Master Thesis

Responsible Investing in Private Equity: Examining Financial Performance Evidence and Efficient Investment Practices

An Empirical Study of West European Private Equity Buyout Funds

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Abstract

The purpose of this study is to contribute to the scarce literature in the crossing of responsible investing and private equity. We do so by examining how Private Equity Buyout (PE) funds in Western Europe have endeavored to capitalize on responsible investing; an investment approach that aims to incorporate environmental, social, and governance (ESG) factors into investment decisions and active ownership to better manage risk and generate sustainable, long-term returns.

Using a multi-epistemological approach in a sequential multi-phase research design, we hypothesize a positive association between financial performance and PE funds with a systematic integration of responsible investing, and between financial performance and PE funds that engage portfolio companies on ESG matters. We also hypothesize how other measures of responsible investing relate to financial performance.

To test the hypotheses, we consider the return data of 261 PE funds with vintage years between 2006 and 2017. We find systematic integration to be positively associated with financial performance as measured by net IRR and MOIC *($p<0.01$)*. Furthermore, we find that PE funds with a systematic integration generate more stable returns in terms of lower MOIC variation *($p<0.10$)*, compared to nonsystematic funds. These results seem to support this paper's tenet that it is the PE funds with a systematic integration that have been able to capitalize on integrating responsible investment practices.

Additionally, 26 semi-structured interviews were conducted with 15 GPs, 7 Limited Partners, and 4 advisory firms to explore systematic integration. Here, respondents point to efficient responsible investment practices as being those where core responsible investment activities are integrated into existing processes, rather than carried out in parallel, and thus, are an integral part of how PE funds think and work. Achieving this requires a commitment to responsible investing followed by a build-up of adequate capacity and process capabilities.

These findings must be viewed in the light of limitations in the data collection process. Thus, further research is needed to understand the causal relationship between responsible investing and financial performance in PE.

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Introduction

Sustainability, a focus on meeting the needs of the present without compromising the ability of future generations to meet their needs (Kiernan, 2009), is considered a megatrend in the global economy similar to previous trends such as mass production, information technology, and globalization (Hale, 2018). Spawned from this megatrend is responsible investing; an investment approach aiming to incorporate environmental, social, and governance (ESG) factors into investment decisions and active ownership to better manage risk and generate sustainable, long-term returns (PRI Association & ERM, 2018; PRI Association, n.d.-a).

Although not a new phenomenon, responsible investing has increased dramatically in the last few years, as represented by investors' assets under management (AuM) and public awareness (PRI Association, n.d.-a; DWS Investment, 2018; Kozlowski, 2019). This fundamental shift has, to some extent, been driven by changing consumer behavior such as that of sustainability-conscious generations like Millennials and Generation Z. Following are investors who themselves are becoming more interested in a risk-return driven approach that incorporates beneficiary values and achieves positive societal impact (Pinto, 2019).

From 2016 to 2018, investment assets entailing ESG criteria increased by 34%, reaching a total of $30.7 trillion (tn) in 2018 (Chasan, 2019). Compared to PwC's estimation of worldwide AuM in 2018 at $97.2tn, ESG investment assets represented roughly 32% of 2018's global AuM activity (PwC, 2017). However, while two-thirds of the ESG investment assets regards negative screening, i.e. the practice of excluding sectors and companies based on ESG factors (Chasan, 2019), only about one-third of AuM with ESG criteria, roughly $10tn of the world's 97.2$tn AuM, involve incorporating ESG factors into both investment decisions and active ownership (Global Sustainable Investment Alliance, 2018), denoted as responsible investing. Nonetheless, responsible investing has been growing rapidly, up 69% from 2016, and with investors increasingly recognizing ESG-integration as a core practice to be deployed throughout the investment process, the global investment community's interest in responsible investing is thought to have reached a tipping point with ESG issues starting to materialize as a mainstream investment component across asset classes (Beard, 2019; Global Sustainable Investment Alliance, 2018). This rising level of awareness and responsible investment activity is reflected by the growth of several network organizations, such as United Nations' Principles for Responsible Investment (UNPRI), in which a network of institutional investors, or Limited Partners (LPs), provide a framework that helps asset managers and asset owners across asset classes to invest responsibly (Zeisberger, 2014). With more than 2,700 signatories in 60 countries representing $89tn in AuM[1], UNPRI is the world's largest corporate sustainability initiative (PRI Association, n.d.-a; Rust, 2020). Generally, Europe is leading the ESG movement in terms of the number of UNPRI signatories (Appendix 1) and by total ESG investment assets (Appendix 2).

[1] The discrepancy between AuM represented by UNPRI signatories at $89tn and total ESG investment assets at $30.7tn is reflected in the proportion of AuM committed to responsible investing relative to investments made with ESG criteria. For instance, in 2018 this were 48.8% for Europe and 25.7% for the US (Global Sustainable Investment Alliance, 2018).

Problem statement

Throughout the past decades, private capital has been considered a key driver of growth and development (Koenig & Jackson, 2016), and LPs have increasingly recognized alternative investments as a valuable addition to their portfolios (Allianz Global Investors, 2016). Especially private equity, a subset of private capital and alternative investments, has risen in popularity and size due to its attractive returns and low correlation with other asset classes (Musters, 2004). In private equity, it is the Private Equity Buyout (PE) funds that account for the largest proportion of AuM, roughly representing $1.79tn in 2018 with the majority being placed in the US and Europe (Preqin, 2019a). The primary goal of PE funds is to create economic profit by strengthening and improving the resilience of the companies they invest in. They are in a unique position to do so, as they operate beyond the public eye and are under no scrutiny from a large shareholder base, thus capable of influencing businesses in a manner that creates long-term, transformational change (EMPEA, 2018; Idzelis, 2019).

With a heightened pressure from LPs, in particular in Western Europe, to invest responsibly (ERM, 2020; Oldenhove, 2019), PE funds are progressively mobilizing capital for sustainable development (Koenig & Jackson, 2016). As more PE funds commit to responsible investing, PE-backed companies are embracing ESG-issues accordingly, thereby increasingly viewing ESG as a way to mitigate risks that impact profitability and identify opportunities that drive returns while creating an impact (Beard, 2019). Nonetheless, while many LPs have adopted responsible investing, others have held back as they believe a responsible investment approach produces lower returns than conventional strategies (Bernow, Klempner, & Magnin, 2017). Although a substantial amount of data indicates a link between responsible investing and financial performance on a company-level basis, including more than 2,200 empirical studies with roughly 90% showing a non-negative relationship (Lomax & Rotonti, 2019), and 100 academic studies showing that firms with high ESG ratings exhibit lower cost of capital (Bakhshi & Hassl, 2017), no studies have examined how PE funds in Western Europe have capitalized on integrating responsible investment practices. This is relevant because significant heterogeneity exists among PE funds in regards to how they incorporate ESG into investment decisions and active ownership, which in turn cause variation in PE funds' capability to capitalize on value from responsible investing (ADVEQ Applied Research Series, 2015). Moreover, PE funds and LPs who embrace responsible investing – even large, sophisticated ones – are often less thorough and systematic when incorporating ESG factors into investment decisions relative to when they use other, more traditional investment factors (Bernow, Klempner, & Magnin, 2017; Daskam & Khan, 2019; Bakhshi & Hassl, 2017; Uhrynuk, Burdulia, & Mugambi, 2019). According to ERM (2020), such absence of standard practices and robust policy frameworks for integrating responsible investment practices can compromise financial performance. Most notably, while responsible investing has been much incorporated in public equity, little is known about its effect on illiquid asset classes, e.g. PE funds. Thus, it remains obscure whether the collective efforts made by LPs and PE funds in responsible investing, particularly in Western Europe, have materialized in their financial performance.

Research question

Despite beneficiaries' growing interest in sustainability (CGS, 2019), the ambiguity of conducting responsible investing is disorienting LPs' and PE funds' understanding of whether incorporating ESG factors into investment decisions and active ownership impacts returns positively (Kozlowski, 2019). Here, the lack of consistent, high-quality, long-term, comparable ESG data is considered a top challenge (Bakhshi & Hassl, 2017; Broderick, 2019). Moreover, the vagueness of responsible investing, stemming from inconclusive approaches to how it is defined, integrated, and perhaps most importantly, measured, is a cause of great variation to how PE funds handle responsible investing throughout their investment process. This lack of standard practices and policy frameworks may obscure funds' ability to identify and efficiently handle important ESG issues (Daskam & Khan, 2019; Bakhshi & Hassl, 2017; Uhrynuk, Burdulia, & Mugambi, 2019), ultimately resulting in a possible lack of alignment with LPs (Kozlowski, 2019). This is decisive, as top-down governmental regulation regarding responsible investing and ESG disclosure is still in its infancy (Mayor, 2019), causing both LPs and PE funds to rely on bottom-up self-regulation initiatives, such as that of UNPRI (Daskam & Khan, 2019).

As further adoption of responsible investing ultimately depends on the investment approach's potential to align fund objectives with risk and return considerations (Koenig & Jackson, 2016; Kozlowski, 2019), examining the relationship between PE funds' responsible investing and financial performance may be influential in further incentivizing LPs' capital allocation within the sustainability domain. By investigating how funds incorporate ESG factors into investment decisions and active ownership, combined with insights on the effect on financial performance, this paper is ought to help PE funds and LPs identify responsible investment practices associated with financial performance. This is important to enlighten because of the black-box phenomena in which PE funds often operate. We argue that a thorough analysis on this matter will provide PE funds and LPs, particularly in Western Europe, first, with an understanding of whether, and to what degree, responsible investing affects PE funds' financial performance, and second, with insights into how PE funds can efficiently integrate responsible investment practices. By virtue, we set out to examine:

How have Private Equity Buyout funds in Western Europe endeavored to capitalize on integrating responsible investment practices?

The complexity of the research question can be encompassed by the following sub-questions:

1. *How does PE relate to responsible investing, and what characterizes West European PE anno 2020?*
2. *What is and what drives responsible investing, and what kind of responsible investment strategies exist?*
3. *Which metrics can best represent and measure the concept of responsible investing in PE?*
4. *Which factors can explain how responsible investing affects PE funds' financial performance?*
5. *What is the effect on PE funds' financial performance from integrating responsible investing?*
6. *What constitutes efficient responsible investment practices in continuation of the empirical findings, and what implications do the findings have for West European PE funds in responsible investing?*

Purpose and audience

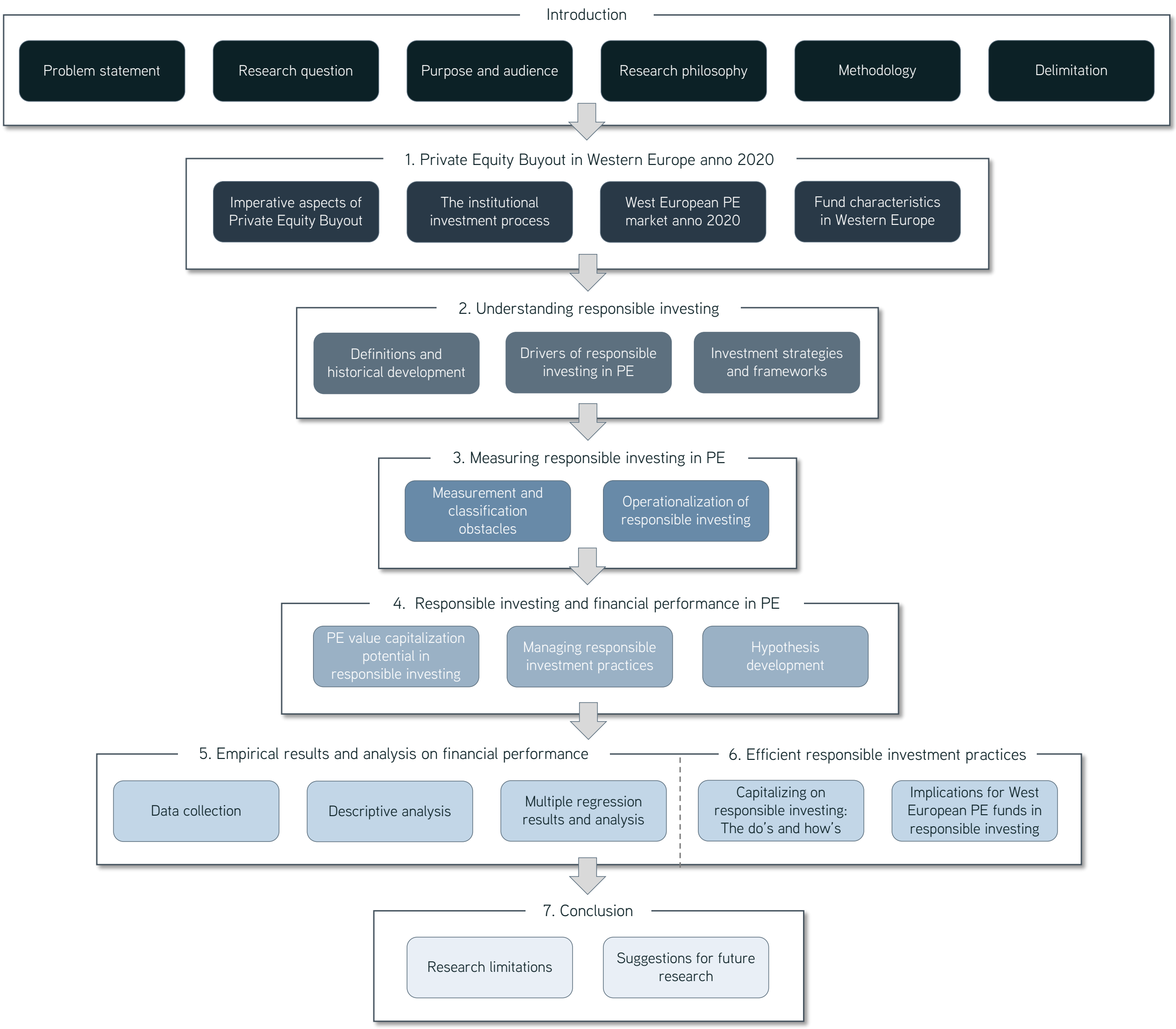
The purpose of this study is to contribute to the existing research on responsible investing and financial performance by adding a new focus to the area. While several studies indicate a non-negative relationship between ESG profiles and financial performance on the company-level, few studies investigate this relationship in PE funds. The lack of research in this area is critical as company-level research on ESG does not explain whether PE funds have capitalized on this trend, primarily due to the heterogenic approaches in how PE funds conduct responsible investing. More importantly, no studies have examined the relationship between responsible investing and financial performance in PE funds in Western Europe while also providing support for how they have endeavored to capitalize on their responsible investing. Thus, we add to the current literature by examining these issues and base our analysis on recent data that are ought to instill new findings.

The paper is primarily addressed to PE funds and LPs in Western Europe who wish to enhance their understanding of responsible investing. In a global survey of 490 institutional investors conducted by Oxford Economics in 2018, 60% of the respondents said that their ability to conduct responsible investing was hindered by the confusion over different approaches and lack of standardization, and that 56% would allocate more capital to funds focused on responsible investing if benchmarks were clearer and more consistent (Allianz Global Investors, 2019). By creating transparency for PE funds and LPs into how responsible investing affects financial performance and into what constitutes efficient investment practices, we believe that this study can contribute to demystifying performance effects in responsible investing, while also providing funds with insights that will help them build resilient frameworks for integrating responsible investment practices. As the primary audience is assumed to hold general knowledge about the private equity industry, the paper does not provide an exhaustive overview of PE but focuses on the key aspects of it that relate to responsible investing. The paper is secondarily addressed to researchers by providing a basic understanding of the problem in scope. It is our hope that the practical contributions of the study will provide our audience with an enhanced understanding of responsible investing in PE through insights into its practices, implications, and limitations.

Structure

The structure of this study (Figure 1) is developed in cooperation with the primary audience and seeks to build a thorough understanding of the problem in scope. Chapter 1 examines how PE relates to responsible investing, followed by an investigation of PE funds' investment process and how this is affected by the institutional investment process. To understand PE anno 2020, the chapter then investigates the West European PE market, including movements that currently direct the industry. Then, general characteristics that distinguish PE funds in Western Europe from those in other markets are considered and evaluated. Chapter 2 then seeks to attain a sufficient understanding of responsible investing by examining definitions and historical development, its key drivers, and investment strategies and frameworks that enable integration. Building on these discoveries, chapter 3 seeks to overcome classification obstacles in measuring responsible investing in PE by operationalizing the concept of responsible investing and deducing observable variables. Chapter 4 then reviews theory and literature on the problem in scope with the purpose of identifying factors that can explain how responsible investing affects PE funds' financial performance. In tandem with insights from chapters 1, 2, and 3, the theory and literature from chapter 4 provide the prerequisites and framework that allow for hypothesis development and subsequent data analysis and interpretation. Chapter 5 tests the hypotheses by investigating empirical results on funds' financial performance from integrating responsible investment practices. Following the empirical findings, chapter 6 seeks to examine how funds then have endeavored to capitalize on integrating responsible investing with the purpose of deducing efficient investment practices. Subsequently, the chapter examines what implications the findings have for West European PE funds in responsible investing. Finally, chapter 7 summarizes conclusions alongside an overview of research limitations and suggestions for future research.

Figure 1: Research structure



Source: Credit of the authors

Research Philosophy

According to Kuhn (1962), research practices are directed by a scientific paradigm, or research philosophy, in which criteria for the methodology are established. As the research philosophy decides how data is gathered, analyzed, and used – and therefore what is seen as relevant for the analysis – the choice of research philosophy is important for researchers to determine (Holm, 2018). As this paper investigates how PE funds have capitalized on integrating responsible investment practices, a significant amount of financial data has to be analyzed in conjunction with reports, interviews, and other literature, and thus, this study is argued to be of both quantitative and qualitative nature. As such, different approaches for understanding, handling, and interpreting contrasting data is necessary, hence a multi-epistemological approach is used in which positivism dictates the quantitative analysis, and hermeneutics facilitates the qualitative (Holm, 2018). It is positivism (deduction) that dominates the research philosophy of this study, complemented by hermeneutics.

Positivism

In positivism, researchers see the reality as stable and something that can be observed and described from an objective and rational viewpoint without an interference with what is being studied (Levin, 1988). Positivistic research is based on the verification principle in which statements only are considered verifiable if they are possible to test and confirm. Yet, in the endeavor to verify theories, a risk of confirmation-bias occurs where researchers investigate only what supports the verification (Holm, 2018). Because of this, we pay particular attention to not discounting events that do not support our overall verification. Positivism most often follows a deductive approach in which hypotheses are based on existing theory, and objective empirical data is collected to test these hypotheses. This is favorable as it allows for a quantitative measurement of relationships between variables and, to some extent, a generalization of research findings. The strength of positivism is that results can be considered true and objective as long as the paradigm's rules are followed. A weakness of positivism is that it assumes objectiveness and rationality, both rarely valid in real life as focused research relies upon limitations, which in turn cannot be completely objective and rational (Holm, 2018).

Hermeneutics

Hermeneutics complements positivism by facilitating an understanding of social, cultural, and historical contexts. For example, the paper uses hermeneutics to conduct textual analyses of published sources and understand insights from interviews. This understanding is realized through the hermeneutic circle, in which parts of a text or statement are understood from its context while the context is understood from its parts. While the purpose of positivism is to deduct a complete understanding, the truth, about objects, the hermeneutics is an infinite interpretation process, thus, provides no final truth or complete understanding. A strength of the hermeneutics is that it can be used to interpret a phenomenon and understand why it occurs. Its weakness is that it provides results that can be discussed in infinity as the hermeneutic truth is never complete. Moreover, results have to be understood in the context that they are made, thus another context can produce other results.

This paper will be using Gadamer's modern hermeneutics which, in contrast to Dilthey's classic hermeneutics, is not about understanding the author's understanding of the text, but to create a new domain of understanding from the text and its context. Gadamer's viewpoint is not to reproduce meaning, or to represent the author's understanding, but to produce new understandings based on what the text communicates today. Therefore, the starting point of new understanding in hermeneutics is directed by prejudices, and it is our role as researchers to be aware of our prejudices and be open to reevaluate them on an ongoing basis if necessary (Ankersborg & Boolsen, 2007). By combining the ontology, epistemology, and methodology from positivism (Appendix 3) and hermeneutics (Appendix 4), we argue that we construct the highest possible understanding of the problem.

Methodology

With an understanding of the research philosophies that guide this study, attention is now turned to the research design in order to transform the research question into a research project (Saunders, Lewis, & Thornhill, 2016). The following section considers the methodological choices and research strategies chosen for this study, whereas the tactics for data collection and data analysis are examined more closely in section 5.1. Thus, this methodology section does not cover the specific data collection, but discusses the necessary and general precautions that will help us ensure a high degree of validity, reliability, and quality of our findings. The research design follows the framework proposed by Saunders, Lewis, & Thornhill (2016) and is shown in Appendix 5.

Sequential multi-phase research design

To pursue the research question, we combine the use of qualitative and quantitative data collection techniques and analytical procedures, and thus, the study can be classified as mixed methods research. The methods are used in a sequential multi-phase design; we employ a qualitative approach (chapter 1-4) followed by quantitative (chapter 5), and then a further qualitative phase (chapter 6), recognizing that each method will be used in order to elaborate on the previous set of findings (Saunders, Lewis, & Thornhill, 2016).

The qualitative research conducted throughout chapter 1-4 is descriptive and analytical in nature, aiming at creating a thorough understanding of PE in Western Europe anno 2020, responsible investing, and measurement methods along with an examination of relevant theories and literature. To achieve this, we engage in archival research and use a variety of secondary data sources such as books, scientific papers, journals, reports, and electronic documents to narrate the research.

In the subsequent phase (chapter 5), quantitative research examines the relationship between PE funds' responsible investing and financial performance. The quantitative approach facilitates the comparison of a variety of numeric variables across a broad sample (Hansen & Andersen, 2009). The nature of the chapter is thus explanatory; aiming at explaining the causal relationships between these variables (Saunders, Lewis, & Thornhill, 2016). We employ the strategy of archival research by collecting secondary data from acknowledged databases such as Preqin, and complement this with other metrics collected from PE funds' websites as well as UNPRI transparency reports in order to constitute the final dataset.

Finally, chapter 6 utilizes qualitative research to obtain a richer understanding of PE funds approaches to integrating responsible investment practices. The subsequent use of a qualitative method is necessary to expand upon the initial findings and to investigate PE funds' efforts in capitalizing on responsible investing, given the significant heterogeneity that exists in practices across funds. The purpose of the phase is, thus, exploratory and evaluative, aiming at generating new insights (Saunders, Lewis, & Thornhill, 2016). Semi-structured interviews have been conducted with General Partners (GPs), singled out by those interested in contributing to our research by responding to an invitation sent out via e-mail. LPs and advisory firms (AFs) have been interviewed accordingly in order to attempt a triangulation of data sources; that is to ascertain if the findings from one stakeholder group corroborate with the findings from another (Saunders, Lewis, & Thornhill, 2016).

The research is conducted cross-sectional in contrast to longitudinal, thereby creating a snapshot of responsible investing in PE at this moment in time. While it would be fascinating to examine the financial performance of PE funds across time, hence both before and after adhering to responsible investment practices, the possibility of doing so is quite limited given the nature of the return data available.

Assessment of quality

Reliability and validity are considered essential in order to assess the quality of quantitative research in the social sciences (Saunders, Lewis, & Thornhill, 2016). However, the appropriateness of using these concepts in qualitative research is contested because of its nature where results are not necessarily intended to be replicated but instead produce new understanding in the given context. Nevertheless, these notions are also adapted in the analysis regarding qualitative research in our endeavor to ensure the credibility of the study.

Reliability

Reliability concerns replication and consistency; that is if the techniques used to collect and analyze data are carefully chosen and described so that another researcher would be able to reproduce the study and generate the same findings (Saunders, Lewis, & Thornhill, 2016). Responsible investing is an evolving phenomenon characterized by its rapid development, and PE funds are constantly refining and improving their responsible investment practices. As a consequence, reliability is threatened since future studies might produce different results if new data is used and the context surrounding this study is changed. As a way to mitigate this, we include a forward-looking perspective, although our opportunity to do so is quite limited. Another threat to reliability is the lack of proper and consistent frameworks to identify and measure responsible investment practices in PE funds. Given its decisive influence on this study's reliability, we devote a great deal of effort to describe our specific method in chapter 3 (measuring responsible investing in PE) and in section 5.1 (data collection) to provide adequate transparency. The lack of standardization in semi-structured interviews can also lead to concerns about reliability (Saunders, Lewis, & Thornhill, 2016). However, the interviews have been conducted rather structured to facilitate a comparison in practices across PE funds, but with enough flexibility to allow for a deeper analysis and understanding given the exploratory nature of this study.

Validity

Validity specifies whether the analysis accurately measures what it was intended to, the appropriateness of the procedures used, and the generalizability of the findings (Saunders, Lewis, & Thornhill, 2016). The lack of consensus as to how responsible investing is defined and can be measured possesses threats to the validity of this study. In order to produce valid results, our operationalization and quantitative measuring of responsible investing in PE funds must accurately resemble the objective truth and not contain systemic measurement errors. Yet, this is no easy task as there is limited transparency into the exact practices across funds. Moreover, PE funds' external communication might not accurately reflect what is going on internally due to impact washing[2]. We address such concerns more closely in chapter 3 (measuring responsible investing in PE).

In the interview procedure, validity refers to how accurately the researchers are able to gain access to and infer meaning from the knowledge and experience of the participants (Saunders, Lewis, & Thornhill, 2016). In this context, the semi-structured setup allows for clarifying questions and further elaboration when exploring meanings. As researchers, we have an established understanding of the PE industry which enables us to infer meaning and minimize threats to validity stemming from misinterpretation. Generally, we make sure to assess both primary and secondary sources and remain critical towards them throughout the paper.

In order to maximize the generalizability of the study, we have collected a representative quantitative sample of 261 PE funds' returns that represents approximately 38% of the total population, according to Pregin's list of registered PE funds that fall within the vintage period and geographical focus. For each PE fund, we then gathered an extensive qualitative analysis by examining websites and reports. Finally, we conducted as many interviews as possible with GPs, LPs, and AFs, of which some were ESG award winning practitioners. A total of 26 interviews were conducted with 15 GPs, 7 LPs, and 4 AFs throughout Western Europe over the course of two stages; one in the early phase of the project and another in the later phase. While conducting the interviews, we were aware of, first, participation bias in which those interested to participate may have certain common traits, and second, response bias in which participants might adopt certain behaviors or alter their responses in different ways. Both the quantitative and qualitative data, as well as secondary and primary data, are described and evaluated more carefully in the data collection section (5.1).

[2] Impact washing occurs when a PE fund makes impact-focused claims in bad faith without having any demonstrable positive ESG impact accruing from its investment activity (Flynn & Higdon, 2019).

Delimitation

The research is limited to problematize the pioneering development of responsible investing within the scope of PE funds in Western Europe from 2006 to 2020. There are multiple reasons for choosing this time horizon, among others that it represents a full economic cycle and provides suitable return data that are ought to capture the effects of responsible investing, which is a somewhat recent trend. While the study is based on market statistics[3], it includes only PE funds with a geographical investment focus in Western Europe, although funds and Private Equity Firms (GPs) can be headquartered elsewhere, such as in the US. The main reason for the geographical focus being Western Europe is that the region is a leading figure in bottom-up self-regulation sustainability focuses, including responsible investing (Beard, 2019).

Given the ambiguity of the topic, the study adopts the most widely acknowledged definition of responsible investing and uses only this definition in the analysis and discussion. By excluding other definitions, empirical results are interpreted in the context of the adopted definition. Furthermore, to examine PE funds' responsible investment practices, the study includes analyses only on the portfolio level, or PE fund level. This will allow the paper to focus on the overall operational and strategic interrelationships happening in PE funds' responsible investment practices. Yet, by omitting individual transactions, the empirical analysis does not consider, or differentiate between, PE transaction types[4], takeover structures[5], and takeover motives[6] as these vary across investments. Moreover, the paper considers only PE funds' investment period, holding period, and exit period, thus, excludes from incorporating aspects from the full PE fund life cycle, such as fundraising and liquidation.

Primarily, the study takes a financial and organizational perspective in explaining how PE funds have endeavored to capitalize on integrating responsible investment practices. While the study focuses on investigating the link between responsible investing and financial performance, it does not, however, examine the quality of the ESG or sustainability impact created from responsible investing.

[3] Market statistics are an aggregation of figures according to the location of the portfolio company (Invest Europe, 2019).
[4] Transaction types often include public-to-private, secondary buyouts, and privately held firms (Preqin, 2020).
[5] Structures are most often LBOs, but can be classified more specifically as MBOs, MBIs, IBOs etc. (Sudarsanam, 2004).
[6] Takeover motives include operational improvements, financial restructuring, or multiple expansion (Coupe, 2016).

1 Private Equity Buyout in Western Europe anno 2020

To understand how PE relates to responsible investing and how PE funds invest and operate anno 2020, this section first reviews imperative aspects of PE by examining funds' investment process, followed by an analysis of the institutional investment process and how this affects PE funds' investment process. Subsequently, an overview of the European PE market is provided in which key industry trends are considered and implications for PE funds and LPs are evaluated. Lastly, the chapter synthesizes insights and identifies key characteristics of the West European PE funds, which provides a more thorough understand of funds' investment behavior.

1.1 Imperative aspects of Private Equity Buyout

As one of the fastest-growing and best performing asset classes, PE has gained a significant foothold in the investment portfolios of LPs (Krosinsky & Robins, 2008). The raison d'être, or purpose, of PE funds, is to pool capital from investors and deliver returns by acquiring often relatively mature private or public companies with further growth or efficiency potential, managing and improving these for a holding period of three to seven years, and then divesting them at higher values. The value creation is made possible through a combination of strong governance, operational improvements, and financial engineering (Leleux, Swaay, & Megally, 2015). Historically, the PE model has worked well as the asset class has managed to outperform public equity markets in all the major geographical regions over the last 5-, 10-, 15-, and 20-year periods, with relatively low correlations to other asset classes (Bain & Company, 2019; Neuberger Berman, 2019).

1.1.1 An asset class well suited for responsible investing

PE funds are essentially very opportunistic, and thus, their business models evolve in order to respond to opportunities in the market and the changing demand of LPs (Leleux, Swaay, & Megally, 2015). With PE graduating to the mainstream in LPs' investment portfolios, a natural increase in attention has followed, particularly concerning the responsibility of its business practices. Today, PE funds are increasingly incorporating ESG factors into their investment decisions, and as such, responsible investing is gradually becoming an integral part of PE funds' investment process (Jackson-Moore, Case, Bobin, & Janssen, 2019). The unique characteristics of PE, such as a long-term investment horizon and an active ownership model, make PE funds well suited for integrating responsible investment practices and drive long-term transformational change (Krosinsky & Robins, 2008; EMPEA, 2018; Idzelis, 2019). These characteristics are now reviewed.

High-performance empowerment: While there are several characteristics of PE that are imperative to its success, Leleux et al. (2015) argue that it is, in fact, a PE fund's team that acts as the key driver of performance. While PE funds often consist of small lean teams that allow for a high degree of agility, they also compromise high-performance people with strong capabilities and experience in business and investment portfolio management. The combination of lean teams, top talent, and strong industry experience is what enables PE funds to effectively identify hidden opportunities and efficiently implement value-creating initiatives through active ownership while maneuvering with agility in their decision-making (Oldenhove, 2019).

An active ownership model: As argued by PRI Association (2014), PE funds' active ownership and influence at the board level make them strong candidates for responsible investing. Moreover, unlike corporate world activities in which focus is often diluted by multiple objectives, PE funds have their full power of incentives focused on single transactions, enabling them to effectively drive change. Likewise, fund mandates are often loosely defined, and so PE funds may be able to utilize flexibility as a strategic value lever, ultimately allowing them to capture value from emerging opportunities (Leleux, Swaay, & Megally, 2015).

Long-term investment horizon: Due to the illiquid nature of PE, funds are under no scrutiny from a large shareholder base, as with the case of publicly listed companies, and funds also have no short-term performance pressure, enabling them to implement growth strategies with a medium- to long-term horizon. This allows PE funds to pursue aggressive growth transformation initiatives, and because of the active ownership model, also to participate in the execution of such initiations in order to ensure a proper implementation (Leleux, Swaay, & Megally, 2015). These are all important elements of responsible investing (Krosinsky & Robins, 2008).

Alignment of incentives: PE funds generally have a strong performance discipline in which portfolio companies are incentivized to deliver good performance to GPs, and where GPs are incentivized to deliver good performance to LPs, allowing funds to be effective in their growth transformation (Leleux, Swaay, & Megally, 2015). In the latter, the combination of equity participation and the common 2-20 incentive model where GPs receive an annual 2% management fee on LPs' committed capital and an additional 20% of the profits above LP's hurdle rate at 8%, means that funds' income channel is highly dependent on their ability to create value. Nonetheless, maintaining alignment can be difficult as the traditional 2-20 model may incentivize GPs to raise ever-larger funds in the pursuit of higher fees, perhaps at the expense of quality opportunities.

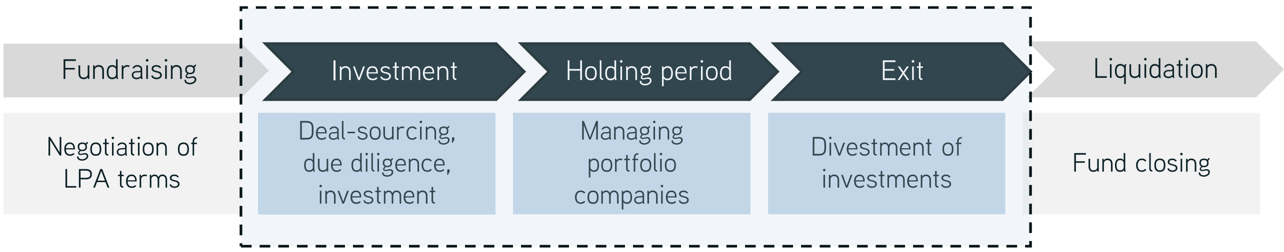
The value of discipline: Perhaps as important as a proper incentive system, several disciplining devices are integrated into the PE model that penalizes non-performance. Among others, these include the limited lifetime of funds which forces GPs to be able to create a significant amount of value in a non-infinite amount of time. Also, the use of debt and leverage in investments, especially in Leveraged Buyouts (LBOs), is a disciplining device as funds have to cope with regular payment deadlines and be compliant with covenants. In fact, most PE funds have covenants where LPs are allowed to stop their contributions if they lose faith in a fund's ability to meet the expected performance, which incentives funds to do their best (Leleux, Swaay, & Megally, 2015).

The combination of high-performance empowerment, an active ownership model, a long-term investment horizon, alignment of incentives, and disciplining devices makes PE funds well suited for responsible investing. To understand how these aspects relate to value creation, we now turn to review PE funds' investment process.

1.1.2 The Private Equity Buyout investment process

Upon fundraising, the Limited Partnership Agreement (LPA) is written in which LPs and GPs agree to specific investment terms. Such document normally entails that LPs only are to be held liable for their equity investment, yet with a passive role in the investment process, and that GPs are responsible for managing the investments, yet fully liable for any debt or obligations occurring in the fund. The LPA also specifies the duration of the fund, often being a 10-year period consisting of a two-year fundraising period, a three-year deal-sourcing and investment period, a three- to seven-year holding period, and a two- to three-year exit period, followed by the fund liquidation (ICAEW, n.d.; Leleux, Swaay, & Megally, 2015). This paper focuses on the investment phase, the holding period, and the exit phase cf. Figure 2. The key elements of these stages are now reviewed.

Figure 2: Phases in the Private Equity Buyout investment process



Source: Credit of the authors

1.1.2.1 Investment phase

Most often, PE funds source deals that either regards family and private owners, corporations, or other funds, i.e. secondary buyouts. The first category often consists of companies that either have a high potential but are in the need of new professional expertise to grow the company, or companies that have aging owners who seek generational change but face significant challenges in doing so. The second category consists of either private or public companies, or business divisions, in which the managers may see great opportunities to develop the business but may lack the necessary investment support or allowance from the parent company to pursue such initiatives. Finally, other PE funds, or secondary buyouts, are an increasingly popular source of deals that has gained momentum due to the supply and demand imbalances in the market where too much capital chase too few deals (Leleux, Swaay, & Megally, 2015). The latter will be examined more closely in section 1.3.

PE funds generally acquire companies in an LBO, which is a transaction involving a large amount of debt to finance the acquisition of the target firm (Rosenbaum & Pearl, 2009). Prospective firms of LBO transactions typically entail certain characteristics, including: (i) large and stable cash flows that allow for a continuous deleveraging of the company during the holding period, (ii) a leading or defensible market position, (iii) a significant untapped growth potential, (iv) opportunities for efficiency enhancement, (v) low CAPEX requirements, (vi) a strong asset base to collateralize the high amounts of debt, and/or (vii) a proven management (Krosinsky & Robins, 2008; Leleux, Swaay, & Megally, 2015; Rosenbaum & Pearl, 2009).

When sourcing new investment opportunities, ESG factors are more or less always considered but to various degrees across PE funds, depending on each fund's ethos and values (Eccles, 2016; Schoot, 2011). While the overall objective of PE funds' due diligence is to gain superior information and build excellent relationships with management (Leleux, Swaay, & Megally, 2015), opportunities or risks related to ESG matters can be important in generating long-term competitive financial returns, hence are often include in the assessment of a target company (Krosinsky & Robins, 2008; Schoot, 2011; Eccles, 2016; PRI Association, n.d.-b).

1.1.2.2 Holding period

After a company has been acquired, there will typically be an onboarding process with the purpose of aligning the portfolio company with the new owners and their value-creating initiatives. Commonly referred to as the "100-day plan", a PE fund develops an extensive to-do list that outlines the most urgent value-creating steps, including (i) setting a clear strategic direction for the company, (ii) ensuring that the right people, structures and processes are in place, (iii) identifying initiatives that can achieve immediate, short-term cash generation, (iv) identifying and prioritizing the value drivers that will help the company grow in the medium-term, and (v) build a detailed roadmap for successful implementation (BCG, 2020; Leleux, Swaay, & Megally, 2015).

Once in operation, PE funds create value by working several key-value levers, including a strong governance setup. The principal-agent problems arising from asymmetric information, and the agency costs that these incur (Jensen & Meckling, Theory of the firm: Managerial behavior, agency costs and ownership structure, 1976), can be reduced by PE funds in two ways. First, a PE fund can implement incentive systems for the top management in which they, for example, become (forced) equity participants, and second, a PE fund can increase its monitoring by utilizing active ownership in which the fund works closely, or engages, with the management team and also drives influence at the board level. Ultimately, this allows PE funds to be very close to the operations of their portfolio companies (Gompers, Kaplan, & Mukharlyamov, 2014).

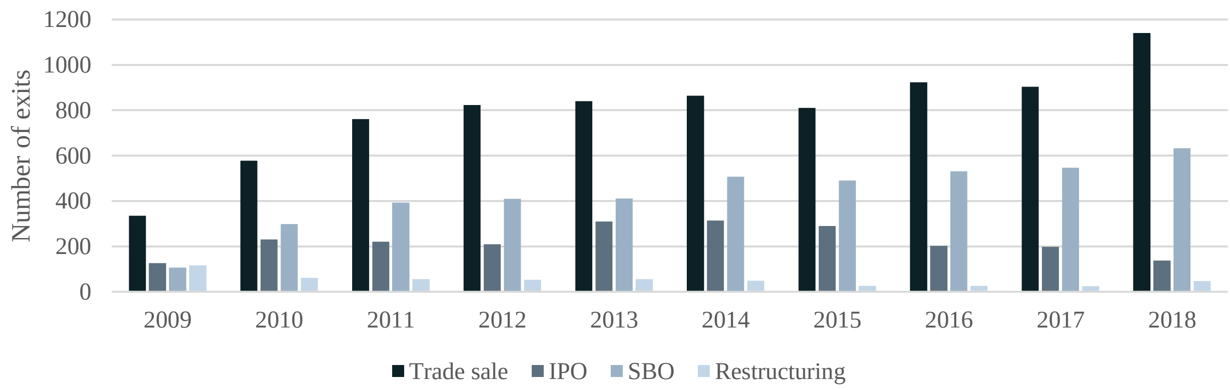
Another tool used by PE funds in their value creation is financial engineering. In this context, the high amount of leverage involved in LBO transactions has two value-creating effects. One effect is that high levels of debt can improve portfolio companies' operating activities by reducing the agency costs that may arise from large free cash flows (Jensen, 1986). The second is that more leverage results in tax-deductible interest payments, which act as tax shields for taxable income, although not effective in perpetuity due to the related bankruptcy costs (Modigliani & Miller, 1958). Also, the value accruing from such tax shields is likely to be inconsiderable in today's current low-yield environment (Leleux, Swaay, & Megally, 2015; Møller & Parum, 2016).

Despite strong governance and financial engineering, operational improvements remain the primary source of value creation in PE (Heel & Kehoe, 2005; Kaplan & Stromberg, 2009). Two sources of operational improvements exist for PE funds; operational efficiencies and strategic initiatives. Whereas the former targets revenue growth, reduced costs, and better management of working capital and assets, the latter focuses on strategic repositioning and acquisitions (Larcker & Holthausen, 1996; Muscarella & Vetsuypens, 1990). Since PE funds often have a market-size focus and industry-specific knowledge, they are able to be rather specialized[7] and use their deep expertise and network capabilities to create value. It is, for instance, quite common for a PE fund or GP to utilize its long-standing personal relationships within sectors to inject high-quality management into its portfolio companies (Haas & Pagani, 2020; Leleux, Swaay, & Megally, 2015), and some also appoint directors to ensure that boards, for example, recognize ESG as a core business issue (PRI Association, n.d.-c).

1.1.2.3 Exit phase

After opportunities have been exploited and value has been created, funds evaluate market conditions and the timing of an exit. Historically, the most common exit routes for PE-backed companies include trade sale followed by initial public offerings (IPOs), secondary buyout sale (SBO), and restructuring (Figure 3).

Figure 3: Private Equity Buyout global exit activity by type, 2009-2018



Source: (Statista, 2019)

To ensure a favorable exit phase, funds often (i) perform a readiness scan of the company and exit environment at least 18 months before the anticipated exit, (ii) ensure that management maintains their focus on creating value while preparing for an exit, and (iii) motivate buyers by identifying additional value-creating opportunities with actionable implementation strategies (Green, Hayes, Seghers, & Zaets, 2018).

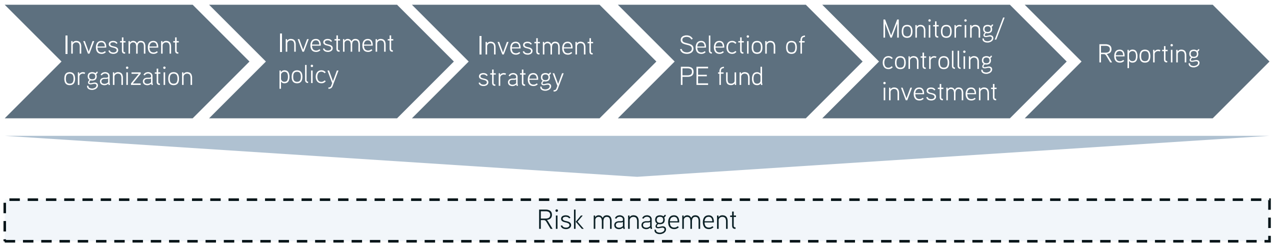
When preparing for an exit, funds generally summarize the progress that has been made during the holding period in order to leverage a great story for the sale memorandum. In this context, PE funds that have integrated responsible investment practices can leverage their ESG-story about how they have created resilient and viable companies with excellent future growth potentials (PwC, 2015). Nonetheless, PE funds' activities can be much affected by LPs, hence the next section is devoted to exploring the institutional investment process.

[7] Not all PE funds operate as specialists, some are also generalists. Nonetheless, sector-focused PE funds have been found to outperform generalists by almost 5 per cent (Cambridge Associates, 2014).

1.2 The institutional investment process

The institutional investment process consists of six or key decision-making steps that LPs often rely on in their investing cf. Figure 4. These are now reviewed to better understand the constraints PE funds operate under.

Figure 4: Stages in the institutional investment process



Source: (Bisang, 2012)

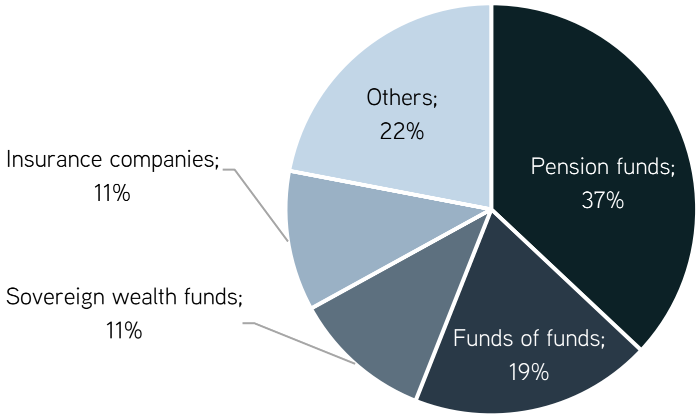
Investment organization: In the design and implementation of their investment approach, LPs need to obtain the necessary know-how and acquire access to the relevant professional network. In the context of responsible investing, LPs often have sustainability experts incorporated into their investment organization, although the degree to which this is done varies greatly. For instance, while some LPs integrate sustainability experts into investment committees, others construct specific sustainability advisory boards (Bisang, 2012).

Investment policy: LPs' investment policy often includes detailed information on the investment approach, such as motivations, expectations to performance on a risk-adjusted basis, and other implications that are of central importance. In the context of responsible investing, members of the fiduciary board align their beliefs on whether the commitment to responsible investing is primarily financially motivated or if ESG impact is of equal or higher importance (Urwin, Worldwide, & Woods, 2010). Only if these investment beliefs and expectations are shared in the investment policy, can an efficient investment strategy be made (Bisang, 2012).

Investment strategy: LPs' investment objective, and therefore investment strategy, vary according to the type of LP. While pension funds, insurance companies, and funds of funds normally state that their main investment objective is to generate financial returns, charitable trusts and foundations are more inclined to engage with non-financial considerations (Bisang, 2012), and sovereign wealth funds are generally perceived as political in nature (Wagner, 2014). Figure 5 shows that pension funds, at 37% of total AuM in European PE, is the most significant institutional investor group, followed by funds of funds (19%), sovereign wealth funds (11%), and insurance companies (11%). Therefore, the large majority of institutional investments, more than two-thirds, are predominantly driven by financial objectives. Because of this, LPs are assumed to generally convey this behavior and are treated as such throughout this study. Yet, this does not mean that LPs bypass non-financial considerations as long as those support their overall financial objectives (Bisang, 2012).

In the context of responsible investing, LPs' investment strategy have tended to be driven by risk mitigation purposes more than using ESG as an investment approach that drives returns, primarily due to the fact that no significant track record exists for how, or to what degree, responsible investing affects PE funds' financial performance (Urwin, 2010; Kumar, Wallace, & Funk, 2020; Franklin Templeton, 2019).

Figure 5: Institutional investments by type as % of total AuM in Private Equity Buyout, Europe, 2018



Source: (Invest Europe, 2019)

Selection of PE fund: Since traditional fundraising in PE requires LPs to make a blind pool commitment in which they commit capital many years before the underlying assets are known, LPs must therefore undertake a thorough due diligence of GPs' investment approach and performance track record. Despite PE being a relationship-based business where GPs often rely on existing investor relations, GPs may, however, secure capital at the same rate as their PE funds deploy it, thereby making it difficult for LPs to assess vintage fund performance, and thus, LPs also weigh qualitative measures high (Leleux, Swaay, & Megally, 2015).

In the context of responsible investing, LPs may be particularly interested in a GP's experience in monitoring, reporting, and engagement activities (PRI Association, n.d.-c) alongside an assessment of the investment- and operations team with regards to ESG competencies (Bisang, 2012). For this purpose, LPs can utilize available sources such as the PRI Limited Partners' Responsible Investment Due Diligence Questionnaire as a starting point (PRI Association, n.d.-c). Moreover, LPs' due diligence is likely to also cover soft factors such as culture, ethics, and commitments to having a client-centric approach (Urwin, Worldwide, & Woods, 2010).

Although a GP does not score high on LPs' due diligence, LPs may still be willing to commit capital if they believe the GP's willingness and capacity to improve its efforts during the life of the fund is high. In such cases, better ESG practices is often a considerable improvement point (PRI Association, n.d.-c).

Monitoring/controlling investment: As conflicts may occur at different stages of the LP-GP relationship, LPs conduct a significant amount of monitoring, often assisted by neutral advisors. Activities that commonly involve conflict of interest are: (i) GPs co-investing alongside funds, (ii) GPs managing overlapping funds,

(iii) GPs growing the fund size at the cost of quality investment opportunities, and (iv) GPs taking on excessive risk (Leleux, Swaay, & Megally, 2015). However, LPs also monitor PE funds in order to assess their progress and forthcoming activities, and to have an iterative supporting dialogue. Moreover, LPs, or neutral advisors, may often measure a PE fund's ESG impact alongside returns, and returns may then be compared to sustainability indexes or other benchmarks. Such controlling reports are then used by the LPs to maneuver their investment activities in order to balance expected returns with associated risks (Bisang, 2012).

Reporting: PRI Association (2020) argues that LPs need to: *"(...) provide clear direction on reporting requests to avoid anecdotal or inconsistent information which lacks standardization. LPs need to ensure a systematic approach to reporting that clearly defines reporting objectives and sets out processes on how to utilize the data"* – (PRI Association, 2020, p. 17). Therefore, LPs typically want PE funds to address the compliance with their investment strategy and how they have adhered to certain sustainability guidelines in their investing (Bisang, 2012). Yet, PE funds may find it troublesome to accurately measure and track the ESG progress of their investments and communicate relevant ESG objectives to LPs (Jackson-Moore, Case, Bobin, & Janssen, 2019), which has caused some LPs to refrain from publishing sustainability reports (Bisang, 2012).

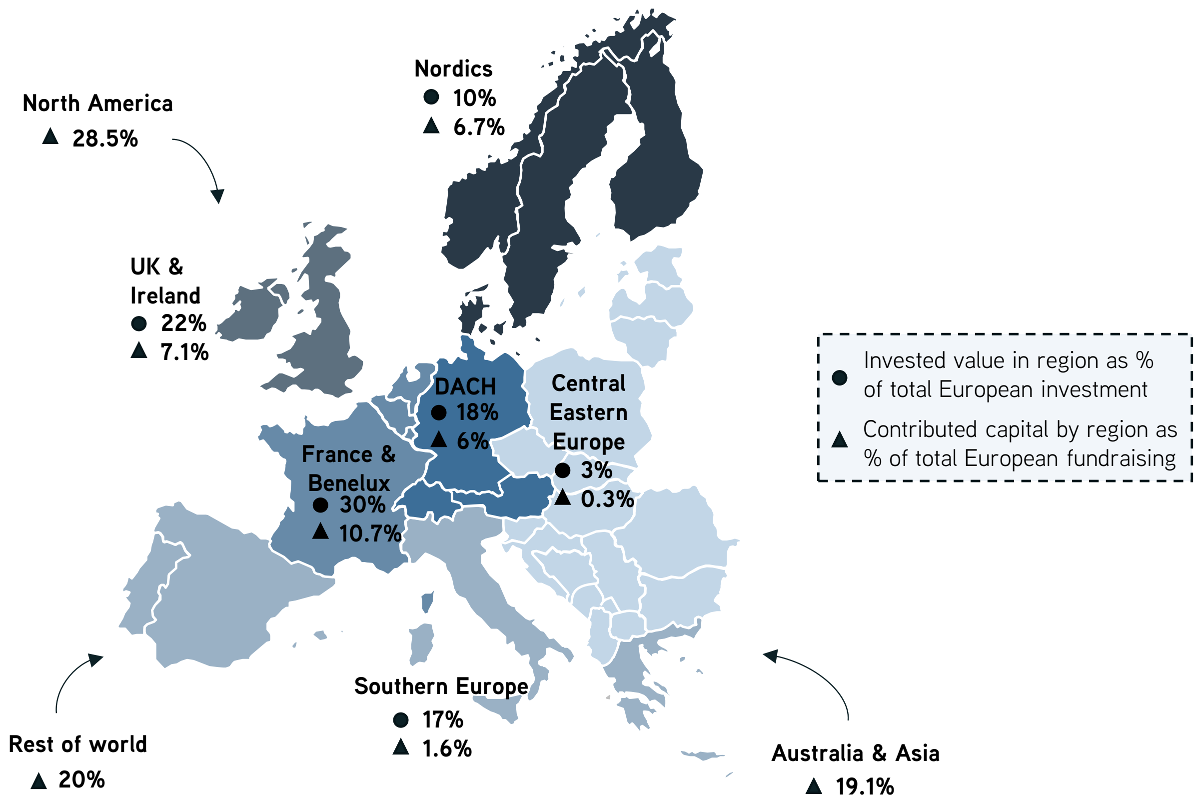
Risk management: Throughout the institutional investment process, LPs center their decision-making around risk management. While LPs' risk management practices in responsible investing do not differ much from those of traditional investment approaches, responsible investing is, however, an investment approach in which LPs often pay particular attention to tracking funds' ESG impact in order to mitigate reputational risks arising from potential impact washing activities. Therefore, responsible investing complements traditional risk management practices by introducing a new risk class encompassing social risk, climate risk, reputational risk, etc. To mitigate risks, LPs thoroughly monitor and assess GPs' capabilities in identifying ESG issues, their expertise in effectively handling such ESG issues, and their ability to be forward-looking in their responsible investment practices. Therefore, responsible investing often involves a higher degree of monitoring, typically making it a more active investment style for LPs than conventional approaches (Bisang, 2012).

1.3 West European PE market anno 2020

To better understand PE anno 2020, this section investigates the West European PE market by analyzing movements that currently direct the industry and what implications these have for PE funds' and LPs' behavior.

Measured in the aggregate value of investments, Europe is the world's second-largest PE market, accounting for roughly 29% of global deal value from 2014 to 2018, overtaken by North America at 57% (Preqin, 2019a). In Europe, significant disparity exists in the investment- and fundraising activity between regions. This is seen in Figure 6 which shows, first, the invested value in each region as a percentage of total European PE investment, and second, the contributed capital by region as a percentage of total European PE fundraising, both in 2018 figures. For instance, it can be seen that out of the total invested capital in Europe in 2018, 10% were invested in firms in the Nordic region, but also that 6.7% of total European fundraising came from Nordic LPs.

Figure 6: Regional investment- and fundraising value as % of total amounts, Europe, 2018

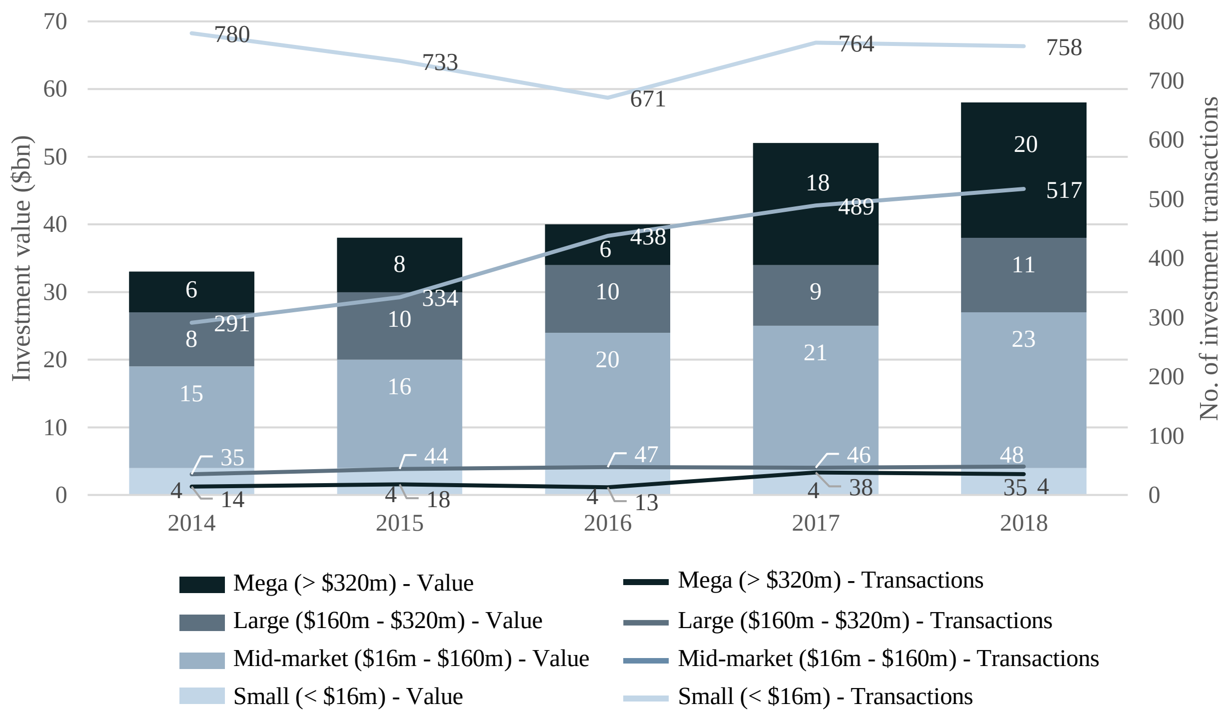


Source: (Invest Europe, 2019)

The figure shows how Western Europe – a geographical region defined, here in this paper, as the aggregation of the UK & Ireland, France & Benelux, DACH, Nordics, and Southern Europe – represents 97% of the total investment activity in Europe in 2018, while having 32.1% of the total European fundraising coming from its LPs. Although that the West European regions convey differences in culture, language, and business customs, they are, and thus PE funds are, nonetheless, treated homogenously in this study for the sake of simplicity.

Although Europe can appear to be a less attractive market than the US due to Europe's lagged economic growth and rising structural challenges, PE investments in Europe have delivered as high returns, or better than, those in the US. One explanation for this may be that many European countries, including large markets such as the UK, Germany, and France, have more growth companies per unit of GDP than in other parts of the world (Bain & Company, 2017). Moreover, as the US is a more mature PE market than that of Europe, funds declare that they see more attractive investment opportunities in Europe with better relative value (Listed Private Capital, 2020). However, the prospect of good deals has heightened the competition in Europe, causing investment activity to rise. For instance, between 2014 and 2018 the aggregate value of PE investments in Europe climbed with a compounded annual growth rate (CAGR) of 15.1%, whereas the number of investment transactions rose with a CAGR of 5% cf. Figure 7. In fact, this development implies that European deals are growing larger in size, especially among the mega-deals where the investment value is above $320m.

Figure 7: Private Equity Buyout investment by value and number of transactions, Europe, 2014-2018



Source: (Invest Europe, 2019)

During the same period, European PE fundraising rose with a 15% CAGR, which implies that PE funds have had an increasing confidence in being able to identify attractive deals at good values (Roberts & Naydenova, 2019; Invest Europe, 2019; Mendoza, 2020). These market movements indicate that LPs and PE funds have become more aggressive in their chase for returns (Bloomberg, 2019), which has resulted in certain market implications, including (i) record levels of uncalled capital (dry powder), and (ii) more co-investment activity.

Dry powder reaches new heights: Generally, the increased competition in Europe has caused multiples to rise, thereby making it increasingly difficult to locate investments at fair value (Roberts & Naydenova, 2019). In a 2018 PwC survey of 250 PE funds in Europe, 72% of the respondents highlighted the scarcity of investment opportunities a top challenge for the next five years, primarily driven by funds' record level of dry powder in Europe, representing $335bn as of December 2019 (Preqin, 2020; Roberts & Naydenova, 2019). While the large amount of uncalled capital is seen as favorable for PE funds looking to exit, it is a considerable issue for newly raised funds looking to deploy capital. Because of this, funds are, to a higher degree than earlier, dependent on their ability to, first, source attractive targets and choose good investments, and second, utilize their financial and operational ingenuity for enhanced value-creation (Listed Private Capital, 2020; Roberts & Naydenova, 2019). In this context, an increasing number of PE funds have begun recognizing the opportunity side of responsible investing and thus utilize it as an investment approach that not only mitigates risks but also exploits ESG value-creating opportunities (Farman, 2019; Financier Worldwide Magazine, 2020).

The increased competition and record level of dry powder are resulting in an increasingly mature European PE market in which funds grow in size in order to be able to participate in larger deals (Figure 7) and remain competitive (Roberts & Naydenova, 2019). The emergence of mega-funds, which is PE funds with more than $5bn in AuM, is therefore on the rise, and although they account for only a handful of funds in the European PE market, they constituted 42.2% of the capital raised between 2016 and 2018 (Pitchbook, 2019). As most of the capital goes to the largest funds, it has become increasingly important, especially for small- and mid-sized funds, to implement effective fundraising efforts, such as offering favorable terms, presenting a demonstrable track record, and showcasing a compelling investment strategy (Preqin, 2019a). In the light of responsible investing, this means that funds need to focus on leveraging a strong ESG story (PRI Association, n.d.-c).

More co-investment activity: The combination of rising allocations and record numbers of oversubscriptions has also meant that LPs operate in an increasingly competitive market. Resultingly, LPs are seeking to enhance returns and reduce costs, causing more LPs to turn to co-investment operations (Roberts & Naydenova, 2019). In fact, 2019 represented a record-setting year with co-sponsored deals representing 10% of global PE investment activity (MacArthur, Burack, Vusser, Yang, & Dessard, 2020), and according to the 2018 PwC survey, 92% of the respondents said that they now conduct more co-investment operations than ever before. However, despite the benefits of more co-investment activity being less clear for funds as it can slow down their process, create additional costs, and result in reduced investment independence, roughly 45% of the PE funds surveyed worldwide by Preqin plan to offer more co-investment opportunities in 2020, since such offers will provide funds with better access to larger deals and improve LP-GP relationships (MacArthur, Burack, Vusser, Yang, & Dessard, 2020; Roberts & Naydenova, 2019). Nonetheless, the increased competition generally means that access to top-performing funds may be constrained, which has caused some LPs to question whether extensive ESG compliance issues with GPs might restrict their access unnecessarily (PRI Association, n.d.-c).

1.4 Fund characteristics in Western Europe

Having explored imperative aspects of PE funds, the institutional investment process, and provided an overview of the West European PE market anno 2020, attention is now turned to analyze general characteristics of West European PE funds to gain a more thorough understand of funds' investment behavior.

Western Europe, a geographical region that covers the UK & Ireland, France & Benelux, DACH, the Nordics, and Southern Europe cf. section 1.3, is an environment that is significantly different from the rest of the world. For instance, when compared to the largest PE market in the world, North America, the West European PE market entails several distinct characteristics, including: (i) stricter regulatory policies, (ii) a lower degree of investment flexibility, and (iii) less mature market fundamentals. These are now reviewed.

Stricter regulatory policies: Historically, the European Commission has been the world's most active regulator on ESG considerations. In 2018, they increased Europe's sustainability efforts by releasing an action plan on responsible financing that includes a roadmap towards, first, reorienting capital for responsible solutions and inclusive growth, second, manage financial risk stemming from environmental and social risks, and third, foster transparency and long-termism in financial and economic activity. Besides the European Commission, governmental officials are increasingly debating regulatory policies in the sustainability domain, and with the emergence of stricter regulatory policies, PE funds and LPs are pressured to adopt certain ESG standards. Yet, much of Europe's responsible investment activity is still, to a large extent, driven by bottom-up self-regulation practices. The reason for this is that although Western Europe most likely is several years away from severe top-down governmental regulation on responsible investment practices, investors expect it to happen in Europe before anywhere else, causing them to coalescent around a set of voluntary standards and guidelines (Daskam & Khan, 2019; Sommer, 2013; Allianz Global Investors, 2019; Beard, 2019).

Lower degree of investment flexibility: While both the US and the UK follow the "Anglo-American" corporate governance model, which is based on shareholder wealth maximization principles, more importance is given to all stakeholders, including shareholders, in the West European governance model (Meier & Meier, 2013). In the Anglo-American model, managers have relatively more freedom to pursue affairs, and they are generally more incentivized by financial rewards than their West European counterparts (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010; Spliid, 2013). Moreover, and as depicted above, West European PE funds generally face a more restrictive political environment, not only with regards to ESG considerations, but also in terms of tax elements, as the national governments that constitute the West European region tend to be more eager to minimize tax advantages for PE funds, among others (Spliid, 2013). Finally, West European PE funds tend to rely more on bank debt when leveraging deals, contrary to the US funds that rely more on bond-issuing (Axelson, Jenkinson, Strömberg, & Weisbach, 2008). And since the covenants on bank loans tend to be more restrictive compared to bonds, the use of bank loans contributes to less operating flexibility (Nathanson, 2019) during funds' holding period. As such, the combination of management that are less monetarily incentivized, a stakeholder governance model in which, for example, companies adhere to stricter employment practices (Sommer, 2013), a method of leveraging that entails stricter leverage covenants, and a regulatory environment where governmental pressure is more severe and interference more common, contributes to a lower degree of investment flexibility. In the context of responsible investing, funds may be able to enhance their investment flexibility by utilizing the opportunity side of responsible investing and exploit the potential of ESG factors. This ESG potential is examined more in detail in section 2.2 and 4.1.

Less mature market fundamentals: Compared to the US, Western Europe generally entails a less mature PE market with lower average entry valuation multiples, despite the increasing competition (Sommer, 2013; Bain & Company, 2019; Listed Private Capital, 2020). In fact, West European PE funds have the longest average holding period of all regions at around 6.2 years for deals exited in 2014 (Preqin, 2015), which indicates a less developed exit environment compared to that of North America. While GPs are incentivized to exit in a timely manner due to the fact that longer holding periods negatively affect financial performance, they may be less able to do so for several reasons, such as credit availability being tighter in Western Europe, and value creation taking longer due to a lower degree of investment flexibility (Sommer, 2013; Mäkiaho, 2016).

Conclusion: Private Equity Buyout in Western Europe anno 2020

Opportunistic in nature, PE is one of the best performing asset classes and is well suited to integrate responsible investment practices and drive positive, transformational change. Through a combination of high-performance empowerment, an active ownership model, a long-term investment horizon, alignment of incentives, and disciplining devices, PE funds are able to identify hidden opportunities, create value, and drive change by utilizing capabilities in strong governance, operational improvements, and financial engineering. With LPs being predominantly driven by financial objectives and largely treating responsible investing as an investment approach that fulfills ESG risk mitigation purposes, LPs increasingly monitor funds on ESG matters so as to avoid impact washing, among others, while also passing on burdensome disclosure requirements to increase transparency.

Combined with a West European PE market that matures and intensifies, and where the competition for quality deals is heightened and record levels of dry powder exist, PE funds are balancing their focus between adhering to LPs' increased pressure and enlarged demand for transparency, while working harder to deliver satisfactory returns. Therefore, PE funds increasingly turn to utilize the opportunity side of responsible investing and treat it as an investment approach that exploits ESG value-creating opportunities rather than one that primarily seeks to mitigate ESG risks. And since West European PE funds have the longest average holding periods in the world, West European funds may be in a unique position to foster long-term ESG goals while simultaneously utilizing responsible investing as a value lever that provides them with enhanced investment flexibility.

2 Understanding responsible investing

In conjunction with responsible investing, a wide range of closely related terms have emerged and developed over time. The definitions are plentiful, and although some lean slightly towards philanthropy and others more towards compliance-related matters, many of them ultimately pursue the same goal of better managing risks while generating long-term returns (Bisang, 2012). Despite this, a major challenge lies in the vagueness and inconclusiveness as to how ESG factors are incorporated into investment decisions and active ownership, and thus, great variation exists in how PE funds integrate responsible investment practices. Therefore, the purpose of this chapter is to gain a better understanding of responsible investing by examining its definitions and historical development, its key drivers, and its strategies and frameworks that enable integration.

2.1 Definitions and historical development

Due to the rapid development and popularity of responsible investment practices, it is an area with a substantial number of expressions that are used interchangeably, and sometimes, defined differently by various market participants. This, in turn, can be a source of great confusion for PE funds and LPs seeking to integrate responsible investment practices. This section therefore addresses some of these various terms and presents the most widely acknowledged definition of responsible investing, which is adopted by this paper going forward.

In their pursuit to simplify the investment field and provide clarity to practitioners, Fulton et al. (2012) conducted an extensive systematization of the terminology related to responsible investing and how it has evolved over time. As they explain, an early form of responsible investing emerged in the 1960s as ‘socially responsible investing’ (SRI), defined as a value-based and largely exclusionary investment approach that took account for the social, ethical, and environmental behavior of companies. The term became comprehensive very quickly and was used to describe any investing that involved some sort of ethical consideration or was driven by investor values. Since then, the sustainable development gained popularity and further support from politicians, especially after the UN’s 1992 Conference on Environment and Development known as the ‘Earth Summit’. Later, in 2003, an interest emerged for a new definition of SRI to include corporate governance in addition to social, ethical, and environmental elements in response to the suggested importance of good corporate governance in academia during this time. Furthermore, a growing need emerged for a risk-and-return driven approach to this type of investing, as opposed to the value-driven one of SRI, indicating that ESG matters were starting to be recognized as financially important. In 2006, such an approach emerged and was coined ‘responsible investing’, devised from UN’s Principles for Responsible Investment (UNPRI):

> “*It [responsible investment] is an approach to investing that aims to incorporate ESG factors into investment decisions and active ownership to better manage risk and generate sustainable, long-term returns*„
>
> – (PRI Association, n.d.-a, p. 1; PRI Association & ERM, 2018, p. 10).

While responsible investing is an approach that complements traditional financial analysis and portfolio construction techniques, it is, in the context of PE, also ought to be incorporated into the full investment process, from investment through holding period up and until exit, according to PRI Association (n.d.-b). Since UNPRI is the world's largest voluntary corporate sustainability initiative and comprehends the most widely acknowledged definition of responsible investing (PRI Association, n.d.-a; Rust, 2020), this paper adopts UNPRI's definition in an effort to minimize the ambiguity of responsible investing going forward.

Yet, since the launch of UNPRI, asset owners and asset managers have tended to differentiate, for instance, SRI and responsible investing in an incoherent fashion. The main difference between the two approaches, as argued by Fulton et al. (2012), is that while SRI is a value-driven approach that focuses on social, ethical, and environmental guidelines, and often stick to an exclusionary approach, responsible investing is a risk-and-return driven approach that incorporates ESG factors into investment decisions and active ownership. Adding to the ambiguity, there has also been confusion to what degree sustainable investing differs from responsible investing, but as argued by Fulton et al. (2012), sustainable investing usually adopts the role as a catch-all term that covers the full sustainability domain. Also, while the European Commission and the European Environment Agency have adopted the term 'green financing', the European Sustainable Investment Forum (Eurosif) labeled it 'sustainable and responsible investment'. Nevertheless, both definitions are highly similar to that of responsible investing (European Commission, 2020; Barkman, 2018; Eurosif, 2018a).

As described by the Investment Leaders Group (2014) from University of Cambridge Institute for Sustainability Leadership, responsible investing is like a friendship: *"one knows when it is true, one senses when it is false, but it is hard to define"* – (Investment Leaders Group, 2014, p. 11). With practitioners in the sustainability domain using different definitions, adopting distinct interpretations, and exploring diverging investment approaches, accurately quantifying genuine responsible investing becomes challenging, and measuring its effect on financial performance even more problematic. These challenges are examined more in detail in section 3.1. Yet, this is only to be expected in today's current environment where the sustainable development is driven by bottom-up self-regulation movements that, *per se*, leads to distinct definitions and divergent interpretations. Thus, as researchers and practitioners, we must do our best to maneuver in such treacherous waters.

As the abovementioned definitions are very abstract and general, they vary in their degree to which they weigh financial objectives relative to environmental and/or social considerations. To fully understand responsible investing, its practices, and its potential as an investment approach, it is necessary to specify its contingencies by positioning it in the investment spectrum. Figure 8 below illustrates such an attempt. Here, it can be seen that although five out of the six investment categories involve considerations within the sustainability domain, only 'full ESG integration' and 'impact investing' fulfills the definition of responsible investing. While 'some ESG integration' primarily entails ESG risk mitigation but no or little stewardship, 'full ESG integration' seeks to mitigate ESG risks *and* exploit ESG opportunities, and therefore harmonizes with responsible investing.

Figure 8: Investment spectrum across asset classes with positioning of responsible investing

Financial considerations			Social/environmental considerations		
Traditional investing	Some ESG integration	Full ESG integration	Impact investing	Impact first investing	Philanthropy
Does not seek to increase environmental or social benefit; only seeks to maximize financial performance	Incorporates some ESG principles into traditional investment analysis in order to maximize financial performance (ESG risk mitigation)	Fully incorporates ESG factors into traditional investment analysis and active ownership to maximize financial performance (ESG risk mitigation *and* opportunity seeking)	Explicitly invests in organizations for immediate and measurable environmental or social impact while also maximizing financial performance	Invests to address societal challenges which may generate below market financial returns for investors	Invests to address societal challenges that often cannot generate financial returns for investors

Responsible investing

Source: (Yang, Akhtar, Dessard, & Seemann, 2019; Uhrynuk, Burdulia, & Mugambi, 2019; McGrath, 2014)

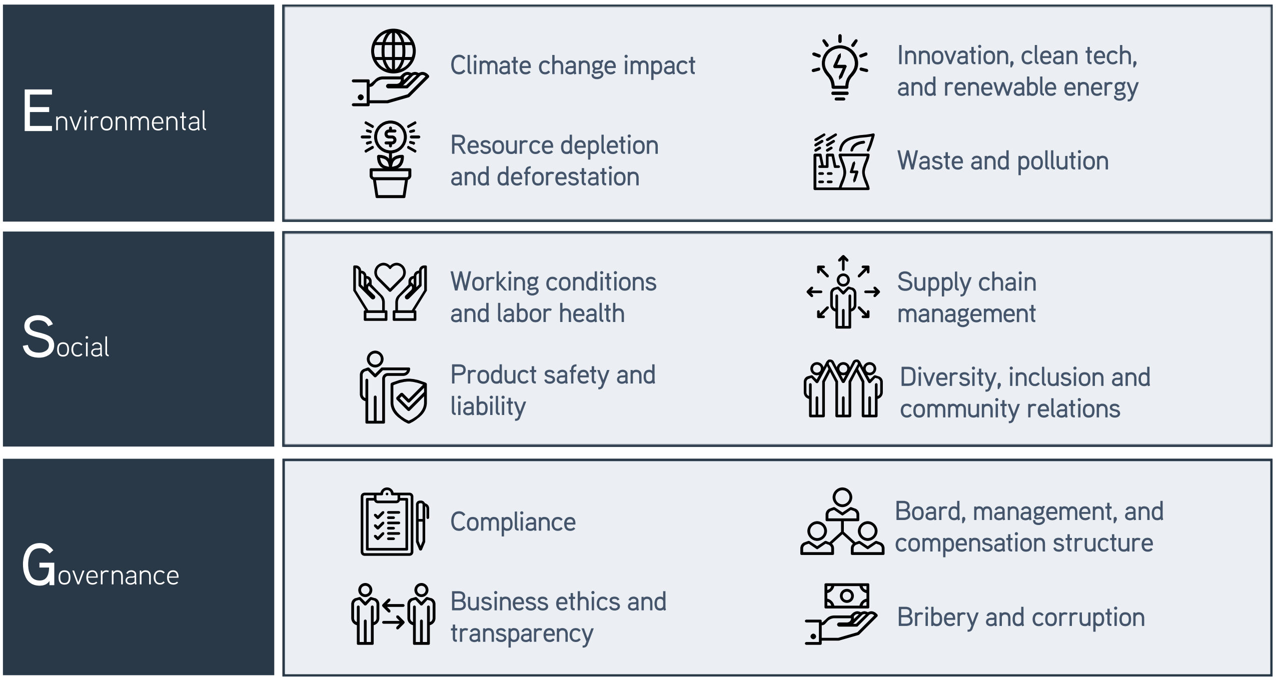
Figure 8 also shows that there are two degrees of impact investing. Whereas the first category 'impact investing' adds to 'full ESG integration' by empowering immediate and measurable environmental and social impact alongside maximizing financial performing, the second category 'impact first investing' entails addressing societal challenges which may generate below-market financial returns. Therefore, it is only 'impact investing' of the two impact investing approaches that complies with the definition of responsible investing. 'Traditional investing' and 'philanthropy' are of course not included as they encompass two extremes.

Although responsible investing is ought to entail 'full ESG integration' and 'impact investing', this is an ideal scenario that may not hold true among practitioners in real-life situations. In section 1.2 it was highlighted that LPs tend to engage in responsible investing for risk mitigation purposes more than utilizing it as an investment approach that drives returns, primarily because no significant track record exists for how, or to what degree, responsible investing affects PE funds' financial performance. Thus, even though LPs commit to responsible investing, for example by being an UNPRI signatory, they may still be exploring their ESG journey, alike PE funds and many other practitioners (Serafeim, Pinney, & Kotsantonis, 2016). Nonetheless, PE funds are increasingly utilizing responsible investing as an investment approach that both mitigates risk and drives returns cf. section 1.3, causing more PE funds to engage with 'full ESG integration' and 'impact investing'. To better understand PE funds' motivation for doing so, we will now examine some key drivers of responsible investing.

2.2 Drivers of responsible investing in PE

Fundamentally, ESG factors are the key components of responsible investing. ESG factors encompass all aspects related to organizations regarding their impact on the environment and the transition to a low carbon economy, the interaction between the company and its stakeholders, and the rules and practices applied when overseeing firms. Thus, it is a catch-all term used to describe risks, opportunities, and performance within these areas (Uhrynuk, Burdulia, & Mugambi, 2019; MSCI, 2020). Although the relevance and magnitude of ESG factors vary across industries and between companies, Figure 9 summarizes the most common categories.

Figure 9: Common environmental, social, and governance (ESG) categories



Source: (MSCI, 2020; Hildebrand, Deese, & Lago, 2018)

In general, the degree to which E, S, and G are considered and utilized throughout PE funds' and LPs' investment process most often depends on how far they have gone on their ESG journey. While practitioners in the earlier stages of ESG adoption are more likely to have an initial focus on governance factors, more sophisticated PE funds and LPs are able to take on social and environmental challenges to a higher degree (Franklin Templeton, 2019; Szmigiera, 2019; KPMG, 2019). What drives the adoption of ESG, especially in the context of West European PE, and which ESG components that often are of high importance, are now examined.

In chapter 1 we learned that LPs tend to be driven by risk mitigation purposes when engaging with responsible investment practices. Naturally, strengthening risk management practices is, therefore, a priority by PE funds (Jackson-Moore, Case, Bobin, & Janssen, 2019). However, section 2.1 showed us that what makes responsible investing interesting is that it encompasses a dual approach in which PE funds can pursue opportunities arising from ESG factors while simultaneously seeking to mitigate critical risks stemming from ESG issues. As such, it has the potential to combine better risk management with improved returns on the portfolio level, while also reflecting beneficiary values (PRI Association, n.d.-a). In this context, section 1.3 revealed that funds increasingly exploit ESG-opportunities to enhance their returns amidst the increased competition for quality deals. Furthermore, section 1.4 taught us that companies in continental Western Europe[8] encompass a corporate governance model in which emphasis is put on all stakeholders, including beneficiaries.

Therefore, PE funds' motivation to engage with ESG and commit to responsible investing is primarily driven by: (i) enhancing returns, (ii) strengthening risk management, and (iii) aligning strategies with priorities of beneficiaries and stakeholders. Each of these responsible investment drivers are now reviewed.

Enhancing returns: Because responsible investing is a style of investing that examines ESG factors and incorporate these into investment decisions and active ownership, the potential benefits are both considerable and growing (PRI Association, n.d.-a; Ugwumadu, 2019). In general, responsible investing allows PE funds to gain a fuller understanding of the true risk and opportunity profile of prospective target companies, hence has the potential to help funds identify better investment opportunities. Resultingly, this puts funds in better odds to deliver higher returns from the onset (Kiernan, 2009; Bernow, Klempner, & Magnin, 2017). Moreover, since responsible investing is ought to provide funds with a more robust, comprehensive, and forward-looking analytical framework, it has the potential to act as a new source of value creation during the holding period. By developing capabilities in responsible investing, funds may, for example, be better at anticipating key regulatory changes, reduce their companies' operating expenses through energy efficiency and waste minimization, and generate additional revenue growth through new products, services, and technologies (Kiernan, 2009; ERM, 2020; Bernow, Klempner, & Magnin, 2017). But perhaps most importantly, since ESG is believed to be a potent, forward-looking proxy for the quality of a company's management team (Kiernan, 2009), PE funds may be able to utilize their ESG capabilities in responsible investing to better assess, improve and/or replace the management of their portfolio companies to further drive financial performance.

Strengthening risk management: In recent time, companies that have experienced waste or pollution spills, worker safety incidents, and other ESG-related incidents have seen their revenues and profits decline accordingly (Bernow, Klempner, & Magnin, 2017). While the number of ESG issues are plentiful, the most actively managed risks by PE funds are, in broad categories, those evolving around water and waste management, product and worker safety, climate change, and governance business ethics (KPMG, 2019; Szmigiera, 2019). Nevertheless, climate change remains the most significant ESG component, primarily due to its physical risks, such as its long-term, negative effect on the environment and societies. Most notably, climate change is causing global temperatures to rise, resulting in a string of extreme weather events, including storms, floods, and

[8] The mainland of continent Western Europe, excluding surrounding islands, such as the UK & Ireland (Misachi, 2019).

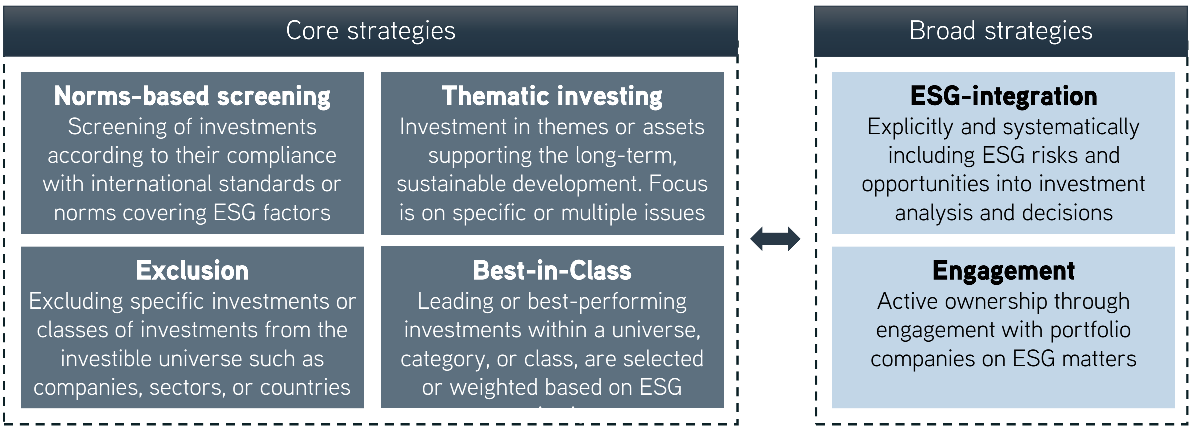
droughts that destroy human habitat and damage assets. And since such events have a major impact on the whole supply chain, e.g. from farmer to consumer, investors bear the consequences as well. Therefore, societal activism and political activity are currently laying out roadmaps towards a low-carbon economy. However, such transformation unfolds risks too, for example transitional risks that, in turn, are likely to be material for companies in the short to medium term. This could entail political interventions that affect how products are produced or whether products have to be reinvented to fulfill certain standards, or it could be societal shifts that result in certain business practices no longer being acceptable. Thus, although PE funds are ought to identify the ESG issues most material to their companies, mitigating climate change risks is one of the few, overlapping risk categories that seem to be material, in one way or another, for all businesses (Wendt, 2018). This thinking is well reflected in World Economic Forum's 'global risks interconnections map' (Appendix 6).

Aligning strategies with priorities of beneficiaries and stakeholders: PE funds that incorporate portfolio companies' stakeholders into their decision-making and onboard their explicit and implicit requests throughout their investment process are able to, among others, avoid unfortunate events to occur in their portfolio companies, such as sudden negative publicity, loss of brand image, and fines. In fact, taking care of stakeholders is ought to strengthening companies' competitive edge by improving relationships (Krosinsky & Robins, 2008). For example, utilizing responsible investing may allow funds to attract, retain, and motivate top talent, internally in the fund as well as in portfolio companies. Contrary, if PE funds were not to engage with stakeholders, they would risk losing their support, including that of employees, customers, regulators, and perhaps that of beneficiaries too. Thus, it is not surprising that a key driver of responsible investing is brand and reputation (Oldenhove, 2019; Bernow, Klempner, & Magnin, 2017; Kiernan, 2009; DWS Investment, 2018).

2.3 Investment strategies and frameworks

Having gained a better understanding of responsible investing and its key drivers, we now examine some of the different strategies and frameworks that enable integration. Building on the strategy-definitions proposed by Eurosif and UNPRI, we distinguish between core and broad strategies as illustrated in Figure 10. While core strategies are composed of screening techniques that systematically assess how investments are selected, broad strategies entail general methods for incorporating ESG into investment decisions and active ownership (Bisang, 2012; Eurosif, 2012; 2018b; PRI Association, n.d.-a). When committing to responsible investing, PE funds often use a combination of core- and broad strategies (PRI Association, n.d.-a).

Figure 10: Core- and broad strategies of responsible investing



Source: (Eurosif, 2012; Eurosif, 2018b; Bisang, 2012)

Nonetheless, core strategies on a stand-alone basis cannot be regarded as responsible investing. The reason for this is that core strategies are used only at the investment- and portfolio construction stage and not throughout the holding period, and so they primarily act as ESG risk mitigation strategies although they can drive returns. This, in turn, would position core strategies as a 'some ESG integration' approach (Figure 8). Contrary, broad strategies can be thought of as ESG initiatives that entail incorporating ESG factors into investment decisions *and* active ownership throughout the full investment process, including at the investment stage. Combined, the two broad strategies can be regarded as an ESG risk mitigation and an ESG opportunity-seeking strategy, and are therefore positioned within a 'full ESG integration' or 'impact investing' approach. In other words, funds that employ both of the broad strategies can be regarded as being conductors of responsible investing, whereas those funds that prefer to stick to only the core strategies, cannot. Of course, funds that employ broad strategies may also be using one or more core strategies. We start by reviewing the latter.

2.3.1 Core strategies

The core strategies include: (i) norms-based screening and (ii) exclusion, two forms of negative screens, and (iii) thematic investing and (iv) best-in-Class, two forms of positive screens. Since core strategies are employed in more than two-thirds of all investments within the sustainability domain across asset classes (Bernow, Klempner, & Magnin, 2017; Chasan, 2019; Eurosif, 2018b), they will now be reviewed in depth.

Norms-based screening: When sourcing and selecting deals, PE funds can utilize norms-based screening to ensure that investments are on par with international standards or norms related to ESG matters. As such, it is a screening procedure that establishes minimum ESG requirements and fundamental responsibilities for potential investment companies. The purpose is to systematically exclude companies with extra-financial risks within areas such as human rights, labor, environment, and corruption, and as such, it is motivated by the risk mitigation driver. PE funds can either establish their own criteria or utilize existing standards, such as those of the United Nations Global Compact, the Organization for Economic Cooperation and Development (OECD), and the International Labor Organization (United Nations, 2020a; Bisang, 2012).

Exclusion: PE funds may also refrain from investing in countries, sectors, and companies based on the ethical principles of client mandates and their fund ethos. It is common to exclude companies within sectors involved in defense, tobacco, hard liquor, and adult entertainment (Sinclair, 2012). Furthermore, companies that operate in environmentally damaging industries such as fossil fuels and traditional automotive, companies that are involved in animal testing, or companies that manufacture hazardous substances are often excluded as well, since a considerable amount of transitional, political, and reputational risks are associated with these types of investments (Bisang, 2012). Across asset classes, exclusion is the most widely employed strategy within the sustainability domain (Bernow, Klempner, & Magnin, 2017; Global Sustainable Investment Alliance, 2018).

Thematic investing: When investing thematically, PE funds utilize a top-down investment approach and concentrate exclusively on themes or assets linked to the long-term, sustainable development (Eurosif, 2018b). The strategy aims to contribute to specific or multiple social and environmental issues in sectors where funds can stand to capitalize on long-term structural changes like population growth, increasing urbanization, resource scarcity, climate change, and changing consumer patterns (Bisang, 2012). While this explicit strategy implies a major reduction of the investible universe, it can be a source of differentiation or competitive edge for funds as it can lead to a deep understanding of macro trends and their effects on companies within certain sustainability-themed areas (Bain & Company, 2016). When this strategy is pursued in tandem with broad strategies, it is most commonly done so in dedicated impact funds (Bisang, 2012).

Best-in-Class: PE funds employing a Best-in-Class strategy utilize a bottom-up investment approach in which portfolios are constructed by the selection of only those companies that meet a certain ESG ranking and financial screen (Bisang, 2012; Eurosif, 2018b). Therefore, a Best-in-Class strategy allows PE funds to identify and select ESG frontrunners regardless of sector, theme, and country. The scoring of companies typically depends on a weighted criterion and can vary by sector (Cambridge Institute for Sustainability Leadership, 2019).

In general, core strategies are approaches to identifying and selecting investments that can help guide funds' sourcing and due diligence. The strategies are not mutually exclusive but can be combined and used in accordance to the desired investment strategy. In the context of PE, funds are moving away from simply employing core strategies to combine them with broad strategies (Bucak, 2019; Eurosif, 2018a), primarily driven by a more opportunistic approach to responsible investing in which ESG opportunity seeking is embraced alongside ESG risk mitigation cf. section 1.3. These broad strategies are now reviewed.

2.3.2 Broad strategies

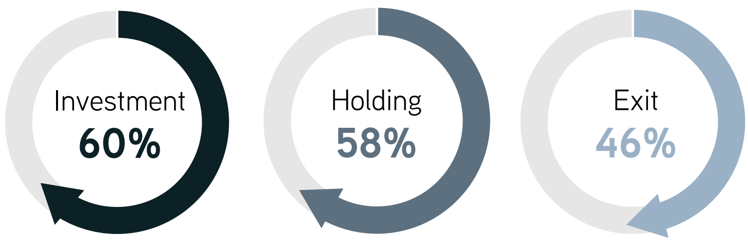
The broad strategies include: (i) ESG-integration, which is the systematic inclusion of ESG factors into investment analysis and decisions, and (ii) engagement, which is active ownership that promotes sustainability and ESG matters through engagement with portfolio companies (Eurosif, 2018b).

ESG integration: The incorporation of ESG factors into investment analysis and decisions is a strategy that influences every phase of the investment process. In the context of PE, this therefore regards the investment stage, holding period, and exit phase. The aim is to identify, utilize, and monitor risks and opportunities that can materially affect the company value by explicitly and systematically incorporating ESG factors in all decision-making. The purpose of doing so is to enhance performance by reducing costs and liabilities, and by increasing revenues in order to support better long-term returns (Sinclair, 2012; PRI Association, n.d.-a).

The ESG-integration strategy has been subject to much discussion in recent years due to inconclusive approaches as to how it is handled in practice. As a consequence of the exhaustive scope of ESG, practitioners suffer from a lack of clarity as to which ESG factors that are material to their investments (Uhrynuk, Burdulia, & Mugambi, 2019). Furthermore, practitioners' efforts to use ESG-integration range from inadequate tick-the-box approaches to well-defined integration strategies embedded in the investment process (Eurosif, 2018b). The lack of best practices and transparency into the ESG-integration strategy makes it very difficult for LPs to assess, monitor, and compare PE funds financial and non-financial performance. This has evoked the phenomena of impact-washing where essentially anyone can label themselves ESG-adopters with no established standards to hold them accountable (West, 2020). Because of this, the information asymmetry between LPs and PE funds is generally heightened in responsible investing (Eurosif, 2018b). In response to this, Eurosif (2014) proposes three categories to determine the degree of ESG integration: (i) nonsystematic/ad-hoc integration, (ii) systematic inclusion of ESG research in financial ratings/valuations, and (iii) mandatory investment constraints based on financial ratings/valuations derived from ESG research. Yet, even with clear definitions, Eurosif (2014) conclude it to be extremely difficult to distinguish investors' ESG-integration.

In a 2019 PwC survey of 38 LPs and 145 GPs mainly in Europe, it was found that 60% of the GPs employed an ESG-integration strategy (Jackson-Moore, Case, Bobin, & Janssen, 2019). However, as illustrated in Figure 11 below, GPs were more inclined to employ ESG-integration in the investment stage than during the holding-and exit phase, despite the fact that an ESG-integration strategy is ought to be employed throughout the investment process. While 60% of GPs assessed ESG factors during screening, due diligence, and acquisition, 58% included ESG issues in the 100-day transformation plan after investing, and only 46% considered ESG factors during exit. This therefore reflects the ESG journey that PE funds currently are on cf. section 2.1.

Figure 11: Adoption of ESG-integration at investment, holding, and exit



Source: (Jackson-Moore, Case, Bobin, & Janssen, 2019; Lambert, Case, & Bobin, 2016)

Engagement: Finally, engagement is a long-term, active ownership process that seeks to influence the behavior of portfolio companies regarding their business practices and disclosure (Eurosif, 2012). It is about encouraging portfolio companies to improve their ESG practices and support them in handling material ESG risks and opportunities (PRI Association, n.d.-a). There are several ways to approach this; PE funds can, for example, establish a Code of Conduct for portfolio companies, regularly assess their ESG improvements at board meetings, assign employees to be held responsible, ensure formalized ESG training, or suggest external sustainability advisors, and thus, engagement is all about exerting influence as majority owners. While PE funds that have committed to responsible investing usually encourage their companies to establish ESG policies and processes, Capital Dynamics (2017) surveyed 175 GPs across North America, Europe, and Asia, and found that only 56% of the GPs impose portfolio companies with mandatory requirements to regularly report on ESG KPIs. This therefore indicates that the engagement strategy can be formalized to various extents.

Since PE funds that employ both broad strategies, ESG-integration and engagement, can be regarded as conductors of responsible investing, it is interesting to approximate the relative number of funds doing so. In this context, it is estimated that about one-third of global AuM within the sustainability domain, $10tn out of the $30.7tn, across all asset classes, are incorporating ESG factors into investment decisions and active ownership, i.e. responsible investing. In Europe, this figure is slightly higher in relative terms, with roughly two-fifths of AuM, $6tn out of $14tn, being denoted as responsible investing (Eurosif, 2018b; Chasan, 2019). However, these rough estimates are bloated as they include ‘impact first investing’ and ‘philanthropy’, which are practices not associated with responsible investing as they seek not to maximize financial performance. Nevertheless, the figure is a good indicator of the degree to which broad strategies are employed among practitioners. Assuming this figure holds for West European PE funds, roughly two-fifths would be conductors of responsible investing and therefore employ both of the broad strategies; ESG-integration and engagement.

Figure 12 summarizes the main elements of the core- and broad strategies and their positioning in the investment spectrum. Generally, the further practitioners position themselves towards social and environmental considerations, the more systematic, explicit, and thorough they need to be with regards to ESG matters.

Figure 12: Investment spectrum with systematization of responsible investment strategies

	◂◂ Financial considerations ◂◂			▸▸ Social/environmental considerations ▸▸		
	Traditional investing	Some ESG integration	Full ESG integration	Impact investing	Impact first investing	Philanthropy
Sources of value	Financial only	Financial performance first; social and environmental impact second		Social or environmental impact alongside maximized financial performance	Pursuit of societal challenges; below market financial returns accepted	Pursuit of idealistic goals; negative or below market returns accepted
Screening approach	Passive	Possibly negative and positive screens ESG factors assessed	Positive and negative screens, possibly thematic screening Material ESG factors assessed in all decision-making		Often thematic screening, possibly best-in-class Most ESG factors assessed in all decision-making	
Degree of ESG integration	None	(i) Ad-hoc/ Nonsystematic, mostly during acquisition	(ii)/(iii) Systematic inclusion of ESG and/or mandatory constraints throughout the investment process (during acquisition, through ownership, and at exit)			
Engagement on ESG during ownership	None	None	Engagement enforcing mandatory requirements	Engagement but usually embedded in portfolio companies' mission		Significant engagement in companies, high societal ESG activism

[ ] Responsible investing

Source: (Yang, Akhtar, Dessard, & Seemann, 2019; Uhrynuk, Burdulia, & Mugambi, 2019; Eurosif, 2012; Eurosif, 2018b; OECD, n.d.; PRI Association, n.d.-a; PRI Association, 2019)

Figure 12 perfectly illustrates the difficulty of identifying funds' ESG approaches. For example, while 'impact investing and 'impact first investing' share the same degree of ESG integration and engagement on ESG during ownership, i.e. the two main characteristics of responsible investing, they only differ slightly in their sources of value and screening approach. Nonetheless, since responsible investing covers 'full ESG integration' and 'impact investing', it can be identified by the systematic inclusion of ESG factors and/or mandatory constraints in tandem with engagement, and of course, the intent to maximize financial performance.

Yet, not all practitioners that are committed to responsible investing may entail such identifiable characteristics due to them not being adequately far on their ESG journey cf. section 2.1. In this context, the emergence and growth of several supporting frameworks may help funds transcend towards more disciplined ESG approaches.

2.3.3 Supporting frameworks

With ESG materializing as a mainstream investment component across asset classes (Beard, 2019; Global Sustainable Investment Alliance, 2018), a variety of organizations, tools, and frameworks have emerged (Figure 13) that are ought to help practitioners be more systematic and formalized in their responsible investing.

Figure 13: Supporting organizations, ESG tools, and frameworks

Source: Credit of the authors

Out of all of these, UNPRI is the largest voluntary corporate sustainability initiative in which asset owners and asset managers as well as service providers, unitedly, have formed six aspirational principles that its members, or signatories, are ought to meet in their commitment to responsible investing (Figure 14).

Although the six principles mostly provide guidance, UNPRI also offers supporting dialogue and frameworks that supports its signatories. For instance, their reporting framework on ESG matters is helpful as it allows practitioners to enhance transparency and strengthen their dialogue between investors, clients, and other stakeholders (PRI Association, n.d.-d; n.d.-e). Moreover, the PRI Association (2016a) has created a blueprint for ESG-integration within equity investments, and although such model is not expected to ensure proper ESG-integration as a standalone framework, it is useful for practitioners when combined with some of the other tools presented in this section. The model consists of four stages, namely: (i) identification of material ESG factors, (ii) incorporation of ESG factors into financial forecasts and valuations alongside assessing environmental and/or social impact, (iii) choosing an investment decision based upon these considerations, and (iv) actively engaging investment companies on crucial improvement points. Here, the ESG information gathered through engagement and active ownership will feed back into future analyses and decisions, and thus, improve practitioners' ESG capabilities.

Figure 14: The six principles

Principles:

1. We will incorporate ESG issues into investment analysis and decision-making processes.
2. We will be active owners and incorporate ESG issues into our ownership policies and practices.
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.
4. We will promote acceptance and implementation of the Principles within the investment industry.
5. We will work together to enhance our effectiveness in implementing the Principles.
6. We will each report on our activities and progress towards implementing the Principles.

(PRI Association, n.d.-e)

Besides UNPRI, there are other guiding tools provided by UN. For instance, UN Global Compact offers ten principles to guide the value system of companies within the areas of human rights, labor, environment, and anti-corruption (United Nations, 2020a). Additionally, UN's Sustainable Development Goals (SDGs) enable practitioners to align their investment decisions with broader societal ESG objectives (United Nations, 2020b).

Another supporting tool is the Sustainability Accounting Standards Board (SASB) which helps practitioners focus their attention on the subset of ESG factors that are most material to their investments. SASB has identified the disclosure topics that are most likely to be material across 77 industries, and they have proposed relevant KPIs for each of these ESG factors. The standards can be used as guidance for assessing ESG risks and opportunities during screening and due diligence processes, and also when planning value-creation initiatives. Moreover, SASB can be used alongside other frameworks such as Global Reporting Initiative (GRI), the Global Impact Investing Rating System (GIIRS), and the Impact Reporting and Investment Standards (IRIS), which can help practitioners communicate the ESG impact from their investment activities (Eccles, 2016; Wendt, 2018). Another noteworthy mention is CDC's Toolkit for Fund Managers, which helps PE funds with practical guidance on material ESG-identification and -integration in emerging markets (CDC Group, 2018).

Ultimately, the many organizations, tools, and frameworks may help PE funds and LPs to build confidence in responsible investment practices (Ugwumadu, 2019; Krosinsky & Robins, 2008; Koenig & Jackson, 2016).

Conclusion: Understanding responsible investing

One knows when it is true, one senses when it is false, but it is hard to define. Indeed, responsible investing and related investment areas within the sustainability domain are featured with diverging definitions and distinct interpretations that, throughout time, have afflicted PE funds, LPs, and other practitioners with limited visibility into the practices of responsible investing. For clarity, this paper adopts the most widely acknowledged definition of responsible investing, defined by UNPRI as an investment approach that aims to incorporate ESG factors into investment decisions and active ownership to better manage risk and generate sustainable, long-term returns. Fundamental to responsible investing is ESG factors, a catch-all term entailing environmental, social, and governance elements that PE funds increasingly utilize in their endeavor to enhance returns, strengthen their risk management, and in aligning strategies with priorities of beneficiaries and stakeholders.

To be regarded as conductors of responsible investing, PE funds' investment approaches need to encompass either 'full ESG integration' or 'impact investing'. While this regards PE funds that use a combination of the two broad strategies, ESG-integration and engagement, PE funds that solely utilize core strategies such as positive- and negative screens are discounted as responsible investors. Nonetheless, despite the emergence and growth of supporting frameworks, tools, and network organizations, responsible investing is still a relatively immature phenomenon, and as a result, many PE funds may not be particularly far on their ESG journey.

3 Measuring responsible investing in PE

With preceding chapters having examined PE in Western Europe anno 2020 and central elements of responsible investing, the purpose of chapter 3 is to gain a more thorough understanding of how responsible investing can be measured in PE. Therefore, section 3.1 compiles some of the critical real-world challenges that both PE funds and LPs currently face in their responsible investing, and subsequently reviews what implications these have for researchers' ability to measure responsible investing in PE. Building on these discoveries, section 3.2 discusses how responsible investing can be adequately operationalized, and thus, quantitively measured, with the purpose of guiding the forthcoming data collection process and empirical analysis.

3.1 Measurement and classification obstacles

In chapter 2 we learned that although ESG factors are starting to become a mainstream investment component, responsible investing is still in a transitional phase where market practitioners are faced with a variety of obstacles in properly planning, incorporating, measuring, and communicating these practices. Consequently, researchers have difficulties in evaluating funds' responsible investment practices in a manner that is reliable, comparable, and transparent. These challenging dynamics of responsible investing are now reviewed.

3.1.1 Challenges for PE funds, LPs, and other practitioners

While many LPs have adopted a responsible investment approach, others have held back as they believe responsible investing cannot produce returns on par with conventional strategies (Bernow, Klempner, & Magnin, 2017). Such thinking finds its stronghold in the lack of consistent, high-quality, long-term, comparable ESG data that makes it challenging for LPs, PE funds, and other practitioners to establish a significant relationship between responsible investing and financial performance (Bakhshi & Hassl, 2017). In this context, the ambiguity in conducting responsible investing, such as the absence of standard practices and robust policy frameworks, and the diverging approaches to how responsible investing is defined and interpreted, are obscuring PE funds' and LPs' abilities to measure and classify the financial value and non-financial impact stemming from responsible investing (Bakhshi & Hassl, 2017; Broderick, 2019; Kozlowski, 2019). Also, PE funds and LPs are often less systematic, transparent and thorough when incorporating ESG factors into investment decisions relative to when they use other, more traditional investment factors (Bernow, Klempner, & Magnin, 2017; Daskam & Khan, 2019; Bakhshi & Hassl, 2017; Uhrynuk, Burdulia, & Mugambi, 2019). Resultingly, they find it difficult to estimate the value created from responsible investing, which, in turn, explains why the majority do not currently do so (Jackson-Moore, Case, Bobin, & Janssen, 2019).

In addition, monitoring non-financial impact in portfolio companies through the use of KPIs requires PE funds to frequently collect relevant data, which many funds find challenging at this stage; their main issues being identifying, assembling, and extrapolating ESG metrics from companies and effectively communicating these to LPs (Private Equity International, 2019; Jackson-Moore, Case, Bobin, & Janssen, 2019). Such reporting and monitoring challenges are problematic as they make it hard to grasp the impact of their strategy, difficult to assess materiality, and challenging to determine the financial value of ESG programs. Even with the appearance of several supporting organizations, frameworks, and tools, there is no single standard for PE funds to follow (Broderick, 2019). This lack of standardizations contributes greatly to the varying degrees in which responsible investing is understood, conducted, and evaluated across PE funds, many of which result in inefficient investment approaches and possible misalignments with LPs' expectations (BSR, 2019; Kozlowski, 2019). The vagueness of PE funds' responsible investing makes it difficult for LPs to evaluate their practices, which in turn raises concerns over impact washing (Private Equity International, 2019; Kiernan, 2009). To address this, LPs are increasingly monitoring PE funds and requesting more disclosure but find the lack of standardization and insufficient financial and non-financial data to be major challenges.

3.1.2 Research implications

Having compiled some of the main challenges surrounding responsible investing, this section now reviews the implications for researchers' ability to measure responsible investing in PE. Overall, practitioners' extensive challenges imply that responsible investing is indeed difficult to encapsulate for researchers, and that it is, in particular, the validity of findings that is troublesome. For instance, in order to ensure validity when examining the link between responsible investing and financial performance, the concept of responsible investing must be operationalized by determining quantitative metrics that adequately represent the undertaking of responsible investing in the PE funds. In this context, since many PE funds, although committed to responsible investing, may not be particular far on their ESG journey and therefore have few responsible investment practices fully integrated, a high validity may prove challenging to obtain. Moreover, when assessing the investment practices of PE funds from an outside-in perspective, a validity issue adds to the problem; the black-box phenomena in which PE funds thrive on information asymmetry and keep their critical information private (Ljungberg & Svedman, 2017). As such, insights into PE funds' processes and practices are limited, causing researchers to rely much on PE funds' and LPs' reporting and disclosure initiatives. Yet, these are not guaranteed to reflect PE funds' actual practices and may in fact entail a publication bias[9].

If we, as researchers, cannot distinguish between the various degrees to which PE funds conduct responsible investing, our findings will be obscured. While the challenges imply that responsible investing is complex and PE funds are private in nature, we face a combination of difficulties that is likely to interfere with the validity of this paper's findings. Nonetheless, it is the reality of the current state in responsible investing in PE. Thus, in our aim to diminish such problem, the following section sets out to review researchers' and practitioners' assessment of the indicators that are thought to best represent the concept of responsible investing.

[9] Publication bias is *"a bias in the published literature, where the publication of research depends on the nature and direction of the study results"* – (Brender, 2006, p. 307). The same thinking applies to the results of fund's ESG impact.

3.2 Operationalization of responsible investing

With insights into the challenges associated with measuring PE funds' responsible investing, we now propose a method for operationalizing the concept of responsible investing. Operationalization is the process of selecting a set of specific indicators to represent a concept and subsequently specifying such indicators into observable variables to allow for a quantitative measuring (Saunders, Lewis, & Thornhill, 2016). In this paper, such process follows, first, from a thorough understanding of the inner workings of PE funds (chapter 1) and responsible investing (chapter 2), and second, from reviewing researchers' and practitioners' assessment of the indicators that best represent the concept of responsible investing. From these indicators, a set of variables are specified. Each of the indicators and variables are carefully described with the purpose of ensuring consistency, to increase the quality of results, and for researchers to assess and replicate the approach. Also, this method guides our data collection process and ensures that our PE fund sample is assessed in a consistent manner.

3.2.1 Indicators of responsible investing in PE

While researchers, LPs, PE funds, and service providers all have distinct convictions about which indicators that are ought to best represent responsible investing, most, however, agree on a few. For instance, 'commitment' is thought to be a good indicator of the degree to which PE funds are dedicated in making responsible investing a priority in their day-to-day operations (BSR, 2019; Uhrynuk, Burdulia, & Mugambi, 2019; Bisang, 2012; Broderick, 2019). Another indicator that is widely supported is that of 'capacity', denoted as PE funds' access to internal and external capabilities, expertise, and other resources that enable a thorough understanding of ESG-materiality and an efficient management of ESG factors (Daskam & Khan, 2019; Beard, 2019; Preqin, 2019b; Eccles & Churet, 2014; Bisang, 2012; Bernow, Klempner, & Magnin, 2017; PRI Association & ERM, 2018). Finally, researchers and practitioners point to 'process' as an important indicator of responsible investing, which refers to the way in which material ESG factors are incorporated into investment decisions and active ownership in a systematic, coherent fashion, throughout funds' entire investment process (PwC, 2020; Eurosif, 2018b; PRI Association, n.d.-a; Broderick, 2019; Bernow, Klempner, & Magnin, 2017).

Thus, when reviewing the empirical literature, it seems that the three indicators that best represent the concept of responsible investing are: (i) commitment, (ii) capacity, and (iii) process. These three indicators are ought to be regarded in unity due to what we have learned so far; PE funds must be committed to responsible investing while having the capacity and processes in place to facilitate a 'full ESG integration' or 'impact investing' approach in which material ESG factors are incorporated into investment decisions and active ownership throughout the entire investment process in a systematic, coherent fashion in order to effectively and efficiently realize financial value and non-financial impact. The three indicators are now reviewed in depth, followed by a specification of the observable variables that proxy each of the indicators.

3.2.1.1 Commitment

The commitment to responsible investing is an important first step towards integrating responsible investment practices and serves as the foundation of a fund's strategy. As expressed by Hampole & Korngold (2019) from BSR, a global non-profit organization that promotes the sustainable development, a commitment to responsible investing, often expressed in a responsible investment policy, has the following implications:

> "*[A responsible investment policy] (i) establishes a 'North Star' by providing direction to employees and other external stakeholders in understanding the firm's core investment beliefs, (ii) communicates commitments to Limited Partners in a clear, consolidated, effective statement, (iii) aligns expectations and builds trust with broader stakeholders including investors, investment professionals, regulators, portfolio company employees and local communities where portfolio companies operate, and (iv) establishes the framework for a consistent approach to implementation by clearly describing the scope, governance structure, actions, and reporting to support the integration*,, – (Hampole & Korngold, 2019, p. 1).

Besides, a formal commitment is one of the main characteristics that LPs look for when determining whether GPs are dedicated to responsible investing. As expressed by AP6 and Aberdeen Standard Investments in Private Equity International's (2019) responsible investing survey; a strong commitment from GPs is a good indicator that can ensure institutional dedication and allocation of resources towards responsible investing. The reason for this is that practitioners are well aware that a commitment from the top effectively spawns a culture that cultivates responsible investing throughout the organization; from the investment teams that source deals and perform due diligence, to operational teams that realize value-creation opportunities. Contrary, without dedication at the senior level it is difficult to integrate responsible investment practices into daily operations (Private Equity International, 2019; PRI Association & ERM, 2018; PRI Association, 2015a).

3.2.1.2 Capacity

Although commitment cultivates an appropriate organizational culture, it is, nonetheless, important to also be in fortune of competent people with strong ESG- and financial analysis capabilities, regardless to what degree such competences stem from internal or external resources. In this context, PE funds' devotion of resources, access to expertise, and understanding of ESG matters are imperative considerations when assessing their responsible investment strategy. As argued by Robert Sroufe (2016), integrating sustainability into organizations is about; *"(...) the participant's individual and collective reflection and understanding of their organization's practices and how to challenge the status quo with new value propositions"* – (Sroufe, 2016, p. 12). This appropriately reflects organizational decision-making; essentially it being individual teams, managers, and partners that are accountable for creating financial value and non-financial impact from their responsible investment approaches. Therefore, PE funds' capacity is largely contingent on the qualifications of its organizational members (Daskam & Khan, 2019; Beard, 2019; Koenig & Jackson, 2016).

3.2.1.3 Process

The last indicator, 'process', refers to the way in which material ESG factors are incorporated into investment decisions and active ownership in a systematic, coherent fashion, throughout funds' investment process. As outlined in section 2.1, although responsible investing is regarded as an investment strategy that fulfills a 'full ESG integration' and an 'impact investing' approach, PE funds may not be particular far on their ESG journey. However, what matters, in extension to PE funds' commitment and capacity, is their ability to be systematic in integrating responsible investing and to engage with their portfolio companies on material ESG issues (PRI Association, n.d.-a; Eurosif, 2018b). Essentially, the purpose is to understand how PE funds utilize responsible investment practices to create financial value and non-financial impact in an effective and efficient manner.

In unity, the three indicators commitment, capacity, and process represent the concept of responsible investing. However, individually, they vary greatly in measurability. For example, whereas measuring PE funds' commitment to responsible investing is considered fairly accessible and straightforward by practitioners, it is somewhat more challenging to measure PE funds' capacity, and even more complicated to measure their process. With this in mind, we now specify the observable variables that proxy these three indicators.

3.2.2 Specification of variables

The aim of this section is to deduce variables that can measure the responsible investing of PE funds quantitatively and in a manner that is collectively exhaustive and mutually exclusive. Each variable has been deduced from the abovementioned indicators and selected based on its presumed measurability. Due to the difficulty in quantifying an assessment that is bound to be qualitative, the variables should be interpreted in the following way: (i) The variables for commitment measures if the fund is committed to responsible investing, and thus, has started its ESG journey. (ii) The variables for capacity are proxying how well the fund is thought to be able to handle ESG matters and thereby facilitate its responsible investment strategy. (iii) The variables for process are there to identify if the PE fund, or GP, has well-established processes, and thus, have come far on its ESG journey. As such, the variables for process are thought to be important differentiators. Whereas the first variable 'formal commitment' proxy the indicator 'commitment', the subsequent four variables proxy 'capacity', and the final two variables proxy 'process'. We start by reviewing the variable 'formal commitment'.

[1] Formal commitment: To measure PE fund's commitment to responsible investing, we devote a categorical variable to measure whether a PE fund has publicly or formally committed to responsible investing. The commitment of a fund is directly measurable as it is either expressed in the fund's terms (LPA), in its investment policy, or through its compliance with UNPRI. To measure funds' commitment, we therefore distinguish between 'UNPRI compliance', 'other formal commitment', and 'no commitment'. However, one drawback of the variable is that it offers no meaningful way to differentiate between varying degrees in commitment across PE funds. For example, funds' commitment may vary from being 'socially responsible' or 'environmentally responsible', to 'socially and environmentally responsible'. As noted earlier, this depends on PE funds' ESG journey; the further they have gone and the more sophisticated they are, the more inclined they are to address social and environmental challenges in addition to governance issues. Moreover, PE funds may have wildly diverging definitions of responsible investing and varying interpretations of what a formal commitment entails. As such, formal commitment, *per se*, is thought to have a low degree of validity and explain very little in itself.

[2] ESG personnel: Typically, it is the investment- and operational teams of PE funds that, in particular, need to incorporate ESG factors into their decision-making. Yet, GPs may designate dedicated ESG specialists to accompany the investment- and operational team in order to strengthen internal capabilities and increase the accountability of the fund's responsible investing. The idea is that such ESG capabilities are necessary for PE funds in order to be able to create financial value and non-financial impact in an effective and efficient manner (Zeisberger, 2014). Therefore, a categorical variable is devoted to measure whether funds employ ESG personnel. However, although it may seem reasonable to measure whether funds dedicate resources towards ESG personnel in order to heighten the accountability of their responsible investing, the variable does not take into consideration the fact that a fund with no designated ESG personnel might still be perfectly capable of efficiently managing ESG factors. Ideally, we would have to carefully evaluate the ESG capabilities of each investment- and operation professional in the PE fund to get a valid measure of a fund's capacity. Yet, such task remains beyond the scope of this study, which means that an important measure of capacity is likely omitted.

[3] ESG training and/or external resources: Despite a PE fund having designated ESG personnel, or perhaps similar capabilities among non-designated ESG personnel, it is important for funds to be sufficiently updated on ESG research, evolving practices, and regulatory developments (Zeisberger, 2014). Thus, PE funds' ESG training of personnel and/or use of external resources to support their ESG decision-making are ought to proxy their capacity to efficiently manage ESG. Consequently, we devote a categorical variable to measure whether funds have a formalized ESG training of key personnel and/or use external resources, such as ESG consultants.

[4] Detailed public ESG disclosure: Disclosure is considered important in responsible investing as it provides stakeholders with transparency into ESG initiatives and real-world impact (PRI Association, n.d.-d; n.d.-e). However, due to the private nature of PE, public disclosure on critical information is not common. Following this reasoning, PE funds that do in fact provide detailed public ESG disclosure must then be funds that have a deep understanding of ESG-materiality and carry efficient ways of handling ESG matters. Nonetheless, funds' ESG disclosure needs to be adequately detailed to allow for a genuine proxy of PE funds' capacity, and thus, should entail SMART[10] ESG initiatives. On the basis of these understandings, we devote a categorical variable to measure whether PE funds provide detailed public ESG disclosure. However, a shortcoming of the variable is that it provides no meaningful way to distinguish between the quality of the disclosed material.

[10] SMART = **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**ime bound.

[5] GP's responsible investment experience: Another way to measure funds' capacity is by considering the experience of GPs, more specifically in the context of responsible investing. Such rationale builds on the notion that if GPs have been able to raise successive responsible investment funds, they must have complied, at least to some extent, with LPs' financial and non-financial expectations, and thus, gained valuable responsible investment experience. Following this rationale, such experience would provide GPs with a strong understanding of ESG-materiality and how to efficiently manage ESG factors. Because of this, GPs' responsible investment experience is ought to proxy PE funds' capacity, and thus, a discrete variable is devoted to measure the amount of successive responsible investment funds raised by a PE fund's GP. Yet, as with any capability measurement, doing so while also ensuring high validity is outright difficult, and this is equally true in the case of GPs.

[6] Formalized engagement: Cf. section 2.3, engagement is imperative to the integration of responsible investment practices as it entails an active ownership, and thus, is ought to proxy PE funds' process capabilities well. Therefore, a categorical variable is devoted to evaluate whether a fund is formally engaging its portfolio companies on material ESG issues. Although engagement is complex and can be difficult to estimate, we evaluate PE funds' engagement by using a consistent set of qualitative viewpoints, such as:

1. Have the responsible investment policy and formal commitment been translated into concrete action?
    a. Case studies and ESG reporting that exhibit robust examples of engagement activity, for instance, ESG initiatives with SMART goal setting, or other displays of ESG progress.
    b. Whether reported progress have been supported by relevant KPIs.
2. Is there a continuous monitoring and engagement of portfolio companies?
    a. Whether ESG is prioritized at the onboarding of portfolio companies and included in 100-day plans.
    b. If ESG is incorporated on the agenda during portfolio companies' board meetings.

However, a shortcoming of the variable is that it relies solely on PE fund's ESG reporting and disclosure, which may not accurately reflect the engagement activity with their portfolio companies.

[7] Systematic integration: Finally, we devote a categorical variable to evaluate whether a fund incorporates ESG into its investment decisions and active ownership in a systematic, coherent fashion, throughout its entire investment process. As highlighted up till this point, measuring funds' process is very complex, but process capabilities are nonetheless important in responsible investing and are thought to be occupied by ESG front-runners. Thus, we assess the integration of each by using a consistent set of qualitative viewpoints, such as:

a. Whether the GP has well-established processes or practices for the handling of ESG matters.
b. If ESG can be considered an integral part of the decision-making throughout the investment process.
c. Whether tools, frameworks, KPIs, and international standards support a systematic ESG-integration.
d. If they have established internal knowledge sharing initiatives with best practices on ESG matters.

Ideally, the categorical variable should be broken down into more practical and measurable components, but the complexity of PE funds' integration makes it more feasible to do so an overall basis. Although we distinguish between the fund's level of integration, we do so on the basis of asymmetric information.

The observable variables, presented in decreasing order of measurement simplicity, are ought to represent the concept of responsible well in unity. Yet, their one shared limitation is that they may measure the responsible investment activity of the GP, and thus, perhaps not exclusively for the PE fund in scope.

Conclusion: Measuring responsible investing in PE

While the ambiguity of conducting responsible investing causes LPs, PE funds, and other practitioners to face significant challenges in measuring financial value and non-financial impact, researchers are bound to difficulties of similar proportions when seeking to distinguish between PE funds' practices in order to determine, with the highest possible validity, which PE funds that can be classified as conductors of responsible investing.

However, by operationalizing the concept of responsible investing, such a measuring becomes more tangible. In this context, the empirical literature points to three indicators that are ought to best represent the concept of responsible investing, namely; PE funds' commitment, capacity, and process. From each of these indicators, a set of observable variables have then been deduced to allow for a meaningful measurement of responsible investing. The variables, presented in decreasing order of presumed measurement simplicity, are; PE funds' formal commitment, ESG personnel, ESG training and/or external resources, detailed public ESG disclosure, GP's responsible investment experience, formalized engagement, and systematic integration. In unity, these seven variables are ought to best represent and measure the concept of responsible investing in PE.

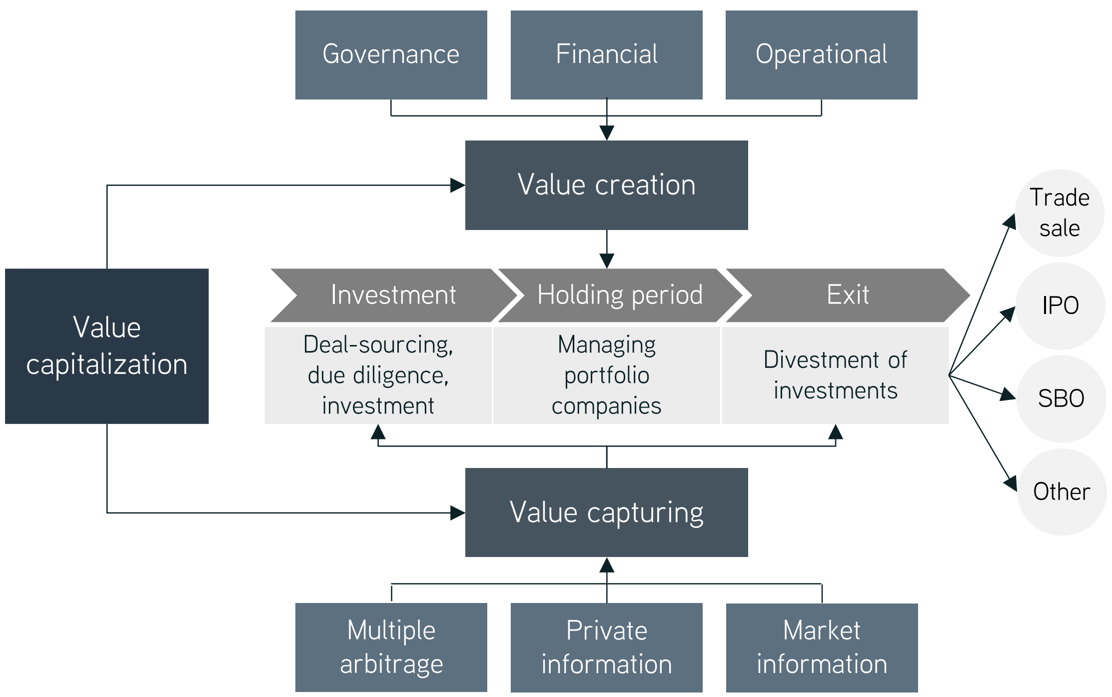
4 Responsible investing and financial performance in PE

With insights into PE in Western Europe anno 2020, an understanding of responsible investing, and how the concept of responsible investing can be operationalized, the necessary understanding of the fundamental elements in which this study is built upon is now established. As such, chapter 4 reviews theory and literature on the problem in scope with the purpose of identifying factors that can explain how responsible investing affects PE funds' financial performance. Whereas the purpose of section 4.1 is to gain an understanding of the effect of responsible investing on PE funds' financial performance, section 4.2 focuses on the organizational facilitation that allows funds to efficiently manage their responsible investment practices. Subsequently, section 4.3 synthesizes key insights from sections 4.1 and 4.2 to develops this paper's hypotheses.

4.1 PE value capitalization potential in responsible investing

Until now, a PE fund's value creation, value capturing, and value capitalization have not been clearly separated. Yet, such distinction is critical for the remaining chapters. Figure 15 shows their interrelatedness; value capitalization consisting of value creation and value capturing activities, and whereas the former creates value from governance, financial engineering, and operational improvements during the holding period, the latter captures value from multiple arbitrage, private information, and market information in the investment and exit phase. Since a fund's value capitalization is equal to their financial performance, we first examine how financial performance can be measured in PE, followed by an analysis of how ESG can affect financial performance.

Figure 15: Value capitalization breakdown in Private Equity Buyout



Sources: Credit of the authors with inspiration from Laskowski (2012)

4.1.1 Measuring financial performance in PE

The underlying structure of a PE fund is that LPs commit their capital for a certain period of time from which the GPs are able to call the capital when relevant investments are found. GPs can call capital continuously and it is only when the capital has been called that it will be included in the overall performance evaluation (Leleux, Swaay, & Megally, 2015). After an investment has been made, managed, and divested, GPs will distribute capital back to the LPs, and thus, a fund's performance is measured by the amount of capital that is distributed back to the LPs in comparison to the amount that was originally contributed. This can be measured using either the multiple on invested capital (MOIC) or the internal rate of return (net IRR[11]).

Multiple on invested capital (MOIC): MOIC is a measure of how many times LPs have made, or are likely to make, their money back on their investments, and can be presented as a return-multiple (Preqin, 2017):

$$MOIC = \frac{\sum Capital\ distributions + NAV}{\sum Capital\ contributions} \tag{1}$$

where, NAV, or net asset value, is the unrealized value of a fund's holdings that are yet to be liquidated[12]. The benefit of MOIC is that it is intuitively easy to understand and provides a quick measure of the total capital return that has been realized from an investment. A major drawback of MOIC is, however, that it does not account for the time it took to realize any return, and thus, ignores the time value of money concept. As such, MOIC is often complemented by net IRR when measuring and comparing PE funds' financial performance.

Internal rate of return (net IRR): Capital calls and distributions during the lifespan of a PE fund are essentially a stream of cash in- and outflows between the fund and its LPs. When GPs call capital from LPs, it is therefore regarded as negative cash flows (investments), and when GPs distribute capital back to LPs it is regarded as positive cash flows (returns). Net IRR is the effective discount rate that makes the net present value of these cash flows equal to zero. Therefore, net IRR can be presented as (Hayes, 2019; Preqin, 2017):

$$Net\ present\ value = \sum_{t=0}^{n} \frac{CF_t}{(1 + net\ IRR)^t} + \frac{NAV_n}{(1 + net\ IRR)^n} = 0 \tag{2}$$

where CF_t is the cash flow at time t, and NAV the unrealized value of a fund's unliquidated investments. Since net IRR accounts for the time value of money, it can easily be compared to LPs' hurdle rate.

Now, to understand how responsible investing, or ESG, affects funds' financial performance, we turn to treat the value creation and value capturing mechanisms that occur within a PE fund's portfolio companies.

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[11] Net IRR is equal to the internal rate of return after management fees and carried interest are factored in (Preqin, 2017).
[12] Net asset value (NAV) is a valuation that represents the amount at which a PE fund's investment assets could be acquired or sold in a transaction between willing parties (Palmer, 2019).

4.1.2 Value creation potential in responsible investing

Cf. Figure 15, PE funds' value creation potential accrue from three primary sources, namely; strong governance, financial engineering, and operational improvements during the holding period. The purpose of the value creation phase is for the PE fund to maximize its initial equity investments within its portfolio companies.

In order to differentiate between the value creation stemming from financial engineering and operational improvements in PE investments, with the latter including governance practices, Achleitner et. al (2010) provide a framework to decompose value creation by looking at the return on equity of the unleveraged company and the leveraged component separately. Using this framework, the authors studied the value creation empirically on a sample of 241 European buyout transactions between 1989-2006. It was found that two-thirds of the value creation was attributed to operational improvements and market effects while the remaining third was due to leverage (Achleitner, Braun, Engel, Figge, & Tappeiner, 2010).

Therefore, we direct our attention to the operational value creation that is directly reflected in portfolio companies' changes to equity valuations, which also seems to be ideal with regards to responsible investing as it constitutes mainly operational elements cf. sections 2.1, 2.3, and 3.1. And since funds' financial performance is reflected in the value creation accruing within their portfolio companies, it is imperative to understand how ESG affects fundamental value drivers at the company-level. This is therefore now examined.

4.1.2.1 ESG in relation to equity valuation

Gregory et al. (2014) and Giese et al. (2019) have shown that the discounted cash flow to equity (DCF) model can be used as a theoretical framework to break down the effect of a firm's ESG profile on its equity valuation. The DCF model describes that the value of a firm's equity is the present value of its future cash flows to equity shareholders, discounted at the appropriate cost of capital, as given by (Bodie, Kane, & Marcus, 2017):

$$Market\ value\ of\ equity_0 = \sum_{t=1}^{n=\infty} \frac{FCFE_t}{(1+r_e)^t} \tag{3}$$

where $FCFE_t$ is the expected cash flow in year t, and r_e is the required rate of return for equity investors. From this starting point, the objective is then to determine how ESG characteristics can affect a firm's cash flow and cost of capital expectations. When determining the investors' required rate of return, it is generally recommended to use the Capital Asset Pricing Model (CAPM), which is given by (Bodie, Kane, & Marcus, 2017):

$$r_e = r_f + \beta \times (r_m - r_f) \tag{4}$$

where r_f is the risk-free interest rate, β the systematic risk of the asset, and r_m the return of the market portfolio. Then, to determine the impact of ESG factors it is imperative to distinguish between systematic- and idiosyncratic risks, as it is only the systematic risk component that is priced by investors (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). This is according to a key assumption in the CAPM in which rational investors always diversify their portfolios, thereby eliminating idiosyncratic risk, and thus, an asset is not priced by its total risk σ but only by its systematic risk exposure β. However, this does not mean that markets are indifferent to firm-specific risks. Instead, rather than being reflected in the cost of capital, it is represented in the firm's expected future cash flows (Bodie, Kane, & Marcus, 2017).

The DCF model (3) shows that company value can be enhanced, *per se*, though an idiosyncratic transmission channel reflected in expectations of higher growth in cash flows and lower probability of cash flow shocks or uncertainty, and through a systematic transmission channel reflected in lower exposure to market risks, and hence lower cost of capital (Gregory, Tharyan, & Whittaker, 2014; Giese, Lee, Melas, Nagy, & Nishikawa, 2019). A firm reducing its carbon footprint is an example that can theoretically affect both the nominator and denominator in the DFC model (3) as explained by Gregory et al. (2014):

> "*(…) More efficient use of energy not only reduces costs and so improves cash flow, but also gives the firm a lower exposure to energy prices. Since energy prices impact upon the economy, we might reasonably expect our low carbon firm to have a lower β as a consequence of this strategy. (…) Further, such a strategy might also diminish firm-specific risk by reducing the company's vulnerability to the threat of any government introduction of carbon pricing to its industry*" – (Gregory, Tharyan, & Whittaker, 2014, pp. 635-636)

The premise is that if ESG factors are financially material and therefore can impact a company's cash flow or risk exposure, ESG must then have an effect on the company's valuation. Following this reasoning, any company that improves upon its material ESG issues must then exhibit higher equity valuations. Nonetheless, there are two challenges with this thinking. The first is that ESG, in some instances, can be seen as an investment that entails bearing initial costs for potential future benefits. It is therefore a long-term strategy that can impact cash flow positively, but short-term cash flow may be negatively affected (Branco & Rodrigues, 2006). Moreover, the future benefits depend on an effective value capitalization, and Barnett (2007) argues that it is only companies with a full commitment to such initiatives that are likely to realize the long-term benefits, where most firms with a lower degree of commitment fail to generate benefits greater than their costs[13].

The second challenge is that it is not always straightforward to see the direct connection between ESG and the value drivers in (3). Environmental factors may be relatively simple to measure as they involve resources and efficiency, and thus, have a direct translation into costs. The same goes for governance factors as they often are associated with regulatory compliance, which implies avoiding fines, penalties, and reputational damage from a risk management perspective. Nonetheless, social factors may be more challenging for companies to measure as their effects typically are indirect, e.g. improved productivity through better working conditions, or increased revenues from attracting consumers that recognizes a firm's contribution to the local community.

[13] Branco and Rodrigues (2006) and Barnett (2007) refers to CSR initiatives in their studies.

These considerations imply that ESG, sometimes, provides a clear potential for value creation, and at other times results in more ambiguous effects. However, it generally depends on the PE funds' ability to drive ESG initiatives at the company-level, and if done successfully, potential benefits may then outweigh costs. Nonetheless, besides the value creation potential that might accrue from responsible investing, PE funds may also want to consider exploiting the value capturing potential in responsible investing.

4.1.3 Value capturing potential in responsible investing

Contrary to value creation activities, funds' value capturing does not directly affect the financial performance of portfolio companies, but is, nonetheless, linked directly to their valuation multiple. The value capturing is often at work during the investment and exit phase, and may consist of multiple arbitrage where valuation multiples rise or fall due to general industry sentiment, perhaps causing temporary deviations from fundamental values, which then may be timed by a PE fund. Also, private information and market information are important components in order for PE funds to buy low and sell high, either by having overcome asymmetrical information obstacles, or by having benefitted from their extensive networks of industry experts to identify quality investment opportunities (Laskowski, 2012; Leleux, Swaay, & Megally, 2015).

As indicated in PwC's responsible investment survey of 38 LPs and 145 GPs mainly in Europe, sustainability-themed assets and strong ESG profiles might be something that investors are becoming willing to pay more for, and therefore provides a potential for multiple arbitrage (Jackson-Moore, Case, Bobin, & Janssen, 2019; Bucak, 2019). Summa Equity, a Nordic PE fund that is an ESG frontrunner, has provided some good examples of the value capturing potential in responsible investing. Summa Equity has found that their responsible investment strategy facilitates a strong proprietary deal flow since their sustainability beliefs are shared amongst many business leaders, and thus, creates excitement around them as new owners. It has also allowed them to close deals where sellers chose them over higher bidders because of their vision and values. Moreover, their insights into sustainability-themed market trends have allowed them to shape an ESG strategy with growth opportunities that are supported by global megatrends (Serafeim & Freiberg, 2018).

Now, having gained insights into how PE funds' financial performance can be measured as well as the potential value creation and value capturing effects in responsible investing, we now turn to review relevant literature on the problem in scope. However, the following section is neither all-encompassing nor mutually exclusive, but rather seeks to incorporate the most influential studies on ESG and financial performance.

4.1.4 Empirical insights: A literature review

Although responsible investing has gained a strong foothold in the PE industry, its implications for West European PE funds' financial performance remains largely untreated within the academic literature. Nevertheless, there is some useful evidence on ESG's association with financial performance, especially at the company-level, which can help develop our understanding of how ESG might affect PE funds' financial performance.

In the literature linking ESG to corporate financial performance (CFP), there is well-founded evidence that ESG is associated with improved financial performance. For instance, the most exhaustive overview of academic research performed to date on ESG and CFP was assembled by Friede et al. (2015) in a meta-analysis of about 2,200 individual studies. It was found that 90% of the studies had established a non-negative ESG–CFP relationship with the majority being reported as a positive one.

In another study, Fulton et al. (2012) compared more than 100 studies and found that all of the studies linked high ESG ratings to lower cost of capital, while the majority was linked to market- and accounting-based outperformance. Moreover, a study by Boston Consulting Group (2017) found that ESG top performers across different industries are rewarded with valuation multiples 3% to 19% higher, *per se*, than median performers in these areas, and furthermore exhibit higher profit margins, up to 12.4%-points. While the sum of these findings provides strong evidence of a positive relationship between ESG and CFP, they do not prove causality by explaining whether one factor causes the other. Consequently, there is a chicken-and-egg problem as to whether a firm's ESG profile affects its financial performance, or if better performing companies have more available resources to commit to their ESG initiatives.

Shedding light on this issue and providing some of the first evidence of causality, Giese et al. (2019) studied the influence of ESG characteristics on equity valuations through the idiosyncratic and systematic transmission channels as derived in the DCF model (3). The study was conducted on data from 2007-2017 using the MSCI World Index and by classifying individual equities using MSCI ESG Ratings[14]. The authors found that high ESG-rated companies are generally more profitable and pay higher dividends, supporting the notions that sustainable firms utilize their resources more efficiently, are better at developing their human capital, and may be more innovative. Moreover, it was found that high ESG scoring firms have fewer incidences of tail-risk events measured by large negative idiosyncratic movements in their stock prices and through residual volatility of CAPM-style returns. This could indicate that these firms have better risk control and compliance standards, and thus, suffer less frequently from severe incidents. It was also found that high ESG scoring firms are less vulnerable to market shocks, have lower betas, and thus exhibit lower cost of capital. In the DCF model (3), higher valuations would be the result, *per se*, and consistent with this, the high-ESG scoring companies showed higher market valuations through book-to-price and earnings-to-price ratios (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). In order to address the complex question of causality, the authors analyzed changes over time in these variables and the extent to which changes in ESG characteristics could be attributed as a leading indicator. The changes in financial variables were considered 3 years after looking at upgrades, downgrades, and no changes in the companies' ESG scores. It was found that rating upgrades were associated with a subsequent decrease in firms' systematic risk and cost of capital through a relative decrease in beta compared to

[14] We cautiously note that there can be great dispersion between ESG ratings from different service providers, which can threaten the validity of these findings (Mayor, 2019).

downgraded companies. This was supported by increases in the firms' valuations observed by relative decreases in earning-to-price ratios. Too, firms that had a rating upgrade were found to have fewer incidents than downgraded companies subsequently to the rating change (Giese, Lee, Melas, Nagy, & Nishikawa, 2019).

Apart from the company-level evidence, Teti et al. (2012) investigated whether UNPRI compliant PE funds across different typologies (e.g. buyout, midmarket, venture, real estate, fund of funds, and mezzanine) generated higher financial performance than their non-compliant peers. They considered a sample of 135 US private equity funds in the period between 2006-2011 in which 25 of the funds were UNPRI signatories. The authors found that the funds' returns, measured by MOIC, were positively impacted by the UNPRI-variable with the results being statistically significant at the 1%-level. While these are some interesting findings, the study focused on the US market across a variety of typologies, which makes it difficult to infer its implications specifically for West European PE funds. Moreover, while UNPRI simply entails a commitment to responsible investing, it would be more justifiable to consider additional measurement variables cf. section 3.2.

Considering the sum of this evidence, it seems plausible that by pursuing responsible investing and seeking to enhance portfolio companies' ESG profiles, PE funds can drive better financial performance and lower their risk exposure. Since such effects are expected for PE funds, or GPs, that have well-established processes and therefore are far on their ESG-journey cf. section 3.2, we expect funds' formalized engagement (variable 6) and systematic integration (variable 7) to be positively associated with financial performance. Moreover, since good ESG characteristics are associated with downside risk mitigation and cause lower residual volatility, we similarly expect funds with formalized engagement and systematic integration to generate more stable returns as measured by lower variation in financial performance. These hypotheses will be summarized in section 4.3.

4.2 Managing responsible investment practices

With insights into funds’ value capitalization potential in responsible investing, and thus, how ESG may affect funds’ financial performance through effects at the company-level, section 4.2 now seeks to gain an understanding of PE funds’ organizational facilitation, i.e. commitment activities and capacity capabilities, which, besides process capabilities, allow funds to integrate responsible investment practices. Whereas process capabilities reflect that a fund, or GP, is far on its ESG-journey, funds’ commitment and capacity indicate that they have started their ESG-journey but are still exploring it in an effort to build up well-established processes. By using a theoretical framework based on these understandings, this section seeks to examine whether funds’ commitment activities and capacity capabilities are ought to be associated with financial performance.

Since this study examines responsible investing at the portfolio level, or PE fund level, we argue that an important prerequisite for understanding the LP-GP relationship in responsible investing is to analyze the agency costs embedded in such partnership. Therefore, a section is first devoted to explore the principal-agent problems in responsible investing. Next, for funds to obtain value from their responsible investment practices, responsible investing needs to be embedded in funds’ structure, culture, and governance (Martindale, Sullivan, & Fabian, 2016). Thus, a section is also devoted to account for the theoretical aspects of organizational culture, learning, and decision-making. First, however, we explore the agency costs in responsible investing.

4.2.1 Agency costs in responsible investing

In principal-agent theory, the principal delegates work to the agent who then performs work on the principal’s behalf. This separation of ownership and control may entail information asymmetries in which one party holds the greater information. If such information asymmetries exist between two parties, and it is the agent that holds it, the agent may then act in a way that is contrary to the best interest of the principal, denoted as agency costs (Jensen & Meckling, Theory of the firm: Managerial behavior, agency costs and ownership structure, 1976). In PE, two types of principal-agent relationships exist; one between the PE fund and its investments, and another between the PE fund and its LPs.

Since this study examines PE funds at the portfolio level by focusing on funds’ operational and strategic interrelationships, the focus lies on the latter principal-agent problem. The former was shortly accounted for in section 1.1, and despite it highlighting that the governance of PE funds’ portfolio companies is superior because of a strong alignment of incentives, this may not have been achieved to a similar extent in the principal-agent relationship between PE funds and LPs, as highlighted by Rhee (2013):

> “*Many LPs complain that governance structures that supervise the relation between GP and LP do not provide them with sufficient control mechanisms over the ultimate users of their funds. One could thus argue that the PE industry hasn’t actually solved the principal-agent problem that exists in public companies but rather shifted it up the investment chain*„ – (Rhee, 2013, p. 1)

For instance, section 1.2 highlighted that the incentive structure of PE may result in GPs feeling inclined to: (i) co-invest alongside their fund, (ii) manage overlapping funds, (iii) grow the fund size, and/or (iv) take on excessive risk, which all may involve a conflict of interest with LPs. Adding to this, Eurosif (2018b) argue that the information asymmetry between PE funds and LPs is generally heightened in responsible investing, primarily due to the ambiguity and complexity of conducting responsible investing where practitioners may find it challenging to measure ESG progress, adequately report on relevant ESG matters, and evaluate and compare performance cf. section 3.1. Consequently, the increased agency costs in the LP-GP relationship in responsible investing entails a loss of total surplus or value capitalization potential (Hendrikse, 2003), and exploring the agency costs in the LP-GP relationship is therefore thought to be an important step in better understanding how responsible investing in PE can be accompanied by efficient investment practices.

Assuming complete rationality and opportunistic behavior among decision-makers, and that PE funds act as the agent and LPs as the principal, then funds must convince LPs that they are of high quality[15] upon contracting. Since LPs increasingly adopt a responsible investment approach themselves (Kozlowski, 2019; Allianz Global Investors, 2019; Jackson-Moore, Case, Bobin, & Janssen, 2019; PRI Association, 2019), one way for the fund, or GP, to do this is to signal its commitment to responsible investing (Ljungberg & Svedman, 2017). However, this signaling entails an adverse selection problem (Hendrikse, 2003) where a GP may use its commitment as a glossy marketing tool, while having few or no actual capacity and process capabilities in ESG (KPMG, 2018; Kerr, 2018). LPs know this and therefore conduct thorough due diligence of prospective PE funds upon committing capital cf. section 1.2, but may find it challenging to do so given the ambiguity and complexity of responsible investing cf. section 3.1. LPs may, for example, have difficulties in knowing what to look for and how to compare performance. In this context, some of the observable variables from section 3.2 may help reduce LPs' adverse selection problem by giving direction to the metrics of importance.

Despite UNPRI, which is the world's largest signatory member base for practitioners committed to responsible investing, not guaranteeing or providing any evidence of its signatories having the adequate capacity and process ESG capabilities, it may, however, still be useful for LPs in reducing their adverse selection problem. Since the PRI Board recently agreed to delist signatories who seriously violate the six principles of responsible investing in order to ensure accountability, UNPRI provides some assurance to LPs, over time, that the funds with an UNPRI signatory status are somewhat compliant with their responsible investment initiatives. Yet, since UNPRI's delisting regulations are passive and minimum requirements are few (PRI Association, 2017; PRI Association, n.d.-f), the UNPRI signatory signaling is thought not to reduce LPs' adverse selection problem, assuming that LPs search for PE funds that exhibit adequate capacity and process ESG capabilities, or at least those who are willing to improve on their ESG capabilities with a roadmap towards that goal cf. section

[15] A PE fund of high quality in responsible investing entails having the capacity and process capabilities with regard to ESG, or at least, a forward-looking approach that enable the PE fund to eventually reach this stage on their ESG journey.

1.2. This notion is largely supported by Serafeim et al. (2016) who argue that UNPRI signatories have committed themselves only to adhering to set of principles, which is a standard that falls well short of actually integrating responsible investment practices. This indicates that a commitment to responsible investing does, in fact, very little to reduce agency costs, which then implies that the loss of total surplus would be largely unchanged in responsible investing despite the appearance of formal commitments (Hendrikse, 2003). Because of this, we expect PE funds' formal commitment (variable 1) not to be associated with financial performance.

Besides adverse selection problems, LPs also battle with post-contractual opportunism, or moral hazard problems, which seems to be more severe than ante-contractual opportunism cf. section 3.1. To reduce moral hazard problems, LPs can either change the payoffs so that both parties are better aligned, or change the information structure by generating additional information (Hendrikse, 2003). For a discussion on the PE payoff structure in responsible investing, we refer to Appendix 7. Below, we discuss the information structure.

The monitoring intensity principle states that the level of monitoring is correlated with the level of incentives being offered to the PE fund (Hendrikse, 2003), which explains why the monitoring activity in PE is higher relative to that of most other asset classes. In responsible investing, the monitoring is generally heightened when compared to traditional investing cf. section 1.2, but the ambiguity and complexity of responsible investing in which PE funds struggle to collect relevant ESG data from their portfolio companies cf. section 3.1, may cause LPs to have limited insights into funds' ESG activities and ESG progress. Moreover, PE funds are known to value discretion around their investment activity and may be cautious not revealing excessive critical information that might weaken their competitive edge and erode their superior performance (Ljungberg & Svedman, 2017; Falch, 2016). And since LPs may risk losing their limitation of liability if they interfere actively with the operations of funds and their portfolio companies (Rhee, 2013), LPs rely heavily on funds' disclosure and reporting initiatives. These mechanisms imply that moral hazard problems may be very hard to reduce in the current state of responsible investing. Yet, the abovementioned also implies that if funds in fact were to disclose adequate or detailed ESG information on their investment activities, such information may then reduce moral hazard problems and the implied agency costs (Bechmann, 2016). Consequently, LPs would favor this behavior and be more inclined to commit capital towards such PE funds. Thus, we expect PE funds' detailed public ESG disclosure (variable 4) to be positively associated with financial performance.

In general, the success of responsible investing in PE is dependent on the alignment of interest in the LP-GP relationship. Yet, as argued by Fama and Michael (1983), the structuring and monitoring of contracts is costly and should not exceed the benefits, which implies that agency costs can in fact become too high. Thus, following transaction cost theory, too high agency costs in the LP-GP relationship may result in LPs being increasingly incentivized to turn to direct investment activities (Black & Lee, 2015; Hendrikse, 2003). This therefore indicates the importance for funds in having the adequate capacity and process capabilities. We now turn to treat the former in terms of whether capacity capabilities may be associated with financial performance.

4.2.2 Organizational culture, learning, and decision-making

As argued by Martindale et al. (2016) and the PRI Association (2015b), linking an organization's culture to responsible investing is an important step in making ESG an integral part of decision-making. Although some funds have managed to do this, Falch (2016) argues that culture changes take time and further developments are expected. By viewing culture from the perspective of Schein (1993), culture provides structural stability through common systems, which ultimately enables organizational learning:

> "*Once people have a common system of communication and language, learning can take place at a conceptual level and shared concepts become possible*" – (Schein, 1993, p. 373)

In the context of responsible investing, a common system of communication and language seems important as definitions and interpretations are plentiful and no real standardization exists. Building on this, Schein (1993) emphasizes that an important task for every manager is to understand and lead the organizational culture, since the learning process starts with the manager setting the culture. And as mentioned in section 3.2, managers, or GPs, can set the culture of the PE fund by committing to responsible investing. So, since culture allows funds to have a common set of understandings in their communication and language, which ultimately enables organizational learning, this speaks for funds' formal commitment (variable 1) being positively associated with financial performance. This is contrary to what agency cost theory suggests, hence section 4.3 will discuss whether funds' formal commitment (variable 1) is really expected to be associated with financial performance.

In the context of organizational learning, Heel & Kehoe (2005) found that what differentiates the best performing PE deals from the worst is the time spent on acquiring privileged knowledge from both portfolio companies and external providers. This reflects the importance of organizational learning mechanisms in PE, and as argued in section 3.2, this is particularly important in responsible investing as it allows PE funds to be able to adequately understand ESG-materiality and efficiently manage ESG factors. Using Garvin's (1993) definition of organizational learning, the rather abstract concept can be broken down into a few tangible subjects:

> "*A learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights*" – (Garvin, 1993, p. 8)

In the context of responsible investing, PRI Association (2018) highlights that building new ESG knowledge, contextualizing investment decisions, and identifying and diffusing best practices among practitioners is important, which in essence is very similar to the definition of Garvin (1993). However, Levitt and March (1988) argue that learning does not always lead to intelligent behavior, as organizational members are boundedly rational and therefore may produce superstitious learning in which information, for example from competing PE funds' responsible investment practices, is misinterpreted. The risk is that such superstitious learning may cause PE funds to confuse correlation with causation and wrongfully attribute certain practices with strong outcomes. Thus, Hendrikse (2003) argues that organizations must establish the necessary forms and processes to enable organizational learning in order to facilitate progress. Since ESG training and/or the use of external resources, for example ESG consultants, make up such forms and processes, we expect funds' ESG training and/or external resources (variable 3) to be positively associated with financial performance.

Despite the importance of organizational learning, PE teams are small and lean cf. section 1.1, and hiring staff dedicated to ESG may not be affordable for smaller PE funds (Gilbert, 2014), reflecting the possible need for a higher management fee (Appendix 7). This indicates that in particular smaller PE funds may have their ESG knowledge decentralized and not centralized in a dedicated ESG team. Building on this, Sullivan (2012) argues that it is less about how research is conducted on ESG issues, but more about ensuring that the knowledge is recognized and used by decision-makers in the organization. Therefore, he argues, having a dedicated ESG team is not enough; maximizing value from ESG requires the research team coming together with the investment team and sharing their knowledge.

Building on this, Huber (1991) argues that organizational memory is an important component of organizational learning; which is the storing of organizational knowledge. In this regard, Levitt and March (1988) highlight that such organizational memory may be difficult to store if it is in the form of tacit knowledge. Since responsible investing seems to rely on tacit knowledge to a greater extent than codified knowledge cf. section 2.3 and 3.2, the importance of securing organizational memory is ought to be high in responsible investing. Following this, Huber (1991) and Hendrikse (2003) argue that an organization must not lose out on its tacit knowledge when key personnel leave, indicating that having knowledge centralized among one or few individuals is sub-optimal, especially in relatively small organizations such as in PE.

The insights seem to indicate that although a PE fund may have dedicated ESG personnel, the tacit knowledge may not be placed solely within ESG teams, but instead scattered across the organization. Because of this, we expect PE funds' dedicated ESG personnel (variable 2) to not be associated with financial performance.

Should an organization have been able to set a strong culture and foster their organizational learning, organizational decision-making remains a granular part of building efficient investment practices that must then be accounted for in the context of responsible investing. According to Hendrikse (2003), organizational decision-making can be defined as the process of identifying and solving problems, and such process, he argues, always entails decision-makers being boundedly (limited) rational and unable to follow an ideal procedure. In this context, Simon (1997) argues that decision-makers aim for actions that are satisfactory rather than optimal:

> "*Bounded rationality, a rationality that is consistent with our knowledge of actual human choice behavior, assumes that the decision maker must search for alternatives, has egregiously incomplete and inaccurate knowledge about the consequences of actions, and chooses actions that are expected to be satisfactory*,,
>
> – (Simon, 1997, p. 17)

Consequently, bounded rationality causes decision-makers to rely much on heuristics (intuition), which in turn, depends on their experience and judgments. According to Hendrikse (2003), intuition is not irrational as it is based on years of practice; in fact, he argues, decision-makers intuition is more appropriate in complex situations rather than using a rational approach that may end up misdiagnosing problems in order to simplify it (Hendrikse, 2003). This is supported by Klein (2003) who argues that decision-makers do better when relying on their intuition. The insights therefore seem to indicate that decision-makers who operate under many constraints that limit their rationality, which is thought to be the case with responsible investing cf. section 3.1, rely more heavily on intuition, which consists of years of hands-on experience. Thus, we expect GP's responsible investment experience (variable 5) to be positively associated with financial performance.

4.3 Hypothesis development

By summarizing our hypotheses, this section aims at concluding on section 4.1 and 4.2 with regards to which factors that can explain how responsible investing affects PE funds' financial performance. From the previous considerations, it seems plausible that responsible investing and sustainability themes can be a source of new value in a competitive PE environment. If PE funds seek to improve portfolio companies' ESG profiles it can possibly affect profitability, risk exposure, and equity valuations, and thereby contribute to the operational value creation with numerous studies indicating a positive association and some evidence of causality. Moreover, responsible investing seems to provide some opportunities to capture value through investor-goodwill and market opportunities. Although these aspects depend on the PE funds' ability to capitalize on the responsible investment potential, we find that the potential is there. Thus, we expect that the PE funds who have well-established processes in place and have come far on their ESG journey, have been able to realize this potential. And since both formalized engagement and systematic integration reflect this, we expect that:

H1a: Formalized engagement is positively associated with financial performance

H1b: Systematic integration is positively associated with financial performance

Similarly, it was also found that good ESG characteristics can mitigate downside-risks, and thus, we expect funds with these traits to generate more stable returns by exhibiting lower volatility in financial performance:

H2a: PE funds with formalized engagement exhibit lower variation in their financial performance

H2b: PE funds with systematic integration exhibit lower variation in their financial performance

Having proposed this paper's main hypotheses, we proceed to state the secondary hypotheses from section 4.2. With agency cost theory and organizational culture theory pointing to distinct expectations with regards to the importance of PE funds' formal commitment, we are inclined to expect no significant effect:

H3: Formal commitment is not associated with financial performance

Moreover, we expect PE funds' detailed public ESG disclosure to reduce the implied agency costs in the LP-GP relationship in responsible investing, causing LPs to favor such PE funds and support them to a higher degree. Theoretically, the reduced agency costs imply a higher total surplus, which is why we expect that:

H4: Detailed public ESG disclosure is positively associated with financial performance

And with the risk of superstitious learning in responsible investing, the necessary forms and processes to enable organizational learning need to be in place in order to facilitate progress. Therefore, we expect that:

H5: ESG training and/or external resources is positively associated with financial performance

In addition, organizational learning theory implies that although PE funds may have dedicated ESG personnel, the tacit knowledge may not be placed solely within ESG teams but instead scattered across the organization in an effort to minimize the risk of losing out on tacit knowledge from personnel turnover. So, we expect that:

H6: Dedicated ESG personnel is not associated with financial performance

And with decision-makers operating under bounded rationality in responsible investing, they rely much on heuristics (intuition), which in turn is built from years of hands-on experience. Because of this, we expect that:

H7: GP's responsible investment experience is positively associated with financial performance

5 Empirical results and analysis on financial performance

Having developed this paper's main and secondary hypotheses, chapter 5 now seeks to test these hypotheses empirically. To do so, section 5.1 first elaborates on the data collection process facilitating the empirical study, followed by a descriptive analysis in section 5.2 that thoroughly examines the dataset. Then, section 5.3 performs a multivariate linear regression analysis and discusses the empirical results.

5.1 Data collection

The data collection methods now put forth in this section regard both the quantitative analysis of chapter 5 and the subsequent qualitative analysis of chapter 6. The aim is to facilitate a better understanding of the underlying data and allow for a critical assessment. Furthermore, specific methodological choices are explained in detail along with the consequences these have for the credibility of the findings.

5.1.1 Quantitative data

The quantitative data have been collected through two main procedures. First, we have gathered performance data from a sample of PE funds using the Preqin database. Then, the funds' responsible investing metrics, as derived in chapter 3, have been collected, utilizing a combination of secondary data sources; primarily using PE funds' websites and publicly disclosed material along with UNPRI transparency reports.

5.1.1.1 Performance data

From the Preqin database, performance data have been gathered for buyout funds with vintage years between 2006 and 2017 with a primary focus on the West European market, corresponding to the geographical region defined in section 1.3. The initial sample consists of 261 buyout funds represented by 156 GPs from a wide range of countries (Appendix 8). As our dataset represents roughly 38% of the total population (695) according to Preqin's list of registered PE funds that fall within the vintage period and geographical scope, we argue that the population is adequately represented and that the generalizability of the study is decent.

In our data collection, we chose to include both liquidated funds (26) and closed funds (235), for the following reasons. Newer, non-liquidated funds provide the best reflection of GPs' current approach to responsible investing, although their performance measures are not finalized yet. Including these funds is imperative to capture recent developments within responsible investing. In contrast, older funds provide the most reliable performance data but with a trade-off for more uncertainty regarding the investment practices that were used during this time. Even though closed funds have a part of their performance stemming from unrealized value estimates, these are usually estimated conservatively as the unrealized value of funds' unliquidated investments (NAV) is based on portfolio companies' current market value (Preqin, 2017). We stay aware of how this might negatively bias the performance of newer funds in our dataset.

The initial dataset includes information such as GPs' and funds' ID, vintage year, fund status, industry focus, fund ethos, fund size, fundraising target, final close date, successive fund number, and performance data represented by net IRR and MOIC with the most up-to-date figures. In addition to this, individual investments made by the funds have been identified, also using Preqin, to collect other relevant data points, such as number of investments made and number of write-offs for each fund. Following this methodology, 5450 single investment transactions conducted by the dataset's 261 PE funds between 2006 and 2019 are considered.

The validity of the data is considered relatively high within an asset class suffering from limited transparency. Preqin is one of the largest providers of alternative investment data covering private equity, venture capital, hedge funds, private debt, real estate, and infrastructure. The data is collected directly from GPs and LPs, and Preqin is generally widely used by investment professionals and researchers (Preqin, 2017).

5.1.1.2 Responsible investment data

The variables that are ought to measure PE funds' responsible investing are collected according to the procedures described in chapter 3. Each fund has been assessed using the following methodology:

Formal commitment: To determine the fund's commitment we examine the GP's responsible investment policy, if any, and use the UNPRI signatory database to verify if they adhere to the principles. We also evaluate if social- and/or environmental commitments have been incorporated into the fund's ethos as provided by Preqin. While some GPs have signed the UNPRI several years after the creation of a fund, many already paid attention to ESG, and thus, their subsequent compliance with UNPRI may not have caused sensible variation in their investment, ownership, and reporting processes. Nevertheless, to ensure a high degree of validity, we impose the rule that the GP must have been known to be formally committed to responsible investing for the majority of a fund's holding period, otherwise, it will not be classified as such.

ESG personnel: When deciding whether a PE fund has designated ESG specialists, we assess the investment- and operation teams of each GP along with the 'roles and responsibilities' section in transparency reports. Investor relation functions are not regarded as being sufficient. With older funds, as measured by their vintage year, we make sure to verify the years of employment of such key personnel when determining this variable.

Dedicated training and/or external resources: PE fund's dedicated training and/or external resources are evaluated by assessing if investment professionals are trained to handle ESG matters and/or external consultants are deployed. In this regard, fund's transparency reports provide a description of the funds' use of external consultants, and the section 'promoting responsible investing' describes if investment professionals are given formal training. These aspects can sometimes also be found when assessing funds' ESG policies and -reports.

Detailed public ESG disclosure: In order to evaluate if a PE fund provides detailed public ESG disclosure, we analyze the aggregated material of the respective GP. In this regard, the main sources of data are ESG reports, UNPRI transparency reports, and case studies. It is assessed if these convey detailed ESG information.

GP's responsible investment experience: GP's experience is evaluated by measuring the number of successive funds raised by the GP while being known to be formally committed to responsible investing; that is, subsequent funds raised after the establishment of an official ESG policy or the UNPRI signatory date, which indicates whether the fund is managed by a GP that has gained prior experience in responsible investing.

Systematic integration and formalized engagement: In order to evaluate the metrics that measures PE funds' process capabilities, systematic integration and formalized engagement, UNPRI transparency reports along with ESG reports, policies, and frameworks have been analyzed using the evaluation criteria specified in section 3.2. Nonetheless, as systematic integration and formalized engagement reflect that a PE fund is far on its ESG-journey, we made sure to exclude 'impact first investing' and 'philanthropy' funds cf. Figure 12 in section 2.3. Although no such funds were found in the performance dataset, we assessed each fund on whether their source of value were to maximize financial performance alongside creating non-financial impact.

Generally, as our responsible investment data relies on disclosure that is sourced by the PE funds themselves, validity is threatened. For instance, funds' ESG reports are self-reported and the transparency reports are not meaningfully audited. Although the PRI association does assess the funds' reports, their evaluation and scorings are private. Moreover, the method of doing an outside-in analysis will favor the funds that provide good public reporting, which may cause us to incorrectly score some funds that have good practices with no public disclosure, for instance. However, the lack of transparency and reporting standards provide few alternatives.

In sum, the performance data metrics net IRR and MOIC (dependent variables) and the responsible investment data metrics (independent variables) are presented below in Table 1.

Table 1: Quantitative variables

Variable	**Variable type**	**Metric**
Dependent variables		
Net IRR	Dependent variable	Continuous
MOIC	Dependent variable	Continuous
Independent variables		
Formal commitment		
UNPRI compliance	Baseline	
Other formal commitment	Independent variable	Binary
No commitment	Independent variable	Binary
ESG personnel		
Dedicated ESG personnel	Independent variable	Binary
No dedicated ESG personnel	Baseline	
Dedicated Training/resources		
Dedicated training & resources	Independent variable	Binary
No training & resources	Baseline	
Detailed ESG disclosure		
Detailed ESG disclosure	Independent variable	Binary

No disclosure	Baseline	
GP's RI experience		
RI funds raised	Independent variable	Discrete
Formalized engagement		
Formalized engagement	Independent variable	Binary
No engagement	Baseline	
Systematic integration		
Systematic	Independent variable	Binary
Not systematic	Baseline	

5.1.2 Qualitative data

The qualitative data consist of semi-structured interviews conducted with 15 GPs, 7 LPs, and 4 AFs, respectively (Appendix 9). In Appendices 10-12, the interview guides supporting the interviews are presented. Initially, we reached out to the entire sample of 156 GPs from the performance dataset, from which we interviewed the ones that responded to our request. Moreover, we contacted more than 150 LPs and 50 AFs to attain their perspectives regarding funds' responsible investment practices in order to triangulate these different data sources. The early sample of interviews consisted of GPs at different stages in their responsible investing journey. This was surprising as we expected a certain degree of participation bias with industry leaders being more willing to display their endeavors. However, we found that GPs were quite willing to engage in dialogue about these matters, despite some even being new to responsible investing. Although this provides a rather diverse sample, we made sure to carry out a second run of interviews where we systematically targeted ESG frontrunners and sustainability leading entities, identified by being award-winning GPs and LPs within responsible investing[16]. This step was crucial to develop a thorough understanding of these ESG leaders' perspectives and to derive efficient investment practices. The consequence of this, however, is that there is a slight discrepancy in the transition between our quantitative and qualitative analysis, in which the practices of some sustainability leaders, that we managed to interview, are not reflected in the performance dataset.

The interviews were carried out via online communication, allowing for a high degree of participation and a broad representation of the population. The additional benefit of this approach is that it is a pleasant mode of participation for interviewees as it is found to reduce their resistance in providing open and full accounts about certain topics. The downside was that it reduced our ability to control the pace of the interview. Also, normal visual cues are absent in voice-only communication, which can provide unclarity to their responses (Saunders, Lewis, & Thornhill, 2016). Generally, interviews were conducted with practitioners across Western Europe and with practitioners of different size; some being relatively small, others being large international entities.

[16] The national Private Equity & Venture Capital Associations are, for instance, providing these awards to GPs and LPs in an effort to recognize strong efforts within the sustainability domain.

5.2 Descriptive analysis

5.2.1 Data description and control variables

In the following section, the performance data is described and prepared for the subsequent regression analysis. The dataset consists of PE funds with different vintage years, exposure to different industries, and of different size dimensions, which are relevant factors to control for to ensure unbiased results. The data is described throughout Tables 2-4 using an adjusted sample, which has been disposed of outliers and missing observations. For a closer look at the distribution of the dependent variables, net IRR and MOIC, we refer to Appendix 13.

When considering the funds by vintage year (Table 2), there are 259 PE funds representing an average net IRR of 14.97% and 253 PE funds representing an average MOIC of 1.62. The highest average net IRR by vintage year is 21.13% in 2011 and the lowest is 9.91% in 2007. These variations seem reasonable and the observations are rather equally distributed across vintage years. However, when considering MOIC, the highest average is 1.97 in 2011 and 1.14 in 2017, and thus, it appears that the performance of newer funds is negatively biased. This is not surprising as such PE funds have had limited time to realize value from their investments. Moreover, the effect appears to be greater for MOIC than net IRR as the latter takes fund's time in market into account. In order to control for these time effects and to discriminate between newly established and more mature funds, we devote a control variable to measure PE fund maturity, defined as the difference between fund vintage and the beginning of the reference period (2006). Additionally, a squared term of maturity is devoted as a control variable to capture the ascending effect in the performance of newer funds (Appendix 14).

Table 2: PE funds by vintage year

	# of funds		Mean	
	Net IRR	*MOIC*	*Net IRR*	*MOIC*
Vintage	(1)	(2)	(3)	(4)
2006	35	33	11.96	1.77
2007	27	26	9.91	1.64
2008	26	24	12.68	1.70
2009	20	20	16.01	1.90
2010	12	12	13.56	1.68
2011	20	20	21.13	1.97
2012	15	15	17.22	1.73
2013	18	18	14.20	1.58
2014	21	21	20.97	1.61
2015	27	26	17.32	1.44
2016	22	22	16.66	1.26
2017	16	16	10.52	1.14
Total	259	253	14.97	1.62

In terms of industry focus (Table 3), most PE funds have a diversified strategy while a few are 'focused'. On average, the focused funds perform slightly better than their diversified peers. The 'Information Technology' industry has the highest average net IRR and MOIC of 31.94% and 1.99, respectively, while ‘Industrials’ has the lowest average net IRR of 6.05%. To control for industry-specific effects on performance, dummy variables are included for each of the industries with ‘Diversified’ being used as the baseline. This is relevant as different industries can be expected to have different growth rates and risk exposures.

Table 3: PE funds by industry focus

	# of funds		Mean	
	Net IRR	*MOIC*	*Net IRR*	*MOIC*
Industry	(1)	(2)	(3)	(4)
Consumer Discretionary	8	8	12.47	1.76
Diversified	229	224	14.83	1.62
Energy & Utilities	2	2	9.98	1.33
Financial & Insurance Services	3	3	8.88	1.40
Industrials	7	7	6.05	1.40
Information Technology	7	7	31.94	1.99
Telecoms & Media	3	2	23.05	1.87

	# of funds		Mean	
	Net IRR	*MOIC*	*Net IRR*	*MOIC*
Industry	(1)	(2)	(3)	(4)
Diversified	229	224	14.83	1.62
Focused	30	29	16.05	1.67

Size-wise (Table 4), smaller funds have performed the best in terms of net IRR with an average of 16.25% while it is the mega-funds that have performed the best in terms of MOIC with an average of 1.74. Cf. Table 4, a decreasing relationship exists between size and performance from small- to large-funds, but with mega-funds standing out. To control for size-specific effects, we include log(size) as a continuous variable.

Table 4: PE funds by size-segment

	# of funds		Mean	
Size	*Net IRR*	*MOIC*	*Net IRR*	*MOIC*
	(1)	(2)	(3)	(4)
Small	129	129	16.25	1.66
Mid	67	64	14.00	1.59
Large	39	38	12.31	1.50
Mega	22	21	14.61	1.74

In addition to the above-mentioned control-variables, the data have been tested for various other effects by considering the number of investments made, the number of investments written off, deviations from the fundraising target, and the sequence number of the funds. Only the latter, the sequence number of funds, indicates significance and have therefore been included as a control variable to proxy GP-experience.

5.2.2 Descriptive statistics

The descriptive statistics of all the variables are presented in table 5 below. Taking a closer look at the independent variables, the data indicates that 59% of the PE funds in the sample are managed by GPs that have made a formal commitment to responsible investing (49% through UNPRI compliance and 10% independently committed) while 41% have not. Approximately 20% of the funds have dedicated ESG personnel, 37% provide dedicated training and/or hire external consultants, and 26% of the funds have detailed ESG disclosure provided by the GPs. The average responsible investing experience of GPs, as measured in successive funds, is rather low, which is expected since responsible investing is a recent trend in PE. Also, 30% and 31% of funds are formally engaging portfolio companies on ESG matters and have a systematic integration of responsible investing, respectively, indicating that roughly one-third of funds are far on their ESG-journey.

Table 5: Descriptive statistics

Variable	*Mean*	*Std*	*Min*	*Max*	*N*
1. Net IRR	14.973	10.589	-17.900	64.000	259
2. MOIC	1.624	0.505	0.620	4.440	253
3. Formal Commitment: None	0.413	0.493	0.000	1.000	259
4. Formal Commitment: Other	0.097	0.296	0.000	1.000	259
5. ESG personnel	0.197	0.398	0.000	1.000	259
6. Dedicated training & resources	0.367	0.483	0.000	1.000	259
7. Detailed ESG disclosure	0.255	0.437	0.000	1.000	259
8. GP's RI experience	0.162	0.428	0.000	2.000	259
9. Formalized engagement	0.301	0.460	0.000	1.000	259
10. Systematic integration	0.313	0.465	0.000	1.000	259
11. Log size	6.127	1.314	1.707	9.353	259
12. Maturity	5.058	3.665	0.000	11.000	259
13. Maturity_squared	38.965	39.595	0.000	121.000	259
14. Fund Number	3.776	2.109	1.000	10.000	259
15. Industry: Consumer Discretionary	0.031	0.173	0.000	1.000	259
16. Industry: Energy & Utilities	0.008	0.088	0.000	1.000	259
17. Industry: Financial & Insurance	0.012	0.107	0.000	1.000	259
18. Industry: Industrials	0.027	0.162	0.000	1.000	259
19. Industry: Information Technology	0.027	0.162	0.000	1.000	259
20. Industry: Telecoms & Media	0.012	0.107	0.000	1.000	259

An exhaustive correlation table considering all the variables is presented in Appendix 15, but below (Table 6) we include one that highlights only independent variables. There appears to be significant correlation between some of these independent variables. For instance, 'formalized engagement' and 'systematic integration' are strongly correlated, as one was rarely observed in PE funds without the other being present. As such, they are rather indistinguishable given the nature of the binary variables, and thus, including both in our model might interfere with standard errors and coefficient significance. Furthermore, ‘detailed ESG disclosure’ is strongly correlated with the former as well, perhaps because the PE funds that are systematic will likely also have rather detailed disclosure and reporting activities on processes and progress. However, this can also be attributed to the data collection methodology where disclosure was the main method of identifying practices.

Table 6: Correlation matrix on independent variables

	1	2	3	4	5	6	7	8
1. No commitment	1							
2. Other commitment	-.274	1						
3. ESG personnel	-.415	-.096	1					
4. Dedicated training & resources	-.639	-.059	.610	1				
5. Detailed ESG disclosure	-.491	-.011	.624	.658	1			
6. GP’s RI experience	-.319	.029	.312	.311	.255	1		
7. Formalized engagement	-.551	-.015	.627	.635	.871	.263	1	
8. Systematic integration	-.566	-.051	.608	.627	.867	.271	.937	1

The above correlations pose a high risk of introducing multicollinearity into the regression model and therefore we test for multicollinearity using variance inflation factor (VIF) analysis (Table 7). There appears to be multicollinearity in the model when including both ‘formalized engagement’, ‘systematic integration’, and ‘detailed ESG disclosure’ as indicated by their inflated VIF-values. This makes it redundant to include all three variables in the model, and given their interrelatedness, it is necessary to use intuition in determining the underlying cause. From the experience we have gathered from analyzing funds, it seems that systematic integration of responsible investing can be considered the fundamental characteristic that leads to formal engagement of portfolio companies and good disclosure policies. It is when responsible investing is systematically integrated that these other practices are efficiently adopted. For instance, it does not make sense for a PE fund to conduct through ESG due diligence, have sophisticated tracking procedures, and to consistently include ESG in investment decisions without using these insights to engage portfolio companies and incorporate it into their reporting. Thus, we find that the variables are not mutually exclusive, and that engagement and disclosure are being explained by fund’s systematic integration. Going forward, we therefore dispose ‘formalized engagement’ and ‘detailed ESG disclosure’, and measure only ‘systematic integration’. After removing these variables, the VIF analysis now signals no multicollinearity as all remaining variables have VIF-values below 3.3 (Table 7), which Alcaraz and Macías (2016) argue to be ideal to obtain efficient estimators in the regression.

Table 7: Variance inflation factor analysis (test for multicollinearity)

VIF analysis	*Before*	*After*
No commitment	2.380	2.285
Other commitment	1.278	1.232
ESG personnel	1.970	1.893
Dedicated training & resources	2.703	2.463
Detailed ESG disclosure	5.145	-
GP's RI experience	1.168	1.167
Formalized engagement	9.524	-
Systematic	9.639	2.095
Intercept	7.397	7.003

5.3 Regression analysis

5.3.1 Model and assumptions

To investigate how responsible investing affects PE funds' financial performance, a multivariate linear regression is performed. For the regression analysis, we used Python 3.8 (Python Software Foundation) and Seabold, Skipper, and Perktold's (2010) statsmodels. Multivariate linear regression is a predictive analysis that studies how the independent variables affect the dependent variable using ordinary least squares to fit the coefficient estimates. The method is very popular since it produces estimators with good sampling distribution properties; however, a variety of assumptions have to be met in order for these to be unbiased and efficient, and for the tests to have good explanatory power and proper size, including (Newbold, Carlson, & Thorne, 2012):

(i) Linearity
(ii) Constant variance in the error terms (no heteroskedasticity)
(iii) Independent error terms (no autocorrelation)
(iv) Normally distributed error terms
(v) No multicollinearity

The assumption of no multicollinearity has already been ensured through the VIF analysis in section 5.2. Tests have also been conducted for the other model assumptions (Appendix 16). These tests indicate that the sample does not conform to all model assumptions; the data contains a certain degree of heteroscedasticity, as revealed by a Breusch-Pagan test (Breusch & Pagan, 1979), indicating that the model lacks variables that can explain the variations in performance between higher and lower performing funds. To account for this, the regressions will be modeled with MacKinnon and White's (1985) heteroskedasticity robust standard errors.

5.3.2 Results and findings

Having described the performance dataset, defined all dependent and independent variables as well as control variables, and also having explained our approach, we now proceed to present our findings. The results of the regression analysis on net IRR is presented in Table 8 below. Model (1) shows the main regression including all of the independent variables while subsequent models (2-4) have removed the least significant variables from the previous regression to check model-robustness and to control for any specification error in the model.

Table 8: Net IRR regression results

	(1)	(2)	(3)	(4)
Independent variables:				
ESG personnel	-0.992			
	(1.616)			
No commitment	1.499	1.456		
	(2.028)	(2.029)		
Other commitment	-2.294	-2.241		
	(2.398)	(2.384)		
GP's RI experience	-1.617	-1.754	-1.954	
	(1.72)	(1.69)	(1.681)	
Dedicated training & resources	-2.200	-2.490	-3.086^{**}	-3.539^{**}
	(1.948)	(1.955)	(1.536)	(1.485)
Systematic integration	5.200^{***}	4.902^{***}	4.610^{***}	4.567^{***}
	(1.808)	(1.705)	(1.642)	(1.666)
Control variables:				
Log_size	-0.758	-0.786	-0.844	-0.876
Maturity	2.567^{***}	2.568^{***}	2.516^{***}	2.588^{***}
Maturity_squared	-0.199^{***}	-0.198^{***}	-0.196^{***}	-0.211^{***}
Fund Number	-0.743^{**}	-0.747^{**}	-0.687^{**}	-0.683^{**}
Consumer Discretionary	-2.558	-2.568	-2.278	-2.240
Energy & Utilities	-3.637	-3.648	-4.801	-4.653
Financial & Insurance Services	-7.086^{***}	-7.078^{***}	-6.25^{***}	-6.157^{***}
Industrials	-10.231	-10.240	-9.796	-9.552
Information Technology	15.128^{***}	15.070^{***}	14.994^{***}	15.015^{***}
Telecoms & Media	7.130	7.296	6.754	6.501
Observations	259.0	259.0	259.0	259.0
R^2	0.234	0.233	0.224	0.220
Adjusted R^2	0.183	0.185	0.183	0.182
Residual Std. Error	9.572	9.556	9.571	9.578
F Statistic	[[5.268]]***	[[5.483]]***	[[5.948]]***	[[6.222]]***
Note:				$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

While the majority of the independent variables are found not to have a statistically significant effect on funds' financial performance, we do however find some interesting observations. The results show that 'systematic integration' is statistically significant *($p<0.01$)* and with a large positive effect size. *Per se*, this indicates that funds that have systematically integrated responsible investing have benefitted from greater financial performance. Thus, the results suggest that a systematic approach to responsible investing is effectively driving value and enhancing funds' financial performance. Moreover, the results are significant at the 1%-level, which indicates a highly probable association between these investment practices and financial performance. The results also underline that an initial commitment to responsible investing is relatively unimportant compared to making it an integral part of the fund's investment process. Thus, it seems that being far on the ESG-journey is a prerequisite for performing well, financially, in responsible investing in West European PE.

Yet, cautiousness must be exerted when interpreting these results, as the positive association does not necessarily attribute a causal relationship between the variables. Despite the results being intuitive, the further funds have gone on their ESG-journey, the more capable they are of capitalizing on value potential in responsible investing, it is, nonetheless, possible that systematic integration and high performance is explained by a third, omitted factor. We expect that such a factor could be the skill of GPs in all aspects of investing.

Generally, the goodness-of-fit measure R^2 of the regression model (1) is 23.4%, which is sufficient to provide some indicatory findings. However, it also indicates that important variables that can explain the differences in performance between PE funds are omitted. Nevertheless, R^2 remains stable when removing insignificant variables from the model (2-4). Yet, in models 3 and 4, 'dedicated training & resources' is found to be statistically significant at the 5%-level. Surprisingly, the variable is negatively associated with financial performance, however, with a lower effect-size than that of 'systematic integration'. While it is hard to interpret this result, we also remain skeptical towards it as it is very difficult to consistently identify whether PE funds utilize dedicated training & resources, and thus, we expect a higher proportion of the PE funds in our performance dataset to have ESG training procedures and use consultants compared to what we were able to identify using our data collection methodology. As such, we doubt whether this variable infers any meaning about the financial consequences of such practices. Similarly, it is surprising that GP's responsible investment experience is not positively associated with financial performance. We suspect this to be due to the few funds that have been raised subsequently to a formal commitment, which makes it challenging to infer a statistical significance, although we suspect GP-experience to be important.

In addition to these findings, funds with no commitment to responsible investing seem to perform better than UNPRI compliant funds, and funds that have adopted an ESG policy without adhering to UNPRI are performing worse, *per se*. This also seems to support the notion that responsible investing needs to be systematically integrated for its benefits to outweigh its costs. However, none of these variables are statistically significant.

When considering the results of the regression on MOIC (Table 9), the findings are rather identical. Most variables are insignificant and not able to explain the variations in financial performance. However, 'systematic integration' and 'dedicated training & resources' remain significant at the 1%-level and 5%-level, respectively. The R^2 of the model is 27.6%, somewhat higher than the net IRR model, but with a lot of variation in performance still being unexplained. Nonetheless, since ‘systematic integration’ remains significant at the 1%-level when tested on both of the dependent variables, net IRR and MOIC, the findings seem to indicate that PE funds with a systematic integration of responsible investing, which reflects funds that have come far on their ESG-journey, are the ones who have been able to capitalize on the value potential in responsible investing.

Table 9: MOIC regression results

	(1)	(2)	(3)	(4)
Independent variables:				
GP’s RI experience	-0.004			
	(0.052)			
No commitment	-0.027	-0.027		
	(0.081)	(0.080)		
Other commitment	0.017	0.017		
	(0.146)	(0.146)		
ESG personnel	0.027	0.026	0.024	
	(0.078)	(0.078)	(0.077)	
Dedicated training & resources	-0.171**	-0.171**	-0.158**	-0.151**
	(0.081)	(0.079)	(0.064)	(0.059)
Systematic integration	0.199***	0.200***	0.206***	0.213***
	(0.073)	(0.072)	(0.069)	(0.062)
Control variables:				
Log_size	-0.028	-0.028	-0.027	-0.027
Maturity	0.089**	0.089**	0.090**	0.089**
Maturity_squared	-0.013***	-0.013***	-0.013***	-0.013***
Fund Number	-0.048***	-0.048***	-0.048***	-0.048***
Consumer Discretionary	0.047	0.047	0.041	0.042
Energy & Utilities	-0.199	-0.199	-0.188	-0.189
Financial & Insurance Services	-0.307**	-0.307**	-0.319**	-0.319**
Industrials	-0.309*	-0.309*	-0.314*	-0.314*
Information Technology	0.417**	0.417**	0.421**	0.423**
Telecoms & Media	0.116	0.117	0.119	0.120
Observations	253.0	253.0	253.0	253.0
R^2	0.276	0.276	0.275	0.275
Adjusted R^2	0.227	0.230	0.236	0.239
Residual Std. Error	0.444	0.443	0.442	0.441
F Statistic	[[8.977]]***	[[9.323]]***	[[10.98]]***	[[11.81]]***
Note:				*p<0.1; **p<0.05; ***p<0.01

To assess the risk mitigation attributes of responsible investment practices, we have considered the overall variation in financial performance between the PE funds that utilize a systematic integration against the funds that do not[17]. Considering the standard deviation between the systematic and non-systematic group (Table 10), it appears that the overall performance variation in net IRR and MOIC is lower for the systematic group.

Table 10: Performance variation in systematic versus non-systematic PE funds

	Net IRR	*MOIC*
Systematic group		
Mean	15.852	1.620
Median	15.340	1.590
Standard deviation	9.102	0.399
Non-systematic group		
Mean	14.573	1.627
Median	13.500	1.525
Standard deviation	11.201	0.546

To evaluate if these differences in variance are statistically significant, we use Levene's (1960) and Brown-Forsythe's (1974) test for equality of variances. The tests state the null hypothesis that there is homogeneity in variance between the two groups, H_0: $\sigma_1^2 = \sigma_2^2$, versus the alternative hypothesis that there is not, H_1: $\sigma_1^2 \neq \sigma_2^2$. While Levene's test focuses on deviations from the sample mean and assumes normally distributed data, Brown-Forsythe's test uses the median and is more appropriate if the data does not conform to normality. When using net IRR as the measure of performance, the results of both tests (Table 11) do not indicate any statistically significant difference in performance variation between the two groups. However, when considering MOIC, the results are statistically significant at the 5%-level and 10%-level when using Levene's- and Brown-Forsythe's tests, respectively. As the MOIC performance data is not normally distributed cf. Appendix 13, the Brown-Forsythe's test is the most robust of the two, and thus, we disregard Forsythe's test. As such, we can reject the null-hypothesis of equal variances at the 10%-level, thereby providing some evidence that the systematic group has a lower variation in performance when disregarding the element of time. This indicates that funds with a systematic integration of responsible investing may generate more stable returns.

Table 11: Levene and Brown-Forsythe test for homogeneity of variance

	Test statistic	*P-value*
Net IRR		
Test using the mean	1.698	0.194
Test using the median	1.434	0.232
MOIC		
Test using the mean	4.099	0.044
Test using the median	3.017	0.084

[17] We compare 'systematic integration' funds to all other funds in the performance dataset, including funds not committed to responsible investing and funds that are committed but not yet exhibiting a systematic integration of ESG.

Based on the results of the regression models (Table 8-9) and the tests for performance variation (Table 11), we now proceed to discuss our hypotheses. It can be concluded that some of the hypotheses outlined in section 4.3 are supported while some are not. However, in section 5.2 we disposed the two variables ‘formalized engagement’ and ‘detailed ESG disclosure’ from the regression model due to multicollinearity. In this regard, we do not discount the importance of these investment practices but acknowledge that they are very likely to be explained by the funds having a systematic approach to responsible investing. Therefore, hypothesis H1a, H2a, and H4 are of course not included in the discussion below.

The results of the analysis point to a positive association between systematic integration of responsible investing and financial performance in PE funds, as measured by both net IRR and MOIC *($p<0.01$)*. As such we find that H1b is supported by these findings. Yet, we are not able to verify if the relationship is causal or not due to the risk of omitted factors. However, Hill (1965) argues that the probability of causality increases if one of the following is true: (i) different scholars across countries and among varying samples find similar correlations, (ii) it is logical or plausible, or (iii) the cause existed before the effect. Since causality seems logical or plausible given the abovementioned discussions in which we emphasize that PE funds with a systematic integration of responsible investing reflect those with well-established processes who are able to capitalize on value potential, the correlation may then indicate causality, which Hill (1965) argues to be interesting in itself.

Furthermore, the analysis indicates some evidence of a lower variation in performance for the group of systematic funds compared to non-systematic funds. The results are moderately significant *($p<0.10$)* when using MOIC as the performance measure. Thus, we find that H2b is partly supported by our results.

Most other independent variables were found to be insignificant in explaining variations in performance in both regression models. Therefore, we find support that formal commitment (H3) is not associated with financial performance and neither is dedicated ESG personnel (H6). However, contrary to our expectations, the results do not support dedicated ESG training and use of external consultants (H5) as well as GP’s responsible investment experience (H7) to be positively associated with financial performance.

Table 12: Summary of hypotheses

No.	*Hypothesis*	*Result*
H1b	Systematic integration is positively associated with financial performance	*Supported*
H2b	PE funds with systematic integration exhibit lower variation in their financial performance	*Partly supported*
H3	Formal commitment is not associated with financial performance	*Supported*

H5	ESG training and/or external resources is positively associated with financial performance	*Not supported*
H6	Dedicated ESG personnel is not associated with financial performance	*Supported*
H7	GP's responsible investment experience is positively associated with financial performance	*Not supported*

* H1a, H2a, and H4 have been discarded

6 Efficient responsible investment practices

With insights into the effect on PE funds' financial performance from integrating responsible investing, section 6.1 now investigates how PE funds have endeavored to capitalize on responsible investing, followed by section 6.2 that seeks to examine what implications the empirical results have for West European PE funds within the responsible investment domain. Throughout chapter 6, emphasis is on unravelling responsible investing, that is, discussing what seems to constitute efficient responsible investment practices, within the scope of this study. We start out by considering how PE funds have been able to capitalize on responsible investing.

6.1 Capitalizing on responsible investing: The do's and how's

Since the empirical findings from section 5.3 suggest that it is the funds with a systematic integration that have been able to capitalize on responsible investing, this section aims at examining what systematic integration entails. To do so, the section is based on an extensive literature search targeting ESG best practices and efficient responsible investment practices from various ESG frontrunners, both PE funds and LPs, and leading network organizations, such as UNPRI, through their published sources and participation in previous research. Also, to allow for deeper insights into funds' systematic integration, we complement the discussion with insights from 26 semi-structured interviews conducted with 15 GPs, 7 LPs, and 4 AFs throughout Western Europe.

As highlighted by the Investment Leaders Group from the University of Cambridge Institute for Sustainability Leadership (2014); *"The proper determination of value – whether financial or ethical – demands clear principles, sound logic and reliable facts, transparent methods, and dispassionate judgment in deriving conclusions"* – (Investment Leaders Group, 2014, p. 14). The same thinking applies to the way in which we seek to examine what systematic integration of responsible investing entails. By allowing for an exhaustive inclusion of secondary and primary data sources where we contextualize insights and discuss contrasting viewpoints to deduce insights that are as clear, reliable and transparent as possible, we aim at building a dispassionate judgment in deriving our conclusions. With this in mind, we now turn to treat PE funds' systematic integration.

From a series of reports that researched best practices in ESG-integration, including surveying more than 1,100 financial professionals, conducting more than 23 workshops in 17 major markets, interviewing hundreds of practitioners and stakeholders, analyzing ESG company scores provided by Bloomberg, and reviewing data from PRI's reporting framework, CFA Institute and PRI Association (2019) ended up concluding that there is no "silver bullet" or single form of best practice to enable ESG integration. Despite this research not being exclusive for ESG-integration in PE, we nevertheless neither expect or seek to stumble upon a one-size-fits-all solution; rather, we aim at exploring different aspects and viewpoints that ultimately point towards investment practices that are thought to be efficient with regards to systematic integration in responsible investing.

As highlighted up till this point, responsible investing entails being formally committing to it while also having, or seeking to build, capacity and process capabilities; the latter being reflected in the funds that are far on their ESG-journey. Since our empirical results suggest that it is the PE funds with a systematic integration that have been able to capitalize on the value potential in responsible investing, it implies that no right or wrong approach to integration exist in the current state of responsible investing, as long as funds demonstrate a process-driven consideration of ESG without compromising on their investment process.

"The ESG work, the resources, and the reporting need to reflect [PE funds'] organization and strategy at hand; there isn't a one-size-fits-all type of solution" – (Mikael Huldt, Head of Alternative Investments at AFA Insurance, personal communication, April 17, 2020)

Ivaylo Dimov, who is a consultant at Sancroft, an international sustainability consultancy, highlights that PE funds and other practitioners struggle with being systematic and also demonstrating that they are systematic. He argues that being systematic entails ensuring that every step or activity of the investment process supports the decision-making with regards to ESG, and that the ESG issues most material to the investment are monitored and engaged with during the holding period (personal communication, April 24, 2020). Yet, since funds are at different stages on their ESG-journey, those with no or little process capabilities may discount ESG related matters at some point throughout their investment process and not realize the value potential. As highlighted by Nigel Smith, ESG & Sustainability Manager at TDR Capital, PE investment professionals have quite a few things to tick off before making an investment, and if ESG is not a high impact business in this context, it can fall down the pecking order (personal communication, April 15, 2020). Thus, a systematic integration may help ensure that funds do not erroneously discount any value potential in responsible investing.

"Once you break down the whole investment cycle, then systematic would mean that each step or activity enables you to make the right decisions about what are the [material] ESG risks and opportunities. Once you actually get into an investment, then to be able to monitor and engage with the business and those risks and opportunities" – (Ivaylo Dimov, Consultant at Sancroft, personal communication, April 24, 2020)

Summa Equity, a sustainability leading Nordic PE fund that won the ESG Award at the Private Equity Awards 2019 (Abdelkander, 2019), focuses on ensuring that ESG and sustainability is as integrated into the organization and processes as possible. Thus, they make sure to tailor their thinking to each investment and focus on ESG-materiality (Alexander Bjørklund, Project Manager at Summa Equity, personal communication, April 16, 2020). In tandem with the abovementioned insights, these findings therefore seem to indicate that by embedding ESG into the fund organization and having a process-driven consideration of ESG,

"When we think about ESG and sustainability, this is an integrated part of how we work, how we invest and how we think about the strategy and everything" – (Hannah Jacobsen, Investment Director at Summa Equity, personal communication, April 16, 2020) in which funds ensure that each step and activity supports their decision-making with regards to ESG, then PE funds are ought to entail a systematic integration of responsible investing. However, since these findings are high-level and point only to an overall, general treatment of systematic integration, it would be more appropriate to examine funds' endeavor to be systematic during each phase of their investment process in order to make the discussion as concrete as possible. As such, we now turn to treat funds' investment phase, holding period, and exit phase with regards to their systematic integration practices.

"The biggest challenge right now and here is to make it [ESG] concrete; to take it down to a level where we can relate to it, and the company can relate to it. This whole ESG discussion is to many, including ourselves, on a very overall level" – (Anonymous informant, Nordic PE firm, personal communication, February 17, 2020a)

6.1.1 Screening, due diligence, and investment

According to PRI Association's (n.d.-b) guide for how GPs can manage ESG, PE funds are advised to first screen deals against ESG criteria, which were elaborated in section 2.3, and develop such criteria internally, utilize existing guidelines, or develop them together with LPs. Then, in the due diligence phase, PRI Association (n.d.-b) emphasizes the importance of examining material ESG issues and how they can be managed. In this context, PwC (2020) point to the increasing importance of understanding the systematic risks from sustainability megatrends, such as climate change, demographics, water constraints and more, as these are likely to have an impact across the portfolio holdings, and thus, should be treated as such.

"In due diligence, the GPs that score best in our ESG assessment are the ones that have a formalized way to uncover and diligence the main ESG issues" – (Anna Follér, Sustainability Manager at AP6, personal communication, April 21, 2020)

Nonetheless, a starting point for PE funds' materiality analysis is to identify the ESG issues most material to the industry in which the deal company operates. To do so, funds can utilize various tools, including The Industry Frameworks (PRI Association, 2016b), the FSB Task Force on Climate-related Financial Disclosures[18] (TCDF, 2020), CDC's Toolkit for Fund Managers[19], and of course, SASB. As highlighted in section 2.3, SASB covers 77 industries and thus constitutes one of the most comprehensive ESG materiality maps. However, the various materiality maps can also be used to complement each other in order to cover specific needs. For instance, Bloomberg uses a combination of TCDF and SASB in an integrative fashion to identify and report on ESG materiality (Bloomberg, 2020).

"After a long series of exploration, we settled on the SASB framework as being a really helpful starting point for our investment teams [in identifying ESG materiality]" – (Megan Starr, Global Head of Impact at The Carlyle Group, personal communication, April 17, 2020)

[18] TCDF focuses on a company's exposure to climate-related issues.
[19] CDC's Toolkit for Fund Managers focuses on responsible investing in emerging markets.

Magnus Young, Senior Manager at PwC Norway, points to the importance of having ESG as an integral part of PE funds' due diligence framework. By doing so, funds will be more systematic in handling ESG in the investment phase (personal communication, April 20, 2020). In this context, Ivaylo Dimov argues that if a fund does ESG due diligence for only two of their deals, for instance, then it can be discussed whether it is in fact systematic. Moreover, he highlights that although ESG may be incorporated in the due diligence and done as a part of the investment process, there is often a less formalized route for these findings to make it into the Investment Committee discussions (personal communication, April 24, 2020). This indicates that PE funds should seek to ensure a rather structured information flow on ESG insights in order to avoid losing out on ESG value potential.

"You can't create one workstream on the ESG aspect that runs in parallel to the financial due diligence or the governance due diligence or the legal; it [ESG] has to be integrated in the same framework" – (Magnus Young, Senior Manager at PwC Norway, personal communication, April 20, 2020)

"Quite often what we see is that there is some degree of ESG due diligence done as a part of the [investment] process, but that there is a less formalized or disciplined route for the findings to make it into the Investment Committee discussions where the final decision is made, so I think there is a challenge there to show it [ESG] is as important as any other risk or opportunity" – (Ivaylo Dimov, Consultant at Sancroft, personal communication, April 24, 2020)

In this regard, PRI Association (n.d.-b) recommends that the ESG findings become included in the investment memorandum to ensure that the Investment Committee is informed on material ESG issues. Subsequently, when PE funds negotiate and finalize the investment agreement with a portfolio company, PRI Association (n.d.-b) advocates that GPs should clarify their expectations on how they expect ESG to be managed, as GPs are more likely to secure management support if they signal their goals early in the process. Also, PRI Association (2014) emphasizes that GPs should focus on sharing ESG objectives, policies and practices with portfolio companies to ensure alignment of expectations.

6.1.2 Active ownership, engagement, and reporting

Contrary to funds' screening, due diligence, and investment activities, funds' holding period may entail more diverging responsible investment practices, as funds experience significant challenges in this phase with regards to efficiently managing ESG-materiality and incorporating ESG into decision-making cf. section 3.1. Thus, we make sure to thoroughly examine what systematic integration entails during PE funds' holding period by focusing on their active ownership, engagement activities, and external reporting activities.

"In due diligence, the ones that perform best have very similar approaches on how to diligence companies before investing. But then practices vary when it comes to ESG during the ownership phase and reporting" – (Anna Follér, Sustainability Manager at AP6, personal communication, April 21, 2020)

Once the investment has been made, PRI Association (n.d.-b) advocates that GPs should start to have deeper conversations with management about the prioritization of ESG issues and on planning how to manage them. FSN Capital, an ESG frontrunner who won the Corporate Citizenship Award at the Private Equity Awards 2017, in which their commitment to best practice in ESG was recognized, have a rather structured approach for onboarding portfolio companies. By asking their companies to identify and point to ESG materiality and create an ESG strategy, FSN Capital makes sure to utilize what knowledge the management already has about the company's most material ESG issues. Moreover, FSN Capital uses external consultants, such as Nora Malm, to examine company profiles and support a complete value chain analysis. Ultimately, this allows FSN Capital to assess the entire ESG impact of their portfolio companies so that they can take appropriate actions to manage these companies' ESG impact accordingly (personal communication, February 18, 2020).

"As a part of the onboarding, all the companies are asked to identify and point to [ESG materiality] and create an ESG strategy. (…) It starts with external experts that are engaged to look at the company profiles and we conduct a value chain analysis of the entire company. So, we look at all the ESG impact the company has" – (Nora Malm, ESG Support at FSN Capital and Senior Consultant at EY, personal communication, February 18, 2020)

PRI Association (n.d.-b) furthermore suggests that GPs put measures in place at portfolio companies, such as drafting an ESG policy, assigning resources and responsibilities as well as setting up processes to implement such ESG policy, ensuring that the firm's board of directors are accountable for the ESG performance, and organizing meetings with representatives from portfolio companies to share knowledge on ESG topics. Also, PRI Association (n.d.-b) states the importance of the companies' boards having the necessary expertise on ESG matters, or at least having access to the necessary expertise. In this regard, Megan Starr, Global Head of Impact at The Carlyle Group, points to a success criterion for responsible investing being that portfolio companies' management and board view ESG as a core business value (personal communication, April 17, 2020), which is supported by PRI Association (n.d.-c). For instance, by ensuring that ESG is always at the top of the board's agenda, ESG can be signaled as a core value (Nora Malm, personal communication, February 18, 2020). In this regard, Polaris, a Danish GP, makes it clear from the very beginning of the onboarding of a portfolio company's board and management, what requirements there are to be a part of Polaris' portfolio (Henrik Bonnerup, personal communication, February 10, 2020). Hence, as argued by PRI Association (2018), by being transparent and setting the expectations from the start, responsible investing is ought to have the most success.

"Talking at the portfolio company level [a success criterion for responsible investing is that] ESG is viewed as a core business issue by the management and the board, and is resourced and treated as such" – (Megan Starr, Global Head of Impact at The Carlyle Group, personal communication, April 17, 2020)

"The board agenda is very important. By ensuring that ESG is always at the top of boards' agenda, FSN sets the tone from the top, signaling that ESG is a core value" – (Nora Malm, ESG Support at FSN Capital and Senior Consultant at EY, personal communication, February 18, 2020)

PRI Association (2014) also suggests ESG issues to be incorporated into the 100-day-plan, drafted in collaboration with portfolio companies, with a roadmap that is formulated for a 3-5-year horizon and constitutes clear process benchmarks. Nordic Capital, another leading GP within the sustainability domain, ensures to incorporate ESG into their 100-day plan by taking the insights and ESG materiality analysis from the due diligence to set clear targets and actions on the value creation plan going forward (personal communication, February 10, 2020). In this regard, PRI Association (2014) suggests that funds align their framework for ESG-integration with existing tools and standards to ensure it is based on good industry practices. However, there are many different accreditations, guidelines, organizations, and sign-ups, hence, Julie Cooke who is Interim Head of Responsible Investment at Hg, a sustainability leading GP and signatory to the PRI since 2012 – and that won BVCA's award for 'demonstration of an ESG framework at PE level' in 2013 – suggests choosing those that work for one's own business and sectors and then fully commit to them (personal communication, April 17, 2020).

"During the 100-day plan we have a very structured onboarding process, also from a sustainability point of view, to take the insights from the DD on the risk and opportunity side and set clear targets and actions on the value creation plan" – (Elin Ljung, Director of Communication and Sustainability at Nordic Capital, personal communication, February 10, 2020)

Throughout the holding period, PRI Association (n.d.-b) highlights that GPs need to monitor whether its ESG goals are being met in the portfolio companies. Here, PRI Association (n.d.-b) and (2014) points to monitoring as taking place either through scheduled meetings with companies, by collecting internal data from the company and reviewing their public reporting, or by conducting regular site visits that may reveal the extent to which the company works with its ESG objectives. GPs can then measure the ESG progress in portfolio companies by using a set of standardized ESG metrics (PRI Association, 2014). However, coming up with relevant KPIs may not be straightforward for practitioners despite them being important for measuring firms' ESG progress (Mirja Lehmler-brown, personal communication, May 1, 2020). With regards to KPIs, Summa Equity uses proxies for impact, typically company outputs such as how many customers they have, how many people they reach with their products. Alexander Bjørklund, Project Manager at Summa Equity, argues that in some cases the proxies are quite good, for instance in terms of how many people you test for a disease, whereas in other cases it may be a more distant proxy. Nonetheless, Alexander highlights, the distant proxies are still important metrics as they give indications and oftentimes are very relevant to the firm (personal communication, April 16, 2020).

"The problem you have at some firms is coming up with what KPIs you should focus on; what's the relevant metrics for you to assure that you improve upon. (…) For each thing you want to move the needle on, you need to come up with the KPIs that are the most relevant to ensure that you can measure progress" – (Mirja Lehmler-Brown, Managing Director at Hayfin, personal communication, May 1, 2020)

PRI Association (n.d.-b) highlights that two types of KPIs can be used by PE funds; core KPIs that are applicable to all portfolio companies and that measure the overall portfolio progress, and tailored KPIs that are more company- and sector specific. Alexander notes that having both is important; whereas the business-specific KPIs allows Summa Equity to track the unique ESG impact each firm is having, the shared KPIs provide a measurement of the ESG progress for the entire portfolio (personal communication, April 16, 2020). In this regard, PRI Association (2014) argues that GPs need to provide their companies with tools to monitor ESG progress, otherwise a PE fund may not be able to measure progress after all. As found by Serafeim and Freiberg (2018) in a case study of Summa Equity's purpose-driven approach to ESG, Summa Equity has managed to develop an online tool that portfolio companies' management can use for monitoring progress, such as whether their employees feel pride in the company they work for, and to what degree they find their work meaningful. Ultimately, this is ought to create a more rich and efficient information flow.

"We have a set of [ESG] KPIs that we use across our portfolio and we want to keep that very simple so were looking at it at a very high-level, say carbon emissions, (…) employee satisfaction, (…) gender balance, (…) personnel turnover rate, and intensity in terms of revenue (…) and we report these things publicly. And the way we tend to track [ESG] progress is to look at the year-on-year change and look at the change over several years" – (Alexander Bjørklund, Project Manager at Summa Equity, personal communication, April 16, 2020)

Generally, frequent data collection on ESG issues remains a challenge for many PE funds. Whereas some use software, others prefer manual solutions (Jackson-Moore, Case, Bobin, & Janssen, 2019). Elin Ljung, Director of Communication and Sustainability at Nordic Capital, highlights that their approach to follow up on KPIs is to have a sustainability software platform that collects around 50 KPIs per company, which allows them to develop a sustainability scorecard for each of their businesses. The aim is then that each company progresses during the ownership in terms of becoming more sustainable (personal communication, February 10, 2020). When engaging portfolio companies and measuring their ESG progress, PRI Association (2014), PwC (2020) and KPMG (2019) point to the importance of concrete and factual reporting on ESG progress to ensure transparency to LPs and other stakeholders. However, as argued by Mikael Huldt, Head of Alternative Investments at AFA Insurance, PE funds' reporting should not only contain ESG success stories, but also their improvement points and an evaluation of their current ESG risks in order to be transparent (personal communication, April 17, 2020).

"Being transparent with the approach and processes for ESG, not just to investors but also to the public, is something that we see amongst best performers" – (Anna Follér, Sustainability Manager at AP6, personal communication, April 21, 2020)

"In terms of the ESG reporting, it cannot only be the success stories, you need to also be transparent on what needs further improvement – (Mikael Huldt, Head of Alternative Investments at AFA Insurance, personal communication, April 17, 2020)

To make portfolio reporting more efficient, Alexander Bjørklund at Summa Equity highlights that they use an analytics partner to aggregate all portfolio companies' ESG data and create high-level ESG outputs. Such an approach, he argues, is particularly efficient when it comes to reporting the ESG impact of a portfolio company's entire value chain, as this would have been a laborious process if done the old-fashioned way where a consultant would have had to go through every item on a spend list and apply emission factors, for example. But what Summa Equity discovered was that if their portfolio companies could simply upload their spend data directly from their accounting system to a portal provided by the analytics partner, then Summa Equity would be able to liberate capacity from their teams and simultaneously provide portfolio companies with immediate insights into their current negative externalities (personal communication, April 16, 2020).

Generally, PRI Association (n.d.-b) highlights that regular communication on responsible investing during the holding period can help strengthen GP-LP relationships. In this context, a regular monitoring and engagement on ESG issues by LPs can enhance an iterative supporting dialogue with GPs (PRI Association, n.d.-b). Anna Follér, Sustainability Manager at AP6, a Swedish public pension fund investing exclusively in private equity, notes that the results they get from their monitoring are in fact a very good basis for discussion with their GPs (personal communication, April 21, 2020). However, although an iterative supporting dialogue may provide both GPs and LPs with several benefits with regards to efficiently managing ESG, it is not without its costs too. Elin Ljung from Nordic Capital, tells that because no real standard exists, PE funds end up answering questionnaires from their LPs that differ slightly from each other, although LPs may have read the fund's ESG report (personal communication, February 10, 2020). And for PE funds with a large investor base, the yearly or quarterly questionnaires may be particularly cumbersome to complete. Nonetheless, some LPs are aware of the time-consuming questionnaires and try not to ask more than a yearly questionnaire, notes Philippine-Mai Lê Vu, Principal at BPI France. She tells that BPI France tries to make the questionnaires less painful by having a market approach in which they seek to ask questions similar to those of other LPs' (personal communication, April 16, 2020). Nonetheless, despite such efforts, the GP-LP relationship continues to struggle with time-consuming questionnaires. One GP, Quadriga Capital in Germany, sought to accommodate this issue by developing a cloud-based questionnaire program, which allowed them to more efficiently answer LPs' questionnaires and ultimately liberate some capacity (Jörg Mugrauer, personal communication, February 25, 2020).

"Throughout the year there is this sort of ad hoc dialogue that goes on and we share information with them and they share information with us" – (Adam Black, Head of ESG & Sustainability at Coller Capital, personal communication, April 20, 2020)

"Over the last years, we built up a consolidating questionnaire program [to handle LPs' questionnaires]. (…) Before that, we were just forwarding emails which was very ineffective, so we stepwise digitalized it to a large extend (…) and with a lot of content, that is then quite a facilitation in administration" – (Jörg Mugrauer, Partner at Quadriga Capital, personal communication, February 25, 2020)

6.1.3 Leveraging an ESG story at exit

As argued by PRI Association (n.d.-b), the underlying premise for funds' responsible investment efforts in mitigating ESG risks and exploiting ESG opportunities, is for such value to be realized at exit. To leverage a strong ESG story at exit, PRI Association (n.d.-b) notes that funds should demonstrate that their KPIs, which have been set from the beginning of the holding period, provide evidence that the portfolio company's ESG issues have been well managed. Furthermore, PRI Association (n.d.-b) highlights that PE funds should strive to demonstrate the approach that they have followed to achieve such results.

In continuation of this, PwC (2020) points to the importance of not only reflecting the value of the ESG programs in the exit price, but also to evaluate market and investor expectations with regards to the ESG management. In this context, an anonymous Nordic GP highlights that they, for instance, do not sell companies to buyers that act in a bad fashion, and that they regularly use external consultants to perform background checks on buyers (personal communication, February 20, 2020b). This method is shared by Procuritas Partners, another Nordic GP, who performs a know-your-customer exercise in order to assess the buyer. Nonetheless, besides managing market expectations, PE funds may also manage LPs' expectations. In this regard, funds with a purpose-driven approach to ESG may experience difficulties in managing LP-expectations in scenarios where the highest bidder may, for instance, backtrack the firm's ESG progress (Serafeim & Freiberg, 2018). In such scenarios, some LPs would may be inclined to exit anyway, whereas a purpose-driven PE fund may be more inclined to consider accepting a lower bid from a buyer who seeks to continue managing the firm's ESG issues. Yet, by following the hypothesis of Summa Equity, such choice should not have to be made after all. As noted by Hannah Jacobsen, Investment Director at Summa Equity, if a company is well managed with regards to ESG issues and exhibit great performance within sustainability, it would be acquired by a buyer who is willing to pay more for this (personal communication, April 16, 2020).

> ***"In an exit phase we both make sure that the company's ESG is ready (…) but we also do a know-your-customer exercise where we make an assessment of the people buying the company (…) to make sure that they are good buyers"*** – (Jørgen Møinichen, Associate at Procuritas Partners, personal communication, February 25, 2020)

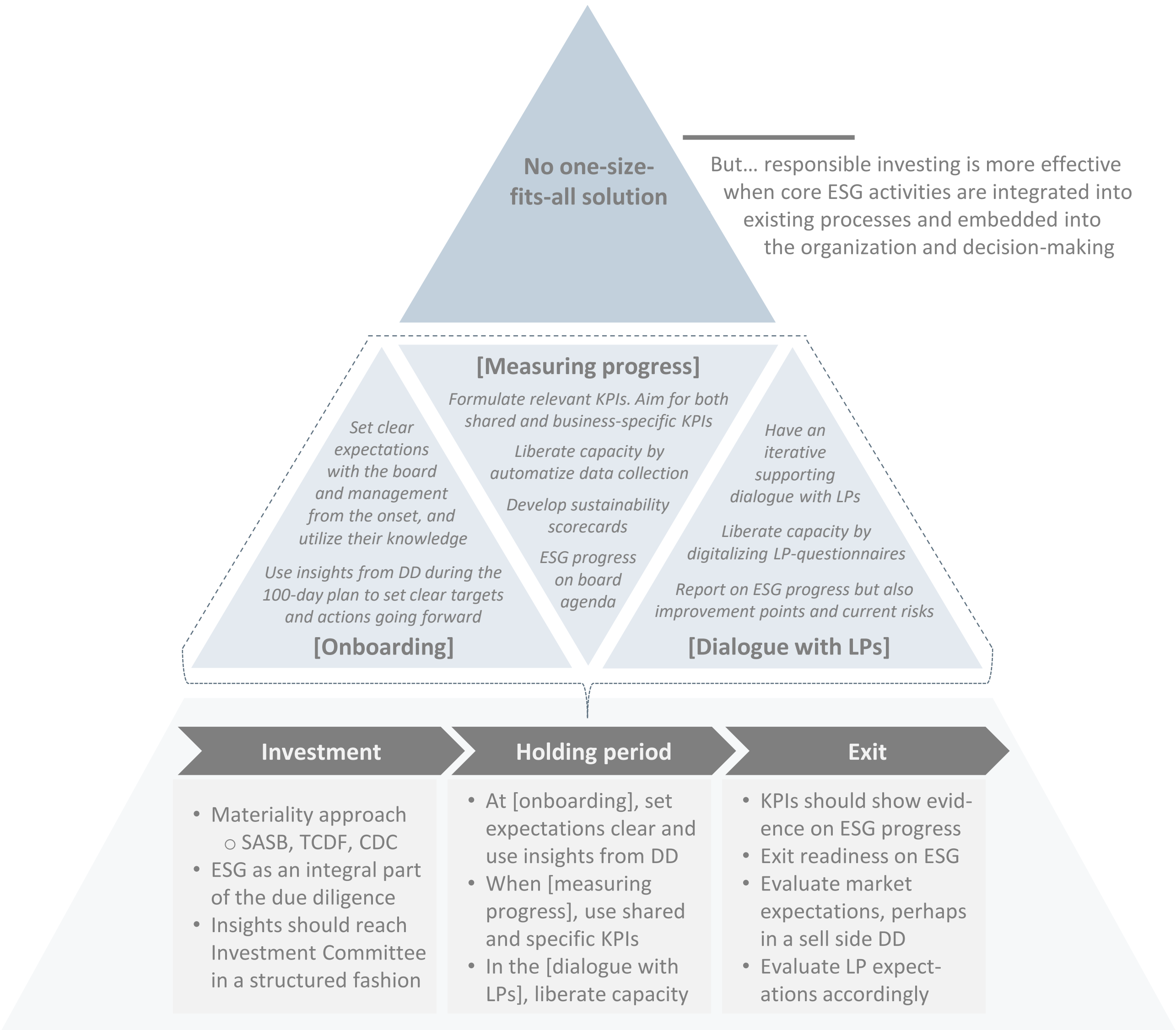
> ***"Our hypothesis when it comes to this [exit] is that if you see the value of having a company that is ESG compliant (…) and has great performance within sustainability, you would also be willing to pay more"*** – (Hannah Jacobsen, Investment Director at Summa Equity, personal communication, April 16, 2020)

6.1.4 Systematic integration in the current state of responsible investing

Although not exhaustive, the different aspects and viewpoints highlighted and discussed before point to a set of efficient investment practices within responsible investing. Although no one-size-fits-all solution exists with regards to systematic integration of responsible investing in PE, one thing stands out; responsible investing is more effective when its core activities are integrated into existing processes, rather than carried out in parallel. As such, ESG and sustainability should be embedded in the PE fund to be an integral part of how a they think and work. If systematic, a PE fund would make sure that every activity enables them a better decision-making on ESG. Figure 16 below summarizes the high-level findings and insights from funds' systematic integration.

During screening and due diligence, funds should have a materiality approach to avoid losing focus, and SASB, TCDF, and CDC's Toolkit for Fund Managers can function as a starting point in this regard. Moreover, it is important to have ESG as an integral part of the existing due diligence framework to ensure that the materiality analysis is performed in a systematic fashion. Subsequently, at investment, insights from the due diligence and materiality analysis should make its way to the Investment Committee in a structured fashion.

Figure 16: PE funds' systematic integration of responsible investing



Sources: Credit of the authors

Then, at the beginning of the holding period, funds should set clear expectations with the portfolio company's board and management that ESG is viewed as a core business issue, and that it should be treated and resourced as such. Furthermore, funds should seek to utilize management's knowledge on the company's material ESG issues during the onboarding, perhaps supported by an analysis from external consultants. During the 100-day plan, insights from the due diligence and materiality analysis should then be used to set clear targets and actions on the value creation plan going forward. Subsequently, relevant KPIs should be formulated so ESG progress in portfolio companies can be measured and monitored adequately. In this context, PE funds should seek to formulate both shared KPIs for the entire portfolio but also business-specific KPIs. To liberate as much capacity as possible from investment and operation teams, funds could seek to automatize the data collection process on KPIs, either by using a sustainability software or by outsourcing it to an analytics partner. Then, to assess ESG progress in a structured fashion, funds should develop a sustainability scorecard for each portfolio company. Moreover, funds should generally ensure that ESG progress gets followed up on at board meetings.

Throughout the holding period, it is also important for funds to have an iterative dialogue with LPs, who, based on their monitoring, might have valuable guidance for GPs on their responsible investment practices. To make sure that funds then handle their LPs' questionnaires in an efficient manner, funds can develop a consolidating questionnaire program, rather than forwarding emails, for example. Generally, stakeholder communication should be strived for on a continuous basis by reporting on portfolio companies' ESG progress, but also by including further improvement points and current ESG risks faced by the company, to ensure transparency.

At exit, funds should ensure that the KPIs that have been set from the start of the holding period provides some evidence of the ESG progress made in the portfolio company. Alongside summarizing sustainability progress, funds should also strive to demonstrate their approach to achieve such results. Funds may also perform an exit readiness analysis not only on traditional factors, but also on ESG related matters. Furthermore, funds should evaluate market and investor expectations; perhaps performing a sell side due diligence while also making sure to clear expectations with LPs on the exit, accordingly.

In unity, these practices are ought to represent systematic integration in the current state of responsible investing. Yet, not all funds have come this far on their ESG-journey, as some may not have well-established processes in place. Therefore, we now turn to treat the implications of this paper's findings for such PE funds.

6.2 Implications for West European PE funds in responsible investing

In this final section, we explore what implications our findings have for West European PE funds in responsible investing. For our primary audience, it is not only valuable to have PE funds' systematic integration examined in order to deduce efficient responsible investment practices, but perhaps more so to explore how funds that are not yet systematic, can become it. Despite section 6.1 concluding on a series of practices that sustainability leaders and ESG frontrunners obey to in their endeavor to systematically integrate responsible investing, they are nonetheless, oftentimes, the result of experience. Therefore, the purpose of this section is to gain an understanding of how PE funds can build an organizational facilitation that will allow them to transition from an ad-hoc set of practices to a systematic one in which ESG is embedded into investment and ownership activities.

With PE funds being at different stages on their ESG-journey in responsible investing, some may recently have committed while others have managed to build both capacity and process capabilities. In this context, those funds with well-established processes and a systematic integration of responsible investing, the ESG frontrunners, are thought to represent only a minority of the West European funds. For instance, when considering this paper's data on 261 West European PE funds in which roughly 30% were characterized as systematic, it implies that approximately 30% of the total West European PE fund population entails a systematic integration. Therefore, our data seems to indicate that the majority of the West European PE funds are yet to be systematic. Thus, it interesting to examine how PE funds can travel further on their ESG journey and become systematic.

6.2.1 Traveling further on the ESG-journey: Becoming systematic

As noted by PRI Association (n.d.-g), funds may invest responsibly despite not having formally committed to it yet. Nonetheless, a formal commitment to responsible investing may be important for funds in building the appropriate culture in the fond cf. section 4.2, and in particular the culture aspect is highlighted by Mirja Lehmler-Brown, Managing Director at Hayfin, as being one of the most important things in order to develop systematic integration. As she notes, the culture should be set from the top and managed by senior partners (personal communication, May 1, 2020), which corresponds to Schein's (1993) culture theory.

> ***"To me, it [systematic integration] starts with culture more than anything. (…) The most important thing in order to do this [responsible investing] right is that the senior partners believe that it is something that is good (…) and ensuring that it becomes an integrated part of what they do"*** – (Mirja Lehmler-Brown, Managing Director at Hayfin, personal communication, May 1, 2020)

Moreover, Nigel Smith, ESG & Sustainability Manager at TDR Capital, a British GP, emphasizes that culture is very important in terms of really understanding and embedding the principles of ESG management. Unfortunately, as he points out, having the culture in the business is not something that happens overnight (personal communication, April 15, 2020). So, as a starting point for those PE funds that have just embarked on their ESG-journey, PRI Association (n.d.-g) notes that funds should formulate a responsible investment policy, which can either be integrated into the fund's main investment policy or function as a standalone responsible investment policy. Although PRI Association (n.d.-g) notes that there are no one-size-fits-all approach to writing a policy, they point to most policies including; (i) purpose, (ii) scope, (iii) legal and regulatory factors, (iv) responsibilities, (v) implementation, (vi) engagement, (vii) reporting, and (viii) review (PRI Association, n.d.-g; Hampole & Korngold, 2019). In this context, BSR (2019), a global non-profit organization that promotes the sustainable development, highlights that PE funds should seek to avoid using generic language and content, as this will lead to policies that are not well-tailored to funds' investment style, creating a possible disconnect between strategy and ESG objectives, which may lead to less effective and efficient responsible investment practices.

Adam at Black, Head of ESG & Sustainability at Coller Capital, a sustainability leading LP that won BVCA's Responsible Investment Award 2018, recognizes the importance of culture in responsible investing, but also emphasizes the importance of having competent people. At some point, ESG gets very technical, even for him, Adam notes, and he has done it for 30 years. So, he emphasizes that PE fund professionals need to know when they do not know, and thus be capable of knowing their own limitations so far as ESG regards, at least. If funds do not have the competence in the organization, then they have to ensure that they have it close to them, for instance trusted advisors, Adam notes (personal communication, April 20, 2020). The importance of having access to competence is supported by PRI Association's (2014) guide to GPs' ESG-integration, in which it is highlighted that GPs should ensure that the investment and operation team both have access to ESG expertise when developing and deploying the fund's ESG framework.

"I think ultimately it comes down to culture and values and leadership. (…) The better firms at the portfolio level are those where there is a positive [ESG] culture and I think that's the same in private equity. (…) It's about empowerment; that individuals feel empowered to speak out and do the right thing. (…) But you also need competence. You need competent people taking the right actions at all levels and functions" – (Adam Black, Head of ESG & Sustainability at Coller Capital, personal communication, April 20, 2020)

For funds that need to build capacity, PRI Association (2020) notes that a starting point is to analyze the existing practices among teams and committee members, and map their investment practices around typical ESG issues. This will then allow funds to analyze any gaps and locate areas where there may be room for improvement. Subsequently, funds can then start building their capacity capabilities. Then, as funds start to build capacity, PRI Association (n.d.-g) highlights that ESG training may advance funds' personnel in identifying skill gaps and staying abreast of latest developments within the sustainability domain.

"Organizations that score high do a lot of capacity building so that they make sure that the deal team is up to speed on relevant ESG issues" – (Anna Follér, Sustainability Manager at AP6, personal communication, April 21, 2020)

For instance, Nordic Capital, an ESG frontrunner, has implemented a mandatory ESG training program for all of the fund's employees as well as for portfolio companies' management and boards. In this regard, Elin Ljung notes that Nordic Capital's ESG team are there to train, facilitate, develop, and being the experts, but that it is in fact the investment team who are responsible for integrating ESG into the investment case (personal communication, February 10, 2020). This view is shared by Megan Starr, Global Head of Impact at The Carlyle Group, who notes that ESG has to be owned by the investment team, but supported and perhaps directed by dedicated ESG teams (personal communication, April 17, 2020).

"We have a quite extensive established training program where it's mandatory for all employees in Nordic Capital and for all board members and key executives in the portfolio companies to do ESG training" – (Elin Ljung, Director of Communication and Sustainability at Nordic Capital, personal communication, February 10, 2020)

"If we believe this [ESG] has to be a part of investing, it has to be owned by the investment teams. So, we think of it [responsible investment] as a both-end approach where we work in lock-step; where the investment team has to believe in this and think it matters, but we [dedicated ESG team] can be there to help support, direct, and do research and show them new kinds of thinking" – (Megan Starr, Global Head of Impact at The Carlyle Group, personal communication, April 17, 2020)

"There are quite a few ways we try to acquire knowledge. First of all, we are trying to avoid [ESG] specialists in Summa. (…) And we do lunch-and-learn calls where we try to share [ESG] knowledge across (…) and we encourage each other to go to important events to stay up to date" – (Alexander Bjørklund, Project Manager at Summa Equity, personal communication, April 16, 2020)

Contrary, Summa Equity's strategy in regards to organizational learning and knowledge sharing is to avoid specialists. Because of this, there is no dedicated ESG team or centralized learning team within Summa Equity; rather, each organizational member has a responsibility for understanding, driving, and working with ESG (Alexander Bjørklund, personal communication, April, 16). Yet, while such structure may be working particularly well for Summa Equity, as they have a purpose-driven approach to ESG, it may prove less efficient for other PE funds. Summa Equity's decentralized knowledge structure ensures, first, that ESG is recognized and used by decision-makers, and second, that organizational memory in the form of their tacit knowledge remains intact despite personnel turnover, which Huber (1991) and Hendrikse (2003) argue to be critical cf. section 4.2. Nonetheless, the lack of centralized ESG knowledge prerequisites that Summa Equity's employees are able to efficiently share ESG knowledge and stay up to date on ESG research. Because of this, Summa Equity operates what they call lunch-and-learn calls to facilitate knowledge sharing, and they encourage each other to go to important events related to ESG and sustainability. Moreover, Summa Equity also works with consultants in the ESG space to improve their practices and to get more knowledge in. Especially with their first portfolio reports, Alexander Bjørklund notes, they used consultants to make sure that important insights were not left out and that everything was communicated in a good way (personal communication, April 16, 2020).

Through interviews with more than 100 practitioners in responsible investing, PRI Association (2018) found that practitioners should generally strive to strengthen their feedback loop between new ESG information and knowledge gained through engagement. This would then allow PE funds to enhance their decision-making processes and ultimately their ESG-integration. Summa Equity, for instance, sets up workshops with portfolio companies where various ESG issues are discussed and where ESG consultants may come and present (Alexander Bjørklund, personal communication, April 16, 2020). Not only does such learning and knowledge sharing initiatives provide portfolio companies with learning opportunities, it also strengthens Summa Equity's feedback loop through dialogue with portfolio companies on their material ESG issues.

"We set up workshops with the companies where we can spend a day, for example, workshopping various ESG issues and how it relates to the future in this industry. And we might also bring in outside consultants to present at these workshops so we get ESG professionals to talk about what's important. So, we seek to facilitate these learning and co-creation opportunities for our portfolio companies to try to move things forward" – (Alexander Bjørklund, Project Manager at Summa Equity, personal communication, April 16, 2020)

This view of working closely with portfolio companies is also shared by Hg. As noted by Julie Cooke, Interim Head of Responsible Investment, it is important for funds to have strong relationships with their companies and to promote transparency. For instance, Hg value their portfolio as one large community in which the fund makes sure to share what one organization in the portfolio may be doing particularly well with the other portfolio companies (personal communication, April 17, 2020).

"I think that to be successful you have to have really strong, transparent relationships with and across the organizations. For us, collaboration across the whole community to share ideas and best practice is particularly important. For example, an organization that has a really fantastic employee engagement programme would share their ideas and successes across the [portfolio] organizations"– (Julie Cooke, Interim Head of Responsible Investment at Hg, personal communication, April 17, 2020)

Furthermore, collaborating closely with the portfolio companies in order to ensure ESG progress may also be recognized by LPs as a proxy for good management. For instance, as highlighted by Adam Black at Coller Capital, it is more important for them to focus on what happens at the company-level and whether ESG is really implemented in the companies (personal communication, April 20, 2020).

"We are more interested in what is going on at the company-level than the GP-level. (…) Most of them [GPs] have a policy now. It is about whether it is really implemented and if they have case studies to back it up" – (Adam Black, Head of ESG & Sustainability at Coller Capital, personal communication, April 20, 2020)

In continuation of this, Mikael Huldt at AFA Insurance notes that what they look for in funds is to see how committed they really are in working with ESG issues. To avoid investing in funds that use ESG or responsible investing as a glossy marketing tool, AFA Insurance makes sure to examine whether a fund has ESG in top of mind. And they do this by speaking with PE professionals at all layers to understand how they think about ESG and how they use it in their investment process. Moreover, besides examining funds' capacity and process capabilities in handling ESG, AFA Insurance also tries to dig down into what happens at the company-level and how they are working with ESG subsequently to having invested in a PE fund (personal communication, April 17, 2020).

"As with most things, you need to see how committed an organization truly is towards these [ESG] issues, whether it's just a glossy presentation or whether they are actually investing into these areas and having it [ESG] in top of mind. We spent a lot of time understanding investment processes; we speak to everyone from analysts to senior partners to understand how they are acting within the investment processes and obviously how they look on ESG related matters" – (Mikael Huldt, Head of Alternative Investments at AFA Insurance, personal communication, April 17, 2020)

"The message to the GPs should be; be a [ESG] leader, not a laggard. Because the next time you raise funds, you have to have a very good answer and you should be one of the best-prepared from that [sustainability] perspective" – (Carsten Stäcker, Partner in Capital Markets, PwC Germany, personal communication, April 20, 2020)

These insights imply that to be in the favor of LPs and secure future funding, funds may need to obtain adequate capacity and process capabilities in responsible investing. As David Rubenstein, co-founder and co-executive chairman of The Carlyle Group, said; *"If your ESG aren't that good, you probably won't get money from an institutional investor"* – (Walker, p. 1). Carsten Stäcker, Partner in Capital Markets at PwC Germany, supports this notion and makes it clear to GPs; be an ESG leader and not a laggard to be competitive (personal communication, April 20, 2020).

In sum, the discussions indicate that for funds to go further on their ESG-journey towards becoming systematic in their integration of responsible investing, they must first commit to responsible investing to foster an appropriate culture, they must facilitate organizational learning and knowledge sharing initiatives to ensure capacity and process building, and they must develop strong relationships with portfolio companies to strengthen feedback loops and enhance their decision-making processes. Ultimately, this may then allow PE funds to build up well-established processes and become systematic in their integration of responsible investing.

Nonetheless, PE funds' ESG-journey, including ESG frontrunners', does not stop here. ESG and sustainability should be further worked on and resourced, and the GP- and LP community need to work harder in establishing standards so that common ground can be established (Mikael Huldt, personal communication, April 17, 2020).

Conclusion: Efficient responsible investment practices

In continuation of the empirical findings from section 5.3, the results suggest that it is the funds with a systematic integration that have been able to capitalize on the value potential in responsible investing. Although no one-size-fits-all solution exists with regards to systematic integration, the discussion points to efficient responsible investment practices being those where core responsible investing activities are integrated into existing processes, rather than carried out in parallel, and where ESG and sustainability are embedded into funds' organization so that it is an integral part of how they think and work. Generally, funds with a systematic integration of responsible investing ensures that every activity enables them a better decision-making on ESG.

The implications for PE funds who lack process capabilities, such as systematic integration, and who are not far on their ESG-journey in responsible investing, are that such funds must ensure to, first, foster an appropriate organizational culture by committing to responsible investing, second, build capacity and process capabilities by facilitating organizational learning and knowledge sharing initiatives, and third, enhance decision-making processes through strengthened feedback loops, which stems from developing strong relationships with portfolio companies. Eventually, funds may then become systematic in their integration of responsible investing.

7 Conclusion

This paper addresses responsible investing in private equity and examines how Private Equity Buyout (PE) funds in Western Europe have endeavored to capitalize on integrating responsible investment practices. This was undertaken by using a multi-epistemological approach in a sequential multi-phase research design.

By examining the inner workings of PE funds, we learned that the asset class is well suited to integrate responsible investing due to its active ownership model and long-term investment horizon, among others, which put PE funds in an advantageous position to foster transformational change in portfolio companies through strong governance, operational improvements, and financial engineering. In PE anno 2020, funds are balancing their focus between adhering to Limited Partners' (LPs) increased scrutiny, while working harder to deliver satisfactory returns in an intensified market. This is causing more PE funds to treat responsible investing as an investment approach that seeks to exploit environmental, social, and governance (ESG) value-creating opportunities rather than one that primarily seeks to mitigate ESG risks.

As responsible investing is featured with diverging definitions and distinct interpretations, this paper uses the most widely acknowledged definition of responsible investing, defined by UNPRI's as an investment approach that aims to incorporate ESG factors into investment decisions and active ownership to better manage risk and generate sustainable, long-term returns. When adopting responsible investing, PE funds are driven by utilizing ESG to enhance returns, strengthen risk management, and aligning strategies with stakeholders. Then, when deploying responsible investing, PE funds use a combination of broad strategies, ESG-integration and engagement, complemented by core strategies, such as negative and positive screens.

Since significant challenges exist in measuring responsible investing in PE, this paper attempts to operationalize the concept of responsible investing to allow for a quantitative measuring. The empirical literature points to three indicators that best represent the concept of responsible investing, namely, PE funds' commitment, capacity, and process. From each of these indicators, a set of observable variables was deduced: PE funds' formal commitment, ESG personnel, ESG training and/or external resources, detailed public ESG disclosure, GP's responsible investment experience, formalized engagement, and systematic integration.

Through a theoretical and empirical discussion of the value potential in responsible investing, we hypothesized a positive association between financial performance and PE funds with a systematic integration of responsible investing, and between financial performance and PE funds that engage portfolio companies on ESG matters. This is so because ESG is related to operational value creation with numerous studies indicating that ESG can positively affect profitability, risk exposure, and thereby equity valuations at the company-level. We also hypothesized how other measures of responsible investing relate to financial performance.

To test our hypotheses, we considered the return data of 261 PE funds represented by 156 GPs with vintage years between 2006 and 2017. According to the multivariate linear regression results, systematic integration of responsible investing is found to be positively associated with financial performance, as measured by net IRR and MOIC *($p<0.01$)*. Furthermore, we found that PE funds with a systematic integration generated more stable returns in terms of lower MOIC variation *($p<0.10$)*, compared to non-systematic funds. These results seem to support this paper's tenet that it is the PE funds with a systematic integration that have been able to capitalize on integrating responsible investment practices. Correspondingly, systematic integration reflects the PE funds that are far on their ESG-journey in responsible investing.

To explore systematic integration, 26 semi-structured interviews were held with 15 GPs, 7 LPs, and 4 advisory firms. Although the discussions seem to point to no one-size-fits-all solution, the respondents highlight that efficient responsible investment practices are those where core responsible investing activities are integrated into existing processes, rather than carried out in parallel, and where ESG and sustainability are embedded into funds' organization. The implications of these findings for non-systematic PE funds are that they must commit to responsible investing to foster an appropriate culture, they must facilitate organizational learning and knowledge sharing initiatives to ensure capacity and process building, and they must develop strong relationships with portfolio companies to strengthen feedback loops and enhance their decision-making processes.

7.1 Research limitations

Over the course of conducting this research, we have acquired a thorough understanding of responsible investing and the West European PE market. From the onset, it has been our objective to accommodate some of the major challenges that our primary audience are facing in responsible investing. In doing so, we hope to have provided some indicatory findings and discussions that can be valuable to your ESG-journey going forward. However, we also recognize that there are areas where our research may show weaknesses and limitations.

Two major hurdles have been dealt with throughout the research: the intangible nature of responsible investing and the low transparency of PE. While the public equity markets have come far in quantifying non-financial information and in providing public ESG-scores, the private markets are yet to. Furthermore, the crossing of responsible investing and PE is an area that is scarcely researched within the academic literature, and thus, no predetermined methodology exists for analyzing the problem in scope.

In the data collection process, we were restricted and had to rely on the PE funds' publicly disclosed material. Although, the disclosed material was sufficient to conduct the analysis, the outside-in perspective is based on asymmetric information and thus poses a threat to the validity of our findings. This is so because the analyzed materials have not been meaningfully audited and have had to be taken at face value. To account for this, we did consider gathering data on independent variables through a questionnaire sent out to the 261 PE funds in our performance dataset, but expected such a method to produce only few respondents, which is not feasible.

Moreover, even though a correlation between systematic integration and financial performance was identified, we did not manage to verify if this relationship was causal or not. Similarly, we could not ensure whether or not a third factor was omitted from our analysis, which may explain differences in financial performance. We suspect such a factor to be the skill of the GP, which we, however, did not capture sufficiently in our attempt to include fund sequence number. Lastly, the return data used for the regression analysis is primarily based on the performance estimates from non-liquidated funds, which reduces the validity of the results.

Our findings must be considered in light of these limitations. Nonetheless, we believe to have contributed to a new level of depth in the analysis of responsible investing by considering a holistic view of what these practices entail. While previous studies have solely considered the association between UNPRI compliance and financial performance in private equity, we did not find this variable to have any explanatory power on recent data. Therefore, we highlight the importance of qualitatively assessing PE funds' commitment, capacity, and process when assessing their responsible investment practices, despite such an approach facing a variety of limitations.

7.2 Suggestions for future research

Given the ample limitations in this paper's research, we highly encourage more research conducted on responsible investing in private markets to expand upon this paper's initial findings.

First, while this study focused on responsible investing's implications on financial performance in PE, it would be interesting to study how PE funds have managed to improve the non-financial performance of their portfolio companies. Although the two are bound to be interrelated, this would provide assurance that responsible investors are successfully fostering sustainable business practices. This could, for instance, be case studies at the company-level to assess the ESG impact during PE funds' ownership period.

In addition to this, it would be necessary to repeat this study and have the independent variables collected using other data sources. For instance, the data could be gathered from LPs or through an extensive questionnaire sent to GPs. The PRI Association also provides a scoring of the UNPRI compliant funds based on their transparency reports, and thus their responsible investment practices, and if researchers can access this and conduct a regression analysis on such information, it could provide some interesting findings in relation to ours.

Similar research should also be repeated at a later point in time. As funds mature and are liquidated, the return data can provide a higher level of assurance and strengthen the validity. Moreover, it will be easier to measure responsible investing when more formalized standards and top-down regulation are imposed on the PE industry, thereby facilitating better data for comparison. Investigating responsible investing in other regions would also be interesting to compare whether the results differ from those in Western Europe.

Overall, further research is needed to understand the causal relationship between responsible investment practices and financial performance along with the efficient investment practices that funds can implement. The research is scarce within the PE industry, especially due to the complexity of measuring responsible investing and the low degree of transparency. However, we observe that the amount and quality of reporting are increasing steadily, and we are confident it will continue to do so as stakeholders increasingly take interest in responsible investing in PE. We hope that this study inspires future research within this area.

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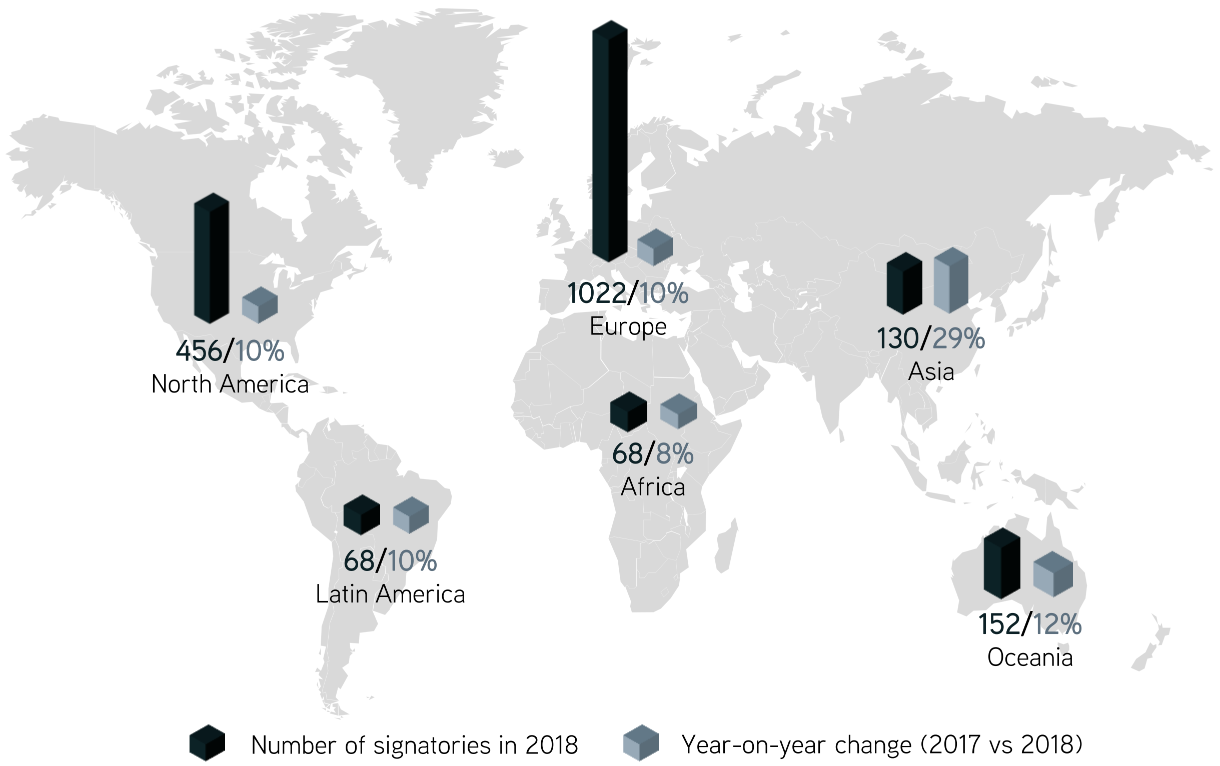
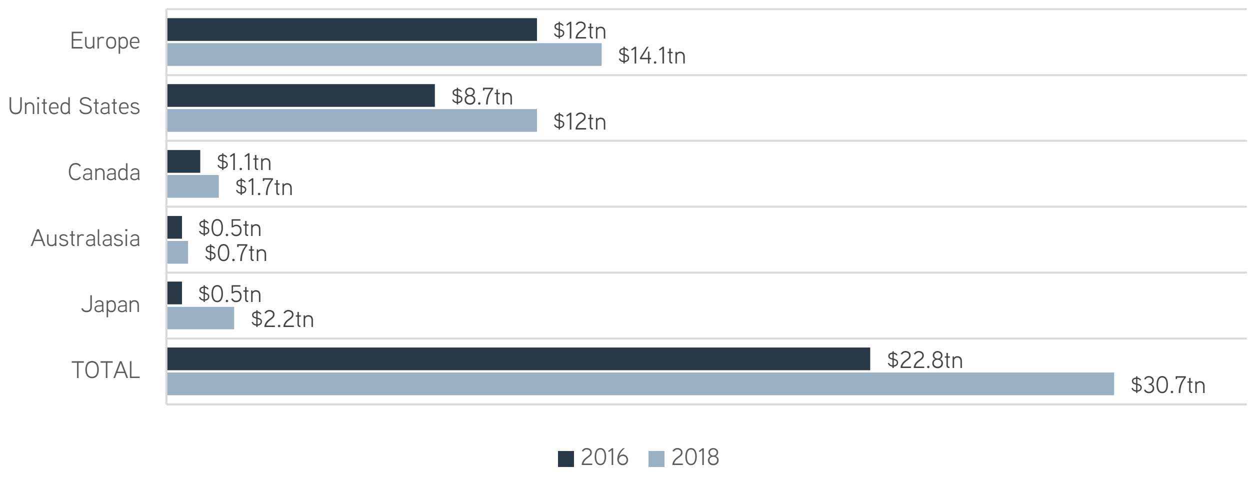
Appendices

Appendix 1: PRI signatories, regional breakdown and increase against 2017



Source: (PRI Association, 2019)

Appendix 2: ESG investment assets value, regional breakdown in 2016 and 2018



Source: (Stevens, 2019)

Appendix 3: Research ontology, epistemology and methodology in positivism

Ontology: REALISTIC

The reality exists in a structure independent of our understanding of it. Scientific objects exist independently of the scientific observation. The reality is material and consists of objects and individuals.

Epistemology: OBJECTIVE

It is possible to deduct the truth and exact knowledge about the truth. The world is waiting to be discovered and mapped by scientific investigations. Objective knowledge is possible.

Methodology: QUANTITATIVE

Quantitative methods and experiments can discover the objective data. The goal is to set up the laws of causation that direct the society and the world.

Source: (Holm, 2018)

Appendix 4: Research ontology, epistemology and methodology in hermeneutics

Ontology: LIMITED REALISTIC

Scientific objects have to be seen in humans' understanding of them, but are not created directly from human recognition. Our access to reality is bound to a certain understanding. This understanding can be nuanced so that it comes near the truth. The primary scientific object is other people's understanding.

Epistemology: SUBJECTIVE

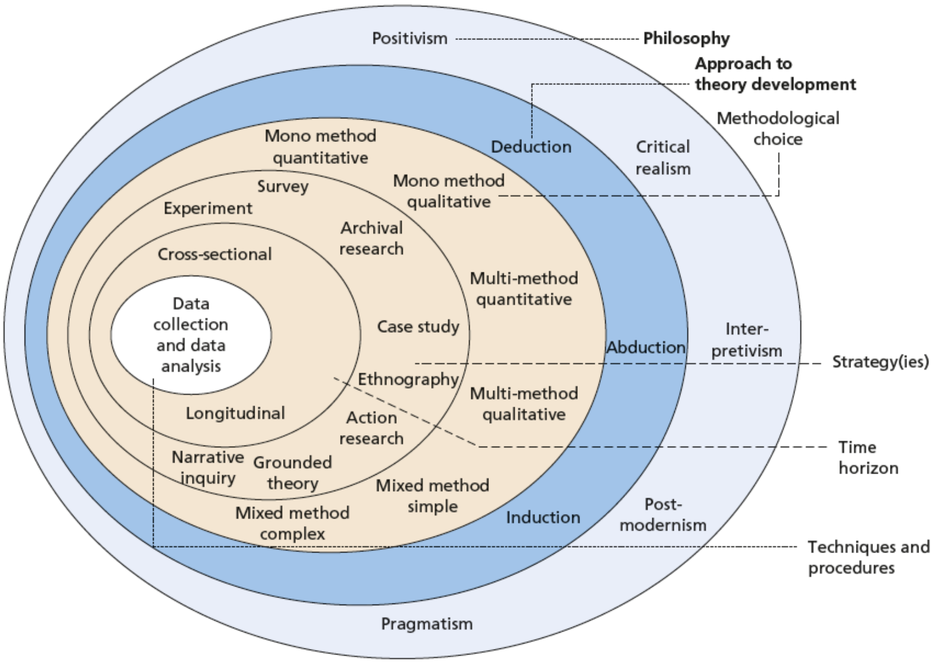
Knowledge is always bound to a specific subjective understanding of the world. Therefore, acknowledgement consist of expanding ones understanding.

Methodology: QUALITATIVE

Qualitative methods like interviews and observations are able to cover other understandings. The goal is mutual understanding between humans.

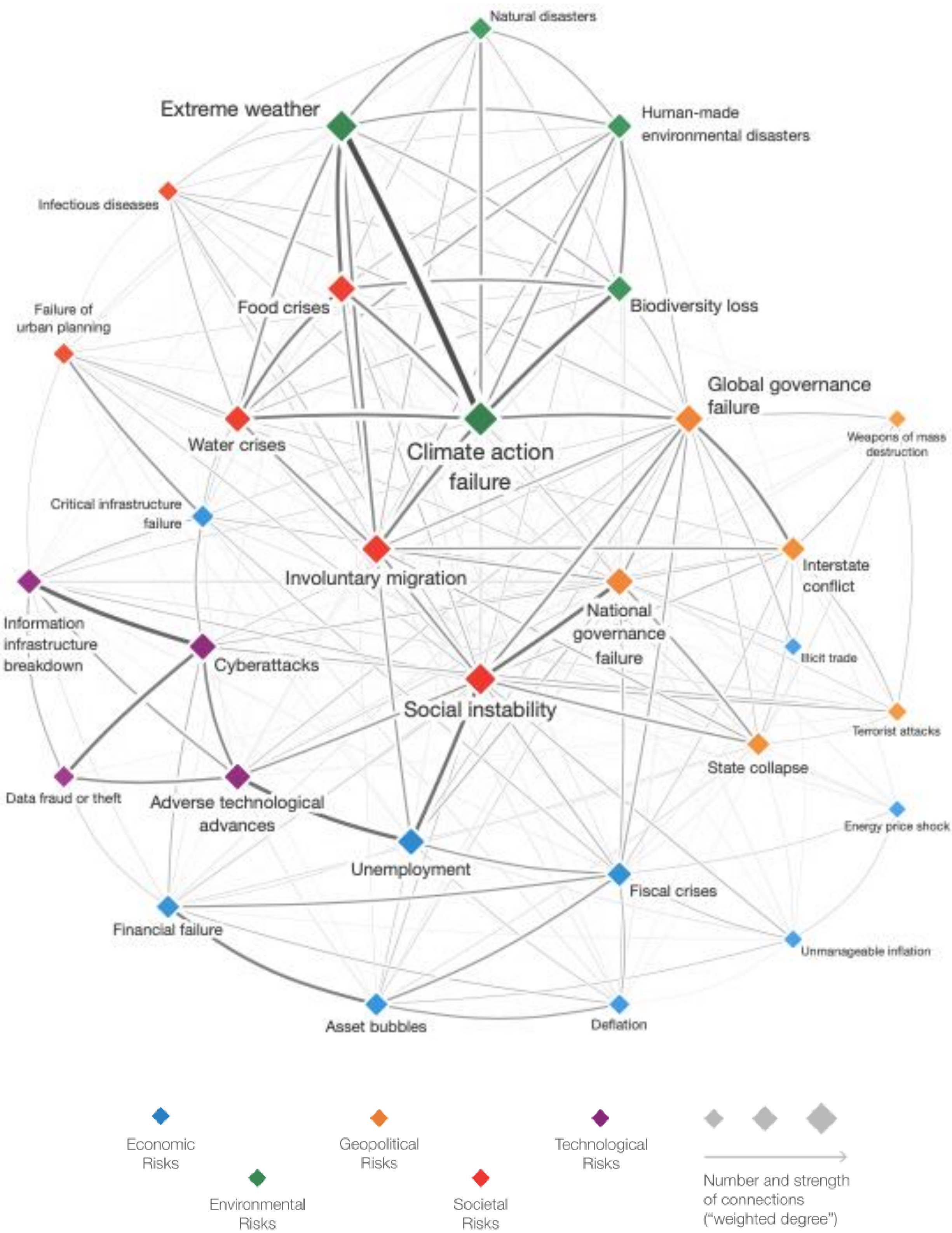
Source: (Holm, 2018)

Appendix 5: Research design framework



Source: (Saunders, Lewis, & Thornhill, 2016)

Appendix 6: The global risks interconnections map 2020



Source: (World Economic Forum, 2020)

Appendix 7: Private Equity payoff structure in responsible investing

Whereas LPs stand to lose a substantial amount of capital, and thus, are risk-averse, PE funds, who often have little equity participation, or skin in the game, may have relatively little to lose on their initial investment but much to gain on carried interest if they capitalize well on value, and are therefore regarded as being less risk-averse (Cendrowski, Petro, Martin, & Wadecki, 2012). Building on this, expected utility theory suggests that PE funds' utility function is less concave than that of LPs', causing LPs to choose a profit-maximizing contract with as high an incentive intensity, or variable salary component β, as possible. Yet, since PE funds are not risk-neutral, they require a larger risk premium with a higher variable salary. Since this is expensive for LPs, they prefer to take part of the risk in order to reduce the risk premium, and thus, a fixed salary part a is introduced (5). Nonetheless, this decreases the PE fund's effort e, entailing a loss of total surplus (Hendrikse, 2003). Thus, moral hazard problems cause profit-maximizing contracts to be only second-best of nature, shown below (6) as a trade-off between increasing return through incentives and decreasing it due to higher risk premium:

$$w = a + \beta z \;\rightarrow\; w_{PE} = 2\% + 20\% \tag{5}$$

where

$$\beta = \frac{P'(e)}{1 + r * Var * C''(e)} \tag{6}$$

and

$$z = profit > LP\ hurdle\ rate + GP\ equity\ participation \tag{7}$$

In responsible investing, most of the parameters in the incentive intensity, β, would not change. For example, PE funds' value output per effort $P'(e)$ is thought to follow the same ratio-relationship as in traditional investing; a certain amount of incremental effort produces a certain amount of incremental output, or net IRR/MOIC. Likewise, the PE funds that integrate responsible investment practices are not thought to be more or less risk-averse than those sticking to traditional investment practices, so r remains constant too. Additionally, the variance or noise, Var, to which value output is measured in responsible investing does not differ with traditional investing either, as responsible investing is ought to be reflected in net IRR/MOIC cf. section 4.1. However, the cost of providing a level of effort, denoted as $C''(e)$, is thought to be higher for PE funds in responsible investing since these funds have a lower degree of discretion regarding their choice of activities.

For example, $C''(e)$ is higher for funds in responsible investing since taking on effort to committing to responsible investing and making it an integral part of a fund's decision-making, perhaps by the desire of LPs, is accompanied by a large increase in compliance obligations to LPs and likely also to several network organizations, such as UNPRI cf. section 1.2 and 2.3. The increased compliance entails larger personal costs per level of effort for PE funds in responsible investing relative to those in traditional investing. Thus, according to the incentive intensity principle in the profit-maximizing contract, the variable payment β, or carried interest, should be lowered for funds in responsible investing. LPs can then adjust the fixed salary component α in such a way that funds earn their opportunity costs (Hendrikse, 2003), hence the incentive structure may look more like a 3-18 model, for example. However, the rationale for lowering the carried interest and heightening the management fee is strongest for the PE funds that exhibit low capacity and process ESG capabilities, as these funds are likely to have a less thorough understanding of ESG-materiality cf. section 3.2 and therefore be more inclined to do ESG related tasks that relates mostly to LPs' compliance requirements. Contrary, the PE funds that exhibit high capacity and process ESG capabilities would be capable of identifying and exploiting ESG value creation opportunities and therefore be less inclined to focus only on fulfilling compliance matters.

As such, if the PE funds that exhibit low capacity and process ESG capabilities have their incentive intensity lowered and their fixed salary part heightened, they have more resources to build their ESG capabilities and drive ESG initiatives outside the compliance arena, which Garvey et al. agues to be important (2019). Moreover, a higher management fee and a lower carried interest may induce PE funds not to hurry their value capitalization, which may be more beneficial for the success of long-term ESG goals (University of Cambridge Institute for Sustainability Leadership, 2016). On the downside, the lower incentive intensity reduces funds' effort and entails loss of total surplus, indicating that a lower carried interest and higher management fee should be only a temporary solution until ESG compliance becomes top-down regulated and embedded in legislation.

Source: Credit of the authors

Appendix 8: PE funds by GP location

Belgium (1)
- Vendis Capital I

Czech Republic (1)
- JET I

Denmark (10)
- Axcel IV
- Axcel V
- Erhvervsinvest II
- Erhvervsinvest III
- Erhvervsinvest IV
- Maj Invest Equity 4
- Maj Invest Equity 5
- Polaris III
- Polaris IV
- Via equity Fond II K/S

Finland (8)
- CapMan Buyout VIII
- CapMan Buyout X
- Sentica Buyout III
- Sentica Buyout IV
- Sentica Buyout V
- Vaaka Partners Buyout I
- Vaaka Partners Buyout II
- Vaaka Partners Buyout III

France (36)
- Apax France IX
- Apax France VII
- Apax France VIII
- Ardian Expansion Fund IV
- Ardian LBO Fund VI
- Astorg VI
- AtriA Private Equity III
- AXA Expansion II
- AXA Expansion III
- AXA LBO Fund IV
- AXA LBO Fund V
- Chequers Capital XV
- Chequers Capital XVI
- Ciclad 5
- Hexagone III
- I&FI II
- Idinvest SME Industrial Assets I
- iXO 3
- Latour Capital I
- Latour Capital II
- MBO Capital 2
- MBO Capital 3
- MBO Capital 4
- Middle Market Fund IV
- Middle Market Fund V
- Montefiore Investment II
- Montefiore Investment III
- Montefiore Investment IV
- PAI Europe V
- PAI Europe VI
- Pechel Industries III
- Pechel Industries IV
- Pragma Capital II
- Small Caps Opportunities
- White Knight IX
- White Knight VIII

Germany (9)
- Arcadia Beteiligungen II
- Auctus Fund II
- Auctus Fund III
- Auctus Fund IV
- Borromin Capital III
- Brockhaus Private Equity II
- Brockhaus Private Equity III
- German Equity Partners III
- German Equity Partners IV

Italy (11)
- Aksia Capital III
- Aksia Capital IV
- Aliante I
- Clessidra Capital Partners II
- Consilium Private Equity Fund
- NB Renaissance Partners Annex Fund
- NB Renaissance Partners I
- Private Equity Partners Fund IV
- Progressio Investimenti I
- Progressio Investimenti II
- Quadrivio Private Equity Fund II

Jersey (8)
- Nordic Capital Fund VI
- Nordic Capital Fund VII
- Nordic Capital Fund VIII

Stirling Square Capital Partners SecondFund
Stirling Square Capital Partners Third Fund
Triton Fund II
Triton Fund III
Triton Fund IV

Luxembourg (3)

Alpha Private Equity Fund 5
Mandarin Capital Partners I
Mandarin Capital Partners II

Netherlands (19)

Egeria Private Equity Fund III
Egeria Private Equity Fund IV
GEM Benelux
GEM Benelux II
GEM Benelux III
Gilde Buyout Fund III
Gilde Buyout Fund IV
Gilde Buyout Fund V
Karmijn Kapitaal Fund
Karmijn Kapitaal Fund II
Main Capital II
Main Capital III
Main Capital IV
Main Capital V
Waterland Private Equity Fund III
Waterland Private Equity Fund IV
Waterland Private Equity Fund V
Waterland Private Equity Fund VI
Waterland Private Equity Fund VII

Norway (7)

FSN Capital III
FSN Capital IV
Herkules Private Equity Fund II
Herkules Private Equity Fund III
Herkules Private Equity Fund IV
HitecVision Private Equity VI
HitecVision Private Equity VII

Poland (3)

Avallon MBO Fund
Innova/5
Innova/5 Prime

Portugal (2)

Explorer II
Explorer III

Spain (11)

Corpfin Capital III
Corpfin Capital IV
Fondo Nazca III
Magnum Capital
MCH Iberian Capital Fund III
MCH Iberian Capital Fund IV
Portobello Capital Fund II
Portobello Capital Fund III
ProA Capital Iberian Buyout Fund I
ProA Capital Iberian Buyout Fund II
Qualitas Fund II

Sweden (16)

Accent Equity 2008
Altor Fund II
Altor Fund III
Altor Fund IV
EQT Mid Market Europe
EQT Mid-Market Fund I
EQT V
EQT VI
EQT VII
K3 Fund
Litorina Kapital Fund III
Litorina Kapital Fund IV
Procuritas Capital Investors IV
Procuritas Capital Investors V
Procuritas Capital Investors VI
Segulah IV

Switzerland (12)

Capvis Equity III
Capvis Equity IV
Euroknights V
Euroknights VI
Euroknights VII
Invision Hospitality
Invision V
Partners Group Direct Investments 2009
Ufenau III German Asset Light
Ufenau IV German Asset Light
Ufenau V German Asset Light
Xenon V

UK (87)

3i Eurofund V
AnaCap Financial Partners
AnaCap Financial Partners Fund II
AnaCap Financial Partners Fund III
Apax Europe VII
August Equity Partners II
August Equity Partners III
August Equity Partners IV
BC European Cap IX

Bowmark Capital Partners IV
Bowmark Capital Partners V
Bridgepoint Development Capital II
Bridgepoint Europe IV
CapVest Equity Partners Fund III
CBPE Capital Fund IX
CBPE Capital Fund VIII
Charterhouse Capital Partners IX
Charterhouse Capital Partners VIII
Cinven V
Clyde Blowers Capital Fund III
CVC European Equity Partners V
Darwin Private Equity I
Doughty Hanson & Co V
Elysian Capital I
Elysian Capital II
Equistone Partners Europe Fund III
Equistone Partners Europe Fund IV
Equistone Partners Europe Fund V
Exponent Private Equity Partners II
Exponent Private Equity Partners III
GMT Communications Partners II Feeder
GMT Communications Partners III
Graphite Capital Partners VII
Graphite Capital Partners VIII
Growth Capital Partners Fund III
Growth Capital Partners Fund IV
Harwood Private Equity IV
Hg Mercury
Hg Mercury 2
Hg5
Hg6
Hg7
IK 2007 Fund
IK Small Cap I Fund
IK VII Fund
IK VIII Fund
Inflexion 2006 Buyout Fund
Inflexion 2010 Buyout Fund
Inflexion Buyout Fund IV
Inflexion Enterprise Fund IV
Investindustrial Fund VI
Kings Park Capital I
Livingbridge 4
Livingbridge 5
Lyceum Capital Fund III
Milestone 2007
Mobeus Equity Partners IV
Montagu III
Montagu IV
Montagu V
NorthEdge Capital Fund I
NorthEdge Capital Fund II
Palatine Private Equity II
Palatine Private Equity III
Permira IV
Permira V
PHD Equity Partners Fund No. I
PHD Equity Partners Fund No. II
Phoenix Equity Partners 2006 Fund
Phoenix Equity Partners 2010 Fund
Phoenix Equity Partners 2016 Fund
Primary Capital III
Primary Capital IV
Sovereign Capital IV
STAR Finance Partnership
STAR II
Synova Capital Fund I
Synova Capital Fund II
Synova Capital Fund III
TDR Capital II
TowerBrook Investors III
Trident Private Equity Fund III
Vision Capital Partners VII
Vitruvian Investment Partnership I
Vitruvian Investment Partnership II
Vitruvian Investment Partnership III
Zeus Private Equity Fund I

US (17)

Advent Global Private Equity VI
Advent Global Private Equity VII
Advent Global Private Equity VIII
Bain Capital Europe III
Carlyle Europe Partners III
Carlyle Europe Partners IV
Carlyle Europe Technology Partners II
Carlyle Europe Technology Partners III
KKR E2 Investors - Annex Fund
KKR European Fund III
KKR European Fund IV
Levine Leichtman Capital Partners Europe
Rhone Partners III
Rhone Partners IV
Rhone Partners V
Riverside Europe Fund IV
Riverside Europe Fund V

Appendix 9: Interview respondents

GPs	
A&M Capital Partners	United Kingdom
FSN Capital	Norway
Hg	United Kingdom
Karnell	Sweden
Litorina	Sweden
Maj Invest Equity	Denmark
Nordic Capital	Jersey
PAI Partners	France
Partners Group	Switzerland
Polaris	Denmark
Procuritas Partners	Sweden
Quadriga Capital	Germany
Summa Equity	Sweden
TDR Capital	United Kingdom
The Carlyle Group	United States

AFs	
PwC	France
PwC	Germany
PwC	Norway
Sancroft	United Kingdom

LPs	
AFA Insurance	Sweden
AP6	Sweden
BPI France	France
Coller Capital	United Kingdom
Navast	Denmark
PenSam	Denmark
Hayfin	United Kingdom

Source: Credit of the authors

Appendix 10: GP semi-structured interview guide

1. We can start out by you introducing yourself and your role in the fund
2. Can you describe your setup for investing sustainable/responsible?
    a. To what extent do you focus on ESG (check-the-box or integration)?
3. For how long have you had this setup and what was your motivation for doing so?
4. Can you guide us through how you handle ESG in a typical investment during the pre-investment period, ownership period, and exit?
    a. What specific ESG-initiatives do you take during the pre-investment period?
        i. What is your rationale when you screen? How do you do it?
    b. What specific ESG-initiatives do you take during the ownership period?
        i. How do you identify material ESG issues in your investments?
        ii. Do you have a general framework, a list of pre-defined steps, for your ESG-initiatives that you follow for every investment case? Do you variate from this depending on case? Have you developed this framework yourself? How did you do hat and how much time did you spend on doing so?
        iii. How do you measure your ESG-initiatives and results hereof?
        iv. How do you report ESG-related information to LPs and how often?
        v. How involved are LPs in their monitoring of your ESG-initiatives, and what do they do that is good and perhaps not good given the current state?
    c. What specific ESG-initiatives do you take during exit?
        i. What is your rationale when you screen? How do you do it?
5. What do you consider your biggest obstacles in incorporating ESG into investments?
6. What do you consider to be your success criteria for integrating material ESG-factors?
7. How do you ensure proper implementation and execution of your ESG-policy?
8. Do your portfolio companies report adequately on critical ESG-information?
9. How is the decision-making done in regard to handling ESG issues?
10. Do you believe that it is the culture of the fund that drives ESG-initiatives? How is yours?
11. How do you accumulate ESG-knowledge and knowledge share internally and externally?
12. How do you allocate your time in regard to ESG initiatives? What do you focus on?
13. What do you see other funds doing that you believe are good or bad in regard to ESG?
14. In what areas do you see yourself improving on ESG, and where are you in 3-5 years?

Source: Credit of the authors

Appendix 11: LP semi-structured interview guide

1. We can start out by you introducing yourself and your role in the firm
2. To what extent do you consider a funds' ESG/responsible investment practices when deciding whether to invest or not?
3. What are your beliefs on the effect of ESG/responsible investing on a fund's financial performance?
4. What do you consider important in your ESG due diligence of a PE fund/GP?
5. Which expectations do you have towards a PE fund/GP that commits to ESG/responsible investing?
6. How do you monitor a PE fund's ESG/responsible investment approach, and what do you look for?
7. What do you consider to be good ESG/responsible investment approaches among the PE funds that you have invested in?
8. In which areas would you like to see PE funds/GPs improve on their ESG capabilities?
9. What general advice do you have for PE funds/GPs that pursue ESG/responsible investing?

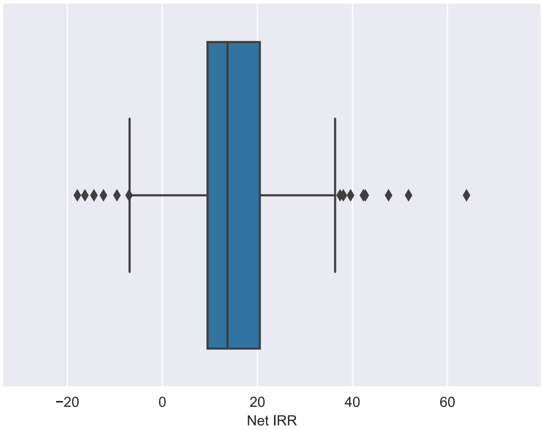
Source: Credit of the authors

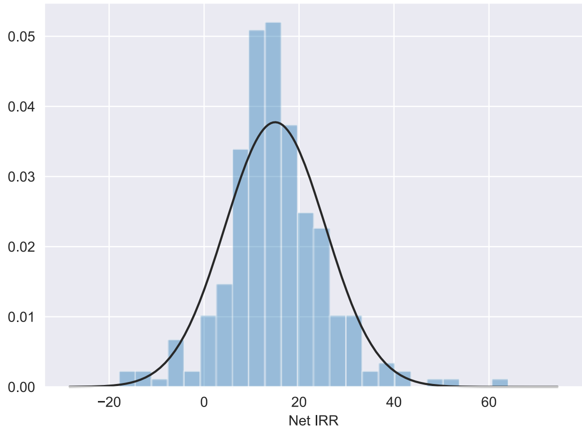
Appendix 12: AF semi-structured interview guide

1. We can start out by you introducing yourself and your role in the firm
2. What is your experience with ESG/responsible investing, and what services do you provide to PE funds/GPs?
3. Where do you see PE funds/GPs struggle in particular with their ESG/responsible investing?
4. Which capabilities do you believe are the most important for PE funds/GPs to have in their ESG/responsible investing approaches?
5. What elements of an ESG/responsible investment strategy do you consider to be most important for a PE fund/GP?
6. In your experience, and in regards to PE, what do you see ESG frontrunners do, that other funds are yet to adopt?
7. In your view, how can a PE fund/GP be effective and efficient in creating financial value and non-financial impact in the context of ESG/responsible investing?
8. What general advice do you have for PE funds/GPs that pursue ESG/responsible investing?

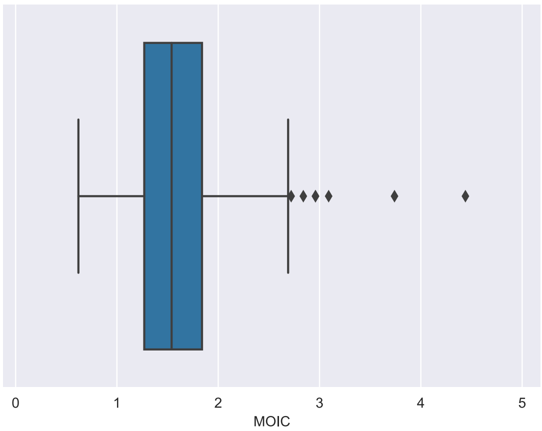
Source: Credit of the authors

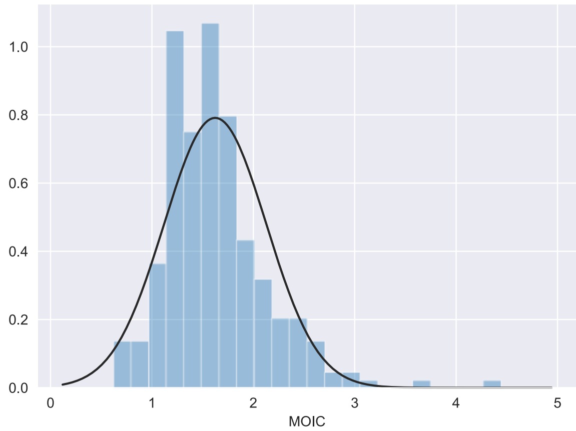
Appendix 13: Boxplot and histogram of dependent variables





- The average net IRR of the analysed funds is 14.97% with a standard deviation of 10.59%-point. Lowest score -17.9% and the highest 64.0%.
- Net IRR centered around 9.5% - 20.5%, however there are quite a few outliers in both ends.
    - A single outlier has been removed from the sample. The others were accepted.





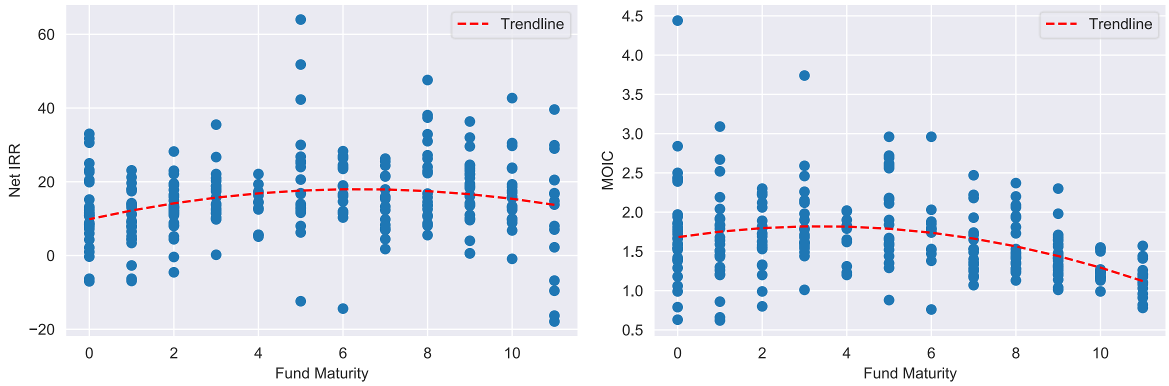
- The average MOIC of the analysed funds is 1.62 with a standard deviation of 0.51. Lowest score 0.62 and the highest 4.44. It seems that the distribution is skewed and thus not normally distributed.
- MOIC centered around 1.27 - 1.84, however with a few outliers in the positive spectrum.

Descriptive statistics

	count	*mean*	*std*	*min*	*25%*	*50%*	*75%*	*max*
MOIC	253	1.62	0.51	0.62	1.27	1.54	1.84	4.44
Net IRR	259	14.97	10.59	-17.9	9.5	13.7	20.5	64

Source: Credit of the authors

Appendix 14: Fund maturity trendline



Source: Credit of the authors

Appendix 15: Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Net IRR	1																			
2. MOIC	.645	1																		
3. No commitment	.027	.057	1																	
4. Other commitment	-.072	.027	-.274	1																
5. ESG personnel	-.057	-.040	-.415	-.096	1															
6. Training & resources	-.081	-.096	-.639	-.059	.610	1														
7. Detailed ESG disclosure	.023	-.001	-.491	-.011	.624	.658	1													
8. GP experience	-.045	-.199	-.319	.029	.312	.311	.255	1												
9. Formalized engagement	.027	-.006	-.551	-.015	.627	.635	.871	.263	1											
10. Systematic integration	.056	-.009	-.566	-.051	.608	.627	.867	.271	.937	1										
11. Log_size	-.181	-.169	-.253	-.009	.349	.296	.385	.145	.434	.389	1									
12. Maturity	.162	-.321	-.219	-.005	.061	.076	.092	.424	.130	.158	.008	1								
13. Maturity_squared	.106	-.375	-.199	-.006	.055	.058	.083	.457	.121	.146	.018	.965	1							
14.Fund Number	-.142	-.257	-.104	-.096	.163	.111	.146	.105	.194	.155	.473	.152	.141	1						
15. Consumer Discretionary	-.042	.047	.167	.017	-.088	-.136	-.104	-.068	-.117	-.120	-.041	-.076	-.062	-.098	1					
16. Energy & Utilities	-.042	-.053	.016	.121	-.044	-.067	-.052	-.034	-.058	-.060	.067	.035	.012	.114	-.016	1				
17. Financial & Insurance	-.062	-.049	.129	-.035	-.054	-.082	-.063	-.041	-.071	-.073	.012	-.031	-.025	-.091	-.019	-.010	1			
18. Industrials	-.141	-.075	.054	-.054	-.023	.021	-.043	-.063	-.058	-.061	-.093	-.029	-.035	-.107	-.030	-.015	-.018	1		
19. Information Technology	.268	.123	.005	-.054	-.083	-.127	-.097	-.008	-.109	-.112	-.171	.095	.094	-.028	-.030	-.015	-.018	-.028	1	
20. Telecoms & Media	.083	.044	-.018	.087	-.054	-.008	.020	.043	.008	.005	-.056	.018	.026	-.091	-.019	-.010	-.012	-.018	-.018	1

Appendix 16: Ordinary least squares method assumptions

Multicollinearity

VIF-model			
No commitment	2.451	Fund Number	1.409
Other commitment	1.305	Consumer Discretionary	1.051
ESG personnel	1.956	Energy & Utilities	1.051
Dedicated training & resources	2.595	Financial & Insurance Services	1.038
GP experience	1.490	Industrials	1.035
Systematic	2.237	Information Technology	1.080
Log_size	1.603	Telecoms & Media	1.025
Maturity	15.363	Intercept	40.127
Maturity_squared	15.768		

Since it is only the control variables 'maturity' and 'maturity_squared' that displays VIF-values above 3.3, the VIF analysis raises no concerns for multicollinearity because one is the squared value of the other.

Heteroskedasticity

Breusch-Pagan test:

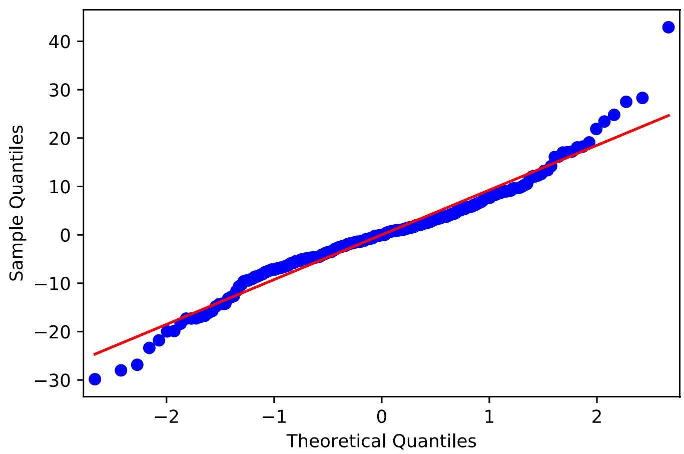
The Breusch-Pagan test displays a p-value of 0.035, well below the appropriate threshold *($p<0.05$)*. Therefore, we reject the null hypothesis, and heteroscedasticity exists (Breusch & Pagan, 1979).

Autocorrelation

Durbin Watson test:

The Durbin Watson statistic is 1.977, indicating no autocorrelation (Durbin & Watson, 1951).

Normal errors



The mean of the residuals is 1.336e-13, indicating normally distributed errors (Newbold, Carlson, & Thorne, 2012).

Source: Credit of the authors