LUISS

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Private equity: Rationale and performance - a comparison with the public equity market's performance and how the performance is affected by geographic and cultural factors.

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Before proceeding with the discussion, I would like to dedicate a few lines to all those who have been close to me during my university career.
In particular I'm so grateful to Prof. Pierluigi Murro, my thesis Supervisor, because he gave me the opportunity of deepening this theme, implement my studies and produce this thesis.

I am so grateful to my father and my mother for the support they gave me during my whole university career. I would also thank my sister, and the whole family.

In conclusion I am so glad for all the experiences I had with all the people I met during my studies, my "university friends", the historical ones and Chiara.

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Introduction

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"In a world of radical uncertainty, there is no way to identify the probabilities of future events, nor a system of equations that describes individuals' attempt to cope with that uncertainty." (Lord Mervyn King, "*The End of Alchemy").*

The concept of uncertainty is a pillar throughout the analysis of the Private equity market. It is defined as the circumstance in which investors have difficulties in assessing current and expected market's condition due to high market volatility.

The uncertainty mentioned by Lord Mervyn King is the so-called "radical uncertainty" which stress out the idea that each economical model can't quantify or assess exactly which is the level of volatility and uncertainty of a market. Many scholars were skeptical of this method, but after the 2008 crisis they re-evaluated their positions on the quantifiability and predictability of uncertainty, promoting and accepting the idea that in the stock market investors cannot ignore uncertainty as a fundamental element of it.

If this concept must be applied to the stock market, much more significant is analyze the presence of uncertainty in the Private Equity industry.

Since the end of 1960 Private Equity industry was a significantly growing industry due to its profitability, over the securities offered by public equity market, and for its ability of granting an easier access to capital markets.

Due to the nature of this market (institutional investment activity in risk capital of unlisted companies characterized by a high development potential) Private Equity funds aren't subject to any disclosure's duty and for this reason it's hard to figure out the real performance of Private Equity funds.

This paper aims to deepen Private Equity industry for what concern its historical background, activities, and its main concern: the assessment of the performance.

In the first and second chapter I will analyze the Private Equity market and all its main features, from its history till funds structure and the activities and steps that a Private Equity fund manage in order to achieve value creation.

In the third chapter instead, I will conduce my analysis throughout the performance of Private Equity companies. After an overview of the related literature and a focus on the main methods implied to assess valuation and the performance of a Private Equity fund (IRR and Multiples analysis), I will proceed to an understanding of the relative performance of Private Equity market compared to the public one. I will demonstrate there is an effective steadily

outperformance of Private Equity market despite the nominal performance recorded by the General Partners of the funds.

In the second part of the analysis I demonstrate there's a correlation between the regulatory and social panorama of a country and its performance in Private Equity industry. I will focus on how much internal growth in terms of GDP and grade of development of each sector, including the financial one, affect the diffusion of the Private Equity phenomena.

Furthermore, from this context I underline the necessary update from a regulatory point of view in order to manage, avoiding arbitrage and illusory and exaggerate results, and give to everyone the possibility to access the Private Equity industry.

Chapter 1

1. Private Overview of the Private Equity market

1.1 History of Private Equity

a) Early stages: the ARD

The first approach to the Private Equity Market has begun its rise in the American context in the middle of 40', when the first Venture Capital fund, the ARD (American Research and Development Corporation) was founded in 1946 by Georges Doriot, an Harvard Business School professor. It was a publicly traded and closed investment company which tried to fix a common issue for the middle and small private American companies: a lack in financing opportunities for future growth.

Its goals were:

- Create a private institution able to obtain investments from institutional investors
- Organize a system that was able to deliver and provide managerial expertise that was critical as the financing itself.

ARD failed its mission because both of the continuous needs of capital from investors and for the bad prevision of the stock analyst that focus on the current negative earnings of the company.

After a decade from the foundation of the ARD, there was in America the first incentive from the institutions to promote venture capital investments by private. In 1958, was founded the SBA[1] (Small Business Administration) that should administrate, support and finance the SBIC's (Small Business Investment Companies). Those companies were authorized by the SBA to provide and manage capital to risky companies. In order to encourage the formation and the spread of this new economical trend, SBICs' were subject of two advantages:

- They can borrow more than a half of their financing power from the SBA
- Gain tax benefits as governmental incentive.

Despite its initial success in managing more than 450mln of private capital investment and the license for more than 600 SBIC during the first five years of the program, the SBICs' system is destined to decline due to three main defects.

[1] One of the steps was passage of section 1244 of the Internal Revenue Code to allow individuals who invested $25,000 in small new businesses to write off any capi- tal losses against ordinary income. The major piece of legislation, however, was the Small Business Investment Act of 1958, which established Small Business Investment Companies.

- Not all the SBICs were able to deliver equity financing to all new ventures, meaning that just few of the whole system of the SBICs' can take advantage of the loans granted by the SBA since SBICs are required to pay themselves interest payments and so the group o SBICs that can benefit of this system restricts to the ones with positive cash flows.
- The majority of the licensed SBICs attracted mostly private capital investment instead of the institutional one. For the peculiar investment structure of SBICs, privates were less willing to invest their capital in such risky private equity investments.
- The most damage element for the program is related to a shared feeling: "Wrong people who operate SBICs" as an outgoing deputy of SBA said.

b) The 1970s and the limited partnership

A hot new-issues market in 1968-69 brought to a successful conclusion many of the new venture investments made during the 1960s. Though they had gained valuable experience and enjoyed modest personal rewards, private equity professionals saw an opportunity to improve upon existing arrangements. This provided the impetus for the formation of a significant number of venture capital limited partnerships. At Donaldson, Lufkin and Jenrette (DLJ), for example, a venture capital partnership management unit, Sprout Group, was formed to centralize and professionalize the firm's private equity activities. DLJ had been active in organizing individual deals in the 1960s, with the result that "people in every department were dabbling in venture capital."

Limited partnerships also were attractive to many private equity professionals as a way of addressing the problem of compensation. Under the Investment Company Act of 1940, managers of publicly traded venture capital firms (including publicly held SBICs) could not receive stock options or other forms of performance-based competition. Even where there were no legal restrictions at bank affiliated SBICs and on the staffs of institutional investors. These salaries seemed especially inadequate compared with the earnings of the general partners at the handful of existing venture capital partnerships. Finally, limited partnerships were attractive as a way of avoiding SBIC-type investment restrictions and attracting investors more sophisticated than the retail shareholders of publicly traded SBICs.

In 1969, newly formed venture capital partnerships raised a record $171 millions. In general, these partnerships were small ($2.5 million to $10 million) and raised money from individual investors; however, one, Heizer Corporation, raised $80 million from thirty-five institutional

investors. Between 1969 and 1975, approximately twenty-nine limited partnerships were formed, raising a total of 376 million dollars. Organized venture capital financing through limited partnerships was beginning to be recognized as an industry, and in 1973 the National Venture Capital Association was formed.

c) The boost of venture capital limited partnership from the 80' till nowadays

The evolution of the limited partnership in combination with the numerous favorable regulatory and tax changes spurred the flow of capital to the private equity market. Commitments to private equity partnerships during 1980-82 totaled more than $3.5 billion, two and one-half times the commitments to private Equity during the entire decade of 70'. Over the next three years, commitments surged to more than $4 billion annually. In 1986 and 1987 commitments more than doubled each year, reaching a 1987 peak of $17.8 billion. Since then, commitments have followed a cyclical pattern, reaching a low of $6.4 billion in 1990 and a high of $32.1 billion in 1996.

Such a steadily grown of the venture capital limited partnership during the 80', was followed by a decline in the last years of this decade. On the other hand, all the non-venture capital private equity investments took the floor. During the 90' there was the same pattern but even more interesting was the huge new commitment in both, venture and non-venture capital private equity investments, at the beginning of the millennium. There was a change in the mindset of the investors, the institutional ones, that are seeking for new and alternative form of investments and an increasing willingness of the BoM2to sell to Private Equity groups especially to buyout3 firms. There was a boom in the private equity market reaching a total amount traded in 2000 of 199.2 billions U.S. dollar (statista: Value of venture capital investment in the United States from 1995 to 2020). This *boom* of the venture capital investments lead a huge number of company, most iconic case were in the IT industry[4], was just the start for its develop. Looking at the report of Harvard Law School "Private Equity: 2021 Year in review and 2022 outlook", in the last year Global Private Equity deal volume, touched 1.2 trillions dollar with an increase of 111% from 2020, and it is expected to growth. The boost to this sector and in particular of the huge number of buyouts, was following the pattern of the past years that was made by both plentiful capital supply and an easier access to

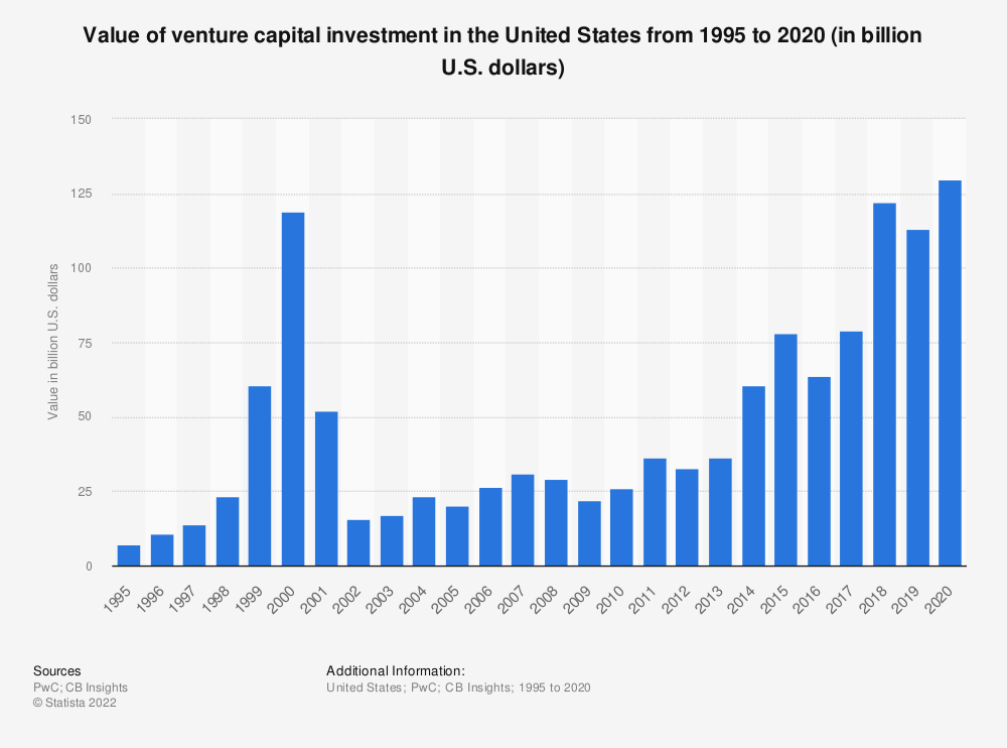
[2] Board of Managers

[3] The proces through which a company is able to acquire control of a company (by owning at least the 51% of company's voting shares). *Corporatefinancialinstitute.com*

[4] *Microsoft and Apple*

debt financing due to a lower interest rate and and favourable terms and condition to borrow money.

Figure 1: Value of Venture Capital investment in the US from 1995-2020



1.2 The Private Equity Market: Overview

In Great Britain during '700, from the banking activities, rose a new intermediation institution: the merchant banks. It provide activities such the placement of securities, advice to companies in crisis and extraordinary finance operations, participation in the risk capital of companies and the management of investment funds. Those services can be summarized in the system of financial activities related to fundraising, both from venture and non-venture capital.

In the last years the applied concept of this new intermediary companies related to venture capital investments should update due to the increasing number of alternatives of investment in venture capital. Considered the developed financial panorama, this class of investment has a common floor: the undertaking of majority of the target companies. Investment in venture

capital from institutional investors, also defined by U.S. literature[5] as "activities of Private Equity", can be divided in two investment strategies:

- Venture Capital funds
- Buyout funds[6]

Private Equity market is related to a peculiar asset class of investment. This expression refers to any kind of institutional venture capital investment activities in unlisted companies with a high potential of growth.[7] The rationale of the Private Equity market is linked to investments in high growth companies earning both from the capital gain and from the sale of the participation in the target companies.

Private Equity market typically is a medium-long term investment and brings both, the target company and the investing fund, in a win-win situation. On one hand the target company receives, beyond the financing, also the expertise and the know how provided by the fund. A private Equity fund in fact, especially with a buyout strategy, become part of the Management of the target company, thus having active participation in strategic and investment decisions. On the other hand, investors have interest in bring to success the company since, higher is the expected return of the target company and higher will be the selling price of their participation.

The reason that lead Private Equity market to spread exponentially globally since the last two decade is the performance it offers despite the one that comes from investments in Public Equity market. The success of private equity operations, and its constant growth rates, are linked to its natural logic:

1) business' purchase
2) quick guide of the business to success
3) subsequent sale.

This kind of activity perfectly combine management and finance skills, from companies' analyses using financial models, to management skills, for the correct government of

[5] W. Bygrave, J.A. Timmons, Venture Capital at the Crossroad, Harvard Business School Press, Boston, 1992.

[6] A livello metodologico, l'analisi del mercato statunitense del private equity e venture capital viene oggi comunemente ripartita tra attività realizzata dai venture capital funds e quella posta in essere dai buy out funds. Cfr. NVCA, 1999, Annual Report, Venture One, San Francisco, 1999.

7 Borsaitaliana-glossiario finanziario

companies in which there was an investment. Private equity can have a twofold nature and can be both considered as a source of financing or a real investment.

The bottom definition means that Private Equity market can be used as an alternative for small and medium companies as substitute from bank loans and IPO operations. The latter, is related to the circumstance in which the investor are the same that are going to be part of the BoM; thus, behind the increase of target company's equity, there's the idea that an investor is now able to bring to success by himself, a company in which decides to invest in. The strength of the Private Equity market relies on this concept. Furthermore, the overall positive results and performances of these funds are also linked to some exogenous factors:

1) high-powered incentives both for private equity portfolio managers and for the operating managers of businesses in the portfolio;
2) aggressive use of debt, which provides financing and tax advantages;
3) focus on cash flow and margin improvement;
4) avoiding of restrictive public company regulations

1.2.1 Private Equity Fund

The investing activity in the private equity market, involves three main subject: the target company, the adviser and the private equity fund. The first one, as we already mentioned above, is the company that will be acquired. The others are the main components for private equity investment activity. Private equity fund is a pooled investment vehicle where the adviser, the private equity firm that manage the funds, pools together the money invested in the fund by all the investors and uses that money to make investments on behalf of the fund. A relevant peculiarity of this market is that even if the adviser must be registered and must respect SEC's guidelines and requirements, private equity funds themselves are not registered with the SEC[8]. So, private equity funds are not subject to regular public disclosure requirements.

Private Equity funds must satisfy at least one of these requirements to avoid to be registered as investment company under federal security laws. The Investment Company act of 1940 defines these conditions in sections 3(c)(1) and 3(c)(7). The latter specifies that a fund should not registered as an investment company if any issuer whose outstanding securities (other than

[8] Securities and Exchange Commission

short-term paper) are beneficially owned by not more than one hundred persons and that is not making and does not at that time propose to make a public offering of such securities. The bottom, excludes all the companies in which the issuer whose outstanding securities are owned exclusively by persons who, at the time of acquisition of such securities, are qualified purchasers[9] and that is not making and does not at that time propose to make a public offering of such securities.

This context is no longer acceptable for the Securities and Exchange Commission, due to the difficulties for the FSOC[10] in estimate the effective systemic risk, and for the matter of protection of investors[11].

1.2.2 Private Equity Fund: Structure

The most common legal structure used within the private equity investments market, is the limited partnership: it involves two main types of actors: a general partner (GP) and a Limited Partners (LPs). The limited partnership is usually a fixed-life investment vehicle, wherein the GP, or the management firm, has unlimited liability and the LPs, or investors, have limited liability and are not involved with day-to-day fund operations. The GP receives a management fee and a percentage of the profits, while the LPs receive a portion of the income and capital gains. Policies laid out in a Partnership Agreement manage the relationship between the GP and the LPs, covering terms, fees, investment structures, and other items that require mutual agreement before investment. A limited partnership model usually also includes an advisory committee and an investment committee.

[9] (i) any natural person (including any person who holds a joint, community property, or other similar shared ownership interest in an issuer that is excepted under section 3(c)(7) with that person's qualified purchaser spouse) who owns not less than $5,000,000 in investments, as defined by the Commission;

(ii) any company that owns not less than $5,000,000 in investments and that is owned directly or indirectly by or for 2 or more natural persons who are related as siblings or spouse (including former spouses), or direct lineal descendants by birth or adoption, spouses of such persons, the estates of such persons, or foundations, charitable organizations, or trusts established by or for the benefit of such persons;

(iii) any trust that is not covered by clause (ii) and that was not formed for the specific purpose of acquiring the securities offered, as to which the trustee or other person authorized to make decisions with respect to the trust, and each settlor or other person who has contributed assets to the trust, is a person described in clause (i), (ii), or (iv); or

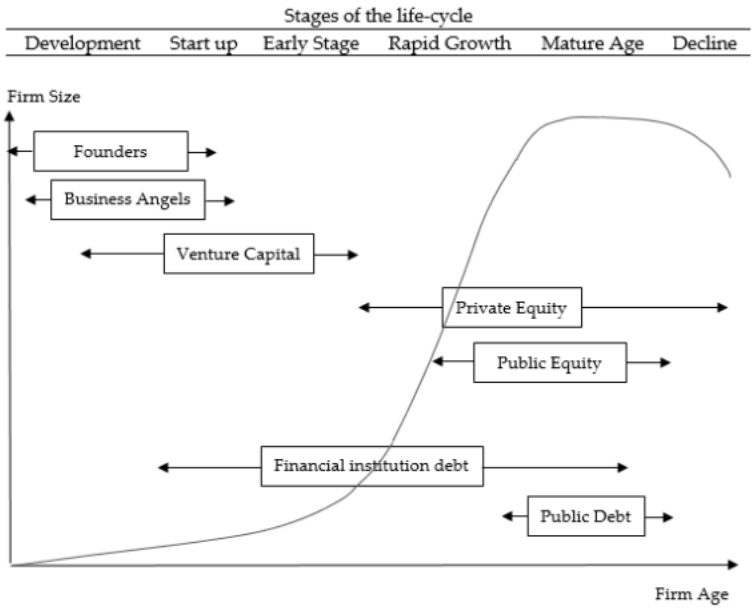
(iv) any person, acting for its own account or the accounts of other qualified purchasers, who in the aggregate owns and invests on a discretionary basis, not less than $25,000,000 in investments.

[10] Financial Stability Oversight Council's

[11] The proposed emendement, requires current and continuos reporting for advisers to private equity funds. With this amendements, the SEC and FSOC will have more timely information with which can be assess risk to investors and markets more broadly.

The great success of private equity funds is also related to their historical high return. Investors have made use of more than $2 trillion into buyout funds over the past decade for a simple reason: they create profits. During the last 30 years, US buyouts have generated average net returns of 13.1%, compared with 8.1% for an alternative private-market performance benchmark, based on the LongNickels public market equivalent (PME)[12] method and using the S&P 500 as the proxy. PE funds have outperformed public markets, even during one of the longest-ever bull markets. There are three main strategies a Private Equity *fund/firm* can implement. The decision over the one to undertake is strictly linked to which stage of the life cycle the company is experiencing

Figure 2 – financing along Life cycle of a company.



Source: "Investors along the Company Life-Cycle", 2016.

We define the company's life cycle of a business as the following six-step development:

[12] Public Market Equivalent is a metric we often use at PitchBook to compare private capital fund performance to public indices. Essentially, the metric adapts public market returns into an IRR-like metric that accounts for irregular and fluctuating cash flows. It's designed to give investors more of an apples-to-apples comparison between private market funds and public benchmarks. It is exclusively used for private market funds and because of that investors may not be as familiar with using it.

1) *Development*:

The business is just launched; sales are slow but in a potential increase. There's a focus on marketing and on target customers rather than profits; in this phase the contribution of private equity is known as seed financing[13]. It is therefore the riskiest investment. The private equity investor[14], in fact, invests in research and development. In most cases, these investments are made in markets characterized by high growth rates, with extreme profitability.

2) *Start-Up:* The start-up stage concerns the start of the company's activity. In this case, private equity investors decide to invest on a business plan, not a simple idea. For this reason, this phase is yet a risky phase, in which entrepreneurs and company's founders require cash in order to proceed with their business; in this case companies have a negative profitability and need a great amount of money in order to buy the necessary equipment. Since this is also a very risky phase, the private equity investor can decide to institutionalize following different paths:

• Put option: an agreement between the private equity investor and the founders of the company thanks to which, when the business plan does not work, the founder is obliged to buy back the shares held by the investor;

• Collateral: it is a question of arranging some corporate assets to guarantee the investment and to protect the private equity fund in the event that the business plan does not work;

• Stock option for the investor: this is a real incentive for the proper functioning of the business plan rather than a form of guarantee;

• Balance between money and share: the investor, in addition to granting a form of financing that allows the company to have greater liquidity and therefore greater investment possibilities, can decide to become an important part of the company management in order to contribute to

[13] Seed financing is a type of equity-based financing. In other words, investors commit their capital in exchange for an equity interest in a company. (www.corporatefinanceinstitute.com)

[14] At this stage investors that have a key-role are the angel-investor: Angel investors are individuals who offer promising startup companies funding in exchange for a piece of the business, usually in the form of equity or royalties. Angel investors are commonly found in the following professions: Business professionals; C-level company executives, who have risen through the ranks and know what it takes to run a successful business; Successful small business owners and entrepreneurs who have already launched successful companies and know how to recognize start-ups that have a bright and profitable future;Investors who make financing small businesses a professional pastime; Crowdfunding platforms that raise pools of money in groups, with each person investing a small amount in exchange for a small share of any eventual profits, if the company proves successful. (www.Forbes.com)

the correct functioning of the business plan. The financial markets are unable to support the growth of companies in the phases just described, therefore the role played by private equity operators such as business angels[15] and venture capital companies becomes fundamental.

3) *Early Growth:* In the early-stage phase, a company generates positive sales revenues and evolving growth rates; both cash flow and profitability are still negative, albeit with sharply decreasing values (this is the last stage with negative values). Even in this phase, the role played by private equity funds is fundamental. It grants the needed liquidity to the company to continue the production process that has just started. However, as this is still a risky phase, very often private equity investors decide to adopt a hands-on approach that allows them to have a real impact on the management choices to be made.

4) *Rapid Growth:* At this stage, the riskiness of the investment is moderate. This phase is characterized by a great profitability and cash flow growth, with widely positive sales. The company's main goal is to establish itself on the market, increasing its market share and becoming one of the most important players in the industry. In this type of operations, business growth can be internal (organic) or external. For this reason, the role played by a private equity investor, is very similar to that of a bank, with its financing similar to a bank loan; private equity investor allows the company to proceed with the purchase of fixed assets or, in general, it confers greater liquidity useful for financing projects that allow internal growth. In external growth operations (in most cases M&A operations), the private equity investor adopts a hands-on approach, therefore it is proactive in managing the entire business process. M&A operations have essentially three main objectives: • create a big player in the reference market by expanding the offer of products/services and having a greater geographical expansion; • exploit the economic/strategic synergies (greater competitive advantages) due to the M&A operation, trying to diversify the offer on the market, becoming a research and development hub and therefore a real innovation engine; • possibility of obtaining fundamental tax advantages, but also carrying out "internal outsourcing" operations that allow a strong reduction in production costs.

5) *Mature Age:* This phase involves the intervention of a private equity operator in a company that is in the maturity phase. The company has positive profitability and cash flow but also stable sales revenues. In this phase the objective is strategic, the aim is to obtain a definitive

[15] The former operates in particular in the US, but they are not yet very present in Europe. These are companies that contribute risk capital and allow the development of business ideas which in turn make the markets more competitive, therefore more challenging and competitive. The role played by these incubators can be fundamental for improving the GDP's growth rates of European countries.

and long-lasting success in one's own reference market. In this phase, the investor does not present serious risks and investor's task is to support the company management in strategic operations towards a long-term expansion. In this phase, the most common operations carried out by private equity funds are: leverage buyout (LBO), private investment in public equity (PIPE) and corporate governance deals (CG).

6) *Decline:* The riskiest phases in which to invest. Sales revenues have negative rates, the profitability of the investment in the company is temporarily low and there is often a great liquidity's need in order to finance a recovery plan. Why does the investor decide to make this investment? Quite often the company is still profitable even if poorly managed and impoverished by the making of wrong investments. This phase presents, in turn, a further breakdown into:

• restructuring financing;

• distressed financing.

In the first case, the company is experiencing a moment of severe crisis but is still alive, and therefore still has great potential. For this reason, the private equity investor decides to adopt a strong hand-on approach, in which, in addition to financial recovery of the company, as a real consultant, obtaining the majority of the shares, deals with the strategic plan of rebirth. In the second case, the company is at the end of its days, the choice of the private equity investor is therefore to finance the latter, in order to purchase patents, brands, equipment and other corporate assets that can be resold to a third-party buyer or to be included in another private equity transaction.

The decision of the Private Equity Fund over which strategy has to be implement is based on which stage, of the ones mentioned above, the company target is living: Venture Capital (VC), Growth Equity, Buyouts.

- *Venture capital:* Venture capital is a form of investment in early-stage companies with strong growth potential. The types of businesses venture capital funds invest in tend to be young and often pre-profit, and potentially even pre-revenue. Venture capital funds buy minority equity stakes in these companies and provide them with financial support and business expertise to help them grow and succeed. VCs take minority stakes in businesses, very often alongside other VCs and investors. Early-stage companies raise money in 'rounds' which will see further investment from either the same investors and/or new ones to support the company as it grows. Many start-ups will also receive funding via angel investment, crowdfunding, grants, incubators or even friends and family.

Together, these form what is known as the 'innovation eco-system', a funding chain that provides capital and business expertise to early-stage, fast-growing companies. Furthermore, we have to provide a distinction between investments that comes from "angel investors" and venture capitalist. The latter invest in the target company at the "development" stage, mainly in R&D while the bottom start to financing the business when the business product or service starts to be commercialized.

- *Growth Equity:* is an investment opportunity in late-stage companies. Growth equity funds seek to invest in well-run companies with proven business and a history of significant and rapid revenue growth, which minimizes the technology adoption risks often associated with venture capital investing. Also, unlike venture capital deals, which are often made on speculative assumptions about the total addressable market for a product and future funding requirements, growth equity investments are typically underwritten on relatively defined profitability milestones and tend to have limited, quantifiable future funding needs to achieve their goals.

Compared to VC[16] investments, it differs for many aspects:

1) *Holding Period*: VC investments requires higher holding time due to their nature. Those investments are made in the early stages of the business, and it requires much more time (on average from 5 to 7 years) to develop and consolidate within the market. Conversely, Growth Equity investments, are undertaken when the potential and the profitability of the company is already spread out.

2) *Risk Profile*: Growth Equity investments, have a moderate level of risk since they are usually undertaken in a late stage of the business, when the company has already consolidated its presence in the market. Conversely, VC investments have an high risk profile due to the new market entry risk and the one associated to the launch of a new product.

- *Buyout:* is the strategy to implement in the mature stage of life cycle of a company. Buyouts occur when a mature, is purchased by either a private equity firm or its existing management team: the investor became owner of the majority of shares[17] and of the controlling interests over the company.

Within the buyout's investment strategy, we have to make a distinction between the management and leveraged buyout. The latter is a strategy that is made in order to face a future

[16] Venture Capital

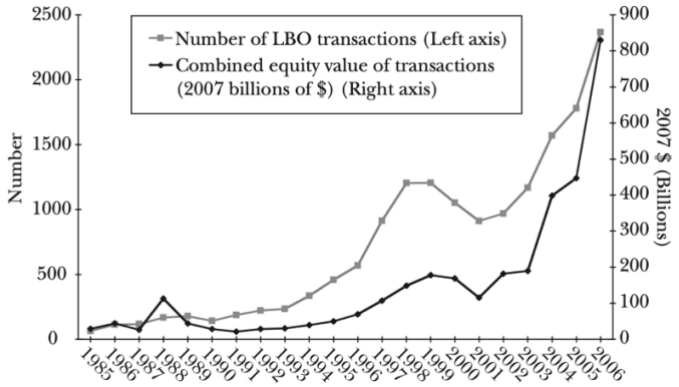
[17] Once the target company is acquired, all previous investors of the company cash in on their shares and exit.

organizational restructuring of the target company. The Private Equity fund assembles a management team that will be able to manage the acquired company throughout the organizational renewal and strive it towards an increase in profitability and on the overall going concern. The Private Equity fund will finance the designed management team the made the takeover of the company and they will obtain a non-controlling percentage of shares of the company as compensation. Within management buyout we can subcategorize this investment based on the decision of which management team is supposed to take control of the company. It should be an existing, the old, or both management team to made the takeover, depending on the Private Equity fund decision.

The bottom, leveraged buyout (LBO[18]), is the largest portion of strategy used by funds in the Private Equity market, where in these takeover operations is involved a large use of outside debt financing. The target company in a buyout is commonly a closely held private business, a division or subsidiary of a large company or a public company. The mechanism behind these acquisitions through LBO, implies a small investment in the equity of the target company; conversely, the Private Equity fund make a massive use of leverage. The buyout is typically financed with 60 to 90 percent debt. The private equity firm invests funds from its investors as equity to cover the remaining 10 to 40 percent of the purchase price. The new management team of the purchased company typically also contributes to the new equity, although the amount is usually a small fraction of the equity dollars contributed. The chart displayed below, shows the number and combined transaction value of worldwide leveraged buyout transactions backed by a private equity fund sponsor based on data from CapitalIQ. In total, 17,171 private equity-sponsored buyout transactions occurred from January 1, 1970, to June 30, 2007. Overall buyout transaction activity mirrors the patterns in private equity fund-raising. Transaction and fundraising volumes exhibit a similar cyclicality. Transaction values peaked in 1988; dropped during the early 1990s, rose and peaked in the later 1990s, dropped in the early 2000s; and increased dramatically from 2004 to 2006.

Figure 3: "Global Private Equity transactions volume, 1985-2007"

[18] Leverage BuyOut



Source: CapitalIQ, Stromberg (2008), authors' calculations.

In conclusion to have a quick look to the three investment strategies, looking at the below table, we can easily state that in the early stage of the company, investors should act as a Venture Capital or as an Angel Investor. During the late stage of its business, investor can pursue a equity or capital growth in the company target. In the end, the maturity stage is characterized by a takeover of the target company itself by the fund.

Figure 4: Comparison of Private Equity's investment strategies

	Venture Capital	Growth Equity	Leveraged Buyout
Maturity	Early stage, limited financial history	Inflection point, unit economics proven	Mature, long track record of cash generation
Profitability	Not profitable	May or may not be profitable, but clear path to profitability	Profitable with a history of EBITDA and cash flow
Free Cash Flow	No	Limited	Stable
Control Features	Typically minority	Minority or control	Control
Debt	No	Limited	Yes
Protective Provisions	Generally No	Generally yes	Yes
Primary Risks	Market and product	Execution and management	Credit default
Sources of Return	Revenue growth and fit between product and strategic buyer needs	Revenue growth, profitability and strategic value	Earning growth and debt repayment

Source: iCapital. For illustrative purposes only.

Source: iCapital.com

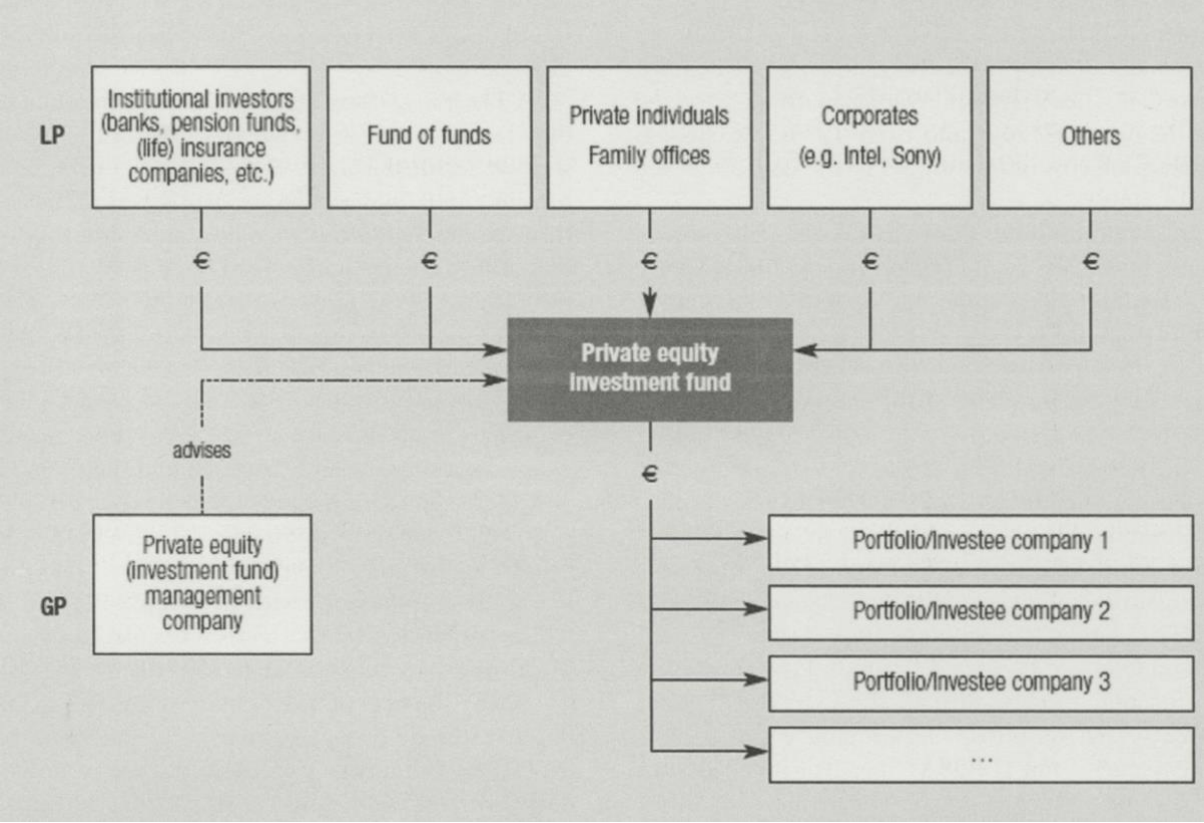
Chapter 2

2. Activities/regulatory framework/trends/public vs private equity

In this chapter I will analyze, even if each private equity fund differs from each other by socio-cultural aspects, regulatory framework, asset class on which the fund is supposed to invest in and the specific strategy to follow, how each fund follows the same path within the industry to reach its goal.

Before analyzing the process that leads the private equity company to value creation, I focus on the main actors in this market.

Figure 4: participants and investment flow in Private Equity market



Source: EVCA 2007

From the above graph, is possible to figure out which are the participant to this market:

1) General Partner (GP)
2) Limited Partner (LP)
3) PE fund
4) Portfolio/Investee companies

GP is the responsible, with unlimited capital, of process of fund sourcing and of managing the investee companies. LP instead, as the name suggests, have limited liabilities meaning that their liability for the investment is limited for how much money they invested in the private equity fund. Furthermore, the private equity fund, is a pool of money, a vehicle raises by the LP and managed by the GP. Private Equity fund shouldn't be confused with private equity firm that, despite the fund, can include more than one fund. In conclusion, the investee is the destination, identified companies by the GP with high potential, of the pool of money raised by investors through the fund.

The overall rationale behind the flow of delegation of decisions from LPs to the GP has to be searched in the LPA (Limited Partnership Agreement), an agreement that provides the assurance to the LPs that the GP will act in the interest of the fund and its value creation.

Activities of Private Equity fund

The investing activity of a Private Equity can be divided into four stages:

- Fundraising Period
- Structuring and Investment Period
- Managing Period
- Exiting Period

The first stage involves the fundraising process and the selection of the investments. This stage should grant access to Private Equity firms to high-quality deals. This first step requires a huge amount of information to be analyzed to evaluate the capacity and the potential of an investment.

The second stage is the Structuring Investment. It refers to the amount the type of securities that should be used as equity and all the other substantive investment agreements issued by the General Partner.

The third stage involves a process of integration of the portfolio's companies' management. Through their presence in the company's Board of Management, they can exercise control over the strategic decisions of the company, also by providing all the operating, financial expertise.

The fourth and last stage instead refers to the exit strategy of the fund from the investment. It is considered an integral part of the investment process in the Private Equity market since all the investors expect to receive a payback in a medium short temporary range. A fund can follow two different path to exit an investment: going public, mainly through the constitution of an IPO; the alternative is to sell the company on the private market.

1.a) <u>Fundraising period</u>

The first step to pursue is the so-called *business idea creation.*

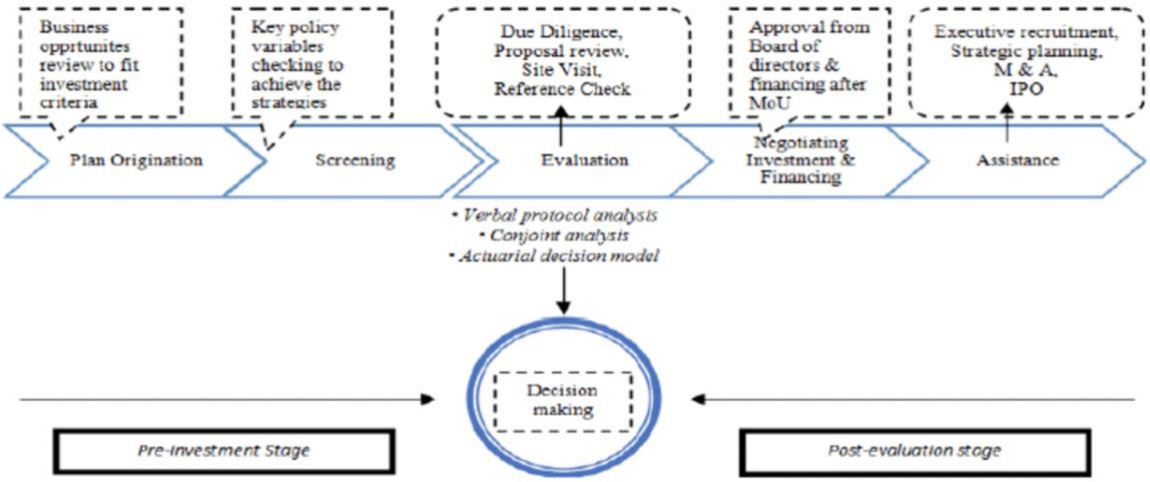
Through this step private equity company have to sell its business idea to the investors, making the willing to invest their money into this project. In this phase all the attention is concentrated towards the target market and all its complementary information and concerns about macroeconomics assumptions, at which stage of the business lifecycle the target company is, in order to have a clear understanding of which strategy fits better the circumstances.

Once the business idea has clearly reached investors' mind, private equity company has to *sell.*

In this phase, the most difficult part of the GP is to raise the first-time fund. Once the GP had created a good amount of track records from previous funds, the follow-on became easier. A central role in the fund raising is taken by the reputation of the GP throughout all the investors' panorama: higher is the reliability and the performance obtained by GP and higher will be the willingness of investors and the attractiveness of the investment. The conclusion of this phase is sanctioned by the commitment letter of the investors that declare their interest and participation to the project.

The last step to go through is the decision over the financial leverage to use to finance the investment: which level of debt and equity is required.

Figure 5: Venture Capital investment process



Source: Abacademies.org

Access to information about high-quality investment opportunities is crucial to a private equity partnership.

General partners rely on relationships with investment bankers, brokers, consultants, lawyers, and accountants to obtain leads. Economies of scale apparently play an important role in deal flow: the larger the number of investments a partnership is involved in, the larger the number of investment opportunities it is exposed to. Partnerships compete directly with agents to locate candidate firms.

Deals brought to the partnership by agents are less attractive than deals the partnership locates itself because agent-arranged deals involve additional fees and tend to get bid up in price by competing investors. Nonetheless, a portion of partnership investments are generated by agents.

The already analyzed steps are inherent to the first phase described in the graph: *"business opportunities reviewed to fit investments criteria".* The second step instead, *"key policies variables checking to achieve strategies",* is related to the screening process of the proposed business idea. In this phase, to satisfy the sake of control and review, must be presented a due diligence document.

a) Due Diligence

Partnership managers receive hundreds of investment proposals. To be successful, they must be able to select efficiently the approximately 1% of these proposals that they invest in each year.

Efficient selection is properly regarded as more art than science and depends on the acumen of the general partners acquired through experience operating businesses as well as experience in the private equity field.

Investment proposals are first screened to eliminate those that are unpromising or that fail to meet the partnership's investment criteria. Private Equity partnerships typically specialize by type of investment, as well as by industry and location of the investment.

Specialization reduces the number of investment opportunities considered and also reflects the degree of specialized knowledge required to make successful investment decisions.

This initial review consumes only a few hours and results in the rejection of up to 90% of the proposals the partnership receives. In many cases, the remaining proposals are subjected to a second review, which may take several days.

Critical information included in the investment proposal is verified and the major assumptions of the business plans are scrutinized.

More than a half of the proposals that survived the initial screening are rejected at this stage. Proposals that survive these preliminary reviews become the subject of a more comprehensive due diligence process that can last up to six weeks (it includes visits to the firm, meetings and telephone discussions with key employees, customers, suppliers, and creditors, and the retention of outside lawyers, accountants, and industry consultants).

For proposals that involve new ventures, the main concerns are:

- the quality of the firm's management
- economic viability of the firm's product or service.

For proposals involving established firms, the general objective is to gain a thorough understanding of the existing business, although the precise focus of the investigation varies with the type of investment.

In the case of distressed companies, efforts are focused on discussions with the company's lenders. In the case of a buyouts of family-owned businesses, management succession issues will warrant greater attention while in the case of highly leveraged acquisitions, efforts will focus on developing detailed cash flow projections.

Extensive due diligence in the private equity market is needed because of informative lack regarding the issuer. Thus, the partnership must rely heavily on information that it is able to produce from the scratch. This context leads the management of the issuing firm to knows and doesn't disclose to the outsider, an higher information level about many aspects of its business. This information asymmetry, combined with the fact that issuing private equity is very expensive, has the potential to create severe adverse selection problems for investors.

In the private equity market, the problem of adverse selection is mitigated by the extensive amount of due diligence and by the fact that alternative sources of finance for private equity issuers are limited. Though they compete intensely to locate potential investment opportunities, partnerships also cooperate with one another, most often through syndication[19]. The most common reasons for syndication are size and location of the deals. Partnerships team up to finance larger deals because of restrictions on the percentage of a partnership fund that may be invested in a single deal.

The geographic rationale for syndication is related to the value of local monitoring.

[19] Bank syndication is a type of loan offered to the same subscriber by a pool made up of two or more creditors with equal terms and conditions for all parties who adhere to the contract. Generally, a creditor is chosen as an agent who manages everything related to documentary practices on behalf of the participants.

A third, less common, reason for syndication is that it permits the validation of one partnership's judgement by another.

Finally, by allowing other partnerships to participate in its deals, a partnership informally obliges others to return the favor in the future, thereby increasing its access to profitable deals. When deals are syndicated, the lead investor, generally the partnership that finds and initiates the deal, structures the deal and performs the lion's share of the due diligence.

In return, it can set terms and conditions that more closely meet its needs, although it rarely gets preferential terms. It appears that the majority of later-stage venture capital and middle-market buyout investments are syndicated owing to their size. Conversely, early-stage new ventures are more likely to be financed entirely by a single partnership, reflecting not only the more manageable size of early-stage investments but also the greater value of the services performed by the lead investor.

The largest buyouts also tend to involve a single investor, a mega-buyout fund; the managers of these funds appear to be less collaborative endless willing to share information than the managers of other types of funds and are large enough to finance large deals entirely by themselves. There may also be a secular trend at work: as the size of new partnership funds has grown over time, reliance on syndication apparently has diminished.

Analyzing the factors that should affect the fund-raising process[20] both in US and in the Western Europe market, we can state that the literature available and the empirical data about this topic are scarce due to the nature of the company in which Private Equity funds invest: unlisted company, in fact, are exempted to respect any disclosure duty.

It's possible to develop and consider some proxies to have a better understanding of what influence most fund-raising decisions. According to the economic literatures, the following factors influence mostly the spread of private equity fund

The presence of a developed stock market has the function of guarantee for those one who decided to invest in alternative asset classes. The stability of the stock market in fact ensures an exit strategy with an Initial Public Offer (IPO). This is one of the conditions for the existence and development of a Private Equity market.

So, the main hypothesis is that "*The higher the shares of the IPO exits in past transactions, the higher the future fundraising probability and volume".*

[20] The amount available for investments in unlisted companies and the invested amount that comes from professional investors

PE management firms set clear investment objectives for each of their funds that, in turn, are in line with the expertise of fund management and that are communicated to LPs through private placements memoranda. These fund characteristics are important for limited partners to decide whether to commit capital, in line with their own investment objectives.
When a PE firm decides to raise a new fund, the GP of the current fund begins a fundraising campaign that lasts anywhere from a few months to more than a year and a half, depending on the prestige and perceived ability of the PE firm, overall market conditions, and the size and terms of the fund being raised.
Unlike mutual fund performance, private equity fund performance is reported using internal rates of return and value multiples (VMs). Before the Freedom of Information Act (FOIA) forced large public LPs to disclose the returns of individual funds in which they invested, leading to the emergence of third-party data aggregators such as Preqin in recent years, Venture Economics provided summary information about IRRs and VMs for a cohort of same vintage year, same fund type, same geographic region funds while maintaining the anonymity of individual funds that provided them with their performance data.

By investing through a partnership rather than directly in issuing firms, investors delegate to the general partners the labor-intensive responsibilities of selecting, structuring, managing, and liquidating private equity investments. However, limited partners must be concerned with how effectively the general partners safeguard their interests. Among the more obvious ways in which general partners can further their own interests at the expense of the limited partners are spending too little effort monitoring and advising portfolio firms; charging excessive management fees; taking undue investment risks; and reserving the most attractive investment opportunities for themselves and their associates. Private equity partnerships address these problems in two basic ways.

1) Partnerships have finite lives; to remain in business, private equity managers must regularly raise new funds and funds raising is less costly for more reputable firms;

2) Second, the general partners' compensation is closely linked to the partnership's performance.

1.b) Structuring and Investment period

If after due diligence the partnership remains interested in investing in a firm, the partnership and the firm begin negotiating an investment agreement setting the financial and governance aspects of the deal.

The main financial issues are the amount of ownership the partnership acquires and fair evaluation process through the determination of the price.

Two main governance issues are:

- managerial incentives at the portfolio company;
- Partnership's ability to exert control over the firm, especially in the event that its performance suffers.

a) The Partnership's Ownership Stake

The partnership's ownership share is determined in essentially the same manner regardless of the type of equity issued–by projecting the company's value on some future date and backing out the percent ownership that provides the partnership with its required rate of return.

The values typically are based on multiples of projected after-tax earnings, EBIT, or cash-flow. Required rates of return vary by investment type: Venture capital partnerships report required returns of 50% on early-stage investments and 25% on later-stage investments; required returns on most non-venture investments are in the range of 15% to 25%. Because riskier investments generally require more attention and monitoring, their higher required rates of return reflect – as the Capital Asset Pricing Model (CAPM) states, there's a correlation between the remuneration from and investment and the risk an investor will undertake- both a risk premium and compensation for the general partners' time and effort. "Required" rates of return on private equity investments of 15% to 50% are much higher than average partnership returns, which are in the mid-teens.

The discrepancy suggests that partnerships consistently fail to earn their required rates of return or that private equity is systematically overpriced.

The more likely explanation is that the "required" rate of return is the return the partnership expects to earn if the investment is a success. It is a conditional expected return.

This conditional expected return approach to pricing deals reflects the fact that returns on private equity investments are highly skewed: more than half of all investments produce below-average returns, and a small number of investments yield extraordinarily large returns that raise the average.

It is difficult determine the future value of the firm: It is in the firm's interest to project a high future value, as a high future value means that the firm will have to give less stock to the

partnership. On the other hand, it is in the partnership's interest to adopt a more conservative forecast.

This conflict is often resolved by offering the firm's managers the opportunity to increase their shareholdings if certain performance objectives are met.

b) Governance Issues

Information asymmetries between investors and managers of the issuing firm give rise to a potential "moral hazard," whereby management pursues its own interests at the expense of investors.

Private equity partnerships rely on various mechanisms to align the interests of managers and investors.

These mechanisms can be classified into two main categories:

- Those that relate to performance incentives, including the level of managerial stock ownership, the type of private equity issued to investors, and the terms of management employment contracts.
- Those that relate to direct means of control of the firm, including board representation, allocation of voting rights and controlling access to additional financing.

The failure of the internal control systems of many public corporations has been linked to the lack of stock ownership by senior managers. Senior managers typically own a significant share of their company's stock, and stock ownership often accounts for a large part of managers' total compensation.

A common provision in both venture and non-venture financing is an equity "earn-out"[21]. This arrangement allows management to increase its ownership share if certain performance objectives are met.

Performance objectives can be stated in terms of earnings, the market value of the firm, or a combination of the two:

c) Type of Equity Issued to Investors

Convertible preferred stock is the type of private equity security most frequently issued to investors.

[21] contractual provision stating that the seller of a business is to obtain additional compensation in the future if the business achieves certain financial goals

The major difference between convertible preferred stock and common stock is that holders of preferred stock are paid before holders of common stock in the event of liquidation. From the partnership's standpoint, this type of equity issued reduces the partnership's investment risk. Moreover, it allows the parties involved in the partnership to take advantages from strong performance incentives to the company's management, because management typically holds common stock, or warrants to purchase common stock.

d) Management Employment Contracts

In principle, management's equity position in the firm could induce excessive risk-taking. However, management compensation can also be structured to include provisions that penalize poor performance, thereby offsetting incentives for risk-taking.

Such provisions often take the form of employment contracts that specify conditions under which management can be replaced and buyback provisions that allow the firm to repurchase:

a) manager's shares if he or she is replaced.

b) Mechanisms of Direct Control: although managerial incentives are a very important means of aligning the interests of management and investors, a private equity partnership's primary reliance is on its ability to exercise control over the firm in order to protects its interests. Mechanisms of control include the general partners' representation on the firm's board of directors, the allocation of voting rights, and controlling access to additional financing.

e) Other Control Mechanisms

Other mechanisms by which partnerships control and monitor the activities of the companies in which they invest include covenants (give the partnership the right to inspect the company's facilities, books, and records). Other covenants require that the company not sell stock or securities, merge or sell the company, or enter large contracts without the approval of the partnership.

1.c) Managing Investments

After the investment is made, general partners are active not only in monitoring and governing their portfolio companies but also in providing an array of consulting services.

Private equity firms' defining characteristic is the ability to "add value" by furnishing managerial assistance. In their monitoring and governance role, general partners help design compensation packages for senior managers, replace senior managers as necessary, and stay

abreast of the company's financial condition through regular board meetings and interim financial reports.

They also remain informed through informal contacts with second- and third-level managers that they established during the due diligence process.

General partners provide assistance by helping companies arrange additional financing, hire top management, and recruit knowledgeable board members.

General partners also may become involved in solving major operational problems, evaluating capital expenditures, and developing the company's long-term strategy. Naturally, the degree of involvement varies with the type of investment.

Involvement is greatest in new ventures—for which the quality of management is viewed as a key determinant of success or failure—and in certain non-venture situations—for which improving managerial performance is one of the underlying purposes of the investment (leveraged buyouts). For these two types of firms, private equity investors typically are also majority owners, so the investors have even greater incentive, as well as authority, to become involved in a company's decision-making. Even when the degree of partnership involvement is lowest—for example, when the partnership is a minority investor in large private or public companies—general partners may spend as much as a third of their time with portfolio firms. A partnership rarely is a completely passive investor; an exception is the case of syndication when other partnerships may allow the lead investor to take the active management role. Because venture investments require intensive oversight, venture capital partnerships tend to specialize by industry and geographic area to a greater extent than other private equity partnerships.

The high level of general partner participation in the management of young companies—along with the more demanding nature of the due diligence process for these companies—is thought by some to account for the progression of some partnership management firms from venture investments to non-venture investments after one or two funds as the partnership managers succumb to venture capital "burn-out".

1.d) Exiting Investment

An important element of limited partnerships is the contractual agreement to end the partnership and repay the limited partners within a specified period of time.

Though repayment of the limited partners with illiquid securities of the portfolio companies is sometimes unavoidable, it is highly undesirable, as the limited partners then have neither

liquidity nor control. Consequently, there must be a clear route for the partnership to exit the firm. The three possible available exit routes are:

- a public offering;
- a private sale;
- a share repurchase by the company.

Each exit route has different ramifications for the limited partners, the general partners, and the company's management.

A public offering generally results in the highest valuation of a company, and thus, is often the preferred exit route. In addition, the company's management favors an IPO because it preserves the firm's independence and provides it with continued access to capital by creating a liquid market for the firm's securities. However, a public offering, unlike a private sale, does not end the partnership's involvement with the firm. The partnership may be restricted from selling any or a portion of its shares in the offering by Rule 144[22] which requires that private placements be held for an initial period of two years.

The partnership also may be restricted from selling its shares by agreement with the underwriter. As a result, following a public offering there may be very little change in the number of shares or board seats held by the partnership. The economic literature, suggest that in many cases general partners remain actively involved with portfolio firms until the company's stock is eventually sold or distributed to the limited partners.

A private sale has very different consequences. For the limited and general partners, a private sale is attractive as it provides payment in cash or marketable securities and ends the partnership's involvement with the firm. For the company's management, in contrast, a private sale is potentially unwelcome, to the extent that the company is merged with or acquired by a larger company and cannot remain independent.

The third exit route is a put of stock back to the firm, in the case of common stock, or a mandatory redemption, in the case of preferred shares. With puts of common stock, a valuation algorithm is agreed to in advance. For minority investments, a guaranteed buyout provision is essential, as it is the only means by which the partnership firm can be assured of liquidity. For

[22] Restricted securities are securities acquired in an unregistered, private sale from the issuing company or from an affiliate of the issuer. They typically bear a "restrictive" legend clearly stating that you may not resell them in the public marketplace unless the sale is exempt from the SEC's registration requirements.Rule 144 provides the most commonly used exemption for holders to sell restricted securities. To take advantage of this rule, you must meet several conditions, including a six-month or one-year holding period.Even if you've met all the conditions of Rule 144, you still cannot sell your restricted securities to the public until you've had the legend removed from the certificate. Only a transfer agent can remove a restrictive legend. But the transfer agent won't remove the legend unless the issuer consents. www.sec.gov

many investments, however, buybacks by the firm are considered a backup exit route and are used primarily when the investment has been unsuccessful.

Partnerships add value through the choice of how and when to exit and obtaining the maximum value for the firm in connection with any given exit strategy.

Several studies document the valuable role that partnerships play in connection with public offerings.

Historical records, shown off that venture capital-backed companies are usually underpriced by a smaller amount than companies that are not venture-backed; similarly, the degree of underpricing of venture-backed firms seems that has a negative relation to the size of the venture capitalists' ownership stake, the age of the lead partnership management firm, and the length of time the lead partnership has served on the firm's board.

Furthermore, Private Equity partnerships, in many cases retain their ownership stake and board positions for some period after companies are taken public. Less underpricing has also been found in the case of reverse leveraged buyouts, which may also be a result of their affiliation with private equity partnerships. Also, of value in the process of going public is a partnership's ability to time the market.

2) Fundraising: an essential activity of any independent private equity firms[23].

The importance of the "Role of the Reputation" during the fundraising process is also stressed out in an investment model proposed by one of the biggest Private Equity company, the Swedish EQT, "the EQT Model". This model has the mission of make the future of most of the Private Equity companies "future-proof" creating a positive impact through the investments undertaken.

What EQT, is trying to stress out through its business model, is the idea that even if historically, the primary factor driving the strong growth in this industry has been consistent and stable returns[24], nowadays the main concern is the skepticism to the ability of PE companies to maintain the same stability of return. In the last years, the pandemic was the demonstration of this. It undoubtedly reduced the value of PE portfolio companies.

The good news, however, is that the decline in stock prices could help PE continue to outperform the public markets. Thus, while PE's vast amounts of capital have long been

[23] Cumming, Fleming, & Suchard, 2005; Gompers & Lerner, 1998

[24] The median internal rate of return (IRR) for funds with vintage years 2010 through 2016 has been around 15%, with the top quartile at about 21% and the bottom quartile at 9%

thought as posing a major threat to the industry, the huge amount of dry powder may well turn out to be a blessing.

But if PE's future returns are uncertain, one thing is clear: the PE industry has become large and important enough to have systemic effects on social issues like income inequality and environmental issues like climate change.

The large "universal owner" asset managers and asset owners are increasingly concerned about these system-level issues and are pushing for more sustainability reporting by public companies, to the extent possible as guided by and in accordance with a set of globally agreed-upon standards. The PE industry to date has been "selective" when it comes to information about sustainability. Considered the latter information, particular attention was paid to the so-called responsible investments based on ESG factors, environmental, social and governance.

3) Which factors affect the most Private Equity funds diffusion? Current trends

3.1) ESG: strategic and decisional investment key-factor

ESG (environmental, social and governance) criteria are criteria for evaluating a company's commitment according to three dimensions - environmental, social and governance -, which measure how sustainable and responsible it is.

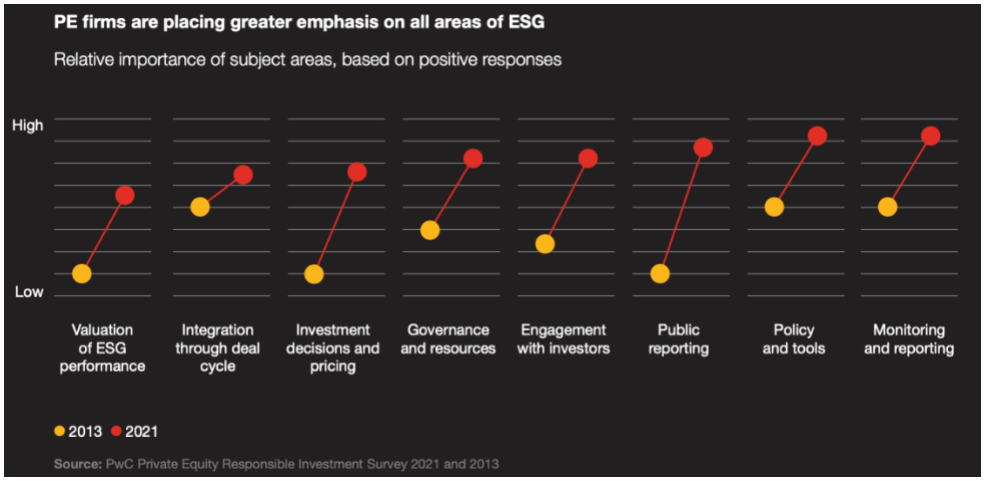
ESG principles are extra-financial parameters that are added to the "classic" economic parameters, thus increasing the information available to formulate an opinion on the company. For investors, the ESG criteria - or rather the ESG scores and ratings - also serve to assess their solidity in terms of investment. In fact, we speak of sustainable finance when, in addition to economic objectives, environmental and social ones are also taken into consideration.

A sustainable and responsible company is therefore attentive to the environmental factor if it reduces greenhouse gas emissions; it is efficient in the use of energy and natural resources (water, raw materials, forests ...); does not pollute; protects biodiversity etc. The value given to the social factor is expressed, for example, in the quality of the work environment and the supply chain; in the development of human resources; in attention to gender equality, diversity and inclusion; in taking on corporate social responsibility in a broad sense.

The third ESG factor - company governance - concerns ethics and transparency; control policies and procedures; in the case of joint-stock companies, the rights of the shareholders, the composition, independence and remuneration of the board of directors.

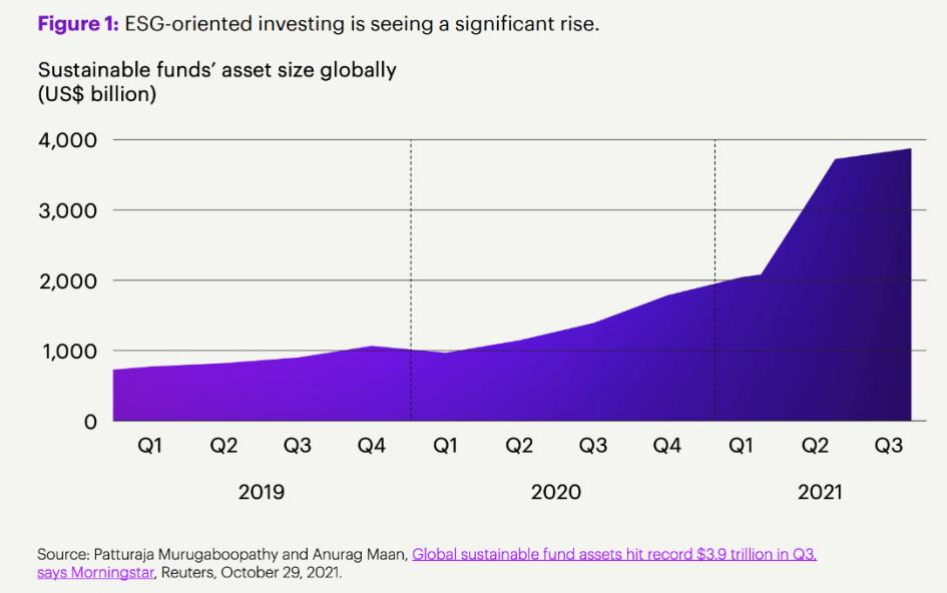
To varying degrees, the large listed PE firms conduct some sustainability reporting covering their own operations, but this reveals no more than the "tip of the iceberg" when it comes to their portfolio companies, where sustainability reporting is in a decidedly immature state. For the most part, even the largest GPs have yet to require information about the ESG performance for most of their portfolio companies that would be valuable to their LPs. But if the GPs are failing to take decisive steps and perhaps make good on their public statements of commitment to ESG, the LPs appear to be contributing to the problem. Though some LPs are gradually becoming more sophisticated, ESG remains largely a box-ticking exercise during the fundraising process that involves filling out an ESG due diligence questionnaire (DDQ)—and the fact every LP has its own form suggests the challenges to voicing ESG concerns in a more forceful and effective way. Once the money has been committed, expressions of interest or concern tend to disappear. The GPs that earn the highest returns continue to get money, even if the results of the ESG DDQ aren't the most impressive. To be sure, the more sophisticated GPs now incorporate ESG screen in their due diligence acquisition process to flag any major problems that could inhibit value creation.

Figure 6: importance of subject area on ESG themes.



Source: PwC Private Equity responsible investment summary 2021 and 2013

Figure 7: ESG-oriented investing is seeing a significant rise



Source: Patturaja Murugaboopathy and Anurag Maan, Reuters, October 29,2021

3.2) Slowdown of alternative investment methods

Special Purpose Acquisition Companies (SPACs) are becoming a very popular system for debuting private companies on the stock exchange and are increasingly attracting the interest of institutional and private investors.

The Special Purpose Acquisition Company (SPAC) IPO is an alternative to private equity also available to non-institutional investors. The SPAC formula aims to summarize the advantages to a large extent of a Private Equity operation and the tempting potential of an IPO investment.

The SPAC can be considered as a fourth exiting strategy beyond the three mentioned above. A fund aimed at the acquisition of a private company with the aim of making it listed too, avoiding the costly paths and certain associated risks for the latter to a normal IPO operation. In this process, investors will benefit from some additional guarantees, hedges and decision-making powers with respect to both IPOs and Private Equities transactions.

SPACs, often called "blank-check vehicles" IPO before they have a target, raise capital based on the expertise and reputation of the manager, and then acquire a target through a reverse merger with the money raised through the IPO.

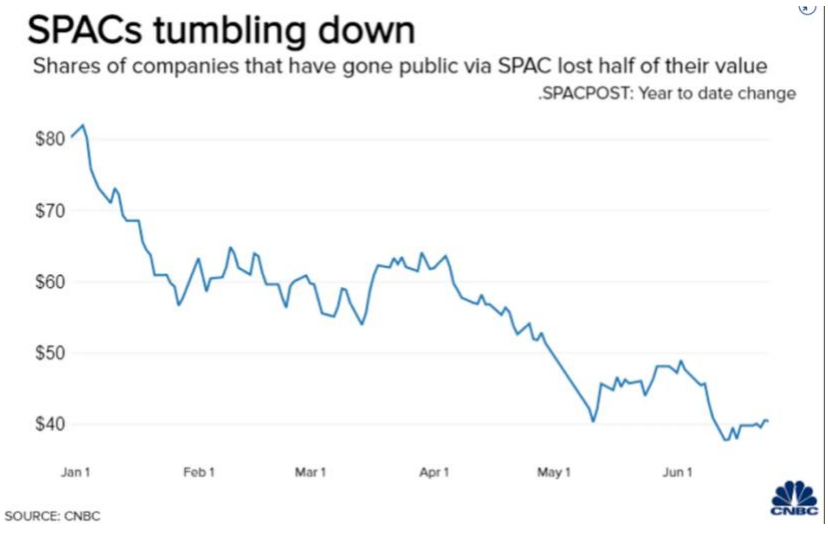
SPACs offer private companies the ability to raise capital during their transition to public markets, but however, SPAC IPOs ultimately tend to be nearly as costly as traditional IPOs, may only bring a company to market a few months faster, and have a track record of poor performance.

Since 2015, SPACs' performance was extremely poor compared to non-SPAC companies. This is attributed to looser governance and less valuation orientation. Furthermore, recent studies, had detected the real problem of the slowdown of the SPACs in their insane valuations. So, in each SPAC, due to the fact that the valuations aren't consistent, all the fluctuation of the price, will made the SPAC automatically more or less attractive. In the end, it was really that kind of excitement and ability to look forward that sat at the heart of why SPACs boomed so much in the first place.

SPACs' phenomenon in the few last years, experience a decline in the share price decline. The SPAC frenzy and SPAC mania reach its peak a year ago and those companies' share prices are now down 60% or more in the last 12 months. So you're talking about just really swift declines that have hurt a lot of individual investors and even a lot of Wall Street institutions.

Funds managed by big names like BlackRock, Fidelity, they put money into a lot of these things at $10 a share, and now they're trading at 4, 5, 6, $7 a share. So, interest rates are going to go up and make a lot of speculative trades less attractive, hit tech stocks, cryptocurrencies, and all of that. But a lot of startups that went public through SPACs, that's where the damage is most acute.

Figure 8: SPACs tumbling down



Source: CNBC

Chapter 3

3. Private Equity vs Public Equity Performance

3.1 Overview

The main reason behind the "*Boom"* of the Private Equity phenomenon starting from the 1980, has to be detected in the institutional investors' expectations over the potential return those investments in private equity offers compared both to alternatives asset class investment and public equity.

Furthermore, the understanding of the private equity funds' performance is a difficult task. The concept behind this issue is linked to disclosure's regulation. Agents in the private market don't have any duty of public disclosure about accounting records, investment in privately held companies and return on undertaken investments.

In addition, the principles of valuing private companies are similar to those of valuing public companies; however, there are estimation problems that are unique to private companies. The valuer needs to deal with limited information available in terms of history and depth because private firms do not report their performance publicly and do not need to meet accounting and reporting standards that apply to public entities in many countries, as already mentioned. Another significant hurdle when valuing private firms is the difficulty of estimating risk parameters for discount rates. These require stock prices for equity which are not available for private firms. Further, private companies face acute uncertainties regarding their future operations making forecasting difficult. In fact, often they have negative cash flows and earnings. Since their profitability is expected to occur at some point in the future, the assessment of their current value can be a challenging task. Private companies also tend to have concentrated ownership, thus reported earnings might reflect discretionary expenses or are affected by tax motivations and the accounting records are subject to the risk of manipulation by the GP.

Managers of private equity funds assess the values of private companies at several points in time when they invest in a financing round of the company (venture funds), acquire a company (buyout funds), list the company on an exchange, sell or liquidate the company. There were many efforts to limit this discretion of the GP, as we will see later, and one of this attempt was

the set-up of The International Private Equity and Venture Capital Valuation Guidelines Board (IPEV Guidelines Board).

3.1.1 Public Equity vs Private Equity

Considering disclosure's obligations mentioned above, I will focus on the distinction between the meaning attributed to both public and private equity in literature.

The most widespread, of Anglo-Saxon matrix, identifies with public equity the financing activity of a company through the open market, avoiding private negotiations. In Anglo-Saxon countries, public assets, called "public assets", are assets listed on the stock exchange, meaning that they can be examine by anyone. Public equity, therefore, is a strategy of fundraising based on the sale of a company's stock to the public. The main public equity structure and fundraising strategy, refers to the initial public offering: the IPO.

On the other hand, the second way through which is possible to identify public equity is related to the source of the financing. The type of financial resources that comes from institutional investors (States, International Communities such as the EU), determine whether the investment undertaken belong to a Public or Private Equity.

Furthermore, interpretation of "public" is a stretch considering that the prevailing literature, in contrasting public with private equity refers above all to the method of acquiring resources for investments, an open method, in which anyone can potentially participate.

Looking closed to both the financing and investment methods, is possible to easily identify some distinctive elements.

Stocks' Price: in Private Equity market, the price of the shares to be exchange is directly defined through a negotiation of the involved parties. of the is that while this occurs through direct negotiation with the entrepreneur with whom the value of the shares is defined, with Public Equity the price of the shares is defined by the market.

Investors: in Public Equity, the investor assumes a more detached attitude, in the sense that he limits himself to providing capital and nothing more while in Private Equity the private investor, in function of the direct relationship with the entrepreneur mentioned above, collaborates also in terms of skills and experience, also contributing with their personal relationships, with their knowledge, facilitating access to specific networks and allowing better performances also through cost rationalization.

Governance: in the case of a public investor, there is no specific intention to assume a role within governance, although having acquired shares, the activity tends to be limited to the contribution of capital. Unlike in the case of Private Equity, there is a clear willingness of the investor to take on direct role within the company, aimed mainly at maximizing returns on investment by improving performance indicators.

Another difference is in the expected duration of the investment. In Private Equity there is generally a greater propensity for long-term objectives, the public investor, on the other hand, is more interested in short-term objectives and the exit is defined by the prices established by market laws and not predetermined in advance (including times and methods) as in private equity.

Currently, the landscape of opportunities for companies to access public equity is growing; the European Union, the State and the Regions have now consolidated this procedure.

During the 2014-2020 programming, now in the closing phase, the European Commission provided for with Regulation no. 1303/2013 the establishment of specific financial instruments, including forms of co-investment that take the form of a fund managed by a financial intermediary that invests in the capital (equity) of SMEs. The co-investment instrument aims to attract private resources (alongside public ones) in the capital of the beneficiary SMEs, aimed at investing in the constitution, start-up and expansion phases or for the realization of new projects, for the penetration of new markets or for new developments by existing companies through co-investment agreements with co-investors transaction by transaction, but also to provide more capital to increase the volume of investments.

As private placements are less regulated than a public investment, they usually involve greater risks and are therefore generally aimed at more sophisticated investors. Typically, these investors are accredited investors as defined by investment regulations with specific net worth and they can be individuals, institutions, banks or pension funds.

Offering a private placement will generally be very similar to an initial public offering. Private companies often collaborate with investment banks to structure the offer. Investment bankers help structure the value of private shares or paid-up capital as it is used in the offering. Investment bankers can also help companies test investment demand and set an investment date. Unlike public investment, private companies can also solicit commitments from investors over time that help with long-term planning.

All companies need capital to run their business, and offering private equity helps companies grow. Often, a private equity agreement is concluded with the intention that one day the

company will go public. However, starting as a private company gives management the freedom to make distributions and manage equity at their discretion. It also allows them to avoid certain regulatory and reporting requirements, including those included in the anti-fraud law.

3.2 Performance literature review

The high complexity issue of the measurement of the performance within the Private Equity market, had always caught the attention of many scholars.

The following studies all show private equity significantly outperforming public equity benchmarks.

Ljungqvist and Richardson (2003) find excess returns in the U.S. private equity market within the range 5% - 8% points per annum compared to the stock index S&P 500.

As we already seen, Limited Partner data should be of high quality since LP invest on it and have a strong incentive to maintain its accuracy. Nonetheless, Lerner, Schoar and Wongsunwai (2007) report significant differences in skill and performance between limited partners, making it difficult to generalize from such studies.

The Thomson VentureXpert (TVE) private equity database is broad in coverage and has been a natural destination for researchers looking for representativeness. Using TVE's dataest, Kaplan and Schoar (2005, KS) find that net returns from U.S. buyout funds are slightly below the S&P 500. Phalippou and Gottschalg (2009, PG) show a significant underperformance of the entire asset class.

These findings have been influential and widely referenced in the past. However, recent evidence suggests that a significant proportion of the records in those datasets had missing cash flow data that could result in a systematic downward bias in measured performance (Stucke (2011), Phalippou (2012)). Aside from the data issues the structure of the private equity industry makes difficult an objective understanding of performance. Below I'll analyze the main theories and studies of the literature about PE's performance undertaken by Gompers and Lerner (1997), Hwang, Quigley, and Woodward (2005), Cochrane (2005), Driessen, Lin, and Phalippou (2012), Ang et al. (2014).

The first theory about PE performance were proposed by Gompers and Lerner in 1997. They tried to assess PE investments performance in two different ways. The first one implies the analysis of the change in prices of firms, backed by private equity investors once they became

public. The second approach requires the calculation of the IRR to understand the performance of the private equity funds[25].

The first method can be easily brought forward by recking at index such as the "Venture Capital 100"[26]. The construction of this index is as easy, from a timely point of view, as inconsistent and with limitations from a performance analysis point of view. This approach has mainly two boundaries. Evaluating a public company, backed from private equity investors, doesn't take into consideration many factors. The factors that can affect the performance of a private equity fund and a public company are different, and for this reason is mostly wrong to base the valuation of a private equity fund on the actual performance of the public company. One of these is a large number of funds' investments inflows towards a single venture fund, creating an environment in which "too many funds are chasing too few deals". In the circumstance the price of a public company isn't affected since public investors can easily move their capital across industries and securities. Another element that reflects the incompatible valuation of PE funds through the analysis of backed private equity companies became public is the absence of adequate public comparable. The index used for the analysis in fact, doesn't represent a good proxy for the understanding of PE performance.

Gompers and Lerner, for the second approach wanted to calculate the Internal Rate of Return of the private equity funds to understand their overall performance. To proceed with this system, they started by collecting data directly from institutional investors about the inflows and outflows of capital towards PE funds. This study let the scholars to have a relative understanding of the quarterly and annual return of PE funds compared to small capitalization stocks. Although this method seems to move concrete first step to the proper way of measurement of the performance, it presents two main limitations:

1) inconsistent valuation of investment from Private Equity groups
2) conservative assumptions are still in use, despite all the reforming efforts, for the computation of returns

For the analysis of the bottom issue, we have to take into consideration both the established and the less-established private equity firms. The first ones tend to use a more conservative investment strategy, holding their investment as a cost till they are liquidated and the company goes public, despite the second typology of firms that focus their strategy on a raising follow-

[25] "Risk and Reward in Private Equity Investments: The Challenge of Performance Assessment"; Authors: Paul A. Gompers and Josh Lerner; The Journal of Private Equity, Winter 1997, Vol. 1, No. 2 (Winter 1997), pp. 5- 12; Published by: Euromoney Institutional Investor PLC.

[26] A monthly report, published on *Venture Capital Journal*, of the prices of the least liquid public firms with the smallest market capitalization*; Galante[1995]*

on funds. Collecting funds is a difficult task for small private equity groups since institutional investors aren't willing to invest in first-time funds due to the expectations of low returns rather the one offered by other partnerships on the private equity market. This circumstance leads small private equity group to incur in an aggressive behavior in the fundraising step in presenting performance and return from their investments, in order to overcome the expectations' bias of potential investors. Among the aggressive behaviors is possible to notice:

- the valuation of still-private equity firms above their cost
- Worst firms that are part of the portfolio aren't discounted for the valuation
- Failing the discount of illiquid shares of public companies still held in the private equity portfolio.

All these differences in the valuation process can lead the investors in overthinking about the performance of certain subset of private equity groups. Beyond the appearance, even if comparing interim returns of both experienced and small private equity groups seems to have different performance, in the long term it is the same for both groups.

The second issue mentioned above, is related to one of the subset groups taken into consideration: the established firms and their valuation method. There were a lot of efforts to create standards in order to produce proxies for the valuation of privately held firms in private equity groups portfolios, without any effective success due to the exploitation of "loopholes" standards to avoid a standardized valuation.

The presence of standardization efforts and the valuation method commonly used by established private equity group, involve the employment of more conservative valuation method (mainly the valuation of the investment as a cost). This is a double-faced situation: on one hand it allows all the investors to compare, to be clearly informed about the performance of a certain group of private equity funds and also to avoid being deceived by aggressive reporting policies. On the other hand, is difficult for private equity organizations to demonstrate they outperformed the equity market since the adjusted risk return both private equity and public equity market are not comparable. There's inconsistency between reported returns of private equity market and alternative asset class investments. Comparison's difficulties lies in the so-called "stale price[27]" problem. In the public equity market, the value of quoted companies can be monitored on a daily base despite the increase in the value of private equity firms is known after a long horizon time period after the fundraising process. Its value is accessible to potential investors only during the exiting activity of a private equity fund both

[27] An old price of the asset that does not reflect the most recent information. *Source:* https://www.nasdaq.com/glossary/s/stale-price

through the Initial Public Offer on the stock exchange market or a third parties' follow-on investment.

A possible solution to overcome the "stale price" problem is the "mark to market" theory. Its rationale is to anticipate the "material" event (IPO, LBO) for the valuation process through reexamination and revaluation on a periodic base.

Pursuing this analysis allows investors to take advantage both of a compatible set of return and report of the performance between private and private equity companies and allows to assess a sharply defined risk measure of the private equity portfolio.

Hwang, Quigley, and Woodward use the same dataset, but with fewer missing financing rounds. They find that average performance is close to that of the S&P 500. Studies of VC returns do not, therefore, contradict our findings in any obvious way. In addition, we note above that gross-of-fees performance in our dataset is also relatively high.

Hwang, Quigley, and Woodward, constructed an index of Venture Capital firms, building on the concept deriving a clear benchmark for evaluating the perfomance of PE funds. Constructing the index was difficult, as pricing events for PE were intermittent and infrequent. The pricing was only possible in the case of raising capital and selling shares through IPO, acquisition, and cession. In addition, the valuations for trades are reported every time based on true value.

They developed a standardized price index using a repeat sales technique. They constructed histories pricing events and estimated the probabilities of companies revealing values, and using probabilities, they constructed an index by a repeat valuation method, which used transactions for companies that revealed the value or for which price or return were available. They were the first to apply a hybrid repeat sales approach to private companies to correct a non-timely reporting selection bias. The index reflected gross returns from direct investments the companies, not the returns to Venture Capital funds. These results are not reliable due to the selection bias: the dataset taken into consideration is not fully reliable to run this analysis. The following study undertook by Cochrane [2005] tries to overcome this problem.

Cochrane [2005], wants to analyze whether investments in venture capital behave as securities traded in the public market. He attempted to correct the selection bias[28] in PE in the dataset used by previous studies, with a maximum likelihood estimation[29]: Cochrane [2005] finds that

[28] Selection bias incurs in the circumstance in which the selection of a dataset used to run an analysis, proper randomization is not achieved

[29] The fundamental data unit is a financing round. Each round can have one of three basic fates. First, the firm can go public, be acquired, or get a new round of financing. These fates give us a new valuation, so we can measure a return. For this discussion, I lump all three fates together under the name "new financing round." Second, the firm may go out of business. Third, the firm may remain private at the end of the sample. We need to calculate the probabilities of these three events, and the probability of the observed return if the firm gets new

log returns of VC investments have negative alphas, but arithmetic returns (and alpha) are high. We only observe a valuation when a firm goes public, receives new financing, or is acquired, events that more likely occur when the firm is experiencing good returns. He identify and measure the increasing probability of observing:

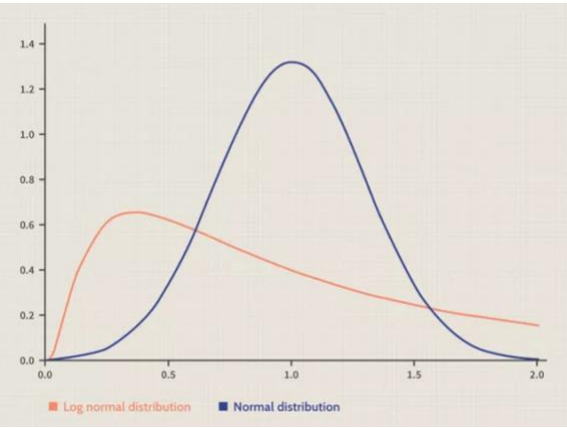
- return as value increases
- the parameters of the underlying return distribution
- at which stage firms go out of business.

He base the analysis on measured returns from investment to IPO, acquisition, or additional financing excluding any valuations' attempt in intermediate dates.

The selection bias correction dramatically lowers estimates of the overall performance of Private Equity market, suggesting that private equity market's performance and securities publicly traded are much more similar than the estimates reported without the correction of the selection bias. He corrected the selection bias using log-normal distribution, reducing the return estimates, such that the estimated average log return is 15% per year, not 108%. A market model in logs gives a slope coefficient of 1.7 and a -7.1%, not +92%, intercept. Mean arithmetic returns are 59%, not 698%. The arithmetic alpha is 32%, not 462%. The standard deviation of arithmetic returns is 107%, not 3,282%.

He reported large volatile returns when there was a new round of financing or in the same way, there's a steadily decrease in the riskiness of the investment during the last rounds of it**.** Mean returns, alphas and betas all decline steadily from first to fourth round investments, while idiosyncratic variance remains the same.

Figure 9: pattern of normal distribution and log normal distribution



Source: Investopedia

financing. Source: The Risk and Return of Venture Capital John H. Cochrane Graduate School of Business, University of Chicago March 19, 2004.

In addition, Cochrane discovered two factors explain the pattern returns':

1) firm's age
2) the patterns of exits as a function of the firm's age.

He concluded that the distribution of returns remains constant across horizons and exits occur slowly as a function of firm's age; the pattern of exit with time rather than return drives low return and high volatility, and high volatility rather than high mean drives the core findings of high arithmetic average returns. VC firm returns were found to behave like the smallest NASDAQ stock only.

Cochrane concluded that there is nothing special about VC and not a deep difference in the performance between both market.

Driessen, Lin, and Phalippou [2012] proposed a risk and return methodology for PE funds. Their model method extends the IRR approach by using a dynamic discount rate[30]. The study attempts to demonstrate that this theory can be run through the GMM[31] (generalized method of moments) estimation. This method doesn't require any assumption for the probability distribution of 1 period returns. This is a key contribution because it is basically impossible to estimate this distribution when an asset is not traded and doesn't have disclosure's duty despite what previous studies of Cochrane [2005] and Hwang, Quigley, and Woodward [2005] tried to figure out.

The proposed model develops a new econometric methodology to estimate the risk and return of an asset using cash flow data. This study develops the standard IRR calculations towards a dynamic setting and tries to solve for the abnormal return[32] and risk exposure that best fit the cross section of private equity fund cash flows. A simulation study shows that the small-sample properties of our method are satisfactory. Our method can be used for other limited life nontraded private partnerships and for corporate investments in case the chief financial officer observes a stream of cash flows from a division/project but no market values.They used the general moment method (GMM), to estimate the performance and risk exposure of non-traded assets. They used actual cash flow data rather than self-reported net asset values, which do not

[30] For example, in case of a market model, the discount rate in period t equals $1 + rf,t + \alpha + \beta rm,t$. Then, if one assumes that the α and β are the same across a cross section of funds, a natural approach is to find the α and β that provide the best fit of this cross section of cash flows. This boils down to finding the α and β that bring the NPVs of (portfolios of) funds closest to 0.

[31] Statistical estimator who provides an operative, flexible and more generalized approach for the construction of statistical tests. Source: "Stato dell'arte e prospettive del Metodo dei Momenti Generalizzati (GMM): un'analisi critica", Luigi Cembalo

[32] Abnormal rate of return or 'alpha' is the return generated by a given stock or portfolio over a period of time which is higher than the return generated by its benchmark or the expected rate of return. It is a measure of performance on a risk-adjusted basis.

require any distribution assumptions, and built their article based on the concept of alphas and betas of PE funds and the computational difficulties of performance assessment resulting from noncontinuous reporting in the PE industry.

In using the GMM approach, the authors proposed two solutions for the estimation problem:

1) Minimizing the distance between the log of the present value of investments and the log of the present value of dividends;

2) Establishing a ratio of the present values of investments and dividends and a ratio of the present value of investments and the value obtained in the approach just given.

Ang et al. [2014] developed a methodology to estimate time series returns based on the cash flows accruing to partners using PE data from 1993 to 2011. They decomposed PE returns into components attributable to traded factors and time-varying PE premiums and used the Bayesian Markov chain Monte Carlo (BMCM) process to filter time-varying PE returns using fund-level NPVs. They documented high PE volatility compared to industry indexes and found less serial dependence in PE returns compared to the industry. They also decomposed PE returns into systematic and idiosyncratic components and found that market factor is the most important systematic factor explaining differences in PE returns and that the time-varying premium is highly persistent and shows strong cyclically. They supported the view of capital market segmentation as a potential driver of PE returns and concluded that cyclically of the PE risk premium could be related to behavioral frictions.

3.3 Valuation approaches for Private Equity funds' performance

An investment in a private equity fund reflects an investment in a stream of cash flows provided by the underlying portfolio companies. This seems to be similar to an investment in a bond that pays coupons but in fact there are significant differences between the two. Bonds typically have a cash outflow at the beginning and cash inflows whose timing and magnitude can be predicted with relative accuracy given the terms of the bond contract. However, in the case of a private equity fund, the timing and magnitude of the series of cash flows is highly uncertain.

As a result, measuring the performance of an investment in a private equity fund is not obvious. The most widely used measure of performance is the internal rate of return (IRR). Calculation of the IRR takes into consideration the timing of cash contributions and distributions to and from the fund partnership and the length of time an investment in the fund has been held. Another widely accepted measure of performance is the investment multiple. This measures the proceeds received from a fund plus the valuation of any remaining investments divided by the capital contributed by the investors to the fund.

3.3.1 IRR Approach

The internal rate of return is a valuation approach based on the comparison between return of different investments. All the valuation process takes into consideration the cash flows over the established duration of the investment, drawdowns, distributions through capital gains and dividends and in the end through the examination of the residual value of the fund. IRRs are often used by the PE industry to measure returns, because they offer a means of comparing two investments with irregular timings and size of cash flows. They are, however, a measure that can't directly be taken into account in the public markets. In the Private Equity market, there aren't any kind of benchmarking metrics neither measure to understand firms' performance based on the market return proxy. IRR is an absolute measure of performance that is beyond any proxy (as the ones used in the valuation process in the public equity market), and for this reason the use of this approach, underlines its first limitation: performance outcomes from the public and private equity market can't be compared.

Uses and strengths

The IRR allows investments with irregular cash flows, one of the defining features of private equity and venture capital funds, to be analyzed. In doing so, it offers a way to compare and rank different investments, clearly showing which investments offer the best rates of return.

The IRR considers the time value of money. For example, having £100 today is (generally) worth more than an expected £100 in a year, and the IRR accounts for this in its calculations.

Relatively easy to calculate in a standard fashion with the assistance of a computer and can be straightforward to interpret.

Limitations

The IRR assumes that cash flows are reinvested at the same rate of return. This can lead to the over or understatement of the performance of a given investment where the returns on reinvestment do not match those produced by the investment and should be accounted for when comparing IRRs.

The IRR is not an effective way of assessing mutually exclusive projects, as it does not take into account the scale of the projects – this can be difficult when two projects require a significantly different amount of capital, but the smaller project has a higher IRR.

If returns are looked at only on an IRR basis, then there is the potential for performance to be artificially improved by changing the timings of distributions back to investors. Early wins (quick returns of significant amounts early in the life of the fund or investment) can disproportionately boost the IRR.

Since the IRR represents the discount rate at which the value of all cash flows equals zero, it is possible that multiple IRRs, or no IRR at all, can be calculated in some cases.

3.3.2. MIRR Approach

As the Internal rate of return, this valuation method measures the attractiveness of an investment. This is just a modification of the previous method used to solve some issues linked to the financial measure that arise with the IRR method.

The modified internal rate of return (MIRR) and the internal rate of return (IRR) are two closely related concepts. The MIRR was introduced to address a few problems associated with the IRR. For example, one of the main problems with the IRR is the assumption that the obtained positive cash flows are reinvested at the same rate at which they were generated. Alternatively, the MIRR considers that the proceeds from the positive cash flows of a project will be reinvested at the external rate of return. Frequently, the external rate of return is set equal to the company's cost of capital.

Also, in some cases, the calculations of IRR may provide two solutions. This fact creates ambiguity and unnecessary confusion regarding the correct outcome. Unlike the IRR, the MIRR calculations always return a single solution.

The common view is that the MIRR provides a more realistic picture of the return on the investment project relative to the standard IRR. The MIRR is commonly lower than the IRR.

3.3.3. Multiples Approach

The multiples approach is a valuation theory based on the idea that similar assets sell at similar prices. It assumes that the type of ratio used in comparing firms, such as operating margins or cash flows, is the same across similar firms.

Generally, "multiples" is a generic term for a class of different indicators that can be used to value a stock. A multiple is simply a ratio that is calculated by dividing the market or estimated value of an asset by a specific item on the financial statements. The multiples approach is a comparable analysis method that seeks to value similar companies using the same financial metrics.

An analyst using the valuation approach assumes that a particular ratio is applicable and applies to various companies operating within the same line of business or industry. In other words, the idea behind multiples analysis is that when firms are comparable, the multiples approach can be used to determine the value of one firm based on the value of another. The multiples approach seeks to capture many of a firm's operating and financial characteristics in a single

number that can be multiplied by a specific financial metric to yield an enterprise or equity value.

The simplicity of using multiples in valuation is both an advantage and a disadvantage. It is a disadvantage because it simplifies complex information into just a single value or a series of values. This effectively disregards other factors that affect a company's intrinsic value, such as growth or decline. However, this simplicity allows a financial analyst to make quick computations to assess a company's value.

Meanwhile, using multiple analysis can also lead to difficulty in comparing companies or assets. This is because companies, even when they seem to have identical business operations, may have different accounting policies. As such, multiples may be easily misinterpreted, and comparisons are not as conclusive. They need to be adjusted for different accounting policies.

Multiples analysis also disregards the future – it is static. It only considers the company's position for a certain time period and fails to include the company's growth in its business operations. However, there are ways to adjust for this using certain multiples that look at "leading" ratios.

Among Private Equity performance's valuation through multiple approach, the literature commonly uses the following multiples:

a) *TVPI (Total Value to Paid-In-Capital):* is the sum of the distribution to date, plus the remaining undistributed value of funds' assets, divided by paid-in capital. It doesn't account for the timing of capital call and distributions and can be reported on a gross or net of fee basis.

b) *DPI (Distribution to Paid-In-Capital):* it measures how much of a fund's return has been distributed to the investors. Normally, at the beginning of fund's life, this ratio is equal to 0 since none distribution occurs; conversely, in the latest stage of their life, funds have this ratio equal or above 1.0, meaning that the fund is now able to produce capital gain on the investment.

c) *PIC (Paid-In-Capital to committed capital*): this ratio, gives perspective on how much capital cumulatively has been drawn down to date. It is also called the "dry powder ratio" since it indicates how much capital is left to be deployed by the fund.

3.4 Assessing Private Equity Performance: IRR vs TVPI

In PE, the CFs are made up of outflows for contributed capital (capital calls or takedowns), and inflows from distributions.

Total fund performance can be measured both by the SI-IRR[33] and by the investment multiple, TVPI[34].

In order to assess which one of these two approach is the most suitable to represent Private Equity funds' performance, we have to consider the discontinuous and irregular timing of Private Equity cash flows. Investors, for this reason want the most possible holistic panorama over the performance of the fund. The most suitable solution is to overcome the problems of the quantity of returned capital and how efficiently this process happens[35] through a synergy between both methods: IRR and TVPI.

Based on an investment sample, we can easily understand how both metrics, through synergy can overcome issues that arise from the use of one single method of them.

YEAR	INVESTMENT A	INVESTMENT B
1	($500,000)	($500,000)
2	($500,000)	($500,000)
3	$1,800,000	$200,000
4	$600,000	$200,000
5	$0	$200,000
6	$0	$4,200,000
IRR	64.0%	45.7%
TVPI	2.4×	4.8×

TVPI is higher for Investment B, and its total profits ($3.8 million) are more than twice the profits realized on Investment A ($1.4 million).

Conversely, since IRR, time weights the CFs, it measures the speed with which cash is returned to investors and as we can see from the table, there's a distributions' termination in Investment A (year 4) and therefore we can state that an earlier distribution can positively affect the IRR. Time weighting the CFs also gives GPs incentives to delay capital calls and accelerate exits, making IRR subject to manipulation.

On the other side, TVPI is not time weighted, and it isn't subject to concerns about manipulation.

Limitation of IRR and TVPI metrics

Since PE is a long-lived asset class, performance is measured more accurately the longer the period over which the fund's performance is evaluated. We start by calculating the net SI-IRR and TVPIs to LPs for the fund through year 7. Capital calls and distributions are recognized at

[33] The equity IRR at vehicle level after any vehicle-level fees, taxes and carried interest are deducted. This calculation is from inception through to the current quarter adopting NAV (adjusted to eliminate the effect of fees, taxes and carried interest if necessary) as the final end value

[34] total value to paid-in capital

[35] IRR measures the time and the speed involved to return back the money to the investors; conversely, the TVPI metric, defines properly the quantity that should be returned to the investors.

the point in time they are paid or received. If the fund is not fully liquidated, the remaining value, NAV before distributions (NAVb), is assumed to be distributed as a liquidating dividend to LPs (net of carry). In year 7, NAVb is $960 million, but by this point, LPs have received more in cumulative distributions than their $820 million of paid-in capital (LPs are made whole in year 5), so that the entirety of $960 million is subject to carry. GPs receive $192 million ($960 million × 20%). leaving $768 million to be distributed to LPs. The net SI-IRR 0_7 to LPs is 18.4% and the net TVPI to LPs is 2.2× (the sum of distributions to LPs [$1,820 million] divided by paid-in capital [$820 million]).

A limitation of these metrics is that they assume the NAV of the fund is liquid, while in reality it is the unrealized (and often the illiquid) portion of the fund. Distributions are received in cash (or shares of stock), and the cumulative cash LPs receive is measured by the DPI metric. While there is little debate over the value of distributions, the value of NAV is estimated by GPs following fair-market-value guidelines. The guidelines urge managers to "mark to market" fund assets using valuation methodologies that are objective and timely (e.g., recent similar transactions, prices of similar securities, or multiples of related companies or investments). Auditors and appraisers often are brought in to assess and verify fair market value. Traditionally, the PE industry has relied heavily on the cost or the value of the latest round of financing as an approximation to fair value. GPs justify the use of historic cost as being "conservative," but they tend to be slower (relative to public equities) to mark down assets after market declines. There is also generally a lag between when a PE portfolio is valued and when its performance is reported to LPs, and in times of market volatility, concerns remain about the accuracy of NAV, even in the aftermath of FASB 157. Consequently, a key issue in assessing PE performance is how accurately NAV reflects the potential realized market value of the assets. For these reasons, much of the literature on PE performance has argued that performance can only be measured accurately for fully realized funds[36].

3.5 Methodology

After an overview over the Private Equity market, the history, the main features and the activities of funds, from the fundraising till the exit strategy, I'm going to analyze the most controversial question mark about the Private Equity world: the performance that a fund can achieve. The goal of this study is to present and analyze the performance of Private Equity companies compared with a public equity indexes and bonds, with the extent to demonstrate if

[36] Terminal NAV of the project is 0

the results of the Private Equity market are, in such a consistent way, outperforming the results of the public market.
The first research question I want to deepen throughout this chapter is:

Does the private equity market steadily outperform the public equity market?

To run this analysis, I'll proceed with two steps.
Firstly, I will structure an analysis of the return of both public and private equity funds through a comparison of the offered yield instead of the IRR due to the fact that the internal rate of return used to compare cash flows from public and private equity is not fully meaningful because of the different timing and irregularity of the mentioned cash flows. I will calculate the rate of return of treasury bonds, corporate bonds, and stock indices, through the reference and the data of the platform Refinitiv. I will focus on the geographical area of the US and the EU since those are the areas in which there's a boost of this market. In conclusion, I'll compare these results with the performance of the Private Equity indexes.
The second step I'll follow, implies the use the PME (Public Market Equivalent) to clearly understand if the Private Equity market trend over the years, mirrors the path previously demonstrated with a comparison with the main stock indexes of the targeted geographical area mentioned above. The PME approach is a benchmark method that allows private's equity investors to gauge a relative understanding of private funds' performance compared with public markets. Private equity returns, however, are not directly comparable with public market indices, due to the asset class's illiquid nature and irregular timing of cash flows. The development of the public market equivalent (PME) measure of returns however, provides a more meaningful comparison.
PME metrics benchmark the performance of a fund, or a group of funds, against an appropriate public market index while accounting for the timings of the fund cash flows.
The second research question I will focus on is:

There is a connection between the performance of a Private Equity fund and the social and cultural texture of a country?

To run this analysis, I will take into consideration the major trends and results, divided by geographical area, of private equity market. After this analysis I will focus on aspects mainly related to risk aversion and moral hazard of potential investors and their trust degree towards

the mode of use of the capital raised by the funds, and the main regulatory guidelines for each country.

3.6 Sample and variables

For the analysis of the performance I considered as variables, treasury bonds, corporate bonds, stock indexes of both North American and European market.

For what concern treasury bonds, I gauge the historical series of the last 10 years (31/12/2012-30/09/2022) of both the US 10 years treasury bonds[37] and the European bond, for which I considered the German 10 years government bond[38].

Corporate Bonds are debt securities representing a loan issued by a joint stock company or a limited partnership. I will consider the Corporate Bonds as ETF (Exchange Traded Fund) that underline the ability of the corporate bonds to be traded easily on the stock market despite treasury bonds. The main advantages of considering ETF Corporate bonds come from:

- Transparency: since they are linked to quoted portfolios, they are subject to disclosure's duties.
- High liquidity: they are listed assets and is extremely easy to sell or buy stocks of it.
- Efficiency: ETF have a passive management and for this reason, ETF doesn't incur in high management fees or transaction costs. Management fees on an active management fund is about 2% despite the ETF for which accounts about 0,5%.

There are two categories of ETF corporate bonds: investment grade[39] and high yield[40]. For the sake of the analysis, I have only considered the high yield corporate bonds due to their nature, in order to demonstrate the outperforming performance of Private Equity funds also over the investments that offer the higher yield.

For US market I took the S&P US High Yield Corporate Bond Index.[41] For what concern the European market I used the iShares EUR High Yield Corporate Bond UCITS ETF EUR (Dist). IShare is a fund provided by BlackRock that aims to track as closely as possible the

[37] *Source*: CNBC

[38] Standard&Poors gives to this bond an AAA rating, meaning that it has the less riskiest probability of credit defalut

[39] "Ivestment Grade corporate bonds (meaning those rated BBB- and above) have historically been touted as a high quality safe haven for investors seeking a steady stream of income and yield, but with limited appetite for default risk."
Source: JPMorgan Asset Management

[40] "A high-yield corporate bond is a type of corporate bond that offers a higher rate of interest because of its higher risk of default. When companies with a greater estimated default risk issue bonds, they may be unable to obtain an investment-grade bond credit rating. As a result, they typically issue bonds with higher interest rates in order to entice investors and compensate them for this higher risk."
Source: sec.gov

[41] The S&P U.S. High Yield Corporate Bond Index is designed to track the performance of U.S. dollar denominated, high-yield corporate bonds issued by companies whose country of risk use official G-10 currencies
Source: SPglobal.com

performance of an index composed of high yield corporate bonds denominated in euros. The iShares EUR High Yield Corporate Bond UCITS ETF EUR (Dist) invests in Corporate Bonds with focus Global. The ETF has a currency exposure to the EUR currency.

Furthermore, I accounted the main stock indexes of both US and EU. For the US I choose the NASDAQ Composite, that includes all the companies listed on the stock exchange market, and the S&P500, the most important US index that mirrors the performances of the biggest 500 companies in the US for market capitalization; conversely for EU market, I take the Italian FTSE MIB index and the Great Britain Index FTSE 100.

For what concern the US private equity side, I choose to consider the private equity index provided by Refinitiv Workspace platform: PE Buyout Indices measure the performance of the U.S. private equity buyout industry through a combination of liquid and publicly traded assets.

These publicly traded assets are allocated across seven sector portfolios, each representing a different sector in which U.S. PE buyout firms invest.

The series consists of the PE buyout research private equity index, which is a comprehensive and highly representative indicator of the U.S. PE buyout industry, while the PE Buyout Index is a ground-breaking, investable index tracking the performance of our PE Buyout Research Index using liquid public securities.

On the other hand, the European private equity performance should be summarized by the LPX Europe Listed Private Equity Index TR. It represents the performance of Listed Private Equity companies, which are listed on a European stock exchange. The LPX Europe comprises the 30 most highly capitalized and liquid companies and is diversified across private equity investment styles, financing styles and vintages.

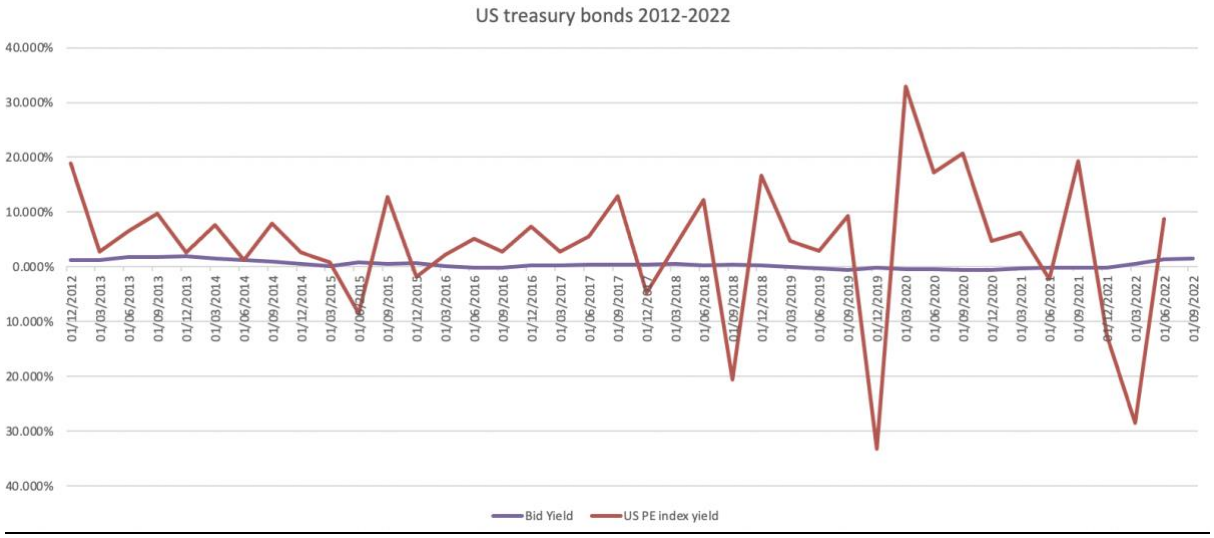
3.7 Performance Analysis

Following the previous literature and studies about the performance and its limitation, I want to provide an answer to the previous research question through the analysis of historical trend.

3.7.1 Treasury Bonds

US Panorama

Figure 10: US treasury bonds and US PE index

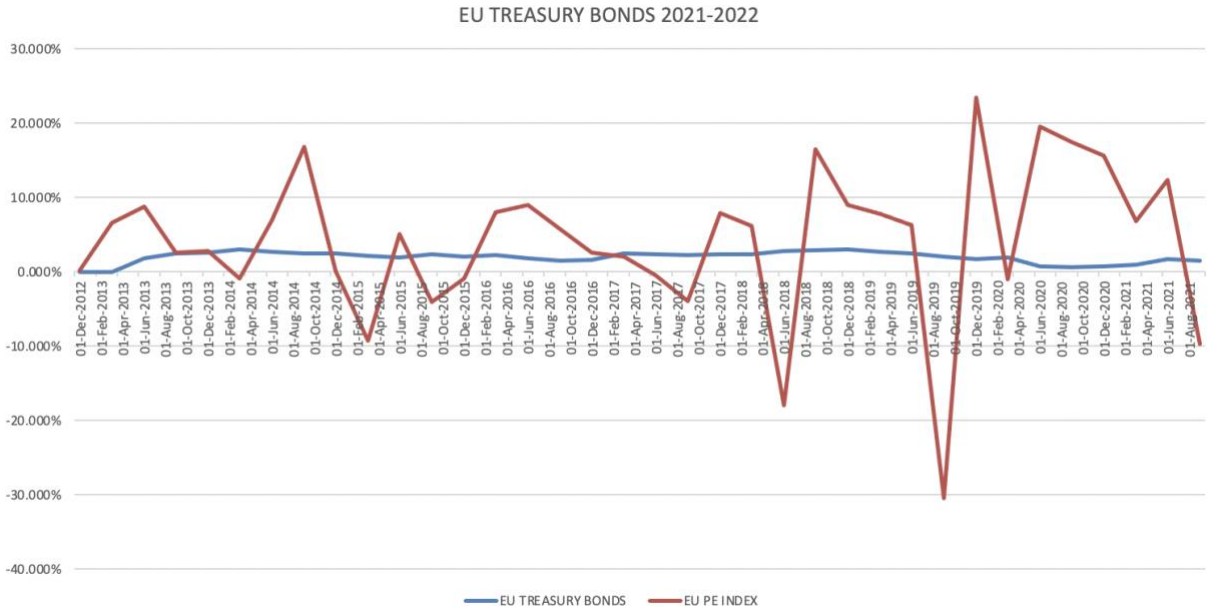


Source: personal production

In the graph above there's the comparison between rates of return of treasury bonds and the Private Equity index for the US. It's easy to deduce, due to the nature of the treasury bonds, they offered both low level of volatility of the bond and low return, that there's an almost constant outperformance of the Private Equity index.

EU Panorama

Figure 11: EU treasury bonds and EU PE index



Source: personal production

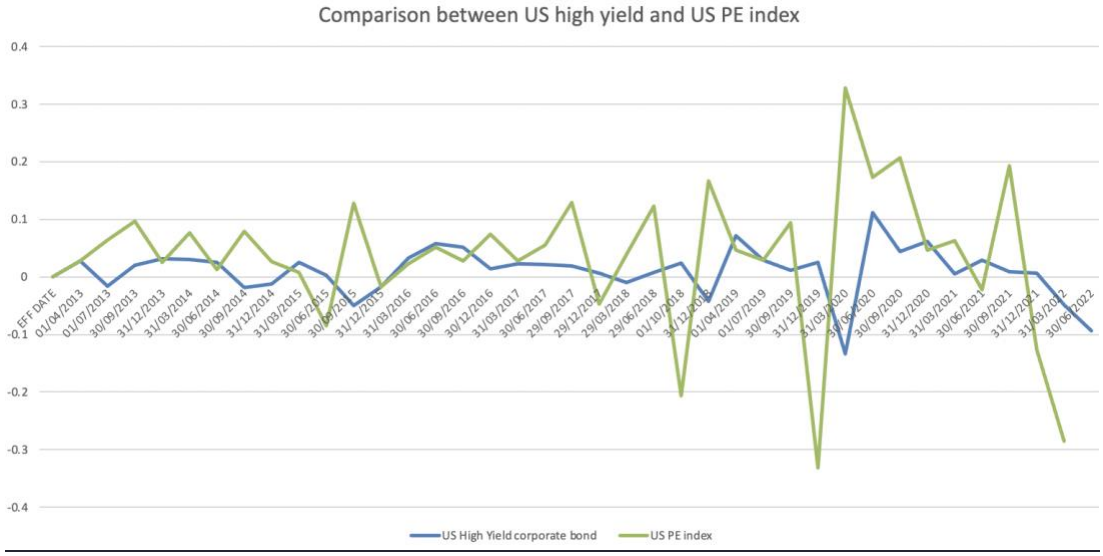
For the EU Panorama we are not facing a different scenario. We can still face an outstanding performance of private equity market.

3.7.2 ETF Corporate Bonds

ETF Corporate Bonds can be considered as stocks traded on the exchange market and for this reason, they should follow the path of the stock indexes. We have a demonstration of this trends as per US and EU market. US corporate bond, on February 2020 and December 2018 when, despite the widespread crunches, it face opposite and huge return of respectively of 32,8% with a delta of about 45% and 16,7% with a delta of about 20%.

US Panorama

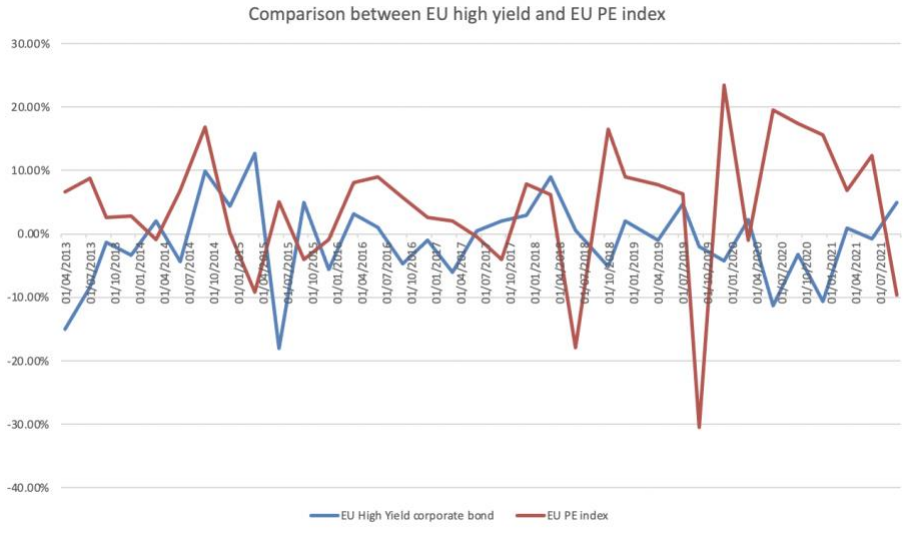
Figure 12: US ETF corporate bonds and US PE index



Source: personal production

EU Panorama

Figure 13: EU ETF corporate bonds and EU PE index



Source: Personal production

3.7.3 Stock indexes

In the following graphs I analyze the comparison between stock market indexes of US market (S&P500 and NASDAQ composite) and EU market (FTSE 100 and FTSE mib) with the respective PE index.

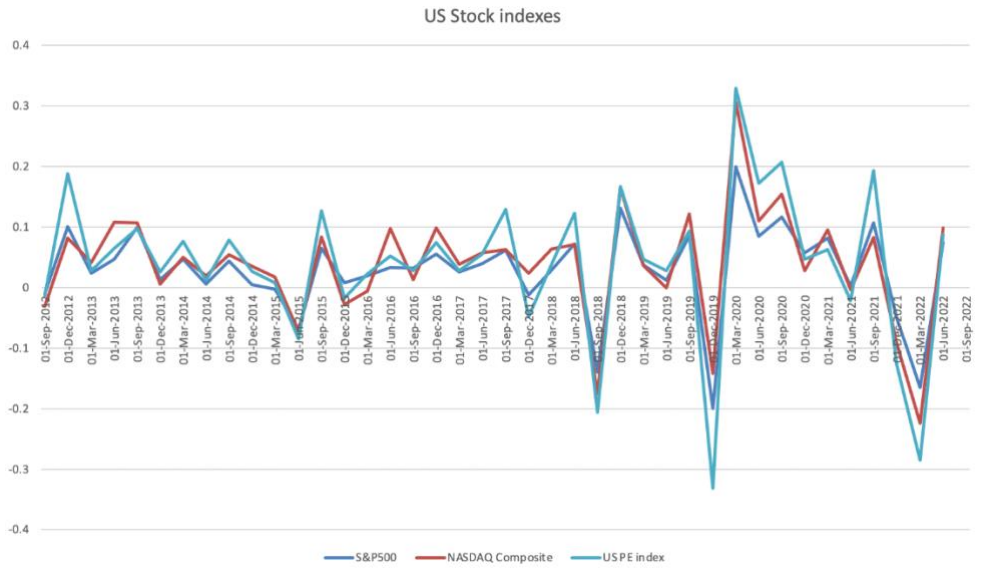
From the graphs, the most important outcome on which we have to focus is related to the "crunch periods". One of the main characteristics of the private equity market, seems to be the ability of the fund to go counter-current to the market trend. As we can see in fact, during period of crisis, the performance or better the rate of return of both PE indexes, is solidly higher than the ones offered by the public equity market. During December 2015 and June 2020, private equity market records a performance of, respectively of 12,73% despite the stock market that made a return between 5%-7%. In the same way in 2019, PE market has a return of 32,87%.

We can notice the same pattern in Europe, in particular during June 2020 when the overall economy crunches, due to the beginning and the spread of the pandemic, and the private equity market faced huge returns of 19,52% with a delta from the EU indexes between 38%-40%.

This is a clear view of how private equity market is able to provide investors, during global financial crisis, investments with higher returns and a relative lower volatility.

US Panorama

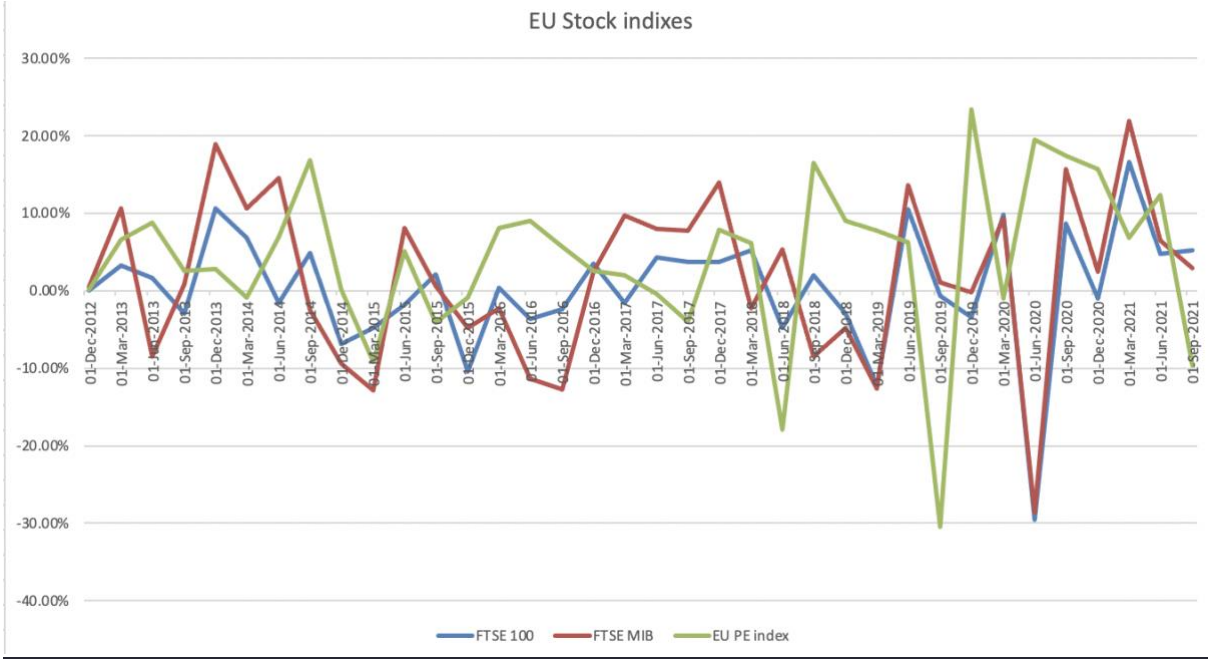
Figure 14: US stock indexes and US PE index



Source: personal production

EU Panorama

Figure 15: EU stock indexes and EU PE index



Source: Personal production

3.8 PME Analysis (Public Market Equivalent)

As already mentioned, the second analysis on which I'll focus is the one made by the use of the benchmarking tool PME. This approach is useful to make return on private equity market and public equity market, comparable.

The performance methods usually used to evaluate private equity funds (IRR and multiples approach), only allow a comparison between different funds. Public benchmarking instead, allow the comparison between private equity funds to public market and is a key driver for the computation of opportunity cost of investing in private or public equity.

The literature provides three types of PME benchmark:

1) KS PME (Kaplan-Schoars): is a ratio made by discounting the private equity fund cash flows by the public market index value. The discounted distributions plus the current remaining value are divided by the discounted contributions to obtain the ratio. This approach avoids the generation of an IRR that should be easy to manipulate by the GP. At the same time, however, ignores the timing of the cash flows and the lack of the beta factor in the implied discounting

factor. Using this method, private equity is outperforming the public market if the value of this ratio is >1.

This measure provides an effective method to evaluate PE funds performance totally grounded on cash flows figures. It consists in the creation of a fictious investment vehicle that simulates private equity cash flows. All the fund's cash distributions (outflows) are discounted by the return available on public markets over the period, and subsequently divided by all the capital calls (inflows) to the fund discounted by the same market return.

$$PME = \frac{\sum_t \frac{dist(t)}{1+R_M(t)}}{\sum_t \frac{call(t)}{1+R_M(t)}}.$$

Where:

Dist (t): are the distributions over a period t

Call (t): are the capital calls over period t

R: is the return available, over the period t, on public market

2) LN PME (Long-Nickels): is an annualized rate in which contributions to PE fund are converted to an equal purchase of shares in the public index. Distributions represent liquidation of share in public index. IRR calculation uses same contributions and distributions as PE fund, but with a different final period remaining value. The main limitation related to this method is the presence of an IRR that is sensitive to early distributions; if a fund faces large distributions, the IRR could cause a negative PME for the final period remaining value, making PME IRR calculation computationally impossible.

PE outperforms public equity market if the estimated PME IRR<PME fund IRR.

3) Capital Dynamics PME+: is an annualized rate that uses a fixed scaling factor (lambda) to modify each distribution to ensure the PME final period remaining value is the same as the PE fund remaining value. IRR calculation uses modified contributions and distributions but same final period remaining value that is the cause of its main advantage: avoiding a final period negative remaining value that makes PME IRR calculation possible in more cases.

So in conclusion, both LN PME and PME+ are intuitive and therefore good options for benchmarking private equity funds with public market indices. Furthermore, even if LN PME method has a mathematical issue, in real world application, this issue is underestimated as it is perceived as being an academic problem.

Through the use of the PME+, we can proceed to the understanding of PE performance over North America and Europe.

US Performance:

As we can see from the first graph which describes PE performance against the S&P500, through KS PME method, 2007 and 2009 vintages are already outperforming public markets, while 2008 vintage funds have equal performance.

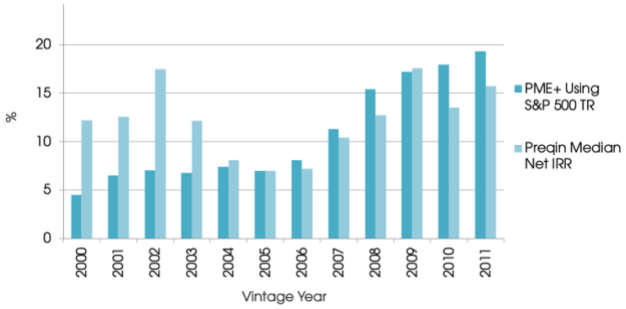
Investors in 2001 vintage funds are 23% better off than if they had the same cash flows in the public market. On the other hand, investors in 2014 vintage North America-focused funds would have been 10% better off investing in the public market over the same time period to 31 December 2014.

Looking at the analysis made with PME+, we can notice that there's a constant underperformance of the private equity market till 2004. In 2005 they performed the same results and then, till the end of the analysis horizon, private equity overperformed compared to its benchmark.

Figure 10: *KS PME North America*

Source: Preqin Performance Analyst

Figure 11: PME+ North America



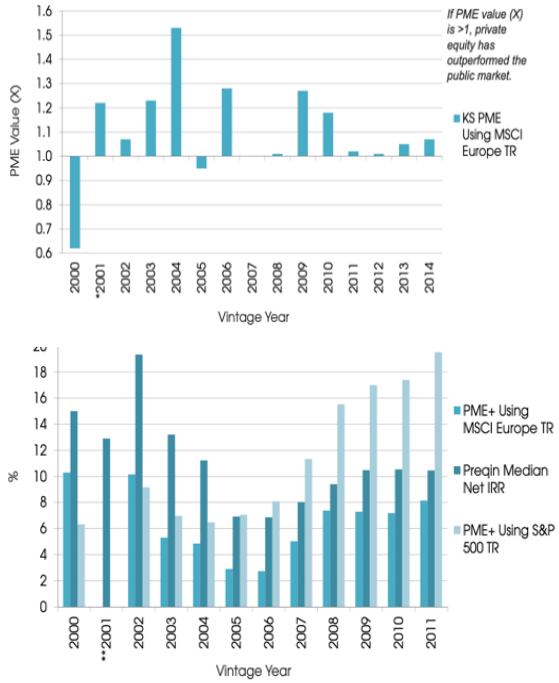
Soruce: Preqin Performance Analyst

EU Performance:

The first graph below, show us the comparison between private equity performance and its benchmark: the MSCI Europe Total Return index.

There is almost a steadily and continuous outperformance of private equity market except for the years 2000, 2005 and 2007 where the performance of PE and MSCI EU TR was the same. For vintage years 2006 to 2011, PME+ values are greater than Preqin's median net IRRs, indicating that investing the same amount with the same timings in the public market would have produced greater returns for the investor.

Figure 12: Europe KS PME and PME+



It's important to focus on the main difference between the analyzed approach (PME and PME+). As already mentioned, PME and PME LN faced the same problem of a complete meaningful comparison between private and public equity due to the difference in the NAV[42]: the presence of this difference can probably lead to a misleading understanding of the performance. PME+ instead, through the use of the factor lambda, scale and harmonize both the distribution from private and public equity market, presenting an analysis that involves the same level of NAV, making both markets comparable overcoming the issue noticed in PME KS and PME LN.

3.9 Socio-Cultural Analysis

Private Equity market, as we have already seen in the first chapter, has experienced a period of rapid expansion during the last few years. We can now analyze how this growth was accompanied by the degree of development of certain sectors and key elements, both from a social and macro-economic point of view.

Market capitalization reflects the overall health of equity capital markets. As a result, market capitalization can be an explanatory factor for funding process. So any increases in market

[42] Net Asset Value

capitalization means two favorable aspect for the economy: an increase of the liquidity and a more attractive investment panorama. Therefore, larger equity market capitalization should reflect greater supply of funds available for venture capital investments. Liquidity, in particular, can be a major determinant of the development of private equity markets. Specifically, liquidity constraints have been seen as an impediment to private equity in certain European markets. In Europe, the fragmentation of national markets is a major reason for lower volume on each individual country's exchange. This low volume translates into reduced access to capital for both young companies and established corporations. As a result, one of the major new efforts currently underway is to consolidate the sovereign markets in Europe in order to create a larger more liquid European Union marketplace for equity securities. McCurry (1999) asserts that two major changes must be made in Europe to achieve maximum growth in private equity:

1) the creation of a pan-European exchange to improve liquidity in equity markets

2) the harmonization of regulations and tax codes to prevent arbitrage opportunities on the continent.

These changes would increase the pool of investors able to invest in private equity. The state of a country's economy should also affect venture capital market growth and development. According to Arcs and Audertsch (1994) macroeconomic fluctuations have a profound influence on business startup activity. Results from their work indicate that expansions are found to lead to an increase in the number of startup firms. Since an increase in startup activity requires additional funding, GDP growth should increase the demand for venture capital funds. In addition, GDP growth leads to enhanced business opportunities, more economic success, and a more favorable environment for investors. This serves to increase the supply of venture capital funds available in an economy. Since growth in GDP works to increase both the supply and demand for venture funds, it is reasonable to expect GDP growth and venture capital investing to be positively associated.

The real lending rate in an economy can be viewed as the opportunity cost of holding money and the real cost of obtaining funding. High lending rates correspond with a high opportunity cost to providing venture capital funding. As a result, institutions and individual investors are less likely to take on the risks inherent in venture capital investment thereby decreasing the supply of venture capital funds available. In addition, the lending rate also serves as an indicator of both the depth of the debt market and the risk premium inherent in a given country. A higher lending rate suggests limited sources of borrowing and/or more risky borrowing and lending environments. Therefore, a higher lending rate signifies that venture firms have less access to

conventional investment funding through the debt market and face a higher risk premium. Thus, higher real interest rates should have an unambiguous negative impact on VC funding.

To these macroeconomic variables, the actual number of patents applied for, granted, and denied reflects the level of innovation and regulation in an economy.

Jeng and Wells (2000) note that more innovative economies are more likely to have greater VC activity. They use labor market rigidities as a proxy for the innovativeness of a given economy. However, this study utilizes the number of patents applied for in a given country as percent of its GDP to represent the innovation per dollar of productive activity. In countries where, for cultural, social, political, or institutional reasons, innovation and creativity are not stressed, this number will be small. However in a nation such as the United States, which culturally encourages risk taking and entrepreneurship, the number of patent applications will be large. This relative difference in cultural perspectives towards entrepreneurship and innovation is an important variable in determining private equity activity. Cultural conditions are extremely difficult to quantify. Therefore, the patent application data is used as a rough proxy to estimate the amount of innovation relative to output in an economy along with the risk preference inherent in a given economy. In addition, the percent of patents denied variable measures the difficulty in securing a patent in a given economy. Higher percentages of patents denied may signify greater regulation that can impede innovation and stifle the potential returns to a venture capital investing.

On the other hand, patents denied may reflect the soundness of the screening process noted by Gompers and Lerner (1999a). In this capacity, it may be the case that higher percentages of patents denied could positively affect venture capital activity. In that Kortum and Lerner (2000) have shown that VC and patenting are associated, it stands to reason that intellectual property rights may be an additional institutional factor determining the robustness of a nation's venture capital industry.

According to Park and Ginarte (1997) intellectual property rights (IPR) affect economic growth by stimulating the accumulation of factor inputs such as research and development and physical capital. The major benefit from strong IPR protection is the impetus it provides for the research sector to invest and take risk. Park and Ginarte (1997) conclude that a country lacking strong IPR protection is very unlikely to establish innovative sectors in the economy, as people are unwilling to take the risk inherent in entrepreneurship out of fear they will not be adequately rewarded. As a result, lack of IPR protection may diminish the demand for venture capital funds by reducing the number of potential entrepreneurs. According to Park and Ginarte (1997) intellectual property right protection can be gauged by looking at specific variables such as

patent agreements, provisions for loss of protection, enforcement mechanisms, and duration. In fact, they employ these factors to establish an index of property rights protection from 1960-1990, which is presented in the table below:

Intellectual Property Rights Metrics

Country	Value	Dummy Value
U.S.A	3.52	1
U.K.	3.26	1
Ireland	2.46	0
Finland	2.39	0
Germany	3.29	1
France	3.48	1
Italy	3.5	1
Spain	3.53	1
Portugal	1.82	0

The countries are assigned an IPR index score between 0-4 based on the compulsory licensing of inventions, the revoking of patents, and the exploitation of patents. The scores for the countries in our sample of countries range from 1.82-3.53. Due to the wide gap between countries, 3.0 was determined to be the cut-off point between countries with high levels of property right protection and those without. Countries with an IPR index value greater than 3.0 receive a one in the regression while countries with a value less than 3.0 receive a zero. Looking at a sample of the world's most developed economies illustrates that some countries have been able to produce stronger capitalistic systems than others. Specifically, nations such as the United States and the United Kingdom have more developed capital markets and more companies that go public than nations such as France and Germany.

According to the Wall Street Journal, the main factor in capital market development can be traced to the different legal traditions. There are two main legal traditions: Common law, with its roots in England, and Civil law, redefined throughout Europe.

According to a study by Shleifer (1998) civil law countries exhibit heavier regulation, weaker property right protection, more corrupt governments and less political freedom than common law countries. He argues that investors in civil-law countries are less certain that their property rights will be enforced and as a result fewer individuals are active in financial markets. La Porta et al (1996) finds strong links between capital market development across different countries and the related countries' legal traditions. The evidence confirms the basic hypothesis that being a shareholder or creditor entitles an investor to different rights depending on a nation's legal structure. This issue of legal traditions and their implications for shareholders may have dramatic effects on the development of private equity markets across countries.

If investors are not well protected they will not invest in venture companies and entrepreneurs will have greater difficulty obtaining funds. In addition, smaller companies have a more difficult time procuring financing in civil law countries due to reliance on public funding and concerns over bankruptcy law. High concentration in the ownership of companies is also a common result of poor investor protection. These factors all decrease the amount of venture capital activity by making it unsafe for venture capitalists to invest in start-up or early stage companies.

This study postulates that as a result of less capital market development, weaker investor protections, and fear of contract repudiation, civil law countries suffer from less developed private equity markets. In these nations, early stage companies become dependent on bank loans or public financing to obtain the capital necessary to grow. As a result, there is a sub-optimal quantity of investment in high-growth and innovative sectors of the economy. On the other hand, common law countries provide the incentives and legal protection that foster strong venture capital markets.

To incorporate these ideas into a model, legal traditions have been operationalized as a "dummy variable" based on work done by La Porta et al (1996). This work divided countries into four legal traditions: English, French, German, and Scandinavian.

1) English legal tradition: is referred to the Common law
2) The others can be grouped together as civil law.

Any country with English or common law was assigned a score of one in legal tradition, while any country with civil law was assigned a score of zero.

Similarly, capital market development in general and VC activity, is dependent on the level of transparency in a country. Transparency is a key component for promoting the investor protections that contribute to the success of firms in procuring external financing. A country lacking transparency can only offer limited protection for outside investors. In addition, the lack of transparency fosters an environment more conducive to the inefficiencies that arise due to the presence of asymmetric information and moral hazard.

The following table presents the array of scores reproduced from La Porta et al (1996) based on four characteristics:

1) rule of law
2) corruption
3) risk of expropriation
4) risk of contract repudiation.

These four scores were added together and divided by the total possible of 40 points to determine an average transparency index value for each country. Countries receiving 95% or higher are considered transparent and thus are assigned a value of one while countries receiving a score less that 95% are not considered transparent and are assigned a value of zero. A positive correlation should exist between those nations with high transparency index values and active venture capital activity.

Transparency Measures

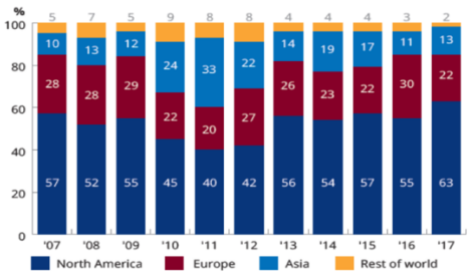
Country	Rule of Law	Corruption	Risk of Expropriation	Risk of Contract Repudiation	AVERAGE	Dummy Value
U.S.A.	10	10	9.98	9	97.450%	1
U.K.	10	8.57	9.71	9.63	94.775%	1
Ireland	8.75	7.8	9.67	8.96	87.950%	0
Finland	10	10	9.67	9.15	97.050%	1
Germany	9	9.23	9.9	9.77	94.750%	1
France	8	8.98	9.65	9.19	89.550%	0
Italy	6.75	8.33	9.35	9.17	84.000%	0
Spain	6.25	7.8	9.52	8.4	79.925%	0
Portugal	5.5	8.68	8.9	8.57	79.125%	0

Following the previous assumptions and studies, we can state that market's characteristics, countries' economy health and regulation of investment, transparency, and patent protection, play key role for the definition of the spread and the performance of Private Equity market.

Based on the above assumptions I will now analyze the different Private Equity trend throughout Anglo-Saxon and European market.

As is it possible to figure out from the below graph, there's a predominant presence of US assets invested in the global private equity market. However, it is not negligible European Private Equity market.

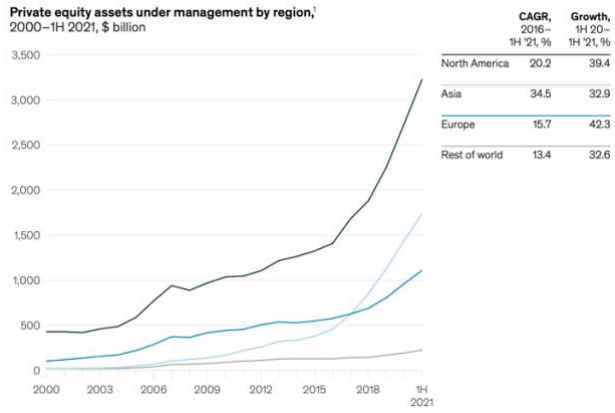
Figure 13:



Source: Prequin

The American market outperforms the other mainly due to the level of liquidity granted by its regulatory framework, GDP's growth over last two years post pandemic that offer an average growth rate of 10,9%[43], and strong regulation about patent protection[44], as it's easy to see from the level of assets under management by described by the following graph.

Figure 14: Private Equity assets under management by region



Source: https://www.mckinsey.com

Even if the spread and the growth of the European PE market was affected largely by lower economic growth and the concerns about the eurozone's future, buyouts from EU panorama has been as good, if not better than that of US buyouts over different time horizons.

The main reasons linked to the underperformance of the EU Private Equity market must be recognized in more aspects:

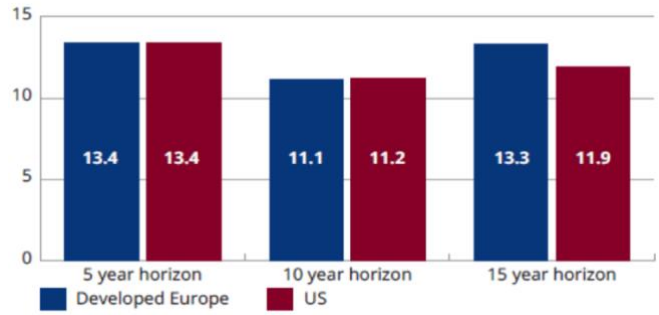
1) Different competition context: US Private Equity market it's more crowded and for this reason the price of each deal is more attractive.

2) Timing and size of buyouts: European market, for large buyouts, requires till three years to recall the committed capital despite mid-small buyouts that requires about seven months. This situation leads the European market to close, for the highest percentage, small-mid size deals that lowers the overall value of European Private Equity market.

[43] *Source: https://it.tradingeconomics.com/united-states/gdp-growth*

[44] *"While there is a uniform patent law system in the U.S., European patent law is based on the European Patent Convention (EPC), an international treaty, which is not part of EU law. Currently, only the patent application procedure is harmonized by the EPC. Successful applicants are granted a bundle of national patents under the EPC. The EU considers to introduce a European Community Patent system, which would allow it to grant a single patent valid throughout the EU. Political quarrels, especially regarding the language question, prevented the EU in introducing the Community Patent so far. On the other hand, the European Community Trade Mark was a real success story and could be seen as a general reference of how attractive a Community Patent might be for enterprises."*
Source: https://law.stanford.edu

Figure 15: Different time horizon related performance

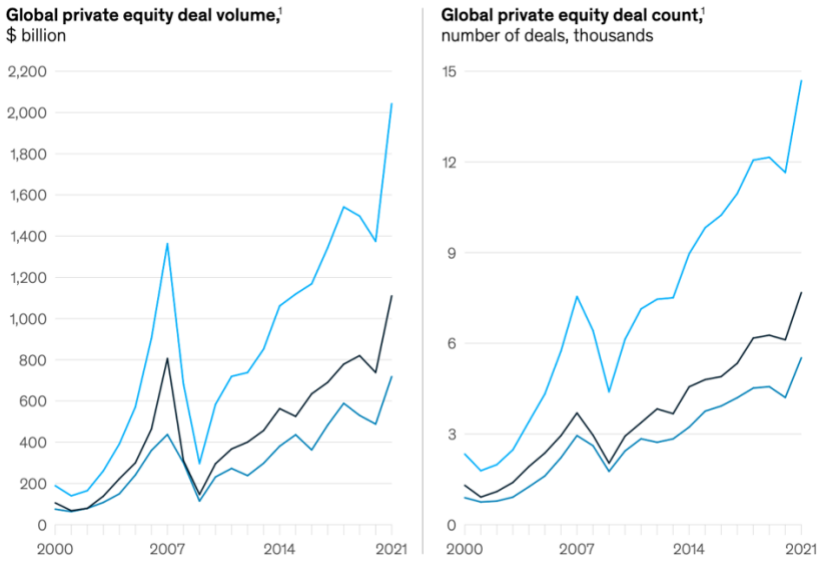


Source: Global Private Equity report 2017, Bain&Company

We can summarize the underperformance's reasons mentioned in the above paragraph through the following graphs.

The higher volume and number of deals in North American market is explained both from the overcrowded market and the larger size of the deals. As it possible to guess from the graphs below, there is a steadily overperformance of US deals volume except from the "subprime crisis" of 2008 when American economy fell down and the deals' volume of both market are almost the same. For what concern the number of deals, global Private Equity market is still facing an outperformance of the US market but the delta between EU and US markets is quite smaller, mainly due to the country size and its offer capacity.

Figure 16: Deals volume and count by country



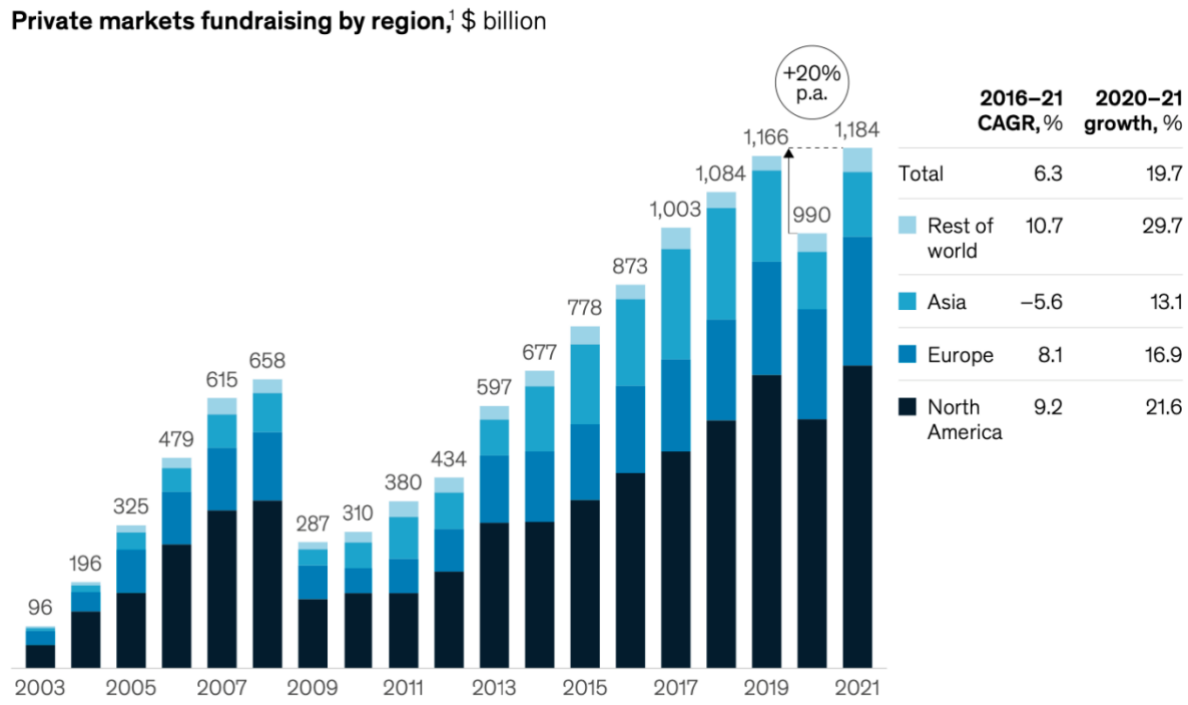
Source: McKinsey

There's are still some other factors that obstacles the growth of the European market.

First of all, the ease of access to capital markets[45]; North America capital market is the strongest worldwide, providing the greatest selection of diversified funding options. Being the biggest capital markets all over the world means being the greatest boost to private equity industry. US market fundraising, despite the European, doesn't rely on banks' lending but on corporate bonds. The use of bank loans in fact, is only 26% compared to that of corporate bonds which amounts to 74%. On the other side, the European capital market is fragmented within each State of the Union, making the Fundraising process much more difficult. Venture capital companies raise capital through banks' lending. This is risky since banks' lending are cycle and it dries up if there's an economical shock. Capital market, instead, diversify the funding and acts as shock absorber.

EU is making progress towards the unicity of capital market. Since 25 June 2021, EU's leaders stressed out the importance of the CMU ("Capital Markets Union").

Figure 17: Private Markets fundraising by region



Source: McKinsey.com

[45] Capital markets are financial markets that bring buyers and sellers together to trade stocks, bonds, currencies, and other financial assets. Capital markets include the stock market and the bond market.

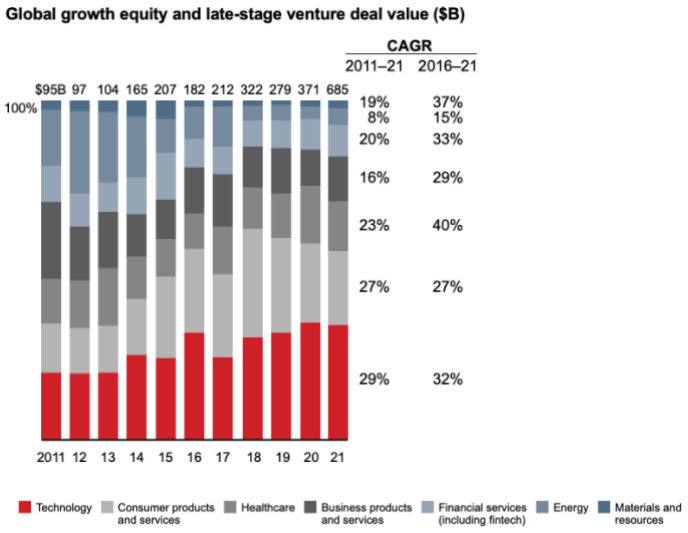
Other factors that for sure is giving a boost to the US Private Equity market more than the European one are the current trend that this industry is facing.

During last years, in particular during the pandemic period, investors' and stakeholders' attention strive towards technological and bio-technological sectors.

Since venture capitalist Marc Andreessen wrote in 2011, "software is eating the world," private equity investments in software and technology have exploded to become the industry's dominant area of focus, and investors continue to flood the zone with new capital.

This shift had a huge impact on the develop of Private Equity industry: most investors are more willing the "*bet"* their money in countries and in companies that are more advanced in this sectors and, even more important, have strong regulation of the Intellectual Property Right. For the reason mentioned above about the differences between civil and common law, we can assume that US regulation and advanced degree of development of TMT and health sectors, brings a large contribution to North American Private Equity market development.

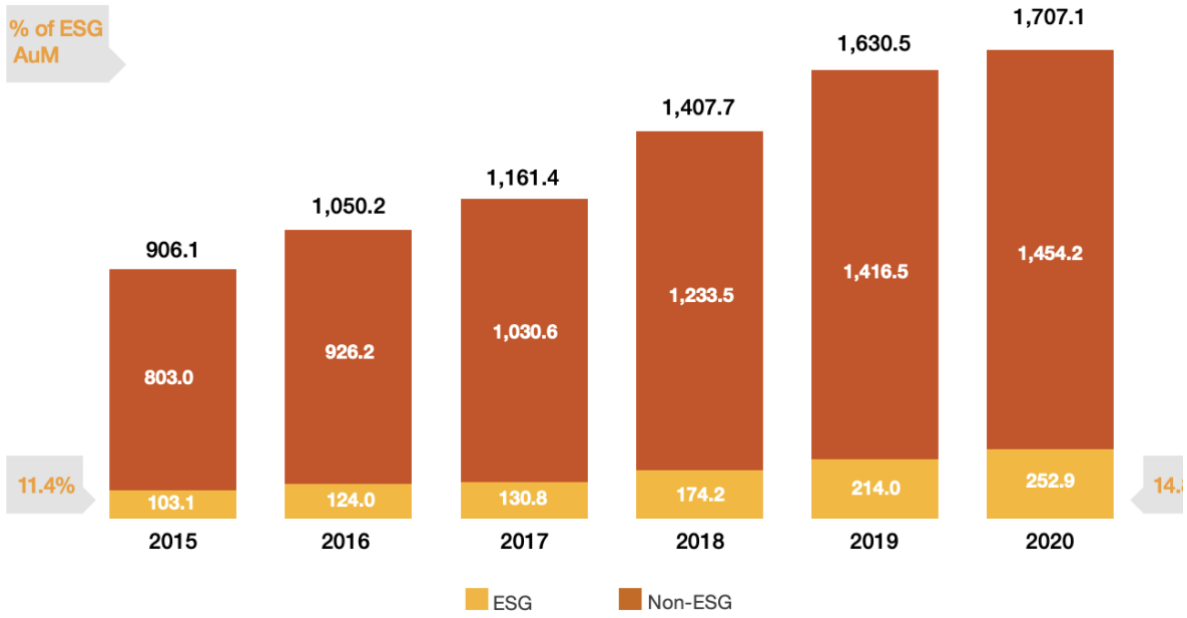
Figure 18: Global growth equity and late-stage venture deal value



Source: PitchBook

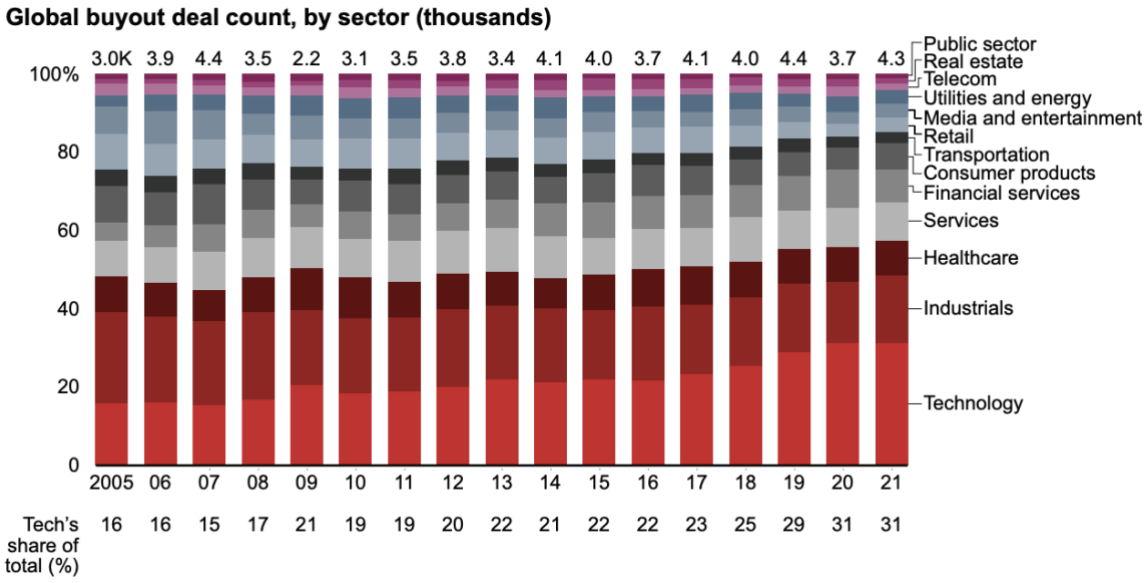
In the same way, is possible figure out the continuous growth of the European market due to the large attention and fostering in the EU zone of sustainability themes.

Figure 19: Growth of ESG assets under management



As we can see from the following graph, is easy to conclude that the level of development of sectors that are becoming even more important for the investors' lead to the success of Private Equity industry within a country.

Figure 20: Global buyout deal count, by sector



Conclusion

Through the analysis of the literature and of the previous dissertation I've tried to provide an understanding of the outperformance of the Private Equity industry compared to the main investments in Public's Equity market: stock market, treasury bonds, ETF corporate bonds, for both the North American and the European market. I also concentrate the analysis over the potential correlation between the cultural and social texture of a country and the performance in the Private Equity industry it can achieve.

For what concern the performance of private and public equity market I'd like to underline some key points. There are plenty of valuation methods analyzing the performance of the single fund, such as the use of the Internal Rate of Return and the use of multiples. Among each of this method there's one issue that obstacles a clear understanding of the absolute and relative performance of private equity companies: the lack of a well-defined regulatory framework about disclosure's duty of Private Equity companies' results.

Even if there were many efforts to limit this issue, as already seen in the literature through the construction of dataset, "Venture Capital 100" and Thomson VentureXpert (TVE)", there's one common output: valuations are based on assumptions that are trying to exclude, as much as possible, the GP's influence on these valuations processes.

Among all the valuation methods considered, the one that best fit the understanding of the relative performance of Private Equity industry, is the Public Market Equivalent (PME+) provided by Capital Dynamics since, despite the other benchmarking methods, it allows to avoid a final period negative NAV making possible PME IRR calculation in many circumstances. It offers the best benchmark approximation of the performance compared with the public market's indexes taken into consideration, underlining the trend that emerged from the previous literature: Private Equity industry is steadily outperforming Public Equity market even more during crunches of the economy.

For what concern the second part of my analysis, if there's correlation between the culture and PE performance, we stated that there were many factors affecting the spread worldwide of this phenomenon. Focusing on the targeted geographical area of North America and Europe, as briefly just discussed, what lead the two markets to have different performances mainly are two elements. The first one is the regulatory framework, concerning the mandatory level of legal reserve, granting enough liquidity to the market, the protection for the patent and the transparency of the market, related to the level of corruption, risk expropriation and risk of contract repudiation. The second is the structure of the capital market and consequently the

capacity of each state of granting access to it, fostering, in this way the develop and diffusion of the Private Equity phenomena worldwide.

In conclusion, during the last decade the Private Equity industry faced an exponential growth and for this reason is required a regulatory framework and capital markets' renewal in order to manage disclosure issue, in order to avoid arbitrage in this market due to, as I tried to underline through my analysis, the overall profitability of this industry, and in order to grant access to capital market to everyone in the easiest way, as it is also planned in the *to-do list* of the European Commission.

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Summary

The first step towards the private equity phenomenon was made by the Harvard's professor George Doriot, when he instituted the ARD, the first Venture Capital fund, in 1946. He tried to fix the problem of the small and medium companies in the American market: the lack of growth possibilities for those companies.
Another step before the spread of Private Equity was undertaken in 1958 the first regulatory effort of this trend. In the US market was created the SBA, Small Business Administration, that should manage, support and finance the SBIC, Small Business Investment Company. Despite its initial success, more than 450 mln capital fundraised, it'll decline for the inability of support all the venture capital part of this reality and due to a widespread feeling of distrust.

This provided the impetus for the formation of a significant number of venture capital limited partnerships. In 1969, newly formed venture capital partnerships raised a record $171 millions. In general, these partnerships were small ($2.5 million to $10 million) and raised money from individual investors; however, one, Heizer Corporation, raised $80 million from thirty-five institutional investors. Between 1969 and 1975, approximately twenty-nine limited partnerships were formed, raising a total of 376 million dollars. Organized venture capital financing through limited partnerships was beginning to be recognized as an industry, and in 1973 the National Venture Capital Association was formed.

Such a steadily grown of the venture capital limited partnership during the 80', was followed by a decline in the last years of this decade. On the other hand, all the non-venture capital private equity investments took the floor. During the 90' there was the same pattern but even more interesting was the huge new commitment in both, venture and non-venture capital private equity investments, at the beginning of the millennium. There was a change in the mindset of the investors, the institutional ones, that are seeking for new and alternative form of investments and an increasing willingness of the BoM to sell to Private Equity groups especially to buyout firms. There was a boom in the private equity market reaching a total amount traded in 2000 of 199.2 billion U.S. dollar (Statista: Value of venture capital investment in the United States from 1995 to 2020). This boom of the venture capital investments leads a huge number of companies, most iconic case were in the IT industry, was just the start for its develop. Looking at the report of Harvard Law School "Private Equity: 2021 Year in review and 2022 outlook", in the last year Global Private Equity deal volume, touched 1.2 trillion dollars with an increase of 111% from 2020, and it is expected to growth. The boost to this

sector and of the huge number of buyouts, was following the pattern of the past years that was made by both plentiful capital supply and an easier access to debt financing due to a lower interest rate and and favorable terms and condition to borrow money.

Investment in venture capital from institutional investors, also defined by U.S. literature as "activities of Private Equity", can be divided in two investment strategies:

- Venture Capital funds
- Buyout funds

Private Equity market is related to a peculiar asset class of investment. This expression refers to any kind of institutional venture capital investment activities in unlisted companies with a high potential of growth. The rationale of the Private Equity market is linked to investments in high growth companies earning both from the capital gain and from the sale of the participation in the target companies.

Private Equity market typically is a medium-long term investment and brings both, the target company and the investing fund, in a win-win situation. On one hand the target company receives, beyond the financing, also the expertise and the know how provided by the fund. A private Equity fund in fact, especially with a buyout strategy, become part of the Management of the target company, thus having active participation in strategic and investment decisions. On the other hand, investors have interest in bringing to success the company since, higher is the expected return of the target company and higher will be the selling price of their participation.

The reason that leads Private Equity market to spread exponentially globally since the last two decade is the performance it offers despite the one that comes from investments in Public Equity market. This kind of activity perfectly combine management and finance skills, from companies' analyses using financial models, to management skills, for the correct government of companies in which there was an investment. Private equity can have a twofold nature and can be both considered as a source of financing or a real investment.

The investing activity in the private equity market, involves three main subject: the target company, the adviser and the private equity fund. Private equity fund is a pooled investment vehicle where the adviser, the private equity firm that manage the funds, pools together the

money invested in the fund by all the investors and uses that money to make investments on behalf of the fund. A relevant peculiarity of this market is that even if the adviser must be registered and must respect SEC's guidelines and requirements, private equity funds themselves are not registered with the SEC. So, private equity funds are not subject to regular public disclosure requirements.

The most common legal structure used within the private equity investments market, is the limited partnership: it involves two main types of actors: a general partner (GP) and a Limited Partners (LPs). The GP is responsible for the management of the Private Equity company and he can implement three main strategies. The decision over the one to undertake is strictly linked to which stage of the life cycle the company is experiencing:

1) Development
2) Start-up
3) Early Growth
4) Rapid Growth
5) Mature age
6) Decline

The decision, based on which of the stage mentioned above the company is situated, has three possibilities:

1) Venture Capital: is a form of investment in early-stage companies with strong growth potential. The types of businesses venture capital funds invest in, tend to be young and often pre-profit and pre-revenues. Venture capital funds buy minority equity stakes in these companies and provide them with financial support and business expertise to help them grow and succeed.
2) Growth Equity: is an investment opportunity in late-stage companies. It invest in well-run companies with proven business and a history of significant and rapid revenue growth, minimizing the technology adoption risks.
3) *Buyout:* is the strategy to implement in the mature stage of life cycle of a company. Buyouts occur when a mature company, is purchased by either a private equity firm or its existing management team: the investor became owner of the majority of shares and of the controlling interests over the company.

Within the buyout's investment strategy, there're management and leveraged buyout. The latter is a strategy that is made in order to face a future organizational restructuring of the target company. The bottom, leveraged buyout (LBO), is the largest portion of strategy used by funds in the Private Equity market, in which is involved a large use of outside debt financing. The target company in a buyout is commonly a closely held private business, a division or subsidiary of a large company or a public company. The mechanism behind these acquisitions through LBO, implies a small investment in the equity of the target company; conversely, the Private Equity fund make a massive use of leverage.

In the Private Equity market, the participants are:

5) General Partner (GP)
6) Limited Partner (LP)
7) PE fund
8) Portfolio/Investee companies

GP is the responsible, with unlimited capital, of process of fund sourcing and of managing the investee companies. LP instead, as the name suggests, have limited liabilities meaning that their liability for the investment is limited for how much money they invested in the private equity fund. Furthermore, the private equity fund, is a pool of money, a vehicle raises by the LP and managed by the GP. Private Equity fund shouldn't be confused with private equity firm that, despite the fund, can include more than one fund. In conclusion, the investee is the destination, identified companies by the GP with high potential, of the pool of money raised by investors through the fund.

The overall rationale behind the flow of delegation of decisions from LPs to the GP has to be searched in the LPA (Limited Partnership Agreement), an agreement that provides the assurance to the LPs that the GP will act in the interest of the fund and its value creation.

The investing activity of a Private Equity can be divided into four stages:

- Fundraising Period
- Structuring and Investment Period
- Managing Period
- Exiting Period

The first stage involves the fundraising process and the selection of the investments. This stage should grant access to Private Equity firms to high-quality deals. This first step requires a huge amount of information to be analyzed to evaluate the capacity and the potential of an investment.

The second stage is the Structuring and Investment period. It refers to the amount the type of securities that should be used as equity and all the other substantive investment agreements issued by the General Partner.
The third stage involves a process of integration of the portfolio's companies' management. Through their presence in the company's Board of Management, they can exercise control over the strategic decisions of the company, also by providing all the operating, financial expertise.
The fourth and last stage instead refers to the exit strategy of the fund from the investment. It is considered an integral part of the investment process in the Private Equity market since all the investors expect to receive a payback in a medium short temporary range. A fund can follow two different path to exit an investment: going public, mainly through the constitution of an IPO; the alternative is to sell the company on the private market.

The main reason behind the "Boom" of the Private Equity phenomenon starting from the 1980, has to be detected in the institutional investors' expectations over the potential return those investments in private equity offers compared both to alternatives asset class investment and public equity. Furthermore, the understanding of the private equity funds' performance is a difficult task. The concept behind this issue is linked to disclosure's regulation, as already mentioned above. The principles of valuing private companies are similar to those of valuing public companies; however, the valuer, in private equity context, needs to deal with limited information available in terms of history and depth. Another significant hurdle when valuing private firms is the difficulty of estimating risk parameters for discount rates. These require stock prices for equity which are not available for private firms. Furthermore, Private companies also tend to have concentrated ownership, thus reported earnings might reflect discretionary expenses or are affected by tax motivations and the accounting records are subject to the risk of manipulation by the GP.
Based on the above disclosure's limitation, we can focus on the differences and interpretation of public and private equity.
1) Investment method: The most widespread, of Anglo-Saxon matrix, identifies with public equity the financing activity of a company through the open market, avoiding private negotiations. In Anglo-Saxon countries, public assets, called "public assets", are assets listed on the stock exchange, meaning that they can be examine by anyone. Public equity, therefore,

is a strategy of fundraising based on the sale of a company's stock to the public. The main public equity structure and fundraising strategy, refers to the initial public offering: the IPO.

2) Financing method: the type of financial resources that comes from institutional investors determine whether the investment undertaken belong to a Public or Private Equity.

Looking closed to both the financing and investment methods, is possible to easily identify some distinctive elements.

- *Stocks' Price*
- *Investors*
- *Governance*

The high complexity issue of the measurement of the performance within the Private Equity market, had always caught the attention of many scholars.

The first theory about PE performance were proposed by Gompers and Lerner in 1997. They tried to assess PE investments performance in two different ways. The first one implies the analysis of the change in prices of firms, backed by private equity investors once they became public. The second approach requires the calculation of the IRR to understand the performance of the private equity funds.

Cochrane [2005], wants to analyze whether investments in venture capital behave as securities traded in the public market. He attempted to correct the selection bias in PE in the dataset used by previous studies, with a maximum likelihood estimation. Cochrane [2005] finds that log returns of VC investments have negative alphas, but arithmetic returns (and alpha) are high. We only observe a valuation when a firm goes public, receives new financing, or is acquired, events that more likely occur when the firm is experiencing good returns.

Their model method extends the IRR approach by using a dynamic discount rate. The study attempts to demonstrate that this theory can be run through the GMM (generalized method of moments) estimation.

In conclusion, Ang et al. [2014] developed a methodology to estimate time series returns based on the cash flows accruing to partners using PE data from 1993 to 2011. They decomposed PE returns into components attributable to traded factors and time-varying PE premiums and used the Bayesian Markov chain Monte Carlo (BMCM) process to filter time-varying PE returns using fund-level NPVs. They documented high PE volatility compared to industry indexes and found less serial dependence in PE returns compared to the industry.

For what concern instead, valuation approaches for Private Equity funds' performance, the most widely used measure of performance is the internal rate of return (IRR). Calculation of

the IRR takes into consideration the timing of cash contributions and distributions to and from the fund partnership and the length of time an investment in the fund has been held. Another widely accepted measure of performance is the investment multiple. This measures the proceeds received from a fund plus the valuation of any remaining investments divided by the capital contributed by the investors to the fund. So summarizing, the main methods used for the calculation of the performances are the IRR, the modified IRR (mIRR) and multiples like the TVPI, DPI, PIC.

The overall purpose of this thesis is to try to answer to the following research question:

Does the private equity market steadily outperform the public equity market?

And

There is a connection between the performance of a Private Equity fund and the social and cultural texture of a country?

To provide an answer to the first question, I'll proceed with two steps.

Firstly, I will structure an analysis of the return of both public and private equity funds through a comparison of the offered yield instead of the IRR since the internal rate of return used to compare cash flows from public and private equity is not fully meaningful because of the different timing and irregularity of the mentioned cash flows. I will calculate the rate of return of treasury bonds, corporate bonds, and stock indices, through the reference and the data of the platform Refinitiv. I will focus on the geographical area of the US and the EU since those are the areas in which there's a boost of this market. In conclusion, I'll compare these results with the performance of the Private Equity indexes.

The second step I'll follow, implies the use the PME (Public Market Equivalent) to clearly understand if the Private Equity market trend over the years, mirrors the path previously demonstrated with a comparison with the main stock indexes of the targeted geographical area mentioned above. The PME approach is a benchmark method that allows private's equity investors to gauge a relative understanding of private funds' performance compared with public markets. Private equity returns, however, are not directly comparable with public market indices, due to the asset class's illiquid nature and irregular timing of cash flows. The development of the public market equivalent (PME) measure of returns however, provides a more meaningful comparison.

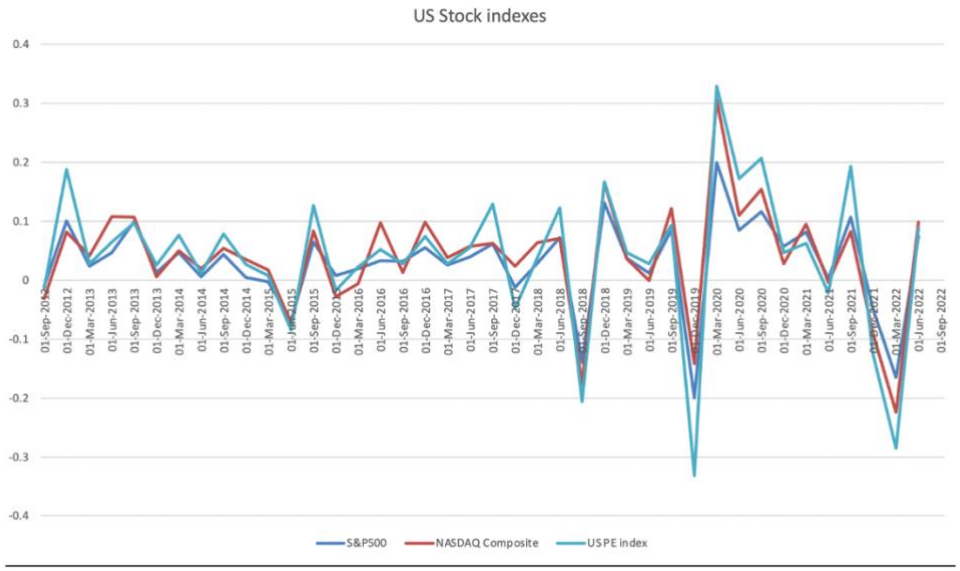
PME metrics benchmark the performance of a fund, or a group of funds, against an appropriate public market index while accounting for the timings of the fund cash flows.

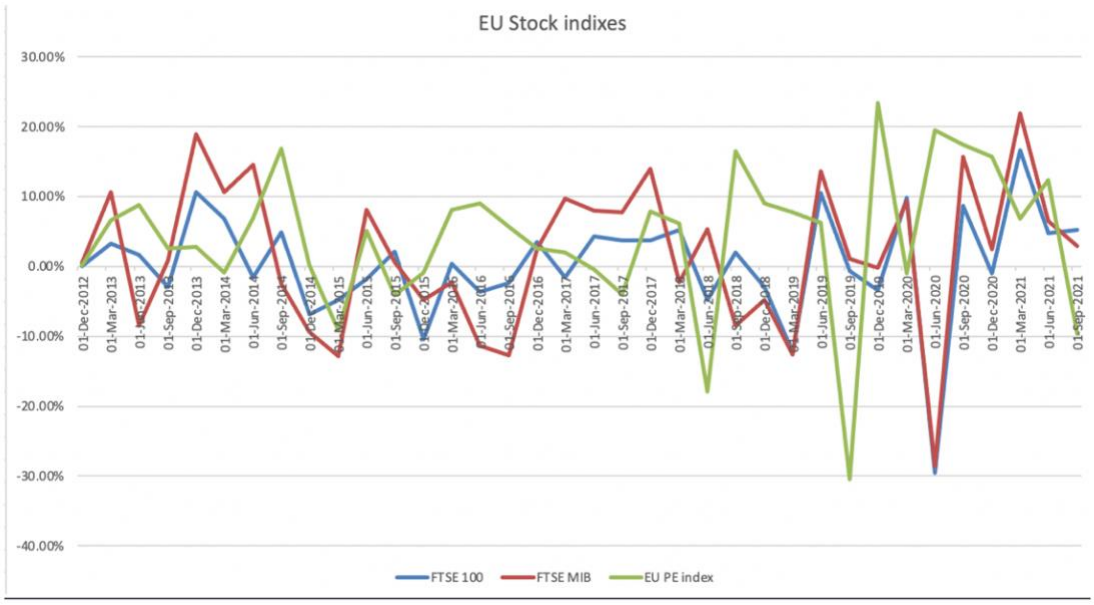
Focusing on the second research question, I will take into consideration the major trends and results, divided by geographical area, of private equity market. After this analysis I will focus

on aspects mainly related to risk aversion and moral hazard of potential investors and their trust degree towards the mode of use of the capital raised by the funds, and the main regulatory guidelines for each country.

The most representative results that comes from the performance analysis can be summarized in the trends that figure out from the comparison between the Private Equity index of both European and North American and the related set of stock indexes for each country.

From the following graphs we can easily understanding that there's a sort of correlation in the price changes of the considered variables with an almost steadily outperformance of the Private Equity indexes.





As already mentioned, the second analysis on which I'll focus is the one made by the use of the benchmarking tool PME. This approach is useful to make return on private equity market and public equity market, comparable.

The performance methods usually used to evaluate private equity funds (IRR and multiples approach), only allow a comparison between different funds. Public benchmarking instead, allow the comparison between private equity funds to public market and is a key driver for the computation of opportunity cost of investing in private or public equity.

There're three main PME benchmarking tools:

1) KS-PME: This approach avoids the generation of an IRR that should be easy to manipulate by the GP. At the same time, however, ignores the timing of the cash flows and the lack of the beta factor in the implied discounting factor;

2) LN PME: is an annualized rate in which contributions to PE fund are converted to an equal purchase of shares in the public index. Its main limitation is the presence of an IRR that is sensitive to early distributions;

3) PME+: is an annualized rate that uses a fixed scaling factor (lambda) to modify each distribution to ensure the PME final period remaining value is the same as the PE fund remaining value overcoming final period negative remaining value (NAV).

We can now analyze how this growth was accompanied by the degree of development of certain sectors and key elements, both from a social and macro-economic point of view.

Market capitalization reflects the overall health of equity capital markets. As a result, market capitalization can be an explanatory factor for funding process. So, any increases in market capitalization means two favorable aspect for the economy: an increase of the liquidity and a more attractive investment panorama. Therefore, larger equity market capitalization should reflect greater supply of funds available for venture capital investments.

The scholars Arcs and Audertsch (1994) macroeconomic fluctuations have a profound influence on business startup activity. Results from their work indicate that expansions are found to lead to an increase in the number of startup firms. Since an increase in startup activity requires additional funding, GDP growth should increase the demand for venture capital funds. In addition, GDP growth leads to enhanced business opportunities, more economic success, and a more favorable environment for investors.

Another key metrics that can affect from a regulatory point of view the widespread within a country of the Private Equity phenomenon, is the number of patents applied for, granted, and denied reflects the level of innovation and regulation in an economy.

The main factor in capital market development can be traced to the different legal traditions: civil law countries exhibit heavier regulation, weaker property right protection, more corrupt governments and less political freedom than common law countries, countries with Anglo-Saxon matrix; consequently, if investors are not well protected, they will not invest in venture companies and entrepreneurs will have greater difficulty obtaining funds. In addition, smaller companies have a more difficult time procuring financing in civil law countries due to reliance on public funding and concerns over bankruptcy law. These factors all decrease the amount of venture capital activity by making it unsafe for venture capitalists to invest in start-up or early-stage companies.

In conclusion, the spread and the growth of the European PE market was affected largely by lower economic growth and the concerns about the eurozone's future. Far away from these concerns, EU buyouts has been as good, even if not better than the performance achieved by US buyouts.

The main reasons linked to the underperformance of the EU Private Equity market must be recognized in more aspects:

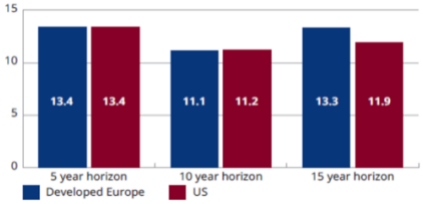
1) Different competition context: US Private Equity market it’s more crowded and for this reason the price of each deal is more attractive.

2) Timing and size of buyouts: European market, for large buyouts, requires till three years to recall the committed capital despite mid-small buyouts that requires about seven months.

This situation leads the European market to close, for the highest percentage, small-mid size deals that lowers the overall value of European Private Equity market.

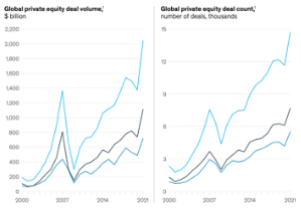
To summarize, the main differences that lead a different performance both in North America and Europe from a socio-cultural texture, are mainly two factors. The first one is the regulatory framework, concerning the mandatory level of legal reserve, granting enough liquidity to the market, the protection for the patent and the transparency of the market; the second is the structure of the capital market.

Different time horizon related performance



Source: Global Private Equity report 2017, Bain&Company

Deals volume and count by country



Source: McKinsey