ICADE BUSINESS SCHOOL

VENTURE CAPITAL VALUATION METHODS: CHALLENGES AND OPPORTUNITIES TO CURRENT TRENDS AND LANDSCAPE

Author: Elias Ferraz Cabrera

Director: Javier Errejón Sainz de la Maza

Madrid
June 2019

Index

Abstract

The venture capital industry needs to gather their resources and expertise with the aim of developing a standardized guideline system which can help investors reduce the subjectivity of alternative startup valuation methods, which rely highly in qualitative scales and procedures. However, their use as a block can be helpful to tackle the uncertainty of the decision process, as they all emerge as a surrogate answer to the mechanical and highly quantifiable standard methodologies characteristic of more consolidated and stable phases of the company life cycle.

Key Words: Venture Capital, Start Up, Valuation, Methodology, Entrepreneur, Subjectivity, Empiric, Industry Development.

A Brief Introduction

The aim of the project is to analyze the crucial components of the decision-making process of the average player in the industry of venture capital. From the internal means of sourcing, going through the key analytics and on to the first approach to the potential entrepreneurial partner to close the deal. It is important to define, measure and understand the major parts of such development and learn where is the potential of proceeding innovation, including the power structure of the investing company itself. Finding the main knowledge and procedural gaps between the current market approach and its real needs is what can make the difference between a high volatility gamble or a stable, well defined project.

Although we must mention the necessity to evaluate the entire proceeding to assess the investment needs, a special focus will exist through in this thesis towards distinct steps which deserve more attention due to its complexity or its broad methodology. The traditional methods of startup valuation gather this criterion and understanding them more in depth is decisive to find its strengths and weaknesses. The Venture Capital Method, the First Chicago Method, the Berkus Method or the Run Rate method are a few examples of the measures and stratagems I would like to dive into. More customary means such as Discounted Cash Flow valuation shall be analyzed as well, trying to find how these type of stable long-term methodologies copes with imminent uncertainty. Within it, one of the most debated and confusing procedures not only for venture valuation but for all companies is the cost of equity calculation, the Capital Asset Pricing Model (CAPM). Although CAPM has always been considered an infallible standard in the industry, many studies have shown its inefficiency over the years, not only for venture type firms (which are the focus of the discussion), but consolidated reference multinationals as well. Alternative systems like the Fame-French model or the Pastor-Stambaugh model can make the cost of equity calculus more realistic and therefore the DCF method flexible and more useful depending on the external and internal conditions of the valuated enterprise.

Opposed to the classic methods mentioned above, innovative mechanisms of decision making appear constantly, and reviewing the latest trends in venture capital firms can guide us or give us hints about which direction is the industry taking and where it might go next.

However, prior to those main stages of the manuscript, a literature review will be held, in order to revise key concepts, like types of venture capital entities and how they function and coexist, which may be uncertain due to the unfamiliarity of the reader. Within these concepts, explaining how venture capital is unique in both procedures and company stages can be done revising the

characteristics of mezzanine financing, leveraged buyouts and distress investing and how each mechanism can be optimized depending on the characteristics of the potential company

Additionally, the current status of the industry as well as how it has evolved through the various economic and financial landscapes of the past decades will be meticulously explained, trying to give context and help such reader understand how this area behaves and how it correlates to other disciplines, specially economics.

This small text is just an introductory approach which tries to emphasize what I consider interesting topics to talk about regarding the Venture Capital-Private Equity world, but I am 100% open to reestablishing the goals and perspectives of this piece. My objective is to learn as much as I can about this industry while finding new ways to conceive these issues.

Personal Motivation

Although all forms of financial analysis centered in the empirical and objective valuation of a business or project is inherently very interesting for me, it is the level of complexity and uncertainty what drives my passion towards the world of venture capital and private equity. This level of risk and lack of valuation inputs may discourage many, as an imminent feeling of frustration may arise making their interests fade. For me, it is this uncertainty, the flexibility and the broad variety of investigation opportunities what motivates the purpose and scope of this work. The high potential of the industry, the constantly evolving means and the need of instinct for this kind of activity is a high stimulus for students like me trying to expand their knowledge and perspective within the world of business and finance. With this said, I shall try to transmit, develop and expand such passion and knowledge to you, the reader.

Discussion Goal

The Master's Degree Final Thesis which is presented here intends to review, study and comprehend the actions through which venture capitalist and other specialized investors evaluate the potential of a venture or start up. As this objective may seem broad, we shall separate this larger principal goal into subsequent smaller ones, as it is believed not only to transmit the aim of the study, but to allow a better understanding of the potential reader, which may not be completely familiarized with the discipline. In a secondary way, identifying the components which define the direction of the study simplifies the way it is developed, allowing a more fluid and organized structure. They shall be interpreted and used for future reference as they are here cited:

1st. Understand and familiarize the reader with the basic theoretical principals and concepts of the industry of venture capital, in a specific approach which permits the full comprehension of the paper and its use as a potential working and skill development tool.

2nd. Empirical review of industry state aiming to expand perception of global needs to posteriorly estimate the requisites that professional investors methodology shall comply with to be truly effective

3rd. In depth development of the major valuation methods, reviewing the complexity of its numerical processes or characteristic criterion-based decisions.

4th. Effective review of the input development and the correct use and interpretation of output data unfolding through adequate application of systems

5th.Exhaustive review of results, proceeding to define potential upcoming strengths and weaknesses and how they shall be tackled through a technical review of processes

6th.Establish complementary support or independent channels on which investors can rely on to obtain more accurate and reliable results.

The accomplishment of these 6 goals guarantees a reliable guidance framework to operate in venture capital investment deals, being able to successfully assess an estimated price at the purchase negotiation table of the potential venture. Raising awareness about the concept of "estimated price" is important, as most analyst pretend to have completely empirical proceeding through which an undisputable value is obtained. This belief is far from reality, as the model is composed of many relative inputs which may differ attending the criteria of one investor of the other, especially in terms of return and risk assessment. Therefore, the goal is to reach a starting point price through which investors and entrepreneurs may sit to start a negotiation complex negotiation actions which shall obey to the necessities of the parties involved and exogenous structural factors as well. The negotiation scheme implies enough complexity by itself, and consequently it will not be fully covered by the present thesis, although certain indications shall be provided as linkage between both coexistent processes.

How do we value a startup? Or on the other side of the table: ¿How do investors value an entrepreneurial firm?

In order to address these objectives, the first part consists of a comprehensive overview of the start-up market and the *status quo* of academia in terms of literature and research findings. Beginning with the start-up market in general is essential to acquire a sophisticated foundational knowledge of the topic under review. On such basis, the analysis will be continued with a profound literature review of traditional valuation methodologies and followed by new entrepreneurial venture valuation approaches. Multiple methods are available to the valuator at first sight, however, each individual approach has to be scrutinized in detail to assess its suitability for the valuation of young ventures. Traditional methods are mainly developed for valuation of ongoing, mature businesses concerns. Startup valuation approaches, however, are based on an amalgamation of traditional methods such as discounted cash flows or income/asset-based multiples, and novel methods based on qualitative factors such as management experience. Additionally, further refinements via real options or multiple-stage scenarios can be considered.

Why is the valuation necessary?

The valuation is not just a mere step of the investment process in which only the purchasing part is interested. The valuation of the firm is obviously important for the investors as it sets the overall profitability of their fund, which defines their performance and future reliability. It is important for the entrepreneur as well, as this valuation actually gives a tangible number to the resources put into the plan. This way, valuation aligns the interests and ambitions of both parts, helping set a fair structure and the optimization of resources, while at the same time it diminishes the potential conflicts between both parts, standardizing partially the negotiation development (Clercq et al. 2006).

Which is the problematic with this type of deal?

As stated before, mainstream financial theories base themselves on the premise that any company is nothing but the future profit it can generate, and thus this aspect shall be the only subject matter to any type of study. This way the commonly used methods in corporate finance give a logic approach to the issue but set its entire structure on strict assumptions and information that an emerging enterprise just cannot guarantee. This initial and substantial information gap limits the early stage valuation and makes the process nowadays partially an "alchemy". This is a fact that must be interiorized by any potential reader, and thus these methodologies try to find the optimal approach to cope with it empirically, resulting in trustful preferences.

Main Concepts

In order to compel with the aspirations of this thesis it is necessary not only to introduce the concept to potential outsiders and to show the nature of field but also the identify and define the dominant concepts which delineate the industry itself. An approach to the must know concepts will be specified and interpreted in the upcoming lines. These basic notions will be frequently used along the entirety of the discussion and are consequently of imperative knowledge for successful follow up and easing the read as well.

Start up. We will refer as "startup" or "ventures" to emerging enterprises which are looking to effectively start or launch a new business or to companies which have already started their activity but are lacking the financing necessary to adequately develop their business model and ideas, exploiting the full potential of the concept. We shall mention the intention to refer as startup to all companies which themselves n such phase, regardless the nature of their activity. This observation is made due to the common trend of associating start up to companies related to technological development, which is false. However, the presence in that industry is frequent due to the innovative nature of most companies trying to access this means of financing. This innovation is the main attractive component of project, as well as their large flexible organizational and productive capacities, allowing them to grow profitably fast. These ventures imply high levels of risk but an extraordinary return potential (exponential scalability of the binomial risk return) (P.A. Gompers, 1996)

Business Angel or Angel Investor: It is the name used to denote a prosper and wealthy individual which provides capital and liquidity to a startup or emerging company demanding an equity participation in such enterprise. Besides the capital, many business angels have a high expertise in business creation and development matters, helping to expand the venture through his previously acquired knowledge and relationships. The conditions imposed by business angels are usually much more supportive than other means of lending, since they are looking to support the entrepreneur and their idea in their root rather than exercising pressure to obtain immediate profitability *(Hardymon, F., 2012).* Business Angels cover the financing gap between the earliest phase of seed financing (in which entrepreneurs' resort to the three Fs: "family, friends and fools") and the step entering the scope of private equity entities.

Comparable: When our possible valuation techniques are presented in the following pages, the concept "comparable" will be used to reference other recently deals closed involving similar internal and external conditions. This will not bring full value to the valuation means but will serve as a support tool to specify useful realistic margins and boundaries. Because similarity among startups is in fact relative, the concept may refer to operations closed on ventures within

the same industry, market conditions or development stage, all within a explicit time frame so that other external determinants shall not change.

Target. This shall be the denomination given to the society object of an acquisition. Therefore, we will refer constantly to the investment proposal as "target".

Private Equity/Late Stage Financing. Private Equity simply refers a form of alternative investment which intends to obtain large revenues through the purchase of private companies which are not large enough to be listed in a public exchange. The investments are developed mainly by institutional accredited investors, who possess high levels of liquidity to make such large investments. The final purpose of this type of investor is to enlarge the company and its potential to the point in which it can be made public (through an IPO) or a larger company is interested in its purchase. Although the holding periods are long, with this we want to emphasize that the mere purpose of the purchase is to resell the company creating profits, companies are simply seen as investment vehicles. The major difference with other types of capital financing is the latter stage of the targets, which are stable and pose lower levels of uncertainty, allowing it to decide within a broader range of funding alternatives (*Finkel R., 2010)*

Venture Capital/Seed Capital/Early Stage Financing. The presented terms refer again to alternative investment options through which professional investors provide financing to early stage companies which demonstrate very high capacity but whose high failure exposure creates a risk that conventional lending institutions are not willing to take. As this concept has been explained in our introductory review the only mention that shall apply is the key separation between seed capital and venture capital, which despite showing very close situations are in fact completely different phases, leading to distant risk grades. Seed capital refers to the simple presence of promising concept whose creators are still trying to find reliable forms of financial expansion.

Hurdle Rate. On a certain proposal or investment, the hurdle rate declares the minimum rate of return that a given investor is willing to accept or find suitable for the exposure conditions they may enter into. Such rate sets a base for decision making, setting the basis of the criteria on which a venture will be considered plausible. Therefore, its use will be constant throughout the manuscript, reason why its establishment is necessary.

Blind Profile/Teaser. In order to correctly organize and present the components and the essence of the investment opportunity, financial analysts present it through a document referred to as the teaser or the blind profile. Its goal is to generate interest while presenting a veridic and reliable image of what's presented. Consequently, not all the criteria and methodology followed for the valuation process will be presented, but an essential sum up emphasizing on the potential outcome and its financial source. Certain information obtained throughout the selected valuation methods will define the value proposal, which will be canalized through this report, explaining its importance.

Temporal Concepts. The entire decision-making process consists of several actions, each one contributing differently to the system. As we implied in our general description, trying to explain the entirety of such would be mistake, due to its complexity and detail. Accordingly, diving into the rationale of imperative parts would be plentiful for the intends of the present work.

Pre-Money Valuation. In the venture industry, the pre-money valuation equals the quantity paid per stock of the company prior to the financing round multiplied by the number of outstanding

shares (P. Gompers, J. Lerner, 2000). What is equivalent, the price paid for the equity of such investment prior to the financing round. Consequently, it is independent from how much we are willing to inject into the company, as it does not take it into account. It is the price paid per share of the company "as it is" (Gompers and Lerner, 2004)

Post Money Valuation: After explaining the meaning of pre money valuation, the one of post money valuation seems logical. Once the venture capitalist makes the choice of the amount granted to such venture, the forecast of the value brought through it is what determines the post money valuation. It is a more hypothetical approach, as it does not only rely on the growth and market relationship assumptions determined before but now it implies an illicit and fictitious injection of capital with the correspondent increase in our position within it. This increase in assumption makes the determination of an empirical reliable result more complicated, and criterion discrepancies start to dominate the discussion, separating us from our goal. However, this is another intuitive and relative tool for decision making, in under no circumstance the decision will be fully supported by this result (Seppä & Laamanen, 2008).

Letter of Intent: When all the parties involved as substantial parties in the negotiation process reach a plausibly fair agreement, a letter of intent is created to compilate all crucial components of this future pact. As explicitly stated by its name, the document only serves a temporary and provisional purpose, product of the termination of the negotiation actions which will solidify into a fully binding agreement (sometimes phrased as memorandum). Despite its temporal nature, it is fully binding, as all parties have priory shown their conformity and consent. (TC Homburger, JR Schueller, 2002). After such stage, the parties proceed to execute the due diligence of the deal.

Due diligence: Not necessarily mandatory, the due diligence is almost a must when its time to close an acquisition. During this proceeding, the purchaser party has the task to analyze for verification purposes the real state of the company, inquiring about the total of compelling elements of the negotiated accord. It's a cautionary measure which is usually outsource but which prevent future legal settlement, disputes or even deal disintegration. A reverse due diligence may be occasionally performed, in which the seller disputes the purchasing capacity of the counterparty, demanding for unequivocal proof that he is in fact able to close the operation (DM Freedman, MR Nutting ,2015).

Milestones: Operative or financial objectives which serve to consistently determine if a venture is eligible for additional financing for future expansion or additional compensation to the management team. This logic structure is instituted by the funding part, intending to purposely verify the competence and effectiveness of the management team or the sole entrepreneur. It serves as a guarantee to gradually increase the involvement in the venture, dispersing and reducing risk (Metrick and Yasuda, 2010).

Exit: Procedure in virtue of which the investor is permitted to realize its capital gains derived from the underlying investment. While in the private equity world the most common exit means are the launch of an Initial Public Offering, venture capitalist usually exit through the transaction of the entirety of the corporation to private equity fund or other type of institutional investor, which shall apply their expertise in this new more stable phase of the business life cycle.

Development of the life of a Venture. A simple timeline.

The most common funding moves for recently created companies are, among venture capital, the direct investment by individuals, the so called "business angels" or the investment by more established industrial partners. With them, the recent phenomenon of collaborative funding platforms popularly as crowdfunding is emerging as a real alternative for very early stage enterprises. This very early stage can be named "seed capital", which is defined by the EVCA as the financing grated with investigation, advisory or evolutionary purposes in order to conceive a clear idea even before the business has reached the denomination of startup. Startup financing will be the one endowed to companies for the development of products and its initial commercial activity.

The development of an average startup is very straight forward. The phases through which it crosses are highly standardized, showing similar characteristics, regardless of the field in which the company is trying to develop its activity. The scale of these chapters or its duration is indeed what variates widely depending on these factors: The first phase for an internet company could be laid out in months, while a software company tries to conceive it within a few years and a biotech company, pending of further evolution and patent development can undertake decades to succeed in this very early stages.

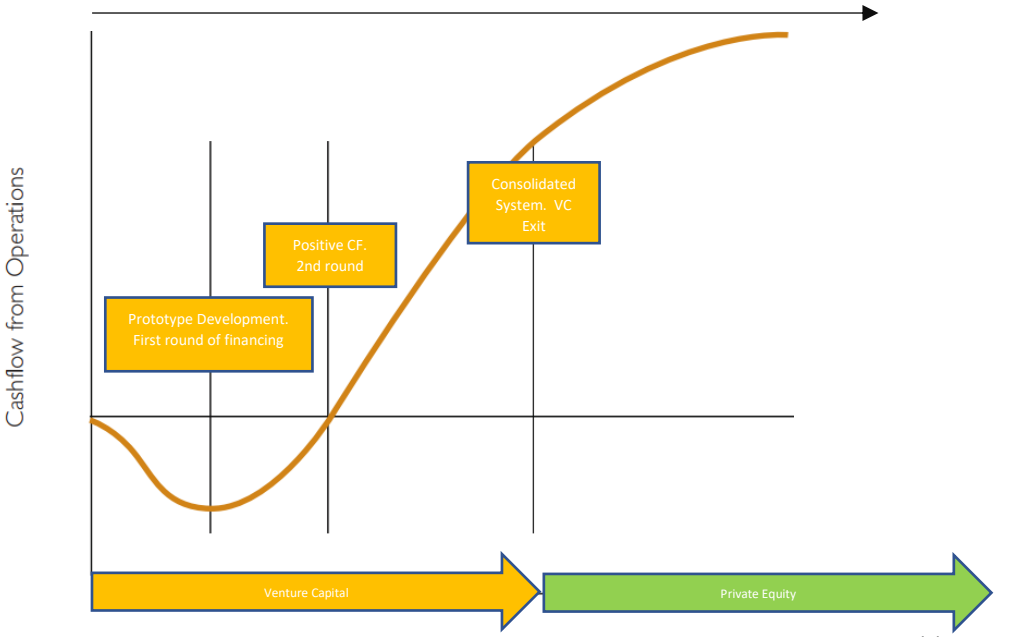

Figure 1. Source: Own elaboration

Figure 1 shows the average development of any company, showing its average business life. Although this is a very well-known diagram, it is crucial to understand the phases in which a venture capital investor operates and where the startup properties of the company start to vanish to demonstrate it is an already consolidated firm, able to withstand mayor financial crisis. Each one of the vertical lines showed in the graph represent a notable financial event which defines the stage in which the company is positioned. The entire scheme in terms of organization, financial needs, personnel progress and market status change substantially implying major changes.

The founding moment of the company is usually informal and not well defined, although it normally constitutes a juridical event in order to be able to face the upcoming commercial challenges that entrepreneurs expect to encounter. The initial idea actually leads to specific business action which tries to discover the organizational components that the idea needs for success. This section of the cycle finishes when the action leads a real result, a prototype of the final product or service is created which can be shown to potential customers and investors. In this part, once the product is ready to be partially launched, business plans are seriously developed and the search for additional capital starts, as the plan is much more defined and can caught the amount needed for a mayor start.

The generation of revenue then defines the beginning of the second phase, as the cashflow from the product is not positive but starts making up for the prototype cost. The demand becomes more constant, clear and defined. With these signals and feedback, product improvement can shift towards new ideas or concepts, which may be contrary to their initial proposal, forcing them to create synergies and develop innovative channels. In a parallel way, the startup intends to obtain the initial round of institutional investment. This needed capital is provided by the venture capitalist, the real point in which the investor enters the firm and is able to relocate resources and influence or supervise its activity, leading to the new improvement of organization structures. Now the management and the property separates, and therefore methodologies to ensure the protection of new players have to be put in place, like the development of a board of directors which may safeguard the vision and plans of the investor. This new hiring process imply finding experienced managers which are often found through years of experience in the industry, carefully testing individual's capabilities (Engel, 2007). The firm, however, does not have the monetary resources to successfully compensate a team of such caliber. In order to avoid this need for liquidity and to incentivize their adequate performance, many are paid partially through stocks, showing commitment and long-term trust. Also, the presence of venture capitalist pushes the construction of a whole new professional net and system. If the venture is successful, this action of construction shall develop fast, as outsiders will become interested and start providing growth opportunities.

With this firm establishment, the company now has abundant strategic assets to control, allowing it to function normally, following in more standardized way their business plan. This is the beginning of the third phase, the settlement or consolidation, in which cash flows finally turn positive. The company is finally put in place guaranteeing minimum capabilities and slowly decreasing the possibilities of failure, although the venture is still a very fragile entity (Freeman, 2007). The successful actions earlier implanted can now be taken to larger dimensions, to a higher level of replicability, allowing economies of scale to reduce the unitary cost of our product.

In the long run, the evolution tops its potential and closes with the creation of a new firm which can phase any potential rivals simultaneously. When the consolidations reach such point, we can finally state that the venture has entered the private equity field, as its market share is clear despite not being public or trading. The business is now ready to obtain direct injections of capital with drastically new conditions, enabling rapid progress.

Role of Venture Capital in the economy and society

The key value created by the venture capitalist resides in dealing with the issues of risk and asymmetric information, connecting investors with liquidity excess and agents in need of financing with emerging ideas.

To do so, many tools are employed. The most common ones consist in handing over liquidity in an escalated manner in subsequent "financing rounds" over time; syndication of the investment among diverse venture funds; taking seats the management table of the invested company and including stocks as part of the management team bonuses.

Financing rounds are one of the most effective control mechanisms in the hands of investors. The injections of capital in a subsequent manner maintain the entrepreneur or the management team (depending of the stage) much more focused and aware during the entire process, reducing losses generated from bad decision making and lack of supervision. The investor can increase the duration of the financing path reducing the frequency of these controls and periodic revisions as the company consolidates and the management gets used to its task development.

How is the value generated by external influences?

Some authors define entrepreneurship as an evolutionary system or model (Aldrich 1999), as entrepreneurs test various strategies and allocate resources in different manners with the principle of defining an efficient firm. The financial intermediaries which take part in this selection process, like investors, have been defined as the motor of the evolutionary approach, the main selecting actor. The venture capitalist is socially a player with an advanced level of knowledge, which is basically understood and respected by others and therefore used as a pressure tool, crediting their investments with reliability and ensuring a certification which will push the operative negotiation advantages for the firm.

The expertise of these agents allows to shorten the iterations within the evolutionary system, as their profound criteria eliminates trials of variation (as they learn from their trial and error background), credited also by the more cost-efficient selection process. Although the positive influence of venture capitalist within the entrepreneurial world is undisputable, the subsequent dilemma is defined by the type of influence caused in the startup: Do venture capitalists pick winners or make them?

The research clearly shows that startups backed by this type of investor show larger performance, but the gap in our criterion come from the source of such outperformance: Is the value created through the progress expertise or the valuation methodology? Most experts assume that venture capitalists are good opportunity identifiers. If the investment in a startup derives into a subsequent high performance, it is seen as a result from the venture research team's ability to identify potential. On the other hand, the startup high growth can be seen as the result of the investor's capability to transmit experience and management expertise, opposite to the reasoning that winners are determined in the moment of valuation. These perspectives are defined as the "scout" and "coach" roles of the industry and try to explain the creation of value within it.

Brief History of VC

The business of entering risky and innovative projects has always existed throughout history, ever since individuals starting trading, founding the economic activity. Despite this long path, the current shape taken by modern venture capital entities was first developed in 1946. Venture firms separated themselves from banks by inherently assuming more risk, ceasing the collateral requirements which implies regular commercial banking activities. In order to cover their risk positions, investors demanded capital on the firm since the entrepreneur did not have the possessions in order to fulfill a regular bank's requirements. Before that, anything outside the conventional banking system meant demanding exclusively to the so called "three fs": "Family, fools and friends", which are the closest resources to the investor. George Doriot tackled this issue by recognizing this need and funded the first entity covering such demand. American Research and Development Corporation was founded in 1946 and characterized itself for being a publicly traded company. The historical annual return of such company reached the 15,8 return for investors, summed up in 25 years of existence. As Andrew Metric himself states: "Today, venture capital is a well-established business throughout the developed world but remains quite geographically concentrated both across and within countries, with the United States still comprising nearly half the VC activity in the world".

Global Private Equity and Venture Capital Status

During the period of 2018, maximum levels were reached in the middle market of the private equity, which includes purchases between 10 and 100 million euros, reaching a massive amount of 1,467 billion euros expanded over 56 different operations. Furthermore, the level above that reaches the so-called megadeals, in which investors classify operations above 100 million euros. During the period, 8 megadeals were closed, out of which 3 reach billion deals. The disinvestment in this year, valued at initial cost was 2,049 million with a total of 295 deals. This implies that the purchases entering the fund's portfolio are finding, and the failure levels are decreasing, settling and demonstrating the performance and the value of the analysts.

Once again, the prosperity of the private equity and venture capital industry as a whole is solid, and the proliferance of alternative investments define risk perception of financing partners, demanding lower returns on equity and entering more venture capital like operations. Diving in the investment in venture capital remained high confirming the tendency of past exercises, with a volume of 417 million euros in a total of 510 operations. International venture capital funds closed 2018 with the best register in terms of quantity of investments: 84 deals. Out of it, 340 investments were led by national closed venture capital funds and 86 by open ones.

In terms of sector division, the divisions in which the investment volume topped were Energy and Natural Resources, with a 20,4% of the contribution. In this sector we include the new technologies developed for the expansion and efficiency optimization of renewable sources, like distinct software or engineering parts. Entertainment and Catering comes second, with a 17,9%; although it might start to diminish due to the upcoming expansion of the economic cycle. Finally, Information Technologies (IT) came last, although its trends have been constant due to massive investment by software giants like Google or Facebook. In terms of number of expenditures, the most relevant sectors were Software 46%, consumer goods (9,1%) and Health (7,2%).

As stated earlier, the fundraising capacity reached by funds (leaving away independent investments) reached 2,15 million euros, which is another demonstration of how institutions believe and are expanding their trust towards the Spanish private equity and venture capital industry. Estimated divestments for 2018 (although changed data will be withdrawn when official balance sheets stating investment costs are published) valued at cost were 2,05 billion euros with 295 operations. 47% of that sum was obtained through the elevation of the company, a regular exit passing the lead to another private equity entity. 24% was classified as sell to an industrial investor, which refers to large companies not specialized in the field looking to diversify or expand business are. Lastly, 22% were labeled as "Shareholder repurchase".

Top sector	By investment (%)
Energy and Natural Resources	20,40%
Entertainment	17,90%
Information Technologies	17,80%

Top sector	By number (%)
Software	46%
Consumer Goods	9,10%
Health	7,20%

Exit Method	By number (%)
Sell to Private Equity Entity	47%
Sell to Industrial Investor	24%
Shareholder repurchase	22%

Figure 2. Source: ACRI Report

Industry Status

The Venture Capital industry, just like any other financial branch, relies heavily in the global economy as well as the evolution of the financial markets, which will determine many of their major functioning financial inputs and the availability and success of attractive business proposals. Because of this, this review will rely partially in economic indicators and evolution, since it is the base ground for an accurate and meaningful evaluation.

In addition to this, despite the global spectrum of this industry, market dynamics, political stability and legal frameworks create the necessity to narrow the scope to a country analysis. The main focus must be centered in the Spanish economy, since it is the marketplace in which as investors, we intend to develop our business practices and create a prosper and profitable business model. However, in western society, reality is that the United States economy defines the evolution of most of the financial drives around the globe, and this is no exception, especially since half of the venture capital business is developed abroad. The US leads the way, and we must then understand the leader not only for the learning opportunity which that can mean, but for the strategic development of our business knowing that our competitors will look that way.

According to the first estimations (as most of the 2018 results have not yet been disclaimed) obtained, the investment volume in Spain reached last year the amount of 5,84 million dollars, setting a volume record of the second year in a row. This capital was distributed among 670 different investments, which demonstrate a clear strength and dynamism in the reality of the Private Equity and Venture Capital sector.

According to the type of investor, international funds keep demonstrating a large interest for the Spanish market, since they are responsible for 77% of the investment volume, concentrated in 118 investments out of these 670.

Illustrated by the chart exposed above, the industry can successfully claim to be in a reasonably successful path, since the investment levels have reached record levels during three consecutive years, creating a strongly defined trend which goes from 4959 million euros to 5844 million euros in 2018, an increase of 17,85 percent. A different phenomenon is seen through the number of purchases, reaching 670 investments while 2017 showed a maximum of 715 (a 6,3% decrease), which signifies that operation size is considerably increasing.

Venture Capital Industry Status

However, the venture capital data shows that the sector is highly exposed. If data is confirmed, the estimation of 417 million euros invested in 2018 proves the high volatility which can be seen in the evolution venture capital investment in Spain shown in the table below. This decrease from the 537 million of 2017 means a high offset and initially proves that the venture capital industry takes its own path, as it returns to levels of 2016 despite massively growing high risk equity as a whole (PE and VC). The downturn is no surprise, since the levels in 2013 and 2014 were nearly half of the actual ones. This makes perfect sense, since the alternative investments have always been known for the high volatility of its returns, and also its investments, since opportunities vary a lot from one year to another. Despite this large variation from one period to another, the investment does seem to follow a slight correlation path with the rest of the economy, slowly increasing as investors truly believe that the post financial crisis era was over, and that confidence could be regained, in 2014. I believe that the already announced fact that the top of the cycle is being reached and the authorities may tighten policies is causing the confidence of analysts to drop, as they know that consumption will deteriorate once this start killing of innovative consuming which most startups require to survive. In moments of recession, the economy is especially harsh with high risk capital.

2016 was an exceptional year for portfolio rotation of companies in the first stages, either in terms of volume (363,8 million euros) as well as in terms of exits (228). After this, 2017 presented itself with a massive diminishment, registering 126 million euros at cost and 131 disinvestments. This data shows the necessity to keep pushing the sale of participated companies as a challenge of the sector. In positive terms, we must center the category "Sale to third parties" as the main exit way (47,5% in terms of volume) and the fall of the losses registered hitting an all-time low (only 15 disinvestments meant a loss for the original investor)

	Volume (Million €)					Number of companies				
Type of Investor	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
International VC	58,6	158,1	401,3	256	308	33	38	7343	43	63
National Public VC	101,6	112,6	119,9	150,3	185,2	261	258	293	338	345
National Private VC	34,4	21,5	27	27,5	44,4	68	53	107	108	152
Total	194,6	292,2	548,2	433,8	537,6	362	349	7743	489	560

Type of Investor	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Seed	9	12,8	18,5	14,7	21,7	39	53	66	82	118
Start-Up	49,8	42,8	167	76,6	101	118	80	117	156	177
Other Early Stage	52,9	51	134	151	163,7	43	47	69	107	104
Late Stage Venture	82,9	185,6	228	191,5	250,3	55	55	66	47	50
Total	194,6	292,2	547,5	433,8	536,7	255	235	318	392	449

Figure 3. Source: Own elaboration

Madrid and Barcelona prove to be the main hubs of startups. 236 million invested in Madrid and 201,8 in Barcelona, positioning themselves once again as centers of innovation and entrepreneurship which explain the high presence of venture capital funds. This way, many events are held, and communities are created focusing on these startups in order to help them develop themselves in the earlier stages. Far behind are regions like Galicia (17,7 million), Navarra (13,8 million) and Baleares (11,7 million). In terms of number, it is Cataluña the region which takes the lead with 115 financed startups.

These are the most important operations closed in the year.

Company	VC Entity	Operation	Sector	Type
Cabify	Rakuten, GAT Inversores, Endeavor, Liil Ventures	Later stage VC	Internet	Internacional / Nacional
Typeform	Connect Ventures, GEN Atlantic, Index Ventures, Pointnine Capital	Later stage VC	Internet	Internacional
Glovo App	Rakuten, Cathay Capital, Seaya Ventures, Entrée Capital, Bonsai Venture Capital, Caixa Capital Risc	Later stage VC	Internet	Internacional / Nacional
Logtrust	Insight Venture Partners, Kibo Ventures, Investing Profit Wisely	Other early stages	Software	Internacional / Nacional
Verse	E.Ventures, Greycroft, Spark Capital	Other early stages	Internet	Internacional

Figure 4. Source: ACRI 2018

Public Intervention in the Industry. The role of the administration within the industry.

To enable the reactivation of the economic activity as whole, it is necessary to empower the innovative tissue of the productive economy. Innovation is an inherent aspect to most startups, and therefore public funding is often centered in distinct initiatives which fund ideas with the required capacities. Institutional intervention can be held through direct paths, funding programs which directly redirect capital towards this kind of companies or in funds which then subsequently allocate these resources to the potential firms. The indirect aid come through regulatory matters, creating and developing an adequate business climate or setting. According to Lerner, almost all top economies in innovation have settled the foundation of its innovation system in proactive public intervention. However, public intervention in this manner must be handled carefully, as the initiatives do not always produce the desired effect.

One of the most innovative and direct mechanisms applied by the Spanish authorities is the "fund of funds" Fond-ICO Global. It was launched by the Official Credit Institute in 213 seeking to stimulate non baking financing in SMEs in Spain throughout the creation of venture capital and private equity funds. The final purpose of the program is for it to act as a "link investor", attracting many other private investors worldwide which could grant larger financing quantities.

At a European scale we can find examples of public initiatives, like the European Investment Fund (EIF), which manages funds assigned by the European Council and which offers grants to small businesses as anticyclical investor, during times of economic downturns. The EIF invests directly and constantly in numerous national funds.

As for indirect measures, many studies back the importance that legal framework, financial markets evolution, tax system and R&D policies have on the venture capital activity. Among these, the development of financial markets seems to be the most relevant variable, as it is usually linked with the economy and the financial addition and practice of that specific society. When the company exits the fund, the dynamism of the market will determine the capacity to find interested buyers in the country. Jeng and Wells (2000) demonstrate that the venture capital industry is much more active in countries with a larger number of IPOs, one of the indicators of a financially dynamic economy. A clear measure within Spain was the creation of the Alternative Stock Markets ("Mercados Alternativos Bursátiles" in Spanish), which helped growing companies seek financing.

Methodologies:

Once again, we would like to point out that since each startup is so unique and the level of information is highly sensible and uncertain, many analysts have developed their own personal methods throughout the years, basing themselves mainly in their day to day experience and small tricks. However, these methods have very little empirical foundation, and are often used by investors because they work. This helps us achieve a goal, but not explained how we achieved it, since there is not many reasoning to apply this as a market standard. This is why the decision has been to use the generalized approaches, the ones that have become industry standards due to their logics, efficiency and author reputation. The problem is that even that set of widely known methods is wide, and to narrow the scope of the work, we have settled picking in terms of reputation, since many times this is the main indicator which leads to the other two, logic and efficiency.

First Chicago Method

Among the different concepts analyzed throughout the extension of this manuscript, each practice has different qualities which lead professional investors to rely differently on one or the other. Without a doubt, the First Chicago Method has developed a reputation which has defined it as the most used alternative valuation method in the industry and is a common daily tool for any standard venture analyst. Sahlman and Scherlis, two of the most notable authorities in the Harvard Business School developed this vision in 1987, as an alternative to frequently used paths, and was then widely used by the equity division of the First Chicago National Bank.

The First Chicago Method is similar to the standard capitalization method.

The basic premise of this practice is the lay out of three different scenarios in order to realize the true potential outcome of the company, which comes from the modified average of these scenarios. These are set based on multiple payout ratios, which are then assessed multiple probabilities of occurrence depending on the success or failure chances of the project. This allocation is the basic ground which made the method so innovative and simultaneously realistic.

This is its main advantage, the reflection of different outcomes of a company as well as the predictions about how it might evolve. This way, it is much more specific than pure Discounted Cash Flows, as it adds the uncertainty factor to the equation.

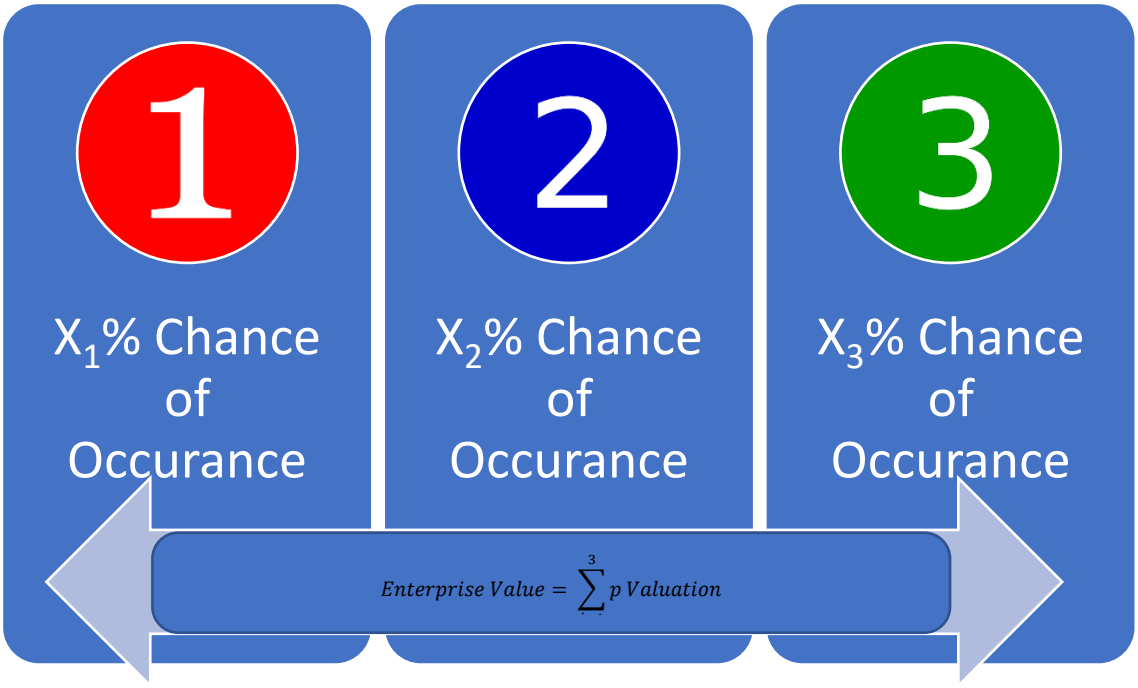

Figure 5. Source: Own elaboration

First Scenario: Success

In this scenario, we consider that the company is being successful and that is able to pay regular dividends or generate constant major cash flows during within the short midterm, a 3 to 5-year horizon, which is the largest we can look ahead for a company this size, as it may be on bankruptcy terms. This scenario is usually just compliance with the designated business plan.

Second Scenario: Survival

The intermediate scenario is set considering that the venture distributes uneven yearly dividends, but that the company is still generating profits. For a venture, this should be in most of the times the most likely scenario, as it defines the reality of this stage: Inconsistency and uneven sales, relying a lot of the time in low number of clients which may potentiate the return of one period and make the following one despicable in comparisons. We can sum it up in a process with less growth and delays in the day to day work

Third Scenario: Failure

It is crucial that potential analysts do not fool themselves and try to be as accurate as possible when valuating this component of the equation, as it is the realistic scenario which will be valuation reliable. Dividends or positive cash flow are inexistent in this scenario, and the management team is unable to redirection the company strategy to at least try to breakeven. In this scenario, losses grow as fixed costs take down the firm budget. In case the chances are high, the investor can even include an early bankruptcy in the scenario, accounting for the liquidation and "hot sale" costs.

Risk is reflected through interest rates, but through this method the item shall not be switched from one scenario to another, as the weighting in the component compensating for the real expectations about the company. If the interest rate is common, it must be neutral, and the case the analyst does not believe it is, the ponderation will be changed benefiting the contrary situation. A lot of VCs like to use IRR or the desired return due to uncertainty, and therefore WACC cannot be used.

This first step is the most complicated one and it requires a large analysis and research, although investors can modify this data depending on the strategic changes that they are considering implementing if they do purchase the company

This method is seen as betterment of Discounted Cash Flow methodology and the Net Income Value is obtained with the present value of each single scenario multiplied by the explicit ponderation.

Limitations and Issues:

The First Chicago Method can specifically adjust the underlying discount rates and Cash Flow levels for each respective scenario and, hence, more accurately and faithfully reflects the true investment valuation. Nevertheless, the method entails a major downfall as the method calculation needs to be repeated for each expected round of financing to eventually maintain the required rate of return. More specifically, for each investment round, the investor's required ownership, retention rate and number of shares have to be recalculated to overcome this stumbling block.

Venture Capital Method

The Venture Capital method tries to extrapolate the actual value of the startup depending on the expected return for an investor in the moment of his exit from the company. The three components necessary for the valuation throughout this method are: size of the investment, expectations over the employed capital by the investor and the estimation of the startup value in the exit moment.

Considering the return that the investor wishes to obtain, and analyzing the market standards, an approximation to the quantity the venture should reach in its exit point is calculated. Based on this data, the investor can determine the total disbursement which he's willing to undertake once the adjustments consequence of the dilution effect have been made.

The premise of the methodology is therefore very simple.

Return On Investment (ROI) = Terminal or Harvest Value/Post Money Valuation

So equivalently, the post money quantity is equal to the terminal or harvest value divided by the desired Return On Investment, the return that the venture capitalist desires to make through the involvement in the company. However, we shall clarify different concepts present in this equation, which might be ambiguous for any potential reader.

The harvest or terminal value is what the investor anticipates selling the company for during the timeline planned for the project, which usually implies 5 to 8 year after making the initial entry. The price of the sale shall be formed by creating a coherent and rational expectation about the incoming future revenues in the final year, the one in which we are going to exit the company.

Dilution is a factor taken into account through this method, referring to future subsequent investment procedures though which we modify the set of players present in the company. Although some other methods can be used to cover the issue of dilution, the author presents an easy and straight forward way to readjust the pre-money valuation in the current round, reducing it by that estimated level of dilution from incoming investors. Again, this is just an estimation, since the amount and conditions of an additional entry are impossible to forecast.

In order to estimate the share quantity which, the venture must grant the investor, the analyst must first calculate the part of the full venture which is going to be acquired through the investment. This proportion calculus shall be done through two different ways, each one implying different methodology but in reality, the solution obtained is equal. First, the so called NPV method.

f=INV/POST=Amount of new investment/Post-money valuation after the investment

The second one is the IRR method, where:

f=FV(INV)/Exit Value=Future value of investment in first round at projected exit date/Company valuation upon exit

This fraction of the ownership demanded (f) results in a similar quantity through both approaches as long as the same compounded discount rate is used to obtain both the actual value of the exit. Once the proportion has been set, the exact issuance number is the next unknown part, and can be easily calculated if we have the original shares of the entrepreneur.

Venture Capitalist shares= Founders shares *(f/1-f)

Because of the simplicity of the calculus, the venture capital method depends highly on the assumptions originally formed. To face this issue, sensitivity tables are used to evaluate and realize which modification of the model input are necessary, as well as how the variable defines the output. Despite this, many company founders are often way too optimistic and take out of the table the real scenario of possible venture failure, mostly because they are not able to see the weaknesses that the business model might present. Venture Capitalist do not have the job of convincing the entrepreneurial team that its venture has flaws during the time of evaluation, as it is something to be done once the company has been acquired or when negotiating it. Instead of that, a much higher rate is applied, accounting for the menace that those risks imply.

But how can be the rate adjusted?

To adjust such input to the much higher level of risk, the rate must be adjusted to reflect the potential risk of failure of the venture. The mathematics used to adjust it are:

$$i_1* = (1+i_0)/(1-p) - 1$$

i_1: Modified discount rate

i_0: Original discount rate

p: Chance of bankruptcy

The rates of return demanded by the venture capitalists differ from case to case, but authors try to give an indicative percentage in depending on the stage of the company acquired.

Development stage	VC target rate of return
Start-up stage	50% - 70%
First stage	40% - 60%
Later stage	35% - 50%
Bridge / IPO stage	25% - 35%

Figure 6. Source: Own elaboration

Real Option Method

McGrath defines a real option in four different manners:

- "The idea of option value as a component of the total value of the firm"
- "A specific investment proposal with option like properties"
- "choice that might pertain to one or more proposals
- "The use of options reasoning as a heuristic for strategy"

Indeed, these four brief approaches capture very well not only the nature of the financial instrument, but also the base pillar for this method and how it can create value. Through real option value analysis (ROV) investors can actually realize the opportunity cost of their decisions, whether investing in the venture or letting it go. The basic premise of the methodology lies in the fact that derivatives (in this case options) are calculated considering the future outcomes of an investment and its occurrence probability. This way, the option fully reflects the real expectations assessed to any venture. The basic mathematical approaches to obtain a numerical sense are the Black-Scholes formula and the Binomial Model (Cox-Rubinstein formula). The reader must however realize that options divide themselves in American or European options, which differ from each other within their execution continuity. European option can be exercise only in characteristic moments of time, while American ones can be exercised anytime.

The real option approach gives much more dynamism as it includes the value of flexibility and the opportunities to expand but the level of feasible strategies that the venture set for uncertain futures (McCahery, J.,2004).

- Cox-Rubinstein formula: The binomial model defines option pricing in a very basic/simplistic way, permitting assets pricing to only take two possible variations/scenarios during a unique period, although they do not forcibly have the same chance of occurrence. It is a simplification, as more scenarios are likely to be present during a realistic time frame (Collan, 2009)
- Black-Scholes formula: This model on the other side, tries to settle the issue through a more realistic approach. It bases itself on continuous European option concept, assuming that prices follow a normal distribution. Because of this mathematical reality it is regarded as a reliably useful and widely used technique.

Although the mathematical model employed defines our result, a venture analyst must indeed try to assess the reality of the startup in order to fully understand how each component considered is going to influence the final option price. The investor must be able to understand how the option is shaped by reality. The most meaningful variables defining option price are:

- Valued Venture dynamics: When the value of the asset is higher, the call option is going to increase as well. Put options work in the opposite direction: Price decreases as the value does as well.
- Dividends: The fact that a company issues dividend implies that the company regularly giving return, and is therefore much safer for a potential buyer, since it is regularly paying an amount which cannot be taken away. Like this, the asset becomes less risky and its option price reflects that
- Interest rate: Reasonably, exogenous market variables will realistically and mathematically define the risk associated with the company. The clear example is the influence of interest rate; whose rise signifies a positive impact on call options.
- Strike Price: Not exclusive to companies, the strike price changes clearly price of the option. The implications of this are clear. A strike price that is further away from the actual value of the asset implies a larger possibility of unexpected market or company turn around which can quickly make the call option seller lose money. A strike price proportionally further away gives room for market conditions to change severely and still not trigger the option. But how do we define "room"? The variance of the price is what defines if the asset price is far enough from the strike price. The difference between both prices (strike and real) can be meaningless if the asset is highly volatile and can plummet in a short period of time. For alternative investments like the one analyzed, this is very common, as the uncertainty inherent to it might make investors that the company is on trouble.

Increase in …	Change in call option	Change in put option
Underlying asset	Increment	Decline
Dividends	Decline	Increment
Interest rate	Increment	Decline
Strike price	Decline	Increment
Expiration date	Increment	Increment

Figure 7. Source: Own elaboration

Issues and Limits

The process presented above is simultaneously a threat and an opportunity. The fact that it englobes such a large variety of concepts in a realistic manner makes the system much more suitable. On the other side, it is not able to compete with other much simpler practices described above, such as Scorecard or Berkus Methodology. The fact that the entire set must be foreseen implies major complications.

In fact, real options shall not be employed in scenarios where its value is not fully reflected within the cash flow growth (Damodaran, 2009). This might be a problematic for cases in which the stage is much more advanced, but it suits perfectly the startup needs, as research demonstrates. The derivative creates the possibility for the entrepreneurs to correct decision during the initial phases.

Finally, the last issue found in this is again the variation of the price, or how volatile the startup price is. A concise calculus of this data is highly difficult and can potentially offset our prediction capability.

Scorecard Valuation Method:

Also known by its author name, Bill Payne's method, it is a must know methodology for any venture capitalist or angel investor, as it is one of the most used ones. The method compares the objective firm to typical venture capital startups and then modifies the starting average calculus of recently funded ventures in an exact area in order to set a reliable pre-money valuation of the target. This modification comes from factors such as team strength, size or the type of product. To make sure that the comparable are appropriate, only companies within the same evolution stage are allowed in the compute (pre-revenue startup ventures in our case)

The steps to following to ensure a successful valuation are the following:

1. Obtain pre-money industry average valuation
2. Decide on the weighting for each individual item
3. Assign factors which allow to compare to the weighting
4. Multiply factor sums

With this basic path, the clear first step is determining an average pre money valuation based in regional companies which operate within the same business sector or industry of the target. However, as the base is formed by deals which happened under unique circumstances, the author encourages the analyst to keep in mind that pre money valuation shifts with the economy and the strategical competitiveness in that situation. However, he conducted a local survey in which he analyzed multiple angel groups through its methodology, obtaining a consistent range between one to two million dollars (with an average of 1,67 million USD).

Secondly, we proceed to compare the target to the similar deals which have been included to compute the starting point data. In order to proceed to a comparison, we have to go through an information recollection process, not only about the acquired company but about the deal conditions under which the pact have been established, as they are key comparison points.

The analyzed items, according to the author Bill Payne, are the following:

- Strength of the Entrepreneur and the Management Team:
- Size of the Opportunity
- Strength of the Product and Intellectual Property
- Competitive Environment
- Marketing/Sales Channels/Partnership
- Need for Additional Investment
- Other

Within it, we create different criterion to proceed to the comparison, selecting a set of characteristics which apply to the most frequent cases and can be used as a standard key factor. Bill Payne summarizes them perfectly in the following table:

Comparison factor	Weights	Key questions	
Strength of the Entrepreneur and the Management Team	0-30%	**Impact**	Experience
		+	Many years of business experience
		++	Experience in this business sector
		+++	Experience as a CEO
		++	Experience as a COO, CFO, CTO
		+	Experience as a product manager
		-	Experience in sales or technology
		---	No business experience
		Impact	Willing to step aside, if necessary, for an experienced CEO
		---	Unwilling
		0	neutral
		+++	Willing
		Impact	Is the founder coachable?
		+++	yes
		---	No
		Impact	How complete is the management team?
		-	Entrepreneur only
		0	One competent player in place
		+	Team identified and on the sidelines
		+++	Competent team in place
Size of the Opportunity	0-25%	**Impact**	Size of the target market (total sales)
		--	< $50 million
		+	$100 million
		++	> $100 million
		Impact	Potential for revenues of target company in five years
		--	< $20 million
		++	$20 to $50 million

		-	> $100 million (will require significant additional funding)
Strength of the Product and Intellectual Property	0-15%	**Impact**	Is the product defined and developed?
		---	Not well defines, still looking a prototype
		0	Well defined, prototype looks interesting
		++	Good feedback from potential customers
		+++	Orders or early sales from customers
		Impact	Is the product compelling to customers?
		---	This product is a vitamin pill
		++	This product is a pain killer
		+++	This product is a pain killer with no side effects
		Impact	Can this product be duplicated by the others?
		---	Easily copied, no intellectual property
		0	Duplication difficult
		++	Product unique and protected by trade secrets
		+++	Solid patent protections
Competitive Environment	0-10%	**Impact**	Strength of competitors in this marketplace
		--	Dominated by a single large player
		-	Dominated by several players
		++	Fractured, many small players
		Impact	Strength of competitive products
Marketing/Sales Channels/Partnership	0-10%	**Impact**	Sales channels, sales and marketing partners
		---	Haven't even discussed sales channels
		++	Key beta testers identified and contacted
		+++	Channels secure, customers placed trial orders
		--	No partners identified
		++	Key partners in place
Need for Additional Investment	0 – 5%	**+++**	None
		0	Another angel round
		--	Need venture capital
Other	0 – 5%	**++**	Positive other factors
		--	Negative other factors

Figure 8. Source: Bill Payne

These precise variables (subcategories) need to be evaluated somehow. In this part, a similar procedure to the one used for the Risk Factor Summation Method is applied. An evenly distributed scale is set, ranging from +3 (+++/Very positive) to -3 (---/Very negative) with a neutral rank (0) as well.

Now that we have seen the position of the venture in terms of the created seven fields, each one of them needs to receive a weighting depending on the overall circumstances of the venture, distributing the 100% available. This part of the analysis is more suitable after the specific variable analysis has been performed. This way, the investor has had the time to wisely reflect about the importance of each one of those within the industry, in comparison to the previously created ed average. Once it is done, not the aspects which show the most weaknesses but the ones that impact on the company the most will rise through the weighting of its category.

Finally, a percentage is obtained, which serves as the adjustment rate for the initial industry average pre-money valuation. This value calculated within the first step will now define the value of the company from the investor point of view as the negotiation process goes on.

As this method combines simple calculus and specially relatively complex sub variables, no investor will ever obtain a value exactly equal to his partners' valuation. However, it helps install a value range and where the related following startups should be positioned within that range.

Risk Factor Summation Method

The Risk Factor Summation Method is a method highly focused on the qualitative aspects of the potential investment and is therefore very related of the Berkus Methodology reviewed above, although this one expands is perspective and its analytic accuracy.

The method amplifies analytic spectrum by first establishing an initial position based on the environment trends and prices. The original authors refer to this initial valuation as the "Initial Box", which is calculated as an average of the fairly similar transactions developed in our area. The input problematic is obvious: assessing correct criteria when delimiting physical and technical areas. Which physical area shall be considered sufficiently homogenous in order to be set as the main scope? Similar dilemmas apply technology wise. Which expertise field shall be included as a similar component to the business model of the valuated venture? Despite its high criterion sensibility, authors try to provide a basic answer for these questions. A State wise panorama conform the physical area, as regulatory and economic conditions make those projects face similar difficulties to the objective. A similar industry shall be chosen to cover the knowledge/technology spectrum, although most concerns are found in this statement due to very innovative characteristics of the company. In this case, the author encourages to compare to ventures which use similar technologies, or which try to cover the same basic service as ours.

This "Initial Box" will be modified through a qualitative analysis which tries to adjust it depending on the potential strengths and weaknesses standardized and summarized in 12 main variables, 7 more than the Berkus Methodology. This is the reason why professionals interpret a higher accuracy of this method, as it allows a more distinct review which can potentially help analyst to be sure how present these characteristics are. The 12 variables are the following:

1. Management risk. Related to the day to day operations of the venture, and how much its business model relies on this logistical management power.
2. Stage of the business. Although it shall be partially included in the "Initial Box" valuation, the risks associated with its company life span position will determine this aspect as well
3. Legislation/Political risk. We foresee if the business is or will be present or tied to an industry subject to high regulatory hazard or whose functioning regulation changes frequently depending on the ideology of the party in power. I.e. electricity distribution industry (highly regulated)
4. Manufacturing risk (or supply chain risk). Again, related to logistics, but specially focus on the characteristics of our product and how this influences the distribution patterns through which we deliver it to our clients.
5. Sales and marketing risk. This relates mainly to business strategies based on margin, in which sales are expected to support themselves in brand strength or market positioning. This applies also to industries in which the product generally has bad press, like the tobacco industry or the processed food, and therefore a constant disbursement in advertising expenses will be made.
6. Funding/capital raising risk. Although this part is highly subjective, all other subjects which will cause the venture to find difficulties raising capital shall be contemplated here.
7. Competition risk. This is synonym of industry analysis, and how possible competitors are developing their strategies, specially the level of aggressiveness of these.
8. Technology risk. Simply of much the startup relies on technologies which are yet being developed or which have high potential that has not been yet discovered, allowing possible diversification opportunities or fast obsolescence products.
9. Litigation risk. The degree in which the value proposition of the company is similar to an already existing one positions it in a controversial part through which possible legal developments shall arear.
10. International risk: It refers to the problematic that a specific company may find when trying to expand its operations to foreign countries, either because of different demands or because an alternative already exists in such market.
11. Reputation risk. Highly related to marketing risk, this one again centers in those strategies who must always ensure a perfect brand image, as it's the main asset of the company.
12. Exit value risk. Just like funding risk, this is a very subjective part of the analysis, as it tries to englobe the future problems we might find in order to find possible future investors, either for the complexity of the team or the future intentions of the funding entrepreneurs, who will have a say in this process due to their role as capitalist partners.

When we dive into one each one of these, the system standardizes the positioning of the venture through five levels out of which 2 show a favorable positioning in this aspect and 2 a negative one, keeping the last one as a neutral one. The top-level positions imply a positive adjustment

to obtain our pre-money valuation (although one is larger than the other) and the bottom positions imply a negative one.

Therefore, from the starting point that we know and comprehend these 12 aspects, the real step following the set-up of the "Initial Box" is the variation range. The variation range is defined as the quantity in which the valuation will increase or decrease if the corporation proves to be outstandingly good or bad in each one of the variables mentioned earlier. Of course, since there are intermediate steps towards that maximum value, the quantity for those must be formed as well, but authors do recommend maintaining them proportionate (half of the variation range) in order to simplify the process. This number depends mostly on the initial valuation in order to keep it proportionate so that a slight imbalance between weaknesses and strengths does not cause a significant change over the valuation. Despite this, most readings recommend a variation range of 500000€, implying a midrange of 250000€. As stated earlier, the final compute of the analysis will determine our final pre-money valuation. This way we have:

+2 * Mid-Range (250000€ standard), if extremely positive for the growth and performance of the company

• +1 * Mid-Range if positive

• 0 Neutral

• -1* Mid-Range, if negative for the growth performance of the company

• -2* Mid-Range, if extremely negative

The main inconvenient found in this method lies again within standardization. The fact that we divide risks in 12 major categories means that we are stating that each one of these factors influence in an equal way to the business model of our venture. While venture relying on specific patent may find lot of issues on legislation risk, a business model which bases itself in logistics will find crucial its management risks. However, this does not reduce the value of our compute, although it is not recommended to use this as a stand-alone methodology, as it suits best its complementation with more advanced or even traditional quantitative analysis techniques.

Dave Berkus Valuation Methodology:

David Berkus, an angel investor tired of the misled of discounted projections, developed in the mid-1990s a simple form specially developed for early stage projects and which intended to set a starting point which did not rely mainly on such projections. As Berkus stated himself, "all companies fail to take into account the universal truth, that fewer than one in a thousand startups meet or exceed their projected revenues in the periods planned". His method tries to find the major components which determine value differences between seed stages and the upcoming venture phases. It suits best enterprises which have the potential of overcoming the 20 million manufacturing goal in the following 5 years, resulting in pre-money valuation ranging from 0 to 2,5 million € depending on the amounts chosen (optimal for earliest formation stages).

The methodology finds use in both quantitative and qualitative components, which together gather 5 major elements which define most risks present in a venture, which are the following:

- Sound Idea (Basic Concept Value directly attached to Business Risk)
- Prototype (Which reduces Technology Risk)
- Quality Management Team (Which reduces Execution Risk)

- Strategic Relationships (Which reduces Market Risk)
- Product Rollout or Sales (Which reduces Production Risks)

Each component is given a maximum value quantity which it can add to the global compute. Depending on the degree in which the aspect is controlled in the present and shows possible discrepancies in the future, it shall reduce its maximum base value. The organizational display of the method usually consists on listing potential disruptive items in a table form chart, and then linking it to the potential risks it shall increment, as well as in which quantity it reduces our base value.

As we can see, although we find a numeric component to the analysis, most of it relies on subjective details set during the qualitative part of the process. In addition to this, its specific focus on early stage valuation can be seen as a consistency weakness, as the valuation method must be abandoned once the company starts making periodically stable results, moving forward to classic cash generation methods lie DCF.

This separation of competences can be easily explained in the following diagram:

Figure 9. Source: Own Elaboration

As a cautionary method, the author encourages the method applicant to input low values in order to prepare for extreme risk scenarios and ensure that a reasonable opportunity to profit from the operation can be found. If either the potential investor or the entrepreneur seeking expansion wish to use this method as a stand-alone valuation, they would have to ensure that they possess a very strong knowledge e of pre-money valuations in the industry.

The Berkus methodology is a lot of times considered as a complementary tool to the Venture Capital Method previously explained, which focuses mainly in industry quantitative data and therefore tends to ignore some of the qualitative conditionings which compose this criterion.

Rule of Thirds

Once the company is officially in place, it does not get the financing from a constant source. This is the reason why investors should be able to realize that, as pronounced before in the dissertation, the development of the path of the startup which has accomplished an outstanding performance and value has actively relied on three types of participants which have played different parts within the protection of the enterprise. The three components mentioned are the ones indeed developing a mature company from a raw startup.

Above all, the entrepreneur figure plays the visionary, the actual motor supporting the plan from start to finish. His or her compensation leading the countless hours of time and commitment is actually translated into the amount of the so called "pie" which will remain under his property, the real participation and involvement from than moment on, and also regarding the other resources employed to reach that goal. For most entrepreneurs, the true value comes from the raising of the project, the value created throughout the process.

Innovators like this have large difficulties getting there on their own, dispersing with the help from hired staff, the expertise of a reliable management teams and the abilities that both possess. This is why some develop a co-management system, which will be present to receive the reward when the time comes. In certain occasions the lack of liquidity and the need for further performance incentives leads investors to offer compensation through issuance of stocks, making them active participants. This usually totals 15-20% of the company's equity for this founding team, equally distributed.

The final group is shaped by the totality of investors apart from the original founder, regardless the type and the implication. This implies all supporting figures during the entire life of the project, starting from close rudimentary funding like family figures all the way to business angles exogenous to the original founder all the way to professional venture capitalist which seek larger investment opportunities. All of them with the future profit of the consolidated creation in mind once the exit phase is finished.

Once business angels enter, which are looking to obtain large portions of the stake considering their risk, lead to a twenty to thirty five percent stake for them. The following ones usually have the aim of diminishing founder's controlling position, leaving him with a minority position, unless the enterprise reaches growth levels which, boosting the pre-money valuation, allows them to renounce to a smaller or similar equity portion. The stage is contemplated constantly, as the risk assumed must correspond to the reward obtained. Success is reached when the exit is profitable or the company reaches a position to go public, although it is very rare. The three parts or slices of the pie to keep in mind by all investors once the creating process of the company has started or when the exit is considered are: risk, time and effort while driving the business forward. This is the rule of thirds

The major downturn when following this reasoning is that the post money valuation at least triples itself when adding an extra dollar by the capitalist figure. Entrepreneurs have the motivation to obtain as much capital as possible, despite what the reals liquidity needs are in the near future. As the author Paul A. Gompers states, "one of the greatest positive aspects of the rule of thirds lies in the fact that a founding team often refuses to give up more than own third to external business angels or venture capitalists. Naturally, these reference values have strong implications on any pre-money valuations negotiated between the different parties"

Conclusions

The presented work has explained in depth the functioning of the Business Angels and Venture Capital environment, starting from the most basic concepts and building onto the industry status and tendencies, passing through its history and past trends. However, throughout the full length of the project, the final intention of the project has been to dive deeply into one of the fundamental pillars of the business: financial valuation. The most traditional methodologies and its variations have been reviewed, showing its strengths and weaknesses, to then do the same with the most innovative although widely used ones. The information gathered in this process has a specific purpose: find the closest approach to tackle the three main issues found when reaching an objective quantity: (1) negative profits in the present and past of the firm, (2) Lack of historical information and (3) inexistent comparables due to innovative business model. The industry of venture capital deals with all three simultaneously, and the subjectivity derived from it questions the reliability of the investor criteria.

The principal manner through which professionals try to avoid this set of issues lays in one major tendency: the detachment from quantification of issues and the entrance into characteristic-qualitative valuation, focusing on a more strategical approach, which is necessary in order to redefine the firm's future, where it is going to head in case of an imminent purchase. This way investors step back from inaccurate and hard to explain forecasted growth rates, which most of the time inflate revenues and misread future management costs. This practice however does not reduce the subjective component but can potentially define a valuation structure or scale which can be applied to at least the common framework of any standard startup. Despite the actual result of this procedure, the mere intention can allow the overture of the debate in the industry about which are the major characteristics which define success and can create incentives to develop further investigation.

While developing the literature review and the theoretical framework which allow to understand the dimensions of the issue, many authors agree on a crucial issue: the lack of reliable and empirically accurate studies which can seriously support the hypothesis laid out during the ongoing debate. This comes from the lack of a solid cooperative organization which can represent the majority of the funds and a willingness among competitors to release useful information about the deal once it has been closed. This issue can be solved in a long-term basis, but other issues arise related to the basic nature of subject matter of the business: the lack of periodicity in deals. The uneven frequency in which deals are closed and their completely different nature stops researchers from linking temporal phenomenon as cause to precise deal outcomes, and therefore makes them unable to reach an empirical conclusion on which specific valuation method currently employed throws the most accurate results.

With this in mind, funds, individual investors and corporates should reconsider the reach of their conjunctive initiatives. While the actual schemes have public relationship purposes, associative formations such as ACRI or EVCA could employ funding in study development in order to furtherly study which could be the best current practices and slowly develop new ones.

While the approach to the universal path has been the center point of the discussion, there are still relevant questions inherent to the problem which despite their secondary importance, they clearly compromise the goal of this dissertation. If no standardization is reached, is the actual status quo sufficient for the demands of investors? Reality is that the lack of congruence and work towards new possibilities show the reliance of investors on the disperse set of

methodologies, and are willing to undergo the large process suggested by most firms of using various techniques. Also, the inclusion of discounts rates in some of the quantitative options explains before make us enter the dilemma present in classic measures like DCF, which turns into the items conforming this rate. When it comes to the use of cost of equity, it is complicated for many investors to pick whether to rely in economic calculation means like CAPM or simply provide a minimum Return On Equity which, although this latter does not comply with empirical reasoning.

Reality is that the industry is far away from an answer, and the lack of research and communication suggest that the venture capital universal valuation will remain an enigma during the upcoming economic period, making investors wonder if it can be solved.

Bibliography:

Amis, D., & Stevenson, H. H. (2001). *Winning angels: The seven fundamentals of early-stage investing*. London: Financial Times Prentice Hall.

ASCRI (2018), Informe Capital Riesgo & Private Equity en España

Collan, M., & Kinnunen, J. (2009). Acquisition strategy and real options. *The IUP Journal of Business Strategy*, *6*(3), 45-65.

Cumming, D., & Walz, U.
(2010). Private equity returns and disclosure around the world. *Journal of International Business Studies*, *41*(4), 727-754.

De Los Ríos, Susana; Rodríguez, Isabel y Sáenz-Díez, Rocío. Emprendedores y Capital Riesgo en España: El caso de Fond-ICO Global. Revista ICADE

Flanc, J. (2014). *Valuation of Internet Start-ups: An Applied Research on How Venture Capitalists Value Internet Start-ups*. Anchor Academic Pub.

Finkel R., (2010). The Masters of Private Equity and Venture Capital: Management Lessons from the Pioneers of Private Investing

GOMPERS, P. A. (1995), "Optimal Investment, Monitoring and the Staging of Venture Capital", The Journal of Finance, vol. 50

Gompers, P. A.
(1996). Grandstanding in the venture capital industry. *Journal of Financial economics*, *42*(1), 133-156.

Gompers, Paul A. y Lerner, Josh (1998). What drives venture capital fundraising? Brookings Papers on Economic Activity. Microeconomics.

Gompers, P., & Lerner, J. (2000). Money chasing deals? the impact of fund in# ows on the valuation of private equity investments. *Journal of Financial Economics*, *55*, 281-325.

Gompers, P. A., & Lerner, J. (2004). *The venture capital cycle*. MIT press.

Gompers, P., & Lerner, J. (2001). The venture capital revolution. *Journal of economic perspectives*, *15*(2), 145-168.

Harris, R. S., Jenkinson, T., & Kaplan, S. N. (2014). Private equity performance: What do we know? *The Journal of Finance*, *69*(5), 1851-1882.

Invest Europe (European Private Equity and Venture Capital Association)
(2018), European Private Equity Activity Report

LERNER, J. y TAG, J. (2013), "Institutions and Venture Capital", Industrial and Corporate Change.

Lerner, J.; Leamon, A.; Hardymon, F., (2012). Venture Capital, Private Equity, and the Financing of Entrepreneurship

Lerner, J. (2000). Assessing the contribution of venture capital. *the RAND Journal of Economics*, *31*(4), 674-692.

Lerner, J., Sorensen, M., & Strömberg, P. (2011). Private equity and long-run investment: The case of innovation. *The Journal of Finance*, *66*(2), 445-477.

McCahery, J., & Renneboog, L. (2004). *Venture capital contracting and the valuation of high technology firms*. Oxford University Press McGrath, R. G., Ferrier, W. J., & Mendelow, A. L. (2004). Real options as engines of choice and heterogeneity. *Academy of Management Review*, *29*(1), 86-101.

Metrick, A., & Yasuda, A. (2010). Venture capital and the finance of innovation. *VENTURE CAPITAL AND THE FINANCE OF INNOVATION, 2nd Edition, Andrew Metrick and Ayako Yasuda, eds., John Wiley and Sons, Inc*.

Metrick, A., & Yasuda, A. (2010). The economics of private equity funds. *The Review of Financial Studies*, *23*(6), 2303-2341.

P. Gompers, J. Lerner (2000) *Journal of Financial Economics 55*

Payne, W. H. (2006). *Definitive Guide to Raising Money from Angels*. Gust. doi:http://sacangels.com/downloads/2011-09-12 Definitive Guide Raising Money from Angels.pdf

Putten, A. B., & MacMillan, I. C. (2009). *Unlocking opportunities for growth: How to profit from uncertainty while limiting your risk*. Upper Saddle River, NJ: Pearson Education.

Robinson, D. T., & Sensoy, B. A. (2016). Cyclicality, performance measurement, and cash flow liquidity in private equity. *Journal of Financial Economics*, *122*(3), 521-543.

Samila, S., & Sorenson, O. (2011). Venture capital, entrepreneurship, and economic growth. *The Review of Economics and Statistics*, *93*(1), 338-349.

The Berkus Method – *Valuing the Early Stage Investment*.

LERNER, J. y SAHLMAN, W. (2012), "Reviving Entrepreneurship", Harvard Business Review, marzo, pp. 116-119.