than to the venture itself (Drover, Wood, et al., 2017).

(Kaminski et al., 2019) confirmed the link between reward-based CF and venture capital by analysing the interplay between them at the aggregate level; the authors found out a positive long-run relationship between the two, in which an increase in the former is followed by a proportionally higher increase in the latter with a lag of three months. They argued that reward-based crowdfunding, thanks to its flexibility in adapting to change, helps professional investors to assess future trends, in particular as concerns technological evolution and market size; indeed, according to (Zider, 1998): "One myth is that venture capitalists invest in good people and good ideas. The reality is that they invest in good industries". Their claims are corroborated by the fact that the industry sectors in which the relation is more evident are electronics and fashion, which typically represent fast changing markets (Kaminski et al., 2019).

(Colombo & Shafi, 2021) deepened the examination of the impact of reward-based crowdfunding differentiating between firms already backed by professional investors before the campaign and companies that were not; it was demonstrated indeed that also ventures which have already obtained capitals from VCs and BAs often undertake reward-based CF campaigns. The authors examined the role of the excess capital raised in the campaign, the delay in the product delivery and the comments of the crowd on the product. Their findings highlighted that the information produced by the CF campaign is useful only for ventures not already backed by professional players: an adverse sentiment of the market, represented by negative comments of backers, and delays in the product delivery are associated with a lower likelihood of obtaining capitals from VCs or BAs. The information conveyed by the campaign is noisy and unprecise, but in the absence of more valuable inputs it's used by potential funders to screen projects and to wipe out the ones with consistently unfavourable feedback; moreover, the campaign can help to reduce information asymmetries between investors and founders, reducing the cost of capital infusions. Prior equity providers instead are insiders of the firm, thus they have access to more precise data; hence, they are not influenced by the outcomes of the campaign, challenging the belief that they use CF to test the market potential of the firm's products. In this case it seems more likely that reward-based CF is employed by entrepreneurs as an innovative bootstrapping technique, which allows to raise funds without further equity dilution and control restrictions (Colombo & Shafi, 2021).

Summarizing, in the right conditions crowdfunding is compatible with other sources of finance, but a certification effect seems to exist only as concerns the reward-based model. The most likely reason is that pledgers act more like customers than investors, hence they can provide more precise hints about market trends. As regards the equity model, contractual features play a key role in determining the likelihood of future financing from professional capital providers. As discussed in the first chapter (section 1.4.6), legislation has a delicate role in the equity CF market: allowing the issuance of different types of shares, such as preferred ones, and the use of the pooled approach, to collect all the contributions and invest as a single shareholder, appear to be essential to facilitate the follow-on funding of firms and ensure the survival of the whole market (Tuomi & Harrison, 2017)(Palin, 2016).
Altogether, crowdfunding does not seem to be able to crowd-out traditional equity providers, such as BAs, who are still crucial players in the market for funds for entrepreneurial ventures. Considering the increasing shift of angels to later-stages of the start-up growth, which involve higher amounts of money, the rise of equity CF could help to alleviate primary funding gaps related to the first injections of capital needed to develop the product. The presence of all these actors is likely to be beneficial for the whole entrepreneurial finance ecosystem, increasing the number of options available to entrepreneurs and mitigating the long-standing issue of the financing of new ventures.

2.4 OTHER RELATIONS BETWEEN DIFFERENT CAPITAL PROVIDERS

Venture capitalists and banks in the Italian scenario

The analysis of the relationship between VCs and banks represents an interesting research area, in particular in Italy considering the strong bank-centrism of the country. According to the Financial Growth Cycle view, venture capitalists should target firms which are excluded from the credit market, and their intervention should then facilitate the access to external debt for these companies (Vacca, 2013). Therefore, a possible certification effect of venture capitalists towards banks has been investigated in recent years. The findings from the Italian market, however, do not support this hypothesis: due to the bank-centrism of the nation, firms targeted by VCs are usually not excluded from the credit market. The evidence points more towards an "inverse signalling", in which banks act as certifiers of quality deals for venture capitalists (Drucker & Puri, 2006), challenging the Financial Growth Cycle predictions (Vacca, 2013).
Specifically analysing bank-affiliated VC funds, (Hellmann et al., 2008) argued that the signalling effect of these capital providers is stronger towards banks of the same group, since they can exploit the relationship with the firm built by the VC. However, also this hypothesis is not confirmed by the results on the Italian market; instead, the inverse signalling argument is corroborated: companies targeted by this kind of VCs already have outstanding debt towards banks belonging to the same group of the fund (Vacca, 2013).
Besides the access to credit, a possible certification effect of VCs concerns a reduction of the cost of the former for target firms (Hellmann et al., 2008); in the Italian context results support this hypothesis for independent and bank-affiliated VCs, while for other types of funds reductions are negligible. In particular bank-related ones seem to be able to significantly improve the situation of the companies they back as regards the cost of credit, exploiting the belongingness to the same group (Vacca, 2013).
Summarizing, Italian VC funds do not seem to facilitate the access to credit for target firms, but they can reduce its cost for these companies (Vacca, 2013). In the Italian scenario, bank loans represent an essential source of funds for any kind of venture, hence the ones usually targeted by VCs are typically already backed by banks. Therefore, it makes more sense to judge the certification effect of VCs looking at their ability to reduce the cost of credit.

Incubators and accelerators

The investigation of the impact of incubators and accelerators on the firm, in particular on its follow-on financing, represents a still developing research area. One of the main objectives of

these players is to facilitate the access to capital for target firms, hence understanding in which conditions they successfully manage to achieve this goal it's paramount for the future of this market. Scholars argue in favour of a positive signal sent by accelerators to VCs: they act as screening mechanism for best entrepreneurial projects and speed up the growth of the venture, filling many of its knowledge gaps (Bellavitis et al., 2017). Some VC funds have indeed established their own accelerator program: this is common in the US, in which these organizations are typically associated with venture capitalists, as outlined in the first chapter (section 1.5). (Hochberg & Fehder, 2015) claimed that accelerators' activities foster the presence of venture capitalists in the area: in particular, in the regions in which these actors are present the share of early-stage VC deals focused on software and information technology start-ups increases, in line with the digital orientation of the formers (Drover, Busenitz, et al., 2017).

3. BUSINESS ANGELS AND FOLLOW-ON VENTURE CAPITAL IN THE ITALIAN MARKET: WHICH FEATURES OF ANGELS FAVOUR FUTURE FINANCING?

It is nowadays widely recognized that business angels and venture capitalists constitute key players in a florid entrepreneurial ecosystem. As outlined in previous chapters, they are among the most important sources of equity for start-ups, second only to the "love capital" (i.e. money from the FFF: family, friends and fools). They are often crucial in the growth process of many ventures, in particular the most innovative and disruptive ones. Therefore, the investigation of the impact they have on the firms they fund and also on the whole regional economy has been the focus of many studies in the last decades. Even if precise estimates are difficult, due to the low degree of visibility of transactions in this segment of capital markets, it's generally acknowledged that the angel market is larger than the venture capital one and funds many more businesses (Fenn et al., 1997)(Gaston, 1989)(C. M. Mason, 2006)(Wong et al., 2009)(OECD, 2011)(Wiltbank et al., 2009)(Hellmann & Thiele, 2015). Considering their similar focus and their wide diffusion, it is normal to assume that these equity providers often get in touch with each other, creating different types of relations which can be friendly (cooperation) or competitive. Scholars have often tried to understand the different roles these two actors play in the market and which kind of interactions they have, but as of today the argument is still debated. As a consequence of the heterogeneity of these investors, in particular of BAs, and of the rapid evolution of the market for funds for start-ups, the outcomes of their interplays are diversified and fast-changing, being also highly contingent on the overall context (country, legislation, time period, firms considered). Therefore, our comprehension of relations between them is far from complete, and many avenues of research are still open to new findings; moreover, previous studies often need confirmation in different environments in order to extend and generalize their results.

In the more traditional view, BAs and VCs represent sequential steps of the financing of entrepreneurial ventures. Previous studies argued that VCs are more likely to invest in firms already backed by business angels; however, it has been demonstrated that this "certification effect" can vary widely and depends on the characteristics and behaviour of the angel (chapter 2.2.1) (Harrison & Mason, 2000). Specific attributes of BAs, which are highly heterogeneous, have a strong influence on the future of the firm, in particular on its financing pattern. These elements indeed send strong signals, which potential investors carefully consider. The aim of this work is to deepen the understanding of the impact of different features of business angels

on the future financing of the firm, specifically focusing on subsequent capital injections by venture capitalists.
Alongside the sequential one, the most analysed and discussed kind of interplay between these two capital providers is the co-investment setting, in which they invest in the same financing round. Opinions about the effects of their co-existence on the future performance of the firm are highly debated, with opposite views on the argument (chapter 2.2.2). In the present analysis also this issue is considered, with the objective of trying to shed lights on the impact of co-invested deals on follow-on venture capital infusions.
The focus of this research is on the Italian market, for which this kind of study is particularly useful: SMEs are crucial in the economy of the country, but their growth is hampered by underdeveloped markets for funds and credit constraints, whose negative impact is amplified by the strong bank-centrism of the nation (chapter 1.1.2); therefore, the relevance of entrepreneurial finance research is particularly evident. As previous studies based on the Italian market, data were collected mainly thanks to the IBAN, the national association of business angels and their networks.
The present analysis is inspired by the work of (Capizzi et al., 2022), with whom a large part of the data are in common and many variables employed in the regression are built in the same way. In particular the first hypothesis, related to the impact of the rejection rate of the angel, is equal to the one proposed by the aforementioned authors. The aim is to obtain a corroboration of their findings with a larger sample, both in terms of number of years and firms examined.
The results of this study indicate that companies financed by angels who present higher rejection rates, which is a proxy of the thoroughness of their screening and selection processes, have greater chances of obtaining follow-on funding from a VC, reinforcing the validity of the findings of (Capizzi et al., 2022). Also being financed by investors with working experience in venture capital or private equity funds enhances this probability. On the other hand, selling larger equity stakes to external capital providers in the first financing round has the opposite effect, reducing the likelihood of further equity injections by VCs. Lastly, co-investments between BAs and VCs foster the chances of additional capital infusions from the latter.
The remaining of the chapter is structured as follows. In the first place some key points of the literature, already outlined in the preceding sections, are reviewed, followed by the formulation of research hypotheses. Subsequently the sample is described, along with the sources of data; the variables employed and the methodology adopted are outlined right away. Lastly, results are reported and discussed.

3.1 LITERATURE REVIEW AND RESEARCH HYPOTHESES

3.1.1 Literature review

Business angels and venture capitalists are the most longevous actors in the external equity market for start-ups, hence relationships between them are more solid and frequent compared to the ones with more recent sources of capital. The examination of these interactions has been the focus of many studies in the last two decades, but results have often been conflicting; therefore, opposite views on the argument exist and the topic is still highly debated as of today. According to the Financial Growth Cycle view (N. Berger & F. Udell, 1998) angels and VCs constitute sequential stages of the funding path of entrepreneurial ventures: angels are the first external capital providers of start-ups, after the funding of the 3F (family, friends and fools), while VCs represent the subsequent step for successful firms. This explains why the angel market is larger: many start-ups indeed fail during the first years of their life, hence only the ones which survive reach the venture capital stage. In this traditional view, the interplay between BAs and VCs is friendly: the presence of the angel, who acts as a certifier of best-quality ventures, reduces the information asymmetries which characterize investments in this kind of firms; his tough selection process minimizes adverse selection concerns, while his monitoring activities lower moral hazard risks (Capizzi et al., 2022). Moreover, his coaching and mentoring activities fill the knowledge and reputational gaps typical of new businesses, making them ready for venture capital (Capizzi et al., 2022)(Bonini et al., 2019)(Madill et al., 2005)(Capizzi, 2015). On the other hand, the intervention of a VC is crucial when the capital needs of the firm reach an amount too high for the limited financial capacities of the BA (Hellmann & Thiele, 2015).

A different rationale, based on cognitive theories, has been used by other scholars to explain this sequential relation: according to this view, cognitive differences are the reason behind this financing path. The entrepreneur has difficulties to communicate with VCs because of the diversity of their mindsets, and angels constitute a bridge between them: they are able to transpose the ideas of the entrepreneur into the financial language of the venture capitalist, facilitating follow-on financing from the latter (Bonnet & Wirtz, 2011).

More recent studies have questioned this complementary relation: they argued that these two players represent distinct financing paths that a start-up can take. Among the possible reasons, the more likely ones are misalignment of objectives between the investors, differences in the evaluation methods and approach to the investment and diverse networks (Hellmann et al., 2021). The presence of an angel could discourage the subsequent intervention of a VC as a

result of the heightened agency costs to align their divergent interests, or because of the risk of frictions at the exit stage, which is a fundamental step for VCs with precise parameters to be respected (Capizzi et al., 2022). According to (Hellmann & Thiele, 2015) venture capitalists could abuse of their market power, offering angels unfairly low valuations; as a consequence, angels are pushed to search for alternative ways of exiting their investments, creating a substitute relation between them and VCs at the aggregate level.

However, a sequential relation is not the only possible one: some authors have highlighted the diversity of interactions that these players can have (e.g. (Harrison & Mason, 2000)); in particular the likelihood of a co-investment in the same financing round has been analysed by several studies. Moreover, the diffusion of BANs and other types of angel organizations and the rise of new players in the market for funds for entrepreneurial ventures have widened the variety of their relations and re-shaped the classical ones. The larger financial power of angel networks reduces the need for the intervention of a VC and enhances their competition in the same financing range; on the other hand, certification effects from BAN members are often deemed more solid and valuable by venture capitalists, increasing the chances for cooperation (Drover, Wood, et al., 2017). The reason is the professionalization of angels' investment processes pushed by BANs, which have rendered them more formal and rigorous; hence, they are considered more trustable in the eyes of VCs (Capizzi et al., 2022). The diffusion of crowdfunding and the entry of professional players in this market have instead created the basis for new scenarios, in which angels and VCs have to deal also with a multitude of non-professional investors.

In this complex panorama, finding universal rules to describe the interplay between these capital providers is not possible, hence many recent studies have tried to understand which are the factors that influence the final outcome and shape the relation between angels and VCs, both at the firm level and at the market level. Some scholars focused on the characteristics of the firm: for instance (Hellmann et al., 2021) claimed that angels and VCs cater different types of companies, hence the features of the latter drive their funding path. Others have analysed the context, in particular the level of development of capital markets and the legal and economic ecosystems: for instance (Hellmann & Thiele, 2015) argued that the level of legal protection for angels and the competitiveness of the VC market are key factors in determining the relation between them. Finally, a stream of the literature has tried to shed lights on the features of investors which are able to impact the future funding of the venture: differences in characteristics and investment behaviour of previous backers are indeed seen by potential capital providers as signals of the reliability of their certification effect, hence favouring or

hampering follow-on funding (Capizzi et al., 2022)(Croce et al., 2018); moreover, pre-existing investors can affect the strategic decisions of the firm and strongly impact the ability of new funders to control it, which is often a key concern, in particular for venture capitalists. Therefore, the examination of other shareholders is not a secondary issue when analysing a deal, but a key determinant of the final decision to fund. In particular, a developing area of research is trying to understand which attributes of BAs are positively valued by venture capitalists and impact their decision-making process. The reputation of the angel often turns out to be a key discriminant: not every angel is equal as often highlighted, thus they are not always deemed good partners for a deal and their investments are not always considered predictors of quality ventures (Harrison & Mason, 2000)(Drover, Wood, et al., 2017). The factors which influence the reputation of the angel are several, and many studies have attempted to find the most impacting ones. More recent studies have tried to combine the first and the last avenue of research described above, integrating the analysis of firms' and investors' characteristics: a good fit between the two is indeed deemed to be the key for success. Different features and behaviours of funders can have divergent effects for diverse ventures, depending on the way they receive and absorb these inputs.

The present analysis belongs to the stream of literature whose aim is to widen the comprehension of the features of BAs which facilitate follow-on funding from a VC for the targeted firm. Hence the research question examined is the following: *Which features of angels and which of their investment practices increase the likelihood of subsequent financing from a venture capitalist for the firm, and which ones reduce it?*

3.1.2 Hypotheses development

Venture capitalists obviously prefer angels who are better able to select quality ventures, the ones which have higher probability of success in the future. According to previous studies (Wiltbank et al., 2009), the adoption of more deep and rigorous due diligence procedures leads to higher returns for angels, hence it's associated with the ability to choose better deals. The rejection rate of the angel was used as a proxy of the thoroughness of these operations by (Capizzi et al., 2022): it's indeed seen as a signal of more sophisticated and formal screening and selection processes, which hence lead to more accurate choices. (Capizzi, 2015) directly linked the rejection rate of BAs with the success of their investments, showing a positive relationship between the two: more selective angels earn on average higher returns. However, some angels can exhibit higher rejection rates without practicing more precise scrutiny: BAs

indeed are really heterogeneous and use different criteria when evaluating deals, hence they could refuse opportunities for various reasons, which do not always reflect a thoughtful and rigorous decision-making procedure; for instance they could refrain from investing in firms which belong to an industry sector to which they are not acquainted or, as it often happens, they are guided by non-rational motivations, such as lack of trust towards the entrepreneur, absence of perceived passion/commitment of the latter or incapacity to establish a personal relation with him (Capizzi et al., 2022)(Mitteness et al., 2012)(C. Mason et al., 2017). Nevertheless, more recent studies (C. Mason et al., 2017) argued that a "community of practice" has emerged among angels, leading to a common view on deal-selection criteria and investment behaviours. The widespread diffusion of BANs, which facilitate information sharing and learning from peers, has been the main factor behind this evolution of the angel market (Capizzi et al., 2022). For these reasons, the rejection rate of BAs is deemed to be associated with the ability to select high quality firms, which are more likely to be successful and obtain venture capital funds (Capizzi et al., 2022). The first hypothesis of the present analysis is then formulated in the same fashion of (Capizzi et al., 2022):

"H1: Companies financed by BAs with higher rejection rates have a higher probability of receiving follow-on VC funding."

Another important factor to consider when evaluating potential investments is the percentage of the equity of the firm in the hands of other external backers. A large equity share acquired by an angel could signify that he strongly believes in the project, hence representing a more solid certification for a VC. However, it is also an indicator of the "weight" the angel has in the firm: higher equity shares result in more voting rights, hence greater influence on decisions; moreover, considering the larger interests at stake, it's more likely that the BA is actively involved in the company, trying to steer its growing path. This can be problematic for the VC, since this strong presence could be cumbersome: these two capital providers indeed are often characterized by misaligned objectives, as stressed earlier; therefore, a heavy influence of the angel on strategic decisions, also fostered by the strong ties which BAs typically have with the entrepreneur, hampers the control on the firm that VCs typically require. In this situation, it could be difficult for the venture capitalist to protect his interests and agency costs increase for him (Goldfarb et al., 2013)(Capizzi et al., 2022). As argued by (Goldfarb et al., 2013) indeed, conflicts between shareholders are more likely to arise when control rights are more evenly split, and nobody can firmly control the venture; therefore contractual and agency problems

could strongly increase in a situation in which the angel constitutes a large presence in the ownership of the company.
Moreover, the point of view of the entrepreneur should also be considered: if he really believes in the future potential of his venture it's likely that he doesn't want to dilute his participation too much, thus a greater share of ownership acquired by the BA reduces the room for venture capital funding. Previous studies have shown that entrepreneurs retaining larger equity shares for themselves have greater probability of success in stock markets (Leland & Pyle, 1977); it's indeed interpreted by investors as a positive signal: insiders are the ones who have more information about the project, hence their investment is seen as a trustable certifications of quality. When founders are not convinced they usually prefer to sell higher proportions of stocks to reduce risk and get cash immediately; on the other hand, retaining control of the firm signals long term commitment to generate value (Leland & Pyle, 1977)(Vismara, 2016). As argued by the signalling theory, this decision is costly: owners of low-quality ventures are prone to sell to avoid losses in the future, hence only for high-quality agents it's convenient to retain shares (Vismara, 2016). The validity of this signal has already been widened to the private equity and venture capital context by subsequent studies (Busenitz et al., 2005).
For these reasons, it is reasonable to believe that a larger share of equity acquired by the angel represents a negative signal for VCs. Thus, the second hypothesis is formulated as follows:
"H2: Companies which sell a larger equity share to BAs in the first financing round have a lower probability of receiving follow-on VC funding."

Experience is highly valuable, and many studies have linked this feature of angels to a greater likelihood of follow-on financing for the ventures they fund; it's indeed particularly appreciated by VCs, being considered an indicator of better capacity to assess deals, and is often a key factor evaluated when choosing investment partners (Harrison & Mason, 2000)(Drover, Wood, et al., 2017)(Croce et al., 2018). Experience is an umbrella term and there are many different types: sometimes even age has been used as a proxy of the former. The most typical kinds of experience investigated in previous studies are the entrepreneurial and the investment one. The latter refers to the number of deals examined or concluded by the angel: their ability indeed advances along a learning curve, and knowledge accumulated over time has an enormous value (Sørheim, 2003)(Drover, Wood, et al., 2017); new BAs are typically deemed less trustable certifiers since they are more likely to over evaluate firms (Drover, Wood, et al., 2017). (Croce et al., 2018) split investment experience into early-stage and later-stage, based on the focus of the angel's deals: they found out opposite effects on the future financing of the venture for the

two variables, highlighting the multiple facets of this term (see chapter 2.2.1). Entrepreneurial experience instead is based on the previous job of the angel: ex-entrepreneurs are indeed believed to be better able to assess their "colleagues". Moreover, their mentoring and consulting activities are likely to be wider and more effective, hence increasing their potential added value as funders. Several authors claimed that many professional investors attach a high value to this kind of background (Carpentier & Suret, 2015)(Gimmon & Levie, 2010)(Piva & Rossi-Lamastra, 2018).

Analysing the professional career of angels opens the door to several possible types of experience to consider, so the question is what is really appreciated by venture capitalists. More valued signals are the ones which are better able to unravel information asymmetries for potential investors, hence the ones which have a good fit with the quality of the venture and present low ambiguity (Piva & Rossi-Lamastra, 2018). Typically angels invest in industries to which they are acquainted, in order to be better able to evaluate deals (OECD, 2011); therefore, working experience in the same industry of the focal firm could be positively valued by future investors, being judged as a strong technical certification of the product/service (Piva & Rossi-Lamastra, 2018). However, venture capitalists are typically highly concerned with financial aspects, which are often troubled in new entrepreneurial ventures; hence, they could value more certifications coming from angels who have greater financial knowledge, such as ex-manager or, even better, who has experience in evaluating businesses. People who have the ability to properly assess a business model, the organization of the firm, its management team, its financial results, the viability of its plans, the opportunities in that market and the threats of the environment could be considered more trustable and their certifications highly appreciated (Piva & Rossi-Lamastra, 2018); moreover, this signal does not present ambiguity, since these skills are always fundamental for any kind of start-up, at the opposite of industry-specific skills whose usefulness is confined to firms belonging to a precise sector (Piva & Rossi-Lamastra, 2018). VCs could value a lot the opinion of "colleagues" who have worked (or still work) in venture capital or other types of private equity funds, considering them reliable indicators of quality deals by virtue of their experience in assessing firms. Moreover, they share similar backgrounds and mindsets, which facilitate communication: as discussed previously indeed, people tend to consider information conveyed by those perceived as similar more valuable (Brack & Benkenstein, 2012)(Wang et al., 2019). Therefore, it's likely that firms financed by angels who have worked in venture capital or private equity funds have a higher probability of obtaining follow-on VC funding. Thus, the third hypothesis is formulated as follows:

"H3: Companies financed by BAs with working experience in venture capital or private equity funds have a higher probability of receiving follow-on VC funding."

The angel market has changed, and co-investment has become more and more common in order to be able to fund larger projects and spread risk. Existing literature mainly argues about positive effects of this practice both for investors and firms, which can benefit from larger capital infusions and wider non-monetary contributions (Bonini et al., 2019). Therefore, a greater number of co-investors should increase the chances of being funded by venture capitalists later on, also thanks to the stronger certification coming from a larger number of minds. However, co-investing settings are various and can include different types of players; diverseness strongly impact relations, often with hardly predictable outcomes. As discussed in the previous chapter (section 2.2.2), literature about angels and VCs co-investments in the same financing round presents divergent opinions, thus the comprehension of their intertwining is still shady. The main arguments in favour of their co-existence are based on the complementarity of the heterogeneous features of these capital providers, which can be exploited to benefit both of them; on the other hand, detractors argue about conflicts generated by too different mindsets and misalignment of objectives, amplified by the division of control rights (Wallmeroth et al., 2018). Environmental factors are probably key determinants of the final outcome, leading to opposite kinds of interplay between VCs and BAs; in particular the level of development of capital markets and the maturity of the angel one can determine the stage of growth of the firm in which these capital providers mainly focus, hence strongly influencing relations between them. However, these claims are usually made considering the overall impact of co-investments on the performance of the firm, while in the present analysis only the likelihood of additional VC financing is evaluated. Even if the two are inevitably and strongly tied, the balance tilts towards a positive impact of these deals when considering only the latter. Firstly, subsequent financing rounds are likely to be funded by the VC already present among the shareholders of the firm, hence avoiding the need to convince new investors about the merit of the project. Additionally, already having a venture capitalist in the ownership base is expected to be seen by potential funders as a strong guarantee of quality, thanks to the reputation which these equity providers have. Lastly, even in this case one can argue about the easier communication between peers: certifications from other VCs can be valued more than the ones coming from angels, and the likely convergence of objectives is also an important element positively considered by potential investors.

Previous empirical studies which specifically focused on the follow-on financing of the firm mainly claimed that ventures co-financed by angels and VCs are likely to get additional funds (Hellmann et al., 2021)(Croce et al., 2018). Therefore, the fourth and last hypothesis is formulated as follows:

"H4: Companies financed by BAs and VCs in the same financing round have a higher probability of receiving follow-on VC funding."

3.2 DATA AND METHODOLOGY

3.2.1 Sources of the sample and description of the dataset

The present analysis is based on the Italian market, hence the dataset is composed only by Italian companies which have received angel funding. The list of firms and the data about angel investors were collected by the IBAN (Italian Business Angel Network), the Italian national trade association for BAs and their networks. Each year the IBAN collects data about business angels and their investments through a survey, dispensed to both their associates and non-associates suspected to be angels; this is done in order to reach also the invisible share of the market and enhance the representativeness and reliability of the sample. To identify suspected angels out of their association, the IBAN retrieves from the Bureau Van Dijk – AIDA database shareholders of start-ups and analyses their investment behaviour: the ones with a profile consistent with that of a BA (i.e. repeated investment in new companies, non-executive role, minority shareholder) are surveyed (Capizzi et al., 2022)(Bonini et al., 2018).

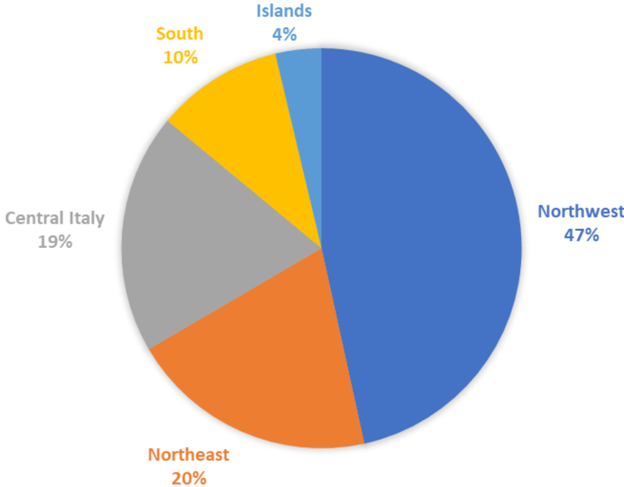
Accounting and financial information of the companies were retrieved from AIDA (Bureau Van Dijk Orbis database). Venture capital interventions were detected through Crunchbase, an online database managed by TechCrunch which highlights the funding path of start-ups, and further checked using the Bureau Van Dijk Zephyr database. Lastly, education and working experiences of the angels were gathered from LinkedIn.

The final sample is composed by 348 firms which received in total 432 rounds of financing by 210 different angels. The companies are analysed across the 2006-2020 period. All of them were funded by a BAs during this period of time at least once and 83 of them managed to obtain follow-on venture capital, equal to the 23,85% of the sample; none of them presents venture capital investments prior to the BA one. Altogether, 115 firms were able to get additional funds after the first angel intervention (either by a VC, a BA or other investors); 84 businesses collected more than one angel funding round and 25 received more than one VC round, up to 5; in total 124 round of investment by VCs were recorded, of which 104 alone and 20 in co-investment with a BA.

The geographical disposition of companies is tilted towards the North of the country, where about 2/3 of the enterprises analysed are located (Figure 10); in particular, Lombardy alone accounts for 35% of the sample with 123 ventures. This is in line with the territorial distribution of angels' investments highlighted by previous studies (see chapter 1.3.4) and with the regional disparities which affect the country. As concerns the industry sector, information and communication is the most represented with 128 start-ups, accounting for 36% of the total;

professional, scientific and technical activities follow with 71 firms, while 63 ventures belong to the manufacturing category. Altogether these three groups account for about 3/4 of the sample.

Figure 10: Geographical distribution of the sample



Turning to the investors' features, the average age of angels is 48 years. The number of companies in their portfolio ranges from 1 to 10, with a mean value of 3.5, in line with the data reported by the (Venture Capital Monitor – VeM, 2021) exposed in the first chapter (section 1.3.4). Their net worth spans from €250.000 to €7.5 million, with a mean of almost €1.5 million, and on average 15,83% of this amount is stably dedicated to angel investing. These values are higher compared to the ones detailed by the (Venture Capital Monitor – VeM, 2021), outlining a portrait of richer BAs which are also prone to commit a greater share of their wealth to young entrepreneurial ventures.

The database is structured as a panel dataset, in which every firm has a row for every year from 2006 to 2020. Hence, each record represents the data for a precise firm-year combination. A variable "t" is constructed as follows: for each venture it takes a value of 0 in the year of the first BA intervention, which is the moment in which the status of the firm fundamentally changes, and increases by one each of the following years, signalling the time elapsed from the first angel round (vice versa, it decreases of 1 each year prior to the 0 one, assuming negative values). The analysis is performed employing a random effects panel logistic regression, in which the dependent variable is a dummy variable which takes a value of 1 from the year in which the first VC investment subsequent to the angel one is recorded.

3.2.2 Variables employed in the analysis and descriptive statistics

The outcome variable of this model is a dummy (*d_VC*) which takes a value of 1 from the first year in which the focal firm receives funds from a venture capitalist, but only if it happens after a capital infusion from an angel, and 0 before. All the dependent variables regarding BAs' features and investment behaviours report a value of 0 in the years before the first angel round and their effective value since then. All of them refers to the first angel funding received by the company, since it represents the moment from which the presence of this investor could influence the future probability of obtaining venture capital; hence subsequent angel rounds are not considered (Capizzi et al., 2022).

The first hypothesis is tested using the variable *Rejection_rate*, computed as 1 minus the ratio between the number of investments finalized and the number of deals evaluated by the angel in the year in which the financing of the focal firm is concluded (i.e. the % of refused proposals). The calculation refers only to the focal year because retrieving data for the entire life of the investor is difficult and could lead to imprecise estimates. When more BAs co-invest together in the focal round the average of their rejection rates is assessed (Capizzi et al., 2022).

To test the second hypothesis the variable adopted is *Ownership_share*, calculated as the percentage of the equity of the firm acquired by the angel in the focal deal; in co-investment settings, the sum of the shares of all the investors is examined.

The variable employed to test H3 is a dummy (*VC_experience*) which takes a value of 1 when at least one of the angels involved in the deal has worked in venture capital or other private equity funds, and 0 otherwise. Previous working experiences of BAs were retrieved from LinkedIn and categorized by the author. Only relevant roles (e.g. partner, manager…) in the fund were taken into account.

As regards the last hypothesis, a dummy variable (*coinv_VC*) assumes a value of 1 if at least one venture capitalist participates at the first angel financing round, and 0 otherwise.

Turning to control variables, other angel-specific features are checked to understand their impact on the likelihood of receiving later on VC funds. The first factor appraised is the proximity between the firm and the residence of the BA: a dummy variable (*Proximity_same_region*) acquires a value of 1 when both dwell in the same region, and 0 otherwise. In a co-investment setting, the reported value is 1 if at least one of the investors satisfies the aforementioned condition. As highlighted in the first chapter (section 1.3.1), BAs prefer to invest in start-ups located close to their residence (OECD, 2011); geographical proximity is in fact necessary for the success of their soft monitoring approach: it favours direct

interactions with the entrepreneur and facilitates personal visits to the company site (Wong et al., 2009). Co-localization in the same area of the investor and the investee company reduces the cost of oversight, decreasing agency problems, and fosters the efficacy of the mentoring and coaching activities, thanks to the closer angel-entrepreneur relationship (Croce et al., 2018).

As regards experience, both the entrepreneurial and the investment one are employed as controls, in order to widen the analysis of the impact of different backgrounds: concerning the former, a dummy variable (*Entrepreneurial_exp*) adopts a value of 1 if at least one of the co-investors was an entrepreneur prior to the focal deal, while the latter is measured with a variable (*Investing_exp*) which reports the number of deals concluded by the angel in his entire life (or the average of all funders in co-investment situations) (Capizzi et al., 2022).

As discussed previously, the typical monitoring approach of BAs denotes some particularities which can influence the evaluations of potential investors. In line with previous studies (Capizzi et al., 2022)(Bonini et al., 2019)(Croce et al., 2021)(Bonini et al., 2018), a control variable measures the level of soft monitoring implemented by the angel. According to the frequency of visits to the company site, 5 levels of monitoring are contemplated (very-low, low, medium, high, very-high); then a dummy variable (*Soft_monitoring*), used in the regression, acquires a value of 1 if the level of monitoring is medium or higher, and 0 otherwise. In a co-investment setting, the highest value of monitoring among all the angels is taken into consideration.

In line with the reflections exposed before, also the number of co-investors in the focal deal is controlled. A co-investment by multiple angels can bring to the company larger capital deployments, which allow faster growth and scaling-up of operations, and a wider set of non-monetary contributions, thanks to the multiple sources of knowledge, experience and network (Bonini et al., 2019). Moreover, a selection process carried out by multiple individuals with different backgrounds reinforces the validity of the choice and increases the level and quality of monitoring, enhancing the certification effect for future investors. For these reasons, company financed by multiple angels in the same financing round are more likely to get follow-on VC funds (Bonini et al., 2019). Therefore, a variable with the number of co-investors in the focal deal is employed as a control (*Coinvestors*).

As regards firm-specific controls, factors which can impact the probability of receiving venture capital financing are included in the regression: the company age in logarithmic form (*companyageLN*), the revenues of the previous year in logarithmic form (*Revenues (t-1)*), which represent a proxy of the size of the firm, and the intangible ratio of the previous year (*Intangible_ratio (t-1)*), calculated as the ratio between the intangible assets and the total assets of the venture, to proxy future growth opportunities (Capizzi et al., 2022).

Finally, dummy controls using the industry sector (based on the NACE classification), the geographical location (based on the NUTS 2 level, which is equivalent to the Italian regions) and the year are encompassed.

Table 1 sums up all the variables involved in the regression, along with their source and a description of their meaning. Table 2 presents some summary statistics. The dataset is not balanced to avoid restrictions of the sample. Therefore, the number of observations it's different for each variable since not every firm presents data for all the years analysed; it was indeed not possible to retrieve them from the aforementioned sources. Table 3 reports the correlation matrix. No correlation higher than 70% is detected, hence there shouldn't exist multicollinearity issues.

Table 1: List of the variables employed

Variable	Description	Data source
d_VC	Dummy variable which takes a value of 1 from the first year in which the focal firm receives funds from a venture capitalist, but only if it happens after an investment from a BA, and 0 before.	Crunchbase Bureau Van Dijk Zephyr
Rejection_rate	1 minus the ratio between the number of investments made by the angel and the number of investments evaluated by the angel in the year in which the financing of the focal firm is concluded. When more angels co-invest in the same financing round (the focal round) the average of their rejection rates is considered.	IBAN survey
Ownership_share	Percentage of the total equity of the firm acquired by the angel in the focal deal; in co-investment settings, the sum of the shares of all the investors involved is considered.	IBAN survey
VC_experience	Dummy which takes a value of 1 when at least one of the angels involved in the deal has working experiences in venture capital or other private equity funds, and 0 otherwise.	LinkedIn
coinv_VC	Dummy variable which assumes a value of 1 if at least one venture capitalist is involved in the focal deal, and 0 otherwise.	IBAN survey
Proximity_same_region	Dummy variable which takes a value of 1 when the firm and the angel dwell in the same region, and 0 otherwise. In a co-investment setting, this variable adopts a value of 1 if at least one of the BAs resides in the same region of the firm.	IBAN survey
Soft_monitoring	Dummy variable which acquires a value of 1 if the level of monitoring of the angel is medium or higher, and 0 otherwise. The indicator is based on the frequency of visits to the company, and a scale from 0 to 5 is contemplated: from 3 to 5 the dummy takes a value of 1, while it reports a value of 0 from 0 to 2. In a co-investment setting, the highest value of monitoring among all the angels involved is considered.	IBAN survey
Investing_exp	Number of investments performed by the angel in his entire life; in co-investment situations the average of all funders is computed.	IBAN survey
Entrepreneurial_exp	Dummy variable which reports a value of 1 if at least one of the co-investors was an entrepreneur prior to the focal deal.	IBAN survey
Coinvestors	Number of co-investors in the focal deal.	IBAN survey
Revenues (t-1)	Revenues (thousands EUR) of the previous year (t-1) in logarithmic form.	Bureau Van Dijk Orbis
companyageLN	Company age in logarithmic form.	Bureau Van Dijk Orbis
Intangible_ratio (t-1)	Ratio between the intangible assets and the total assets of the firm, in the previous year (t-1).	Bureau Van Dijk Orbis

Table 2: Summary statistics

Variables	N	Mean	SD	Min	Median	Max
d_VC	5220	0.094	0.291	0	0	1
Rejection_rate	4934	0.379	0.395	0	0.154	1
Ownership_share	5094	0.105	0.192	0	0.025	1
VC_experience	5220	0.174	0.379	0	0	1
coinv_VC	5088	0.009	0.093	0	0	1
Proximity_same_region	4667	0.343	0.475	0	0	1
Soft_monitoring	4671	0.310	0.462	0	0	1
Investing_exp	4680	3.424	4.703	0	0	26
Entrepreneurial_exp	4821	0.149	0.356	0	0	1
Coinvestors	5190	1.719	3.943	0	0	40
Revenues (t-1)	2385	3.962	2.906	0	4.239	12.764
companyageLN	3388	1.861	0.632	0.693	1.946	3.664
Intangible ratio (t-1)	2378	0.264	0.269	0	0.175	0.996

Table 3: Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. d_VC	1.000												
2. Rejection_rate	0.325*	1.000											
3. Ownership_share	0.055*	0.478*	1.000										
4. VC_experience	0.281*	0.449*	0.150*	1.000									
5. coinv_VC	0.118*	0.114*	0.052*	0.159*	1.000								
6. Proximity_same_region	0.204*	0.647*	0.504*	0.279*	-0.023	1.000							
7. Soft_monitoring	0.253*	0.659*	0.425*	0.285*	0.098*	0.548*	1.000						
8. Investing_exp	0.277*	0.652*	0.406*	0.371*	0.082*	0.506*	0.525*	1.000					
9. Entrepreneurial_exp	0.108*	0.274*	0.245*	0.065*	0.021	0.317*	0.314*	0.506*	1.000				
10. Coinvestors	0.249*	0.400*	0.036*	0.238*	0.220*	0.157*	0.177*	0.286*	0.197*	1.000			
11. Revenues (t-1)	0.200*	0.143*	0.027	0.011	-0.052	-0.006	0.049	0.143*	0.035	-0.024	1.000		
12. companyageLN	0.063*	0.248*	0.092*	0.050*	0.007	0.151*	0.032	0.151*	0.043	0.050*	0.333*	1.000	
13. Intangible_ratio (t-1)	0.020	-0.077*	-0.040	-0.018	0.055*	0.021	0.027	-0.036	0.013	0.028	-0.300*	-0.169*	1.000

Significance level: * p<0.1

3.3 RESULTS AND DISCUSSION

3.3.1 Reporting of results

To get a first glance about the influence of the factors considered in this work on the likelihood of obtaining additional VC funding for the focal firm, the mean level of all the variables used in the analysis was calculated for two subgroups: one composed by all the companies which managed to receive follow-on VC financing after the angel intervention, and one formed by the ones which didn't; subsequently, a t-test was run on the difference between the means of the two subgroups for all the variables.

As shown by table 4 companies receiving follow-on funding are financed by angels with higher rejection rates, providing a preliminary confirmation of H1; the difference of means between the two groups is wide, highlighting a substantial discrepancy between them. Results for the ownership share variable instead contrast with the 2nd hypothesis: companies which receive further financing present larger equity stakes acquired by the first angel on board.

H3 and H4 obtain a preliminary confirmation: former VCs and current ones, co-investing with angels, are more diffused among the shareholders of the firms which manage to get additional funding. On average, these companies also have more expert angels on board, both in terms of investment and entrepreneurial experience, present a larger number of co-investors and display more funders who dwell in their same region; lastly, their first backers employ higher levels of monitoring. As regards firm's attributes, ventures which get further financing are larger (in terms of revenues) and older on average. All the variables described so far display results significant at 1% level; the only one for which the coefficient is not significant is the ratio of intangible assets on total assets.

Table 4: T-test on the difference between means

Variables	Follow-on VC		NO Follow-on VC		T-test	
	Number of observation	Mean	Number of observation	Mean	Mean difference	Std Err
Rejection_rate	439	0.791	4495	0.339	0.452***	0.018
Ownership_share	468	0.138	4.626	0.102	0.036***	0.009
VC_experience	489	0.505	4731	0.140	0.365***	0.018
coinv_VC	463	0.043	4625	0.005	0.038***	0.005
Proximity_same_region	445	0.640	4222	0.311	0.329***	0.023
Soft_monitoring	440	0.672	4231	0.272	0.401***	0.022
Investing_exp	456	7.387	4224	2.996	4.391***	0.223
Entrepreneurial_exp	456	0.268	4365	0.136	0.132***	0.018
Coinvestors	489	4.756	4701	1.403	3.354***	0.181
Revenues (t-1)	413	5.230	1972	3.696	1.534***	0.154
companyageLN	488	1.958	2900	1.845	0.113***	0.031
Intangible ratio (t-1)	409	0.276	1969	0.262	0.014	0.015

Significance level: *** p<0.01

Following the calculation of the aforementioned preliminary results, the four hypotheses were tested using a series of random effects panel logistic regressions, in which the dependent variable is a dummy variable which takes a value of 1 from the year in which the first VC intervention subsequent to an angel investment is recorded, and 0 before. Table 5 reports the results for the six different models tested: coefficients indicate the impact of the variable on the first column on the probability of receiving follow-on financing from a VC for the focal company. Below each coefficient, the relative standard error in brackets. The base model encompasses only control variables, while each of the following models includes one of the four hypothesis variables; in the last scenario all the variables considered in the present work are incorporated in the regression.

Starting from control variables, results indicate a positive impact on the dependent variable of the number of co-investors and of the level of revenues, both significant at 1% in all the possible scenarios. Weak conclusions can be drawn about the soft monitoring variable, which appears to be positively related to the likelihood of receiving venture capitals financing, but coefficients are not always significant. This contrasts with previous studies (Capizzi et al., 2022), which found it to be negatively linked to follow-on VC funding. All the other control variables display not significant results.

As regards research hypotheses, coefficients indicate a positive impact of the rejection rate of the angel on the outcome variable, therefore hypothesis 1 is confirmed. Higher shares of ownership acquired by the first BAs who back the venture lead to a lower probability of a

subsequent funding from a VC, validating H2. The third and fourth hypotheses are verified too: previous working experience of the angel in a venture capital or private equity fund and co-investment with VCs in the first financing round positively impact the likelihood of follow-on capital injections.

In the lower part of table 5 marginal effects are reported. The estimated impact of changes in the rejection rate of the angel on the probability of receiving follow-on venture capital for the focal firm is between +17,20% and +20,90% (when the rate goes from 0% to 100%); on the other hand, an increase in his ownership share in the company (from 0% to 100%) reduces this likelihood of 21,00%-29,10%. Having at least one VC among the investors in the first financing round increases the chance of getting additional venture capital funds of a rate between +15,20% and +23,10%%, while having on board an angel investor with prior job experiences in private equity firms foster this probability of 11,80%-13,60%.

Table 5: Regression results and marginal effects

	Base	Rejection rate	Ownership share	VC experience	Co-investment with VC	Total
Panel logit regression						
Proximity_same_region	1.168	0.896	-0.991	1.023	0.051	1.447
	(2.172)	(1.518)	(1.571)	(1.700)	(1.402)	(1.851)
Soft_monitoring	3.338	5.022**	4.776**	2.492	2.996	4.746*
	(2.150)	(1.790)	(1.666)	(1.790)	(1.768)	(2.061)
Investing_exp	0.082	-0.031	-0.034	-0.034	0.088	-0.134
	(0.193)	(0.150)	(0.155)	(0.150)	(0.128)	(0.207)
Entrepreneurial_exp	0.612	3.089	1.718	2.364	1.024	2.673
	(2.450)	(1.862)	(1.834)	(1.894)	(1.893)	(1.950)
Coinvestors	0.921***	0.781***	0.820***	0.534***	0.659***	0.414***
	(0.134)	(0.103)	(0.104)	(0.124)	(0.108)	(0.123)
Revenues (t-1)	1.561***	1.339***	1.691***	1.564***	1.613***	1.380***
	(0.413)	(0.279)	(0.289)	(0.290)	(0.273)	(0.282)
companyageLN	-1.231	-0.497	-0.244	-1.089	-2.302	-1.463
	(2.850)	(1.814)	(2.174)	(2.210)	(2.180)	(2.057)
Intangible_ratio (t-1)	0.349	0.195	-0.025	0.232	0.689	0.328
	(2.029)	(1.969)	(2.200)	(2.159)	(2.005)	(1.963)
Rejection_rate		13.275***				13.171***
		(2.805)				(3.072)
Ownership_share			-14.897**			-22.339***
			(4.668)			(5.889)
VC_experience				7.879***		9.073***
				(2.313)		(1.948)
coinv_VC					14.551**	11.698**
					(4.539)	(4.422)
Dummy industry	Yes	Yes	Yes	Yes	Yes	Yes
Dummy NUTS	Yes	Yes	Yes	Yes	Yes	Yes
Dummy year	Yes	Yes	Yes	Yes	Yes	Yes
Log-likelihood	-233.130	-208.218	-228.166	-228.433	-232.154	-200.478
N	1632	1522	1632	1632	1632	1522
Marginal effects						
Rejection_rate		0.209***				0.172***
		(0.046)				(0.041)
Ownership_share			-0.210***			-0.291***
			(0.061)			(0.078)
VC_experience				0.136**		0.118***
				(0.041)		(0.024)
coinv_VC					0.231***	0.152*
					(0.068)	(0.059)

Significance level: *** p<0.01, ** p<0.05, * p<0.1

3.3.2 Discussion of results

The validation of the first hypothesis confirms the positive impact of the rejection rate of the angel on the probability of obtaining subsequent funds from venture capitalists for the firm, corroborating the findings of (Capizzi et al., 2022) in the Italian market. The level of formality and thoroughness of the due diligence process performed by the angel is a key aspect in

determining his reputation, and thus the value of his certification effect for future investors. This remarks the importance for BAs to adopt formal and rigorous screening and selection procedures, in order to better identify quality ventures and enhance the yield of their investments. Indeed, only a few companies manage to obtain VC funding, hence choosing the ones which are able to reach this step of their growth it's often fundamental to achieve higher returns. As shown by previous studies, BANs are strongly impacting this aspect of angel investing, pushing for a professionalization of the market and strongly influencing the investment approach of many angels. The association with these organizations can help individual investors, in particular the less experienced ones, to improve their scrutiny procedures and increase the success rate of their operations. Therefore, the pivotal role of angel networks in enhancing the efficiency of this segment of capital markets, benefitting the whole entrepreneurial ecosystem, is once more emphasized.

As regards H2, which is endorsed by the results of the regression, the negative influence of the ownership share acquired by the first BA on board on subsequent VC infusions might constitutes a major rationale behind the typical choice of angels to purchase small equity stakes. They are in fact aware that a large participation by the first external investors can hamper the future financing of the firm and compromise its growth, and thus also the angel's returns. Venture capitalists indeed require a strong control on the start-up, hence the presence of other influent external stakeholders is considered cumbersome and could make them refrain from the investment. The signalling effect of a larger equity share retained by the entrepreneur could represent an alternative explanation. If this is the case, the results of the present work could help to consolidate and extend the findings of previous studies performed in different settings to the market for funds for entrepreneurial ventures, arguing about a positive influence of equity retention in the evaluation of potential investors.

Among the three types of experience considered in the analysis, the only one which displays significant results is the working experience of the angel as a venture capitalist, the hypothesis variable which validates H3. This remarks the need, highlighted by previous studies (Piva & Rossi-Lamastra, 2018)(Croce et al., 2018), to deepen the examination of different kinds of experience in order to understand what venture capitalists value more. This feature of investors is one of the most analysed in the entrepreneurial finance research panorama, but a more thorough comprehension of the impact of the multiple facets of this generic term it's fundamental to enhance the understanding of the interplay between different capital providers. The present inquiry reveals the stronger certification effect conveyed by investors with experience in the private equity market. Financial aspects represent the main concern for VCs,

hence an investment from someone who is able to properly assess firms is considered a trustable guarantee of quality. This signal is not ambiguous and always fit with the informational needs of potential investors: it's indeed a skill useful for any kind of start-up. (Piva & Rossi-Lamastra, 2018) argued that signals which have these two characteristics are highly valued by crowdfunders, hence the results of the present work help to corroborate and extend the findings of the aforementioned authors to the angel market. Moreover, the claims of (Drover, Wood, et al., 2017), who argued that angels are seen as certifiers of the financial viability of the project, are endorsed by this analysis.

The effects displayed by co-investments between VCs and BAs contribute to the debate on this highly discussed matter: the positive impact of this practice on the subsequent financing of the firm found out by previous studies is confirmed by the validation of H4; however, wider conclusions about its influence on the future performance of the company cannot be drawn. Additionally, it should not be forgotten that the outcome is highly contingent on the level of development of capital markets of the country and on the characteristics of the angel one. As outlined in the first chapter (section 1.2.6), nowadays co-invested deals between angels and venture capitalists represent the most relevant type of operation in terms of capitals deployed in the Italian early-stage equity market; therefore, these results assume a valuable relevance in the current context.

Lastly, the confirmation of H3 and H4 provides support to the claims about the impact of similarities between investors in the evaluation of signals: certifications conveyed by venture capitalists or investors who have previously worked in that industry are valued more by their peers. Therefore, communications aspects should not be underestimated, and social and psychological factors represent important variables to consider in the analysis of relations between different capital providers.

CONCLUSION

This thesis contributes to the entrepreneurial finance literature, a prominent field of research which calls for results, considering the wideness of the questions still unexplored and the numerous debated findings which need confirmation.

The first two chapters together constitute a review of the existing literature, useful to point out the state-of-the-art knowledge in this field, compare different school of thoughts and have an overview of the ongoing debates which require further deepening. The opening section lays down the theoretical foundations pivotal to understand the remaining of the paper and depicts the status of the market for funds for entrepreneurial ventures, deeply describing its major actors along with their key features. The aim is achieved relying on the pillars of the literature but also on the most recent contributions, to portray an updated picture of the functioning of these organizations. The second chapter addresses the main topic of this thesis, delineating and analysing the possible relations between different capital providers for start-ups. The subject represents the current central focus of scholars: entrepreneurial finance research has headed towards the study of these interplays, which are complex and contingent on many variables. The present thesis summarizes and compares the findings of different studies in order to outline a holistic representation of the current knowledge on this topic and highlight the main points of disagreement.

The keynote which emerges from this examination is the impossibility of depicting interactions between capital providers with static rules which are universally valid, as attempted by the first scholars who addressed the topic. The variety of possible intercourses between diverse actors in the market is wide and the outcomes conditional on a multitude of factors; indeed, results of different analyses based on dissimilar samples are frequently conflicting. As of today, contextual differences, in particular between countries, still represent a key discriminant. Therefore, recent studies have approached the issue adopting a more holistic view, attempting to comprehend the role that distinct variables play. Furthermore, the validity of results is often inhibited by the fast-changing nature of the entrepreneurial finance panorama. Traditional equity providers have evolved and interactions between them have changed in the last decades; moreover, new sources of funds, in particular crowdfunding, have been able to impact the whole ecosystem reshaping existent relations and creating new ones. Therefore, the reliability of numerous findings has been questioned and several unexplored avenues of inquiry have emerged. Overall, it appears that the evolution of this market and the entry of new players have

been beneficial to the start-up environment and can help to address the long standing issue of new ventures financing, if supported by effective regulation.

The last chapter adds to the most recent avenues of research in the entrepreneurial finance field by deepening the exploration of the Italian market with an empirical analysis. The inquiry contributes to the growing body of knowledge on business angels, which is still underdeveloped compared to the one on VCs, focusing in particular on their impact on the future performance of the firm with the examination of follow-on capital injections, which often represent a key determinant of the start-up's growth and success. Additionally, this work adds to the stream of literature inspecting the interplay between different capital providers for young entrepreneurial ventures, specifically focusing on the interactions between BAs and VCs. In particular, the present investigation is part of the area of research which analyses the characteristics of investors as determinants of the funding pattern of start-ups; this approach is more recent compared to the traditional focus on the firm's features and its relevance is growing steeply. Lastly, the exploration of the effects of co-investments between BAs and VCs adds to the research area which is examining the impact on the venture of the co-existence between these two capital providers, contributing to a highly debated argument.

The proposed research question is answered by revealing the influence of four different angel's personal attributes and investment practices on the future financing of the firms they fund, specifically focusing on venture capital injections. Precisely, the analysis performed indicates that start-ups financed by business angels characterized by high rejection rates in their selection processes have greater probabilities of being subsequently funded by a venture capitalist. Also firms backed by BAs with working experience in private equity funds present larger chances to access follow-on venture capital. By contrast, selling larger equity shares to angel investors weaken the likelihood of upcoming VC investments. Lastly, co-invested deals between BAs and VCs enhance the prospects of additional venture capital infusions.

However, the aforementioned claims need to be appraised being aware of the limitations of the present inquiry. Robustness checks are necessary to corroborate the validity of findings and argue about the existence of causal relationships. Moreover, a larger and more international dataset is required to generalize results. Lastly, the nature of data, which were mainly retrieved from surveys or other information provided by the investors themselves (e.g. LinkedIn), and their elaboration, which was partially carried out by the author with personal discretion, represent weaknesses which must be considered.

The results of the present work reinforce the claims of previous studies and help to extend the validity of analyses performed in different settings to the angel and venture capital context.

Additionally, hints which can be seized by future research are provided: for instance, upcoming works could address the evaluation of different types of experience, deepening the comprehension of the influence of this critical variable which is characterized by a wide spectrum of possible interpretations.

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