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**Private equity and debt:  
why should people invest in Private markets**

**Supervisors**

Ch. Prof. Pelizzon Lorianà

Ch. Prof. Lucchetta Marcella

**Graduand**

Leonardo Castellaro

869167

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## **Abstract**

The purpose of this thesis is to walk investors through the processes and methods used by Private Equity Funds and the economics of Small and Medium Enterprises (SMEs). Small Businesses, are generally private and their shares are not traded on public markets, thus their evaluation may be difficult and their market is characterized by an intrinsic informational opacity although despite these characteristics, private markets have attracted many investors in the latest years. In later parts of this paper we will see how funds and individuals (namely Business Angels) screen, monitor and invest in private business and the evolution of this phenomenon across the world and in territories whose general economy is based on SMEs. The ultimate question which we are going to answer is: why should investors consider private markets and in what cases they should not consider this option.

## **1. Literature review**

### **1.1 Economics of Small and Mediums Enterprises (SMEs)**

One of the most troublesome aspects of dealing with small businesses is the lack of information regarding them, as they do not enter in contracts that are publicly available and are, in general, kept private. Furthermore, private firms do not issue traded securities that are continuously priced in public markets and registered with the competent authorities. As a result, small firms cannot credibly convey their quality and many have difficulty building reputations to signal high quality or non exploitive behaviour quickly to overcome information opacity (Berger, Udell 1998).

Private equity and private debt markets offer specialized processes to address these issues by screening, monitoring and entering into contracts with the business into which they are investing.

Over the course of their lifecycle, SMEs experience different phases with different financial needs as the business grows. As Carey (1993) argues in his research, younger and more opaque firms rely on initial insider finance (which can be represented by funds provided by the owners own money or their families' and friends'), trade credit and angel finance, while as we move forward in the lifecycle process and firms become more stable and less opaque they gain access to intermediated finance on the equity side

(private equity, PE, and venture capital, VC) and on the debt side (private debt, bank loans) ending eventually in an Initial Public Offering (IPO) as the firm continues its growth process. The early stages of companies are characterized by the development of a business plan which can be used as a sales document for funding purposes; in this particular stages initial internal funding is often the best (an usually only) source of capital as products are still in the developing phase, the business concept is not well defined yet and the assets are mostly intangible; an additional round of inside finance may be required once the production starts (in the case of industrial firms) or in the hiring process of professionals in the case of companies providing particular types of services; PE and VC comes in the following stages of the growth process and often regard financing full-scale marketing and production as well as product development costs. PE firms and Venture Capitalists may then take part in the decision making process of firms and as such, one of the service offered is their aid in the management process of firms which would then end up in a disinvestment beyond a given time horizon, which is usually ten years, once firms are ready to be listed on stock exchanges through IPOs.

Conventional wisdom argues that bank and commercial lending would typically not be available to SMEs in their initial stages until the point where there are enough tangible assets in their balance sheets that can be pledged as collateral in case of default; such as assets may include account receivables, inventory and equipments (Berger, Udell 1998). Costly state verification (Townsend 1979, Diamond 1984) and adverse selection (Myers 1984) highlight that the optimally of debt contracts after internal financing has been exhausted. These debt contracts may include trade credit, bank loans and finance company loans; however one issue that rises when dealing with debt contracts can be represented by moral hazard which is likely to occur when the amount of external financing needed is relatively large with respect to internal financing (comprehensive of personal wealth of stakeholders pledged as collateral). This hints at the fact that external equity financing, namely angel investors, VC and PE funds, play a role of the utmost importance when such conditions are met and moral hazard is acute. The reason why high-risk, high-growth new ventures obtain such forms of financing before they obtain

substantial amounts of external finance can be found in the attempt to face the moral hazard problem which can be acute for these firms (Garmaise 1997).

According to a research performed in 1997 by Fluck, Holtz-Eakin and Rosen, evidence of external finance exceeding internal sources of finance at the start-up phase has been brought to light. They highlighted also the fact that external source of finance decrease in later stages of the lifecycle process up to 7-8 years in subsequent phases and then increasing thereafter; although their data do not take into account trade credit and the dependence on external sources of finance may be underestimated. This result hints to the fact that the above mentioned informational opacity of small firms may not be a deterrent in the process of obtaining external finance in particular for what concerns debts related to financial institutions.

In line with Berger and Udell (1998) we categorize small business according to their stage in the lifecycle as “infants” (0-2 years), “adolescents” (3-4 years), “middle-aged” (5-24 years) and “old” (over 25 years), which is a rough approximation of seed, start-up and later stage finance. One interesting phenomenon that has been observed is that funds provided by the principal owner increase from 25% to 40% as firms move from middle-aged stage to the old one; a possible explanation may be represented by the fact that successful firms that survive up until these later stages either tend to have a significant amount of retained earnings accumulated and reinvested into the company (by acquiring a larger equity portion from other shareholders and thus decreasing the dilution effect of shares concentrating an even larger portion of the company into the hands of the principal owner) or have a large principal owners’ stake put into them in their initial phases. As mentioned earlier as most of the seed money invested to start a business comes from family and friends, such figures can be repaid of their capital put at risk into a highly uncertain business by having their shares repurchased by the principal owner of the company. This is proven by the research by showing that the principal owner’s equity increases over time reaching more than half of the firm’s total equity and the debt held by other participants decreases meaning that they are being repaid. The research of Berger and Udell held in 1998 on a sample of small firms in Wisconsin, USA, shows that, even in the early stages, internal finance does not dominate over external finance. The data they provide shows that for firms in the

adolescent phase the principal owner provide, on average, 25.7% of the equity, while the majority of the remaining equity, represented by 28.3% of the total, is held by other insiders as well as the 2.8% of the debt; this results in an upper bound to internal finance of 56.8% some of which comes from angel investors. Funds coming from Venture Capitalists are of less importance in the adolescent phase as VC funds tend to avoid pure start-ups. This shows a balance between internal and external finance on adolescent firms in opposition to what may be perceived by common wisdom.

When evaluating SMEs, in particular the smaller firms, it may be advisable, as it represents a more informative representation, to evaluate the creditworthiness of the business owner as it may have a longer track record on his/her credit history, more assets that can be used as collateral.

Researches performed in the '90s show that companies with different type of earnings profile are financed with different combination of debt and equity in their capital structure. SMEs in particularly risky sectors with a high growth potential are more prone to obtain funds coming from angel investors and venture capitalists whereas companies in steadier environments which are characterized by less risky investments (even though risk remains high as we discussed above) are often financed via loans coming from banks and other financial institutions; Industries such as automotive, construction and others characterized by large quantities of tangible assets are likely to be backed by loans originated by financial institutions due to the availability of large amounts of pledgeable assets (Berger, Udell 1998). Fenn, Liang and Prowse in 1997 found that VC backed firms that reach the final stage of their maturity and goes through IPOs are the ones in technology and medical industries.

In 1995 the US Small Business Administration estimated that around 23.7% of small businesses disappear in their infant stage and the 52.7% of the remaining do not reach the middle-aged stage due to failure, bankruptcy, business owners' retirement or poor health. A noteworthy aspect is that not all SMEs are designed to follow the path from inception to quotation in stock exchanges and do not follow high growth strategies but are simply designed to by the idea of entrepreneurs to be their "one's own boss"; this does not imply lack of profitability for such firms but may be detrimental to venture capitalists who seek high-growth prospects (Wetzel 1994).

## **1.2 Private markets for SMEs**

Internal finance, as noted above, plays a crucial role in the very early stages of the lifecycle process for small firms allowing for a reduction of adverse selection and moral hazard as well as representing a strength in the later stages, once retained earnings become steadier, in order to gain access to external sources of funds. Business angels and venture capitalists, being respectively the 3.59% and 1.85% of total finance, represent relatively small portions of the finance of SMEs. However, we have to take into account that angels and VC funds are incredibly selective in their investment choices which tend to fall into firms with high-growth potential (Berger, Udell 1998) depending on the “target rate of return” which can range between 40% and 80% (with angels settling in the lower bound of the interval and venture capitalists on the upper end) when investing in early stages ventures taking over the majority stakes in the ownership of such companies (Fenn, Liang and Prowse 1997).

The market of business angels differs from the ones of private equity firms and venture capitalists as it is not intermediated but, instead, is a form of direct finance for high net worth individuals (HNWI) who aim to invest their own wealth on projects carried in by innovative new businesses and start-ups through the purchase of common stock; although to implement a sustainable equity structure backed by angels, a single one is often not enough and for this reason business angels tend to act as small investment groups coordinating their activity (Prowse 1998); sometimes with the aid of external lawyers or accountants in structuring the various contracts.

As previously mentioned, since business angels acquire ownership stakes that surpass 40% of the total equity a question may arise as to whether they can be viewed as actual active investors. Barry in 1994 described them as those investors who “do not take on the consulting role of venture capitalists” while Wetzel in 1994 viewed them as a group of co-investors led by successful entrepreneurs who are familiar with the dynamics and management of the industries into which they are investing, further mentioning that advisory role in such firms provide a useful tool for their eventual success; despite the contrasting ideas we can say that whether taking on an advisory role or merely buying ownership stakes in companies they require far less control and bring less expertise

compared to properly structured venture capitalists. The attempts to formalize dates back in the '90s where networks of angels had been created in which entrepreneurs can pitch equity investments to such individuals; this networks are often operated by not-for-profit organizations which are referred to as the "switch", entrepreneurs solicit PE investments with pitch-deck presentations summarizing their firm's scope, business plan, financial informations and needs. Angels who have been approved by the switch can then scout companies by looking at their presentations, or term sheets, and being put in touch with entrepreneurs via the switch (Berger, Udell 1998).

Venture capitalists, on the other hand, play the role of financial intermediaries placing the funds of one group of investors into informationally opaque firms and are also entitled to determine the time and form of investment exit (Gorman, Sahlman 1989) as well as performing an advisory role in FP&A (Financial Planning and Analysis) functions of firms and taking part in the operational management. Due to these roles of VC funds, agency problems are bound to arise because of lacks of effort by the entrepreneur, or insufficient competence for the optimal management of the firm (Berger, Udell 1998) as well as discrepancies between the mission and vision of the business owner and the venture capitalist blaming the fact that informations about projects are imperfect and opaque becoming clearer and more specific over time as they reveal themselves (Bergemann, Hege 1998). During the process of structuring contracts, venture capitalists have at their a wide variety of features at their disposal, including staging of investments over a time horizon to ensure optimal exercise of production, control over debt and equity instruments, entrepreneur's compensation, covenants, board representation and allocation of voting rights (Gompers 1995, Lerner 1995, Fenn, Liang and Prowse 1997); furthermore VC funds tend to specialize in specific industries developing a high level of expertise (Norton, Tenenbaum 1993).

As noted earlier, the typical time horizon of the investments of venture capitalists is 10 years with the possibility to extend this period for additional 2 years. These firms manage multiple funds simultaneously each of them at different stages in their lifecycle; during the early years of the fund, managers screen and structure new deals with prospective companies; moving into the middle stages venture capitalists are take active role in the management of portfolio companies: taking on the role of advisors,



becoming involved in dealing managerial and operational problems, aiding the board of directors, scouting new managers and structuring strategy & planning functions and operations (Gorman, Sahlman 1989); as the investments approach their last stages, the effort of venture capitalists is focused on disinvestments in portfolio firms to realize the gains. The most attractive form of exit strategy is through public offerings, which is a market characterized by informational asymmetries as the private markets with the difference that firms that are in proximity of IPOs are usually less opaque and more clearer than when VC and business angels provided funds for them, and this can be partly addressed to the role that venture capitalists and angels have played during the investment period as well as to mechanisms such as underpricing and price stabilization which are market features that deal with information problems (Rock 1986, Wilhelm 1998). Researches conducted by Megginson and Weiss in 1991, revealed that IPOs backed by venture capital are less underpriced than non-VC backed public offerings; moreover the degree of underpricing has been found to be negatively related to amount of venture capital ownership stakes (Barry 1990) and, in the long run, VC backed IPOs outperform offerings that have not been backed by venture capital funds (Brav, Gompers 1997), additionally, because of their advisory role, venture capitalists are able to efficiently time IPOs in order to maximize their value (Lerner 1994).

According to Berger and Udell (1998), only the minority of portfolio investments of venture capitalists will be successful enough to achieve an IPO while less successful firms will be repurchased by the original owner or liquidated in case of default, however the returns generated by successful investments would be such profitable to compensate the overall return of the fund.

Another source of finance for small businesses is represented by the private debt markets which can represent a rather appealing alternative since SMEs are typically owner-managed and entrepreneurs are adverse to giving away part of their ownership, which is the case of equity issuance but not debt, in order to keep ownership and control over their firm.

During the '90s in the US, private debt has been divided on three categories: financial institutions, nonfinancial businesses and governments and individuals; which respectively accounted for 26.66%, 19.26% and 5.78% (Berger, Udell 1998). Trade

credit, which falls into the “nonfinancial business” category, is of the utmost importance for small firms as it can be optimal from the point of view of transactions costs, liquidity and cash management as well as representing a source of information that helps predict cash flows (Ferris 1981), it can also serve as a cushion during credit crunches, monetary policy contractions or other economic shocks that affect financial institutions making them less prone to finance small businesses (Nilsen 1994; Biais, Gollier 1997); Furthermore, only half of small businesses in the US had loans from financial institutions which made expensive trade credit the best viable solution of external funding for working capital; transactions and financial variables have been found to affect the proportion of trade credit paid by small businesses (Elliehausen, Wolken 1993). Studies have shown that as SMEs grow they become more informational transparent and tend to pay off their accounts payable sooner, thus decreasing their dependence on trade credit (Petersen, Rajan 1994/1995).

Moving onto the debt held by individuals, it consist mainly in debt funding from the original business owner in addition to his/her own equity stake in the firm which may be viewed either as a way to provide short term finance to the company or, in some other cases, as a method to exploit tax shield and benefits basically substituting dividends with interest payments (Berger, Udell 1998).

The classical method to obtain debt finance is trough financial institution. In order to obtain such products SMEs must undergo through a process which consists in screening, contracting and monitoring its performance and financial wellbeing in order to allow institutions to deal with information opacity which can be viewed as intrinsic when dealing with private small businesses.

The research performed by Berger and Udell in 1998 shows that 54.23% of small businesses have loans or leases from financial institutions and the vast majority of these, about two thirds, have loans coming from only one institution while only the remaining third of firms borrow from multiple institutions; they highlighted also that, in 86.95% of the cases, SMEs identify banks as their primary source of debt from institutions. Most of the funds of the firms that had been analyzed (52.03%) belonged to financial products falling in the category of the lines of credit enforcing the strategy of cost reduction, in particular transaction costs, and in order to provide insurance against credit

rationing; the second largest category of debt coming from financial institutions is represented by mortgage loans (13.89%) which can have commercial property or even the property of the owner as collateral. It is worth to bring to attention that, according to these data, in the '90s most (91.94%) of SMEs debts allocated to financial institutions were backed by collaterals and 51.63% of secured debts were guaranteed by the owners of the firms.

### **1.3 Effects of macroeconomic dynamics on SMEs**

General macroeconomic conditions affect the flow of funds into private equity and debt markets as they are based on forecasted valuation models at the time of exit. One of the main evaluation models involves taking current public market P/E multiples and applying them to forecasted earnings at exit, while the subsequent behavior of the stock market will determine the exit time via public offerings; this implies that whenever stock markets fall the repercussions extend to venture capitalists and business angels which may experience a reduction in the flow of funds (Berger, Udell 1998).

Gompers and Lerner, in 1997 and 1998, found that high realized returns of venture capitalists tend to be a driver for increase in capital commitments to such funds; as a regulated industry, it is subject to the same shocks that affect the commercial banking industry, this may be partially attributed to the fact that the vast majority of funds provided to venture capitalists come from corporate and public pension funds which, in the US, are allowed to invest in venture capital only in accordance to directives of the ERISA (Employee Retirement Income Security Act) in 1979 which state that investments in such industry are permitted provided they do not pose any threat to the entire portfolio (Berger, Udell 1998).

Over the course of the years there have been many crises involving, failures, capital shortfalls, regulatory changes and bubbles which are all followed by periods of recession which affect the banking industry causing distress and poor macroeconomic performance that will eventually reflect in reduction of finance available for small businesses as banks try to avoid having a huge exposure on credit risk while rebuilding their equity capital ratios. Additionally, bank failures may bring with them long-run costs because of the loss of bank-borrower relationships alongside the information built

up over time, making it difficult to borrowers to continue funding investments that have positive Net Present Value (NPV) (Slovin, Sushka, Polonochek 1993); this is especially true for SMEs, characterized by informational opacity, which rely on their banks and would find it difficult to raise external finance elsewhere (Berger, Udell 1998).

Monetary policies play a crucial role in affecting small business economics and their ability to obtain finance through either equity or debt. When tightening monetary policies are implemented this results in a reduction of bank reserves and subsequent reduction in their supply of loans forcing borrowers to reduce real spending slowing the macroeconomy because of unavailability of alternative means of funding, at least in the short term (Bernanke, Blinder 1988); this suggests that monetary policy shocks may have huge effects on borrowers, namely those small businesses who depend on financial institution finance, who are highly dependent on their relationship with banks and do not have access to alternative sources of funds. Kashyap and Stein, in a survey held in 1997, found that much of the aggregate slowing of macroeconomy is likely to be caused by adjustments by small businesses leading to the idea that monetary policies have a much stronger effect on small banks which are highly specialized in lending to SMEs, furthermore such shocks appear to impact small manufacturing firms more than large manufacturers. This can also be attributed to the fact that tightening monetary policies characterized by increase interest rates either affect the value of collaterals or reduce the net worth of borrowers thus impairing their creditworthiness and ability to obtain external finance through debt (Bernanke, Gertler 1995).

Credit crunches also appear to have huge effects on small business lending considerably reducing the supply of loans to such firms; Hancock and Wilson, in 1998, found that, during these periods, in the US a \$1 decline in the capital of small banks reduced commercial and industrial loans more than a reduction of \$1 capital of large banks; in addition the reduction of small banks' capital resulted in significant decrease of employment, payroll and number of SMEs.

Credit rationing is a phenomenon that occurs during credit crunches as well: lenders limit the supply of further credit to firms with exacerbated issues related to informationally opaque borrowers when interest rates rise, partly due to their inability to raise interest rates to such borrowers according to rates on government securities in

order to avoid attracting low quality borrowers or triggering risk-shifting behaviors (Stiglitz, Weiss 1981). This results in “sticky” loan interest rates and rationing equilibrium affecting significantly the availability of credit to small businesses (Berger, Udell 1998); nonetheless it has been found that the proportion of commitment to non commitment loans rise when tightening monetary policies are adopted (Morgan 1998).

A possible explanation for this phenomenon may be that some banks provide some sort of “interest rate insurance” to some of their borrowers smoothing interest rates by providing loans at below-market rates to their risk averse clients when rates are particularly high and compensate, in the opposite case, with above market interest rates or by providing other slightly overpriced financial instruments (Fried, Howitt 1980).

A catalyst for the provision of interest rate insurance can be found in the market power of banks which has been built via the accumulation of information over the entirety of their relationship with borrowers particularly the most informationally opaque ones. The short term loss experienced in such periods can be compensated with the subsequent overpricing provided by the exclusive access to informations about borrowers over the course of the years and lending period. It is also likely that, similarly to implicit “interest rate insurance”, banks may provide implicit credit risk insurance dispensing credit at expected loss to relationship borrowers that face temporary distress eventually making up for these losses in the long run thanks to the continuation of such relationship. This practice can also be facilitated by the informational power that banks have over their relationship borrowers as well (Berger, Udell 1998).

#### **1.4 The Venture Capital Industry**

Gompers and Lerner trace the history of the venture capital industry in the United States back to the 1940s, when a group of wealthy individuals began providing capital to startup companies. In the 1960s, the industry began to grow rapidly, as more firms were established and more capital became available. The authors attribute this growth to several factors, including changes in the regulatory environment, which made it easier for venture capital firms to operate, and the availability of capital from institutional investors, such as pension funds and endowments.

The authors also examine the role of new technologies in the growth of the venture capital industry. They note that the emergence of new technologies, such as semiconductors and biotechnology, created opportunities for venture capital firms to invest in innovative companies with significant growth potential. In addition they argue that the venture capital industry has played a crucial role in the development of these technologies, by providing the capital and expertise needed to bring new products and services to market.

They have analyzed that the performance of venture capital funds varies widely, with some funds generating significant returns for their investors, while others underperform or even lose money.

Gompers and Lerner identify several factors that contribute to the success of venture capital funds, including the experience of the fund's management team, the quality of the fund's investment opportunities, and the ability of the fund to add value to the companies in which it invests. They note that successful venture capital funds tend to focus on specific industries or sectors, where they have expertise and a deep understanding of the market. Taking into examination the role of luck in the success of venture capital funds. They note that successful venture capital investments often involve a significant element of luck, as it is difficult to predict which companies will succeed and which will fail. However, they argue that successful venture capital firms are able to consistently identify promising investment opportunities and manage the risks associated with these investments. (Gompers and Lerner, 2001)

### **1.5 Differences between Private Equity and Venture Capital**

Private equity and venture capital are two distinct asset classes within the broader alternative investment industry. While there are some similarities between the two, there are also key differences, particularly in the European context.

Private equity refers to investments in mature, established companies that are seeking to grow or restructure. Private equity investors typically acquire a controlling stake in the company and work closely with management to improve operations and increase profitability. Private equity investments are typically made in companies with a proven

track record of revenue and earnings growth, and the focus is on generating high returns through operational improvements and financial engineering.

Venture capital, on the other hand, refers to investments in early-stage or start-up companies that are seeking to develop and commercialize new products or services. Venture capital investors typically provide financing and strategic support to help these companies grow and achieve market success. Venture capital investments are typically made in companies with high growth potential but limited operating history, and the focus is on generating high returns through capital appreciation.

In the European context, there are several key differences between private equity and venture capital. One of the main differences is the size of the investments. Private equity investments in Europe tend to be larger than venture capital investments, reflecting the more mature and established nature of the companies being invested in. According to data from PitchBook, the average size of a private equity deal in Europe in 2020 was \$191 million, while the average size of a venture capital deal was \$21 million.

Another key difference is the stage of the companies being invested in. Private equity investments in Europe tend to be made in more established companies that are seeking to grow or restructure, while venture capital investments are typically made in early-stage or start-up companies that are seeking to develop and commercialize new products or services.

There are also differences in the types of investors that participate in private equity and venture capital. Private equity investors in Europe tend to be institutional investors such as pension funds and sovereign wealth funds, while venture capital investors tend to be smaller, more specialized funds that focus on early-stage investing.

Finally, there are differences in the regulatory environment for private equity and venture capital in Europe. Private equity is subject to the Alternative Investment Fund Managers Directive (AIFMD), which imposes certain regulatory requirements on private equity funds, including reporting and disclosure obligations. Venture capital, on the other hand, is subject to less regulation, reflecting the higher risk and early-stage nature of the investments.

Overall, while there are some similarities between private equity and venture capital in Europe, there are also key differences in terms of investment size, stage of company,

investor types, and regulatory environment. These differences reflect the unique characteristics of each asset class and the different investment strategies and objectives of private equity and venture capital investors in Europe.

- Investment focus: Private equity investments in Europe tend to focus on mature, established companies that are seeking to grow or restructure. These companies typically have a proven track record of revenue and earnings growth, and the focus is on generating high returns through operational improvements and financial engineering. Venture capital investments, on the other hand, focus on early-stage or start-up companies that are seeking to develop and commercialize new products or services. These companies typically have high growth potential but limited operating history, and the focus is on generating high returns through capital appreciation.
- Investment size: Private equity investments in Europe tend to be larger than venture capital investments, reflecting the more mature and established nature of the companies being invested in. According to data from PitchBook, the average size of a private equity deal in Europe in 2020 was \$191 million, while the average size of a venture capital deal was \$21 million.
- Stage of company: Private equity investments in Europe are typically made in more established companies that are seeking to grow or restructure, while venture capital investments are typically made in early-stage or start-up companies that are seeking to develop and commercialize new products or services.
- Investor types: Private equity investors in Europe tend to be institutional investors such as pension funds and sovereign wealth funds, while venture capital investors tend to be smaller, more specialized funds that focus on early-stage investing.
- Regulatory environment: Private equity is subject to the Alternative Investment Fund Managers Directive (AIFMD), which imposes certain regulatory requirements on private equity funds, including reporting and disclosure obligations. Venture capital, on the other hand, is subject to less regulation, reflecting the higher risk and early-stage nature of the investments.
- Investment timeline: Private equity investments in Europe typically have a longer investment horizon than venture capital investments. Private equity investors



typically hold their investments for five to seven years, while venture capital investors typically hold their investments for three to five years.

- Return expectations: Private equity investors in Europe typically expect to generate returns through operational improvements and financial engineering, while venture capital investors typically expect to generate returns through capital appreciation. Private equity investors typically target returns of 20% or more, while venture capital investors typically target returns of 30% or more.

Overall, while there are some similarities between private equity and venture capital in Europe, there are also key differences in terms of investment focus, investment size, stage of company, investor types, regulatory environment, investment timeline, and return expectations. These differences reflect the unique characteristics of each asset class and the different investment strategies and objectives of private equity and venture capital investors in Europe

Venture capital investments can offer high potential returns, but they are also associated with a range of risks. Here are some of the key risks associated with venture capital investments:

- High failure rate: Start-ups and early-stage companies have a high failure rate, and many venture-backed companies fail to achieve commercial success. According to data from CB Insights, 70% of start-up companies fail within their first five years.
- Limited liquidity: Venture capital investments are typically illiquid, meaning that investors may have to wait several years before they can realize a return on their investment. In addition, there may be limited opportunities to sell or transfer the investment before the company is acquired or goes public.
- Limited diversification: Venture capital investments are typically concentrated in a small number of companies, which can result in a lack of diversification and increase the risk of losses.
- Market risk: Venture capital investments are subject to market risk, meaning that the value of the investment can fluctuate based on market conditions and investor sentiment.

- Management risk: Early-stage companies may lack experienced management teams, which can increase the risk of operational and strategic challenges.
- Regulatory risk: Start-ups and early-stage companies may face regulatory challenges that can limit their ability to operate and grow.
- Technology risk: Many start-ups and early-stage companies are focused on developing new technologies, which can be risky and may not achieve commercial success.

Overall, venture capital investments can offer high potential returns, but they are also associated with a range of risks. Investors should carefully consider these risks before investing in venture capital, and should seek professional advice to ensure that they have a diversified portfolio and are managing their risk appropriately.

As VC and PE funds deal with early stage companies this can represent a source of risk of uttermost importance due to what has been described in previous subchapter as “information opacity” (Berger, Udell 1998). Investing in start-ups can be risky, but there are several ways that investors can evaluate the potential of a start-up before investing.

Here are some key factors to consider:

- Market opportunity: Investors should evaluate the size and growth potential of the market that the start-up is targeting. This may involve analyzing market trends, competitive landscape, and customer demand.
- Business model: Investors should understand the start-up's business model, including its revenue streams, pricing strategy, and customer acquisition strategy. They should also evaluate the start-up's ability to scale its business model as it grows.
- Management team: The management team is a critical factor in the success of a start-up. Investors should evaluate the experience, skills, and track record of the start-up's founders and management team.
- Product or service: Investors should evaluate the quality and uniqueness of the start-up's product or service, and its potential to solve a problem or meet a need in the market.
- Financials: Investors should review the start-up's financials, including revenue projections, cash burn rate, and funding history. They should also evaluate the start-up's ability to generate a positive return on investment.

- Intellectual property: Investors should evaluate the start-up's intellectual property, including patents, trademarks, and copyrights. They should also consider the potential for future intellectual property development.
- Exit strategy: Investors should consider the start-up's exit strategy, including potential acquisition targets or IPO opportunities. They should also evaluate the potential for the start-up to generate a positive return on investment.

As previously noted, evaluating the potential of a start-up requires a thorough analysis of its market opportunity, business model, management team, product or service, financials, intellectual property, and exit strategy. Investors should seek professional advice and conduct extensive due diligence before investing in a start-up, and should carefully assess the risks and potential rewards of the investment.

### **1.6 Role of policymakers**

Policymakers can take several steps to ensure that investors have access to accurate and reliable information.

Firstly, they can establish regulations that require companies to disclose relevant and material information to investors in a timely and transparent manner. This can include financial statements, annual reports, and other disclosures such as corporate governance practices, risk factors, and material events.

Secondly, policymakers can establish regulatory bodies or agencies that oversee and enforce compliance with disclosure requirements. These agencies can monitor companies' disclosures and investigate potential violations of disclosure regulations, and can impose penalties or sanctions on companies that fail to comply with disclosure requirements.

Thirdly, policymakers can promote the use of standardized reporting and accounting practices to ensure consistency and comparability in financial reporting across companies and jurisdictions. This can make it easier for investors to compare and evaluate different investment opportunities, and can increase transparency in the marketplace.

Fourthly, policymakers can encourage the development and adoption of new technologies that can improve the quality and accessibility of information for investors. This can include online platforms that provide investors with real-time access to company information, as well as tools such as data analytics and artificial intelligence that can help investors to analyze and interpret information more effectively.

Finally, policymakers can promote investor education and awareness campaigns to help investors understand the importance of accurate and reliable information, and to help them make informed investment decisions. This can include initiatives such as investor protection programs, financial literacy programs, and investor education seminars and workshops.

Overall, policymakers can play an important role in ensuring that investors have access to accurate and reliable information by establishing regulations, promoting standardization and transparency, and supporting investor education and awareness campaigns.

In their article “Venture Capital and the Finance of Innovation,” Andrew Metrick and Ayako Yasuda examine the role of venture capital (VC) in the finance of innovation. The authors analyze data on VC investments in the United States from 1978 to 2009, and examine the impact of VC on the innovation process. They also identify the factors that contribute to the success or failure of VC investments, and the implications of their findings for policymakers.

Metrick and Yasuda begin by examining the role of VC in the finance of innovation. They note that VC plays a critical role in financing and supporting new and innovative companies, particularly in high-growth sectors such as technology and biotech, finding that VC investments tend to be concentrated in sectors that are characterized by high levels of innovation and technological progress. They also note that VC-backed companies tend to have higher rates of patenting and other forms of intellectual property creation, as well as higher rates of commercialization and product development. They also examine the factors that contribute to the success or failure of VC investments highlighting that successful VC investments tend to involve companies with strong management teams, innovative products or services, and the potential for high growth and profitability. They also note that successful VC investments tend to involve

investors with strong networks and the ability to provide strategic guidance and support to portfolio companies. The authors also examine the role of external factors, such as the state of the economy and the availability of financing, in the success or failure of VC investments. They note that VC investments tend to be more successful in periods of economic growth and when financing is readily available, and less successful in periods of economic downturn and when financing is tight. conclude by discussing the implications of their findings for policymakers. They note that VC plays a critical role in financing and supporting innovation, and that policymakers should take steps to encourage the growth and success of the VC industry.

They argue that policymakers should focus on creating an environment that is conducive to entrepreneurial activity and innovation, including policies that support education and training, as well as policies that encourage entrepreneurship and innovation. They also note that policymakers should take steps to ensure that investors have access to accurate and reliable information, and that they are protected from fraud and other forms of misconduct.

Finally, the authors point out that policymakers should take steps to encourage the development of strong management teams and to create an environment that is conducive to long-term growth and innovation. They suggest that this can be achieved through policies that support research and development, as well as policies that encourage collaboration between industry and academia. (Metrick and Yasuda, 2010)

Studies performed by Matthew Ewens and Joan Farre-Mensa examine the relationship between the deregulation of private equity (PE) markets and the decline in initial public offerings (IPOs). The authors analyze data on PE investments and IPOs in the United States from 1990 to 2018, and examine the impact of deregulation on the structure and behavior of the PE industry. They also identify the factors that contribute to the decline in IPOs, and the implications of their findings for policymakers. Ewens and Farre-Mensa begin by examining the impact of deregulation on the structure and behavior of the PE industry. They note that the deregulation of the PE markets in the 1990s led to significant growth in the industry, as investors were able to take advantage of new investment opportunities and lower regulatory barriers.

The authors find that the deregulation of the PE markets has had a significant impact on the decline in IPOs. They note that the growth of the PE industry has made it easier for companies to access capital without going public, and that the availability of PE funding has reduced the need for companies to raise capital through IPOs.

Ewens and Farre-Mensa also examine the factors that contribute to the decline in IPOs. They note that the decline in IPOs is not limited to any particular sector, and that it is driven by a variety of factors, including changes in the regulatory environment, the availability of alternative sources of funding, and shifts in the behavior of investors.

The authors find that the availability of PE funding has played a significant role in the decline in IPOs. They note that the growth of the PE industry has made it easier for companies to access capital without going public, and that this has reduced the need for companies to raise capital through IPOs. They note that the decline in IPOs has significant implications for the broader economy, as IPOs are an important source of funding for new and innovative companies.

Policymakers should take steps to encourage the development of new sources of funding for companies, including alternative sources of equity and debt financing; furthermore they should also consider reforms to the regulatory environment that would encourage companies to go public, such as reducing the costs and burdens associated with the IPO process.

Finally, policymakers should take steps to ensure that investors have access to accurate and reliable information about companies, including those that are privately held.

According to Ewens and Farre-Mensa this can be achieved through policies that promote transparency and disclosure, as well as through measures to protect investors from fraud and other forms of misconduct. (Ewens and Farre-Mensa, 2021)

Private equity firms are subject to a range of regulations and policies in both the US and Europe. While there are similarities between the two regions, there are also differences in the specific rules and requirements that govern private equity activity.

In the US, private equity firms are primarily regulated at the state level, with each state having its own set of rules and requirements. However, the Securities and Exchange Commission (SEC) also plays a role in regulating certain aspects of private equity activity, such as disclosure requirements and anti-fraud provisions. Private equity firms

that manage more than \$150 million in assets are required to register with the SEC as investment advisers and are subject to certain reporting and compliance requirements (SEC, "Private Equity Fund Advisers").

In Europe, private equity firms are subject to a range of regulatory requirements under the Alternative Investment Fund Managers Directive (AIFMD), which was implemented in 2013. The AIFMD sets out rules for the authorization, operation, and transparency of alternative investment fund managers (AIFMs), which includes private equity firms. AIFMs are required to register with the relevant regulatory authorities in each member state where they operate and are subject to reporting, disclosure, and risk management requirements (European Securities and Markets Authority, "AIFMD").

There are also differences in the tax treatment of private equity activity in the US and Europe. In the US, private equity firms are generally subject to the same tax rules as other investment funds, with profits taxed at the capital gains rate. However, there have been debates over the use of certain tax strategies by private equity firms, such as carried interest, which allows fund managers to receive a share of profits as a performance fee taxed at the lower capital gains rate rather than as ordinary income (Tax Policy Center, "Carried Interest").

In Europe, there is a range of different tax regimes that apply to private equity activity depending on the jurisdiction. Some countries, such as Ireland and Luxembourg, have established tax regimes that are favorable to private equity funds, while others, such as France and Germany, have implemented rules to limit the use of certain tax strategies (Financial Times, "Private equity faces tax crackdown in Europe").

Overall, the regulatory and policy landscape for private equity firms in the US and Europe is complex and constantly evolving. It's important for private equity firms and their investors to stay up-to-date on the latest rules and requirements and to work closely with legal and tax advisers to ensure compliance.

In addition to regulatory requirements, there are also policy debates surrounding the role of private equity in the economy and society in both the US and Europe.

In the US, there has been ongoing debate over the impact of private equity on workers, communities, and the broader economy. Some critics argue that private equity firms prioritize short-term financial gains over long-term investments and that they engage in

practices such as excessive leverage that can increase risk and instability. Others argue that private equity firms can play a positive role in driving innovation, creating jobs, and promoting economic growth. Recently, there have been proposals to increase regulation of private equity firms, such as by requiring greater transparency and disclosure or by limiting the use of certain tax strategies (Harvard Business Review, "The Private Equity Debate").

In Europe, there has also been debate over the role of private equity in the economy and society, as well as concern over the potential risks posed by the industry. Some have called for greater regulation of private equity firms to protect workers and communities and to ensure that they contribute to sustainable economic growth. Others have argued that private equity can play a positive role in financing innovation and promoting entrepreneurship. Recently, there have been proposals to increase transparency and disclosure requirements for private equity firms, as well as to strengthen rules around leverage and risk management (European Parliament, "Private Equity and Venture Capital").

Overall, the regulatory and policy landscape for private equity firms is complex and constantly evolving. It's important for investors and policymakers to carefully consider the potential benefits and risks of private equity when making investment decisions or crafting regulations, and to work towards a balanced and responsible approach to private equity activity.

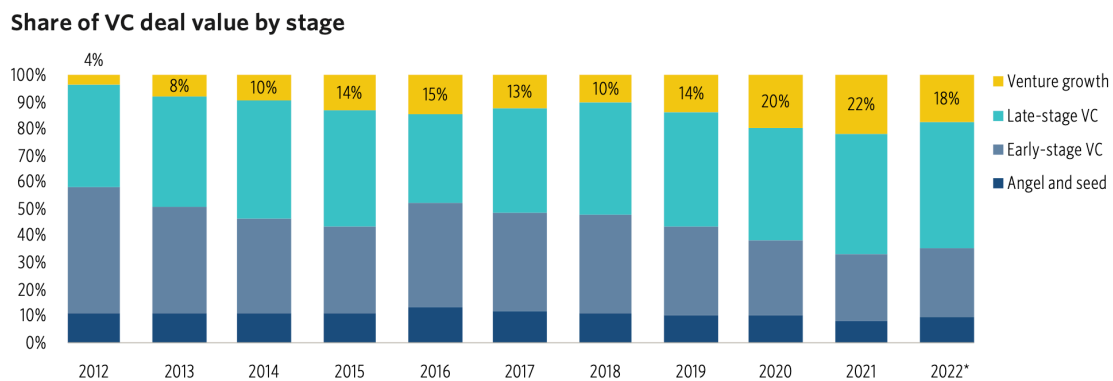
It's also worth noting that there are differences in the way that private equity is perceived and practiced in the US and Europe. For example, private equity is more established in the US and is often seen as a mainstream investment option, while in Europe it is still viewed by some as a more niche and alternative investment. Additionally, there are differences in the size and composition of the private equity markets in the two regions, with the US market being larger and more focused on buyout activity, while the European market is more diversified and includes a greater focus on venture capital and growth equity (PitchBook.com, "2019 Annual US PE Breakdown"; Invest Europe, "Private Equity in Europe Report 2020").

Another important consideration is the impact of Brexit on the private equity industry. The UK has historically been a major hub for private equity activity in Europe, and its



departure from the EU has raised questions about the future of the industry in the UK and Europe more broadly. Some have predicted that Brexit could lead to a shift in private equity activity from London to other European financial centers, while others argue that the UK will remain an attractive destination for private equity investment due to its strong legal and regulatory framework (Financial Times, "Brexit and Private Equity").

## 1.7 PE Trends



**Figure 1.7.1** Source: [pitchbook.com](https://pitchbook.com), 2023 Eu Private Outlook

Private equity has become increasingly popular as an alternative investment for institutional investors and high-net-worth individuals seeking higher returns than traditional asset classes. In recent years, the private equity market has experienced significant growth and evolution, with new trends emerging that are shaping the industry.

According to data from PitchBook.com, one of the leading providers of private market data, the private equity market has been characterized by several key trends in recent years.

- **Record deal activity:** The private equity industry has seen record deal activity in recent years, with the number of deals increasing steadily since the financial crisis of 2008. In 2020, despite the disruption caused by the COVID-19 pandemic, the private equity industry saw a total of 5,795 deals, the second-highest number of deals on record.

- Larger deal sizes: In addition to increased deal activity, the private equity market has seen larger deal sizes in recent years. The average deal size in 2020 was \$392 million, up from \$316 million in 2019. The trend towards larger deal sizes reflects the increased competition and consolidation in the industry, as well as the availability of larger pools of capital.
- Focus on technology: One of the most significant trends in private equity in recent years has been the increasing focus on technology investments. The technology industry accounted for 23% of all private equity deals in 2020, up from 18% in 2019. The trend towards technology investments reflects the rapid growth and disruption in the technology sector, as well as the potential for high returns.
- Rise of ESG investing: Environmental, social, and governance (ESG) investing has become an increasingly important consideration for private equity investors. The number of ESG-focused private equity funds has grown significantly in recent years, with 63 funds launched in 2020, up from 24 in 2019. The trend towards ESG investing reflects the growing demand for socially responsible investments and the increasing recognition of the importance of sustainability in the private equity industry.
- Growing interest in SPACs: Special purpose acquisition companies (SPACs) have become a popular investment vehicle in the private equity industry in recent years. The number of SPACs launched in 2020 reached a record high of 248, up from 59 in 2019. The trend towards SPACs reflects the increasing popularity of alternative investment vehicles and the potential for high returns in the current market environment. (PitchBook.com)

To summarize, the private equity industry has experienced significant growth and evolution in recent years, driven by record deal activity, larger deal sizes, a focus on technology investments, the rise of ESG investing, and growing interest in SPACs. These trends are likely to continue shaping the private equity market in the years to come, as investors seek higher returns and new opportunities in the rapidly changing global economy which are characterized by:

- Increased competition: The private equity industry has become increasingly competitive in recent years, with more investors entering the market and more funds

being raised. According to PitchBook.com, the number of private equity firms globally has grown by 77% since 2010, while the amount of capital raised has increased by 145%.

- Shift towards direct investments: Another trend in private equity is the shift towards direct investments, as investors seek to cut costs and capture more of the value created by their investments. The number of direct investments by private equity firms has increased by 32% since 2015, while the number of traditional fund investments has decreased.
- Diversification into new geographies: Private equity firms are also diversifying into new geographies, with a growing focus on emerging markets. The proportion of private equity deals in emerging markets has increased from 9% in 2010 to 16% in 2020, reflecting the potential for high growth and returns in these markets.
- Focus on operational improvements: Private equity firms are increasingly focused on operational improvements and value creation in their portfolio companies, as they seek to generate higher returns for their investors. This trend is reflected in the growing number of operational improvement professionals being hired by private equity firms, as well as the increasing use of data analytics and technology to drive value creation.
- Growing interest in secondary markets: Finally, there is a growing interest in secondary markets among private equity investors, as they seek to buy and sell existing private equity investments. According to PitchBook.com, the secondary market for private equity has grown significantly in recent years, with more investors seeking to liquidate their positions or acquire existing investments at a discount.

## PE buyout count (excluding add-ons)

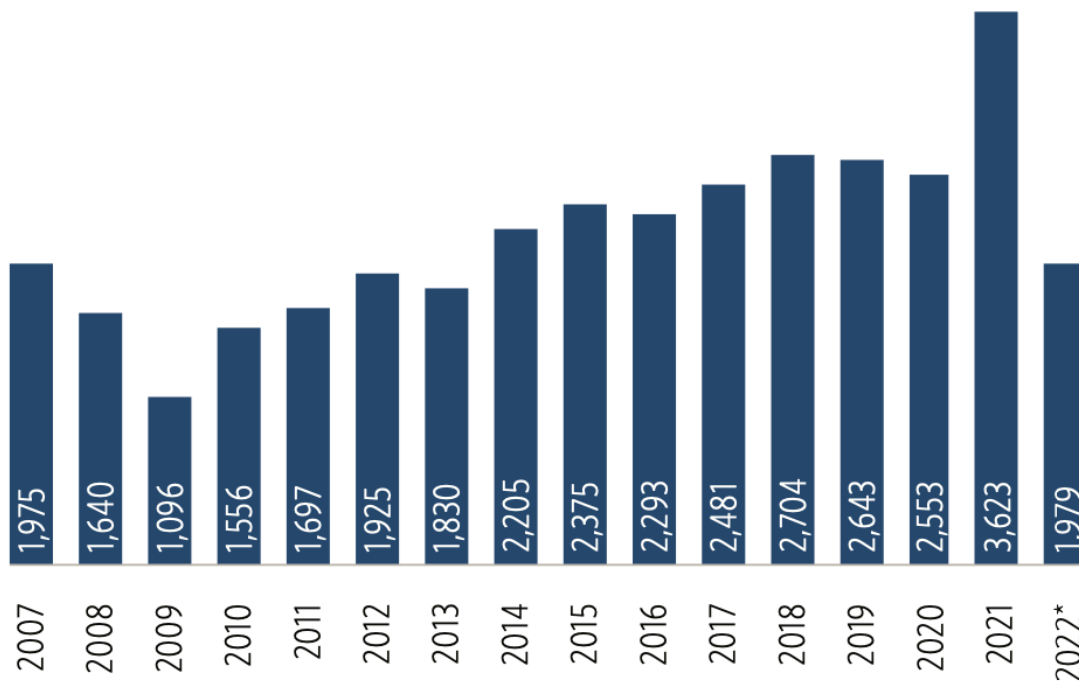


Figure 1.7.2 Source: [pitchbook.com](https://pitchbook.com), 2023 Private Outlook

These trends reflect the changing dynamics of the private equity industry, as investors seek new opportunities and strategies to generate higher returns in a competitive and rapidly evolving market. The private equity industry is likely to continue evolving in the years to come, as investors and firms adapt to new challenges and opportunities in the global economy via the following means:

- **Increase in fundraising:** Private equity firms are raising more capital than ever before, as institutional investors continue to allocate more funds to alternative investments. According to PitchBook.com, global private equity fundraising reached a record high of \$748 billion in 2020, up from \$621 billion in 2019.
- **Rise of co-investing:** Co-investing has become increasingly popular among private equity investors, as they seek to reduce fees and gain greater control over their investments. The proportion of private equity deals with co-investors has increased from 16% in 2010 to 26% in 2020.
- **Focus on healthcare:** The healthcare sector has become an increasingly attractive target for private equity investors, as the aging population and rising healthcare costs

create new opportunities for investment. The healthcare sector accounted for 16% of all private equity deals in 2020, up from 12% in 2019.

- Growing interest in impact investing: Impact investing has become an increasingly important consideration for private equity investors, as they seek to generate positive social and environmental outcomes alongside financial returns. The number of impact-focused private equity funds has grown significantly in recent years, with 47 funds launched in 2020, up from 13 in 2019.
- Use of data analytics and technology: Private equity firms are increasingly using data analytics and technology to drive value creation and improve operational efficiency in their portfolio companies. The use of data analytics and technology in private equity has grown significantly in recent years, with more firms hiring data scientists and technology experts to support their investment strategies. ([PitchBook.com](https://pitchbook.com))

### VC deal value (€B) by sector

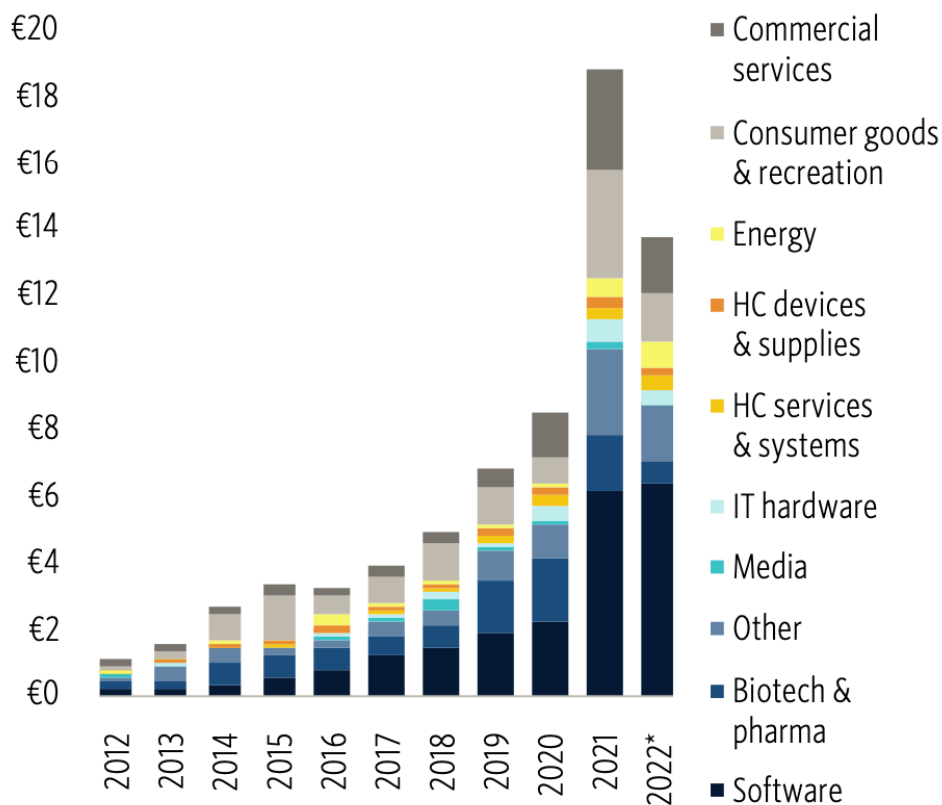
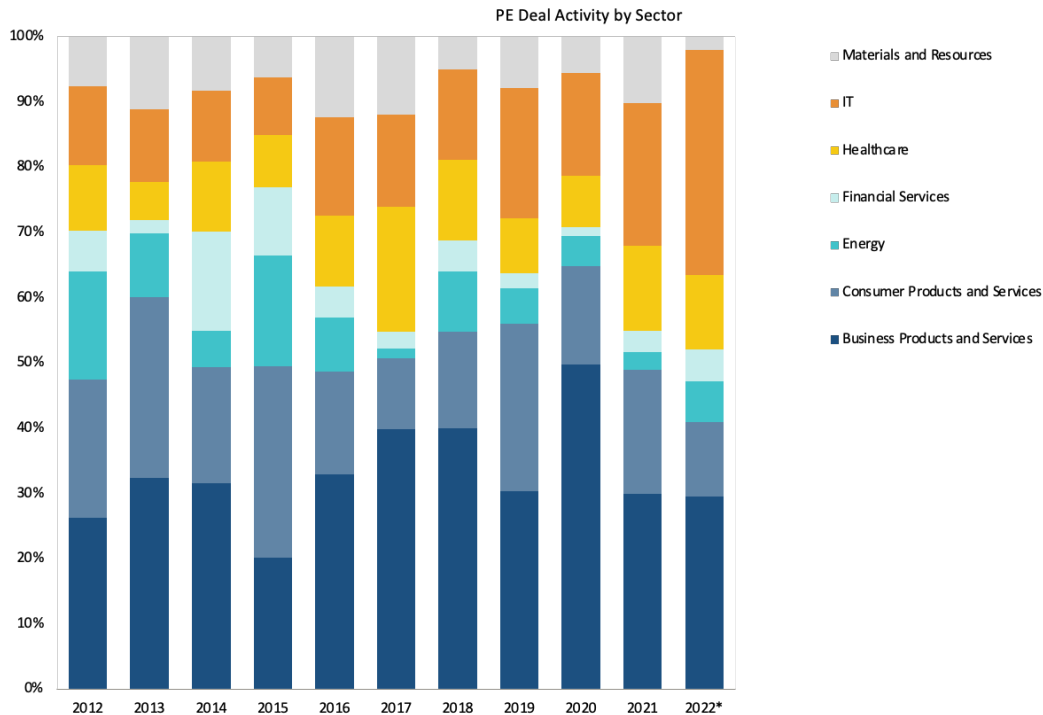


Figure 1.7.3 Source: [pitchbook.com](https://pitchbook.com), 2022 PE Capital Breakdown



**Figure 1.7.4** Source: [PitchBook.com](https://pitchbook.com), 2022 Private Capital Breakdown

Private equity trends have varied across industries over the years, with some sectors experiencing more activity than others.

- **Technology:** Private equity investment in technology has grown significantly in recent years, as investors seek to capitalize on the rapid pace of innovation and digital transformation. According to a report by PitchBook, a data provider for the private equity and venture capital industries, private equity investment in the technology sector reached a record high of \$122 billion in 2020 (PitchBook, "2020 Annual US PE Breakdown"). Additionally, a report by PwC, a global professional services firm, found that technology was the most active sector for private equity deals in Europe in 2020, accounting for 21% of all deals (PwC, "Private Equity Deals Insights 2020").
- **Healthcare:** Private equity investment in the healthcare sector has also been on the rise in recent years, as investors seek to capitalize on demographic trends and advances in medical technology. Private equity investment in healthcare reached a record high of \$80 billion in 2019 (Bain & Company, "Global Healthcare Private Equity and Corporate M&A Report 2020"). The report also noted that healthcare was

the second most active sector for private equity deals in 2019, accounting for 16% of all deals.

- **Consumer goods:** Private equity investment in the consumer goods sector has been relatively stable in recent years, with investors focusing on companies that offer strong brand recognition and growth potential. Private equity investment in the consumer products and retail sector totaled \$35 billion in 2020 (EY, "Global Private Equity Divestment Study 2021"). The report also noted that consumer products and retail was the fourth most active sector for private equity deals in 2020, accounting for 11% of all deals.
- **Energy:** Private equity investment in the energy sector has fluctuated in recent years, with activity influenced by factors such as commodity prices, regulatory changes, and environmental concerns. According to a report by PitchBook, private equity investment in the energy sector reached a high of \$45 billion in 2014, but has declined in the years since (PitchBook.com, "2019 Annual US PE Breakdown"). However, the report also noted that private equity investment in renewable energy has been on the rise in recent years, as investors seek to capitalize on the growing demand for clean energy.
- **Real Estate:** Private equity investment in the real estate sector has been increasing in recent years, particularly in the US. According to a report by Preqin, private equity real estate fundraising reached a record high of \$138 billion in 2019 (Preqin, "Alternative Assets in Europe Report 2020"). Additionally, a report by EY found that real estate was the second most active sector for private equity deals in Europe in 2020, accounting for 18% of all deals (EY, "Global Private Equity Divestment Study 2021").
- **Financial Services:** Private equity investment in the financial services sector has also been on the rise in recent years, particularly in fintech and insurance. Private equity investment in the financial services sector reached a record high of \$88 billion in 2019. The report also noted that fintech was the most active sub-sector for private equity deals in 2019, accounting for 22% of all deals (PitchBook.com, "2019 Annual US PE Breakdown").

- Industrials: Private equity investment in the industrials sector has been relatively stable in recent years, with investors focusing on companies that offer strong growth potential and operational improvements. Private equity investment in the industrials sector totaled \$63 billion in 2019 (Bain & Company, "Global Private Equity Report 2020"). The report also noted that industrials was the third most active sector for private equity deals in 2019, accounting for 15% of all deals.

### **1.8 Private Equity and the creation of value**

Steven J. Davis in 2016 explored the role of private equity firms in creating value for the companies they invest in. PE firms have been able to generate high returns by leveraging their expertise in operations, finance, and strategy to identify and invest in undervalued companies with potential for growth; one way of doing so is through operational improvements, such as streamlining processes, reducing costs, and optimizing supply chains. Private equity firms also often bring in experienced executives to serve as board members or consultants, providing strategic guidance and industry knowledge.

Another way that private equity firms create value is through financial engineering, which involves using financial instruments such as debt and equity to optimize the capital structure of a company. This can help to reduce the cost of capital, increase cash flows, and improve the overall financial health of the company.

His discussion continues with the challenges and criticisms that private equity firms face. One major criticism is that they focus too heavily on short-term financial gains at the expense of long-term investments in research and development or employee training. Additionally, some argue that private equity firms use excessive leverage and engage in financial engineering that can lead to increased risk and instability.

He concludes that private equity can play a valuable role in the economy by investing in and improving the operations of companies that may not have access to traditional public markets. However, it is important for private equity firms to balance short-term financial gains with long-term strategic goals and to be mindful of the potential risks and criticisms associated with their business model. (Davis, 2016)



As already mentioned Private equity firms create value by applying their expertise in operations, finance, and strategy to improve the performance of the companies they invest in. Moving further into the detail:

- Operational improvements: Private equity firms often focus on improving the efficiency and effectiveness of their portfolio companies. They may streamline processes, reduce costs, and optimize supply chains to increase productivity and profitability. According to a study by the Boston Consulting Group, operational improvements were the most common value creation levers used by private equity firms between 2010 and 2015 (Boston Consulting Group, "Global Private Equity Report 2016").
- Financial engineering: Private equity firms may also use financial instruments such as debt and equity to optimize the capital structure of their portfolio companies. By reducing the cost of capital and increasing cash flows, they can improve the overall financial health of the company. According to a report by Preqin, a data provider for the alternative asset industry, private equity firms have increasingly used debt financing to fund their investments in recent years (Preqin, "Private Equity Debt: Market Overview").
- Strategic guidance: Private equity firms often bring in experienced executives to serve as board members or consultants, providing strategic guidance and industry knowledge to their portfolio companies. This can help to identify new growth opportunities and improve long-term strategic planning. According to a survey by EY, a global professional services firm, 68% of executives at private equity-owned companies reported receiving strategic support from their private equity investors (EY, "Global Private Equity Survey 2019").

The performance of private equity firms can vary depending on a range of factors, such as the quality of their investments, their management of portfolio companies, and the economic environment. However, studies have generally found that private equity has outperformed public markets over the long term. For example, a report by Cambridge Associates, a global investment firm, found that private equity funds outperformed the S&P 500 index by an average of 3.1% per year over the 25-year period ending in 2019 (Cambridge Associates, "US Private Equity Index and Selected Benchmark Statistics").

It's worth noting, however, that the performance of private equity can be difficult to measure and there is ongoing debate about the extent to which private equity firms create value for their investors and society as a whole. Some critics argue that private equity firms prioritize short-term financial gains over long-term investments and that they engage in practices such as excessive leverage that can increase risk and instability. It's important for investors and policymakers to carefully consider the potential benefits and risks of private equity when making investment decisions or crafting regulations.

Another way that private equity firms create value is through buyouts, which involve taking a public company private and restructuring it to improve its performance. This can involve selling off underperforming assets, reducing costs, and improving profitability. According to a report by Bain & Company, a global management consulting firm, buyouts accounted for 68% of private equity deal value in the US in 2019 (Bain & Company, "Global Private Equity Report 2020").

Private equity firms also often use their networks and industry expertise to identify and invest in companies with high growth potential. This can involve identifying emerging trends and technologies, as well as leveraging their relationships with industry experts and executives to evaluate investment opportunities. For example, a study by McKinsey & Company, a global management consulting firm, found that private equity firms were more likely than corporate acquirers to invest in companies that were considered high-growth or high-risk (McKinsey & Company, "Private Markets Come of Age").

In terms of performance, private equity firms have generally outperformed public markets over the long term, although there is considerable variation among firms and investments. According to a report by the Private Equity Growth Capital Council, a trade association, private equity had an average annualized return of 10.7% between 2003 and 2013, compared to 7.4% for the S&P 500 index (Private Equity Growth Capital Council, "Private Equity: Top Facts").

However, it's important to note that private equity investments are typically less liquid and more risky than investments in public markets, and there is no guarantee of performance. Additionally, some critics have raised concerns about the impact of private equity on workers, communities, and the broader economy. For example, some argue that private equity firms prioritize short-term financial gains over long-term investments

in research and development or employee training, which can limit the growth potential of portfolio companies and lead to job losses. It's important for investors and policymakers to carefully consider the potential benefits and risks of private equity when making investment decisions or crafting regulations.

Private equity firms may also create value through governance and management improvements. By bringing in experienced executives and board members, private equity firms can provide expertise and guidance that may not have been available to the company before. This can involve implementing best practices in areas such as corporate governance, risk management, and talent management. Additionally, private equity firms may use their influence as shareholders to advocate for changes in the company's strategy or operations.

Another way that private equity firms create value is through add-on acquisitions, which involve acquiring complementary companies to expand the portfolio company's offerings or market reach. This can help to increase revenue and profitability and can also provide cost savings through synergies. According to a report by PitchBook, a data provider for the private equity and venture capital industries, add-on acquisitions accounted for 67% of all private equity buyouts in the US in 2019 (PitchBook.com, "2019 Annual US PE Breakdown").

In terms of performance, private equity has generally outperformed public markets over the long term. According to a report by the American Investment Council, a trade association for the private equity industry, private equity had an average annual return of 13.3% between 2006 and 2016, compared to 7.7% for the S&P 500 index (American Investment Council, "Private Equity at Work").

However, it's important to note that the performance of private equity firms can vary widely depending on factors such as the quality of their investments, their management of portfolio companies, and the economic environment. Additionally, private equity investments are typically less liquid and more risky than investments in public markets, and there is no guarantee of performance. Critics have also raised concerns about the impact of private equity on workers, communities, and the broader economy, arguing that private equity firms prioritize short-term financial gains over long-term investments and that they engage in practices such as excessive leverage that can increase risk and

instability. It's important for investors and policymakers to carefully consider the potential benefits and risks of private equity when making investment decisions or crafting regulations.

Private equity firms may also create value through innovation and technology. By leveraging their expertise and networks, private equity firms can identify emerging trends and technologies and invest in companies that are at the forefront of innovation. This can help to drive growth and profitability and can also position the portfolio company for long-term success. Private equity firms may also use their industry expertise to provide strategic guidance on technology investments and to help companies navigate the rapidly changing landscape of digital disruption.

Another way that private equity firms create value is through environmental, social, and governance (ESG) initiatives. Private equity firms may incorporate ESG considerations into their investment decisions and may work with portfolio companies to improve their ESG performance. This can involve initiatives such as reducing greenhouse gas emissions, improving labor practices, and promoting diversity and inclusion. According to a report by PwC, a global professional services firm, 80% of private equity firms surveyed in 2018 had a formal ESG policy in place (PwC, "Private Equity Responsible Investment Survey 2018").

In terms of performance, private equity has generally outperformed public markets over the long term. According to a report by Bain & Company, private equity funds had an average annual return of 14.5% between 2009 and 2019, compared to 11.5% for the S&P 500 index (Bain & Company, "Global Private Equity Report 2020").

However, it's important to note that private equity investments are typically less liquid and more risky than investments in public markets, and there is no guarantee of performance. Additionally, critics have raised concerns about the impact of private equity on workers, communities, and the broader economy. Some argue that private equity firms prioritize short-term financial gains over long-term investments in research and development or employee training, which can limit the growth potential of portfolio companies and lead to job losses. It's important for investors and policymakers to carefully consider the potential benefits and risks of private equity when making investment decisions or crafting regulations.

Value creation can also be obtained through international expansion. By leveraging their global networks and expertise, private equity firms can identify opportunities to invest in companies in emerging markets or to help portfolio companies expand into new geographies. This can help to diversify revenue streams and increase profitability, as well as provide access to new markets and customers. According to a report by EY, a global professional services firm, cross-border deals accounted for 46% of private equity activity in 2020 (EY, "Global Private Equity Divestment Study 2021").

Another way that private equity firms create value is through digital transformation. By investing in technology and digital capabilities, private equity firms can help portfolio companies adapt to the changing business landscape and position themselves for long-term success. This can involve initiatives such as improving online customer experiences, leveraging data analytics to drive business insights, and developing new digital products and services. According to a survey by McKinsey & Company, a global management consulting firm, 85% of private equity executives surveyed in 2019 said that digital transformation was a top priority for their portfolio companies (McKinsey&Company, "How Private Equity Firms Can Unlock Value from Digital Transformation").

In terms of performance, private equity has generally outperformed public markets over the long term. According to a report by the Boston Consulting Group, private equity funds had an average annual return of 13% between 2010 and 2019, compared to 9% for the MSCI World index (Boston Consulting Group, "Global Private Equity Report 2020").

## **1.9 Valuation models**

Private equity firms use a range of valuation models to determine the value of their portfolio companies. Here are some examples of valuation models commonly used by private equity firms, along with brief explanations:

- **Discounted Cash Flow (DCF) Analysis:** This model estimates the future cash flows of a company and discounts them back to their present value using a discount rate. DCF analysis is commonly used by private equity firms to value mature companies with predictable cash flows.

- **Comparable Company Analysis (CCA):** This model involves comparing the financial metrics of a company to those of similar publicly traded companies. Private equity firms may use CCA to value companies that are in the same industry or have similar business models.
- **Precedent Transaction Analysis:** This model involves analyzing the financial metrics of companies that have been involved in similar transactions, such as mergers or acquisitions. Private equity firms may use precedent transaction analysis to value their portfolio companies when they are considering a sale or acquisition.
- **Leveraged Buyout (LBO) Analysis:** This model involves analyzing the cash flows and debt capacity of a company to determine how much debt can be used to finance a potential acquisition. Private equity firms commonly use LBO analysis to evaluate potential acquisition targets.
- **Replacement Cost Analysis:** This model estimates the cost of replacing a company's assets or operations, taking into account factors such as inflation and technological advancements. Private equity firms may use replacement cost analysis to value companies in industries such as manufacturing or infrastructure.
- **Sum-of-the-Parts Analysis:** This model involves valuing each individual business unit or asset of a company separately, then adding them together to determine the overall value of the company. Private equity firms may use sum-of-the-parts analysis to value companies that have multiple business units or assets with different growth prospects.

Discounted Cash Flow (DCF) analysis is a valuation method commonly used by private equity firms to estimate the present value of a company's future cash flows. This method involves projecting a company's expected cash flows over a given period of time and discounting them back to their present value using a discount rate.

The basic steps involved in a DCF analysis are as follows:

- **Forecast Future Cash Flows:** The first step in a DCF analysis is to forecast the future cash flows of the company being valued. This involves estimating the amount of cash the company is expected to generate from its operations, investments, and financing activities over a specified period of time, typically 3-5 years. These cash flows can be

estimated based on historical financial performance, market trends, and other relevant factors.

- **Determine the Terminal Value:** After forecasting the cash flows for the initial period, a terminal value must be estimated to capture the cash flows beyond the initial projection period. The terminal value represents the present value of all future cash flows beyond the initial projection period, and it is typically estimated using a multiple of the company's earnings, such as EBITDA.
- **Calculate the Discount Rate:** The next step is to determine the appropriate discount rate to use in the analysis. The discount rate represents the rate of return required by investors to compensate for the risk associated with the investment. This rate is typically based on the company's weighted average cost of capital (WACC), which takes into account the cost of debt and equity financing.
- **Discount Future Cash Flows:** Once the cash flows have been forecast and the discount rate has been determined, the next step is to discount the future cash flows back to their present value. This involves dividing each cash flow by the appropriate discount factor, which is calculated by raising the discount rate to the power of the number of years from the present.
- **Sum the Discounted Cash Flows:** The final step is to sum the present value of the forecasted cash flows and the terminal value to arrive at the estimated enterprise value of the company. This enterprise value represents the total value of the company's operations and assets.

DCF analysis is a widely used valuation method in the private equity industry because it provides a comprehensive view of a company's future cash flows and value. However, it is also subject to a number of limitations, such as the difficulty of accurately forecasting future cash flows and the sensitivity of the valuation to changes in the discount rate. Therefore, it is important for private equity firms to use multiple valuation methods and to carefully consider the assumptions and inputs used in their DCF analysis.

DCF analysis is a useful tool to evaluate potential investments, as well as to monitor and manage existing portfolio companies. By estimating the present value of a company's future cash flows, private equity firms can determine whether a potential investment is likely to generate sufficient returns to meet their investment criteria.

DCF analysis can also be used to identify areas where a company's performance can be improved, such as by increasing revenue growth, reducing costs, or improving operational efficiency. By analyzing the various components of a company's cash flows, private equity firms can identify specific areas where they can add value and work with management to implement changes.

One of the key advantages of DCF analysis is that it provides a forward-looking view of a company's value, rather than simply relying on historical financial performance or industry benchmarks. This allows private equity firms to take into account the unique characteristics of a company and to make more informed investment decisions.

However, DCF analysis is also subject to a number of limitations and potential sources of error. These include the difficulty of accurately forecasting future cash flows, the sensitivity of the valuation to changes in the discount rate or other assumptions, and the potential for bias or errors in the underlying data.

To mitigate these limitations, private equity firms often use multiple valuation methods and conduct extensive due diligence on potential investments. This includes analyzing a company's financial statements, market trends, competitive landscape, and other relevant factors to gain a complete understanding of the business and its potential.

Moving Further, The Comparable Company Analysis (CCA) is a valuation method commonly used to estimate the value of a company based on the financial performance of similar publicly traded companies. This method involves analyzing the financial metrics of a company in relation to those of comparable companies in the same industry or with similar business models.

The basic steps involved in a CCA are as follows:

- **Identify Comparable Companies:** The first step in a CCA is to identify a group of comparable companies that are publicly traded and have similar business models and characteristics to the company being valued. This can involve analyzing factors such as industry, size, growth potential, and financial performance.
- **Calculate Key Financial Metrics:** Once a group of comparable companies has been identified, the next step is to calculate key financial metrics such as price-to-earnings (P/E) ratio, enterprise value-to-EBITDA (EV/EBITDA) ratio, and price-to-sales (P/S)



ratio for each company. These metrics are then used to determine the relative valuation of each company.

- **Determine Valuation Multiple:** After calculating the financial metrics for the comparable companies, the next step is to determine an appropriate valuation multiple to apply to the company being valued. This can involve analyzing factors such as the company's growth potential, risk profile, and financial performance relative to the comparable companies.
- **Apply Valuation Multiple:** Once the appropriate valuation multiple has been determined, it is applied to the financial metrics of the company being valued to estimate its enterprise value. This involves multiplying the company's financial metric (such as EBITDA) by the valuation multiple.
- **Adjust Valuation:** Finally, adjustments may be made to the estimated enterprise value to account for factors that may not be captured by the CCA, such as differences in growth potential or risk profile between the company being valued and the comparable companies. ([investopedia.com](http://investopedia.com), [wallstreetprep.com](http://wallstreetprep.com))

CCAs are commonly used by private equity firms to determine the relative value of a company compared to its peers in the same industry. This method provides a useful benchmark for evaluating the potential value of a company and can help private equity firms to make more informed investment decisions.

However, there are also limitations to CCA, including the potential for the comparable companies to have different risk profiles, growth prospects, or other characteristics that may not be fully captured by the analysis. Therefore, it is important for private equity firms to use multiple valuation methods and to carefully consider the assumptions and inputs used in their CCA.

One advantage of CCA is that it provides a relative valuation of a company, rather than an absolute valuation based on a specific formula or set of assumptions. This allows private equity firms to take into account the unique characteristics of a company and its industry and to make more informed investment decisions based on market trends and industry benchmarks.

However, CCA is also subject to a number of limitations and potential sources of error. These include the difficulty of identifying truly comparable companies, the potential for

differences in accounting methods or financial reporting between companies, and the potential for biases or errors in the underlying data.

To mitigate these limitations, private equity firms often use multiple valuation methods and conduct extensive due diligence on potential investments. This includes analyzing a company's financial statements, market trends, competitive landscape, and other relevant factors to gain a complete understanding of the business and its potential.

Going on to the next models, Precedent Transaction Analysis is a valuation method commonly used by private equity firms to estimate the value of a company based on the financial metrics of similar companies that have been involved in similar transactions, such as mergers or acquisitions. This method involves analyzing the transaction multiples of comparable companies to estimate the enterprise value of the company being valued.

The basic steps involved in a Precedent Transaction Analysis are as follows:

- **Identify Comparable Transactions:** The first step in a Precedent Transaction Analysis is to identify a group of comparable companies that have been involved in similar transactions, such as mergers or acquisitions. This can involve analyzing factors such as industry, size, and financial performance.
- **Calculate Transaction Multiples:** Once a group of comparable transactions has been identified, the next step is to calculate the transaction multiples for each transaction. These multiples can include metrics such as enterprise value-to-EBITDA (EV/EBITDA) ratio, price-to-earnings (P/E) ratio, and price-to-sales (P/S) ratio.
- **Determine Valuation Multiple:** After calculating the transaction multiples for the comparable transactions, the next step is to determine an appropriate valuation multiple to apply to the company being valued. This can involve analyzing factors such as the company's growth potential, risk profile, and financial performance relative to the comparable transactions.
- **Apply Valuation Multiple:** Once the appropriate valuation multiple has been determined, it is applied to the financial metrics of the company being valued to estimate its enterprise value. This involves multiplying the company's financial metric (such as EBITDA) by the valuation multiple.

- **Adjust Valuation:** Finally, adjustments may be made to the estimated enterprise value to account for factors that may not be fully captured by the Precedent Transaction Analysis, such as differences in growth potential or risk profile between the company being valued and the comparable transactions. ([investopedia.com](http://investopedia.com), [wallstreetoasis.com](http://wallstreetoasis.com))

Precedent Transaction Analysis is commonly used by private equity firms to determine the relative value of a company compared to its peers in the same industry. This method provides a useful benchmark for evaluating the potential value of a company and can help private equity firms to make more informed investment decisions.

However, there are also limitations to Precedent Transaction Analysis, including the potential for the comparable transactions to have different risk profiles, growth prospects, or other characteristics that may not be fully captured by the analysis. Therefore, it is important for private equity firms to use multiple valuation methods and to carefully consider the assumptions and inputs used in their analysis.

Overall, Precedent Transaction Analysis is a valuable tool for private equity firms to evaluate potential investments and to make informed investment decisions. However, it is important to use this method in conjunction with other valuation methods and to carefully consider the assumptions and inputs used in the analysis to ensure that the resulting valuation accurately reflects the underlying value of the company.

Leveraged Buyout (LBO) Analysis is a valuation method commonly used by private equity firms to evaluate potential acquisitions of companies. This method involves analyzing the cash flows and debt capacity of a company to determine how much debt can be used to finance a potential acquisition.

The basic steps involved in an LBO Analysis are as follows:

- **Estimate Future Cash Flows:** The first step in an LBO Analysis is to estimate the future cash flows of the company being acquired. This involves projecting the company's revenue, expenses, and capital expenditures over a period of several years.
- **Determine Debt Capacity:** Once the future cash flows have been estimated, the next step is to determine how much debt can be used to finance the acquisition. This involves analyzing the company's existing debt, its ability to generate cash flow to service the debt, and the availability of financing in the debt markets.

- Calculate Equity Contribution: After determining the amount of debt that can be used to finance the acquisition, the next step is to calculate the amount of equity that will be required to complete the transaction. This involves subtracting the amount of debt from the total purchase price of the company.
- Calculate Internal Rate of Return (IRR): Once the equity contribution has been determined, the next step is to calculate the expected internal rate of return (IRR) on the investment. This involves analyzing the cash flows and debt service requirements of the transaction to determine the expected return on the equity investment.
- Evaluate Sensitivity Analysis: Finally, sensitivity analysis may be conducted to evaluate the impact of changes in key assumptions, such as the purchase price, debt capacity, or future cash flows, on the expected IRR ([investopedia.com](http://investopedia.com), [wallstreetoasis.com](http://wallstreetoasis.com)).

LBO Analysis is a widely used valuation method in the private equity industry because it provides a comprehensive view of the potential returns and risks associated with an acquisition. However, it is also subject to a number of limitations, such as the difficulty of accurately forecasting future cash flows and the sensitivity of the valuation to changes in key assumptions. By analyzing the cash flows and debt capacity of a company, private equity firms can determine how much debt can be used to finance a potential acquisition and estimate the expected returns and risks associated with the investment.

One advantage of LBO Analysis is that it allows private equity firms to potentially increase the returns on their investment by using a higher level of debt financing than would be available in other types of financing structures. This can allow them to achieve a higher level of return on their investment, but it also increases the risk associated with the investment.

However, LBO Analysis is also subject to a number of limitations and potential sources of error. These include the difficulty of accurately forecasting future cash flows, the sensitivity of the valuation to changes in key assumptions, and the potential for bias or errors in the underlying data.

To mitigate these limitations, private equity firms often use multiple valuation methods and conduct extensive due diligence on potential acquisitions. This includes analyzing a

company's financial statements, market trends, competitive landscape, and other relevant factors to gain a complete understanding of the business and its potential.

Overall, LBO Analysis is a valuable tool for private equity firms to evaluate potential acquisitions and to make informed investment decisions. However, it is important to use this method in conjunction with other valuation methods and to carefully consider the assumptions and inputs used in the analysis to ensure that the resulting valuation accurately reflects the underlying value of the company.

Moving further, Replacement Cost Analysis is a valuation method commonly used by private equity firms to estimate the value of a company based on the cost of replacing its assets. This method involves analyzing the cost of replacing the company's assets, such as property, plants, and equipment, to determine the value of the company.

The basic steps involved in a Replacement Cost Analysis are as follows:

- **Estimate Replacement Cost:** The first step in a Replacement Cost Analysis is to estimate the cost of replacing the company's assets. This involves analyzing the current market value of similar assets, as well as the cost of labor and materials required to replace the assets.
- **Determine Depreciation:** Once the replacement cost has been estimated, the next step is to determine the amount of depreciation that has occurred since the assets were first purchased. This involves analyzing the age and condition of the assets, as well as any improvements or upgrades that have been made.
- **Calculate Net Asset Value:** After determining the amount of depreciation, the next step is to calculate the net asset value of the company. This involves subtracting the amount of depreciation from the estimated replacement cost of the assets.
- **Evaluate Other Factors:** Finally, other factors may be evaluated to determine the value of the company, such as the company's growth potential, market position, and financial performance relative to peers in the same industry ([investopedia.com](http://investopedia.com), [wallstreetprep.com](http://wallstreetprep.com)).

Replacement Cost Analysis is useful for private equity firms to estimate the value of a company based on its tangible assets. This method provides a useful benchmark for evaluating the potential value of a company and can help private equity firms to make

more informed investment decisions based on the cost of replacing the company's assets.

However, there are also limitations to Replacement Cost Analysis, including the potential for differences in market values or replacement costs between assets and the potential for undervaluing the company's intangible assets or future growth potential.

Therefore, it is important for private equity firms to use multiple valuation methods and to carefully consider the assumptions and inputs used in their Replacement Cost Analysis. This can include evaluating other factors such as the company's growth potential, market position, and financial performance relative to peers in the same industry.

Overall, Replacement Cost Analysis is a valuable tool for private equity firms to estimate the value of a company based on its tangible assets. However, it is important to use this method in conjunction with other valuation methods and to carefully consider the assumptions and inputs used in the analysis to ensure that the resulting valuation accurately reflects the underlying value of the company.

The last method involves the Sum-of-the-parts analysis which allows to estimate the value of a company based on the individual values of its different business segments or assets. This method involves analyzing each business segment or asset of the company separately and then adding up the individual values to arrive at an overall valuation for the company.

The basic steps involved in a Sum-of-the-parts analysis are as follows:

- **Identify Business Segments or Assets:** The first step in a Sum-of-the-parts analysis is to identify the different business segments or assets of the company. This can involve analyzing factors such as revenue, profitability, and growth potential.
- **Analyze Each Segment or Asset:** Once the different business segments or assets have been identified, the next step is to analyze each one separately. This can involve using different valuation methods, such as Discounted Cash Flow Analysis or Multiples Analysis, to estimate the value of each segment or asset.
- **Weight Each Segment or Asset:** After analyzing each segment or asset, the next step is to weight each one based on its relative importance to the overall value of the

company. This can involve analyzing factors such as revenue, profitability, and growth potential.

- Calculate Overall Valuation: Once the individual values of each segment or asset have been estimated and weighted, the next step is to add them up to arrive at an overall valuation for the company.
- Evaluate Sensitivity Analysis: Finally, sensitivity analysis may be conducted to evaluate the impact of changes in key assumptions, such as the estimated value of each segment or asset, on the overall valuation of the company (investopedia.com, wallstreetoasis.com).

Sum-of-the-parts analysis is useful for private equity firms to estimate the value of a company based on the individual values of its different business segments or assets. This method provides a useful benchmark for evaluating the potential value of a company and can help private equity firms to make more informed investment decisions based on the individual values of the company's different parts.

However, there are also limitations to Sum-of-the-parts analysis, including the potential for overlap or double-counting between business segments or assets, and the sensitivity of the valuation to changes in key assumptions.

The main advantage of Sum-of-the-parts analysis is that it allows private equity firms to estimate the value of a company based on its individual business segments or assets. This can be particularly useful when a company has hidden value in its individual parts that may not be reflected in its overall market value.

However, there are limitations such as the difficulty to accurately estimate the value of each business segment or asset. Additionally, there may be overlap or double-counting between business segments or assets, which can impact the accuracy of the analysis.

To mitigate these limitations, private equity firms often use multiple valuation methods and conduct extensive due diligence on potential investments. This includes analyzing a company's financial statements, market trends, competitive landscape, and other relevant factors to gain a complete understanding of the business and its potential.

Overall, Sum-of-the-parts analysis is a valuable tool for private equity firms to estimate the value of a company based on the individual values of its different business segments

or assets. However, it is important to use this method in conjunction with other valuation methods and to carefully consider the assumptions and inputs used in the analysis to ensure that the resulting valuation accurately reflects the underlying value of the company.

## 2. The Private Equity Market in Europe

### 2.1 Overview

PE-backed public listing exit activity

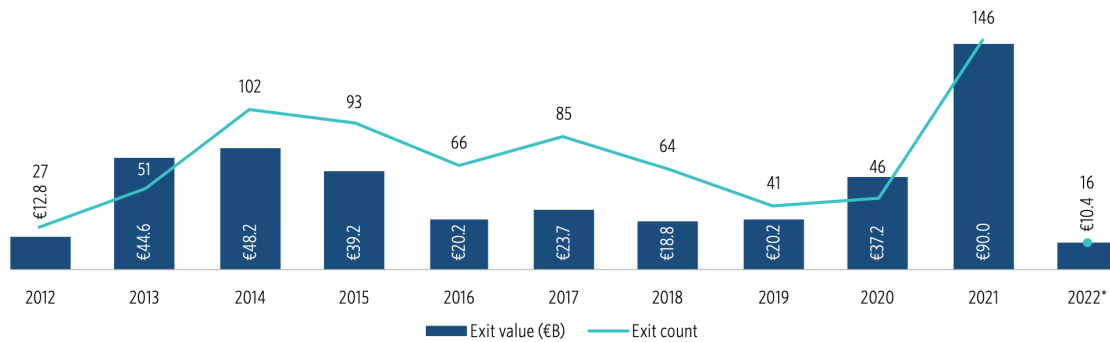


Figure 2.1.1 Source: [pitchbook.com](https://pitchbook.com), 2023 Eu Capital Breakdown

PE investments have been on the rise in Europe, with investors looking for alternative ways to invest their money. According to PitchBook's Annual European PE Breakdown, deal volume and value slightly increased in 2022, with assets under management reaching a record high of €873.9bn. However, fundraising was slow in 2022, with dry powder reaching a record high.

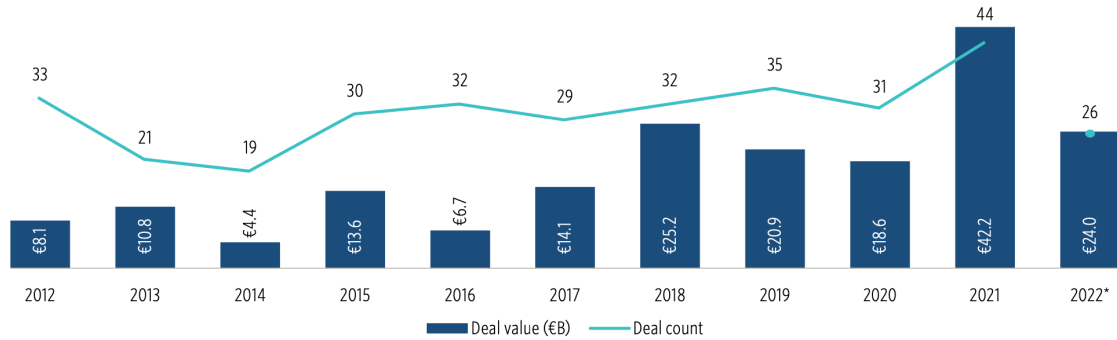
Despite the slow fundraising, European PE deal value surpassed 2021's H1 figures, showing year-over-year increases of 35% and 16%, respectively. Private equity dealmaking activity in Europe remained resilient in H1 2022 due to record amounts of dry powder and increased financing from private credit funds. The business products and services sector received the largest share of European PE capital in H1 with €124.2 billion invested.

In Q1 2023, European private equity deals decreased in value by 8.7% and count by 3.8% from Q4 2022 but were up YoY. PE firms chose acquisitions to enhance existing portfolio companies. Though total deal value was down, exit value remained unchanged



from the previous quarter despite fewer deals. B2B saw significant growth in the share of PE exit value, more than doubling Q4 2022's €14.6 billion to €29.5 billion. Companies prefer to remain private longer due to the market volatility for public listings.

**PE take-private deal activity**



**Figure 2.1.2** Source: [pitchbook.com](https://pitchbook.com), 2023 Eu Capital Breakdown

Furthermore, the PitchBook Annual European PE Breakdown reported that exits were at their lowest for nine years, but small deals made up for the lack of mega-deals in comparison to 2021. Additionally, the report stated that last year saw the highest proportion of add-ons for buyout deals to date at 67%.

Despite the decrease in exit activity, take-privates are expected to continue to be an important theme in 2022 . Fundraising activity is on track toward its lowest total fund count ever with just 40 vehicles closing in H1. However, the quarter saw €26.3 billion in capital raised, showing confidence in the private markets, with significant closes for funds, including Permira's eighth flagship fund. ([pitchbook.com](https://pitchbook.com), 2022 annual PE Breakdown)

In conclusion, European private equity investment has remained resilient in the face of market volatility. Although fundraising has been slow, deal volume and value have been on the rise, with dry powder at a record high. Furthermore, although exit activity has decreased, small deals and add-ons for buyout deals have made up for the lack of mega-deals. Furthermore, take-privates are expected to continue to be an important theme in 2022.

One interesting trend in the European private equity market is the dominance of the business products and services sector, which received the largest share of European PE capital in H1 2022. This was followed by the consumer sector, which saw a decline in deal value compared to H1 2021.

In Q1 2023, European private equity deals decreased in value and count from Q4 2022 but were up YoY. Exit activity was at its lowest for nine years, but small deals made up for the lack of mega-deals. Take-privates are expected to continue to be an important theme in 2022.

European private equity has seen a rise in deal volume and value, even though fundraising has been slow. As of H1 2022, assets under management reached a record high of €1.1 trillion.

The business products and services sector received the largest share of European PE capital in H1 2022, with 36% of total deal value. This was followed by the technology sector, which received 16% of total deal value.

Exit activity was at its lowest for nine years, but small deals made up for the lack of mega-deals. There were 2,020 exits in H1 2022, down from 2,648 in H1 2021. However, the number of exits valued at less than €50 million increased by 2.8% compared to H1 2021.

Take-privates are expected to continue to be an important theme in 2022. As of H1 2022, there were 47 take-private deals, compared to 23 in H1 2021.

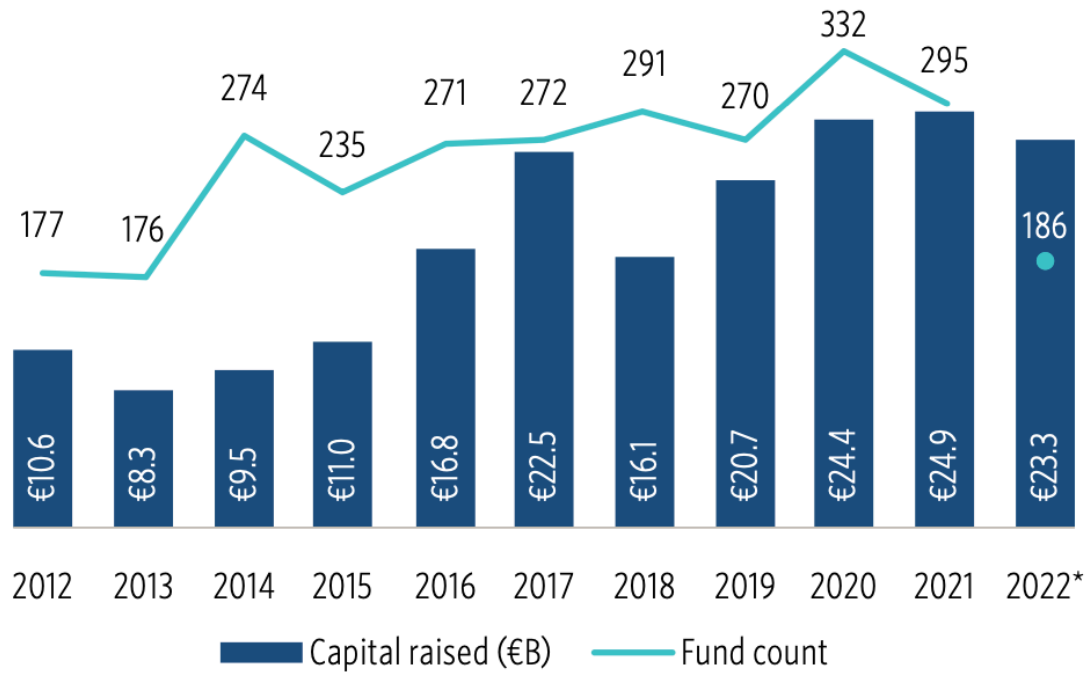
In Q1 2023, European private equity saw a drop in deal value from the previous quarter, but add-ons dominated, with private equity firms pursuing buy-and-build strategies to bolster their existing portfolio companies. Deal count was up year-over-year, and the majority of deals were in the B2B sector, while strategic buyers dominated the exit landscape. (Pitchbook.com)

However, the second half of 2022 saw a sharp decline in deals, exits, and fund-raising due to spiking interest rates, causing banks to withdraw from backing leveraged transactions, resulting in financing ebbing away. Despite this, buyout deal value, exits, and fund-raising still finished 2022 with impressive totals in historical terms. The uncertainty within the economic environment triggered by an unprecedented mix of macro forces continues to pose significant challenges for the private equity industry, but

those within the industry remain optimistic in the long-term about the appeal of private capital to investors .

European private equity is showing signs of strength, despite a tough fundraising landscape. According to PitchBook's 2022 Annual European PE Breakdown report , deal volume and value slightly increased in 2022 compared to the previous year, despite economic and geopolitical challenges. European private equity fund AUM also increased to €873.9 billion, despite higher interest rates. However, fundraising slowed considerably, with 15.2% of funds closed being led by first-timers, the lowest number since 2006.

### VC fundraising activity



**Figure 2.1.3** Source: [pitchbook.com](https://pitchbook.com), 2023 EU Private Outlook

Despite slow fundraising, deal volume and value have been on the rise, with dry powder at a record high . An estimated €182.8 billion was invested across 1,932 transactions in Q1 2023, although both deal value and count were down from Q4 2022. The dominance of the business products and services sector and the increase in take-private deals are notable trends. PE firms are increasingly pursuing buy-and-build strategies by acquisitions to bolster their existing portfolio companies. Exit value was down 12.1% YoY to an estimated €70.6 billion.

The increase in add-ons for buyout deals is a notable trend . In Q1 2023, add-ons dominated, and the majority of deals were in the B2B sector . This trend is partly driven by lower valuations. PE firms are increasingly using add-ons to bolster their existing portfolio companies and pursue buy-and-build strategies.

Exits were at their lowest level in nine years, with total confirmed exit value amounting to €199.35 billion . PE exit activity in Europe fell sharply in the first six months of the year from 2021's highs with some 739 deals totaling and estimated €157.8 . However, strategic buyers dominated the exit landscape in Q1 2023 .

The dominance of the business products and services sector is another notable trend . According to PitchBook's report, this sector accounted for the largest share of deal value in H1 2022 (€77.8 billion), followed by healthcare (€61.4 billion) and information technology (€52.5 billion). The report also provides graphs showing the distribution of European PE deal value by sector and the number of European PE exits by deal size for H1 2022.

The second half of 2022 saw a decline in deals, exits, and fundraising due to spiking interest rates . Despite this, buyout deal value, exits, and fundraising still finished with impressive totals. PE firms are increasingly pursuing buy-and-build strategies by acquisitions to bolster their existing portfolio companies. The PE Pulse report can provide more information.

In conclusion, European private equity remains strong despite a tough fundraising landscape. Deal volume and value have been on the rise, with dry powder at a record high. The dominance of the business products and services sector and the increase in take-private deals are notable trends. PE firms are increasingly pursuing buy-and-build strategies by acquisitions to bolster their existing portfolio companies. The increase in add-ons for buyout deals is also a notable trend, partly driven by lower valuations. Exit activity has been slow, but strategic buyers dominated the exit landscape in Q1 2023. The second half of 2022 saw a decline in deals, exits, and fundraising due to spiking interest rates, but buyout deal value, exits, and fundraising still finished with impressive totals.

According to data from Prequin, private equity deal volume in Europe reached a total of 3,124 deals worth €272.5 billion in 2022, representing a 7.8% increase in volume and a 13.7% increase in value compared to the previous year.

Another trend in European private equity is the increase in take-private deals. These deals involve private equity firms acquiring publicly traded companies and taking them private, allowing them to operate more efficiently and with less regulatory scrutiny. In 2022, take-private deals accounted for 17% of all European private equity deals, up from 12% in the previous year.

Private equity firms in Europe are also increasingly pursuing buy-and-build strategies. These strategies involve acquiring multiple companies in the same sector and combining them to create a larger, more competitive entity. According to a report by McKinsey & Company, buy-and-build strategies accounted for 32% of all private equity deals in Europe between 2017 and 2021.

One factor driving the increase in add-ons for buyout deals is lower valuations. Due to economic uncertainty and other factors, companies are often available for purchase at a lower price than their true value, making them attractive targets for private equity firms. In 2022, add-on deals accounted for 39% of all European private equity buyout deals, up from 34% in the previous year.

Despite the increase in deal activity, exit activity has been slow in Europe. According to Prequin, there were only 882 private equity exits in Europe in 2022, the lowest number since 2013. However, strategic buyers dominated the exit landscape in Q1 2023, accounting for 50% of all exits.

The second half of 2022 saw a decline in deals, exits, and fundraising due to spiking interest rates. However, buyout deal value, exits, and fundraising still finished with impressive totals. As of Q1 2023, dry powder in Europe reached a record high of €392 billion, indicating that private equity firms are well-positioned to continue investing in the region.

Overall, European private equity has seen strong growth in recent years despite challenges such as slow fundraising and low exit activity. The dominance of the business products and services sector, the increase in take-private deals, and the use of buy-and-build strategies are notable trends in the industry. With record levels of dry

powder available for investment, private equity firms are well-positioned to continue driving growth and creating value in the European market.

## **2.2 The Italian Market**

In recent years, private equity (PE) investment has become an increasingly important component of the Italian economy. Despite the pandemic and other global events, M&A activity in Italy was strong in 2022, with more deals closing than in the pre-pandemic period . Much of this activity was driven by government funds and private equity investment, which provided financial resources and know-how to Italian companies . As we move into 2023, there are expectations that M&A activity in the energy sector will increase, as efforts are made to diversify energy sources and promote sustainability .

One of the notable trends in the Italian private equity market is the dominance of the business products and services sector. This sector has seen significant investment in recent years, as PE firms pursue buy-and-build strategies to bolster their existing portfolio companies . This strategy involves acquiring multiple smaller companies and combining them to achieve economies of scale and other operational efficiencies. The B2B sector has been particularly attractive to PE firms, with the majority of deals in this sector.

In addition to buy-and-build strategies, there has been an increase in take-private deals in Italy. These deals involve a publicly traded company being acquired by a private equity firm and taken off the stock market. Take-private deals are attractive to PE firms because they allow for greater control over the target company's operations and strategy. Moody's Investors Service, a leading credit rating agency, has also provided important insights into the Italian private equity market. In 2022, Moody's cut Italy's bond ratings by three notches, citing a "material increase" in funding risks . Despite this, private equity deal value, exits, and fundraising still finished with impressive totals . However, the second half of 2022 saw a decline in deals, exits, and fundraising due to spiking interest rates . It will be interesting to see how this trend evolves in 2023, and whether private equity firms will be able to navigate the challenging economic environment.

Exit activity has been slow in Italy, with strategic buyers dominating the exit landscape in Q1 2023 . This suggests that Italian companies may be more willing to sell to

strategic buyers, rather than private equity firms. However, dry powder in Europe reached a record high of €392 billion as of Q1 2023, indicating that private equity firms are well-positioned to continue investing in the region .

Overall, the Italian private equity market is characterized by a number of notable trends, including the dominance of the B2B sector, the use of buy-and-build strategies, and the increase in take-private deals. Despite challenges such as the pandemic and spiking interest rates, private equity firms are well-positioned to continue investing in Italy, particularly in sectors such as technology, luxury brands, pharmaceuticals, life sciences, agribusiness, and food. The implementation of the Italian National Recovery and Resilience Plan and new measures for restructuring and insolvency will also provide new incentives for M&A deals .

In conclusion, private equity investment has become an increasingly important component of the Italian economy, driving M&A activity in the country. The Italian private equity market is characterized by a number of notable trends, including the dominance of the B2B sector, the use of buy-and-build strategies, and the increase in take-private deals. Despite challenges such as the pandemic and spiking interest rates, private equity firms are well-positioned to continue investing in Italy and to play an important role in the country's economic recovery.

According to Pitchbook.com, there were 187 private equity deals in Italy in 2020, with a total deal value of €9.5 billion. This represents a slight decrease from the previous year, when there were 206 deals with a total value of €10.5 billion. However, despite the challenges posed by the COVID-19 pandemic, the private equity industry remains optimistic about the future of the Italian market.

According to a report by Prequin.com, B2B companies accounted for 62% of all private equity investments in Italy in 2020. This is in line with the broader trend in Europe, where B2B companies have been attracting increasing amounts of private equity investment in recent years. The report also notes that the healthcare and IT sectors were among the most active in terms of private equity deals in Italy in 2020.

Another trend in the Italian private equity market is the use of buy-and-build strategies. This involves acquiring a platform company and then using it as a base to acquire additional companies in the same or related sectors, with the aim of building a larger,

more diversified business. According to a report by the PE Pulse, buy-and-build strategies accounted for 38% of all private equity deals in Italy in 2020, up from 27% in the previous year. This suggests that private equity firms are increasingly looking for ways to create value through operational improvements and synergies between portfolio companies.

Despite the challenges posed by the COVID-19 pandemic, private equity firms in Italy remain well-positioned to continue investing and playing an important role in the country's economic recovery. In fact, the pandemic may have created new opportunities for private equity investment, as distressed companies look for capital and support to weather the storm. However, there are also challenges to be aware of. For example, interest rates in Italy have been spiking in recent months, which could make it more difficult for private equity firms to secure financing for their investments.

Moody's has also provided insights into the Italian private equity market. In a report published in January 2021, Moody's noted that the pandemic had led to a decline in private equity activity in Italy in the first half of 2020, but that activity had picked up in the second half of the year. The report also noted that private equity firms had been active in providing financing to distressed companies, particularly in the retail and hospitality sectors, which were hit hard by the pandemic; expecting private equity activity in Italy to continue to grow in the coming years, driven by a combination of low interest rates, high levels of corporate debt, and the availability of attractive investment opportunities.

One of the key trends in the Italian private equity market is the use of buy-and-build strategies. These strategies involve acquiring a number of companies in a particular industry, with the aim of consolidating them into a larger, more efficient business. This approach has been particularly successful in the Italian market, where there are a large number of small and medium-sized enterprises that could benefit from consolidation. According to Pitchbook.com, buy-and-build strategies accounted for more than half of all private equity deals in Italy in 2021.

Another trend that is likely to continue in the Italian private equity market is the increase in take-private deals. These deals involve taking a public company private, with the aim of reorganizing it and improving its performance before eventually



returning it to the public markets. According to Prequin.com, take-private deals accounted for a significant portion of private equity activity in Italy in 2021, and this trend is expected to continue in the coming years. Despite the challenges posed by the pandemic and spiking interest rates, private equity firms are well-positioned to continue investing in Italy and to play an important role in the country's economic recovery. This is due in part to the fact that private equity firms are able to take a long-term view of their investments, which allows them to weather short-term economic fluctuations. ([prequin.com](https://prequin.com))

Additionally, private equity firms are able to provide the capital and expertise necessary to help Italian businesses grow and become more competitive in the global marketplace. One area that is expected to attract significant private equity investment in Italy is the real assets sector. Infrastructure has become a popular sector for private equity firms in Europe, and this trend is likely to continue in Italy. This is due in part to the fact that infrastructure assets provide a stable, long-term source of cash flows that can help to offset the risks associated with other types of investments. Additionally, the Italian government has signaled its willingness to support private investment in infrastructure, which could help to attract more private equity firms to the sector. ([Pitchbook.com](https://pitchbook.com))

Fundraising by Italy-based funds increased in 2020, despite the fact that this phase remains challenging for Italian operators. The amount of capital raised by Italy-based private equity firms increased by over 50% in 2020, compared to the previous year. This is a positive sign for the Italian private equity market, as it suggests that investors are becoming more bullish on the prospects for the sector. ([Pitchbook.com](https://pitchbook.com))

Despite the challenges posed by the debt market tightening, private equity investors are finding ways to adapt. For example, earnouts are becoming more popular in buyouts, which allows buyers to defer some of the purchase price until certain performance targets are met. Additionally, core infrastructure is emerging as a popular sector, as it provides a stable source of cash flows that can help to offset the risks associated with other types of investments. Businesses with government-backed revenues, high revenue visibility, mission-critical services, and strong cash conversion will remain favorable. ([Pitchbook.com](https://pitchbook.com))

In conclusion, the Italian private equity market is expected to continue to grow in the coming years, driven by a combination of low interest rates, high levels of corporate debt, and the availability of attractive investment opportunities. Private equity firms are well-positioned to play an important role in the country's economic recovery, particularly in the B2B sector. The use of buy-and-build strategies and take-private deals is likely to continue, and the real assets sector is expected to attract significant investment. Despite the challenges posed by the debt market tightening, private equity investors are finding ways to adapt and remain active in the Italian market.

### **3. Entry strategies for retail investors**

#### **3.1 Overview**

Private equity has traditionally been the domain of institutional investors and ultra-high-net-worth individuals. However, with the growth of the industry and increased accessibility, retail investors now have more opportunities to participate in private equity. In this article, we will discuss entry strategies in private equity for retail investors, drawing on sources of information from reputable industry publications and experts.

One entry strategy for retail investors is through investing in private equity funds. Private equity funds are investment vehicles that pool the capital of multiple investors to invest in private companies. They are managed by private equity firms and typically have a minimum investment amount and a lock-up period. According to a report by Preqin, the global alternative assets data provider, private equity funds raised \$748 billion in 2020, and the industry is expected to continue to grow in the coming years.

These funds typically have high minimum investment requirements, often ranging from \$1 million to \$10 million. However, some private equity funds have lower minimum investment requirements, making them accessible to a broader range of investors.

When investing in private equity funds, it is important to conduct thorough due diligence on the fund manager and the investment strategy. According to Pitchbook.com, investors should evaluate the track record of the fund manager, the performance of the fund's previous investments, and the level of diversification in the fund's portfolio. Additionally, investors should be aware of the fees associated with

investing in private equity funds, which can be high compared to other investment vehicles.

Retail investors can access private equity funds through online investment platforms such as AngelList, EquityZen, and SharesPost. These platforms allow investors to invest in a diversified portfolio of private companies with lower minimum investments than traditional private equity funds. They also provide liquidity options for investors, allowing them to buy and sell shares in private companies.

Another entry strategy for retail investors is through investing in publicly traded companies that have exposure to private equity. Publicly traded companies that invest in private equity are known as business development companies (BDCs). According to a report by the National Law Review, BDCs have become an increasingly popular way for retail investors to access private equity, particularly after Congress passed the Small Business Credit Availability Act in 2018.

BDCs are regulated investment companies that invest in small and mid-sized businesses. They are required to distribute at least 90% of their taxable income to shareholders in the form of dividends. BDCs provide retail investors with access to a diversified portfolio of private companies and typically have lower minimum investments than traditional private equity funds.

According to Prequin.com, investing in publicly traded companies with exposure to private equity can provide investors with more liquidity and transparency compared to investing directly in private equity funds. However, it is important for investors to evaluate the performance of these companies' private equity investments and the level of diversification in their portfolios.

However, it is important to note that BDCs are subject to market risk and may not perform as well as traditional private equity funds. In addition, they may have higher fees and expenses than other investment vehicles.

A third entry strategy for retail investors is through investing in crowdfunding platforms. Crowdfunding platforms allow individuals to invest in private companies in exchange for equity or debt. According to a report by Crowdfund Insider, the global crowdfunding market is expected to reach \$28.8 billion by 2025.

Crowdfunding platforms such as Kickstarter, Indiegogo, and SeedInvest provide retail investors with access to early-stage companies that may not be available through traditional private equity funds. They also allow investors to invest smaller amounts than traditional private equity funds and provide opportunities for retail investors to invest in companies that align with their values.

These platforms typically have lower minimum investment requirements than private equity funds, making them accessible to a broader range of investors.

According to The PE Pulse, crowdfunding platforms can provide investors with access to early-stage companies that may not be available through traditional private equity funds. However, investors should be aware of the risks associated with investing in early-stage companies, which may have a higher risk of failure. It is important to note that crowdfunding investments are highly speculative and may not perform as well as traditional private equity investments. In addition, they are subject to regulatory risk and may be subject to fraud.

### **3.2 Direct investing and Funds of Funds**

Direct investing involves investing directly in private companies or assets. This strategy allows investors to have more control over their investments, as they can choose the companies or assets they want to invest in and have a say in the management of those investments. Direct investing also offers the potential for higher returns, as investors can bypass the fees and expenses associated with investing in funds. However, direct investing requires a significant amount of capital, as private equity investments typically have high minimum investment requirements. It also requires a significant amount of time and effort to conduct thorough due diligence on potential investments and to monitor those investments over time.

On the other hand, investing in funds of funds involves investing in a portfolio of private equity funds. Funds of funds offer several advantages, including diversification, access to a wider range of investment opportunities, and professional management. Diversification is particularly important in the private equity space, as it helps to mitigate the risks associated with investing in a single company or asset. Investing in a fund of funds also allows retail investors to access top-tier private equity funds that may

not be accessible to individual investors. However, investing in funds of funds also comes with higher fees and expenses, which can eat into returns. Additionally, investors have less control over the investments made by the fund of funds, as the fund manager makes the investment decisions.

According to a report by McKinsey & Company, direct investing has become increasingly popular in recent years, with many investors seeking to bypass the fees and expenses associated with investing in funds. The report notes that "direct investing has become a mainstream strategy for private equity investors" and that "investors are increasingly looking to take more control of their investments" (McKinsey & Company, 2019). However, the report also notes that direct investing requires a significant amount of resources and expertise, and that "many investors may lack the experience and resources needed to succeed in direct investing" (McKinsey & Company, 2019).

Investing in funds of funds, on the other hand, has traditionally been the more popular strategy for retail investors looking to access the private equity space. According to a report by Preqin, "funds of funds remain a popular investment strategy for private equity investors, with many investors using them to gain exposure to a range of private equity strategies and managers with a single commitment" (Preqin, 2019). The report notes that funds of funds can offer several advantages, including "diversification across geographies and strategies, access to top-tier funds and managers, and professional management" (Preqin, 2019). However, the report also notes that funds of funds come with higher fees and expenses, and that "performance can be affected by the quality of the underlying funds and managers selected" (Preqin, 2019).

According to Preqin.com, FOFs accounted for 14% of all private equity fundraising in 2020.

One of the main advantages of investing in FOFs is the access to a diversified portfolio. By investing in multiple private equity funds, FOFs offer investors exposure to a wider range of industries, geographies, and investment strategies, which can help to reduce risk and enhance returns. Moreover, FOFs typically have a team of experienced professionals who conduct due diligence on the underlying funds and managers, which can provide investors with a higher level of confidence in their investment decisions.

However, FOFs also have some drawbacks. One of the main concerns is the higher fees associated with FOFs. According to McKinsey & Company, FOFs typically charge management fees of around 1.5% to 2% of committed capital, as well as performance fees of 10% to 20% of profits. These fees can significantly reduce the net returns for investors. (McKinsey.com)

Another potential drawback of investing in FOFs is the lack of control over underlying investments. Since FOFs invest in multiple private equity funds, investors have less control over the specific investments made by the underlying funds. Additionally, FOFs may have restrictions on the types of investments they can make, which can limit the potential returns.

Despite these drawbacks, FOFs can be an attractive option for investors looking to gain exposure to private equity. They offer access to a diversified portfolio of funds and managers, which can help to reduce risk and enhance returns. However, investors should carefully consider the fees and other potential drawbacks before investing in FOFs. It is also important to conduct thorough due diligence on the underlying funds and managers to ensure they align with the investor's investment objectives.

Going back to direct investing, it involves investing directly in private companies rather than through a pooled fund or third-party intermediary. This strategy offers investors the opportunity to access potentially higher returns than those available in public markets, as well as the ability to exert greater control over their investments.

According to a report by McKinsey & Company, direct investing has become an increasingly popular strategy among institutional investors, with nearly half of institutional investors surveyed in 2018 indicating that they planned to increase their allocation to direct investments in private equity. (McKinsey.com)

One advantage of direct investing is the potential for higher returns. Private companies may offer greater growth potential than publicly traded companies, as they are not subject to the same level of scrutiny or pressure for short-term performance. Additionally, private companies may have unique advantages or intellectual property that give them a competitive edge in their industry.

Another advantage of direct investing is the ability to exert greater control over investments. In a pooled fund, investors have limited control over the underlying

investments and may not agree with the investment decisions made by the fund manager. With direct investing, investors have the ability to conduct their own due diligence and make investment decisions based on their own criteria.

However, direct investing also has some potential drawbacks. One is the lack of diversification. Investing in one or a few private companies exposes investors to greater risk, as the success or failure of those companies will have a greater impact on the overall portfolio. Additionally, private companies are generally less liquid than publicly traded companies, meaning that it may be more difficult to sell investments or exit a position.

Another potential drawback is the need for significant resources and expertise. Conducting thorough due diligence on private companies can be time-consuming and requires a deep understanding of the company's operations, financials, and industry. Additionally, investors may need to have legal and accounting expertise to navigate the complex legal and regulatory landscape of private investing.

Despite these potential drawbacks, direct investing can be a valuable strategy for investors seeking higher returns and greater control over their investments. However, it is important to conduct thorough due diligence and work with a qualified financial advisor to determine the most suitable investment strategy based on an investor's goals and risk tolerance.

According to a report by Bain & Company, investors in Italy are increasingly turning to direct investing in private equity for greater control and potentially higher returns . However, direct investing requires significant time and resources for due diligence and management. Funds of funds have historically been the most common way for retail investors to invest in private equity in Italy, providing diversification and professional management but with higher fees and less control over investments. (Bain.com)

In terms of fundraising figures for independent fund managers in Italy, commitments raised in 2021 amounted to €5.359 billion and new commitments in the first half of 2022 totalled €1,564 million . Meanwhile, some Italian managers have struggled to raise funds in international markets due to structural factors and political instability . However, there is potential for further growth in the private equity industry in Italy, with

tax incentives introduced to foster long-term investment in local SMEs. (Pitchbook.com)

Investors in Italy should carefully consider their goals and risk tolerance before deciding on an investment strategy and conduct thorough due diligence . The private equity and venture capital funds raising money in 2020 and 2021 included Sinergia Venture Fund, Metrika's first fund, Alcedo V, Prana Ventures, and 21 Invest Italy IV .

On the other hand, one of the main advantages of funds of funds is that they offer investors access to a diversified portfolio of private equity investments. This can help to reduce risk and increase returns, as investors are not relying on the performance of a single company or sector. Additionally, funds of funds can provide investors with greater access to top-tier private equity funds, which may be difficult to invest in directly.

According to a recent report by the Italian Private Equity and Venture Capital Association (AIFI), funds of funds raised €1.36 billion in commitments in 2021, up from €975 million in 2020. This growth suggests that investors are increasingly turning to funds of funds as a way to access the private equity market. (Aifi.it)

One of the key players in the Italian funds of funds market is Fondo Italiano d'Investimento (FII), which was established in 2011 and has since raised over €2 billion in commitments. FII invests in a diversified portfolio of private equity funds, with a focus on supporting the growth of Italian SMEs. The fund has invested in a range of sectors, including healthcare, technology, and consumer goods.

Another major player in the Italian funds of funds market is Investindustrial, which manages over €9 billion in assets and has invested in companies such as Aston Martin and PortAventura. The fund has a focus on investing in mid-market companies in Italy and other European countries. (Investindustrial.com)

In Italy, the trend towards larger commitments concentrated on fewer managers has resulted in longer fundraising periods . Nonetheless, independent fund managers in Italy raised €5.359 billion in commitments in 2021 and €1,564 million in new commitments in the first half of 2022 . This indicates significant potential for growth in the Italian private equity industry, given the size and dynamism of the Italian economy and the number of small and medium-sized enterprises in need of funding.



Thorough due diligence is essential for investors to ensure that they are making informed decisions. Investors should carefully evaluate their goals and risk tolerance before deciding on an investment strategy and conduct thorough due diligence . Some of the private equity and venture capital funds raising money in Italy in recent years include Sinergia Venture Fund, Metrika's first fund, Alcedo V, Prana Ventures, and 21 Invest Italy IV . However, for individual investors, investing directly in private equity can be challenging due to high minimum investment requirements, lack of access to top-tier funds, and limited diversification. (Pitchbook.com)

Funds of funds can be an attractive alternative for individual investors looking to invest in private equity. These funds pool capital from multiple investors and invest in a portfolio of private equity funds managed by external managers . This allows investors to gain exposure to a diversified portfolio of private equity funds, which can help to mitigate risk. Additionally, funds of funds can provide access to top-tier private equity funds that may be difficult for individual investors to access on their own.

However, funds of funds may come with higher fees and less control over underlying investments . Investors should carefully review the fees associated with funds of funds and assess whether they are comfortable with the level of control they will have over their investments.

There has been a trend towards larger commitments concentrated on fewer managers in Italy's private equity industry, resulting in longer fundraising periods . This trend has also been seen in the funds of funds space. According to the Italian Association of Private Equity, Venture Capital and Private Debt (AIFI), the number of funds of funds in Italy has decreased over the past few years, while the average size of funds of funds has increased . This indicates that investors are increasingly looking to invest in larger funds of funds managed by a smaller number of managers. (Aifi.it)

### **3.3 Secondary market of Private Equity**

The secondary market of private equity refers to the buying and selling of already-existing private equity investments. This market has grown rapidly in recent years, with estimates suggesting that secondary market transactions in private equity reached a record \$88 billion in 2020. This trend is expected to continue in the coming years, with

secondary market activity being driven by a variety of factors, including portfolio rebalancing, liquidity needs, and the desire to exit certain investments.

The secondary market for private equity is made up of a variety of different players, including secondary funds, institutional investors, private equity firms, and investment banks. Secondary funds are typically the most active players in the market, as they specialize in buying and selling existing private equity investments. Institutional investors such as pension funds and endowments are also active in the secondary market, as they often use secondary transactions to rebalance their portfolios or generate liquidity.

Private equity firms are another important player in the secondary market, as they often use secondary transactions to exit investments that have reached the end of their holding period. Investment banks are also active in the market, as they help facilitate secondary transactions by providing advisory and brokerage services.

Investing in the secondary market for private equity can offer a range of benefits and risks. One of the main benefits is the potential for higher returns, as secondary investments can often be purchased at a discount to their underlying value. Secondary investments can also provide greater liquidity than primary investments, as they are often already established and have a track record of performance.

However, there are also a number of risks associated with investing in the secondary market. One of the main risks is the potential for lower returns if the underlying investments do not perform as expected. There is also the risk of investing in a fund that has underlying investments with poor performance history, or that is exposed to a particular sector or region that experiences a downturn.

One of the primary benefits of the private equity secondary market is the ability to buy and sell existing investments. This provides investors with an opportunity to exit their positions or acquire new ones. According to a report by Preqin, the volume of secondary market transactions in private equity hit an all-time high of \$88 billion in 2018. The report also notes that the secondary market has become an increasingly important source of liquidity for investors in recent years, particularly as the market for initial public offerings (IPOs) has slowed down. (Preqin.com)

Despite the benefits of the private equity secondary market, there are also significant risks to consider. One major challenge is the limited transparency of private equity investments. Unlike public companies, private equity firms are not required to disclose financial information to the same extent. This lack of transparency can make it difficult for investors to fully understand the risks and potential returns of a particular investment.

Another risk is the potential for volatility in the secondary market. Private equity investments can be illiquid, meaning that they are difficult to sell quickly. As a result, secondary market transactions can be subject to significant price swings based on changes in market conditions or investor sentiment. In addition, because secondary market transactions are negotiated between buyers and sellers, there is no guarantee that a particular investment will be sold at a fair price.

Despite these risks, the private equity secondary market remains an attractive option for many investors. In particular, institutional investors such as pension funds and endowments have increasingly turned to the secondary market to manage liquidity and rebalance their portfolios. According to a survey by McKinsey & Company, institutional investors are the most active participants in the secondary market, accounting for 70% of total transaction volume. (McKinsey.com)

Another option for investors looking to access the private equity market is to invest in funds of funds. Funds of funds are investment vehicles that invest in a diversified portfolio of private equity funds. This provides investors with exposure to a range of different private equity investments, which can help to reduce risk and increase diversification. However, funds of funds also come with their own set of challenges, including higher fees and potential conflicts of interest.

According to a report by Bain & Company, funds of funds have become increasingly popular in recent years. The report notes that funds of funds represented 12% of total private equity assets under management in 2018, up from 7% in 2012. The report also notes that funds of funds can provide investors with access to top-tier private equity managers and can help to mitigate the risk of investing in a single fund. (Bain.com)

However, funds of funds also come with higher fees than traditional private equity investments. According to the same Bain & Company report, funds of funds typically

charge a management fee of between 1% and 2% of assets under management, in addition to performance fees of between 5% and 10% of profits. In addition, funds of funds can also create conflicts of interest, as the fund manager may have an incentive to invest in certain funds in order to generate higher fees. (Bain.com)

The private equity market in Italy is growing, but still relatively small compared to other European countries. According to a report by Invest Europe, a trade association for private equity and venture capital in Europe, the total value of private equity investments in Italy was €16.6 billion in 2019. This represents a significant increase from previous years, but still lags behind countries such as France and Germany.

Investing in the private equity secondary market can be illiquid, with limited buyers and sellers and a lack of transparency around pricing. Additionally, the private equity secondary market can be risky, particularly for mid-to-large sized secondaries funds that typically buy big diversified portfolios. (Investeurope.eu)

To mitigate such risks, private equity investors can use hedging strategies to protect their investments. Secondary markets for hedge funds and private credit can offer compelling returns and important risk mitigation benefits. However, hedge fund structures are quite disparate and require nuanced due diligence.

One approach that can be used to evaluate private equity risk using public securities is to analyze the public market betas of private equity investments. Public market betas are used to measure the sensitivity of an investment's returns to changes in the broader market. By analyzing the public market betas of private equity investments, investors can determine the risks associated with private equity investments and develop hedging strategies accordingly .

Another approach for evaluating private equity risk is to analyze the correlations between private equity investments and other assets. By analyzing the correlations, investors can determine the diversification benefits of private equity investments and develop hedging strategies accordingly. Additionally, analyzing the correlations can help investors identify potential risks associated with private equity investments and develop strategies to mitigate those risks.

A third approach for evaluating private equity risk is to use Monte Carlo simulations. Monte Carlo simulations are used to model the probability of various outcomes based

on different sets of inputs. By using Monte Carlo simulations, investors can model the expected returns and risks associated with private equity investments and develop hedging strategies accordingly .

Finally, investors can use options to hedge their private equity investments. Options provide investors with the right, but not the obligation, to buy or sell a security at a certain price within a certain timeframe. By using options, investors can protect their private equity investments from potential losses while still maintaining the potential for gains .

### **3.4 ETFs**

Private equity ETFs, or exchange-traded funds, are a type of fund that invests in private equity investments. Unlike traditional ETFs, which invest in publicly traded companies, private equity ETFs invest in companies that are not listed on public stock exchanges .

These ETFs offer investors the opportunity to invest in a diversified portfolio of private equity investments, which can provide higher returns than traditional stocks and bonds. They also offer the benefit of liquidity, which is not typically available to investors in private equity funds. (Investopedia.com)

Private equity ETFs work by holding a portfolio of private equity investments. This portfolio is managed by a professional investment manager, who selects the investments and manages the fund. Investors buy shares of the ETF, which represent a portion of the underlying portfolio. The shares are traded on stock exchanges, making them easily accessible to retail investors.

Private equity ETFs can provide investors with several benefits. First, they offer exposure to private equity investments, which may provide higher returns than traditional stocks and bonds. Private equity investments are typically made in companies that are not publicly traded, which means they are not subject to the same regulations and reporting requirements as public companies. This can allow private equity fund managers to make investments that are not available to public market investors, providing opportunities for higher returns. (Investopedia.com)

Second, private equity ETFs offer liquidity. Unlike traditional private equity funds, which typically have lock-up periods of several years, private equity ETFs can be

bought and sold on stock exchanges. This allows investors to liquidate their holdings more easily and provides more flexibility in managing their portfolios .

According to a report by BlackRock, private equity ETFs offer investors exposure to a diversified portfolio of private equity securities that are not easily accessible through traditional investment channels. The report also states that private equity ETFs have lower fees compared to traditional private equity funds, making them more accessible to a wider range of investors. However, the report cautions that private equity ETFs are still relatively new and may not offer the same level of liquidity as traditional ETFs. (Blackrock.com)

Another report by PwC states that private equity ETFs can be used as a hedging strategy to protect investments in the private equity secondary market. The report explains that private equity secondary market transactions are typically illiquid and may take several months to complete, making it difficult for investors to exit their investments. However, by investing in private equity ETFs, investors can gain exposure to a diversified portfolio of private equity securities and hedge against market volatility. (PwC.com)

According to an article by Forbes, private equity ETFs offer investors a lower minimum investment compared to traditional private equity funds. The article also states that private equity ETFs can provide investors with a higher level of diversification compared to traditional private equity funds, which often have a concentrated portfolio of investments. (Forbes.com)

However, private equity ETFs also come with risks. One risk is that they may be less transparent than traditional ETFs. Because private equity investments are not publicly traded, there may be limited information available to investors about the underlying investments in the fund. This can make it difficult for investors to evaluate the fund's performance and may increase the risk of fraud or mismanagement .

Another risk is that private equity ETFs may be more volatile than traditional ETFs. Private equity investments may be more sensitive to economic and market conditions and may experience larger fluctuations in value than publicly traded investments. This can increase the risk of losses for investors . Furthermore, another potential risk associated with private equity ETFs is the lack of transparency. Private equity investments are not required to disclose the same level of information as publicly traded

companies, which may make it difficult for investors to fully understand the risks associated with their investments.

#### **4. Portfolio comparison including PE in the asset allocation**

With this empirical analysis my aim is to compare a portfolio whose asset allocation doesn't diversify its investments in forms of Private Equity investments with a portfolio which takes into consideration PE investments.

For this purpose the data that will be taken into account for Private Equity investments are the ones of PE ETFs, namely:

- iShares Listed Private Equity UCITS ETF USD (IRPV.AS)
- Invesco Global Listed ETF (PSP)
- ProShares Global Listed Private Equity ETF (PEX)
- Xtrackers LPX Private Equity Swap UCITS ETF (XLPE.MI)

##### **4.1 Adopted portfolio Theory: Markowitz's**

Markowitz's portfolio theory is a framework for constructing investment portfolios that aim to balance expected returns and risks. The theory is based on the premise that investors are risk-averse and seek to maximize their utility or satisfaction from returns while minimizing the risk of loss.

According to Markowitz's theory, an investor should diversify their portfolio by investing in multiple assets with different risk-return characteristics. By holding a diversified portfolio, an investor can reduce the overall risk of their investments while still achieving their desired level of returns.

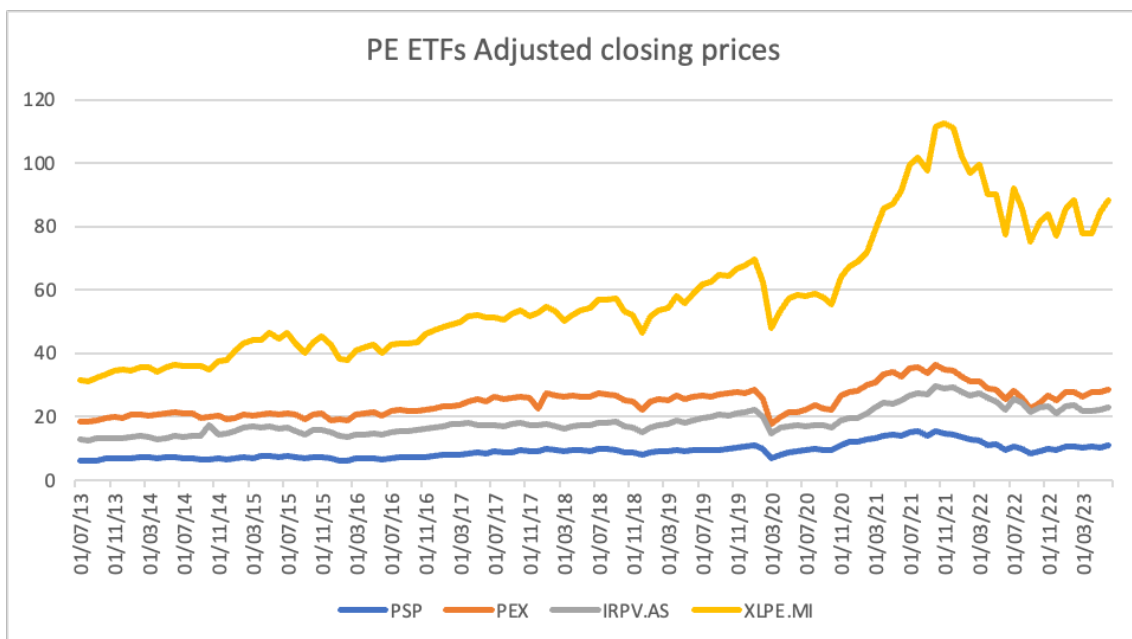
The core of Markowitz's theory is the concept of the efficient frontier, which is the set of portfolios that offer the highest expected returns for a given level of risk. The efficient frontier is obtained by plotting all possible combinations of assets and calculating the expected returns and risks of each portfolio.

To determine the optimal portfolio, an investor must consider their risk tolerance and return objectives. The optimal portfolio is the one that lies on the efficient frontier and offers the highest expected return for the given level of risk that the investor is willing to bear (Markowitz, 1952).

## 4.2 Portfolio Analysis

As previously mentioned we are going to build different portfolio using Markowitz's Theory thus creating an efficient frontier based on the covariance and correlation of the different ETF. Our aim is to create an optimal portfolio composed on only ETFs which are the financial instruments that are more easily accessible to retail investors.

For this purpose we will download the prices available on Yahoo Finance taking into consideration the adjusted closing price allowing us to obtain a more accurate representation of the ETFs' true performance over time, particularly in the viewpoint of a long term investment; since the ETFs we are considering provide regular dividends, considering only the regular closing prices would be misleading resulting in incorrect conclusions. Our analysis is based matching the idea of a mid-long term investments, hence the downloaded data will refer to the past 10 years monthly adjusted closing prices. The adjusted prices are reflected in the following chart:



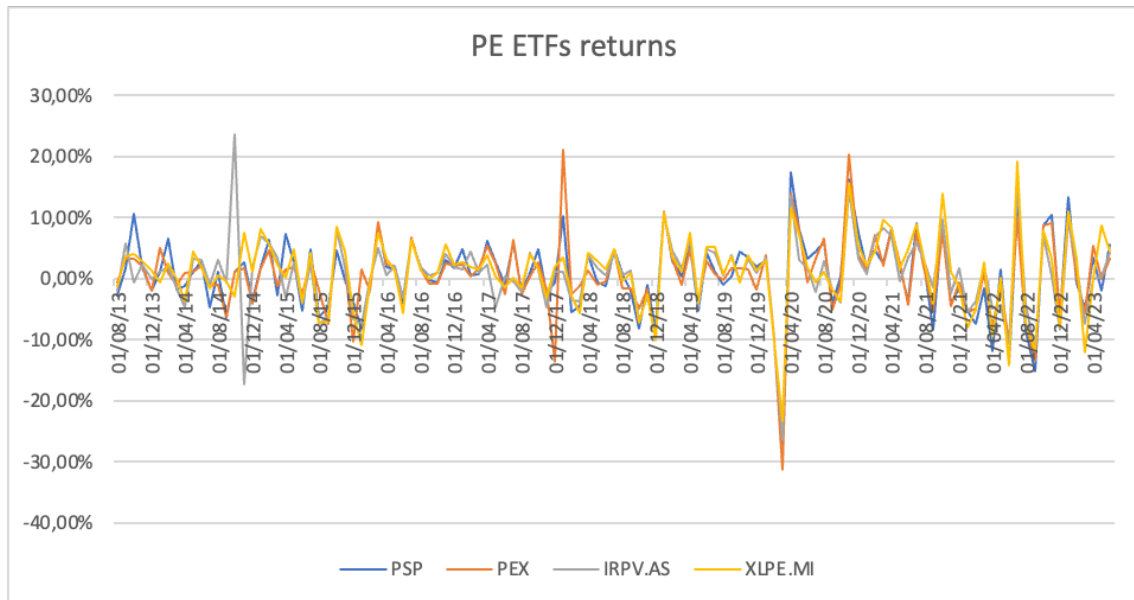
**Figure 4.2.1** Source: Personal elaboration using data from [yahoofinance.com](https://www.yahoofinance.com)

From the chart above we can have a rough picture of the situation regarding the four ETFs with XLPE.MI having outperformed in terms of rise of the adjusted price as of march 2020. Overall we can say that the financial instruments considered behaved similarly in terms of price suggesting a possible strong correlation between them, as



would be expected considering that the four of them invest in companies that are active in the same sector.

Subsequently we will proceed with a graph that illustrate their returns as shown in the figure below (figure 4.2.2):



**Figure 4.2.2** Source: Personal elaboration using data from [yahoofinance.com](http://yahoofinance.com)

From the chart we can get a rough picture of the situation of returns behaving quite similarly and characterized by peaks of high returns, either negative or positive (above 20% on the positive cases and over -30% in the negative one), happening quite frequently at the same periods of time suggesting that the private equity market experiences periods that are remarkably profitable or unprofitable which can be due to the success (or failure) of the disinvestments phases that non listed funds experience; this also suggest the high volatility that characterize the PE industry which is a component that has to be taken into account in the process of building a well suited portfolio of an investor that does not fall in the financial institution definition and has a an invested capital that needs to be protected rather than for mere financial speculation purposes.

### VAR-COV

	PSP	PEX	IRPV.AS	XLPE.MI
PSP	0,004168656	0,00371052	0,00295467	0,00341022
PEX	0,003710517	0,00403064	0,00278055	0,00308583
IRPV.AS	0,002954665	0,00278055	0,00376094	0,0030063
XLPE.MI	0,003410223	0,00308583	0,0030063	0,00376693

**Figure 4.2.3** Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

### CORRELATION

	PSP	PEX	IRPV.AS	XLPE.MI
PSP	1			
PEX	0,80784459	1		
IRPV.AS	-0,785569649	-0,8429194	1	
XLPE.MI	0,268411493	-0,1107008	-0,4141127	1

**Figure 4.2.4** Source: Personal calculation using data from [yahooofinance.com](http://yahooofinance.com)

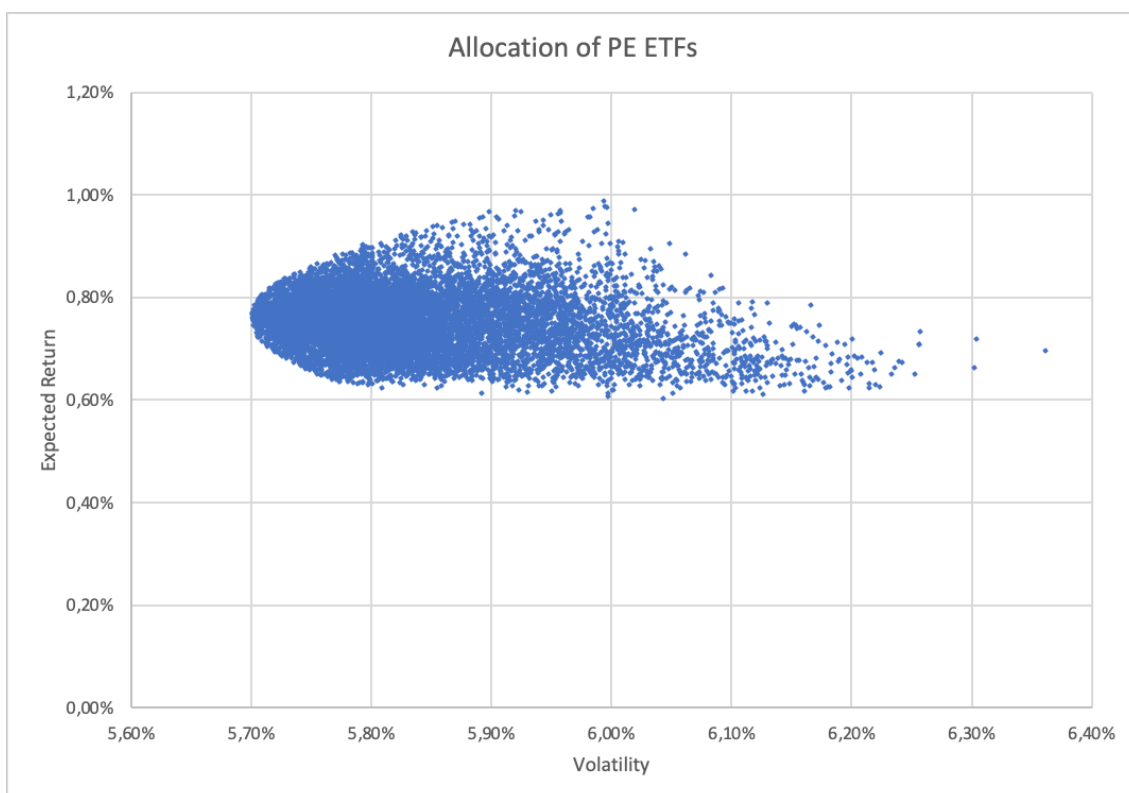
In the figures presented above a variance-covariance matrix and a correlation matrix have been constructed in order to show the relations between the different funds.

As it can be see from the correlation matrix (figure 4.2.4) all the funds, except from PSP and PEX present a negative correlation between one another that can help mitigate the risks associate with each individual fund, which helps in construction a portfolio able to mitigate the fluctuation in the returns of the various ETFs.

To further analyze the performance of such portfolio we have analyzed the expected returns and volatility of each fund taking into consideration the past returns over the span of ten years; we have also calculated the Sharpe Ratio taking into account a risk-free rate of 0 as we do not aim to select funds that may outperform government bonds but we only analyze the value of each funds and its performance over the respective volatility.

Basic statistics				
	PSP	PEX	IRPV.AS	XLPE.MI
Expected return	0,69%	0,57%	0,69%	1,06%
st.dev	6,46%	6,35%	6,13%	6,14%
var	0,004168656	0,0040306	0,0037609	0,0037669
Sharpe ratio	0,106713577	0,0905308	0,1122359	0,173081

**Figure 4.2.5** Source: Personal calculation using data from [yahoofinance.com](http://yahoofinance.com)



**Figure 4.2.6** Source: Personal calculation using data from [yahoofinance.com](http://yahoofinance.com)

As we can see all funds are characterized by a high volatility (“st.dev” in figure 4.2.5) as we would have expected and monthly returns are pretty low which can be in line with the logic of the returns of private equity markets that aim to create large returns over the span of many years and are also characterized by huge losses due to poor performance of many direct investments which turn out to not be profitable.

Nonetheless the availability of PE ETFs are liquid investments contrary to direct investments which can influence investors to exploit their advantages without the constraints of illiquid direct investments.

From the theory mentioned in Chapter 4.1 a series of 10.000 randomized allocations taking into consideration different, randomly selected, weights of each fund has been performed showing an chart from which we can extract the efficient frontier of the portfolio (figure 4.2.6), which is represented by all the points that stand in the border of the scatter plot analyzed starting from the point of lowest volatility.

For a better understanding of the key portfolio represented by each dot on the plot of the asset allocation we perform the so called “minimum volatility portfolio” whose data are represented in the table below:

Minimum Volatility Portfolio				
	PSP	PEX	IRPV.AS	XLPE.MI
Weight	0,00%	30,39%	41,07%	28,55%
Expected ret	0,76%			
volatility	5,70%			
Sharpe	0,13345904			

**Figure 4.2.7** Source: Personal calculation using data from [yahooofinance.com](http://yahooofinance.com)

This portfolio represents the allocation of capital invested in each fund following the weights presented which represents the lowest achievable volatility with the combination of the selected funds; in this case PSP is not taken into consideration as its past returns suggest that including it in the portfolio would not provide any diversification benefits in terms of volatility.

Similarly to the case of minimum volatility we can extract portfolio allocations that maximize its expected return and another portfolio which provides the best allocation in terms of Sharpe Ratio; such portfolios are presented in the tables below (figure 4.2.8 and 4.2.9):

### Maximum Sharpe Portfolio

	PSP	PEX	IRPV.AS	XLPE.MI
Weight	0,00%	0,00%	0,00%	100,00%
Expected ret	1,06%			
volatility	6,14%			
Sharpe	0,173080994			

**Figure 4.2.8** Source: Personal calculation using data from [yahoofinance.com](http://yahoofinance.com)

### Maximum Return Portfolio

	PSP	PEX	IRPV.AS	XLPE.MI
Weight	0,00%	0,00%	0,00%	100,00%
Expected ret	1,06%			
volatility	6,14%			
Sharpe	0,173080994			

**Figure 4.2.9** Source: Personal calculation using data from [yahoofinance.com](http://yahoofinance.com)

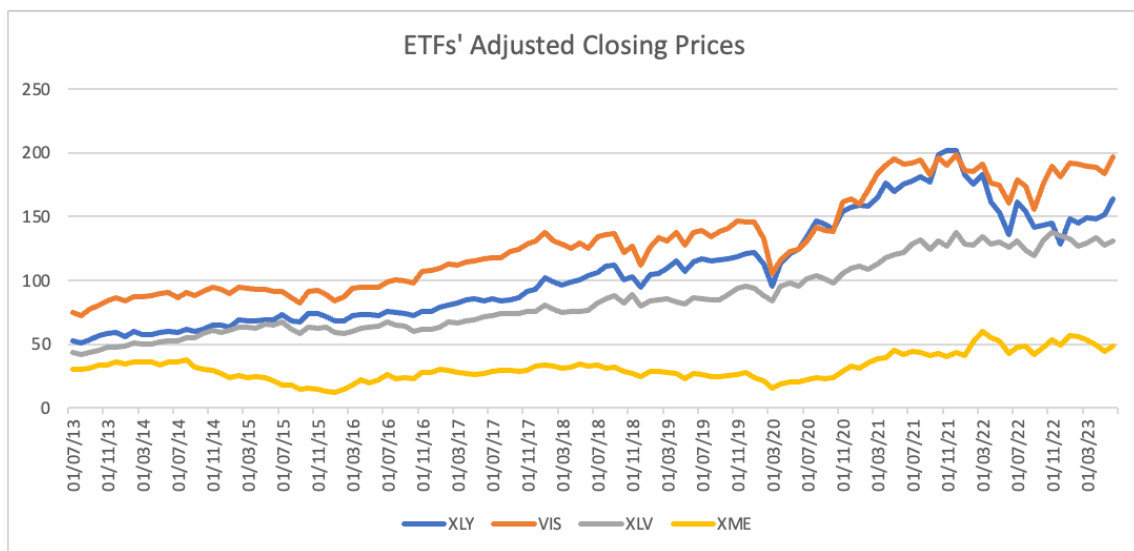
From these tables we clearly see that the case of maximum return and the case of maximum Sharpe coincide this tells us that in the case analyzed, creating an all-ETF portfolio would not be beneficial in terms of a risk-to-reward perspective as any combination of those four would only result in the decrease of the Sharpe Ratio thus there would always be a portfolio which can outperform any other both in terms of highest expected return and risk-to-reward point of view; so considering all the three funds an investor would prefer to invest only in the XLME.MI ETF instead of any other combination, furthermore if we compare the volatility of the minimum variance case (5,7%) with the one of the maximum Sharpe case (6,14%), we don't see a huge difference between the two. Note that for this purposes we consider an investor who is not investing on margin borrowing at risk-free rate in order to invest in other portfolio, for such case other consideration should be taken into account which fall in the domain of financial speculation increasing even further the riskiness of investments.

In order to compare the portfolio of PE ETFs with a general portfolio of a retail investor we have proceeded in the same analysis illustrated above taking into consideration an all-ETF portfolio that can allow investors an asset allocation among different industries to better exploit the advantages of diversification throughout the correlation (or non correlation) between sectors.

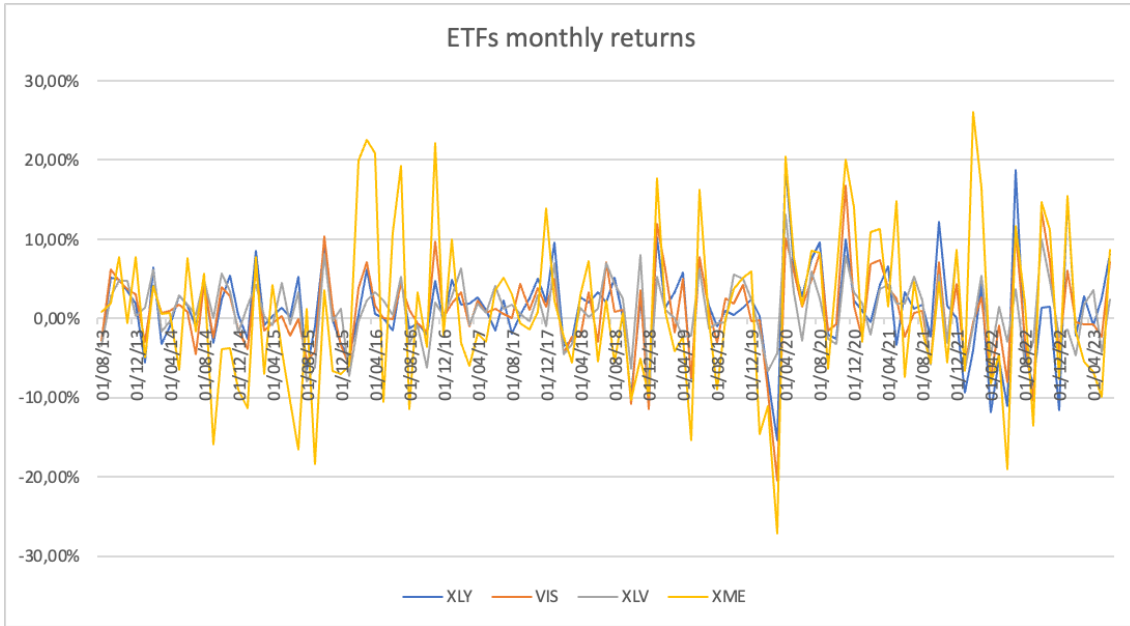
In order to do that we have considered the following ETFs:

- Consumer Discretionary Select Sector SPDR Fund (XLY);
- Vanguard Industrials Index Fund (VIS);
- Health Care Select Sector SPDR Fund (XLV);
- SPDR S&P Metals and Mining ETF (XME);

We have proceeded in plotting the prices and returns of the funds over the last 10 years, as shown in the figures below:



**Figure 4.2.10** Source: Personal elaboration using data from [yahoofinance.com](https://www.yahoofinance.com)



**Figure 4.2.11** Source: Personal elaboration using data from [yahoofinance.com](https://www.yahoo.com/finance)

From figure 4.2.11 we can get a rough picture of what would be the volatility of the funds, with XME characterized by high volatility since we can see that the graph presents peaks, both negative and positive, of high returns.

As for the previous case we have computed the expected return, volatility and variance for each fund as shown in figure 4.2.12:

Performance of each fund				
	XLY	VIS	XLV	XME
Expected return	1,11%	0,96%	1,01%	0,88%
st.dev	5,61%	5,35%	4,12%	10,02%
var	0,003142334	0,00285831	0,00169599	0,01003373
Sharpe ratio	0,198623599	0,1803406	0,24570344	0,08798757

**Figure 4.2.12** Source: Personal calculations using data from [yahoofinance.com](https://www.yahoo.com/finance)

In order to build an all-ETF portfolio as well as having a picture of the behavior of each fund's returns with respect to one another we have calculated the variance-covariance and correlation matrices (figures 4.2.13 and 4.2.14).



### Variance-Covariance

	XLY	VIS	XLV	XME
PSP	0,003142334	0,00242636	0,00152133	0,00307058
PEX	0,002426361	0,00285831	0,001593	0,0038284
IRPV.AS	0,001521333	0,001593	0,00169599	0,00197614
XLPE.MI	0,003070578	0,0038284	0,00197614	0,01003373

Figure 4.2.13 Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

### Correlation

	XLY	VIS	XLV	XME
PSP	1			
PEX	0,735802147	1		
IRPV.AS	0,122475645	0,62390109	1	
XLPE.MI	0,578747958	0,92527864	0,86210258	1

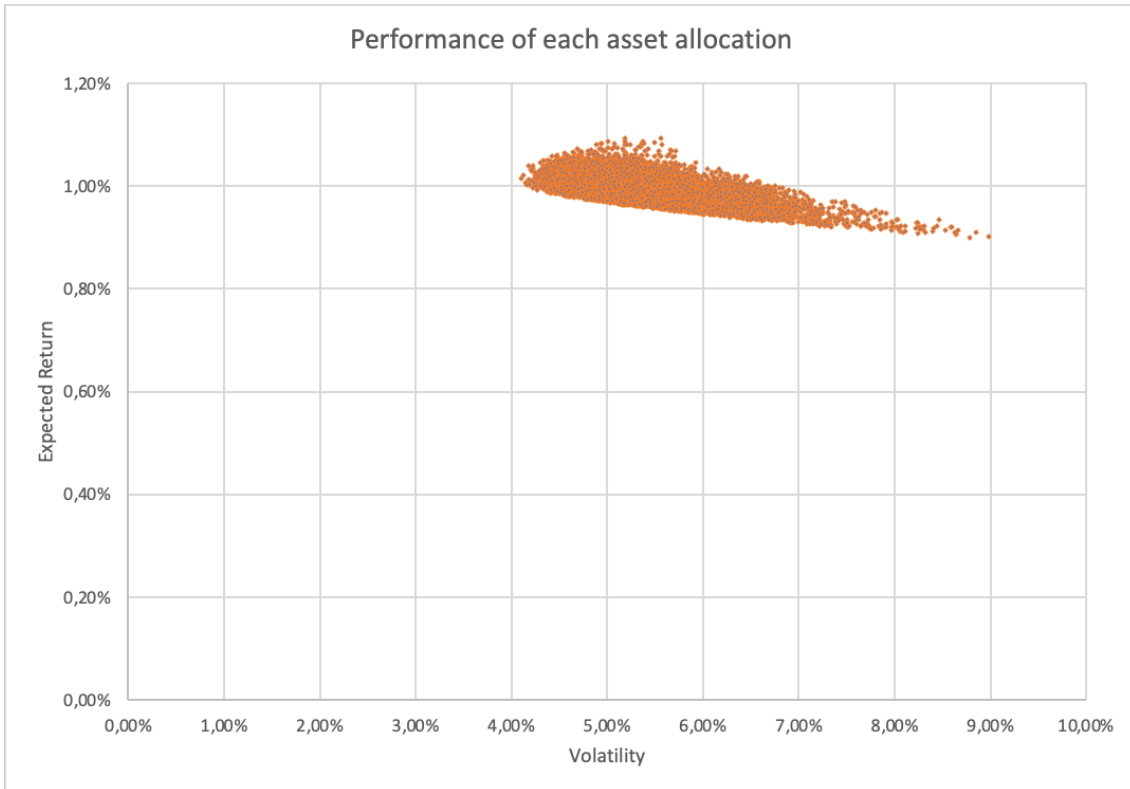
Figure 4.2.14 Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

From the correlation matrix we see that the funds are positively correlated one another indicating that positive and negative movements of the returns follow the same behavior across funds but with different magnitude according to correlation that each fund has with the others.

Now that we have the data we construct the portfolio using these funds which allows an investors to allocate its capital across different industries whose performance is replicated by their respective ETF which follows the respective industry index.

To find the output that each allocation has putting different portions of the capital in each fund, we have run 10.000 random simulation of the four weights and the chart is expressed by figure 4.2.15.





**Figure 4.2.15** Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

As for the case of the portfolio that considered only private equity ETFs from the graph we can see the efficient frontier that represents the most efficient portfolios that can be achieved with the current selection of funds.

In order to find key portfolios (each dot in the graph of figure 4.2.15) we have performed the calculation that give us the minimum volatility portfolio, maximum return portfolio and maximum Sharpe portfolio (figures 4.2.16, 4.2.17, 4.2.18).

Minimum Volatility Portfolio				
	XLY	VIS	XLV	XME
Weight	9,38%	0,62%	90,00%	0,00%
Expected return	1,02%			
volatility	4,10%			
Sharpe	0,24919863			

**Figure 4.2.16** Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

### Maximum Return Portfolio

	XLY	VIS	XLV	XME
Weight	100,00%	0,00%	0,00%	0,00%
Expected return	1,11%			
volatility	5,61%			
Sharpe	0,198623599			

Figure 4.2.17 Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

### Maximum Sharpe Portfolio

	XLY	VIS	XLV	XME
Weight	19,02%	0,00%	80,98%	0,00%
Expected return	1,03%			
volatility	4,12%			
Sharpe	0,250502777			

Figure 4.2.18 Source: Personal calculations using data from [yahooofinance.com](http://yahooofinance.com)

Contrary to the case of all PE ETFs here a combination of funds which maximizes the Sharpe Ratio has been found, meaning that choosing a combination of the funds rather than investing in a single one is actually a better solution in terms of a risk-to-reward perspective. Comparing this results with the ones found in the case of the portfolio composed of only PE funds (figures 4.2.6, 4.2.7, 4.2.8, 4.2.9), shows that the second portfolio actually outperforms the first, achieving a minimum volatility portfolio with a lower risk, a maximum return portfolio with a higher expected return and a maximum Sharpe portfolio that has a significantly larger ratio.

### 4.3 Introducing Private Equity in a diversified portfolio

Starting from the two portfolios analyzed in chapter 4.2 we are going to combine them together taking the second portfolio as the one which better represents the typical portfolio of a retail investor that seeks to allocate its capital across different industries.

In order to introduce the private equity sector in an already diversified portfolio we will first consider the first portfolio that we analyzed and extract the allocation that

maximizes the Sharpe Ratio. From figure 4.2.8 we see that in order to have the best possible risk-to-reward we would have to only invest in XLPE.MI thus we will introduce this fund in the portfolio that includes investments in different sectors.

As previously done we are going to run the same graphs and tables that analyze the prices, returns and their relations.

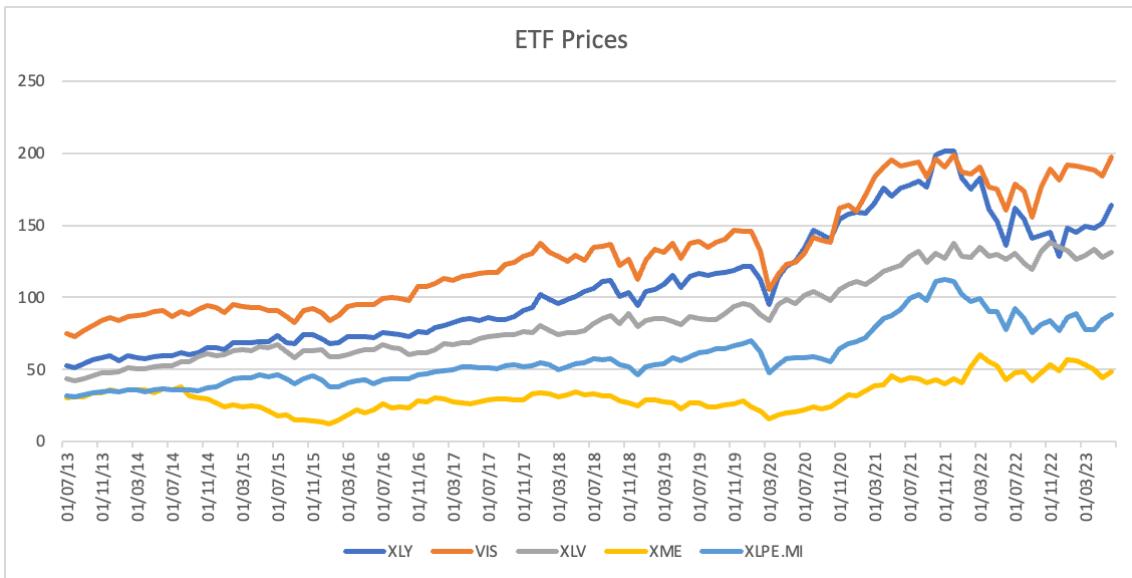


Figure 4.3.1 Source: Personal elaboration using data from [yahoofinance.com](http://yahoofinance.com)

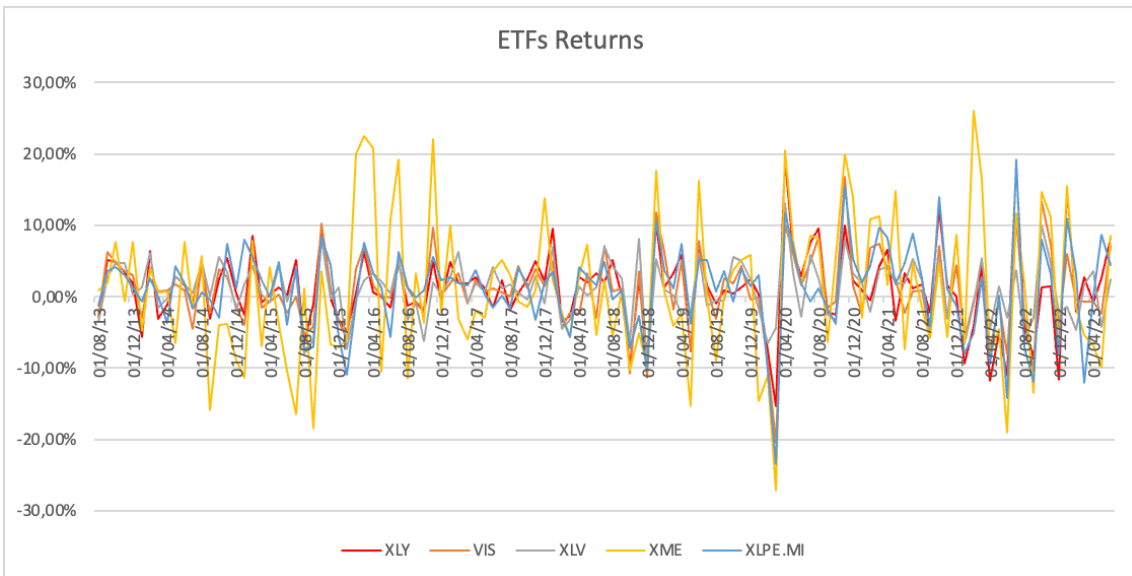


Figure 4.3.2 Source: Personal elaboration using data from [yahoofinance.com](http://yahoofinance.com)

Performance of each fund					
	XLY	VIS	XLV	XME	XLPE.MI
Expected return	1,11%	0,96%	1,01%	0,88%	1,06%
Volatility	5,61%	5,35%	4,12%	10,02%	6,14%
Variance	0,003142	0,002858	0,001696	0,010034	0,003767
Sharpe ratio	0,198624	0,180341	0,245703	0,087988	0,173081

Figure 4.3.3 Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

Variance-Covariance					
	XLY	VIS	XLV	XME	XLPE.MI
XLY	0,003142	0,002426	0,001521	0,003071	0,002754
VIS	0,002426	0,002858	0,001593	0,003828	0,002588
XLV	0,001521	0,001593	0,001696	0,001976	0,001457
XME	0,003071	0,003828	0,001976	0,010034	0,003178
XLPE.MI	0,002754	0,002588	0,001457	0,003178	0,003767

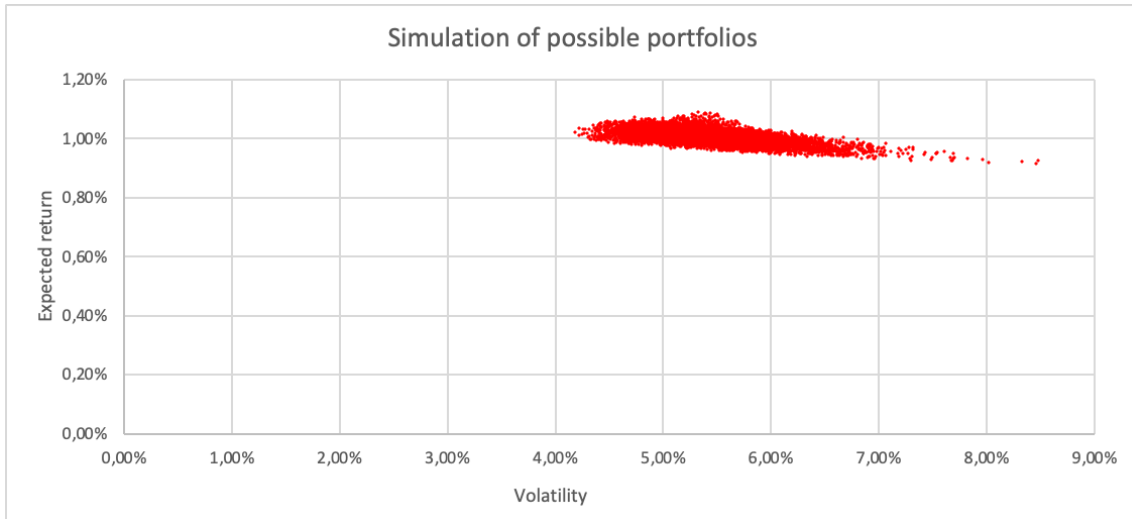
Figure 4.3.4 Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

Correlation					
	XLY	VIS	XLV	XME	XLPE.MI
XLY	1				
VIS	0,719963	1			
XLV	0,026475	0,555596	1		
XME	0,527743	0,91299	0,829226	1	
XLPE.MI	0,793419	0,643552	-0,154801	0,400417	1

Figure 4.3.5 Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

From figure 4.3.5 we can see that the private equity sector, represented by the fund XLPE.MI, presents a fairly high correlation with respect to the fund that represents the consumer discretionary industry (XLY), but we can also see that the PE ETF introduces a negative correlation, precisely with XLV (Healthcare), which, although very weak, was an element which wasn't present before and may help an investor exploit the benefits of diversification better.

In order to have a picture of the possible portfolios achievable with the current fund selection we have proceeded, as done in chapter 4.2, to graph a simulation of 10.000 portfolio generated with a random weights (figure 4.3.6).



**Figure 4.3.6** Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

As done previously in chapter 4.2, we aim to find the key points all these possible portfolios.

Minimum Volatility Portfolio					
	XLY	VIS	XLV	XME	XLPE.MI
Weight	3,88%	0,00%	88,98%	0,00%	7,14%
Expected return	1,02%				
Volatility	4,09%				
Sharpe	0,249291				

**Figure 4.3.7** Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

Maximum Return Portfolio					
	XLY	VIS	XLV	XME	XLPE.MI
Weight	92,86%	0,00%	0,00%	0,00%	7,14%
Expected return	1,11%				
Volatility	5,56%				
Sharpe	0,199513				

**Figure 4.3.8** Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

Maximum Sharpe Portfolio					
	XLY	VIS	XLV	XME	XLPE.MI
Weight	16,43%	0,00%	80,43%	0,00%	3,14%
Expected return	1,03%				
Volatility	4,11%				
Sharpe	0,2506				

**Figure 4.3.8** Source: Personal calculations using data from [yahoofinance.com](http://yahoofinance.com)

Overall these results are aligned with what has been found in chapter 4.2 so we cannot say that the introduction of PE ETFs has increased the performance of the portfolio as the results of expected return, volatility and Sharpe Ratio shown in the figures above are not significantly different from the results found in figures 4.2.16, 4.2.17 and 4.2.18.

However, even though the performance of the overall portfolio has not experienced major changes, we can still see some differences in the asset allocation compared to the ones of previous portfolios; In the tables above we find that all the three portfolios (minimum volatility, maximum return and maximum Sharpe) take into consideration the XLPE.MI fund disregarding completely the funds VIS and XME which was not the case of the portfolio without private equity as VIS was taken into consideration even though for a lower percentage. Since the optimization of the portfolio has taken into consideration a portion of the capital allocated in private equity we can say that its introduction has contributed to the overall performance of the portfolio allowing for diversification benefits.

## Conclusions

This thesis has described a journey on the alternative assets world in particular for what concerns the private equity sphere comprised of its many players.

We have seen how this niche sector which is rapidly increasing in popularity in recent years, actually has existed for quite some time, with its first big steps dating back in the 1980s, in particular in Italy with the birth of AIFI.

The recent popularity of private equity has resulted in many investors, whether institutional or retail, to try and find ways to enter this market as well as a rise in financial products that allow such investments.

As seen throughout this thesis private equity is characterized by illiquidity which can be detrimental to an average retail investor who seeks to protect its capital, especially in the private equity sector which involves being directly involved in the equity ownership of private companies, characterized by informationally opaque performance and valuations as data are not public, for a long span of time bearing huge risks.

The thesis analyzed the point of view of average retail investors trying to exploit the advantages of such market with the instruments that are more available to them, such as ETFs, which turn to be powerful instruments allowing to diversify a portfolio across different industries.

The last chapter of this paper has evidenced that adding a private equity ETF to the portfolio of a retail investor does not bring significant changes, but it may provide diversification to the overall portfolio, so investing in listed products (ETFs) that invest in PE companies may provide diversification benefits when the correlation with other industries offer the opportunity to do so; we can also see that the returns of such funds do not compare to the ones that can be achieved via direct investments in companies which, on the downside, are not widely available to the average investor. A retail investor who seeks to protect its capital through diversification should consider the funds available to him/her only if they contribute to the overall portfolio through diversification; if this does not happen other solutions are to be found as considering other forms of PE investments would not mean to diversify its portfolio but engaging in highly risky choices that may not benefit to the financial well-being of an individual.

Other considerations are to be taken into account if the investors involved fall in the categories of High Net Worth Individuals and Ultra High Net Worth Individuals who have different needs when it comes to investment choices; in this case a portion of their capital may be allocated directly in the equity of private firms with the aim of gaining potential huge returns during the disinvestment phase; such individuals are also differently affected by illiquid investments and engaging in private equity activities may actually be beneficial in terms of overall wealth.

In conclusion we can say that the private market sector have huge potential especially in countries like the EU, and in particular Italy, whose economic systems are highly dependent on SMEs and their presence allows for the private markets sector to flourish

representing a high potential for investors as well as for SMEs themselves who can exploit the advantages provided by the availability of additional equity as well as services provided by professionals. As seen previously a retail investor would find it difficult to access directly the equity ownership of firms and as such it can resort to other, more liquid, methods which do not bear the same risks and rewards of direct investments and can only be seen in the optic of diversifying a portfolio analyzing the correlation that such funds have with other different sectors.

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*Dedicated to those who believed,  
and will believe,  
in me.*