

Competitive Strategy of Private Equity: Boundary of the Investment Firm

vorgelegt von
Diplom-Kaufmann
Daniel Kukla
aus Olmütz

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Promotionsausschuss:

Vorsitzender: Prof. Dr. Jan Kratzer
Berichter: Prof. Dr. Dodo zu Knyphausen-Aufseß
Berichter: Prof. Dr. Viral V. Acharya

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Abbreviations

ANOVA	Analysis of Variance
AuM	Assets under Management
b	Billion
EBITDA	Earnings before Interest, Tax, Depreciation, and Amortization
e.g.	Exempli gratia (Latin), for example
FDIC	Federal Deposit Insurance Corporation
FoF	Fund of Funds
FoHF	Fund of Hedge Funds
GP	General Partner
HNWI	High Net Worth Individual
UHNWI	Ultra High Net Worth Individual
i.e.	Id est (Latin), that is to say, in other words
IF	Investment Firm
IRR	Internal Rate of Return
JV	Joint Venture
KKR	Kohlberg Kravis Roberts & Co.
LBO	Leveraged Buyout
MBO	Management Buyout
LP	Limited Partner
m	Million
MD	Managing Director
M&A	Mergers and Acquisitions
IO	Industrial Organization
p.a.	Per annum (Latin), annually
PE	Private Equity
PMI	Post Merger Integration
PPM	Private Placement Memorandum
SEC	Securities and Exchange Commission
SG	Strategic Group
SIC	Standard Industrial Classification
tr	Trillion
TMT	Top Management Team
VC	Venture Capital

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1 Introduction

1.1 Phenomenon and Research Motivation

1.1.1 Practical Relevance

The central concept of Private Equity (PE) is fuzzier than might immediately appear. Ever since the invention of money, the basic functions of contemporary PE firms have been provided by a century old string of intermediaries. In the 14th century, European financiers such as the Medici dynasty institutionalized the financing of ventures, typically risky ocean voyages of merchants, by investing borrowed and their own money (Ferguson 2008).

Five hundred years of financial intermediation later, at the beginning of the 20th century, American financiers such as John Pierpont Morgan applied the leveraged finance concept by acquiring railroad and electric companies with high amounts of debt. The first Leveraged Buyout (LBO) of the 20th century, it might legitimately be suggested, was the Morgan backed acquisition of Carnegie Steel Company in 1901, forming United States Steel Corporation (Baker et al. 1998).

Virtually exiled by the Banking Act of 1933,¹ the LBO² returned during the second half of the 20th century. Financiers such as Jerome Kohlberg and his protégé Henry Kravis, who jointly with George Roberts left the bank Bear Stearns to establish KKR in 1976, reintroduced the large scale LBO as a niche financing instrument. By the end of the 1980s, LBO financing was applied on an unprecedented scale, peaking in 1989 with KKR's acquisition of RJR Nabisco for \$31b, which for almost two decades remained the largest LBO in history. After a slow-down in the early 1990s, PE activity went through another full cycle before growing to once again unprecedented scale during the mega-buyout era between 2005 and 2007.

Prevailing taxonomy in the US uses the term PE as a synonym for institutionalized LBO activity. Often stereotypical descriptions portray a PE firm as a specialized single-product niche financing firm using small portions of equity and large portions of debt to acquire controlling stakes in mature companies (Kaplan et al. 2008).

This is changing. Such a monolithic, LBO centered, view of the PE firm is ignoring newsworthy phenomena. There is a striking transformation going in the PE industry. More than just a few PE firms have migrated from a single-product pure PE model toward multi-business investment firms. KKR, for example, complemented its traditional PE business with additional product lines including infrastructure funds, debt investment vehicles, mezzanine investment vehicles, capital markets advisory services for its portfolio companies and for its

¹ The Banking Act of 1933 is commonly known as the Glass-Steagall Act, after its legislative sponsors Carter Glass and Henry B. Steagall.

² In an LBO typically a company is acquired by an investment vehicle using a relatively small portion of equity and a relatively large portion of debt financing.

external clients, underwriting of debt and equity securities, and captive operational advisory (see Figure 1). In 2008, the financier Henry Kravis³ claimed that KKR’s investments “*benefit from the collective knowledge of KKR’s professionals across asset classes [...] KKR’s businesses are integrated and all have access to professionals across the entire firm [...] no longer will it be possible to invest successfully without this integration*”.

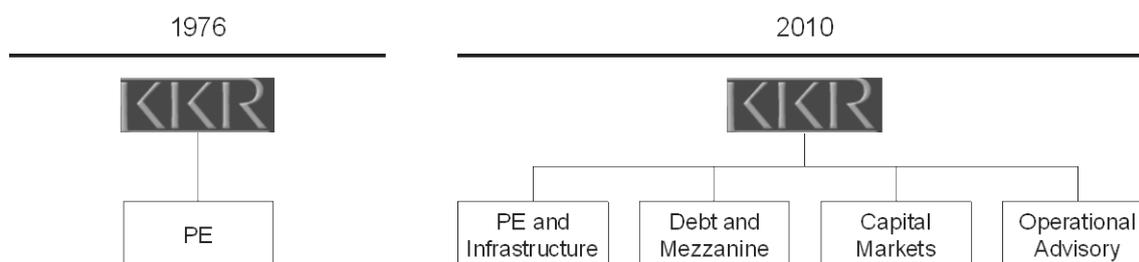


Figure 1: Structure of KKR in 1976 and in 2010

Is KKR an exception? Certainly not, recognizing that in 2009 more than 40% of the top 100 PE firms worldwide had also left the monolithic PE model behind while capturing a considerable share of funds raised by PE (see Figure 2). During the initiation of this research endeavor a thorough literature review on contemporary PE (see Chapter 3), conversations with practitioners, industry experts, and recognized scholars in the PE field confirmed that this phenomenon is by and large scientifically unexplored. Respective knowledge gaps often leave practitioners in an uncomfortable stage of ambiguity.

Some lessons from history imply that this phenomenon could represent a natural evolution of financial species. For example, the case of the Medici dynasty, which will be laid out in greater detail below, suggests that the key to the financiers’ success was diversification. While other early financiers had maintained monolithic structures, which could easily blow up due to one counterparty default, the Medici controlled multiple businesses. One can say that the Medici were the first to make the transition from financial success to hereditary status by being bigger and more diversified than any previous financier (Ferguson 2008).

It seems long overdue to refine the prevailing view of PE as a monolithic LBO centered financing technique. Current PE taxonomy is not only misleading, it also thwarts scientific investigation of relevant phenomena in PE. Ironically, determined by prevailing taxonomy empirical PE studies often deliberately trim their samples by excluding everything that is not LBO related, and by doing so maintain the illusion that PE in 2010 is similar to monolithic PE in 1976. Apparently it is not.

This narrow view of PE as a synonym for monolithic LBO activity actually represents an unnecessary self-imposed handicap on scientific progress in the field of PE research. A lot of scientific groundwork needs to be done so that we can start having a better research grip on what PE in the 21st century is really about. There are many puzzling phenomena in PE

³ See KKR Annual Report 2008.

happening in front of us, including the virtually unexplored branching out of considerable parts of the PE universe (see Figure 2).

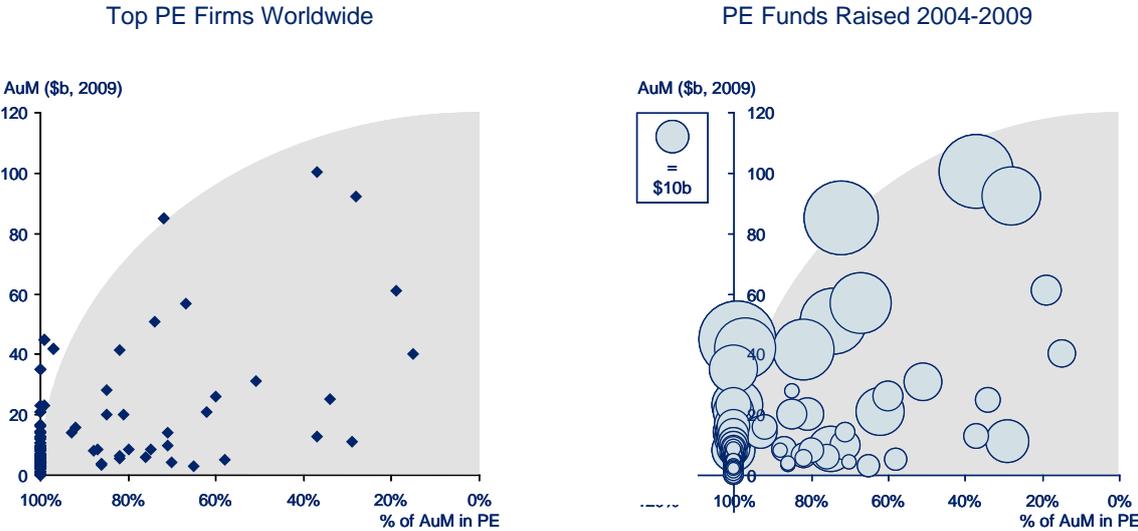


Figure 2: Top 100 PE Firms – AuM, % of AuM in PE, PE Funds Raised 2004-2009
 Source: Mergermarket, Preqin, Thomson Reuters, Company data

In fact, these unexplored phenomena are linked to a wider knowledge gap. Over the last decade some noticed that we know little about corporate strategy of PE firms and initiated first exploratory forays into this area (Wright et al. 2001; Berg 2005; Knyphausen-Aufseß 2005; Barber et al. 2007). Berg conceptualized a generic framework for the strategy of buyout associations, which to date represents the most comprehensive framework for the strategy of monolithic LBO associations, however, one major limitation of his work, which the author himself highlights, is that it suggests only generic strategic dimensions without distilling specific strategic patterns (Berg 2005). A second major limitation of Berg’s framework is that it can barely be used for investigating strategy of non-monolithic PE firms, let alone their competitive dynamics.

In summary, three relevant practical knowledge gaps are in focus of this thesis. First, little is known about a major phenomenon shaping the PE industry. Second, we lack a basic conceptual frame to analyze corporate strategy of the PE firm. Third, corporate level strategic patterns of groups of PE firms are unknown. This thesis attempts to start filling these knowledge gaps.

Recognizing that thousands of companies worldwide, with millions of employees, are currently controlled or influenced by PE, society should rightfully expect from management scientists that we responsibly investigate these matters.

1.1.2 Theoretical Relevance

PE as an asset class is small compared to other asset classes. Over the last five years purchasable PE represented 2-3% of the worldwide investable universe (Idzorek 2007). In absolute terms though, PE is not inconsiderable. Since the renaissance of the LBO technique in the 1970s, PE firms backed an aggregated investment value of almost \$4tr, roughly corresponding to the annual GDP of Japan in 2009, the world's fourth largest economy (in 2009 following the European Union with \$14.4tr, the United States with \$14.1tr, and China with \$8.8tr).⁴

It is actually not so much for its size than for its rapid expansion why PE offers a rich ground for research in the field of management science. Three quarters of total PE activity accrued over the last decade, which annualized roughly compares to the 2009 annual budget of the German Federal Government.⁵ This magnitude illustrates that in the market for corporate control, a term coined in the 1960s (Manne 1965; Jensen et al. 1983), PE firms have rapidly gained market shares over the last years.

Given its recent rapid expansion, PE offers quasi laboratory conditions for investigations on how firms compete in the market for corporate control, how strategic thrusts of investment firms influence the shape of their industry, and which forces shape the boundary of an investment firm. Overall two major theories guardrail this research endeavor: strategic grouping theory and the theory of the firm.

Strategic grouping theory was developed in the early 1970s, suggesting that groups of firms exist within an industry, clustered in a way so that the firms within a group are similar to another on key strategic dimensions and different from other firms outside the group (Caves et al. 1977; Porter 1979; Caves 1980; Porter 1980; McGee et al. 1986; Fiegenbaum et al. 1990; McGee et al. 1992; Reger et al. 1993; Fiegenbaum et al. 1995). While traditional industrial organization (IO) school of thought views the industry as a homogeneous unit, strategic grouping approach laid the foundation for an understanding of the heterogeneity view of the firm.

Within this context, the PE industry represents an interesting research setting. Like traditional IO view the prevailing view of PE is homogenous, ignoring that the phenomenon laid out above implies that PE firms perhaps can be differentiated by other character traits than just size. Various forms of PE firms can be observed ranging from sector focused niche players to multi-business investment houses. Strategic grouping approach allows for an investigation of this heterogeneity and of the existence of hybrid groups and spatial evolutionary paths (McGee et al. 1986; DeSarbo et al. 2008; DeSarbo et al. 2009).

Not only the heterogeneity of PE firms but also the phenomenon presented above, i.e. the branching out of PE firms, makes the boundaries of the PE space increasingly fuzzy, and the more interesting for research in the field of strategic management. One of the major limitations of many recognized management frameworks, such as Porter's five forces, is their

⁴ See <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2001rank.html>.

⁵ See <http://www.bundesfinanzministerium.de>.

rigidity in defining and redefining the boundaries of an industry (Faulkner et al. 2003). Strategic grouping approach allows for the analysis of such boundaries, making it even more an appropriate frame for the investigation of strategy of the PE firm.

On a more granular unit of analysis, this thesis investigates what defines the boundary of a PE firm. The analysis of this question is framed by the theory of the firm. The central concept of the firm is influenced by Coase, who defined the boundary of the firm by aggregating activities under one coordinating center where marginal intra-firm coordinating mechanisms can be conducted cheaper intra-firm as opposed to open market through price mechanisms (Coase 1937). Based on Coase's seminal idea, a string of some of the most central concepts within the discipline of strategic management arose, including coordination cost, complexity cost, limited management capability and capacity, diseconomies of scale, transaction cost, property rights, principal agent approach, contractual rights, and residual rights (Penrose 1959; Chandler 1962; Alchian et al. 1972; Richardson 1972; Chandler 1977; Williamson 1985; Grossman et al. 1986; Hart et al. 1990). These concepts aspire to operationalize the abstract boundary of the firm and together with Coase's thinking about the islands of conscious power in the sea of impersonal market relationships, they offer a suitable frame for this thesis (Coase 1937).

In summary, from a theoretical perspective this thesis attempts to make a contribution toward conversations about the heterogeneity view of the PE centered investment firm, and toward our understanding on how strategic grouping approach can be used to define and refine fuzzy industry boundaries. It also covers forces shaping the boundary of the investment firm. The following section will outline the research objective of this thesis in more detail.

1.2 Research Objective

1.2.1 Strategic Groups

The groundwork of this thesis requires the identification of strategic variables which are most relevant for contemporary PE entities. A thorough synthesis of literature on contemporary PE can provide a solid starting point. It can be triangulated with insights from an evolutionist approach, empiricist approach, and essentialist approach in a comparative-corroborative manner. The goal of the evolutionist approach is to determine strategic variables by tracking evolutionary changes that have characterized variables' trajectories. The empiricist approach works from the bottom up, comprising a comprehensive and theoretically well informed investigation of the industry. The essentialist approach identifies key variables from the top down by a parsimonious selection process.

Upon the identification of key strategic dimensions, this thesis carries out a comprehensive strategic grouping approach, investigating whether strategic groups exist in the PE industry. First and foremost, this approach intends to tests for heterogeneity in the PE space so that differentiating character traits of PE firms can be identified. This allows for new

approaches toward some of the unresolved phenomena in PE such as the branching out of monolithic PE firms. Moreover, this study also intends to derive distinct competitive strategies based on business model patterns, quantitatively measured by strategic group centroids. Characteristics of strategic groups and their evolution over time also indicate competitive dynamics, as well as entry and evolutionary paths of PE firms.

The strategic grouping approach also allows for an investigation of the shape of the boundary of the strategic space of PE. The research objective is to find out whether one or more strategic groups are traversing the initially predefined confines of the PE industry and how this reflects back on the space of PE, notably whether traversing strategic groups leave the industry space or whether the space adapts to comprise evolving business model centroids.

1.2.2 Boundary of the Investment Firm

A second major research objective of this thesis is to investigate the determinants of the boundary of the PE centered investment firm. Recognizing that this is a rather multi-layered endeavor, a multi-layered preparatory groundwork is required.

To begin with, a comprehensive strategic coordinate system is necessary which caters for all major forms of contemporary PE centered investment firms. Existing conceptual frames cater only for monolithic PE firms and therefore do not satisfy the research requirements within this context. A new business model framework needs to be designed, in particular allowing for an analysis of positive and negative synergy between multiple businesses under the investment firm's umbrella. Moreover, to add richness in qualitative descriptions and to avoid confusion due to different taxonomies, it is also relevant to specify all considered non-traditional PE businesses in detail. Investment firms often use non standardized terms and definitions for their products and services. An alignment of the taxonomy of relevant products and services is therefore required.

This study operationalizes its second major research objective by exploring forces which enhance or inhibit the boundary of the PE centered investment firm. The objective is to gather tacit opinions from experts on these forces, ideally with respect to each major constituent of the investment firm's business model. A related research objective is to generate a detailed understanding on the advantages and disadvantages of bundling traditional PE with other products and services. Finally, a third objective is to triangulate the insights generated through the business model approach with insights generated through the bundling analysis, and to aggregate the forces into a unified strategy framework on the boundary of the PE centered investment firm.

1.3 Structure and Scope of Dissertation

Figure 3 illustrates the overall structure of this dissertation, which is integrating the string of research objectives outlined above. The first part of chapter 2 browses through the long-term history of PE and compares definitions of PE. The second part of chapter 2 provides a descriptive overview of the contemporary PE industry, covering the period between the 1960s and today. Chapter 3 provides a synthesis of academic literature on PE, while the first part of chapter 3 arranges academic knowledge across all relevant building blocks of the PE model. The second part of chapter 3 synthesizes existing PE related strategy and business model concepts and extends missing relevant dimensions.

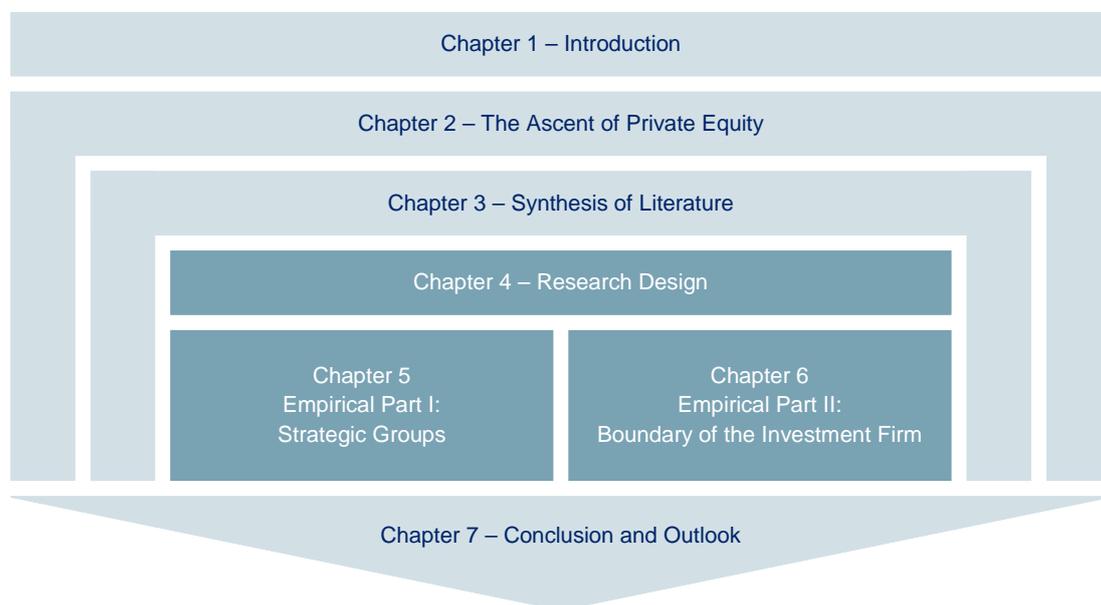


Figure 3: Structure of Dissertation

The concepts and insights from chapter 2 and chapter 3 frame the empirical section of this thesis, which is divided in two parts. Chapter 4 embraces both empirical parts and presents the overall research design, while connecting the framing chapters with the empirical chapter. The first empirical part (chapter 5) investigates the research objectives laid out above in the research block ‘strategic groups’, whereas the second empirical part (chapter 6) investigates the research objectives laid out in the research block ‘boundary of the investment firm’. Chapter 7 synthesizes the academic contributions of this thesis, summarizes implications for practitioners, and offers suggestions for future research.

Recognizing the broad and arguably fuzzy scope of the research topic, in addition to the considerable and growing fuzziness of the PE space, a clarification of the scope of this research endeavor should not be missing.

The theoretical anchor of this study is the discipline of strategic management. Like strategic management is most concerned with understanding what activities should be within the range of the firm and how resources should be allocated, so is this study. Related considerations such as organizational structure, systems, processes, infrastructure, employees, incentive systems, or contractual arrangements, are not within the scope of this study.

Moreover, this study focuses on traditional PE activity as the nucleus of the broader PE centered investment firm. Though the whole range of possible non-traditional PE activities is being considered, the scope of this study can not embrace each one in the same depth as traditional PE.

2 The Ascent of Private Equity

2.1 Origin

To understand present phenomena, it can help to look out for analogies in history. Most studies omit this historical approach.⁶ Even those PE studies which considered insights from a look into the rear view mirror rarely went back further than into the early 20th century. This leaves a valuable source of knowledge underutilized. A more far-reaching investigation unveils that the PE approach and financial intermediation share similar principles throughout the evolution of capitalism. This section sheds light on some striking parallels.

2.1.1 Classic Private Equity: Merchant Banking (14th – 19th Century)

“Money is the god of our time, and Rothschild is his prophet”,⁷ declared Heine, a German poet who witnessed the era of Napoleon Bonaparte, the Emperor of France (Heine 1841). Heine was referring to James Rothschild, a member of the Rothschild banking dynasty which Heine’s coevals called *“Finanzbonaparten”* (*Bonapartes of Finance*). Some basic business principles allowed the Rothschilds to pile up royal riches.⁸ For example, Meyer Amschel Rothschild (1744 – 1812), who was ranked 7th on the Forbes magazine’s list of the ‘20 most influential businessmen of all time’, once said: *“Permit me the control of the credit of a nation and I care not who makes the laws”* (Elon 1996). The principle: you can take control over any entity with little legitimate ownership as long as you can facilitate a lot of credit.

America’s grandmaster of PE, John Pierpont Morgan (1837 – 1913), was ranked 2nd on the Forbes magazine’s list, and was named the most important financier who ever lived. His PE stunt: the financier acquired cheap assets with large amounts of debt and installed capable managers to run the companies which he backed as a financial sponsor. In America of the 18th and 19th century, the driving forces behind PE activity were family offices such as the Rockefellers, Vanderbilts, or Whitneys, typically bundling industrial and banking activities (Lerner et al. 2009). Capital supply from family offices, managing the wealth of HNWI and

⁶ It is also recommended by strategic grouping methodology experts to conduct an evolutionary approach, i.e. tracing historical origins and tracking evolutionary changes that have characterized strategic trajectories within sectors in order to identify groupings which might share common ancestry (Daems et al. 1994).

⁷ Original quote from Heinrich Heine (Heine 1841, p. 378): *“Das Geld ist der Gott unserer Zeit und Rothschild ist sein Prophet”*.

⁸ At the end of his life, in 1836, Nathan Rothschild possessed a personal fortune corresponding to 0.6% of the British national income. Already in 1825 the capital of the Rothschild dynasty was nine times greater than that of Baring Brothers and Banque de France, by 1899 the Rothschild firm exceeded the capital of the five biggest German joint-stock banks combined, and increasingly the firm became a multinational asset manager for the wealth of the investment professionals’ extended family, which was kept in line through a high level of intermarriage between cousins, uncles, and nieces (Goetzmann et al. 2005).

UHNWIs, later expanded rapidly due to fast growing trust companies (White 1984), allowing financial sponsors such as John Pierpont Morgan to catalyze the formation of large corporations such as General Electric, US Steel Corporation, or AT&T.⁹

These striking analogies imply that some effective principles of the PE approach have been around much longer than might immediately appear. The earliest roots of today's PE activity can be found in the origin of merchant banking. Though the term 'merchant banking' itself is barely defined in US banking and securities laws, and interpretations of its exact meaning diverge, today merchant banking is generally understood to stand for 'PE investments by financial institutions in securities of either privately or publicly held companies' (Craig 2002). The earliest roots of the merchant banking model can be traced back to the origin of banking during the Renaissance era in Europe, where merchant houses had begun to use their excess capital to finance foreign trade, typically risky ocean voyages influenced by uncertain weather conditions and piracy, in other words very lengthy and illiquid investments (Banks 1999).

The Renaissance era (14th – 17th century) bridges the dark ages and the modern era, witnessing many new intellectual pursuits, and social and political upheaval (Burke 1998). In addition to its dazzling architecture, some of its most renowned legacy includes the genius of Leonardo da Vinci, Michelangelo, and Galileo. What were the drivers?

Though there has been much debate among historians, the general consensus suggests that the Renaissance began in Florence, Italy, in the 14th century, and that one of the relevant drivers was the patronage of its dominant family, the Medici (Strathern 2003). Initially the Medici family was a small-time clan notable for violence. Giovanni di Bicci de' Medici made the Medici franchise legitimate. Around 1385, Giovanni started building up a reputation as a foreign exchange dealer. When in 1420 his heir apparent Cosimo took the reign, the Medici merchant banking dynasty was providing loans through branches in Florence, Rome, Geneva, Pisa, London, and Avignon, and at the same time the bank was acquiring and controlling industrial businesses such as wool factories, i.e. what today would be called PE investments, principal investments, or proprietary trading of a bank (Brucker 1957).

Ferguson's illustration of the Medici dynasty illustrates the dominance of the model: "*No other family left such an imprint on an age as the Medici left on the Renaissance. Two Medici became popes (Leo X and Clement VII), two became queens of France (Catherine and Marie), three became dukes (of Florence, Nemours and Tuscany) [...] their patronage of the arts and sciences ran the gamut of genius from Michelangelo to Galileo [...] they came to be known as bankers (banchieri) because, like the Jews of Venice, they did their business literally seated at benches behind tables in the street [...] by the time Pius II became pope in 1458, Cosimo de' Medici effectively was the Florentine state. As the pope himself put it: political questions are settled at [Cosimo's] house. The man he chooses holds office ... He is who decides peace and war and controls the laws ... He is King in everything but name*" (Ferguson 2008, p. 42).

⁹ See http://www.forbes.com/2005/07/28/morgan-banking-ge-cx_0728bizmanmorgan.html?boxes=custom.

Connecting the dots, Heinrich Heine's declaration of 'money being the god' of his time becomes a bit less puzzling by taking a closer look on the central concept of money. Money is not metal, money is tangible trust (Williams 1997; Davies 2002). It is difficult to measure trust, while money can be seen as the mathematical equivalent of trust. Also the idea that money is about credit never quite caught on (Ferguson 2008). Credit is the ultimate measure for trust, valued by the credibility of counterparties. The origin of the term 'credit' is 'credo', which in Latin means 'believe', and in Arabic means 'religion' (إيمان).¹⁰ Therefore Heine's claim perhaps can be taken more literally than might immediately appear.

Taken together, the rear view mirror of history suggests that one of the greatest misconceptions about PE is that it was invented in the second half of the 20th century. The financial firepower of small investment boutiques such as KKR in the late 1980s, in fact is rooted in a central principle which was invented by merchant banks during the Renaissance era, notably that the control over assets and entities has not so much to do with entitled ownership rights than with the ability to orchestrate the concepts of money, credit and trust interchangeably.

Another relevant lesson which can be learned from history, with more tangible implications for this study, is that often this central principle was effectively applied in multi-business structures. Throughout the centuries the classic PE model was represented by merchant banking dynasties who typically bundled lending, underwriting, distributing, and 3rd party trading with principal investment activity and control over commercial businesses.

2.1.2 Merchant Banking Wipeout in 1933

Each time a merchant banking dynasty was close to divinity, opposition aroused inevitably. Often this opposition was driven by government's interest (Ferguson 2008). Blaming bank failures of the early 1930s on banks' speculative investment activities, and with vast political tailwind as a reaction to the collapse of a large portion of the US banking system in early 1933, Senator Carter Glass and Congressman Henry B. Steagall established the Banking Act of 1933 (Craig 2002). Known as the 1933 Glass-Steagall Act, it established the FDIC, and introduced the separation of banks according to their business focus. Deposit taking and commercial banking was strictly separated from investment banking (securities business), i.e. commercial banks and their subsidiaries were prohibited from taking positions in and control over other entities.¹¹

This legislation wiped out the merchant banking model, although there is little to no evidence that the investment banking activities of commercial banks actually were a major factor in the bank failures of the 1930s (White 1983; White 1984; Benston 1990; Kroszner et al. 1994; Craig 2002). Senator Glass, the driving force behind the reform, claimed that direct

¹⁰ See <http://www.websters-online-dictionary.org/translations/credo>.

¹¹ Section 20 of the Glass-Steagall Act prohibits member banks in the Federal Reserve System from affiliating with firms that are engaged principally in the securities business (see <http://www.fdic.gov/regulations/laws/important/index.html>).

commercial bank investing created conflicts of interest and was detrimental to the stability of the financial system. These claims gained broad support after the Pecora Committee in 1933 initiated investigations into the potentially conflict-laden and putatively abusive practices at securities affiliates of the two most prominent national banks, National City Company and Chase Securities Company (Kroszner et al. 1994).

Benston examined the cases of the Pecora hearings, which have had been cited as examples of abusive practices by Senator Glass, and concluded that few stand up to close scrutiny, confuting the conflicts of interest argument of Senator Glass (Benston 1990). The concern on the potential instability of the financial system was confuted by White, who showed that universal banks had no higher earning variance or lower capital ratios than their monolithic peers (White 1983). In fact, over 25% of all banks failed during the banking crisis between 1930 and 1933, though less than 10% of banks with considerable securities operations were wiped out (White 1984).

Taken together, the evidence implies that the break-up of merchant banking activity advocated by Senator Glass was not really linked to his publicly stated motives.

This leads to the conclusion that either Senator Glass earnestly assumed that the connection existed or perhaps his real agenda was to weaken the influence of merchant banking activities in favor of government controlled entities. White investigated banking innovation in the 1920s and observed that *“trust companies and investment banks successfully combined commercial banking with their other activities, presenting a serious challenge to undiversified national commercial banks [...] greatest competition came from the fast-growing trust companies. Their advantage over national commercial banks was that they could combine banking and fiduciary powers [...] there were apparently strong complementarities between various kinds of financial services [...] national banks could not conduct such a limited business and survive in the tough competition of American financial markets”* (White 1984, p. 92). Whatever the original intention of Senator Glass was, the findings imply that the Banking Act of 1933 severely setback financial innovation of the late 19th and early 20th century, and for several decades interrupted the evolution of large scale merchant banking activity (Craig 2002).

2.1.3 Renaissance of Private Equity in the 20th Century

In 1946, Massachusetts Institute of Technology president Karl Compton and Harvard professor Georges Doriot¹² jointly with Boston based business leaders established American Research and Development Corporation (ARDC), which legitimately can be considered as the first contemporary PE partnership established after the US banking crisis of the 1930s (see Figure 4). The investment activity of ARDC, and the string of following PE funds which were established between the late 1940s throughout the 1970s, typically focused on young

¹² George Doriot also served as Dean of Harvard Business School and was involved with the foundation of INSEAD, the European business school in Fontainebleau, France.

companies with innovative capabilities and growth potential.¹³ The total investment volume of these venture funds did not exceed a few hundred million dollars annually until the 1980s (Baker et al. 1998; Gompers et al. 2000; Lerner et al. 2009).

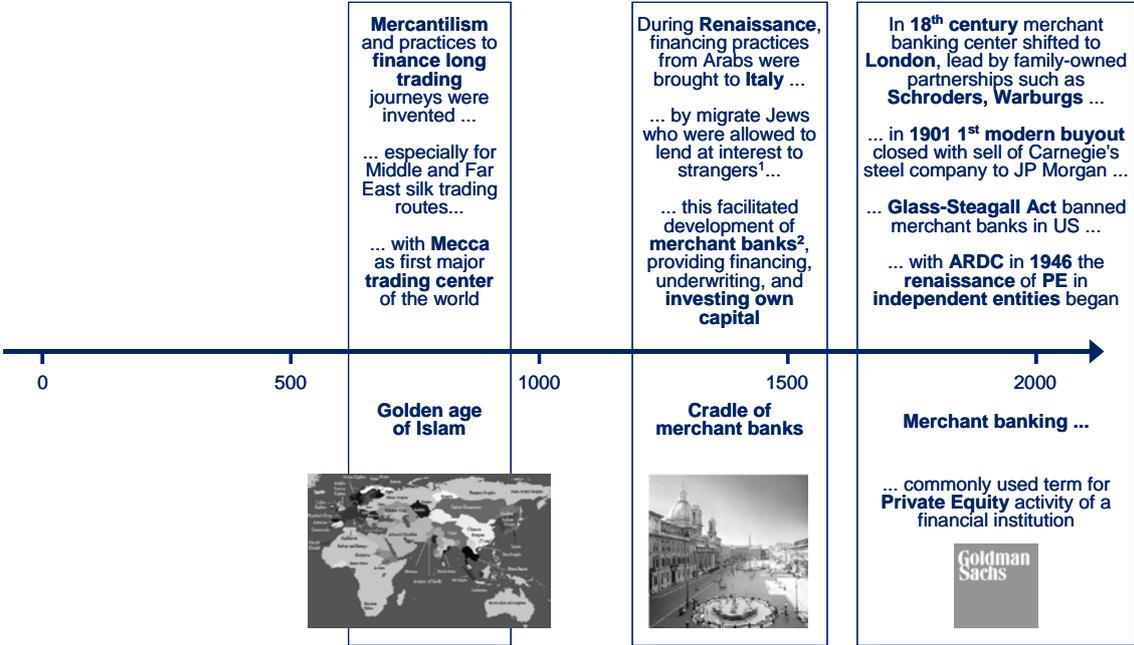


Figure 4: Origin of PE

Note: 1. Jews were also not supposed to lend at interest, except if the borrower was e.g. a Christian: "Unto a stranger thou mayest lend upon usury" (Old Testament, book of Deuteronomy). 2. Merchant banks are the original and first form of banks.
 Source: Author based on Ferguson (2008), Craig (2002) and Baker et al. (1998)

At the end of the 1970s, two relevant regulatory changes in the US spurred PE activity. In 1978, capital gains taxes were lowered and in 1979 the so-called ‘prudent man’ rule governing pension funds was amended. The ‘Employee Retirement Income Security Act’ limited pension funds from investing considerable amounts of money in high-risk asset classes. In 1979, new rules explicitly allowed pension managers to invest in high-risk asset classes such as PE. The share of pension funds’ capital commitments to PE increased from 15% in 1978 to more than 50% in 1986, respectively (Baker et al. 1998; Gompers et al. 2000).

For almost a decade the growing capital supply attracted additional PE industry entrants, typically being specialized on early stage VC or late stage LBO financing, and increasingly being organized as limited partnerships as opposed to publicly traded closed-end funds (Lerner et al. 2009). In 1989, annual capital commitment to PE peaked, declined in 1990 and 1991, grew again steadily until 1994, and from 1994 onwards showed almost exponential growth. In 1994, two additional factors drove PE’s renaissance: capital gains taxes were reduced from 28% to 14% on investments in firms held for longer than five years, and the

¹³ Today’s prevailing taxonomy in the US would define this as VC activity, a term which to a lesser extent caught up in other parts of the world.

'NASDAQ' stock exchange was established, offering an additional avenue for exits of small and unprofitable though high-growth portfolio companies (Gompers et al. 2000).

In Europe, PE activity stagnated during the decades following the 2nd World War. Prior to the late 1970s, the political climate and regulation in many European countries discouraged entrepreneurship through high marginal tax rates on capital gains and through bankruptcy codes favoring creditors over debtors, cross-border M&A was nascent, providing capital for established European firms was a domain of bank financing, and bankruptcy was stigmatized and typically accompanied with social embarrassment.

In the 1980s the overall political and regulatory climate changed course toward a more PE friendly habitat. Baroness Margaret Thatcher, serving as Prime Minister of the UK from 1979 until 1990, was a driving force toward a more deregulated entrepreneurial environment in the UK. In November 1980, the 'Unlisted Security Market'¹⁴ was established in the UK. During the early 1980s similar capital markets were established in Belgium, Denmark, France, Netherlands, Norway, Spain, Sweden and West Germany, while governments gradually promoted a more entrepreneurial culture by lowering capital gains taxes and by offering incentive schemes that encouraged individuals to invest in early stage firms by granting tax benefits. In 1992, the Treaty of Maastricht established the European Union, which formalized Europe's drive toward economic convergence and monetary union, fostering cross-border transparency and removing investment barriers. Like in the US, in the mid 1990s European governments increasingly supported entrepreneurial (investment) activity as an important factor for economic growth. Extensions of capital markets infrastructures such as London Stock Exchange's launch of the 'Alternative Investment Market' provided additional capital supply options¹⁵ and further stimulated the renaissance of PE activity (Landier 2001; Bottazzi et al. 2002; Boquist et al. 2004).

A more detailed overview of the recent evolution of PE will be presented further below. Overall, the gist of this section suggests that contemporary PE activity, with its dismantling, stagnation, and renaissance in the 20th century, can be viewed as basic entrepreneurial investment activity, inversely fluctuating with the intensity of regulation.

Definitions of 'Private Equity'

Prevailing definitions often describe PE organizations as partnerships specializing in VC and LBO, build-up, mezzanine, distressed debt, and other investments, whereas typically the VC or LBO aspects represent the nucleus (Lerner et al. 2009). PE firms are frequently labeled as 'financial sponsors', 'venture capital' activity is often associated with the financing of young companies in the early stages of their development, and particularly in the US the term

¹⁴ The 'Unlisted Security Market' was a secondary stock market for small and medium-sized innovative and expanding firms.

¹⁵ Imitating the NASDAQ, in March 1996 the 'EASDAQ' was launched in Brussels, based on an initiative led by the European Private Equity and Venture Capital Association (EVCA).

‘private equity’ is more often associated with investments in established companies (Gompers et al. 2001). Fundamentally, VC and activity is similar in many aspects (Sahlman 1990), though the stricter differentiation between early stage VC and late stage PE investments in the US created some confusion in taxonomy.

As of August 2010, the definition of the European Private Equity and Venture Capital Association (EVCA) suggested that *“PE provides equity capital to enterprises not quoted on a stock market. PE can be used to develop new products and technologies, also called venture capital, to expand working capital, to make acquisitions, or to strengthen a company’s balance sheet. It can also resolve ownership and management issues. A succession in family owned companies, or the buy-out and buy-in of a business by experienced managers may be achieved by using PE funding”*.¹⁶

While in most parts of the world the terms PE and VC are being used interchangeably, at the time of writing EVCA’s American counterpart, the National Venture Capital Association (NVCA), disagreed that *“VC investment is really the same as PE activity”*, backing this claim up by the following explanation: *“Venture capital is not designed to maximize capital efficiency from mismanaged or undervalued public companies, nor is it designed to meet short-term liquidity needs, invest in public markets, securities or derivatives, take short or long positions or be accessible through brokers. Venture capitalists do not encourage their companies to engage in financial engineering or use leveraged structures. Venture capital returns are achieved by building private companies from the ground up with the goal of bringing innovation to market and creating substantial economic value in technologies, businesses and industries”*.¹⁷

From a regulatory standpoint it may be meaningful to differentiate between early stage and late stage investments. Nevertheless, in this dissertation the term PE is being used as an umbrella including all investment stages, i.e. more in line with EVCA’s taxonomy. Not only have recognized firms such as TA Associates, Apax Partners or Bain Capital migrated over time from early stage investments toward balanced or later stage investment PE models. Also late stage focused investment partnerships such as Carlyle or EQT have branched out into early stage investments over time. Given that one of the central research questions of this dissertation analyzes how PE firms expand their boundaries into adjacent strategic spaces including investment stages or financial products, the broader definition of PE appears to constitute a better suited frame for this research endeavor.

One could even push the envelope a bit further with respect to the definition of PE, alike Jensen who said that *“it started to become clear to me that [...] what later became known as PE, was fundamentally a new way to think about corporate governance, a new model of management, if you will”*.¹⁸ The more we understand about the PE approach the more difficult it becomes to refute Jensen’s observation. Only the notion of ‘new’ seems questionable, given that PE as a corporate management approach has been around since the 14th century.

¹⁶ See <http://www.evca.eu/toolbox/glossary.aspx?id=982>.

¹⁷ See http://www.nvca.org/index.php?option=com_content&view=article&id=69&Itemid=460.

¹⁸ Michael Jensen, Jesse Isador Strauss, Professor of Business Administration, Emeritus at Harvard Business School.

2.2 Contemporary Private Equity

2.2.1 Capital Commitment

Worldwide capital commitment to PE in the period 1960 to March 2010 totaled \$3.7tr. In the 1960s and 1970s capital supply to PE was rather nascent, picking up rapidly after once capital gains taxes were lowered in 1978 and once pension funds were allowed to invest in PE as an asset class from 1979 onward. The left chart of Figure 5 illustrates the first major growth phase of PE in the 2nd half of the 20th century. Annual capital supply to PE grew from \$769m in 1978 to \$30b in 1989. In the second half of the 1980s capital commitments to PE and the introduction of so called ‘junk bonds’, as a substitute for tranches of subordinated debt, notably overheated the overall market until its first peak in 1989 (Kaplan et al. 1993).

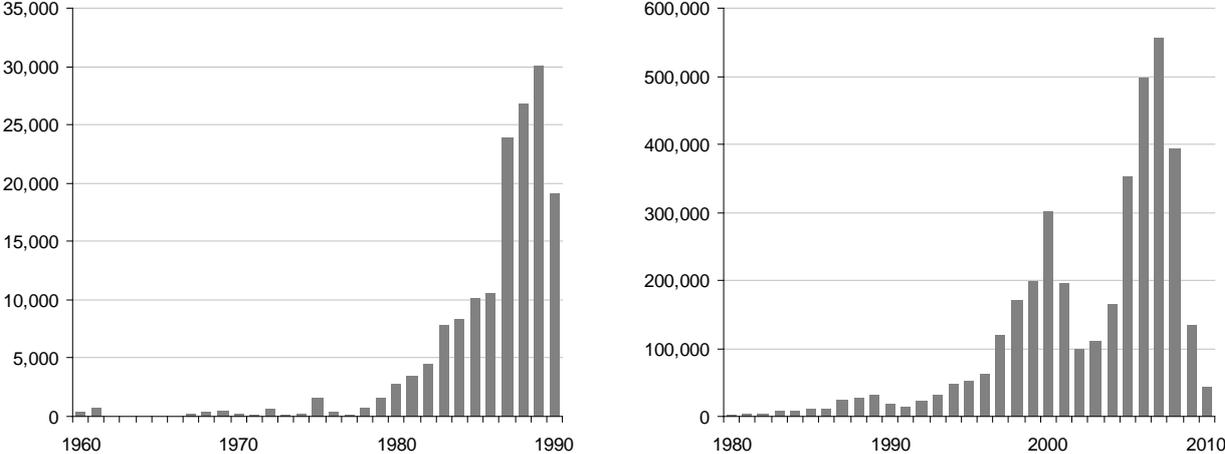


Figure 5: Worldwide PE Capital Commitment (1960-Mar2010, \$m)

Source: Thomson Reuters

The right chart of Figure 5 shows two major cycles which followed. Additional lowering of capital gains taxes and the opening of new capital markets such as the NASDAQ, offering additional exit routes, spurred another upswing which peaked in 2000 with annual capital commitments of \$301b, i.e. ten times the value of 1989.

With the second upswing in the late 1990s, the share of capital commitment to non US PE funds also increased (see Figure 6). European PE activity was spurred by the establishment of new capital markets such as the ‘Alternative Investment Market’ in London or the ‘Neuer Markt’ in Frankfurt. TPG opened its London office in 1997, KKR, Warburg Pincus, and Clayton Dubilier & Rice in 1998, and The Carlyle Group in 1999. Capital commitment to European PE increased from \$6b in 1995 to \$68b in 2000, representing a share of 12% and of 23% of worldwide commitment, respectively.

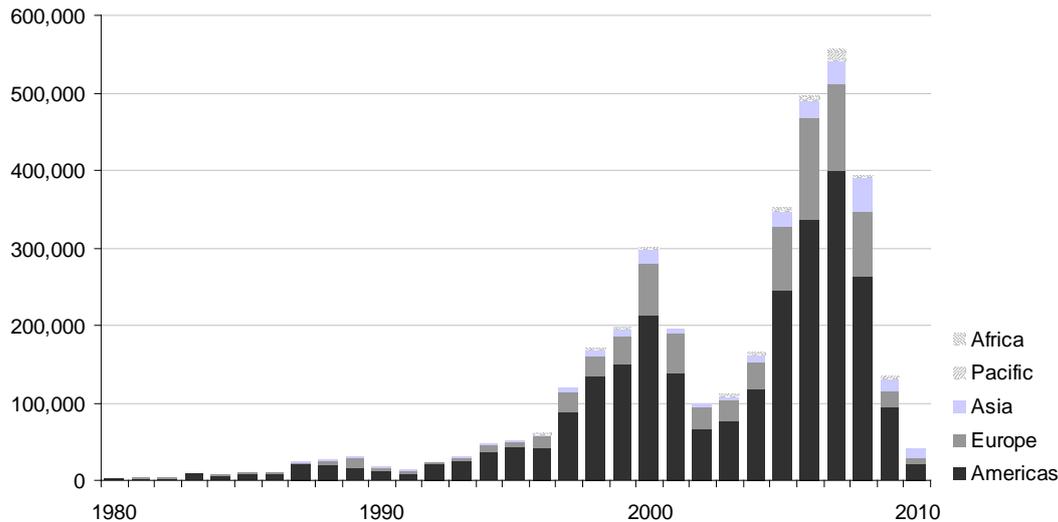


Figure 6: Worldwide PE Capital Commitment by Region (1980-Mar2010, \$m)

Source: Thomson Reuters

After the market correction in 2001 and 2002 of overly optimistic expectations into the so called ‘new economy’, notably internet related new technology ventures, the third major and most recent upswing in capital commitment to PE followed with worldwide annual commitment to PE of \$352b in 2005, \$498b in 2006, and \$557b in 2007.

European all time high in terms of capital supply to PE peaked in 2006 with \$133b, representing 27% of worldwide commitment in 2006, while Asian commitment to PE peaked in 2008 with \$44b, representing 11% of worldwide commitment in 2008. During the most recent downswing, worldwide annual capital supply to PE decreased to \$395b in 2008 and to \$134b in 2009, and for 2010 is expected to range slightly north of 2004 levels.

Ever since the formative years of the PE sector, the largest share of worldwide PE capital commitment went to the US. During the period 1960 to March 2010, the cumulative share of capital commitment to US based PE funds was 70.7%, while during the same period European PE funds received 21.8%, and Asian PE funds received 6.3% of worldwide cumulative commitment.

Recognizing this large concentration of PE on the US and Europe over the last 50 years, one can say that PE related research focusing on these two regions, like this study, covers over 90% of contemporary PE activity by worldwide capital commitment.

The breakdown of PE capital commitment to various investment stages fluctuated considerably across the cycle. While in 2000 the capital commitment to the buyout stage totaled \$97b, in 2007 it grew to \$273b, corresponding to 32% and 49% of worldwide capital supply to PE, respectively (see Figure 7).

Worldwide PE capital commitment to early investment stages totaled \$152b in 2000, while in 2007 commitment to early stages decreased to \$72b, corresponding to 51% and 13% of worldwide capital supply to PE, respectively. The high share of PE commitment to early stages during the upswing of the late 1990s is synchronized with the overly optimistic expectations driven by the ‘new economy’ market hype.

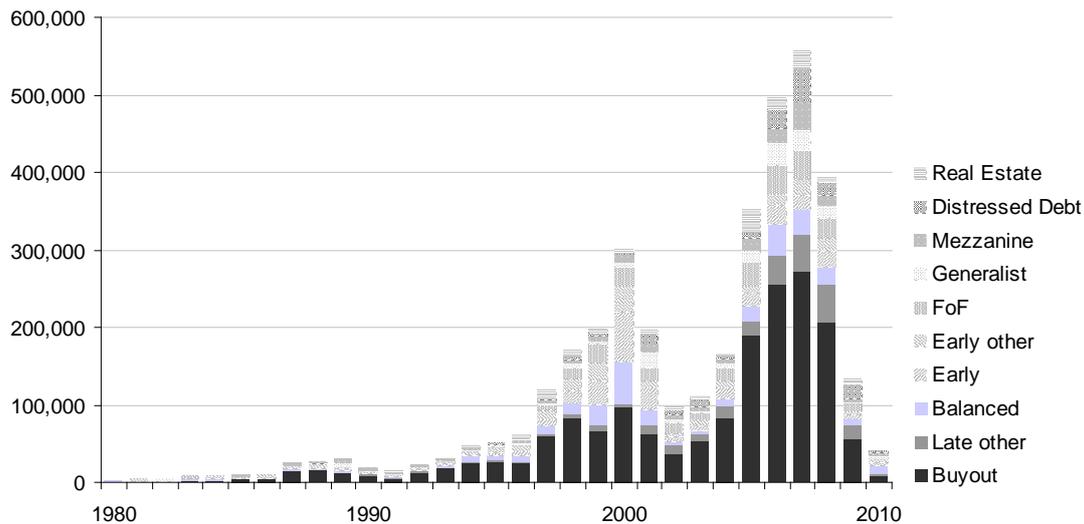


Figure 7: Worldwide PE Capital Commitment by Stage (1980-Mar2010, \$m)

Note: 'Early other' includes seed, development, expansion, later stage. 'Late other' includes secondary, recap, turnaround.

Source: Thomson Reuters

Worldwide capital commitment to non-traditional investment stages totaled \$53b in 2000 and increased to \$212b in 2007, corresponding to 28% and 42% of worldwide capital commitment, respectively. A more detailed breakdown of these other investments stages in 2007 shows that \$47b capital was committed to secondary, recap, and turnaround, \$43b to distressed debt, \$37b to FoF, \$34b to mezzanine, \$24b to real estate, and \$27b to generalist funds. In 2009 the share of worldwide PE commitments to these non-traditional stages increased to 48%.

This growing share of PE capital commitment to these non-traditional PE stages is in line with the phenomenon which was presented in the introduction of this dissertation (see chapter 1.1.1) and confirms the effect's considerable magnitude and relevance for the evolution of the PE sector.

Overall, during the 50 years period 1960 to March 2010, the cumulative share of PE capital commitment to buyout funds totaled 46% of worldwide capital supply to PE, whereas 23% went to early investment stages, and 31% to non-traditional PE.

The number of launched PE funds in the period 1960 to March 2010 totaled 16,334, while during the same 50 years period 3,278 were liquidated. At the end of March 2010, there were 13,056 active PE funds worldwide. During the 1960s and 1970s, 211 PE funds were launched and 145 were liquidated. Figure 8 plots the number of PE funds during the period 1980 to March 2010, while including the overhang of 66 active and 145 liquidated funds from the 1960s and 1970s.

There were seven active buyout funds in 1980, while in March 2010 the number grew to 2,452. The share of active buyout funds over total active funds worldwide grew from 9% in 1980 to 21% in 1990 and fluctuated between 16% and 19% thereafter. The number of active funds focused on early investment stages increased from 71 in 1980 to 7,862 in March 2010, representing a share of 90% and of 60%, respectively. While PE funds in non-traditional

stages were virtually not existent in 1980, the number and share grew steadily over the last 30 years, and reached 2,742 funds in March 2010 and 21% of total active PE funds worldwide.

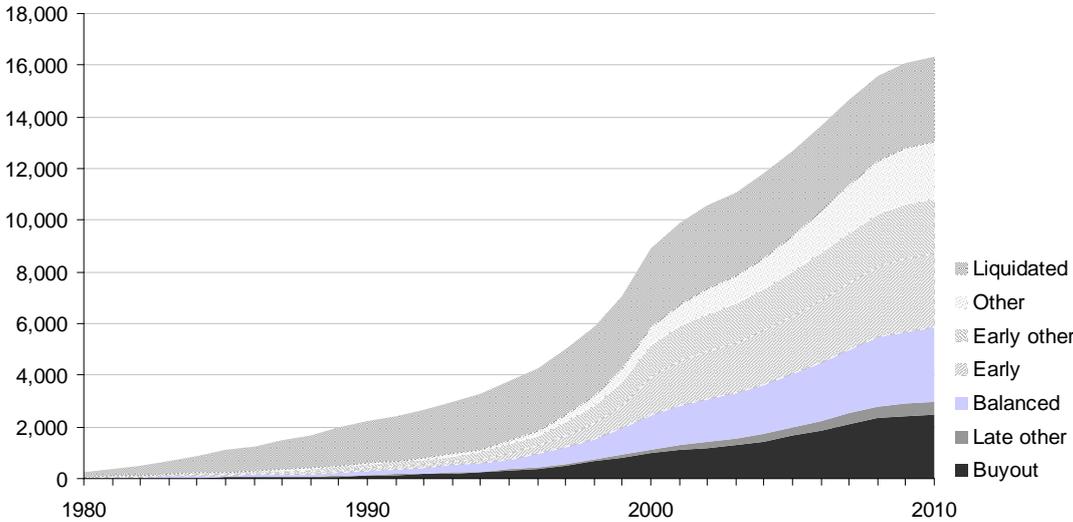


Figure 8: Worldwide PE Funds by Stage (1980-Mar2010)

Note: 'Other' includes real estate, distressed debt, mezzanine, generalist, FoF. "Early other" includes seed, development, expansion, later stage. 'Late other' includes secondary, recap, turnaround.

Source: Thomson Reuters

The fact that during 40 years of PE's most recent 50 years history the number of non-traditional investment stages funds stayed below 15% of total active PE funds possibly explains why the prevailing view and academic research has been focusing mostly on the more traditional part of PE activity. Nevertheless, the steady and continuously growing share of non-traditional PE activity both in terms of capital supply and in terms of number of funds over three full cycles of the PE sector, leads to the conclusion that perhaps the central phenomenon investigated here is not a short-term effect but a long-term evolutionary trend which is shaping the sector, the business models and strategic thrusts of its participants.

The differentiated consideration of early, late and other stages is obviously relevant when it comes to e.g. regulatory considerations, contractual arrangements, incentive systems, or soft skills of the GPs. However, a 'silo view' does not help our understanding whether a PE firm should specialize on one of the stages or whether it should embrace a broader range of activities. Clearly, a more integrated view is overdue.

2.2.2 Private Equity Investment

Worldwide cumulative PE entry transaction value in the period 1980 to May 2010 totaled \$3.7tr (see Figure 9). Over 70% of this cumulative entry transaction value aggregated over the last five years between 2005 and 2010, while \$2tr or 54% aggregated during the years 2005, 2006, and 2007.

Though the PE entry transaction value over the last 30 years averaged \$21m per deal, the general perception of PE is heavily influenced by mega-sized transactions backed by buyout funds, often receiving extraordinary attention. The first mega-sized buyout, i.e. a PE investment with a transaction value of \$5b or more, was closed in late 1985 with the \$9b acquisition of Beatrice by KKR. The plot of the Beatrice transaction in Figure 9 visualizes the unprecedented magnitude in the larger scheme of transactions in the PE sector. In 1989, the next unprecedented mega-buyout followed with the \$31b acquisition of RJR Nabisco, which was also backed by KKR. After a trough, mega-sized buyouts returned during the most recent upswing of the PE sector. In July 2006, a consortium of KKR, Merrill Lynch Global Private Equity, and Bain Capital, backed the \$33b buyout of HCA. In November 2006, Blackstone backed the \$37b buyout of Equity Office Properties. And in 2007, the largest worldwide PE transaction until the time of writing was closed with the \$48b buyout of TXU (renamed to Energy Future Holdings), which was backed by a consortium lead by KKR, TPG, and Goldman Sachs Merchant Banking Division.

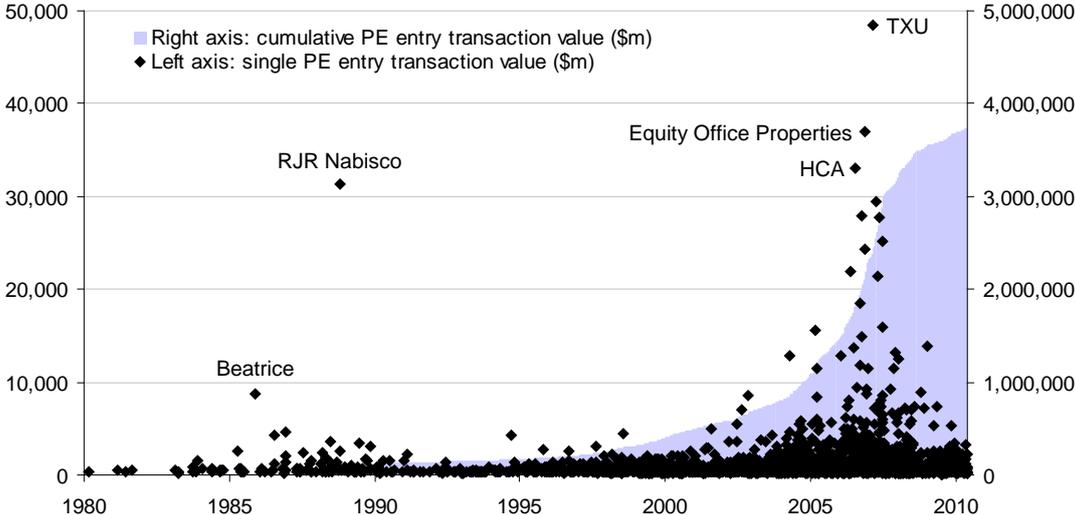


Figure 9: Worldwide PE Investment Transaction Value (1980-May2010)

Source: Capital IQ

It should be noted that even in the buyout segment such mega-sized deals are outliers. In the years 2005, 2006, and 2007, the worldwide buyout transaction value averaged \$253m, \$433m, and \$440m, respectively, and decreased to \$174m per transaction in 2008. Mid-cap transactions traditionally were the focus segment for buyout funds. The acquisition process for mid-cap targets tended to be less structured and less competitive, while the PE backed capital could add value by financing expansion, restructuring, or succession (Fenn et al. 1995). In addition, the trading up of the US high-yield market toward larger and more liquid deals in the 1990s further increased the attractiveness of the mid-cap segment for PE, given that late stage PE funds can finance mid-cap companies that are too large or too mature for early stage financing and at the same time subscale for large cap capital markets vehicles.

A large share of worldwide PE capital was invested in the US. During the period 1990 to September 2010, 69% of worldwide cumulative PE capital was invested in the US, 21% in Europe, and 8% in Asia. During the same time period, the US share of worldwide PE investment declined and is expected to level out north of 60% in 2010 (see Figure 10).

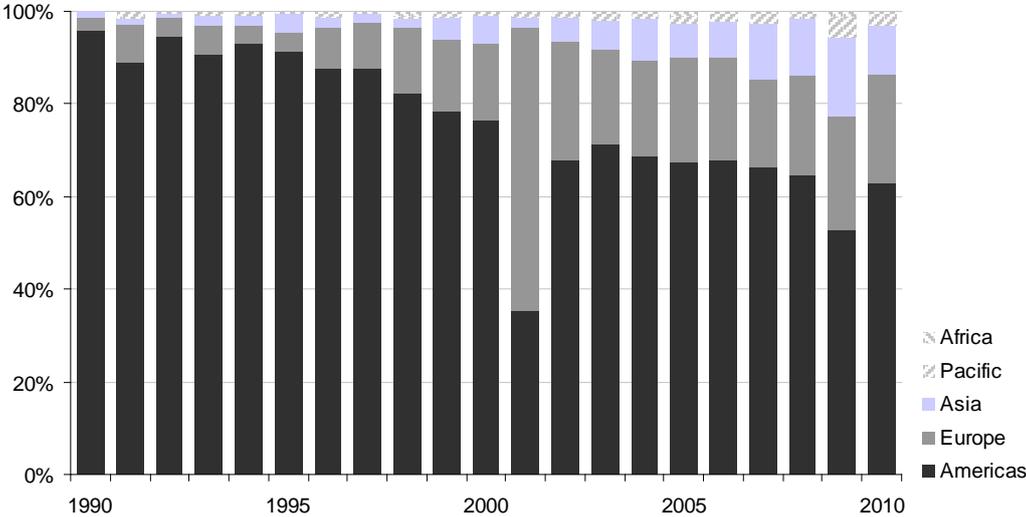


Figure 10: Worldwide PE Investment Equity Value by Region (1990-Sep2010)

Source: Thomson Reuters

The share of PE investment increased notably in Europe and in Asia. Each year during the period 2005 to September 2010, the European share of worldwide PE investments ranged between 19% and 25%, while the Asian share ranged between 8% and 17%.

Provided the trend continues, the US share of worldwide PE investment value will fall below 50% between 2015 and 2020. Naturally this changing demography of the worldwide PE sector has implications for future strategic thrusts of PE firms in terms of regional expansion.

During the period 1990 to September 2010, the cumulative share of PE investments into the top ten sectors totaled 90.6% of total cumulative PE entry equity value, with 19.5% in consumer related goods and services, 13.2% in high-tech/internet, 11.2% in telecommunication, 9.9% in computer software/hardware, 9.6% in industrial/energy, 7.0% in financial services, 6.5% in medical/health, 5.5% in semiconductor/electronics, 4.6% in transportation, and 3.7% in biotechnology. Figure 11 illustrates the breakdown of PE entry equity value by sector for each year during the period 1990 to September 2010.

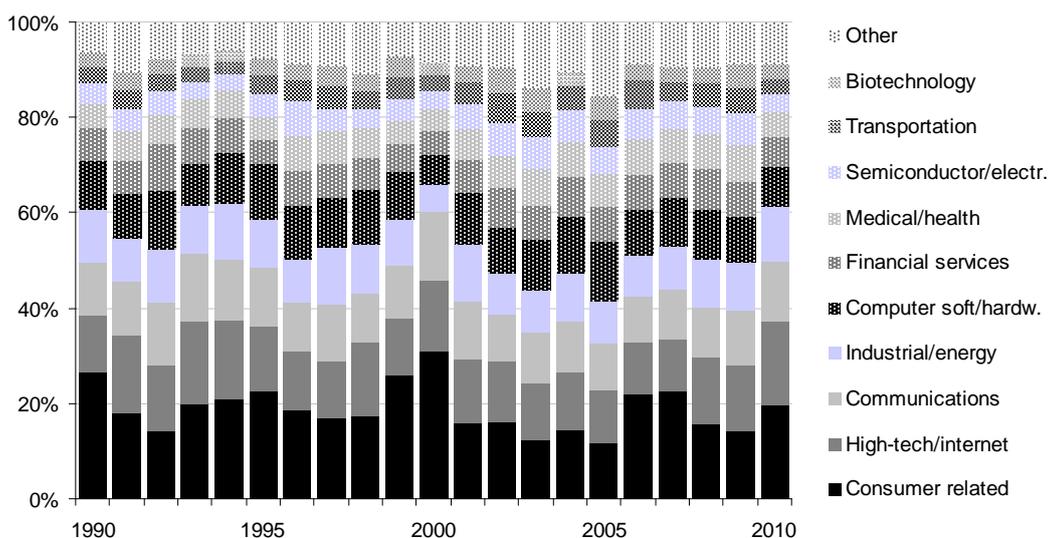


Figure 11: Worldwide PE Investment by Sector (1990-Sep2010)

Source: Thomson Reuters

In spite of the 16,123 PE funds which were launched over the last 30 years, during the same period 42% of worldwide PE investment by transaction value was backed by five most active PE centered investment firms (see Table 1). This data suggests that the PE investment activity is highly concentrated in terms of transaction value. The three most active PE firms, notably KKR Private Equity, Goldman Sachs Merchant Banking, and TPG Capital, backed almost 30% of worldwide cumulative PE entry transaction value between 1980 and May 2010.

PE Centered Investment Firm	Monolithic PE Model	PE Investment Value (\$m)	%
KKR, PE		412,877	11%
Goldman Sachs, Merchant Banking		372,076	10%
TPG Capital	✓	312,340	8%
The Blackstone Group, PE		256,061	7%
The Carlyle Group, PE		214,793	6%
Top 5 worldwide		1,568,147	42%
Worldwide		3,729,552	100%

Table 1: Most Active PE Investment Firms (1980-May2010)

Source: Capital IQ

As of 2010, only one of the top five PE centered investment firms, notably TPG, pursued a traditional monolithic PE model. One could argue that even TPG left the monolithic model with the launch of its \$1.4b debt fund in 2007. However, considering TPG's overall exposure to traditional PE this fund does not justify to call TPG a multi-business PE model, yet. The assessment of the other four firms was easier, given their considerable exposures to a variety of traditional and non-traditional PE products and services, including early stage funds, late stage funds, distressed debt funds, underwriting, corporate finance advisory, hedge funds, FoHFs, mutual funds, and placement consulting. It remains unclear whether the Goldman Sachs division pursuing PE was called 'merchant banking' division in dependence on the

origin of PE in European merchant banking activity (see chapter 2.1.1). Fact is that also The Carlyle Group called itself merchant bank in its formative years, Blackstone called itself investment bank and referred to its PE activities as the Blackstone Merchant Bank, overall adding evidence that the links between merchant banking activity and PE activity are perhaps stronger than might immediately appear.

A closer look on annual PE entry transaction values and transaction multiples in the years 2000 through 2009 suggest that purchase price multiples and debt multiples fluctuated with annual PE entry transaction values (see Figure 12).

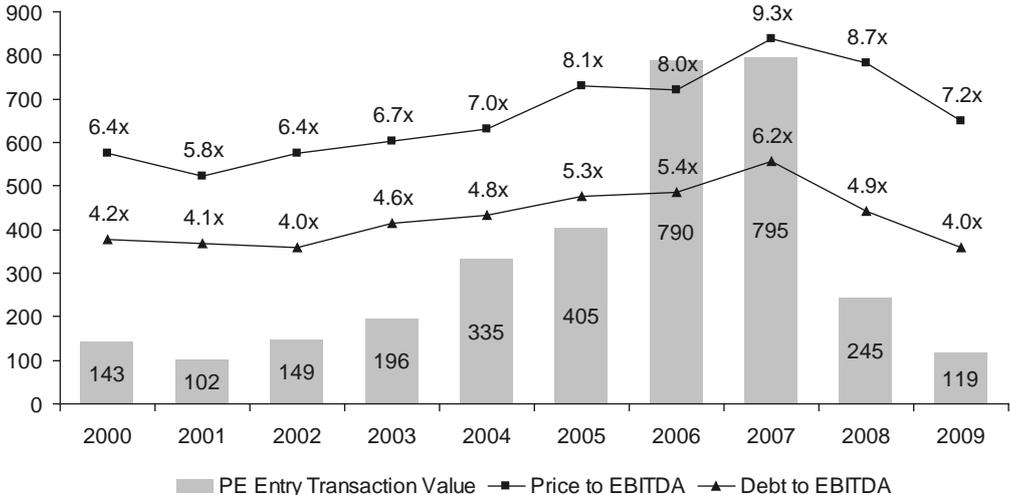


Figure 12: PE Entry Transaction Values and Transaction Multiples (2000-2009)

Note: Price (debt) multiple calculated using average purchase price (debt) of LBOs of \$500m or greater divided by EBITDA.
 Source: Dealogic, S&P LCD

In 2006 and 2007 purchase price multiples averaged 8.0x and 9.3x EBITDA, while debt multiples averaged 5.4x and 6.2x EBITDA, suggesting that in 2006 and 2007, on average, transactions were financed with 67.5% and 66.7% of leverage and with 32.5% and 33.3% of equity, respectively. In 2008 and 2009 purchase price multiples declined faster than debt multiples, and on average each transaction was financed with 56.3% and 55.6% of leverage, respectively. The decline in leverage required more equity per average transaction in 2008 and 2009, in fact 43.7% and 44.4%, respectively.

2.2.3 Credit Markets

The relationship between PE activity and leverage is naturally linked to credit markets. Credit is one of the most relevant factors of production for PE activity, notably for late stage and buyout funds. There is a widespread misconception that early stage investments are not leveraged, given that the leveraging simply does not occur on the investment level but on the investment vehicle level or further above. The relevance of credit markets is just more visible

through buyout activity, given the larger absolute value of leverage used in the buyout context. Like with any other production factor, the pricing of credit is a major factor driving PE activity. Figure 13 shows the pricing of investment grade and speculative grade US corporate bonds during the period 2003 to 2009, suggesting that credit markets virtually dried out in 2008 and early 2009.

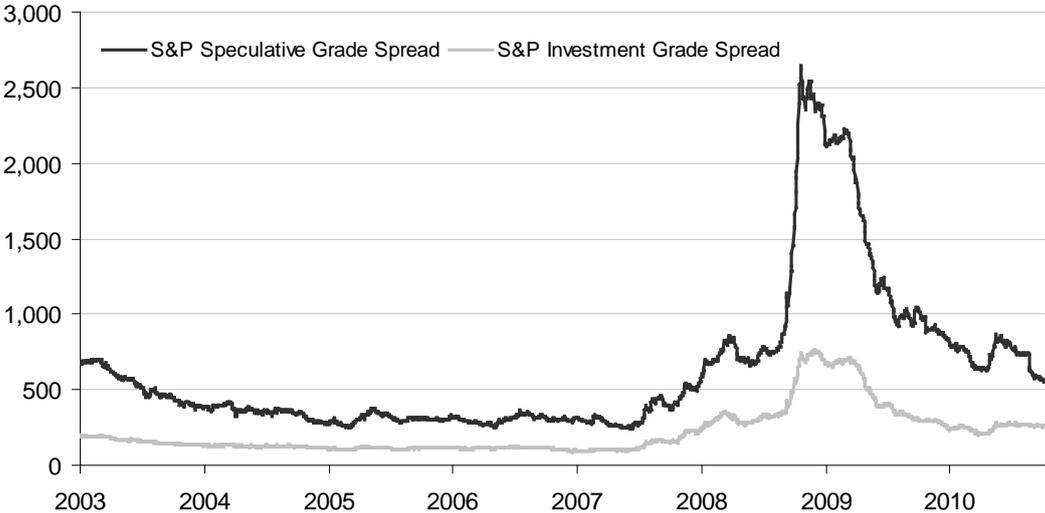


Figure 13: US Credit Spread over Treasuries
 Note: In BPS between January 10, 2003 and October 18, 2010 in bps
 Source: Bloomberg

The comparison of Figure 12 and Figure 13 illustrates the strong inverse relationship between credit pricing and PE activity. PE activity was in its strongest upswing during 2005, 2006, and 2007, which was also the period where credit priced below the long-term average. When in 2008 and 2009 credit pricing galloped, leverage to purchase price ratios declined, equity to purchase price ratios increased, and PE entry transaction value declined by 69% from 2007 to 2008 and by 51% from 2008 to 2009.

2.2.4 Exits

The term exit can be used interchangeably with divestment in the PE context. The limited investment period and finite lifetime of PE funds enforce exits. Some funds are also structured as ‘evergreens’, where this limited lifetime does not apply, however, a large majority of PE funds has to exit its investments in order to transform illiquid investments into liquidity for investors. Figure 14 shows annual PE divestment value in Europe during the period 2000 to 2009. Divestment activity was considerably higher in 2005, 2006, and 2007, than in the other years, suggesting that exit activity also fluctuates with PE investment activity.

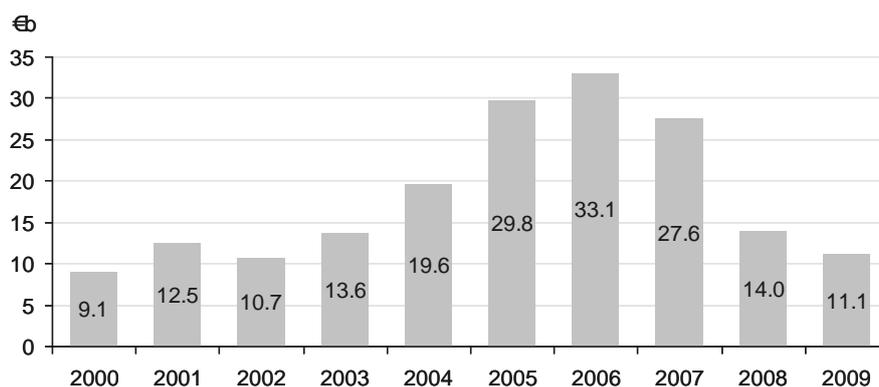


Figure 14: PE Divestment Value (Europe)

Source: EVCA

Exit activity typically fluctuates with overall investment activity in PE because the depth of major exit routes for PE investments is linked to both credit markets, fueling acquisition finance for trade sales or buy-backs, and to overall capital commitment to PE, fueling acquisition finance for secondary buyouts. Table 2 shows a breakdown of European PE divestment at investment cost by investment stage and by exit route in 2009. Write-offs excluded, trade sales were the primary exit route.

PE Divestment by Exit Route (Europe, 2009)	Early Stage	Late Stage
Trade sale	17.1%	21.9%
Write-off	25.3%	16.9%
Sale to management	8.5%	14.5%
Repayment of silent partnerships	24.4%	13.1%
Sale to another PE firm	6.2%	10.5%
Repayment of principal loans	6.6%	9.6%
Other means	4.8%	7.0%
Public offering	5.6%	3.5%
Sale to a financial institution	1.5%	3.0%

Table 2: PE Divestment by Exit Route (Europe, 2009)

Source: EVCA

Liquidity generated by divestments, net of management fees and carried interest, gets redistributed to investors. Once all investments backed by a particular PE fund were divested or written-off, the investment vehicle gets liquidated. Due to the illiquidity of PE investments, the final return on investment is typically unknown until the complete fund had been liquidated. Therefore investment performance estimates of non-liquidated PE funds have a tendency to enjoy more credibility the higher the payout ratio, i.e. the share of liquidated and paid-out investments of total fund value. Contractually agreed clawback provision can settle cash flows with retrospective effect in case the PE fund performance and carried interest have had been overvalued.

2.2.5 Performance

The average performance of PE fund vintages fluctuates inversely with PE capital commitment, an effect which was coined as the ‘money chasing deals phenomenon’ (Gompers et al. 2000). During years of higher capital supply to PE, valuations of PE investments have a tendency to increase which in turn negatively impacts returns. Figure 15 plots the net IRRs of PE funds by vintage during the forty years period 1970 to 2010.

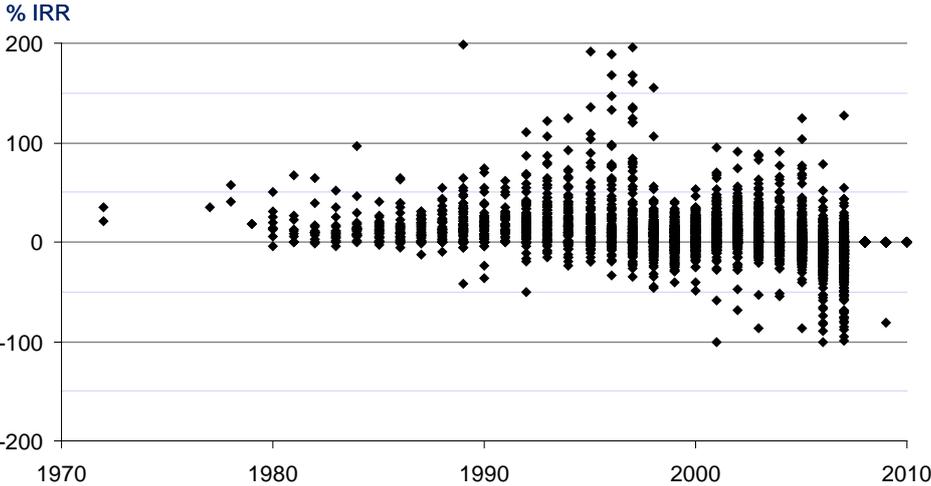


Figure 15: Performance of PE Funds by Vintage
Source: Preqin

In fact, the plot illustrates the performance cyclicality of PE funds with three downswings which occurred during time periods of PE capital supply upswings (see Figure 5). The plot also shows that the lower bound of the range of PE fund IRRs drops more into the negative with each cycle. While during the first performance downswing at the end of the 1980s few fund vintages fell below an IRR of 0%, during the second performance downswing about a third of PE vintages fell below an IRR of 0%. During the latest performance downswing more than half of the 2006 and 2007 vintages fell below an IRR of 0%. So even with some upward correction in asset valuations at a later point of time, the third downswing is expected to end up even more in the negative than the previous two. Although the 40 years cyclicality pattern of the performance of PE fund vintages suggests that the performance of post 2007 vintages may again turn around into an upswing at one point, it should also be noted there is still a considerable capital commitment overhang from the last upswing which yet needs to be put to work. This could create new inflationary pressure on purchase prices and in turn downward pressure on returns.

Taken together, the PE sector analysis shows that over the course of three cycles, the niche sector has evolved into a more mature segment in the investment management universe, comprising a growing variety of traditional and non-traditional PE activities which overlap into investment banking and asset management activity. The following section will complement the presented industry view with a synthesis of PE related academic knowledge.

3 Academic Knowledge on Private Equity

3.1 Synthesis of PE Literature

While the research scope of this thesis requires an understanding of PE related literature across all major building blocks of the PE model, the proliferation of PE literature makes it necessary to limit the scope of this section. Where various contributions share common themes, those synthesizing the overall gist are more exposed in this section, which also builds on existing PE related literature reviews (Fried et al. 1988; Fox et al. 1992; Barry 1994; Wright et al. 1998; Gompers et al. 2001; Hall 2002; Wiklund et al. 2006). Although the industry has rapidly grown and evolved since its formative years, a large share of PE literature is focused on the 1980s and early 1990s (Gompers et al. 2001). As laid out above, worldwide PE activity is still concentrated in the US and in Europe, determining also the regional focus of this review. Major sources of this review include journals,¹⁹ dissertations, studies from research institutes,²⁰ academic working papers, contributions in recognized books and studies from sources such as EVCA or NVCA. During the period October 2008 and August 2010 close to 300 sources were selected and synthesized. Both electronic and manual search techniques were used.²¹

In order to arrange the PE literature effectively a new cataloging scheme was developed, mirroring key components of the monolithic PE model (see Figure 16). A monolithic PE firm can be seen as an intermediary between investors (e.g. pension funds, insurance companies, UHNWIs, endowments) and investments (e.g. companies, projects). Five major research streams were arranged accordingly. The first stream ‘economic impact’ analyzes whether and when PE activity creates or destroys economic value and which drivers influence the development of the sector. The second stream ‘asset allocation’ covers capital allocation decisions. A third stream ‘design of monolithic PE firm’ comprises literature on PE firms’ ‘strategy’, ‘activities’, and ‘resources and characteristics’. Research related to governance in the PE context is covered by the ‘governance’ stream. Finally, the research stream ‘performance’ synthesizes literature on the performance of PE as an asset class, PE funds, and portfolio companies.

¹⁹ American Economic Review, Economic Policy, Financial Management, Journal of Business Venturing, Journal of Corporate Finance, Journal of Economics, Journal of Finance, Journal of Financial Economics, Journal of Management, Journal of Portfolio Management, Journal of Private Equity, Rand Journal of Economics, Strategic Management Journal, The Journal of Small Business Finance, Venture Capital.

²⁰ Babson College, CESifo Economic Studies, NBER – National Bureau of Economic Research, RICAPE – Risk Capital and the Financing of European Innovative Firms.

²¹ All sources were arranged based on the new scheme of PE research streams. Within each stream redundant contributions had been excluded.

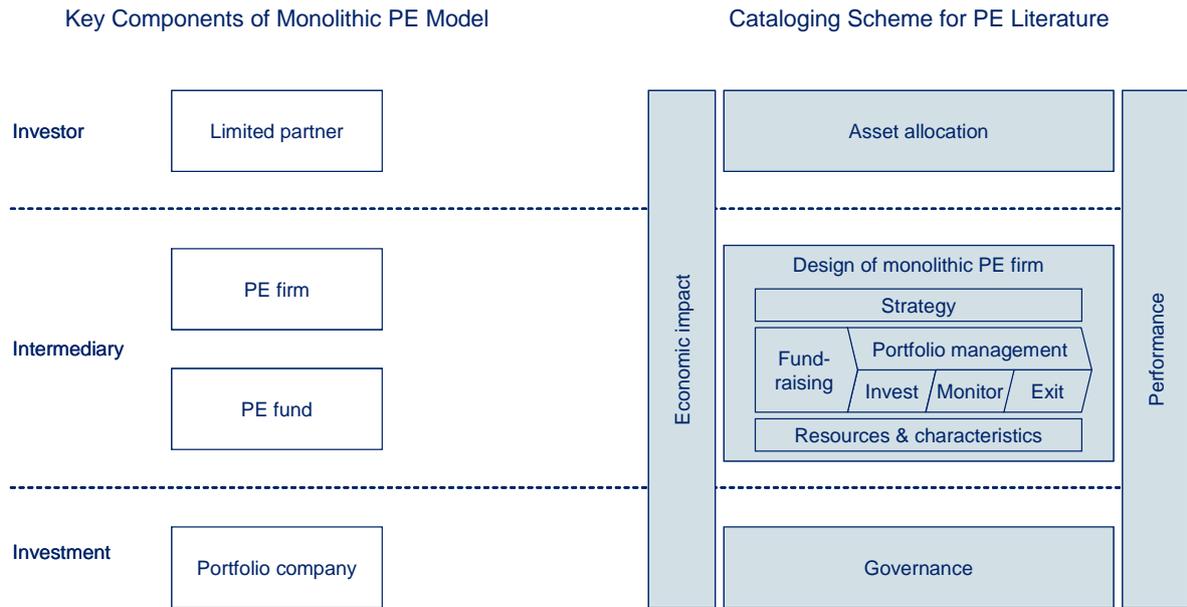


Figure 16: Cataloging Scheme for PE Literature

A breakdown of the PE literature body shows that almost 40% is concentrated in the areas ‘economic impact’ and ‘performance’ (see Figure 17). Assuming minimal selection bias, the breakdown implies that most research attention has had been dedicated toward these two areas. It seems that less research attention has had been dedicated to the PE firm itself, and also the body of asset allocation literature is surprisingly small.

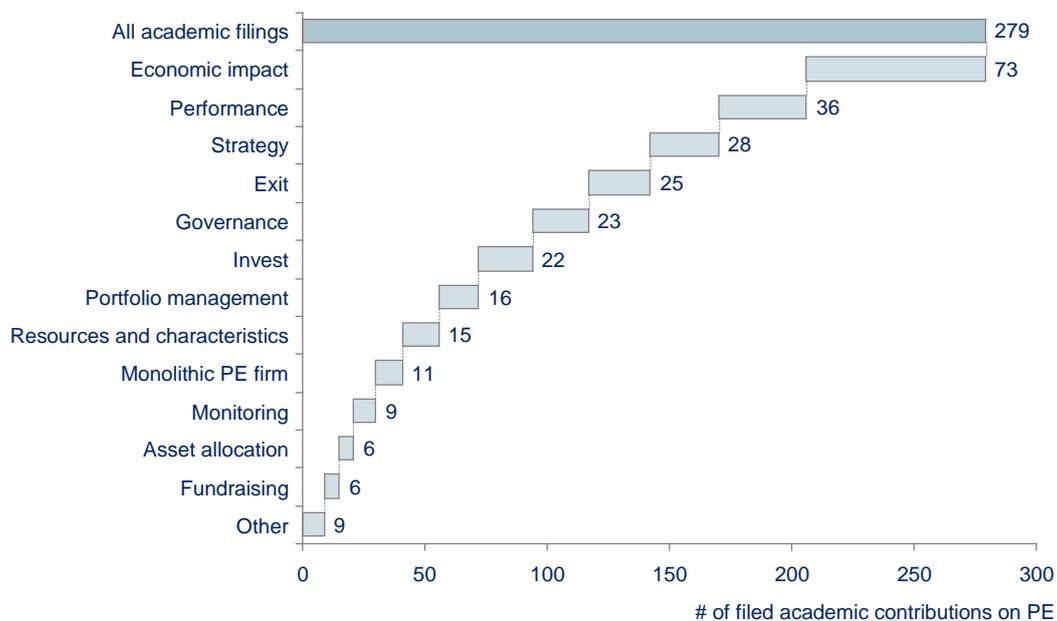


Figure 17: Breakdown of PE Literature by Research Area

The following sections synthesize PE literature along the new cataloging scheme. They offer an aggregated and holistic overview of what was known about the PE approach around 2010.

3.1.1 Economic Impact

The research stream ‘economic impact’ covers conceptual frames and PE’s influence on productivity, employment, and innovation. It comprises ten conversations (see Figure 18):

1. Market for corporate control
2. M&A view
3. Polarizing views of late 1980s
4. Controversial views of early 1990s
5. Financial policy and high leverage
6. Insider information
7. Wealth transfers
8. Demography of PE
9. Enablers for development of PE
10. PE impact on economy

The first two conversations framed early views of PE. The 3rd conversation comprised two polarized views, pro and contra PE. In the early 1990s, the 4th conversation got stuck in controversial evidence. During the 1990s research investigated the most controversially discussed matters, notably financial policy and high leverage (5th conversation), insider information (6th conversation), and wealth transfers (7th conversation). The 8th conversation, demography of PE, covers the sector’s development, subsequent research covers drivers of PE’s development (9th conversation), and the 10th conversation covers PE’s economic impact.

1st conversation: The initial design of conceptual frames concerning the economic role of PE was influenced by Manne who coined the ‘market for corporate control’ (Manne 1965). Two decades later, Jensen and Ruback synthesized the central concept of the market for corporate control and described it as “*an arena in which managerial teams compete for the right to manage corporate resources*” (Jensen et al. 1983, p. 5). Later it was argued that PE pioneers of the 1970s noticed inefficiencies in the market for corporate control in praxis and launched innovative financing techniques to account for its weaknesses (Thompson et al. 1992). The share of PE in the market for corporate control grew rapidly in the subsequent decades. Nevertheless, in spite of the sector’s unprecedented growth during the recent mega-buyout era, in 2007 the asset class still accounted for no more 2-3% of the worldwide investable universe, as laid out above (Idzorek 2007).

2nd conversation: It became generally accepted that the central concept of PE is about buying and selling of business assets, which is naturally closely linked to M&A literature. Early empirical M&A studies showed that in the short run, on average, M&A creates no abnormal returns for owners of acquiring firms and slightly positive abnormal returns for owners of acquisition targets (Mandelker 1974; Langetieg 1978; Malatesta 1983), while in the long run, on average, M&A creates substantial negative abnormal returns for acquirers and negative abnormal returns for targets (Mueller 1977; Malatesta 1983; Mueller 1985; Ravenscraft et al. 1989; Franks et al. 1991; Agrawal et al. 1992). Some evidence also

suggested that owners of target firms benefit from substantial positive abnormal returns due to M&A announcements, whereas announcements of decreasing M&A probability harm both owners of acquirers and of targets (Dodd 1980; Asquith 1983). At the end of the 1980s by and large the general consensus suggested that, on average, M&A activity destroys shareholder value. The legitimate question then is: how can PE firms, whose central concept is about M&A, ever create value?

In their quest for characteristics differentiating ‘good’ from ‘bad’ M&A transactions, researchers delineated M&A activity, and tested whether certain types of M&A transactions are superior to other transactions (Dosoung et al. 1983), whether better performing firms or firms with higher Tobin’s Q make better acquisitions, whether more value can be created in takeovers of poorly performing firms or firms with lower Tobin’s Q (Lang et al. 1989; Servaes 1991), and whether poorly performing firms make value destroying acquisitions (Lys et al. 1995). Often evidence remained inconclusive, except for the finding that post-merger performance is systematically related to opportunities and threats that shape the motives for M&A as reflected in pre-merger firm and industry characteristics, implying that value adding M&A transactions are those which allow to transcend mobility barriers and to combine corporate resources clustered along certain strategic dimensions, which deal ex-ante have had been separate (Philippatos et al. 1996).

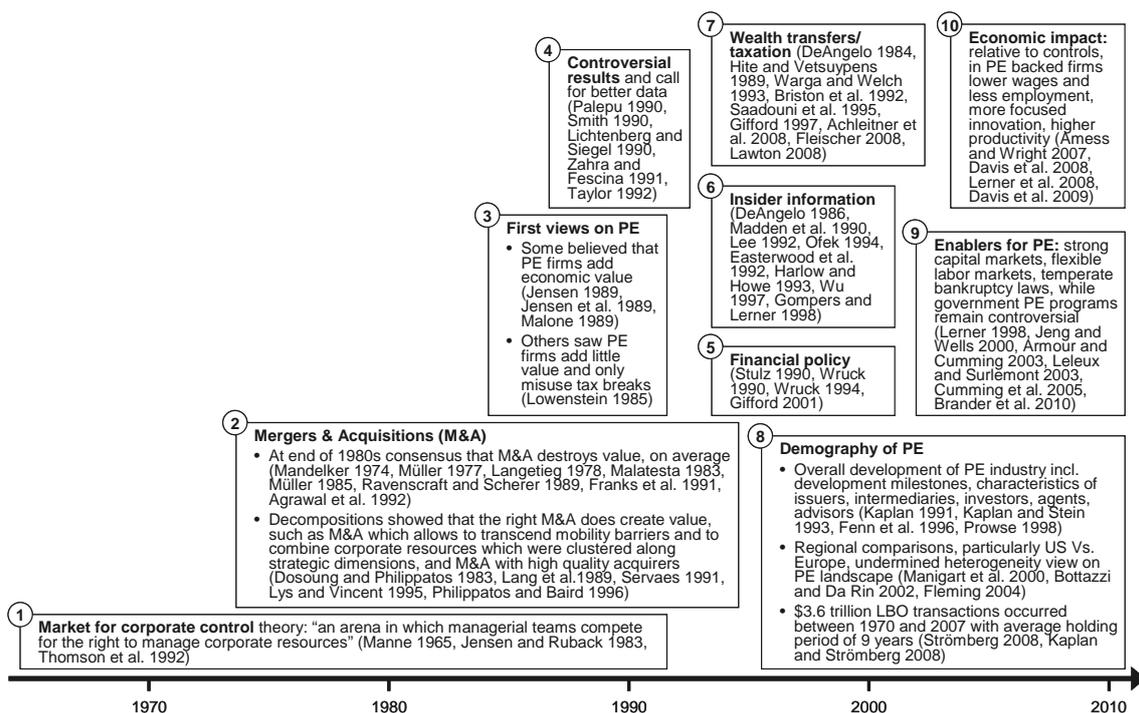


Figure 18: Conversations in Research Area ‘Economic Impact’

3rd conversation: The growth of PE activity in the late 1980s motivated first PE specific research, leading to two polarized views. PE proponents suggested that PE intermediaries are active investors who add economic value in generating corporate efficiency by stimulating

value enhancing growth, by decreasing unnecessary expenses and by facilitating a better utilization of free cash flow through better corporate governance (Jensen 1989; Jensen et al. 1989; Malone 1989). PE opponents argued that LBOs add little social value, that tax-breaks explain much of the shareholder wealth gains, that these wealth gains should not be confused with real gains, and that bidding auctions should be introduced as a standard to determine fairness opinions more objectively than using the ones provided by investment bankers (Lowenstein 1985; Lowenstein 1986). Kaplan found that in LBOs the median value of tax benefits had a lower bound of 21% and an upper bound of 143% of the premium paid to pre-buyout shareholders (Kaplan 1989b). Jensen compared reduced tax payments due to higher interest deductions on the higher debt (so called ‘tax shield’) and lower tax revenues on dividends foregone to positive tax effects from increased capital gains for shareholders, increased operating revenues, higher interest income earned by leveraged buyout creditors, more efficient use of capital, and asset sales triggering additional corporate taxes on the capital gains, and concluded that the US Treasury’s net revenues from LBOs have actually increased (Jensen et al. 1989).

The high emphasis on cash flow supposedly made PE backed companies extremely fierce competitors, though at the same time concerns emerged about the long-term viability of highly leveraged companies, which at the end of the 1980s yet had to face a severe economic recession (Malone 1989).

4th conversation: Anyone entering the PE debate at the brink of the 1990s would have to conclude that it is virtually impossible to assess objectively whether PE should be fostered or put to a halt. New studies provided another string of controversial results, while the general consensus suggested that the inconclusive results call for more research attention and better data (Lichtenberg et al. 1990; Palepu 1990; Smith 1990b; Smith 1990a; Zahra et al. 1991; Taylor 1992). Subsequent research in the 1990s branched out into three major conversations: financial policy (5th conversation), insider information (6th conversation), and wealth transfers (7th conversation). Figure 19 visualizes the flow of the first conversations on PE.

5th conversation: The rapidly growing amount of corporate assets backed by LBO associations triggered investigations about cost and benefits of leverage and about the influence of financing policy on managerial decisions. Financing policy impacts agency cost of managerial discretion, existing when management values investments differently than owners and when management has information that owners do not have (Stulz 1990).

Financial policy can optimize the maturity of a firm’s debt, reduce cash flow volatility, and reduce cash at management’s discretion, aligning interests between managers and owners. Leverage to the extent of financial distress can trigger a process of corporate revitalization. Empirical evidence showed that financial distress triggers changes in strategy and organizational structure, a process that can create long-term value for owners (Wruck 1990).

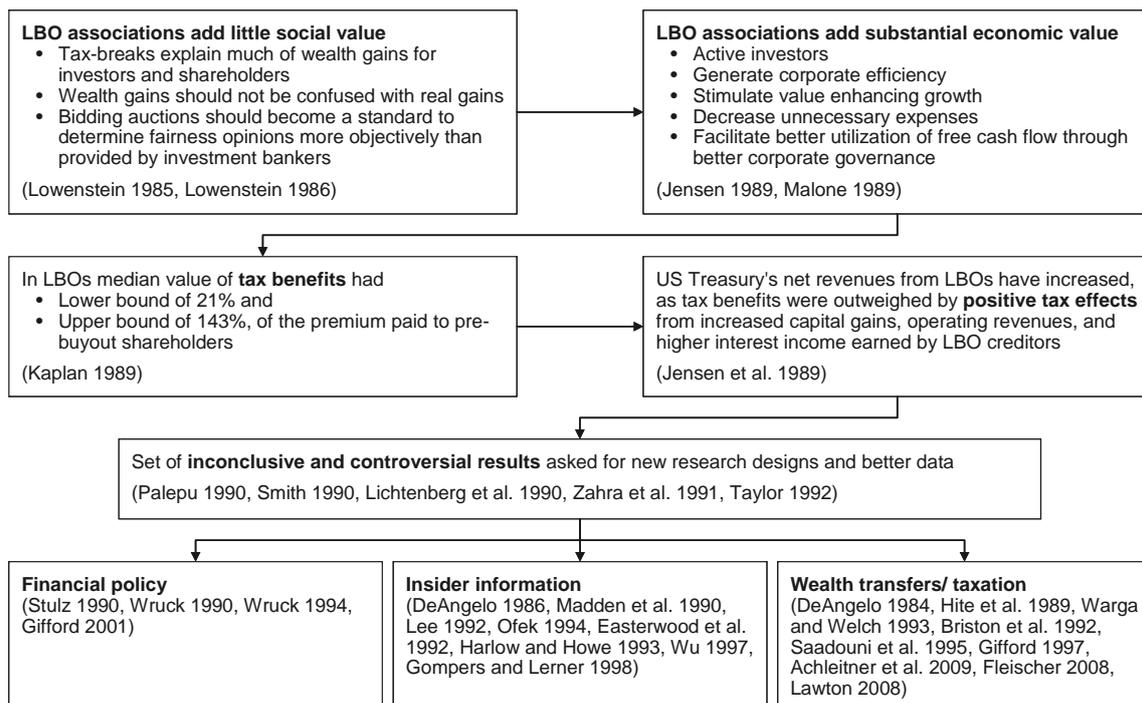


Figure 19: First Conversations on PE

In some cases financial policy as a catalyst for corporate revitalization became even more effective when combined with appropriate governance structure and compensation policy. For example, active investors such as Warren Buffet demonstrated that the PE approach can play an important role in the process of transforming large bureaucratic corporations into leaner and more effective and more competitive corporations (Wruck 1994). Though leverage can add value, the optimal leverage is not necessarily always the highest gearing allowed by the regulatory regime. When companies take on too much debt, their investment decisions get distorted. Management then typically begins to favor divisions that produce cash over those that have the potential to generate higher value in the longer term (Gifford 1997).

6th conversation: Concerns arose on the misuse of insider information within the context of PE transactions. In the buyout context management often had both the fiduciary duty to negotiate a fair value of company shares and at the same time was involved in the purchase of these shares. Conflicts of interest arose and common valuation methods gave inside-managers the incentive to manipulate accounting decisions in order to understate reported earnings prior to the PE transaction. Some evidence suggested that inside-managers actually do not systematically understate earnings, based on comparisons of successful and unsuccessful MBOs which unveiled that withdrawn MBOs showed no increase in operating performance following the buyout attempt, confirming that improved operating efficiency after successful buyouts is not necessarily driven by information advantages of inside-managers (DeAngelo 1986; Madden et al. 1990; Lee 1992; Ofek 1994). However, contrary evidence suggested that substantial conflicts of interest do exist during PE deals by showing that returns to pre-buyout shareholders are greater when managers must bid against outside acquirers (Easterwood et al.

1994), and by showing that LBO offers by a bidding team that includes members of management are preceded by significant abnormal net buying by insiders (Harlow et al. 1993).

The again, based on a different research design and dataset than the one used by DeAngelo in 1986, Wu found that earnings changes for MBOs are significantly lower than the industry median change in the year prior to the MBO and that preannouncement declines are specific to MBOs, suggesting that inside-managers do manipulate earnings downward prior to the MBO announcement, with an estimated potential benefit from earnings manipulation of \$50m per each MBO transaction on average that occurred in the 1980s (Wu 1997). Gompers and Lerner showed that early stage PE firms also use inside information to time stock distributions, offering additional evidence that PE in fact represents a legal form of insider trading (Gompers et al. 1998a).

7th conversation: Concerns also arose with respect to wealth transfers in the LBO context, especially among minority shareholders and bondholders. Controlled investigations of this matter suggested that going-private transactions do not result in the systematic exploitation of minority owners (DeAngelo et al. 1984). Although some evidence implied that bondholders do experience wealth losses during LBOs, cross-sectional regressions unveiled that LBOs with the highest equity gains were only weakly related to LBOs with the highest bondholder losses (Warga et al. 1993). While some argued that MBOs of divisions create wealth by efficiently reallocating corporate resources to higher valued uses (Hite et al. 1989), others criticized that the management team is simply able to negotiate a price enabling them to acquire assets at a price lower than the current market value to the parent or lower than the expected market value to an outside buyer (Briston et al. 1992; Saadouni et al. 1995).

Gifford suggested that the allocation of wealth in the PE deal context is socially optimal, maximizing both the entrepreneur's and the investor's expected value of the venture (Gifford 1997), while more recent evidence showed that PE deals generate positive wealth effects of 6% for target owners around the event day, that these wealth effects are positively related to the target's tax liabilities and degree of undervaluation, and that they are negatively related to the target's leverage (Achleitner et al. 2009a).

More recent debates also cover wealth transfers between GPs and LPs, and between GPs and governments. At the time of writing, de facto industry standards such as 'two-twenty' were under immense pressure, as well as regimes allowing for the taxation of PE partnership profits as long-term capital gains. Reform proposals were designed which try to strike a balance between treating returns on human capital as ordinary income and rewarding entrepreneurial activity, while other designs suggested that PE partnerships are economically analogous to corporations and hence PE partnership profits should be taxed as stock options (Fleischer 2008; Lawton 2008).

8th conversation: From the 1990s onward, researchers increasingly became interested in the demography of the sector. Covering the period between 1946 and 1995, Fenn provided an overview of the PE industry, summarizing major development milestones, characteristics of major issuers, intermediaries, investors, agents, and advisors, and returns of PE investments

(Fenn et al. 1995). Prowse published a related view on the economic foundation of PE and its institutional structure (Prowse 1998).

Demography studies covering the 1980s often investigated the organizational status of LBOs and changes in pricing and structures. Kaplan investigated LBOs of the period 1979 to 1986 and found that the median duration a company in LBO status was 6.8 years, leading to the view that LBOs are transitory organizational forms with a longer-term investment horizon (Kaplan 1991).

Covering LBOs of the period 1980 to 1989, Kaplan and Stein tested whether the PE market was overheated, and presented six findings. First, price to cash flow ratios increased over the 1980s. Second, prices were systematically higher in junk bond financed deals. Third, increased deal prices were accompanied by investments in riskier industries. Fourth, banks accelerated required principal repayments. Fifth, junk bonds increasingly replaced subordinated debt after 1985. Finally, management and investment banks were increasingly able to take out more money upfront. Overall this evidence confirmed the 'overheating phenomenon' of the PE market in the 1980s (Kaplan et al. 1993).

While contemporary PE was by and large a US phenomenon in the 1980s, its rapid expansion in Europe in the 1990s triggered comparisons between the two regions (Manigart et al. 2000; Bottazzi et al. 2002). In spite of its rapid expansion in Europe, incremental new sums of capital committed to European PE were smaller relative to incremental new sums in the US. Explanations were inconclusive. Some argued that Europe lacked the supply of funds rather than capital demand being low, while others argued that the European PE market had rather an undersupply of human than of financial resources. Additional evidence substantiated the latter view, showing that European early stage GPs typically provide more money than advice, relative to their US peers, and that their major ability is to structure companies' births as opposed to human capital intensive monitoring (Bottazzi et al. 2003). Other studies on the regional heterogeneity of the PE sector unveiled that the application of PE ratios as a valuation method is more important in Europe relative to the US, that who you know and who you are is more important in network based economies relative to market based economies, and that investors in countries with more mature PE markets rely more heavily on own reports and capabilities rather than using external advisors (Manigart et al. 2000). Taken together, the current general consensus suggested that the PE landscape is highly heterogeneous across various regions (Manigart et al. 2000; Bottazzi et al. 2002; Bottazzi et al. 2003; Fleming 2004).

One of the most comprehensive studies on the demography of PE was sponsored by the World Economic Forum (WEF) in 2008, in which Strömberg showed that of the \$3.6tr LBOs during the period 1970 to 2007 about \$2.7tr occurred between 2000 and 2007, that the median investment duration of LBOs closed in the same period was 9 years, and that portfolio companies backed by more experienced GPs typically show three characteristics. First, portfolio companies stay in LBO ownership for a shorter time. Second, portfolio companies are more likely to go public. Third, portfolio companies are less likely to end up in bankruptcy or in financial distress. Strömberg, jointly with Kaplan, compared boom and bust

cycles of PE and speculated that after the sector's peak in 2007 fundraising and investment activity would decline, though that the post 2007 downturn would be less severe than the post 1980s downturn, assuming less fragile capital structures and more sophisticated GPs (Kaplan et al. 2008). Others came up with more pessimistic scenarios, suggesting that 20% to 40% of PE firms will disappear (Meerkatt et al. 2008). By and large, at the end of the 2010s the general consensus suggested that a substantial part of PE growth would be permanent (Kaplan et al. 2008; Meerkatt et al. 2008).

9th conversation: Based on growing agreement that the right PE activity can create economic value, at the brink of the 21st century academic research increasingly started to investigate drivers enhancing PE activity. Jeng and Wells analyzed the drivers of PE activity in 21 countries in the period 1986 to 1995 and found that strong IPO markets are a significant driver of late stage PE investing, while early stage PE activity is negatively impacted by labor market rigidities (Jeng et al. 2000). A related research area covered causalities between the supply of government funds and PE, suggesting that in Europe government venture capital increases when the overall economic situation is negative, and when the supply of private venture capital has had been smaller in previous years (Manigart et al. 2001). While some evidence suggested that government PE programs can be an effective supplement to early stage PE activity (Lerner 1998), contrary evidence showed that government PE programs actually can hinder PE activity (Leleux et al. 2003; Armour et al. 2006).

Related investigations also emphasized that the legal environment matters as much as the strength of the stock market, and that temperate bankruptcy laws stimulate entrepreneurial demand for venture capital (Jeng et al. 2000; Armour et al. 2006; Cumming et al. 2006). Some suggested that the development of the European PE market could be enhanced by emulating organizational and contractual patterns of the US PE market, notably the limited partnership form offering benefits for investors as a major prerequisite for the development into a mature PE market (McCahery et al. 2004). Based on a model that examined how macroeconomic conditions, technological opportunity and the entrepreneurial environment affect PE activity, a study with data from 16 OECD countries suggested three major findings. First, early stage PE is pro-cyclical and fluctuates with GDP growth. Second, technological opportunity such as the growth rate of R&D investment, the available stock of knowledge, and the number of high-value patents significantly influence early stage PE activity. Third, labor market rigidities hinder early stage PE activity. Some suggested that in order to effectively change the determinants of PE activity, most notably early stage PE activity, it is necessary to change structural policies with respect to education and labor markets in first place (Romain et al. 2004).

10th conversation: Whereas the previous conversation focused on drivers of PE activity, this conversation covers the impact of PE activity on the economy. Recently a string of studies shed light on this matter. Manigart showed for early stage PE that when the density of firms (portfolio companies) in a sector is low each new founding eases new ventures, given that the simple prevalence of a species tends to give it its own legitimacy. However, once enough firms of a certain species exist, legitimacy advantages hit a ceiling, and as the number

of organizations increases further a second process dominates, notably the competition for resources, leading to a negative relationship between the density and the founding rate (Manigart 1994). Research on late stage PE activity showed that PE in general plays an important role as a financial intermediary in capital markets (Jones 2006).

LBOs appear to have an insignificant effect on employment growth, although LBOs substantially lower wage growth relative to controls (Amess et al. 2007). In a related study, also sponsored by the WEF in 2008, Davis showed empirically that PE targets exhibit lower rates of net employment growth in the years before the takeover year, of the takeover year, and immediately after the takeover year. In year two and three after the takeover, PE backed firms have lower net job growth relative to control establishments. In years four and five after the transaction net job growth in PE backed firms is slightly above controls, and PE backed 'greenfield' companies generally have a higher job creation rate. During the five years after the takeover, net job growth of PE backed companies is 10% below net job growth of controls. Yet PE backed firms create roughly the same amount of new jobs relative to controls. The lower net job growth is due to a higher job destruction rate in PE backed companies relative to controls, given that PE backed firms streamline presumably unprofitable segments faster than non-PE backed firms.

Contributing to the same research initiative of the WEF in 2008, Lerner showed empirically that in terms of impact on innovation, the quality and quantity of patenting does not consistently change after the PE investment. However, patent portfolios of PE backed companies seem more focused and more concentrated on portfolio firms' core capabilities.

Sponsored by the second large PE research initiative of the WEF in 2009, Davis analyzed productivity of PE backed firms and showed that an intensification and reallocation of jobs and establishments in PE backed firms yields a positive incremental productivity differential of about 2% within two years following the PE transaction relative to controls. Davis estimated that in the US manufacturing sector this PE driven productivity differential created an incremental productivity yield of about \$15b between 1980 and 2005.

3.1.2 Asset Allocation

The research stream 'asset allocation' synthesizes research on the amount of capital investors should allocate to PE and about criteria indicating superior GPs (see Figure 20). It became generally accepted that PE as an asset class is part of the wider universe of alternative investments. Alternative investments comprise asset classes such as hedge funds, real estate, physical commodities, currencies, interest rates and natural resources.

Bance presented PE's position in the larger universe of asset classes, outlined types of investors, and synthesized arguments for and against PE as an asset class (Bance 2002). His string of pros included long-term historical outperformance, true stock-picking in a low growth environment, absolute returns, diversification to improve risk and volatility characteristics, scope for growth, exposure to smaller companies, access to legitimate inside

information, ability to gain exposure to the most entrepreneurial sectors of the economy, and ability to make efficient use of leverage. His list of cons included long-term investment horizon of three or more years with an inherent liquidity risk,²² increased resource requirements as a result of the active investment style, a wide degree of discretion of GPs, and rare opportunities to be excused from a particular portfolio investment after the fund has had been established. In fact, around the millennium the illiquidity of PE as an asset class triggered the development of a secondary market for PE (Daniels 2004).

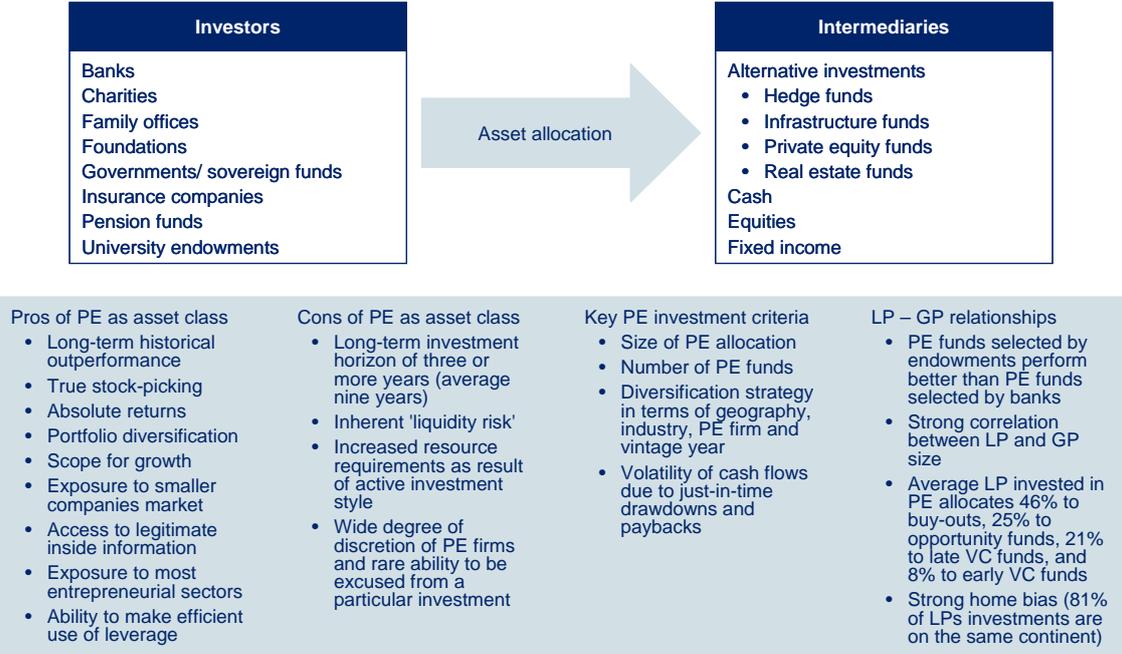


Figure 20: Major Topics in Conversation ‘Asset Allocation’

Xu showed a breakdown of PE investor types such as banks, charities, family offices, foundations, sovereigns, insurance companies, pension funds, and university endowments, and also investigated the attractiveness of various PE vehicles from an investor’s perspective (Xu 2004). Concerning capital allocation it was suggested that for investors with an average risk tolerance an allocation to PE of less than 3% can be considered underweight, while allocations of more than 10% should be applied only by savvy investors with access to the best GPs (Idzorek 2007).

In addition to the size of the PE allocation, Bance also suggested that several key investment criteria are relevant for investors in PE, such as choice of GP, number of PE funds, investment stage, investment region, investment size, and investment sector, vintage, and volatility of cash flows (Bance 2002).

²² Daniels investigated the illiquidity of PE and emphasized four prerequisites for the development of a secondary PE market. First, partial standardization of reporting to investors, second, development of standardized valuation methods, third, development of standardized partnership agreements, and fourth, introduction of a funds rating (Daniels 2004).

Investors choose between direct and indirect investments in PE funds, while FoFs cater for the second route. Lai investigated FoF related data and showed that on average FoFs do not deliver superior returns. What makes FoF attractive is the feature that they allow smaller investors to ‘scale upward’ by providing indirect access to multiple PE funds, and they also allow larger investors to invest sizeable amounts over a short period by spreading capital across multiple funds. Lai’s data also implied that investors who use FoFs are more likely to have weaker governance structures, and that some investors use FoFs to gather experience in new domains (Lai 2006).

More recent research covered relationships between investor types, GP types, and fund performance. Empirical evidence showed that PE funds selected by endowments realized superior annualized returns relative to PE funds backed by other investor types. PE funds selected by banks and pensions funds performed particularly poor: the more banks and corporate pension funds were invested in a fund, the poorer its performance (Lerner et al. 2007). Related research showed that a strong correlation exists between LP and GP size, that the average LP allocates 46% of PE investments to buyout funds, 25% to opportunity funds, 21% to late VC funds, and 8% to early VC funds, that endowments and family offices are overexposed to opportunity funds, and that a strong home bias exists given that 81% of LP investments are being made to PE funds who are managed by GPs headquartered on the same continent (Hobohm 2008).

3.1.3 Design of the Monolithic PE Firm

The research stream ‘design of monolithic PE firm’ covers academic research on the PE firm level. It comprises three research blocks: ‘strategy’, ‘activities’ and ‘resources and characteristics’ (see Figure 16). Literature on each of these blocks will be synthesized further below, while this introductory section covers research which spans across all three blocks.

Recognizing major research contributions on the PE firm level, it appears legitimate to suggest that principal agent view and strategic innovation view were established as the two prevailing conceptual frames for the existence of PE entities. Figure 21 links each view to respective implications for PE.

Ever since the 1970s, principal agent view offered the primary conceptual frame for the analysis of PE entities. Principal agent view is well known in the field of management science. Individuals and firms often demand resources for projects whose qualities are unknown to suppliers of resources. Information asymmetries between principals (e.g. investors) and agents (e.g. management) often create financing hurdles, while financial intermediation (e.g. PE activity) can be seen as a natural response to overcome these hurdles. Empirical research confirmed that PE entities can realize cost savings through the elimination of information asymmetries between owners and management, traditionally by reducing agency cost often occurring in public corporations (Leland et al. 1977; Torabzadeh et al. 1987; Duffner 2003).

	Principal Agent View on PE	Entrepreneurial View on PE
Description	<p>Information asymmetries between principals (investors) and agents (management) create financing hurdles</p> <p>(Financial) intermediation is the natural response to overcome these hurdles</p>	<p>Successful organizations institutionalize strategic innovation through appropriate structure, processes and culture</p> <p>Managers of established organizations often have heavy resistance to change</p>
Implications for PE Activity	<p>Cost savings realized through elimination of information asymmetries</p> <p>Elimination of agency cost and transaction cost which usually occur in public corporations</p>	<p>PE transactions are catalysts for strategic innovation and organizational renewal</p> <p>PE often drives adoption of new reward systems and commitment-oriented policies</p>
Literature	Leland et al. 1977, Torabzadeh et al. 1987, Duffner 2003	Markides 1997, Markides 1998, Wright et al. 2001, Bacon et al. 2004

Figure 21: Principal Agent View and Entrepreneurial View on PE

The entrepreneurial view was added in the late 1990s as a second view on PE. The entrepreneurial view was influenced by Markides who defined ‘strategic innovation’ as the common habit of companies that successfully established or strengthened their competitive position (Markides 1997). Firms who become and remain successful presumably know how to institutionalize strategic innovation by establishing the appropriate organizational structure, processes, and culture, while managers of established companies often develop a heavy resistance to change once they have reached a certain level of comfort. The essence of entrepreneurial view in the corporate context can be summarized by the words of Markides who emphasized that successful strategic innovators have a specific mindset that encourages the ongoing dissatisfaction with the status quo (Markides 1998).

Wright brought the entrepreneurial view into the PE context, emphasizing that GPs can unlock upside growth through regional or product expansion rather than through cost reduction and efficiency improvements. This conceptualized new buyout types as catalysts for strategic innovation and organizational renewal (Wright et al. 2001). Subsequent research further substantiated this view by showing that corporate involvement of PE entities often leads to the adoption of new reward systems, more commitment-oriented employee policies and expanded employee involvement (Bacon et al. 2004).

Principal agent view and entrepreneurial view are not mutually exclusive. Empirical evidence showed that both views can apply in tandem. Butler observed superior performance of PE backed companies in the chemicals sector relative to controls, and identified levers of PE firms’ value creation comprising both principal agent view and entrepreneurial view. According to Butler PE firms in his sample created value by improving operations, by focusing on projects that offer a reasonable chance of return in the short-term and medium-term, by emphasizing growth, by focusing on specific sub-sectors, by having a longer term

investment horizon, and by possessing superior negotiation skills combined with a dispassionate and rather fact-based approach (Butler 2001).

One of the most comprehensive academic compendiums on value creation within the PE context was synthesized by Loos (Loos 2005). According to Loos two endogenous factors determine the value creation potential of a PE firm, notably higher education of investment professionals and previous professional experience in corporate management functions or in other PE firms. Lower education or prior professional experience in other areas, notably accounting, showed adverse effects on returns, on average.

Other overarching contingency variables determining the value creation potential of the PE firm include the size of deals, as well as cultural and institutional differences (Lockett et al. 2002; Nikoskelainen et al. 2005).

As laid out above, the following sections correspond to three major research blocks which constitute the primary pillars of the ‘design of the monolithic PE firm’ (see Figure 16). The cataloging logic builds on the business design approach which Berg developed specifically for PE associations (Berg 2005). The business design focuses on describing the PE firm through its ‘strategy’, ‘activities’, and ‘resources and characteristics’. The block ‘strategy’ covers literature on the definition of the firm, notably general management decisions on the arena or market in which corporate management wants to compete (Abell et al. 1979; Ansoff 1979; Day 1981; Geroski 1998; Berg 2005). The block ‘activities’ describes the product, services and information flows of the firm and is framed by the value chain analysis, suggesting that a business entity has to perform a number of interconnected activities to satisfy the needs of stakeholders (Porter 1985; Stabell et al. 1998). Finally, ‘resources and characteristics’ frame the basis for the activity systems of a business entity, comprising tangible and intangible resources, and also characteristics of the parent such as mental maps, people, and skills (Wernerfelt 1984; Goold et al. 1994; Barney et al. 2001; Collis et al. 2008).

Research Block: Strategy

Synthesizing PE related literature on general management aspects of the PE entity, the research block ‘strategy’ comprises three conversations:

1. Mission of PE
2. Strategic dimensions
3. Strategic patterns

The 1st conversation covers academic contributions concerning the fundamental role and mission of the PE firm. The other two conversations synthesize academic knowledge about major strategic dimensions of the PE firm and known strategic patterns.

1st conversation: The fundamental role and mission of the PE firm is more complicated than might appear. It has been argued that the public corporation has outlived its usefulness notably due to misalignments between corporate management and owners, and that PE firms

represent ramparts of new entities which will more effectively manage corporate resources (Jensen 1989). This revolutionary mission of PE never quite caught on.

A more temperate evolutionary view suggested that PE will influence the public firm, which eventually will undergo a program of radical reforms including innovative approaches on compensation of executives and corporate governance (Rappaport 1990). Consensus supported the latter view, picturing the mission of the PE firm as a corporate catalyst, actively seeking and rejuvenating undermanaged businesses being in lack of strategic focus, efficient corporate governance, effective fiscal policy, and overall being in need of intensive care for a certain period (Barber et al. 2007; Achleitner et al. 2009b). Although the catalyst mission of PE dominated the prevailing view, research challenging the dichotomy between the PE entity and the undermanaged businesses has been growing.

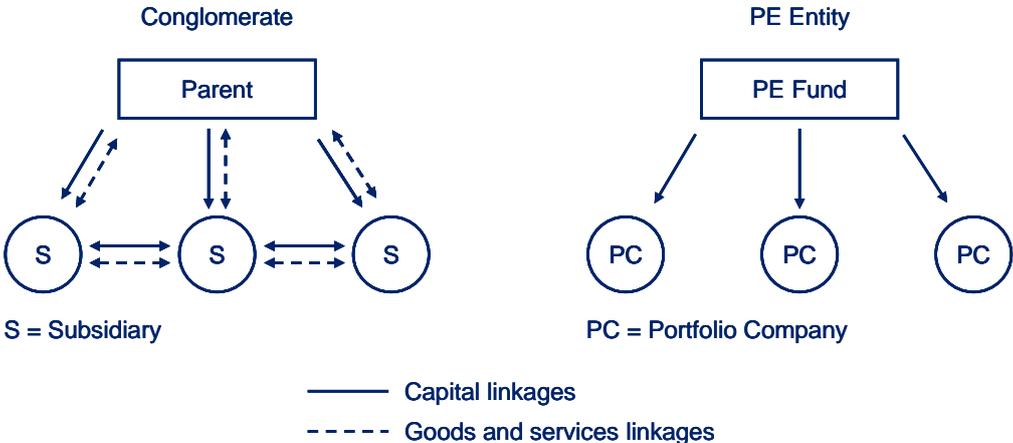


Figure 22: Conglomerate and PE Entity
 Source: Achleitner et al. (2008), p. 26

From the outset conglomerates and PE entities look increasingly similar (see Figure 22), and recent research comparing PE organizations with other organizational forms implies that the fundamental role and mission of PE is perhaps not as linear as might appear (Achleitner et al. 2005; Barber et al. 2007; Achleitner et al. 2008; Baker et al. 2009; Klier 2009). Overall the literature is puzzling, not to say confusing.

Research on links and differences between PE funds and hedge funds is inconclusive. Some argued that certain criteria distinguish these two forms and that specific factors determine the likelihood of potential targets to become involved with a PE fund vs. a hedge fund (Achleitner et al. 2005; Achleitner et al. 2009b), while others observed that the two forms are converging with respect to investment type and investment structure (Povaly 2006).

The comparison of the conglomerate and the PE entity, as illustrated in Figure 22, suggests that the distinguishing feature of portfolio companies is that they are managed as separate and stand alone entities, which can avoid asset shifting risk, intra-group profit risk and capital structure risk (Achleitner et al. 2008). However, growing forays of PE firms into conglomerate-like activities such as buy and build strategies, platform strategies, or

purchasing bundling initiatives across portfolios, imply that the stand-alone feature is not so distinguishing anymore, suggesting that Figure 22 may have already outlived its usefulness.

In fact, it was argued that the only distinguishing feature between the conglomerate and the PE entity is PE's regular divestment activity, providing a high powered incentive mechanism which is not available to conglomerates (Barber et al. 2007; Baker et al. 2009). Taken together, literature suggests that the two organizational forms will increasingly converge as their economic functions are very similar.

2nd conversation: Strategic dimensions establish coordinate systems for strategy analysis. PE literature emphasizes four strategic dimensions for the PE firm: investment duration, investment stage, investment region, and investment sector (see Figure 23).

Not only for practitioners but also for regulators the dimension 'investment duration' constitutes a relevant distinguishing factor for assessing the pursuit of an entity, with two distinct thrusts: 'buy to keep' or 'buy to sell'. Due to the finite life-time of PE funds, 'buy to sell' is the dominating strategic thrust of the traditional PE firm (Barber et al. 2007). However, it also seems conclusive to see the investment duration between the buy event and the sell event rather as a continuum. While the PE fund overlaps with the hedge fund on the short end, the PE firm overlaps with the conglomerate on the long end. Empirical evidence showed positive correlations between shorter investment duration and larger buyouts, buyouts from the public sector, fast changing market conditions and higher IRR thresholds (Wright et al. 1993; Wright et al. 1994).

The second major strategic dimension for the PE firms is 'investment stage'. Between the 1950s until the early 1990s, PE firms typically focused on either VC or on LBO activity. Though the economic functions of both forms are very similar, the separation is deeply embedded in a cultural gap, documented by open cynicism of VCs toward 'conservative', 'risk averse', and 'rapacious' late stage capitalists (Murray 1994). In spite of substantial capital commitments to PE as an asset class the share of VC remained small (Murray 1999), and more recent evidence showed that some complementarities do exist in areas such as co-investing in deals, sequential investing in ventures, and deal referral (Harrison et al. 2000).

The third strategic dimension covers 'investment region'. The PE firm has to decide which regions it wants to penetrate and it also has to face the challenging strategic question to what extent it can leverage benefits from global integration while staying regionally responsive (Rugman 2001). A study comparing the US with the European PE market over the period 1974 to 2002 found some convergence between the two regions, yet the data indicated that major national markets will remain segmented for the foreseeable future (Megginson 2004). Some evidence indicated a positive correlation between the appetite of the PE firm to invest overseas and the size of the PE firm (Hall et al. 2003; Lossen 2006).

Finally, the fourth strategic dimension covers strategic choices of the PE firm with respect to 'investment sector'. While research in this area is still nascent, some evidence showed that sector focus is higher in earlier financing stages relative to later financing stages, given that the monitoring intensity is typically higher in earlier financing stages (Norton et al. 1993; Lossen 2006).

Depending on the sector focus, the PE firm needs to make strategic investments into domain expertise. For example, empirical evidence showed that the value creation of PE firms focused on the financial services sector depends mostly on operational improvements, given the high leverage of targets prior to the takeover, and therefore these PE firms need to develop quite distinct domain expertise to create value (Graf et al. 2009).

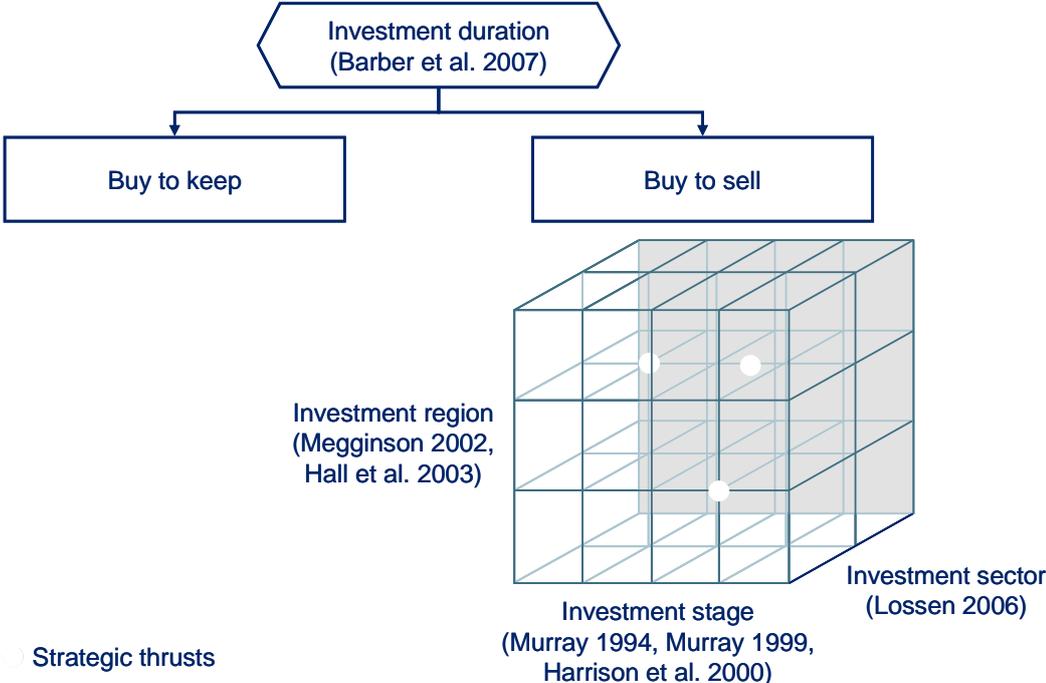


Figure 23: Strategic Dimensions of the PE Firm

3rd conversation: Academic literature on strategic patterns of PE firms exists, though overall the knowledge base can be described as nascent (Chaplinsky et al. 1998; Jakoby 2000; Wright et al. 2000a; Wright et al. 2001; Hellmann 2002; Berg 2005; Knyphausen-Aufseß 2005). Some argued that it may be rather simplistic to investigate PE without an educated differentiation of distinct strategic patterns and that there is a need to consider the variety of forms that the PE concept takes in practice (Wright et al. 1995).

The critique on the homogeneity view is not restricted to academic research. In spite of increasing rivalry between PE firms in the 1980s and 1990s, the overall PE industry was characterized by a near absence of product and services differentiation between most competing PE firms (Murray 1995).

Given their considerable relevance for the research objectives of this thesis, a more detailed synthesis of existing PE strategy concepts will be covered in a separate section further below (see chapter 3.2).

Research Block: Activities

The research block ‘activities’ arranges literature along the generic value chain of the monolithic PE entity. It comprises five conversations:

1. Fundraising
2. Portfolio management
3. Invest
4. Monitor
5. Exit

The 1st conversation covers academic contributions with respect to the supply of capital to the PE firm. The 2nd conversation embraces research about corporate refocusing activities of the PE firm, portfolio and diversification strategies, and portfolio management tools. The 3rd conversation covers target identification, financing, syndication, valuation, and timing. The 4th conversation synthesizes research with respect to monitoring measures and monitoring intensity of the PE firm. Finally, the 5th conversation covers academic contributions with respect to exit types, impact of various PE firm types on exits, and tools.

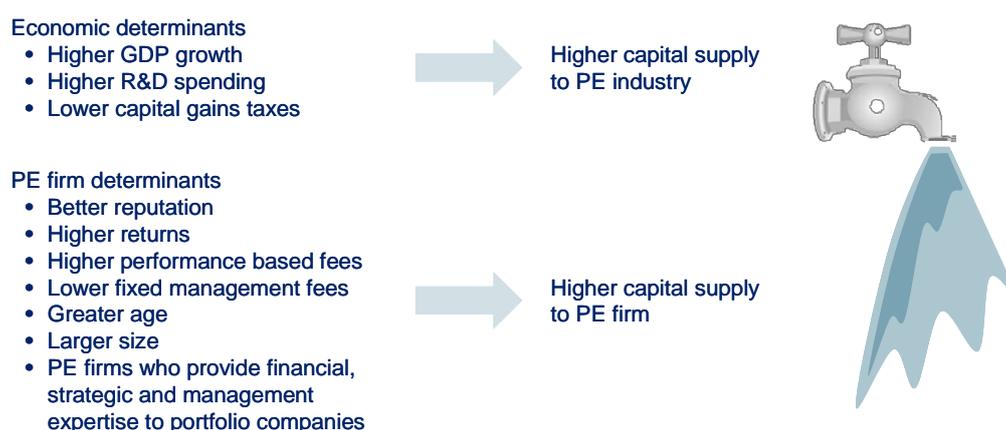


Figure 24: Fundraising Determinants and Capital Supply

1st conversation: From the late 1990s onward some consideration was given to the source of the PE firm’s own funding, to the capital supply process and how it affects the structure and behavior of the PE firm (Van Osnabrugge et al. 2001; Lerner et al. 2004). Figure 24 synthesizes empirical findings on links between fundraising determinants and capital supply. There seems to be a positive relationship between GDP growth, higher R&D spending, and lower capital gains taxes, and the supply of capital to the PE industry. On the PE firm level, it seems that more capital gets allocated to PE firms providing financial, strategic and management expertise to portfolio companies and less capital gets allocated to PE firms providing marketing and administrative expertise. Better reputation, higher returns, higher performance fees and lower management fees of PE firms also have a positive impact on their

abilities to raise capital, as well as firm age and size, though to a lesser extent compared to the other factors (Gompers et al. 1998b; Cumming et al. 2005).

The fund reporting characteristics also influence the fundraising process. Investors in PE have limited access to portfolio company information. In the formative years of PE, LPs often neither received nor requested a lot of detailed reporting information. Empirical research showed that in the 1990s the monitoring activities of investors were typically low and many industry experts expected a shift to a more intensive monitoring of PE firms with greater use of quarterly reporting and portfolio valuations (Robbie et al. 1997). However, one decade later new empirical evidence showed that actually little progress had been made. Still a wide variety existed in terms of disclosure quality and quantity. Financial information on portfolio companies was rarely provided and information on e.g. the risks of the PE funds often was neither quantitatively nor qualitatively reported (Mueller 2007).

2nd conversation: Portfolio management-related research in the PE context has received most attention on the portfolio company level, notably a portfolio company’s portfolio decisions. During the 1970s and 1980s LBO associations were praised to effectively drive the refocusing of far flung organizations when value destruction from ineffective corporate diversification peaked 30% of intrinsic value, on average (Jensen 2000). In the early 1990s additional evidence confirmed that LBO associations refocus strategic activities of companies on core activities, attenuating management incentives to invest in value destroying growth (Seth et al. 1993; Wiersema et al. 1995). Although some evidence suggested that PE backed firms do not refocus more than controls (Liebeskind et al. 1992), overall it became generally accepted that the dispassionate and analytical approach of GPs, and their transaction expertise, can effectively catalyze the refocusing of corporate portfolios (Wright et al. 1996). The gist of this literature body is summarized in Figure 25.

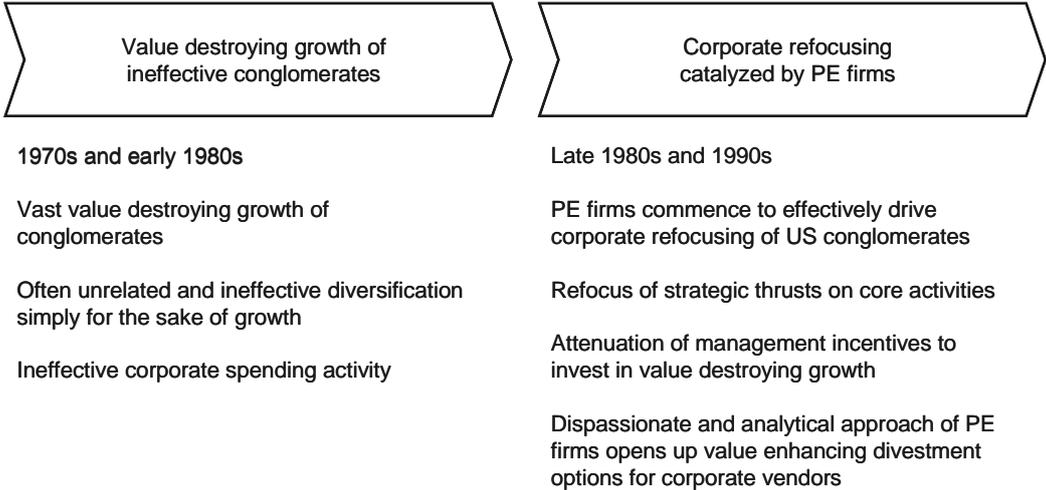


Figure 25: Corporate Refocusing Catalyzed by the PE Firm

On the GP level, theory suggested that the PE firm can either reduce risk by investing in a diversified set of firms or control risk by specializing in order to exploit core domain

expertise (Norton et al. 1993). Empirical evidence found that PE firms specialized in early stage investments prefer less diversification in terms of sector and in terms of region, that captive VC firms prefer less sector diversity yet broader regional scope, that larger PE firms prefer greater sector diversity and broader regional scope, and that greater financing stages diversification correlates with higher performance (Gupta et al. 1992; Loos 2005). Active monitoring takes time and creates a trade-off between intensity of advice and number of portfolio companies. Decreasing marginal benefits of advice per portfolio firm call for a larger portfolio, while with progressively increasing cost of advice, a larger number of portfolio firms crowds out advice to each individual portfolio company, in turn requesting a higher profit share and making further portfolio expansion eventually unprofitable for the PE firm (Kanniainen et al. 2003; Cumming 2006b).

	Diversified PE Investment Portfolio	Focused PE Investment Portfolio
Concept	<p>PE firms can reduce risk by investing in a diversified set of firms</p> <p>Advising firms takes time and decreasing marginal benefits of advice per portfolio firm calls for a larger portfolio</p>	<p>PE firms can control risk by exploiting special technical and industry expertise</p> <p>With progressively increasing cost of advice, larger portfolio crowds out advice to each company, which calls for smaller portfolio</p>
Empirical Findings	<p>Larger PE firms prefer greater industry diversity and broader geographic scope</p> <p>Captive PEs prefer broader geographic scope</p> <p>Higher financing stages diversification correlates with higher performance</p> <p>PE investors with management education are more likely to diversify across industries</p> <p>PE investors with international experience are more likely to diversify internationally</p>	<p>Early stage PE firms are less diversified across sectors and geographies</p> <p>Captive PEs prefer less industry diversity</p> <p>Lower sector diversification leads to higher performance</p> <p>PE investors with a science or engineering or entrepreneurial experience are more likely to focus on earlier financing stages</p> <p>PE investors with national experience are more likely to focus nationally</p>

Figure 26: Portfolio Diversification Considerations

The number of portfolio companies also determines how much diversifiable risk can be reduced, and supposedly it can help in economic downturns to focus resources by reducing the number of portfolio companies (Schmidt 2003; Knyphausen-Aufseß et al. 2006). Another determinant linked to portfolio strategies of PE firms are characteristics of Top Management Teams (TMT). Evidence showed that PE firms with a higher proportion of TMT members with a science, engineering or entrepreneurial background more likely focus on earlier financing stages, a higher proportion of TMT members with a managerial background more likely diversify across sectors, and a higher proportion of TMT members with international experience more likely diversify internationally (Patzelt et al. 2009). The gist of related literature is summarized in Figure 26.

Among investment professionals there is substantial disagreement on how to allocate time on pre- and post-investment portfolio management activities. Portfolio management processes are frequently employed on an ad-hoc basis in the PE industry. And PE firms rarely use portfolio management processes and investment oversight methods such as summary

scorecards, exit plans, scenario models, systematic risk assessment, opportunity assessments, and deal team action plans (Lieber 2004; Shepherd et al. 2005).

3rd conversation: What characterizes a typical PE target? Figure 27 shows characteristics of typical PE targets arranged by research study. One contribution investigated PE targets between 1972 and 1983 (Maupin et al. 1984), while another analyzed LBOs that occurred in the period 1980 to 1990 (Opler et al. 1993). Already in the 1990s pure shareholder activism oriented PE activity faced limited supply of targets and PE firms gradually expanded their opportunity space by selectively targeting more distressed companies in mature sectors with restructuring or capital needs (Vest 1995; Reinholz 1997).

Concerning earlier financing stages some argued that the characteristics of typical targets are more determined by the skill level of the entrepreneur. A principal agent based model and some cases suggested that entrepreneurs with common skills or below average skill levels will always try to involve venture capital investors, while entrepreneurs with more profitable ventures will rather develop their ventures without venture capital influence (Amit et al. 1990).

1972 – 1983	1980 – 1990	Post 1990
1 Majority of stock is held by management and the board of directors	1 Higher than industry average cash flow	PE firms which focused on pure shareholder activism faced limited opportunities to create value
2 Significantly higher than industry average cash flow to net worth ratio	2 Lower than industry average Tobin's Q	
3 Cash flows are comparatively high in relation to total assets	3 Lower than industry average risk of financial distress	PE firms gradually expanded opportunities space by selectively targeting companies in mature sectors with restructuring or capital needs
4 Stock selling at relatively large discount from book value	4 Higher than industry average diversification across sectors	
5 Stable and above industry average dividend yield ratios	5 Lower than industry average R&D expenditures	
	6 Not a manufacturer of machines and equipment	
(Maupin et al. 1984)	(Opler et al. 1993)	(Vest 1995, Reinholz 1997)

Figure 27: Characteristics of Typical PE Targets

Upon target identification, the PE firm needs to arrange financing for the acquisition. An early investigation of PE deals in the 1980s showed that on average the proportion of debt in the capital structures more than triples after successful buyouts, and that most debt securities experience a downgrading in ratings (Marais et al. 1989).

Some LBOs were heavily undercapitalized from the beginning and had very low chances of survival. A prominent failure is the Revco Drug Stores takeover, one of the largest LBOs of the 1980s. Revco Drug Stores was bought out in 1986 and ended up in bankruptcy two years later, sending shockwaves through the financial community. Bruner and Eades developed a cash flow-based model and filled it with assumptions which had been available to Revco's advisors prior to the transaction, showing that Revco had an ex-ante deal chance of

5% to 30% to successfully service its financial obligations. Apparently the Revco LBO was undercapitalized from the beginning and the financial forecasts of Revco’s new owners and their advisers were too optimistic (Bruner et al. 1992).

The Revco case is rather an interesting outlier and it is not representative for all LBOs. Roden and Lewellen investigated LBOs in the period 1981 and 1990 and found that LBO associations typically seek a balance between leverage-related benefits and cost of financial distress, and that PE firms individualize financing packages to account for the targets’ growth prospects, variability of earnings, liquidity characteristics, plans to sell assets, and tax deductibility of interest (Roden et al. 1995).

In 1990, the investigative journalists Bryan Burrough and John Helyar published the book ‘Barbarians at the Gate’, which offers some ‘behind the curtain’ perspectives on the financing aspects of the landmark PE deal of the 1980s, the RJR Nabisco LBO (Burrough et al. 1990).

More recent academic research emphasized the legal environment as one critical determinant for financing structures, showing empirically that PE firms more often use convertible preferred stock with covenants in high enforcement and common law countries, while PE firms use more often common stock and debt in low enforcement and civil law countries (Lerner et al. 2005). Irrespective of the legal environment, a variety of contractual features exist in PE financing contracts which partially alleviate typical agency problems, and from a structuring perspective actually no rationale or necessity could be found for the finite life of PE funds (Axelson et al. 2007).

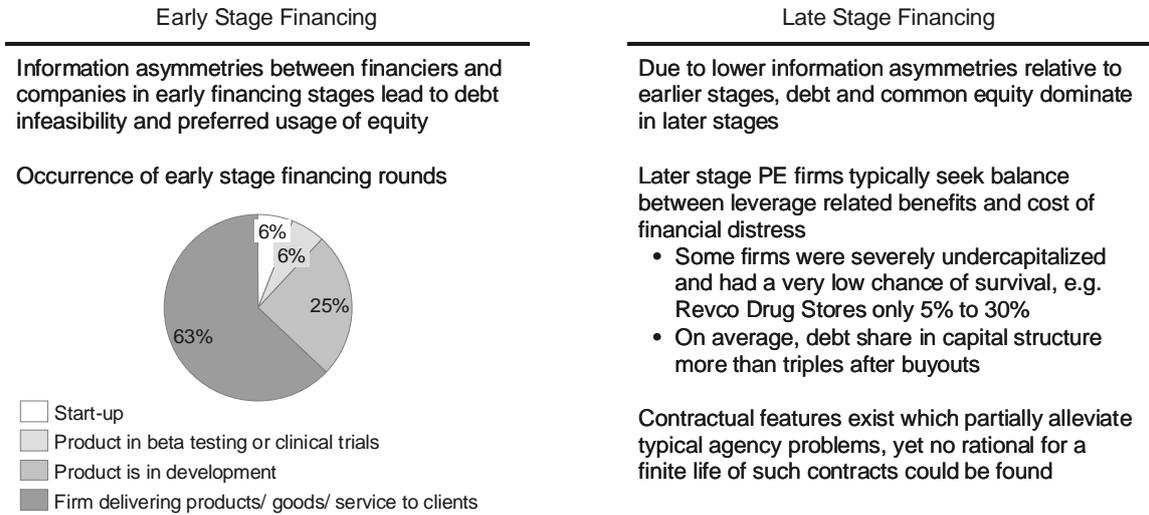


Figure 28: Financing of PE Acquisitions

Figure 28 synthesizes the research gist with respect to financing-related research on both early stage investments and late stage investments. The debt portion is considerably smaller in earlier investment stages. It was argued that increasing information asymmetries between PE firms and entrepreneurs in earlier financing stages lead to increasing debt infeasibility and preferred usage of equity. Empirical evidence confirmed that preferred equity dominates in

early stage financing, whereas debt and common equity dominate in late stage financing, where information asymmetries are often lower (Trester 1998).

A study investigated 12,553 early stage financing rounds in the period from 1987 to 1999 and found that more than half of the financing rounds occurred when the firms were delivering products, goods or services to customers, almost a quarter of rounds occurred while the product was in development, 6% when the product was in beta testing or clinical trials, and 6% when the firm was a start-up (Quigley et al. 2003). This implies that in the larger scheme of things the amount of financing situations with debt infeasibility is marginal. Additional research about the structuring aspects of earlier stage financing contracts suggested that the optimal contract is a time varying share contract which provides inter-temporal risk sharing between the PE firm and the entrepreneur, ideally complemented by relationship financing including monitoring and occasional replacement of the management (Bergemann et al. 1998).

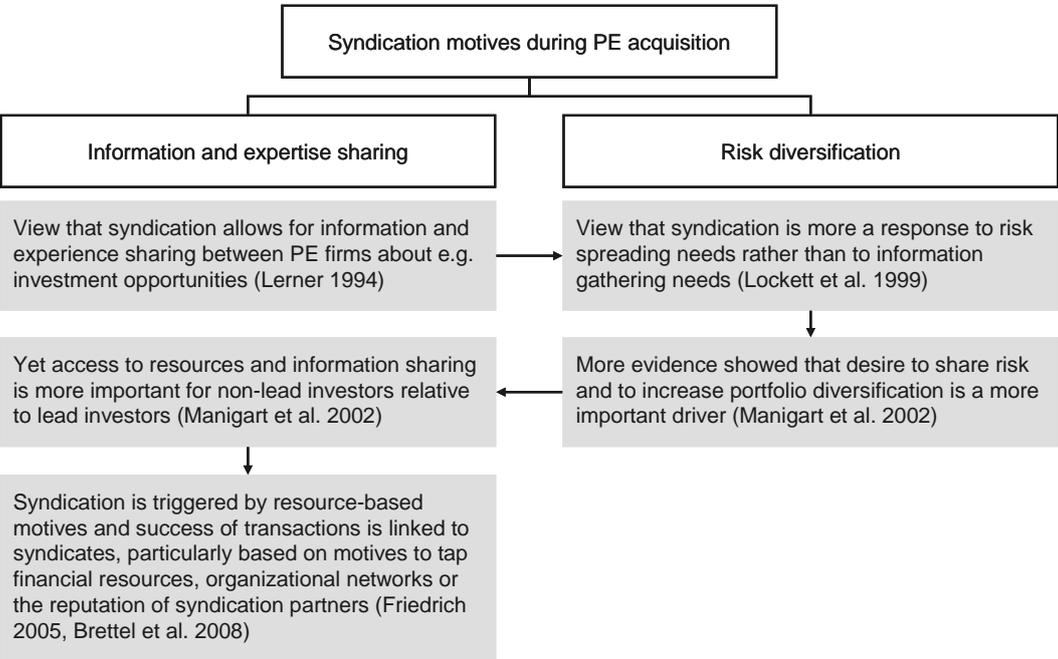


Figure 29: Syndication Motives during PE Acquisition

Related research analyzed syndication motives during PE backed acquisitions (see Figure 29). Some argued that syndication allows for information and expertise sharing between PE firms (Lerner 1994), while others suggested that syndication is more a response to risk spreading needs (Lockett et al. 1999). The first view was based on US deals in the period from 1978 to 1989 and the second on UK deals in the period from 1987 to 1996. A more recent and more differentiated investigation showed that overall the desire to share risk and to increase portfolio diversification is a more important driver for syndication, yet that the access to resources and shared information is more important for non-lead investors relative to lead investors (Manigart et al. 2002c). Most recent evidence supported the view that syndication is

greatly driven by resource-based motives, based on findings suggesting that the investment success is linked to characteristics of syndicates, notably PE firms' ability to tap additional financial resources, organizational networks and reputation of syndication partners (Friedrich 2005; Brettel et al. 2008).

However, presuming resource-based advantages by default can lead to inflated pricing without real justification. Empirical evidence showed that acquisitions are often motivated by the buyers' anticipated opportunity to improve operations under the leadership of better management teams, however, buyers often are infected by hubris and can overpay for targets in overestimating their own abilities to monitor them (Morck et al. 1990). Also the flow of capital commitments to the PE sector can inflate valuations. A study investigated 4,069 financing rounds in the period from 1987 to 1995 and found that higher inflow of capital to the PE industry substantially increases valuations of PE targets (Gompers et al. 2000). Valuations are also linked to investment timing. A study showed that in fact PE firms accelerate their investment activity when investment opportunities improve, when competition for deal flow eases, and when credit market conditions loosen (Ljungqvist et al. 2003; Ljungqvist et al. 2007).

4th conversation: Academic contributions in the 4th conversation cover most notably monitoring measures and monitoring intensity (see Figure 30). In terms of monitoring measures, research showed that PE firms typically encourage pay for performance incentives, take an active role in choosing the portfolio company's CEO, refocus a portfolio company on its core business, tighten control of corporate spending, and apply financial engineering capabilities to optimize the portfolio company's balance sheet (Anders 1992). Related research showed that company performance increases with tighter debt terms only in those portfolio companies where PE firms are not actively involved, leading to the conclusion that, unlike traditional passive institutional investors, PE firms are investors who actively monitor corporate management teams and who can constitute an effective substitute for debt as a disciplining device (Cotter et al. 2001; Van Den Berghe et al. 2002). More recent empirical evidence confirmed that portfolio company performance is linked to active involvement of the PE firm, which typically introduces more effective information systems and makes more effective use of external resources (Meier 2006).

In terms of monitoring intensity and frequency, Gompers showed that both increase with higher agency cost. Supposedly agency cost increase as asset tangibility decreases, as asset specificity increases and as the amount of growth options of portfolio companies increases (Gompers 1995). It was hypothesized that exogenous determinants also influence monitoring intensity. Landier suggested that in a low-risk equilibrium where failure is highly stigmatized, entrepreneurs chose safer projects and therefore financing with debt is optimal, leading to lower monitoring intensity. In a high-risk equilibrium where failure is not so much stigmatized, entrepreneurs chose riskier projects and therefore financing with equity is optimal, leading to higher monitoring intensity. This also serves as an explanation why bank-like debt refinancing contracts may be better suited for Europe, namely due to the higher stigmatization of bankruptcy failure in Europe relative to the US (Landier 2001).

Another model-based study suggested that PE firms who have higher control provide more effort in finding professional managers for their portfolio companies (Hellmann 1998). Related evidence showed that PE backed companies more likely and faster replace founders with outside CEOs relative to controls, and that PE firms sponsoring earlier financing stages are more intensively involved by helping to professionalize start-up companies, architecting human resource policies, adopting of stock options plans, and hiring of TMT members (Hellmann et al. 2002). Empirical research found that greater PE board control is linked to increased intervention and TMT replacement in portfolio companies, while greater PE ownership share is linked to increased advisory support (Kaplan et al. 2004a).

Monitoring Measures	Monitoring Intensity
<p>The PE approach as a disciplining device</p> <p>Role of PE is to actively monitor management, unlike passive institutional investors</p> <p>Typical monitoring measures of the PE firm</p> <ul style="list-style-type: none"> • Active involvement • Effective usage of information systems • Effective usage of external resources • Introduction of performance based incentives • Selecting and hiring of TMT members • Architecting HR policy • Refocusing initiatives on core strategy • Tightening control on corporate spending • Improving corporate finance skills 	<p>Monitoring intensity and frequency increases with higher agency cost, increasing as ...</p> <ul style="list-style-type: none"> • ... asset tangibility decreases • ... asset specificity increases • ... portfolio company's growth options increase <p>Equity financing combined with intensive monitoring is better suited for portfolio companies with riskier projects</p> <p>PE intervention and TMT replacement is associated with greater PE board control</p> <p>More active support and advisory is associated with greater PE ownership share</p>

Figure 30: Monitoring Measures and Monitoring Intensity of the PE Firm

5th conversation: Research on exits is fairly broad compared to other areas of the PE literature body. Overall the evidence showed that liquid stock markets often were the most preferred exit route for PE firms over the last decades (Cumming et al. 2003). Allowing notably early stage PE investors to enter into implicit contracts with entrepreneurs, IPO facilitating stock market centered economies were more attractive for PE relative to bank centered markets (Black et al. 1998). Trade sales were the second best exit choice, given that in the VC context typically the window of opportunity for trade sales extended longer than for IPOs (Giot et al. 2003). A controlled comparison between IPOs and trade sales showed that the likelihood for an IPO is higher for more profitable companies in need of less oversight, while the likelihood for a trade sale is higher for less profitable companies in need of more intensive monitoring (Bienz et al. 2008). Secondary buyouts were historically rarely a preferred exit choice for PE firms, and they were more likely to occur in traditional industrial sectors and after a longer investment duration (Wright et al. 2000b).

Data on 30 years of PE exits in the US showed that the median fund exited 19% of its portfolio companies through an IPO, 7% through a sale of listed equity, and 23% through an M&A transaction, with larger firms having significantly higher rates of successful exits (Torstila et al. 2003). An interregional comparison showed that, relative to their US peers,

European PE firms use less convertible securities, demand less effective reporting requirements, and syndicate less in fewer financing rounds, overall having a negative impact on the likelihood for IPOs (Schwienbacher 2005).

In general, more ineffective reporting can have a negative impact on the IPO process. Evidence from the 1980s showed that firms that had been more transparent during the years before an IPO could typically lower their flotation cost, including initial underpricing, underwriter discount, and administrative expenses. IPO investors typically had anticipated that the IPO prospectus was contaminated by optimistic bias, window dressing, or earnings manipulation, and therefore appreciated company information which was disclosed during the years prior to the IPO (Muscarella et al. 1989). Not only more effective disclosure of company information but also access to higher quality underwriters and better advisors can optimize the IPO process, though such superior access was typically also a privilege of larger PE firms (Megginson et al. 1991).

Consensus grew along the view that the market appreciates the presence of high quality PE firms, better exit preplanning, high quality underwriters, and better advisors, empirically measured by substantially less underpriced issues relative to controls (Barry et al. 1990; Megginson et al. 1991; Cumming et al. 2001). Though the impact of the PE firm was challenged later by evidence showing that value weighting substantially reduces performance differentials between PE backed exits and controls (Degeorge et al. 1993; Brav et al. 1997), more recent research showed that PE backed IPOs tend to be less underpriced, larger and listed earlier relative to non PE backed controls (Jelic et al. 2002).

The phenomenon of earlier listings received more dedicated research attention. Gompers discovered empirically what he called ‘grandstanding phenomenon’, meaning that younger PE firms float companies earlier relative to older PE firms in order to establish a reputation and to raise funds for further investments (Gompers 1996). What Gompers showed for the US was subsequently empirically confirmed for the UK (Barnes et al. 2002). More general research suggested that in terms of divestment timing PE firms balance the cost of continued monitoring involvement against the adverse reaction to selling, being facilitated by reputation and third party certification mechanisms (Lin et al. 1998; Neus et al. 2005).

Subsequently, a new research thrust started investigating whether and how preferences of PE firms influence strategies of portfolio companies. One concept assumed that more innovative ventures have a higher likelihood to make an IPO and suggested that PE firms’ preference for IPOs as an exit route gives portfolio companies an incentive to favor riskier businesses and riskier R&D strategies to increase the likelihood for an IPO (Schwienbacher 2008). So far, this concept lacked broader support. In fact, often PE firms and management of portfolio companies have diverging interests concerning exit options and it was argued that this can be optimized with convertible securities, given that convertible securities leave the owners of portfolio companies in control of the company though allow for a switch in pay-off structures (Bascha et al. 2001). A new puzzling phenomenon was introduced by a recent study which showed that stronger control rights of PE firms increase the likelihood that the portfolio company will be exited by a trade sale, rather than through an IPO (Cumming 2006a).

Research Block: Resources and Characteristics

This research block synthesizes literature on ‘resources and characteristics’ of the PE firm, comprising four conversations:

1. Mindset
2. Network
3. Experience
4. Size

The 1st conversation sheds light on mindsets of PE participants. The 2nd conversation investigates the value of networks and dependencies between networks and performance. A 3rd conversation covers experience of PE firms and quality of decision making. The 4th conversation comprises research on the size of PE entities. A synthesis of the gist of this research block is illustrated in Figure 31.

Mindset	Network	Experience	Size
Management which is less satisfied with its company's strategy will more likely pursue a buyout	Social networks in PE community allow to bridge boundaries and to diffuse information across regional and sector spaces	PE investment professionals' reliability of decision making increases only to certain point of accumulated experience, and then decreases	Size of PE firms is influenced by three factors: services provided, decision process, and metrics of economic returns
PE approach gives more freedom and creates more entrepreneurial mindset	More influential and central network positions contribute to performance	Positive causality runs from experience in terms of investment sector and stage to performance	Two thirds of PE firms' revenue is fixed revenue and one third is linked to performance, suggesting that PE organizations have an incentive to grow assets under management
New ventures and buyouts often exceed personal funds	Past network position centrality is positively related to future performance	Management often values marginal experience more than marginal capital	Scale hurts performance and about one fifth of performance is linked to scale
Investors expect substantial co-investment often exceeding personal net worth	Causality runs more from network position centrality to performance, and not so much in the other direction	Experience allows to accelerate expansion of best practices across regional and regulatory boundaries	
Tight payback schemes create immense psychological pressure while discipline with ability to take risk is needed			

Figure 31: Conversations on ‘Resources and Characteristics’

1st conversation: Mindsets and character traits of individuals and teams pursuing the PE approach are quite distinct. One of the rare investigations showed that management which is less satisfied with its company’s strategy will more likely take the initiative to pursue a buyout (Hanney 1986). Whether an independent and objective strategy analysis would come to the same dissatisfactory conclusion is less relevant. More striking is the parallel between this finding and the corporate mindset of successful strategic innovators, notably their dissatisfaction with the status quo, as was laid out above (Markides 1997; Markides 1998). During periods of PE ownership, management often acknowledges the opportunity to undergo a more entrepreneurial mindset and receives more degrees of discretion. The price for more freedom is an investment of considerable personal wealth into ventures with uncertain outcomes. New ventures or buyouts in most cases exceed personal funds of managers and of

PE professionals. Although external investors can provide the trust, they expect considerable personal co-investment from PE professionals, who in turn expect considerable personal co-investment from management. Often the whole personal net worth of PE professionals and of management is tied up in the ventures and buyouts. Research showed that this pyramid can foster entrepreneurial mindsets, while at the same time very high expectations and tight payback schemes create immense psychological pressure and discipline (Beaver 2001).

2nd conversation: Proprietary networks can be seen as key resources of PE firms. It was observed that in spite of modern communication technology, interpersonal relations still typically concentrate in regional and sector spaces. Some evidence showed that social networks in the PE community allow to bridge mobility barriers by diffusing information across regional and sector spaces, thereby expanding the spatial radius of information sharing (Sorenson et al. 2001). Other studies found that more influential and central positions in social networks in PE contribute to performance, and that past network position centrality is positively related to future performance, however past performance does not always lead to subsequent network position centrality. The causality typically runs from network position centrality to performance yet not so much vice versa (Seppä et al. 2002; Hochberg et al. 2005; Liechtenstein et al. 2008).

3rd conversation: Recognizing that PE is a ‘people business’, academic research about the resources of the PE firm is also interested in the experience of PE practitioners. The prevailing view concerning experience typically implies that more is better. However, empirical research in the PE context suggests that more experience is not necessarily better, by showing that practitioners’ reliability of decision making increases only to a certain threshold of aggregated experience and then decreases again. Moderately experienced practitioners appear to be making better investment decisions relative to less or more experienced peers. Inexperienced practitioners typically face information overload, often leading to errors in judgment, while highly experienced practitioners typically have streamlined their thinking along more automated and intuition driven decision making, which can be susceptible to bias and error (Zacharakis et al. 2003).

Other studies confirmed that a positive causality exists between practitioners’ experience and investment decisions. One contribution discovered that PE practitioners with the most sector experience increase their investment activity most when public market signals become more favorable (Gompers et al. 2008), while another study discovered a positive causality running from PE firms’ knowledge about investment sectors and investment stages to portfolio companies’ performance (De Clercq et al. 2003).

Entrepreneurs and managers value experience of practitioners. Evidence showed that PE firms with a better reputation, influenced by experience, networks, or assistance to portfolio companies, often can negotiate a valuation discount, suggesting that entrepreneurs value marginal experience of PE firms more than marginal financial capital (Hsu 2004).

Not only central network positions but also experience of PE practitioners allows for a quicker spatial expansion of best practices across regional and regulatory boundaries. Specific standard operating procedures and US style contracts, whose development takes considerable

time and resources, can lower the likelihood of failure, and although US style contracts were typically more frequently used in common law countries, evidence showed that more experienced PE firms are able to implement US style contracts irrespective of regional regime (Sahlman 1990; Kaplan et al. 2004b).

4th conversation: Academic research analyzing the scalability of the PE organization does not have a long tradition. Yet it has gained momentum. One of the rare studies suggests that three factors determine the size of PE organizations: services provided, decision processes, and metrics on economic return (Willert et al. 2008). An analysis of the economics of the PE model unveiled that two thirds of revenue derives from fixed revenue components and one third from performance-linked components, suggesting that PE organizations actually have an incentive to grow larger (Metrick et al. 2009). On the other hand, a recent study titled ‘Giants at the Gate’ implied that scale can hurt performance by showing that a negative causality exists between aggregated assets under management and investment performance (Lopez de Silanes et al. 2009). What also needs to be considered within this context is the view that larger AuM and larger investment lots can reduce transaction cost for investors.

3.1.4 Governance

The research area ‘governance’ covers contributions investigating how the PE approach can influence corporate governance. It comprises three major conversations:

1. Ownership of the firm
2. Governance measures
3. Management practices

Contributions to the 1st conversation conceptualize corporate governance aspects which build on the theory of the firm. The 2nd conversation covers governance measures while the 3rd conversation includes debates on PE firms’ influence on management practices.

1st conversation: The conceptualization of the effective governance structure of the firm can be traced back to the 18th century (see Figure 32). With the invention of the joint-stock company the separation of ownership and control on a larger scale became possible (Smith 1776; Berle et al. 1932; Ferguson 2008), yet ever since it has been criticized that “*the separation of ownership and control produces a condition where interests of owner and of ultimate manager may, and often do, diverge, and, where many of the checks which formerly operated to limit the use of power disappear*” (Berle et al. 1932, p. 7).

Still, in the early 20th century the concept of separation of ownership and control caught on. The driving force was the idea that the separation of ownership and control would allow the modern corporation to transfer control from capitalists to engineers (Veblen 1924).

Virtually synchronized with the renaissance of PE in the second half of the 20th century, the prevailing view increasingly turned against the concept, suggesting that a partial reunion

of ownership and control can mitigate agency problems and increase productivity (Jensen et al. 1976; Jensen 1986; Singh 1990; Phan et al. 1995; Jensen 2000).

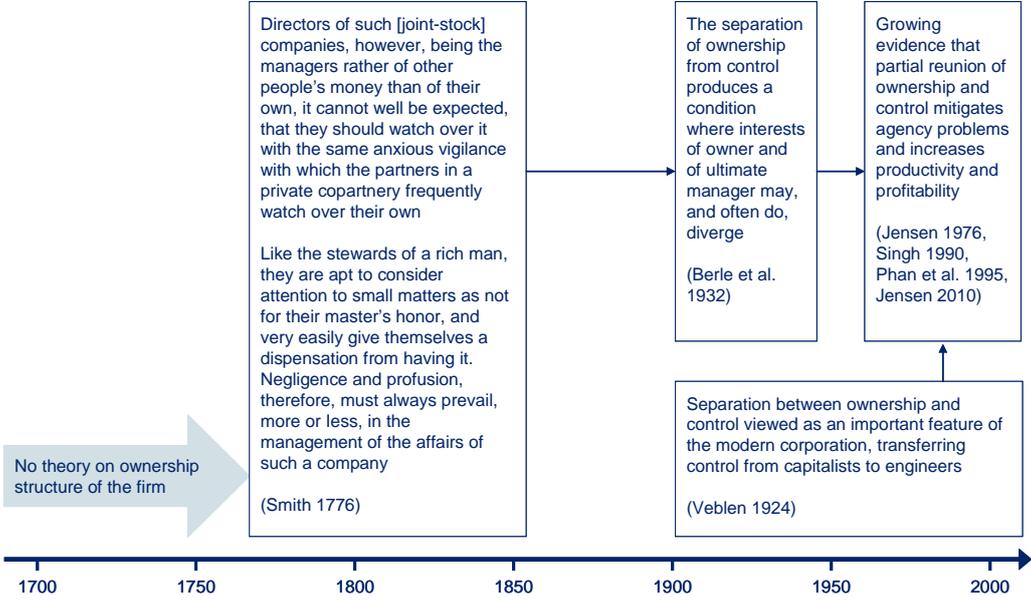


Figure 32: Evolution of Ideas on Ownership Structure of the Firm

The work on theory of the firm is still in progress. Some argued that the magnitude of the conflict between owners and management is less severe than widely believed, assuming that owners of valuable resources would supposedly systematically relinquish control to managers who are not guided to serve their interests (Demsetz 1983). A string of studies on firms where key decision makers do not bear a substantial share of the wealth effects of their decisions investigated whether a partial reunion of ownership and decision making increases value, how fiscal policy can reduce agency cost of free cash flow, why strong relationships exist between undistributed cash flows and firms’ decisions to go private, overall producing a growing body of evidence supporting the view that the PE approach mitigates agency problems related to the separation of ownership and control (Fama et al. 1983; Lehn et al. 1989; Then Bergh 1998; Bruton et al. 2002; Jensen 2010).

Academic research on the effective concentration of control complements these findings. Empirical studies on public companies showed that Tobin’s Q²³ rises when management ownership rises, while its rise can be interpreted as growing convergence of interests between owners and management (Morck et al. 1988), or as increasing anticipated convergence of interests around the time of the takeover event (Peck 1996).

PE specific studies confirmed that managing owners with a substantial ownership stake are induced by self-interest to create economic value, that concentrated control in few hands

²³ Tobin's Q was developed by James Tobin as the ratio between the market value and replacement value of the same physical asset. It has become common practice to calculate the ratio by comparing the market value of a company's equity securities with the value of a company's equity book value.

can provide an effective mechanism to monitor managerial decisions, and that overall the PE approach can provide a superior blend of motivation and discipline to management teams (Easterwood et al. 1989; Weir et al. 1998). Overall, it became increasingly popular that changes in the governance structure of firms toward more concentrated residual claims enable firms to improve asset utilization and to redirect resources to higher valued uses (Muscarella et al. 1990; Jensen 2010).

2nd conversation: Once the economic rationale for the existence of control specialists such as PE firms in the market for corporate control became clear, also the academic interest with respect to effective measures of the PE approach increased. Empirical studies discovered specific performance enhancing governance measures of financial sponsors including management equity ownership, heavy debt load, debt covenants that place restrictions on how the cash required for debt payments can be generated, strong incentives for management to generate cash, more decentralized decision making combined with a system of checks and balances to avoid value destroying behavior, and close monitoring by expert board members owners (Baker et al. 1989; Denis 1994).

The cases of Beatrice, Kroger and Safeway offered an interesting research setting. The Beatrice company, its foundation in 1891 as a small creamery, its growth by acquisitions into a diversified consumer and industrial products firm, and its subsequent LBO and sell-off, is widely considered as a representative case for many American businesses in the 20th century. An analysis of the Beatrice LBO unveiled several measures which supposedly lead to improved governance and in turn positive returns for shareholders, including inauguration of new top management that purchased 1% of Beatrice's shares, decentralization of decision making, reduction of corporate staff by 70%, and divestment of unrelated businesses (Baker 1992). A comparison of two leveraged recapitalization cases unveiled that the more effective recapitalization of Safeway, unlike the less successful Kroger recap, also altered managerial ownership, board composition, and executive compensation, overall leading to a more effective governance structure (Denis 1994).

Other empirical studies showed that although top management teams in PE backed portfolio companies typically receive more discretionary decision making authority relative to controls, at the same time the involvement of the board of directors is more active and a higher share of outsiders controls board seats (Kester et al. 1995; Boursesli et al. 2002). More recent evidence delineated the view and showed that abnormally positive performance of portfolio companies can be associated with specific governance measures. Boards of public companies appear to be more effective with respect to monitoring corporate compliance, risk management and management succession, while PE backed boards appear to be more effective with respect to monitoring value creation and focus on strategic and performance priorities. Overall, the findings imply that PE backed boards are more effective and more committed than boards of public companies (Acharya et al. 2009; Acharya et al. 2010).

3rd conversation: Scientific research with respect to PE's influence on management practices comprises debates which partially overlap into the area of business ethics. Whether an inherent conflict exists between the PE approach and business ethics was examined by

Bruner and Paine who argued that ‘good’ and ‘bad’ PE associations exist, concluding that institutional policy and mechanisms that emphasize fiduciary duty are necessary to discourage abuses of self-interested managing owners (Bruner et al. 1988). Another study implied that the PE approach only unleashes existing management practices, by showing that managers consider the temporary expansion of their own decision making authority as a major lever to unlocking superior management practices which they, according to management, had already possessed prior to the takeover (Frankfurter et al. 1996).

Most recent research published within this context showed that PE backed firms are better managed than government-, family-, and privately owned firms, by applying innovative operational management practices and people management practices, by emphasizing continuous improvements, and by applying a comprehensive performance documentation process. PE backed managerial practices appear to be, on average, superior to managerial practices of controls, given a smaller share of the left ‘tail’, i.e. very badly managed firms, in the PE backed group (Bloom et al. 2009).

3.1.5 Performance

The research stream ‘performance’ vertically embraces all three levels of the monolithic PE model (see Figure 16) and comprises five major conversations:

1. Portfolio performance
2. Financial distress
3. Distortions
4. Indices
5. Performance drivers

The 1st conversation covers PE performance studies of the 1980s and 1990s. The 2nd conversation analyzes situations of portfolio companies encountering severe financial distress. The 3rd conversation deals with methodological distortions when measuring PE performance. The 4th conversation covers PE indices allowing for the application of standard portfolio management tools. The 5th and most recent conversation covers performance drivers.

1st conversation: One string of performance studies showed that operating performance of PE backed portfolio companies considerably improves, in comparing performance of up to two years prior to a buyout with up to three after the takeover event (Bull 1989; Kaplan 1989a; Smith 1990a; Smart et al. 1994; Kitzmann 2005). The gist of these studies suggested that increases in operating income, decreases in capital expenditures, and increases in net cash flow are not so much driven by layoffs and cost cutting than by improved management incentives to increase operational efficiency. A synthesis of PE operating performance studies of the 1980s showed that two years after the buyout relative to one year prior to the buyout average operating margins increased by 17% and operating profit per employee increased by 32% (Opler 1992). Subsequent investigations of portfolio companies exited through IPOs

showed that four years after the IPO the firms outperformed controls, although the outperformance spread was shrinking. After the IPO, firms often increased capital expenditures and working capital levels, even more when the concentration of equity ownership decreased (Holthausen et al. 1996).

Contradictory empirical evidence suggested that in the short run (up to three years post buyout) PE backed companies perform better than controls, though in the long run (three to seven years) underperform controls (Houlden 1990).²⁴ Performance deterioration in the long run can be linked to reductions in commercial sales prices along with higher job creations and increases of wages (Desbrières et al. 2002). A more recent performance study found no evidence for abnormal performance of PE relative to public controls, neither short nor long-term, assuming that this striking puzzle may be due to the sample's returns being net of fees, while most previous studies analyzed gross returns (Jones et al. 2003). In the early stage financing context, a study comparing the performance of investments made by business angels in technology and non-technology firms also found no evidence for significant performance differentials (Mason et al. 2004).

Recognizing that the Internal Rate of Return (IRR) does not account for investors' reinvestment of cash returns into public markets, Ick applied the performance measure Public Market Equivalent (PME), and found that overall PE investments slightly outperform public controls, while late stage investments generate large excess positive returns and early stage investments underperform relative to public controls (Ick 2005). A detailed analysis of early stage PE firms' returns expectations actually found that independent firms stress higher returns relative to captive or public firms, and that those firms who provide more intensity of involvement have shorter holding periods, require higher returns, and are more often located in the UK or US (Manigart et al. 2002b). More recent research on the performance of late stage PE investments found that superior performance is linked to higher Jensen Alphas and that performance is significantly higher if PE firms structure deals in a way so that a substantial part of the risk gets transferred to the lenders, suggesting to adjust for leverage risk when measuring the performance of PE investments (Groh et al. 2005).

2nd conversation: Research interest concerning magnitude and determinants of financial distress of portfolio companies comes with the territory of PE. Denis found that 31% of PE backed portfolio companies in their sample encountered financial distress and highlighted two major causes, notably poor operating performance due to largely industry wide problems and surprisingly low proceeds from planned asset sales (Denis et al. 1995). Another survival rates study showed that a total loss probability of 30% for direct business investments is not unusual, that the total loss probability of PE funds is typically smaller due to diversification effects, and that a very small probability exists for any loss of FoFs, though returns also

²⁴ The study also found that PE backed companies which were exited either by IPO or by trade sale still performed better than controls, even in the longer term. Only those companies which stayed independent underperformed. Houlden speculated that possibly a record of ever improving profits becomes less relevant for privately owned companies, notably when owners become rather content with average performance and when lower reported pre-tax profits lower tax liabilities.

increasingly converge to market average, respectively (Weidig et al. 2004). Overall the hitherto published evidence on survival rates of PE backed companies increasingly shaped the view that on average no substantial differences exist between survival rates of PE backed portfolio companies and controls. With the exception of portfolio companies who showed higher survival rates and where often backed by the oldest PE firms, leading to the conclusion that the backing by the ‘right’ PE firm is a relevant determinant for survival rates (Manigart et al. 2002a).

3rd conversation: Performance data in the PE context is often distorted, which initiated a debate on methodology. One distortion is the so called ‘stale pricing effect’, which stands for the observation that historical quarterly PE return data is typically subject to sluggish adjustment of net asset values, so that the volatility of quarterly PE returns is likely understated. Emery documented the stale pricing effect (Emery 2003). Other known distortions include substantial systematic biases, notably overvaluations in the reporting of fund performance. A study showed that a higher stringency of accounting rules and a higher quality of the legal environment are linked with lower overvaluations of PE fund performance, that more experienced PE practitioners overvalue less, and that PE firms involved in early stage high tech investments tend to overvalue more relative to later investment stage focused PE firms (Cumming et al. 2010).

4th conversation: The development of PE indices is a fairly new endeavor, driven by the opportunity to apply standard tools of portfolio analysis. One of the first PE indices was conceptually built on a continuously reinvested value weighted portfolio of venture backed companies (Quigley et al. 2003). Econometric techniques were used to reduce selection bias and the overall architecture of the index was designed similar to real estate indices. Real estate as an asset class is also relatively illiquid and real estate indices use transaction data from individual properties. Zimmermann was the driving force behind the development of the ‘Listed Private Equity Index’ (LPX) including 229 publicly traded PE vehicles (Zimmermann et al. 2004). Market values are being determined on an ongoing basis and series data. More recently a new stochastic model for cash flows of PE funds was developed, allowing for the approximation of future cash flows, which could enrich the conversation from a technical perspective (Buchner 2008).

5th conversation: Risk-return characteristics of PE investments and performance drivers are at the center of this conversation. Notably a recent string of performance driver studies shed some light on performance determinants in the PE context. Some evidence showed that investment timing has an impact on the performance of PE funds though divestment timing seemed less relevant (Nowak et al. 2004).

In later stage PE investments market timing seemed to be more overshadowed by the relevance of PE investment professionals’ experience. Another empirical study also substantiated the view that PE investment professionals’ experience is linked to PE fund performance, while PE fund performance also appeared to fluctuate positively with business cycles and stock market cycles (Phalippou et al. 2005). Contradictory evidence suggested that PE returns are rather unrelated to stock market returns and that a higher inflow of capital into

the PE industry has a negative impact on PE returns (Gompers et al. 2000; Kaserer et al. 2007). Overall, growing evidence substantiated the view that management capabilities, experience and skills of PE practitioners are relevant determinants of PE investment performance (Kaserer et al. 2004; Nowak et al. 2004; Diller 2007; Kaserer et al. 2007), and a more recent study unveiled that although various investor types do not differ in their abilities to select better performing funds, still a causality exists between physical proximity between LPs and GPs and PE investment performance (Hobohm 2008).

As mentioned above, the following section will investigate the conceptual frames on the strategy of the PE firm in greater detail.

3.2 Strategy for the PE Firm

What is strategy? Initially used in military jargon,²⁵ at the beginning of the 20th century the term expanded into the field of management. Ever since the word strategy expanded into colloquial language, increasingly diluting its original gist. To better understand the essence of ‘strategy’ it helps to recall its origins in ancient Greek: ‘strategos’ stands for ‘general’ or ‘commander’, whereas ‘stratos’ stands for ‘army’ and ‘egos’ for ‘lead’.²⁶

In the discipline of management science, one recognized definition describes strategy in the following way: “*Strategy can be defined as the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out of these goals*” (Chandler 1962, p. 13). Chandler’s definition of strategy is already one of the more succinct ones. Still, there is merit in having a definition of strategy which is even more succinct and even more linked to its classic meaning.

Therefore, I suggest defining strategy as the ‘plan of an authority to achieve an objective’. In the context of management science, which is concerned with optimizing coordinating forces, one may benefit from specifying the definition as follows: ‘Strategy is the general plan of an authority for the coordination of energy, matter and beings to achieve an objective’.²⁷

In terms of strategy analysis, a business model can help as a conceptual vehicle to describe the strategy of a firm toward its major stakeholders (Knyphausen-Aufseß et al. 2002). A business model can integrate a firm’s market approach with its resource-based approach into a strategic concept. The essence of a business model prescribes decision criteria whether and how a firm should use market mechanisms as opposed to internal mechanisms. Coase linked these themes into a theory about the boundary of the firm, suggesting a firm’s shape was determined by the alternative with minimal transaction cost (Coase 1937).²⁸ Coase’s seminal

²⁵ First known use of the modern term ‘strategy’ was in 1810 (see <http://www.merriam-webster.com/dictionary/strategy>).

²⁶ See <http://dictionary.reference.com/browse/strategy>.

²⁷ In order to conceptually integrate the ‘visible hand’ with the ‘invisible hand’ my definition of authority comprises both conscious and unconscious authority. Depending on your worldview, you may wish to use the concepts of ‘matter’ and ‘beings’ as interchangeable synonyms for ‘energy’.

²⁸ In 1937, at the age of 27, Ronald H. Coase published his seminal article ‘The Nature of the Firm’. In 1961, Coase published the article ‘Problem of Social Cost’, which unlike ‘The Nature of the Firm’ became an instant success, and

ideas about the theory of the firm belong to the most widely cited paradigms in modern management literature on why firms exist at all. Without Coase's theory we would barely have a conceptual justification for a managed corporation, leaving us with mass collaboration as the alternative form of economic organization.²⁹ A firm's entitlement of existence is directly linked to its value proposition, mirroring its business model and strategy. As transaction cost can hardly be measured, a business model can be used as a practicable approximation to define and to measure the efficiency of a firm. One may legitimately put forward the claim that the business model can be considered as the practicable essence of the theory of the firm (Knyphausen-Aufseß et al. 2002).

Although the business model concept can be used as a tool to frame the strategy of PE firms, the challenge is that there is no common understanding of the constituting components of a PE firm's business model. Even one of the most comprehensive scientific efforts within this context, notably Berg's dissertation published in 2005, defined merely the generic coordinates for buyout associations (Berg 2005).

Recognizing the lack of this essential conceptual frame, the constituents of all known existing PE related business model frameworks had been assembled into one integrated new business model framework for contemporary PE firms. The major building blocks of this new strategic coordinate system, constitutively framing the major themes of this dissertation, will be presented in the following sections.

3.2.1 Conceptual Frames Related to Strategy for PE

PE literature was reviewed extensively not only to synthesize academic knowledge on PE but also to identify business model frameworks for the strategy for PE. Five conceptual frames related to the strategy of PE could be found, all of which were developed between 2000 and 2009 (Wright et al. 2000a; Berg 2005; Knyphausen-Aufseß 2005; Barber et al. 2007; Klier 2009). Figure 33 illustrates the comparison of these five frameworks, showing which business model coordinates are covered by each generic strategic rack.

In contrast to the hitherto prevailing principal agent view on PE, around the brink of the 21st century Wright was one of the driving forces behind the introduction of the

continues to be the most widely cited article in the whole of the modern economic literature. These two articles were cited by the Royal Swedish Academy of Sciences as a justification for awarding Coase the Alfred Nobel Memorial Prize in Economic Sciences in 1991. Ironically, in contrast to the deterministic concept of strategy, Coase felt that "*what I have done has been determined by factors which were no part of my choosing. I have had greatness thrust upon me*" (see http://nobelprize.org/nobel_prizes/economics/laureates/1991/coase.html).

²⁹ This may sound utopian, yet the debate is more current than might immediately appear. Alan Murray, deputy managing editor and executive editor, online, for The Wall Street Journal, wrote in 2010 that at the time Coase was awarded his Nobel Prize the internet age dawned, so that "*the ability of human beings on different continents and with vastly different skills and interests to work together and coordinate complex tasks has taken quantum leaps*". Murray admits that the eclipse of management and its replacement by mass collaboration is utopian. Nevertheless, Murray's thoughts imply that the debate about the theory of the firm is very relevant for the management of contemporary firms (see The Wall Street Journal, weekend edition, 21/22 August 2010, p. W3).

entrepreneurial view within the context of PE. He criticized that LBO activity had falsely been perceived as just an organizational efficiency tool to reduce cost, and suggested that by empowering entrepreneurial mindsets of managers, buyouts can also foster upside growth, frequently leading to strategic innovation. Wright developed a two by two matrix, differentiating between a managerial mindset and an entrepreneurial mindset on the horizontal axis and between buyouts fostering efficiencies and buyouts fostering innovation on the vertical axis. This grid formalized four buyout categories, notably efficiency buyout, failure buyout, revitalization buyout, and entrepreneurial buyout, and specified conditions under which each may be appropriate (Wright et al. 2001).

Investigating how corporate venture capital organizations add value to their portfolio companies, Knyphausen-Aufseß discovered four types of value creation and also arranged them in a two by two matrix. The horizontal axis makes a distinction between an investment focus on technology and an investment focus on synergy and cost savings, while the vertical axis makes a distinction between the origin and profile of firms, notably between ‘new style’ knowledge-based captive VCs and established industry incumbents. For each one of the four categories the framework suggests value creation levers (Knyphausen-Aufseß 2005).

Guided by his doctoral co-assessor Wright, Berg noticed in his dissertation that research in PE has widely neglected strategy in the buyout context. Building on Porter’s generic value chain concept, Berg designed a detailed generic business model framework specifically for buyout associations, providing for challenges such as double sourcing of capital and investments or cash flow lumpiness due to the nature of the buyout cycle (Berg 2005). At the time of writing, Berg’s framework was arguably the most comprehensive generic strategic coordinate system for monolithic buyout associations.

Puzzled by the unprecedented expansion of PE activity, research increasingly began to investigate which strategic lessons can be learned from PE. For example the gist of the article ‘The Strategic Secret of Private Equity’ suggested that corporate management might be well advised to consider the ‘buy to sell’ model or at least a more flexible approach to the ownership of businesses, balancing the willingness to hold on to acquisitions with the flexibility to sell as soon as corporate parenting no longer adds value. Barber and Goold formalized their conceptual frame by arranging competing intermediaries in the market for corporate control, including PE funds, hedge funds, active mutual funds, public companies, and index mutual funds, and arranged them in a three by three matrix. The horizontal axis distinguishes between ‘invest’, ‘invest and influence’, and ‘invest, influence and build synergies’, whereas the vertical axis distinguishes between ‘buy to sell’, ‘flexible ownership’, and ‘buy to keep’ (Barber et al. 2007).

Strategic dimensions covered by each author's framework	Wright (2001)	Knyphausen-Aufseß (2005)	Berg (2005)	Barber (2007)	Klier (2009)
Individual cognition	✓				
Managerial incentives	✓				
Parent's profile and focus		✓			
Customers (investor groups/ needs)		✓		✓	
Investment portfolio management			✓		
• Investment strategy			✓		
• Time horizon		✓	✓		
• Industry			✓	✓	
• Geography			✓		✓
• Transaction size			✓		
• Rationale for buyout			✓		
• Type of buyout	✓		✓		
• Deal sourcing	✓		✓		
• Value generation approach	✓	✓	✓	✓	✓
• Partnering			✓		
• Exiting			✓		
Activities			✓		
• Primary			✓		
• Fundraising			✓		
• Investing			✓		
• Selecting			✓		
• Structuring			✓		
• Monitoring/ holding			✓		
• Exiting			✓		
• Secondary			✓		
• Finance & administration			✓		
• HR management			✓		
• Public relations			✓		
Administrative systems/ policies			✓		
• Basic organizational structure			✓		
• Degree of outsourcing			✓		
• Office structure (centralized vs. decentralized)			✓		
• Decision & governance structure			✓		
• Incentive & compensation structure	✓		✓		
Resources			✓		
• Tangible resources (financial, physical)			✓		
• Intangible resources			✓		
• Skills (know-how, culture)			✓		
• Intellectual property rights			✓		
• Reputation			✓		
• Relationships & networks			✓		
Revenue model (management fee, carried interest, other fees)			✓		
Ownership duration				✓	
• Buy to keep				✓	
• Buy to sell				✓	
Parenting style				✓	✓
• Active		✓		✓	✓
• Passive		✓		✓	✓

Figure 33: Comparison of Conceptual Frames Related to Strategy for PE

In his dissertation Klier also investigated what multi-business corporate management teams can learn from PE firms and categorized strategic patterns of PE firms, including ‘opportunistic financial investors’, ‘interventionist manager’, and ‘hybrid’, by arranging PE management models in a two by two matrix. The horizontal axis makes a distinction between unrelated diversification and related diversification, while the vertical axis makes a distinction between active parenting and passive parenting (Klier 2009).

In summary, one may reaffirm that there is no common understanding of the constituting components of a PE firm’s business model. Although the various business model coordinate systems presented above overlap partially, no single one constitutes a conceptual bracket.

3.2.2 Inadequacy of Existing Business Model Frameworks

Not only is each single one of the existing PE business model frameworks inadequate for the investigation of contemporary PE firms, but also taken together a merged strategic grid would be inadequate to studying the central research questions, given that relevant non-monolithic strategic dimensions would remain unconsidered. In order to test the applicability of the existing generic strategic grids within the context of this research, a string of the most relevant strategic dimensions for PE firms was distilled from an industry analysis and from a battery of

expert interviews.³⁰ The findings were compared with a synthesis of the existing business model frameworks.

Strategic dimensions (aggregated) covered by each author's framework	Wright (2001)	Knyphausen-Aufseß (2005)	Berg (2005)	Barber (2007)	Klier (2009)
Individual cognition	✓				
Managerial incentives	✓	✓			
Parent's profile and focus		✓		✓	
Customers (investor groups/ needs)		✓	✓	✓	
Investment portfolio management	✓	✓	✓	✓	✓
Activities (primary, secondary)			✓		
Org. structure/ systems/ policies	✓		✓		
Resources (tangible, intangible)			✓		
Revenue model			✓		
Ownership duration				✓	
Parenting style		✓		✓	✓
Multi-business structure Synergy between businesses	Business model gap				

Figure 34: Gap in Existing PE Business Model Frameworks

Figure 34 illustrates the business model gap which would exist even if all known existing PE related business model frameworks would get integrated into one unified conceptual frame. The gap most notably includes multi-business structure-related strategic coordinates and strategic aspects with respect to synergy between multiple businesses. It is not surprising that particularly these strategic dimensions lack any conceptual framing in PE literature, given that no conceptual lens exists which would allow for the investigation of multi-business PE centered investment firms. Perhaps the absence thereof partially explains why the central phenomenon under investigation, affecting considerable parts of the PE universe, has had remained virtually unexplored until the time of writing.

Once the lack of this conceptual lens surfaced during the course of this study, it became necessary not only to merge existing PE related business model frameworks but also to expand and to adjust the unified strategic coordinate system. The following section covers the new business model framework for PE centered investment firms.

3.2.3 Business Model Framework for PE Centered Investment Firm

Defining the business of an investment firm is one of the most complex and most challenging tasks confronting managers and management scientists (Day 1981; Geroski 1998). Some businesses are defined more by accident than design and often actions shape definitions (Abell et al. 1979). When definitions overly shape actions, there is a risk of defining an overly narrow business. Levitt suggested that firms can avoid this ‘marketing myopia’ by defining

³⁰ A more detailed overview of the interview process will be presented in chapter 6.

themselves more broadly in terms of the function being performed as opposed to a particular product, service or technology (Levitt 2008).

Many participants in the PE sector currently face this challenge. Although the prevailing definition prescribes that PE firms' actions are focused on monolithic PE, their actions are becoming increasingly broader. These considerations influenced the new design of the business model framework of a PE centered investment firm (see Figure 35). The framework consists of six major constituents including 'investors', 'owners', '3rd parties', 'center of PE firm', 'traditional PE business', and 'other businesses'.

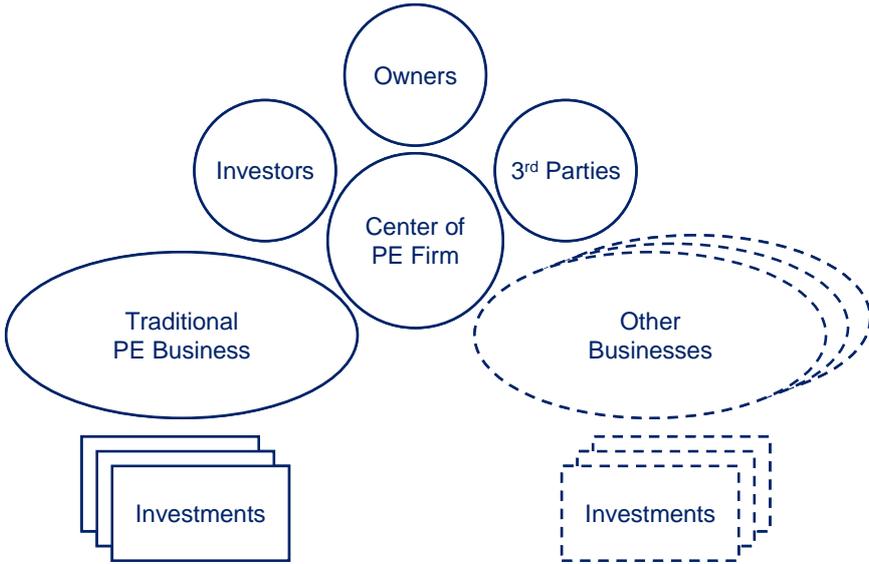


Figure 35: Constituents of Business Model of PE Centered Investment Firm

As laid out above, the new strategy framework builds on existing business model frameworks for the PE entity (Wright et al. 2000a; Berg 2005; Knyphausen-Aufseß 2005; Barber et al. 2007; Klier 2009). The strategic sub-dimensions of the constituents 'investors', 'traditional PE business', and 'center of PE firm', were mostly influenced by Berg's work. Wright, Hoskisson, Busenitz, and Klier, mostly influenced value creation approaches on the 'traditional PE business' level. By investigating synergy between subsidiary businesses of captive PE firms, the work of Knyphausen-Aufseß conceptually influenced the constituents 'owners', 'center of PE firm', and links between 'traditional PE business' and 'other businesses'. Finally, ownership duration considerations ('buy to sell' vs. 'buy to keep') developed by Barber added another more general dimension. Figure 36 illustrates the major strategic dimensions of each constituent.

Within the constituent 'investors', PE firms have to make strategic decisions with respect to investor groups and with respect to investor needs. Investor groups can be segmented further along four main dimensions: type of investor (e.g. pension funds, endowments, foundations, commercial banks, investment banks, insurance companies, family offices, UHNWIs, HNWIs, governments, sovereign wealth funds, funds-of-funds), geographic scope,

fund size (e.g. smaller than \$250m, \$250m to \$1b, \$1b to \$5b, larger than \$5b), and minimum investment size. The variety of ‘investor needs’ can include investments in buyout transaction via intermediaries, cross selling opportunity (e.g. some financial institutions try to cross-sell debt or mezzanine through their engagement in a buyout fund), co-investment opportunity, access to industry intelligence, related services (e.g. quantity and quality of reports), and acquisition of ownership stake in PE firm (e.g. to increase control over PE firm’s asset allocation procedures).

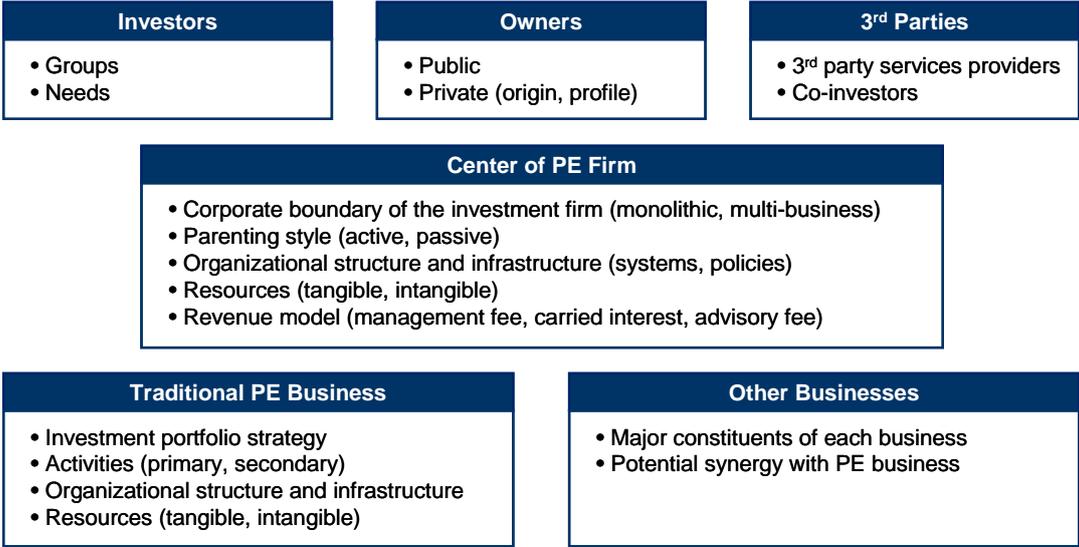


Figure 36: Strategic Dimensions of PE Centered Investment Firm

The constituent ‘owners’ displays a strategic sub-grid for some of the most complex and also politically most challenging strategic decisions, such as the question whether the PE firm should list on a public stock exchange or whether it should remain private. The origin and profile of owners of captive PE firms implies to what degree the PE firm will support strategic objectives of their mother ship as opposed to financial objectives.

‘3rd parties’ as a business model constituent comprises third party services providers (e.g. accountants, HR consultants, industry experts, investment banks, lawyers, strategy consultants) and co-investors (e.g. corporate investors, investment firms).

For the PE firm overall, some of the most relevant strategic dimensions are related to decisions with respect to the constituent ‘center of PE firm’. PE firms can design key principles of their individual strategy by choosing a specific pattern on the five strategic sub-dimensions, including corporate boundary of the investment firm (single-product, multi-business), parenting style (active, passive), organizational structure and infrastructure (degree of outsourcing, office structure, communication and coordination, decision making and governance structure, incentive and compensation structure), resources (tangible, intangible), and revenue model (management fee, carried interest, advisory fee).

On the level of the constituent ‘traditional PE business’, the strategic patterns of PE firms can be arranged along investment portfolio strategy, activities, organizational structure and infrastructure, and resources. ‘Investment portfolio strategy’ considers ten sub-dimensions including investment duration (i.e. ‘buy to sell’, ‘flexible’, ‘buy to keep’), monitoring style, sector, stage, region, size, rationale, type (e.g. efficiency-oriented investment, entrepreneurial investment), risk-return profile, and value creation approach (e.g. financial arbitrage, financial engineering, operational effectiveness, strategic distinctiveness, agency cost reduction, parenting effect). ‘Activities’ as a sub-dimension contains primary activities (including fundraising, investment portfolio management, investing, monitoring, and exit) and secondary activities (e.g. finance and administration, HR, public relations, legal). Decisions regarding the sub-dimension ‘organizational structure’ comprise the degree of outsourcing, office structure (e.g. centralized, regional, country-wise, sub-country-wise), communication and coordination, decision making and governance structure (e.g. autocratic, committee-based, democratic), incentive and compensation structure. The strategic sub-dimension ‘resources’, which is the last sub-dimension of the constituent ‘traditional PE business’ comprises financial resources, physical resources, skills, intellectual property rights, reputation (e.g. from past performance, from past buyout transaction, from past interaction with stakeholders, from key personnel), relationships and networks.

Finally, the constituent ‘other businesses’ creates the conceptual frame for the multi-business PE centered investment firm. One sub-dimension comprises business model and strategic patterns of each affiliated business. The second sub-dimension establishes the frame for a coordinate system for the consideration of potential synergy between the PE business and other businesses in order to highlight this explicitly as an additional relevant strategic dimension of the PE firm.

In summary, the new business model framework for the PE centered investment firm unifies all known existing PE strategy paradigms into one integrated framework. Building on the work of Wright, Hoskisson, Busenitz, Knyphausen-Aufseß, Berg, Barber, Goold, and Klier, the following empirical part of this dissertation focuses on the yet unexplored areas of the new business model framework of the PE centered investment firm.

4 Research Design

4.1 Purpose Statement

The purpose of this concurrent mixed methods study is to investigate strategic groups of investment firms and to explore corporate boundaries of investment firms. Quantitative methods were used to discover strategic configurations and how they relate to performance. At the same time the corporate expansion of the PE firm was explored using qualitative interviews with investment professionals and case studies.

Mixed methods research is an approach to inquiry which associates both qualitative and quantitative forms. It is more than simply collecting and analyzing data, as it involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research would be stand-alone (Creswell 2009).

4.1.1 Philosophic Worldview

Researchers' philosophical worldviews remain largely hidden in research (Slife et al. 1995). A worldview is a basic set of beliefs that guide action (Guba 1990). Worldviews are shaped by past experiences of the researcher, by his cultural, personal and professional background, by his academic discipline, and by the beliefs of his research community and faculty. Worldviews are also shaped by explicit or hidden agendas of interest groups, political parties and businesses. Although worldviews are primarily a domain of philosophy, the purposes and methods of all scholarly activity are influenced by assumptions on ontology (the nature of the world, i.e. what exists) and epistemology (what human beings can know about it) (Crotty 1998; Huff 2009). Some refer to them as paradigms (Burrell et al. 1979; Mertens 1998).³¹

I believe that the following considerations influence my research. Intellectually, it is difficult for me to exclude any of the worldviews, yet I feel less intrigued by worldviews of rationalists, formalists, and positivists, especially within the context of 'business matters'. The disciplines strategic management and finance are social sciences. Especially in the discipline

³¹ Huff presented an overview of worldviews influencing scholarly conversation in roughly the chronological order of their development, including "Rationalist/ Formalist" (Descartes, Leibnitz), "Empiricist" (Locke, Hume, Mill), "Logical Positivist" (Comte, Vienna Circle, Wittgenstein, Russell, Carnap), "Pragmatist" (Pierce, Dewey, Rorty), "Social Constructivist/ Constructionist" (Hegel, Durkheim, Burger, Luckman), "Historicist" (German Historicists, Boas, New Historicists), "Critical Theorists" (Frankfurt School, Marx), "Feminist" (Wollstonecraft, Harding), "Postmodernist" (Lyotard, Latour), "Scientific Realist" (Einstein, Putnam), and "Critical Realist" (Russell, Sellars, Bhaskar), and how each corresponds to ontology, epistemology and focus of scholarly activity (Huff 2009). John Creswell highlighted four worldviews, including "Postpositivism", "Constructivism", "Advocacy/ Participatory", and "Pragmatism", and laid out how each shapes the nature of research, particularly regarding the researcher's choice of quantitative, qualitative or mixed methods designs (Creswell 2009).

of finance, there is a tendency to forget that its central conceptual device ‘money’, in fact is the tangible equivalent for an ideology or beliefs system (see chapter 2.1.1).

In my view, the perception that we understand what is going on around us, in an intelligible and orderly way, is rather naïve. Looking in the rearview mirror of history, it is striking what kind of (from today’s standpoint) absurd views had been generally accepted, heavily institutionalized, massively enforced, and often conceptually undermined by deterministic approaches. Rationalists suggesting that the world is intelligible and orderly and positivists believing that the only authentic knowledge is scientific knowledge which can come only from positive affirmation of theories through strict scientific method, in my view, try too hard to reaffirm than to innovate.

A research design based on a purely deterministic worldview, where the researcher typically begins with a theory, collects data that either supports or refutes the theory, and then makes necessary revisions before additional tests are made, would hardly be able to produce any meaningful answers with respect to the central research questions of this research endeavor.

My scholarly efforts are more influenced by constructivist and by pragmatic worldviews. Constructivists believe that ‘individuals and groups participate in the creation of their perceived reality’ and that ‘all knowledge, including the most basic, taken-for-granted commonsense knowledge of everyday reality, is derived from and maintained by social interactions’. Pragmatists suggest that ‘truth is modified as discoveries are made and is relative to the time and place and purpose of inquiry’ and that ‘thought is simply an instrument for supporting the life aims of the human organism and has no real significance’ (Huff 2009, p. 112). In their research efforts, constructivists seek understanding of the world in which they live and work, they look for complexity of views, and research questions are broad and general so that study participants can themselves construct the meaning of a situation. Constructivist researchers also recognize that their own backgrounds shape their interpretation, and rather than starting with a theory, they inductively develop a theory or pattern of meaning (Lincoln et al. 1985; Berger et al. 1990; Crotty 1998; Schwandt 2007).

Instead of focusing on methods, pragmatist researchers emphasize the research problem and use all approaches available to understand the problem. Pragmatism is not committed to any one system of philosophy and reality, truth is what works at the time, and is based in a duality between reality independent of the mind and within the mind. Thus, pragmatist investigators use both quantitative and qualitative data. The pragmatic worldview frames the philosophical underpinning for mixed methods studies, and opens the door to multiple methods, different worldviews, different assumptions, and different forms of data collection and analysis (Creswell 2009; Tashakkori et al. 2010).

4.1.2 Mixed Methods

In the middle of the 19th century most scientists could be described as positivists. At the time of writing positivist view of scholarly activity still dominated many academic fields, while mixed methods were less known and less established (Huff 2009). Recognizing that all methods have limitations, some researchers felt that biases inherent in any single method could neutralize or cancel the biases of other methods. This led to triangulation,³² a means for seeking convergence across various data sources, evaluators, methods, and perspectives to the same data (Patton 2002; Yin 2009). A mixed methods research design imposes a greater challenge because the collection and analysis of both quantitative and qualitative data takes more time and because it requires the mastering of multiple data collection techniques (Daems et al. 1994; Yin 2009). Nevertheless, the purpose of this study could not have been accomplished otherwise. Each method for itself would have been inadequate to examine the research questions.

As laid out above, virtually all PE research investigated PE firms as monolithic entities, ignoring the migration of many players toward multi-business investment firms. Paradigms are sticky, also when it comes to PE. In the words of a Senior Managing Director, Corporate Officer and Executive Committee member of one of the largest PE firms: *“For us, it has been a diversification effort for over two decades, still people think of us as a PE firm, even if it’s only a quarter of our business”*.

At the time of writing, no research existed which would touch on the phenomenon under investigation. With a complete lack of reference points, qualitative research can help to explore the important variables for examination and to provide rich descriptions, qualified arguments, context-specific descriptions, and connections. However, qualitative research is limited by subjectivity, sloppy observations, and intrusion of the researcher in representations. Quantitative research allows for objectivity, neutrality, replicable procedures, causal laws, abstraction, precision, rigor and verifiability. However, quantitative research is limited by oversimplification and unacknowledged subjectivity of definitions and procedures (Huff 2009). A mixed methods research design was chosen to balance both approaches, to cancel out their weaknesses, to compensate their strengths, and to provide a robust description and interpretation of a new phenomenon.

Most critique on mixed methods research is based on the perception of inherent limitations due to the shallow application of intrinsically incompatible methods. Like in the

³² Triangulation is also a standard technique which is applied during strategy projects by e.g. strategy departments in corporations or by management consultants. For practicability reasons, the ‘80/20’ rule sets the ‘significance’ level rather on ‘80’ than on ‘99.5’. Otherwise the approaches are comparable. The human brain (i.e. researcher judgment) becomes the connecting device of all analyses. This must not necessarily be a disadvantage, given that at the time of writing average computer processing power was still far behind the processing power of human brains. Supercomputers with tens of thousands of microprocessors which were built around the millennium came at an expense of tens of millions of dollars per piece and delivered still only about 1/30 of human performance, and even those with higher processing power were barely not applicable in terms of artificial intelligence (AI). Until the processing capacity becomes more affordable and AI becomes a real alternative, the human brain will remain the most powerful information processing device which science has. At the time of writing, there simply was no better alternative than the human brain for triangulation purposes.

parable of two blind men feeling an elephant, an integrated understanding is rarely obtained (Daems et al. 1994). In the following section I will lay out the general research thrust and the overall empirical research design, which was deliberately designed to obtain an integrated understanding and to make the overall research endeavor more robust.

4.2 General Research Thrust

Recognizing our knowledge gaps with respect to strategy of PE and PE firms' evolution, this study attempts to make a contribution in providing explanations for some of the puzzles by investigating both generic competitive strategies of contemporary PE firms and by exploring factors shaping the boundary of the PE centered investment firm. This section outlines the general research thrust by stating the most relevant research themes. Building on this general research thrust, more detailed hypotheses and exploratory frames will be presented in the empirical parts further below.

4.2.1 Research Thrust: Strategic Groups

One major research thrust of this study is to shed light on competitive strategies of contemporary PE firms. It would not be practical to investigate the strategy of each PE firm. And the individual firm would also not appreciate such an exercise, given that the general availability of a superior distinct competitive strategy would carry the seed of its own destruction (Van der Heijden et al. 1993; Knyphausen-Aufseß 1997). A more practicable alternative is to investigate strategic patterns being shared by groups of firms.

Developing a strategic coordinate system for the PE firm is the primary groundwork for the strategic grouping analysis. Identifying the most relevant strategic dimensions from all factors possibly influencing PE firms therefore must constitute a primary research thrust. The development of an appropriate business model framework helps within this context, given that it provides not only an amended conceptual anchor but also a starting point in the creation of perceived reality of the contemporary PE firm (see chapter 3.2.3).

The subsequent research thrust aspires to identify groups of PE firms sharing similar strategic patterns. Methodologically, the objective is to take advantage of quantitative methods and statistical test to the greatest possible extent. Upon identification of generic competitive strategic thrusts in the strategic space of PE, the study intends to investigate the characteristics of each strategic group and to make an effort in unveiling the underlying business logic of each generic strategy.

A related research thrust intends to make a contribution toward our understanding of the unexplored phenomenon happening in the PE industry (see chapter 1.1.1). Naturally there is some research synergy between the groundwork of the strategic grouping approach and the investigation of this phenomenon, given that the decision of pursuing a single-product vs.

multi-business model is one of the most relevant strategic decisions for any PE firm. Recognizing that the prevailing view about the boundary of the PE firm is by and large focused on the monolithic PE firm, another research thrust of this study investigates whether contemporary PE entities are leaving or perhaps shaping the confines of their strategic space.

4.2.2 Research Thrust: Boundary of the Investment Firm

Recognizing that PE firms are disrupting the confines of traditional VC or LBO financing, this study intends to make a contribution toward our understanding of factors shaping the corporate boundary of an investment firm whose nucleus is in PE.

The research thrust aspires to explore major enhancers and inhibitors of the PE centered investment firm, both on an aggregated PE firm level and with respect to each major constituent of the PE firm's business model, including investors, owners, third parties, center of PE firm, traditional PE business, and other businesses. These enhancers and inhibitors are currently not considered in existing business model frameworks for the PE firm. This study makes an effort to closing this knowledge gap.

Subsequently, the study intends to triangulate this more academic research thrust built on fairly abstract concepts about the theory of the firm, with a more practitioner-oriented research thrust investigating specific products and services bundles between traditional PE and other businesses. This is driven by the study's dependency on practitioners' views with respect to the object under investigation. Engaging practitioners in conversations about economic advantages and disadvantages of bundling different specific products or financing functions is already pushing tolerance levels of abstract thinking, not to mention when adding an overlay of multi-layered business model constituents. The underlying enhancers and inhibitors of the firm's boundary partially overlap. Nevertheless, by applying this more pragmatic approach and by triangulating its results with the more abstract approach, this study intends to increase the quality of its findings.

Lastly, another research thrust is to study polarizing cases of PE firms, notably by linking the new strategic dimensions developed in this study with the underlying business model logic and strategy of each case. The intention of this thrust is not only to make the object under investigation more tangible but also to test for the plausibility of the findings.

4.3 Empirical Research Design

Building on, modifying and expanding the strategic grouping framework developed by Fiegenbaum and Thomas (Fiegenbaum et al. 1990), a holistic research scheme was designed in order to comprise all research steps of this dissertation. Figure 37 illustrates the overarching research design of this study.

The initial step is to define the strategic space of the object under investigation. Once the confines of the strategic space of PE were defined, a synthesis of PE related literature was conducted to distill the essence of contemporary knowledge on PE. Based on this knowledge, relevant strategic dimensions were defined. Subsequently, an initial clustering of PE firms into strategic groups was conducted, in tandem with studying particular cases in more detail. This initial run unveiled that there are puzzling phenomena happening in the strategic space of PE, making prevailing typology severely inconsistent. During the first iteration of the research process, all strategic groups seemed to be within the confines of the initially predefined strategic space.

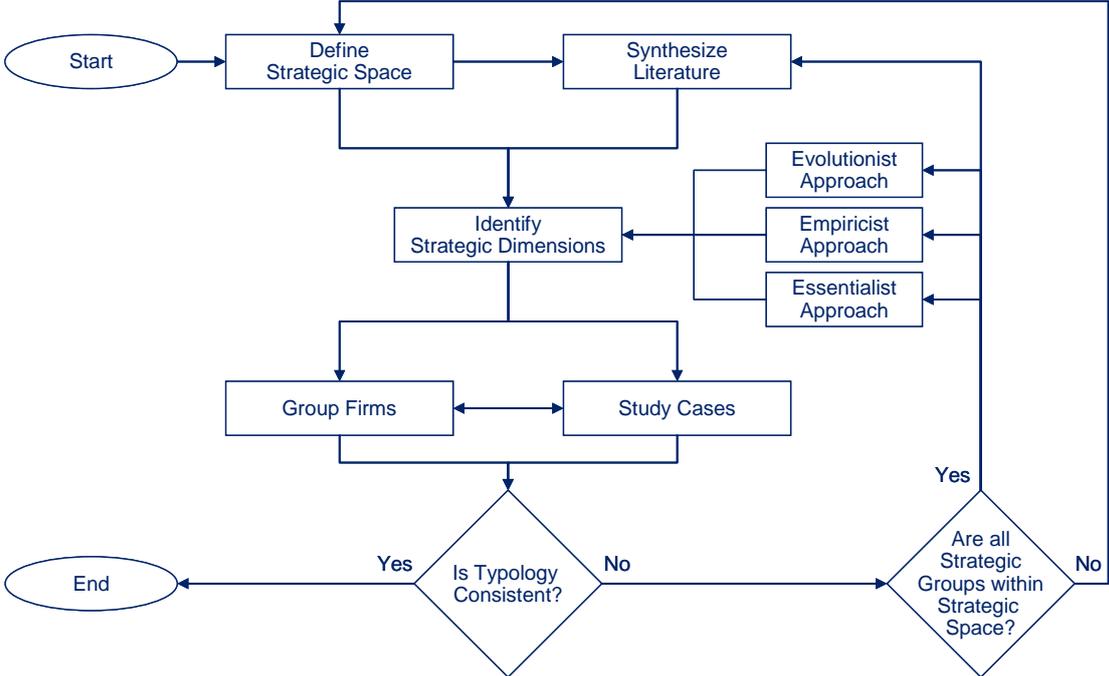


Figure 37: Research Design

The literature was synthesized a second time, now with a clearer focus on finding and synthesizing conceptual frames necessary for explaining some of the puzzles and inconsistencies. Three approaches were conducted in tandem in order to further increase and frame the conceptual strategic coordinate system of PE firms: evolutionist approach, empiricist approach, and essentialist approach. These three approaches, jointly with the essence from the literature synthesis, refined the strategic dimensions. The second iteration of the strategic grouping approach, jointly with expert conversations and deep dives on selected cases, produced a typology which was consistent in itself. However, there was an inconsistency with the definition of the predefined strategic space, and one strategic group disrupted the confines of the initially defined strategic space.

Respectively, the third iteration went back to the very first step. The strategic space was defined more broadly, and additional literature was synthesized providing incremental

knowledge on the broader context. With the new definition of the strategic space, which allowed not only for a monolithic PE model but also for a multi-business PE centered investment firm, the third iteration of the research scheme finally produced a consistent typology.

The strategic grouping approach is the central quantitative method in this study, allowing for tests of statistical significance. It had been generally criticized that the robustness of strategy research using strategic grouping approach is typically being negligently jeopardized by a) selecting variables based on their own inductive reasoning, b) using a hierarchical or nonhierarchical algorithm by itself, and c) paying limited attention to determining the number of validating clusters. Methodological experts suggest that the ill-effects of the weaknesses of strategic grouping analyses can be controlled through triangulation. Specifically for a cluster analysis to be a helpful tool in the effort to create knowledge, the technique needs to be embedded in research designs that include other methods that are far less subject to researcher judgment (Ketchen et al. 1996; Denzin 2009). The design of the research scheme of this study is specifically designed to control these weaknesses.

Concerning a), the research scheme prescribes several iterations of literature synthesis in tandem with evolutionist approach, empiricist approach, and essentialist approach, enriched by a battery of expert interviews and case studies. Regarding b), within the process step ‘group firms’ a more detailed research process specifies multiple iterations and comparisons of hierarchical algorithms and nonhierarchical algorithms. Finally, concerning c), high attention is dedicated toward validating grouping solutions through statistical tests and continuous validations with experts and practitioners.

Although the strategic grouping study and the exploratory investigation of the boundary of the investment firm occurred concurrently, still a choice had to be made in terms of sequencing the two in the subsequent parts of this dissertation. Given the overall focus of this study on the business model approach, one could have also presented the in-depth investigation of the business model boundary of the PE centered investment firm prior to the strategic grouping study. The problem with this sequencing alternative is that without the new findings from the strategic grouping approach the reader lacks the understanding on why the study puts so much emphasis on the boundary of the PE centered investment firm in first place, and particularly on the bundling of traditional PE and non-traditional PE businesses.

Of course, with the current sequencing the reader lacks the new rich qualitative empirical findings on the PE firm business model when reading the strategic grouping approach. Nevertheless, the current sequencing appears to be the lesser of two evils. Putting the strategic grouping approach first has the advantage of presenting a comprehensive empirical top down analysis of the overall PE sector. New evidence on groups of PE firms pursuing distinct strategic patterns and the magnitude of distinct strategic thrusts, notably the weight of the multi-business PE model, then conceptually formalize the research focus of the second part and substantiate its relevance.

Figure 38 roughly connects the research design with the overall structure of the dissertation, while the subsequent section presents the two empirical parts of this thesis.

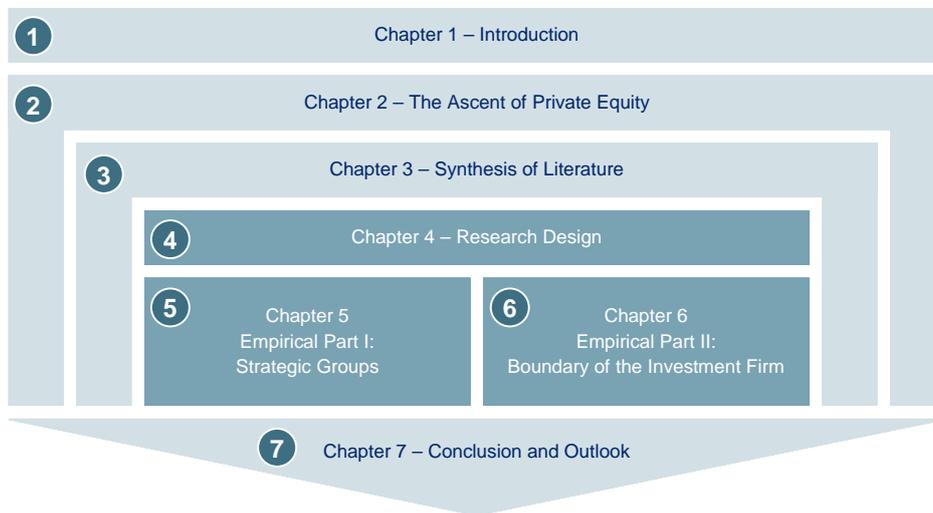
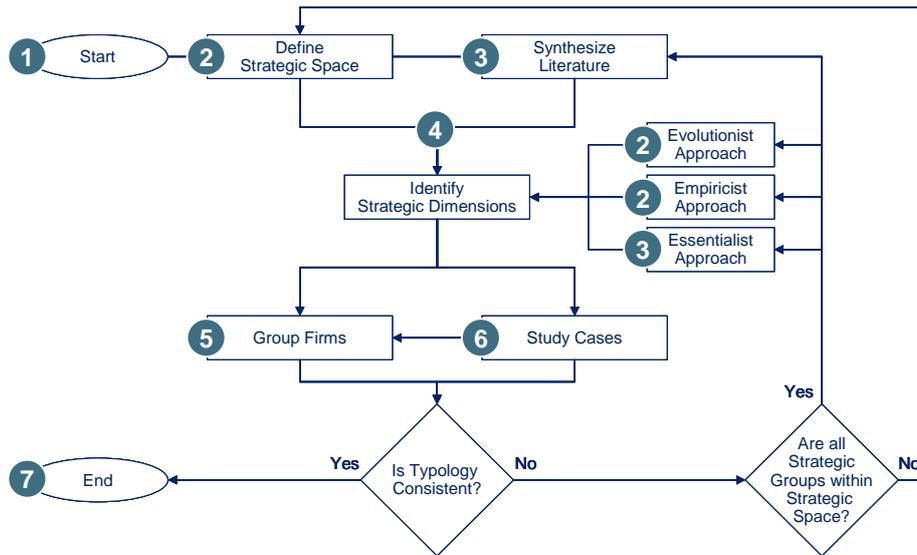


Figure 38: Links between Research Design and Structure of Dissertation

5 Empirical Part I: Strategic Groups

5.1 Conceptual Framework and Hypotheses

5.1.1 IO Research

IO research has a long tradition in investigating industries at the macro level in order to assess the impact and characteristics of an industry on consumer welfare. The ‘Structure Conduct Performance’ (SCP) paradigm, formalized by Mason and Bain, is the main conceptual frame for traditional IO research. The SCP concept investigates why price does not equal average cost in the long run and hence why industries have different averages of profitability, putting the existence of ‘barriers to entry’ on top of possible explanations. The ‘barriers to entry’ concept assumes that, relative to the established firm, a potential entrant faces incremental cost when entering a market (Mason 1939; Bain 1956; Bain 1968).

IO school of thought postulates the existence and height of barriers to entry and the scale of plants as the primary determinants of market structure, suggesting that the industry structure is the major factor determining the performance of the firm. Old school SCP assumes that technology is given and characterized by economies of scale, plants differ in their scale, each firm possesses only one plant, price is set by large plants and is unique in the market, there are no differences between firms within the same market except for the scale of operations, there is no uncertainty in the market, potential entrants and incumbent firms know the demand and the cost curves, all actors have the same set of information, actors’ rationality is not bounded, there is no opportunism in the market, there is no form of asset specificity, and all firms operating within the industry are in direct competition among themselves. Assuming that firm characteristics, besides of scale, have no effect on firm performance, IO school of thought postulates that the market structure is everything.

Discounting the heterogeneity of firms implies, for example, that organizational structures or core capabilities are performance neutral. It should be mentioned that old school IO view was established during an era where mass manufacturing, large scale production and economies of scale were the buzzwords of the hour in the academic discipline of ‘business policy’, which later was renamed to ‘strategic management’. Everything was more confined. It was also easier to define boundaries of markets with respect to region and sector.

Though fast progress in the ‘business policy’ or ‘strategic management’ discipline and our understanding of it increasingly challenge some of the assumptions of traditional IO view, it still remains a legitimate conceptual tool in contemporary strategic management research (Porter 1980; Porter 1991).

5.1.2 From Entry Barriers to Mobility Barriers

In the early 1970s, guided by Caves and Spence, a number of researchers including Hunt, Newman, and Porter, engaged in doctoral research investigating the existence of structural asymmetries within industries and modeling the competitive behavior of firms on the basis of these asymmetries. They also initiated theorizing about strategic groups and formalized the strategic grouping approach (Faulkner et al. 2003). Coined by Hunt in his doctoral dissertation in 1972, the strategic grouping idea caught on with two publications from Caves and Porter in the late 1970s (Caves et al. 1977; Porter 1979).

A strategic group can be seen as a set of firms within an industry that are similar to one another and different from firms outside the group on one or more key dimensions of their strategy. While in traditional IO view firms are assumed to be alike except for their size, strategic grouping view conceptualized the economic understanding of the heterogeneity of the firm (Porter 1979; Porter 1980).

One heterogeneity finding suggested that firms established in other markets were often the least disadvantaged entrants to an industry. Investigations implied that assets of established firms influenced their strategic position as entrants, notably ‘excess capacity’ of underutilized assets and ‘price discrimination’ due to capacity that can be put to use in various markets. This drove an extension of the ‘barriers to entry’ view. Recognizing that entry barriers are partly structural and partly endogenous, the view set forth as a general theory of the mobility of firms among industry spaces, encompassing exit and strategic shifts as well as entry into new spaces. The generalization of ‘entry barriers’ into ‘mobility barriers’ provided the anchor of mobility barriers theory, rationalizing why some strategic groups can achieve persistent performance advantages over other strategic groups (Bain 1968; Caves et al. 1977; Porter 1979).

It was argued that tacit collusion by strategic group members to establish group protection can contribute to superior performance of the group as a whole, as well as to that of the individual firm (Fiegenbaum et al. 1995). The intensity of inter-group competition was linked to three factors: number and size distribution of groups, strategic distance between groups, and market interdependence between groups (Porter 1979). Porter also suggested that variances in performance across strategic groups may be affected for three reasons: differences in bargaining power, differences in exposure of strategic groups to substitute products, and differences in the degree to which firms within the group compete with each other.

5.1.3 Strategic Groups

The contribution of Hunt, Newman, and Porter, shaped the general thinking in suggesting that firms within the same industry are likely to differ on traits other than size. This paved the way for debates about whether the firm or the industry, or some intra-industry group stratification

is the appropriate unit for analysis (McGee et al. 1986; Faulkner et al. 2003). McGee and Thomas specified the definition for the firm within a strategic group: “A firm within a group makes strategic decisions that cannot readily be imitated by a firm outside the group without substantial cost, significant elapsed time, or uncertainty about the outcome of those decisions” (McGee et al., p. 150). The definition comprises the mobility barriers concept, formalizing barriers either as absolute cost of movement from one strategic position to another or as the cost penalty that the group entrant must face relative to group incumbents. Figure 39 illustrates major sources of mobility barriers (McGee et al. 1986).

Market Related Strategies	Industry Supply Characteristics	Characteristics of Firms
Product line	Economies of scale <ul style="list-style-type: none"> • Production • Marketing • Administration 	Ownership
User technologies		Organization structure
Market segmentation	Manufacturing processes	Control systems
Distribution channels	R&D capability	Management skills
Brand names	Marketing and distribution systems	Boundaries of firms <ul style="list-style-type: none"> • Diversification • Vertical integration
Geographic coverage		Firm size
Selling systems		Relationships with influence groups

Figure 39: Sources of Mobility Barriers Creating Competitive Advantage

Source: McGee et al. (1986), p. 151

Mobility barriers view and strategic grouping approach enrich strategy analysis.³³ Provided strategic groups exist, their demography can reflect competitive dynamics and their formation can reflect strategy innovations and risky decisions. Mobility barriers facilitate our thinking about strategic thrusts that underpin market position and competitive advantage. Related considerations naturally link to resources and core capabilities of the firm.

It became generally recognized that strategic grouping provides major benefits for strategic management research: rich interpretations of industry structures and firm asset structures with impact on competition, conceptual frames for analyzing change over time and across sectors, and a taxonomy for interpreting change of asset structures of firms with effects on competition in the long run (McGee et al. 1986; Faulkner et al. 2003). Therefore strategic grouping approach was chosen for this research endeavor.

³³ One example of a prominent strategic group framework is Porter’s two by two matrix, mapping cost advantages accruing to larger competitors due to effects of scale or experience on one axis, and advantages from specializing on customer groups or by developing unique specialist skills on the other axis. Another prominent example of the essence of strategic grouping is the BCG matrix, a model allowing for the investigation of the boundary of the firm. The BCG matrix maps relative market share on one axis and industry growth rate on the other axis. Although the BCG matrix prescribes the optimal intra-firm business portfolio mix of a multi-business firm, it is based on variables which apply the industry as unit of analysis.

Academic research based on strategic grouping approach often links group membership to performance, investigates industry and firm evolution, and also investigates dynamic strategic groups and hybrid strategic groups (McGee et al. 1986; Daems et al. 1994; DeSarbo et al. 2008; DeSarbo et al. 2009). Though research interest with respect to performance-related investigations has a long tradition, empirical evidence supporting a link between group membership and group profitability is rather weak.

It was argued that the overly narrow focus on performance leads to limited insights to be gained from strategic grouping research. Also the drive for quantification seemed to have overshadowed the need to adequately specify the business model and the strategic dimensions being addressed. In fact, a minority of strategic grouping studies emphasized a detailed understanding of the sector context in specifying strategic variables. It was criticized that often strategic grouping studies rely on broad indicators and that few researchers have chosen to build their own sector expertise from which variable identification and specifications could proceed (McGee et al. 1986; Daems et al. 1994). The overall research design of this study deliberately intends to mitigate these issues.

5.1.4 Hypotheses

Until now, most research on PE has by and large investigated the PE industry and its participants through a homogenous view. Academics and practitioners often use the term PE as a synonym for either VC or LBO activity, and firms with a footprint in traditional PE are generally being perceived as VC or LBO associations, even if traditional PE activity only constitutes a small share of their overall business.

Though academic thirst for quantifiable empirical results might facilitate an efficient utilization of research capacity, the marginal practical relevance of many findings must raise concerns about research effectiveness in PE. Often researchers rush into analyzing samples of firms which on the face are marked as PE firms. For example, PE firms who may have less than 50% in assets under management in PE get clubbed with monolithic PE firms.

In samples where data actually would allow for a richer understanding of contemporary PE firms, the prevailing monolithic view of PE triggers adjustments of non-traditional PE activities. Although this reduction in complexity can make research efforts less cumbersome, it also falsely reinforces the homogeneity view and monolithic view of the PE firm.

An analysis of PE strategy considerations based on evolutionist approach, empiricist approach, and essentialist approach, a broad synthesis of PE literature, and expert interviews, indicated that the prevailing homogeneity view of the PE firm might be myopic. This central thesis will be tested empirically by investigating whether hypothesis A1 can be accepted (by rejecting A0).

A1: The PE sector is heterogeneous and strategic groups exist

A0: The PE sector is homogeneous and firms do not differ on specific traits

It seems plausible that different PE firms can successfully pursue various competitive strategies, depending on their strategic group affiliation. Yet, what is success for the PE firm? Most performance studies in the PE context used fund performance or portfolio company performance as an approximation for the success of the PE firm. Nevertheless, success of the PE firm on the corporate level can also be approximated by measuring other variables such as growth of assets under management, capital supply, reputation, or operational efficiency of the PE firm. Not all success variables of the PE firm must correlate with investment performance measures. Scale, for example, typically leads to lower investment performance suggesting less success of the PE firm. However, the same large PE firm can be considered very successful when looking at its high management fees (Lopez de Silanes et al. 2009; Metrick et al. 2009).

Therefore the full success story of the PE firm is perhaps more multi-layered than might instantly appear. If the heterogeneity view holds, it is also possible that several successful competitive strategies exist for PE firms, a hypothesis (B1) which will also be tested.

B1: Several successful strategies exist in the PE sector

B0: There is one best strategy in the PE sector

Empirical research in other strategic spaces showed that in contemplating strategic change, firms typically monitor the behavior of similar reference organizations in the same competitive environment in their search for new strategic options. It was observed that firms examine the recipes of competitive groups and focus initially on their own strategic group as a reference point (Huff 1982; McGee et al. 1986; Huff et al. 1992; Fiegenbaum et al. 1995). Often PE firms are regionally concentrated around major financial hubs and many PE investment professionals belong to relatively tight relationship networks. So in spite of the sector's secretiveness, the proximity between PE investment professionals and networks effect in general can allow for the diffusion of information across firm boundaries (Sorenson et al. 2001; Seppä et al. 2002; Hochberg et al. 2005; Loos 2005). In recent years PE firms also became increasingly transparent about themselves. This indicates that it is possible that successful firms in the PE sector monitor other firms in their strategic group as reference points, converging to each other over time (see hypothesis C1).

C1: Intra-group variances of successful strategic groups converge to the mean over time

C0: Intra-group variances of successful strategic groups stay stable or increase over time

The notion of industry confines and boundaries of strategic spaces is fuzzy. Like arbitrary set borders between countries, there is often no natural separating element between strategic spaces. Strategic spaces investigated by traditional IO research typically had a natural separating element. In the financial services space it is difficult to find such separating elements, except for regulation. Without such natural frontiers, why should PE firms not

gradually expand into attractive adjacent strategic spaces? Therefore this study also tests whether PE firms are traversing the strategic space of the PE sector (see D1).

D1: One or more strategic groups traverse the boundaries of the PE sector

D0: All PE firms are within the confines of the PE sector

Provided D0 can be rejected, two interpretations appear to be plausible. Either a strategic group is in the process of traversing the confined strategic space toward another strategic space, and typology, industry definitions, SIC codes, databases and regulation will be adjusted accordingly sometimes in the future. Alternatively, it could also be that a strategic group is shaping the boundaries of the strategic space, i.e. it is either expanding the pre-confined space or it is pioneering a completely new strategic space. The respective hypothesis (see E1) will also be tested.

E1: Traversing strategic groups shape the boundary of the strategic space of PE

E0: Traversing strategic groups move on to other strategic spaces

A typical problem of research is that it often does not describe how crucial issues were addressed. It was recommended that underlying methodological decisions should be presented in sufficient detail to allow readers to make informed judgments about findings (Cummings et al. 1995). This is even more vital for studies using strategic grouping approach, given the relevance of researcher judgment (Ketchen et al. 1996). The following section presents the methodology, as well as the underlying data which was investigated during empirical testing. The subsequent chapter will interpret the results and provide an outlook for future research.

5.2 Methodology and Data

5.2.1 Strategic Space and Strategic Variables

The study builds on an existing strategic grouping approach (Fiegenbaum et al. 1990; Fiegenbaum et al. 1995), while modifying it in three areas for the purpose of this study. First, the identification of variables capturing competitive strategy of the PE firm was derived from a thorough industry analysis triangulating evolutionist approach, empiricist approach and essentialist approach. Second, strategic grouping was enriched through a concurrent mixed methods research design, iterating several times up to the point of consistency in typology between strategic groups. Third, a decision juncture was introduced, testing whether a strategic group has traversed the pre-confined strategic space. The following section presents the research steps in more detail (see Figure 37).

The first step is to choose the strategic space (sector), which in this study is PE. Defining the boundary of a sector is one of the most challenging tasks confronting strategy analyses (Day 1981; Geroski 1998). Practitioners and researchers overly rely on SIC codes, although the whole concept is extremely fuzzy and can be severely misleading (Abell et al. 1979; Levitt 2008). Besides, businesses pursuing PE activity are classified under a broad range of SIC codes. Therefore a thorough investigation of the confines of PE was carried out (see chapter 2), and a group of the top PE firms by capital supply, based on the 2009 and 2010 annual ranking of Private Equity International, was used as the primary sample.

An initial screening of these firms showed that many PE firms invest across a variety of investment stages, which is in line with the PE definition used in this thesis (see chapter 2.1.3). In fact, this study is the first to investigate the PE firm on the corporate level. The unit of analysis in this study is the corporate level of the PE firm while in most PE related studies the unit of analysis is the PE fund or portfolio company level. Strategic grouping literature suggests that one should not simply focus on business level characteristics such as product and regional scope or market segment. Corporate parenting can also provide essentials for creating competitive advantage and it would be shortsighted to exclude corporate effects and the role of the HQ unit in the firm (Chandler 1991; Daems et al. 1994). For example, functional strategies such as advertising intensity, reputation development, and sales force characteristics can be critical investments in support of the business strategy.

Choosing the strategic variables along which to group observations is a fundamental step in the application of cluster analysis and perhaps the most important one (Ketchen et al. 1996). It involves several critical issues and there are three basic approaches (Dutton et al. 1983; Porac et al. 1990; Thomas et al. 1993): inductive (focuses on exploratory classification of observations), deductive (number and nature of groups in a cluster solution are strongly tied to theory), and cognitive (relies on the perceptions of expert informants such as industry executives, has roots in research on interpretation in organizations, which posits that it is the meaning that top managers attach to phenomena, not 'objective' characteristics, which directs subsequent organizational action and performance).

Strategic variables should be chosen in a way that fosters rich descriptions of a sample's characteristics. Both the inductive and the cognitive approach suit in this context, the latter being preferred because its use of experts enhances the confidence into the relevance of the variables. A small number of strategic dimensions can capture the essence of strategic thrusts, suggesting that it is entirely possible to adopt a pragmatic approach (Meyer et al. 1993; Ketchen et al. 1996). Following recommendations from methodology experts, this study uses the inductive and cognitive approach in tandem in determining strategic variables.

An initial preparatory cluster analysis pointed to potential strategic groups within the PE sector, helping to identify PE practitioners for in-depth conversations from firms representing each strategic group. All interviews were conducted throughout 2009 and the first half of 2010. They were fully transcribed and reviewed by the conversation participants.³⁴

³⁴ A more detailed overview of the interview process will be presented in chapter 6.

The essence from the in-depth conversations, combined with the essence from an overlaying evolutionist approach, empiricist approach, essentialist approach, and from a thorough synthesis of PE related literature, was triangulated to choose the key strategic variables. Insights from this deep understanding of the sector were also used to weight the strategic variables in order to reflect their relative importance.

Earlier efforts in the search of strategic configurations were typically defined across narrow sets of variables, often only one or two. This study incorporates seventeen strategic variables, thirteen endogenous variables and four external variables. The following section presents the sample and sources (see Table 3) and the definition of each variable in more detail (see Table 4).

Sample

- Worldwide
- Initial sample: top 130 PE firms by capital supply 2005 – 2010, representing 78% of PE universe
- 37 firms excluded due to incomplete data
- Final sample: top 93 PE firms by capital supply 2005 – 2010, representing 65% of PE universe

Strategic Dimension	Abbreviation	Source
Firm dependency	FIRMDEP	Desktop research, Thomson
Organizational footprint in US	ORGFOOT	Mergermarket
Organizational centralization	ORGCENT	Mergermarket, Thomson
Institutionalized experience	INSTEXP	Thomson
Strategic space proximity	SSPROX	Mergermarket, Thomson
Strategic space fuzziness	SSFUZZ	Desktop research, Thomson, Mergermarket, Private Equity Intelligence
Capital supply	CAPSUP	Private Equity International
Deal flow	DLFLOW	Mergermarket
Investment size	INVSIZE	Mergermarket, Thomson
Investment sector focus	INVSECTOR	Thomson
Investment region focus	INVREGION	Thomson
Investment stage focus	INVSTAGE	Thomson
Buy to build	BYTOBUILD	Mergermarket
Operational efficiency	OPEREFF	Mergermarket, Thomson, desktop research
Investment performance	INVPERF	Private Equity Intelligence
Market share	MKTSHARE	Mergermarket, Thomson
Reputation	BRAND	Private Equity International

Table 3: Sample and Sources

Whether PE firms are independent or affiliated to e.g. banks, sovereign wealth funds, or pension funds can considerably influence strategic decisions, wealth transfers, and the allocation and repatriation of generated wealth. The variable ‘firm dependency’ (FIRMDEP) measures the share of control rights held by affiliated parties. Given that no database provides this information for all firms in the sample, several sources had to be triangulated and missing data points had to be estimated. The insight generated by the variable ‘organizational footprint in the US’ (ORGFOOT) is two-layered. The US market is the largest and most mature PE market, so ORGFOOT measures both the regional concentration in the US and the footprint in the most mature market. If PE firms undergo a natural evolution path, those with a strong footprint in the US should more likely show signs of more advanced business models. The variable ‘organizational centralization’ (ORGCENT) approximates the centralization degree of each firm. ORGCENT touches on a central theme of expert conversations. Some argued

that centralization is important, assuming that the physical proximity of PE investment professionals would allow for market knowledge and best practices sharing. Others argued that it is difficult to originate transactions from one central office, and that decentralized ‘feet on the ground’ are necessary in order to improve access to more attractive investment opportunities. Measuring full years since firm inception, the variable ‘institutionalized experience’ (INSTEXP) approximates the firm’s experience.

Conceptualized by recognized strategic grouping studies (Daems et al. 1994), the variable ‘strategic space proximity’ (SSPROX) measures the proximity of a PE firm toward the pre-confined strategic space. In this study SSPROX measures the share of assets under management in traditional PE of total assets under management. Although SSPROX indicates the share of traditional PE activity, it does not provide any information about the fuzziness of the remainder. Therefore, the variable ‘strategic space fuzziness’ (SSFUZZ) was also introduced, ranking the order of the cluster to which the firm belongs. Another preparatory cluster analysis was carried out specifically to identify groups of firms within the PE sector, showing different degrees of strategic fuzziness. The alternative would be to measure the degrees of related and unrelated diversification. However, this would have not been practicable given the disadvantages laid out above. SSFUZZ follows a more objective approach by investigating the specific business composition of each firm.

Strategic Dimension	Definition
Firm dependency	$(\text{control rights held by 3rd party strategic owners}) / (\text{total control rights})$
Organizational footprint in US	$\text{sqrt}(\text{number of offices in US})$
Organizational centralization	$\ln((\text{assets under management}) / (\text{number of offices}))$
Institutionalized experience	full years since firm inception
Strategic space proximity	$(\text{assets under management in PE}) / (\text{assets under management})$
Strategic space fuzziness	rank order of segment cluster to which the firm belongs
Capital supply	$\text{neg sqrt}(1 / ((\text{capital raised over last 5 yrs}) / (\text{capital raised by all firms over last 5 years})))$
Deal flow	$\text{sqrt}((\text{number of relationships to 3rd parties}) / (\text{average number of relationships to 3rd parties of all firms}))$
Investment size	$\text{sqrt}((\text{average PE deal size}) / (\text{average PE deal size of all firms}))$
Investment sector focus	$\text{sqrt}((\text{investment value of top two sectors}) / (\text{total investment value}))$
Investment region focus	$(\text{investment value of top two regions}) / (\text{total investment value})$
Investment stage focus	$(\text{investment value of top two stages}) / (\text{total investment value})$
Buy to build	$(\text{average investment holding period}) / (\text{average investment holding period of all firms})$
External Variables	Definition
Operational efficiency	$\ln((\text{assets under management in PE}) / (\text{investment professionals in PE}))$
Investment performance	$\text{sumproduct}(\text{net IRR; value of PE fund}) / (\text{sum of values of all PE funds of firm})$
Market share	$\text{sqrt}((\text{assets under management in PE}) / (\text{assets under management of all PE firms}))$
Reputation	$\text{neg}((\text{capital supply rank 2010}) - (\text{average capital supply rank 2010 of PE firms in sample}))$
Combined external variables	CEV

Table 4: Definition and Normalization of Strategic Variables

Some experts argued that the ‘supply of capital’ (CAPSUP) is one of the most important, perhaps the most important, strategic dimensions for the PE firm. CAPSUP reflects this relevance. ‘Deal flow’ (DLFLOW) is the other variable which weighs as much as CAPSUP. It is difficult to measure deal flow, notably the quality of deal flow. Ideally the researcher would need to see what the investment committee sees. It was recommended that the centrality in networks is an acceptable indicator for deal flow. Therefore DLFLOW is measured by the

number of firm relationships to third parties over the average number of relationship to third parties.

The following five variables are commonly viewed as the most important strategic dimensions with respect to investment decisions of PE firms. First, the variable ‘investment size’ (INVSIZE) measures the average deal size of firm deals compared to the average deal size of all firms in the strategic space. The variable ‘investment sector focus’ (INVSECTOR) measures the concentration of firm investments in the firm’s top two sectors. The variable ‘investment region focus’ (INVREGION) measures the concentration of firm investments in the firm’s top two regions. The variable ‘investment stage focus’ (INVSTAGE) measures the concentration of firm investments in the firm’s top two investment stages. Finally, the variable ‘buy to build’ (BYTOBILD) compares the average investment holding period of the firm to the average investment holding period of all firms in the sample.

To test for statistical validity of the results, four external variables were used. First, the variable ‘operational efficiency’ (OPEREFF) measures the firm economics by measuring the ratio of assets under management in PE over number of investment professionals in PE. Second, the variable ‘investment performance’ (INVPERF) measures the weighted net IRR of firm PE funds. 1994 was defined as ‘vintage’ threshold and 60% was defined as ‘payout ratio to investors’ threshold. Third, the variable ‘market share’ (MKTSHARE) measures the share of firm assets under management in PE of assets under management in PE of all PE firms. Fourth, the variable ‘reputation’ (BRAND) approximates the reputation of the firm by measuring the development of capital supply rank as an indicator. The fifth external variable CEV is synthetic and comprises the four other external variables, OPEREFF, INVPERF, MKTSHARE, and BRAND, being weighted 30%, 30%, 20%, and 20%, respectively.

5.2.2 Data

For each of the seventeen strategic variables data was gathered for the largest 130 PE firms worldwide, ranked by capital commitment in the period from 2005 to 2010. Samples of other strategic grouping studies often were much smaller, e.g. 18 firms in Reger and Huff’s study (Reger et al. 1993), 19 firms in the study of Dess and Davis (Dess et al. 1984), or 16 firms in the study of Lewis and Thomas (Lewis et al. 1990).

The 130 firms analyzed in this study were selected based on the ‘PEI 300 2010’, an annual ranking of the top 300 PE firms worldwide by capital supply, published by Private Equity International. The PEI ranks each firm based on the amount of PE direct investment capital each has had raised or formed during the period from January 2005 to April 2010. The amount of capital supplied to the top 130 PE firms during this period totaled \$1.08tr. Capital supplied to all PE firms worldwide over the same period totaled \$1.39tr (according to VentureXpert, providing data on PE deals from 1970 onward). The top 130 PE firms represent 78% of the total PE universe of PE firms. 37 firms had to be excluded due to not applicable or missing data. Also, when inconsistencies appeared too broad the whole dataset

had to be excluded. With capital commitment of \$0.90tr over the last five years, the final sample of 93 PE firms represents 65% of the total PE universe.

For each variable for each firm bits and pieces of data from a set of different sources and databases had to be hand collected and integrated. Frequent inconsistencies across various sources had to be validated. FIRMDEP was sourced from desktop research and Thomson ONE Banker. ORGFOOT was sourced from Mergermarket and validated through a count of offices which PE firms disclose on their websites. ORGCENT has two components which were sourced from Mergermarket and Thomson ONE Banker. INSTEXP was also sourced from Thomson ONE Banker. The components for SSPROX were sourced from Mergermarket and Thomson ONE Banker. The data components needed for SSFUZZ were sourced from Mergermarket, Thomson ONE Banker, and Private Equity Intelligence, however, due to inconsistencies many data gaps had to be manually complemented by a thorough desktop research which included public filings, press releases, and company websites. Centrality in network positions as a proxy for DEALFLOW was sourced from Mergermarket. The components for INVSIZE were sourced from Mergermarket and Thomson ONE Banker. Data for the three variables INVSECTOR, INVREGION and INVSTAGE was sourced from Thomson ONE Banker. Average holding periods of PE investments for BYTOBILD were sourced from Mergermarket. The components for OPEREFF were sourced from Merger Market, Thomson ONE Banker, and desktop research of PE firms' public filings and company website, notably the number of investment professionals. INVPERF was sourced from Private Equity International, MKTSHARE was sourced from Mergermarket and Thomson ONE Banker, and BRAND was sourced from Private Equity International. In total, 35 sub-variables for almost all of the initial 130 PE firms had to be hand collected, bringing the total number of hand collected data points to roughly 4,500.

The data was collected between July 2009 and December 2009 and updated between April and June 2010, while the expert conversations were conducted throughout 2009 and in-depth interviews between February 2010 and June 2010.

Two methods of data collection exist. The first is to manipulate the independent variables by using different 'participants', i.e. different groups take part in each experimental condition (known as between-group, between-subjects or independent design). The second method is to manipulate the independent variables using the same participants, e.g. by giving one group access to something while restricting the other group from access to something (known as within-subject or repeated-measures design). The first method was used in this study.

Upon completion of the data gathering process, a thorough data exploration process was carried out. First the data was graphed and screened, notably to make sure that parametric tests can be applied. In order to spot the obvious mistakes of abnormal distributions, histograms and descriptive statistics were analyzed.³⁵ Data problems were corrected through

³⁵ In particular skewness and kurtosis. Positive values of skewness indicate a pile-up of scores on the left of the distribution, whereas negative values indicated a pile-up on the on the right. Positive values of kurtosis indicate a pointy distribution whereas negative values indicate a flat distribution. The values of skewness and kurtosis should be zero in a normal distribution.

removals of outliers and through data transformation.³⁶ To test for normal distributions the Kolmogorov-Smirnov test was applied, comparing the scores in the sample to a normally distributed set of scores with the same mean and standard deviation. If the test is non-significant at $p > .05$, it suggests that the distribution of the sample is not significantly different from a normal distribution (i.e. it is probably normal). If the test is significant at $p < .05$, the distribution is significantly different from a normal distribution (i.e. it is probably not normal). The applicability of the test is limited to small sample sizes, given that with large sample sizes it is easy to get significant results from small deviations from normality. Therefore the Kolmogorov-Smirnov test was complemented with Q-Q plots.

Variables with larger ranges would receive more weight in defining a cluster solution than those with smaller ranges so that a subset of variables could easily dominate the cluster solution. The remedy is standardization, transforming the distribution of variables so that each has a mean of zero and a standard deviation of one. This process allows variables to contribute equally to the cluster solution but may also eliminate meaningful differences among elements (Edelbrock 1979; Ketchen et al. 1996; Hair 2006). Moreover, multi-collinearity needs to be addressed. High correlation among clustering variables can be problematic because it can also overweight underlying constructs. Two types of correlations exist: bivariate and partial. A bivariate correlation is a correlation between two variables while a partial correlation looks at the relationship between two variables while ‘controlling’ the effect of one or more additional variables.³⁷ This study also addressed multi-collinearity through an extensive battery of correlation coefficients tests.

5.2.3 Clustering Firms into Strategic Groups

Strategic management research generally focuses on the relationships among strategy, environment, organization, and performance. The multi-dimensionality of these constructs creates a conceptual challenge in that a vast array of combinations could be developed along these dimensions to describe firms (Ketchen et al. 1996). The conceptual idea of cluster analysis is to take a sample of elements and group them so that the statistical variance among elements grouped together is minimized while between-group variance is maximized. Cluster

³⁶ E.g., log transformation squashes the right tail of the distribution, square root transformation brings large scores closer to the center, and reciprocal transformation reduces the impact of large scores and increases the impact of small scores.

³⁷ Pearson’s product-movement correlation coefficient is an example of a bivariate correlation coefficient. A one-tailed test should be selected for a directional hypothesis, whereas a two-tailed test should be used when the nature and direction of the relationship is unknown. Considerable caution must be taken when interpreting correlation coefficients because they give no indication of the causality’s direction. Correlation coefficients say nothing about which variable causes the other to change. Moreover, in any bivariate correlation causality between two variables cannot be assumed because there may be other measured or unmeasured variables affecting the results (this is known as the ‘third variable problem’ or the ‘tertium quid’). Spearman’s correlation coefficient is an alternative test and a non-parametric statistic. It can be used when the data has violated parametric assumptions.

analysis is a statistical technique that sorts observations into similar sets or groups. Distances between groups approximate the height of mobility barriers.

The use of cluster analysis presents a complex challenge because it requires several methodological choices that determine the quality of a cluster solution, and the implementation of cluster analysis in strategic management has come under frequent attack. One cause for concern is the extensive reliance on researcher judgment that is inherent in cluster analysis. Also troubling is the fact that, unlike techniques such as regression and variance analyses, cluster analysis does not offer a test statistic that provides a clear answer regarding the support or lack of support of a set of results for a hypothesis of interest (Barney et al. 1990; Meyer 1991). Another major concern is the perception that applications of cluster analysis have lacked an underlying theoretical rationale. Cluster analysis' sorting ability is powerful enough that it will provide clusters even if no meaningful groups are embedded in a sample. In fact, cluster analysis has the potential not only to offer inaccurate depictions of the groupings in a sample but also to impose groupings where none exist (Barney et al. 1990; Reger et al. 1993; Ketchen et al. 1996). In the 1990s some critics even referred to the use of cluster analysis as an embarrassment to strategic management and singled out cluster analysis as a methodological stigma (Ketchen et al. 1996).

Recognizing these views, measures suggested by methodology experts for improving the robustness of cluster analysis were deliberately applied in this study. Choosing the appropriate clustering algorithms, i.e. the rules or procedures followed to sort observations, is critical to the effective use of cluster analysis (Punj et al. 1983). There are two basic types of algorithms: hierarchical algorithms and non-hierarchical algorithms.

Hierarchical algorithms process through a series of steps that build a tree-like structure by either adding individual elements to (i.e. agglomerative) or deleting from (i.e. divisive) clusters. Whereas agglomerative methods initially view each observation as a separate cluster and then compile them into successively smaller number of groups, eventually putting all into one group, divisive methods follow the opposite approach, by putting all observations into one group initially, and the observations are divided into smaller groups until eventually each observations becomes a separate cluster. The researcher must decide what level of division is appropriate. Although the methods start at the opposite ends of the clustering process, the number of groups identified should be the same regardless of which one is used. The five most popular agglomerative algorithms are 'single linkage', 'complete linkage', 'average linkage', 'centroid method', and 'Ward's method' (Hair 2006). The differences among them lie in the procedures used to calculate the distance between clusters and each has different systematic tendencies in the way it groups observations. Ward's method was used in this study because it is best suited for studies where the number of observations in each cluster is expected to be approximately equal and without outliers (Ketchen et al. 1996).

The following problems are well known in the context of analyses based on hierarchical algorithms (Aldenderfer et al. 1984; Everitt et al. 2001). First, researchers often do not know the underlying structure of a sample in advance, making it difficult to select the appropriate algorithm. Second, hierarchical algorithms make only one pass through a data set, so poor

cluster assignments cannot be modified. Third, solutions are often unstable when cases are dropped, especially when a sample is small. This is particularly troublesome for research in strategic management where sample sizes are often small. Given all mentioned issues the confidence in the validity of a solution obtained using only hierarchical clustering algorithms is limited (Jardine et al. 1971). Therefore this study used the largest possible sample, and applied both hierarchical and non-hierarchical algorithms.

Non-hierarchical algorithms, also known as K-means or iterative methods, partition a data set into a pre-specified number of clusters. After initial cluster ‘centroids’ (the ‘center points’ of clusters along input variables) are selected, each observation is assigned to the group with the nearest ‘centroid’. As each new observation is allocated, the cluster ‘centroids’ are recomputed. Multiple passes are made through a data set to allow observations to change cluster membership based on their distance from the recomputed centroids. To arrive at an optimal solution the passes through a data set continue until no observations change in clusters (Anderberg 1973). Non-hierarchical algorithms offer two advantages over hierarchical methods. First, by allowing observations to switch cluster membership, nonhierarchical methods are less impacted by outlier elements. Although outliers can initially distort clusters, this is often corrected in subsequent passes as the observations switch cluster membership (Aldenderfer et al. 1984; Hair 2006). Second, by making multiple passes through the data, the final solution optimizes within-cluster homogeneity and between-cluster heterogeneity. This requires that the number of clusters be specified a priori. For this study this is problematic because the number of clusters was not known a priori.

A solution advocated by methodology experts is to use a two-stage procedure where a hierarchical algorithm is used to define the number of clusters and cluster centroids. These results then serve as the starting points for subsequent non-hierarchical clustering (Punj et al. 1983; Hair 2006). This procedure increases validity of solutions and the only cost is the extra time and effort required on the researchers’ part (Punj et al. 1983; Ketchen et al. 1996). Although many strategic grouping studies ignored this guidance, the best solutions often are those obtained by using hierarchical and non-hierarchical methods in tandem.

This study uses the recommended procedure to increase validity. First, it applies a hierarchical clustering algorithm (i.e. Ward’s method, as mentioned above) to determine the numbers of clusters in the data sample. The basic procedure is to inspect a dendrogram, a graph of the order that observations join clusters and the similarity of observations joined (Ketchen et al. 1996). A dendrogram indicates clusters by relatively dense branches, and by showing agglomeration coefficients, notably incremental changes in the coefficient. Such reliance on interpretation requires that this method is used cautiously (Aldenderfer et al. 1984). Theory and literature can serve as a non-statistical tool for determining the number of clusters, and comparison of emergent clusters with a typology based on theory can provide evidence regarding the typology’s descriptive validity (Ketchen et al. 1993; Hair 2006). Therefore this study also compares the findings with existing typologies and frameworks which were reviewed during the synthesis of PE related literature. Upon triangulation of the findings, a non-hierarchical clustering algorithm (i.e. K-means) was used to validate the results.

K-means is a heuristic algorithm. It seeks for solutions among all possible ones and there is no guarantee that the best will be found. It was recommended to run it multiple times with different starting conditions. In this study a set of different starting constellations has had been derived from multiple runs of the hierarchical clustering algorithms. Statistical tests with external variables for each run validated the degree of accurateness. The validation procedures will be presented in the following chapter.

5.2.4 Validation of Strategic Groups

Extreme care in validation is necessary. Despite a rigorous application of the methodology which was laid out above, without validation one can not be assured of having arrived at a meaningful and useful set of clusters (Punj et al. 1983). The primary validation objective is to ensure that a cluster solution has external validity, i.e. that it is representative of the general population of interest, and that it has criterion-related validity, i.e. that it is useful for the prediction of important outcomes (Cook et al. 1979; Kerlinger 1986).

Reliability, i.e. consistency, is a necessary but not sufficient condition of validity (Kerlinger 1986). There are two ways to assess reliability. The researcher can perform a cluster analysis multiple times, changing algorithms and methods for addressing multicollinearity, while the degree of consistency in solutions indicates reliability (Hair 2006). Alternatively, researchers can split a sample and analyze the two independently. However, there is no standard for assessing a satisfactory level of consistency, leaving this determination largely to researcher judgment (Hambrick 1983; Ketchen et al. 1996). This study applies the first way to test reliability and than turns to testing validity.

While cluster analysis always remains subjective, several tests can be used to evaluate the results (Daems et al. 1994). Validity can be assessed through significance tests like variance analyses with external variables (Anderberg 1973; Aldenderfer et al. 1984). The selected external variables should be conceptually related to clusters, though not used in defining clusters. In this study the variables determining the strategic groups are the independent variables and the external variables are the dependent variables. As laid out above, this study uses four dependent variables in addition to one synthetic dependent variable. Significance tests with external variables offer a powerful tool to establish validity of a cluster solution because they use a test static (e.g. F-statistic), and it was advocated by methodology experts to use this technique whenever possible (Ketchen et al. 1996).

Effects of experimental manipulation show up against a background of 'noise' caused by uncontrollable differences between conditions. Differences in dependent variables created by noise produce unsystematic variation, while differences in dependent variables created by experimental manipulation, i.e. strategic grouping in this study, produce systematic variation. When using between-subjects designs, as used in this study, differences between the objects under investigation amplify unsystematic variation, so the error variation will typically be larger than when using within-subject research design.

The t-test is often being used to compare means, yet it is not helpful here. First, it assumes homogeneity of variance. Second, it is limited to situations where there are only two levels of independent variables. It seems most unlikely that there are only two strategic groups in the PE sector. Therefore ANOVA is better suited for this study to test for differences between strategic groups. ANOVA is a parametric test showing whether several means are the same. Given that ANOVA is an omnibus test, meaning that it tests for an overall experimental effect, ANOVA shows whether the experimental manipulation was successful, though it does not provide specific information about which groups were affected.

ANOVA shows whether the business model fitted to the data accounts for more variation than extraneous factors, but it does not show where the differences between strategic groups are. Therefore post hoc tests can be used upon the completion of ANOVA. Post hoc tests carry out pair-wise comparisons that are designed to compare all different combinations of observations. Family-wise error rate³⁸ can be controlled by dividing Type I error by the number of comparisons, thus ensuring that the cumulative Type I error is below .05.³⁹ The trade-off for controlling the family-wise error rate is loss of statistical power, so the probability of rejecting an effect that does actually exist increases (Type II error).

A complementary validation method is to use expert opinions to validate the cluster solution. Though the use of expert opinions relies on subjective perceptions, this between-methods triangulation adds value because the perspectives and assumptions of researchers and managers often diverge. Evidence suggested that typically practitioners perceive groups of firms based on different variables than those used by researchers (Reger et al. 1993). Moreover, recognizing that the discipline of strategic management claims to be an applied field, expert opinions can also establish the practical value of a study (Rumelt et al. 1994). Expert views can establish the 'real world' value of results, helping to maximize validity and practical value, and should be sought whenever possible (Ketchen et al. 1996).

Therefore, as illustrated above, the concurrent mixed methods research design of this study deliberately intends to increase validity by allowing for between-methods triangulation between quantitative clustering methods and in-depth expert interviews.

Methodology experts emphasized that the ability of research using cluster analysis to generate knowledge has been hindered by the technique's implementation, and that researchers must take steps to overcome its weaknesses (Ketchen et al. 1996). This study carefully applies these recommendations from methodology experts in order to maximize the robustness of the research and the validity of the findings. The empirical results will be presented in the following chapter.

³⁸ In multiple comparison procedures family-wise Type I error is the probability that even if all observations come from the same population one will wrongly conclude that at least one pair of populations differ.

³⁹ For example, if one conducts 10 tests, one uses .005 as criterion for significance. This method is known as the 'Bonferroni correction'.

5.3 Empirical Results

As a preparatory research step, variables were normalized and standardized to allow for parametric tests. A comparison of tests with normalized and non-normalized variables showed marginal differences, suggesting that the preparatory groundwork neither jeopardizes the intrinsic value of the variables nor their statistical power.

5.3.1 Correlation Analysis

The analysis of correlations between independent strategic variables is presented in Table 5. The measure Pearson r shows the size of the effect, while probability p measures the significance level (two-tailed). 78 correlation relationships exist between the 13 independent variables, of which 44 cases suggest no effect and 8 cases show weak correlations with a probability of less than 5% ($p < .05$) that these occurred by chance. So two thirds of all cases show no or statistically weak signs of correlations. 14 cases (i.e. 18% of all cases) show moderate correlations ($.2 < r < .5$) significant at $p < .01$, and seven cases (i.e. 9% of all cases) show moderate correlations significant at $p < .001$. Finally, six cases show strong correlations ($r > .5$), significant at $p < .001$.

Both the magnitude of the effect and its significance suggest that deal flow is positively related to capital supply ($r = .614$, $p < .001$). Considerable caution must be taken, given that this result does not indicate a causality direction. It is unclear whether capital supply originates from deal flow or whether deal flow originates from capital supply, and which other variables may have an effect on this relationship. The data only suggests that a strong positive correlation exists between deal flow and capital supply. This effect is in line with findings presented in PE literature. On the one hand, the causality could run from capital supply to deal flow, which conceptually would synchronize with the ‘money chasing deals phenomenon’ (Gompers et al. 2000). On the other hand, better deal flow due to better centrality in network positions (Brettel et al. 2007), *ceteris paribus*, can lead to better investment performance, subsequently attracting more capital, which would speak for a causality running from deal flow to capital supply. Perhaps the direction of the causality changes depending on the position in the cycle. Either way, this strong and significant effect confirms the relevance of the double sourcing virtuous cycle as one central constituent of the new business model framework for the PE centered investment firm which was developed and presented above (see chapter 3.2.3.).

		FIRMDEP	ORGFOOT	ORGCENT	INSTEXP	SSPROX	SSFUZZ	CAPSUP	DLFLOW	INVSIZ	INVSECTOR	INVREGION	INVSTAGE	BYTOBILD
FIRMDEP	Pearson r	1												
	Sig. p (2-tailed)													
	N	93												
ORGFOOT	Pearson r	.059	1											
	Sig. p (2-tailed)	.572												
	N	93	93											
ORGCENT	Pearson r	.112	.166	1										
	Sig. p (2-tailed)	.285	.111											
	N	93	93	93										
INSTEXP	Pearson r	.118	.088	.137	1									
	Sig. p (2-tailed)	.259	.404	.190										
	N	93	93	93	93									
SSPROX	Pearson r	-.313**	-.291**	-.326**	.066	1								
	Sig. p (2-tailed)	.002	.005	.001	.528									
	N	93	93	93	93	93								
SSFUZZ	Pearson r	.150	.471**	.257	.062	-.102	1							
	Sig. p (2-tailed)	.151	.000	.013	.552	.329								
	N	93	93	93	93	93	93							
CAPSUP	Pearson r	.377**	.309**	.433**	.318**	-.298**	.327**	1						
	Sig. p (2-tailed)	.000	.003	.000	.002	.004	.001							
	N	93	93	93	93	93	93	93						
DLFLOW	Pearson r	.400**	.123	.185	.335**	-.238**	.300**	.614**	1					
	Sig. p (2-tailed)	.000	.242	.075	.001	.021	.004	.000						
	N	93	93	93	93	93	93	93	93					
INVSIZ	Pearson r	.280**	.102	.503**	.105	-.134	.310**	.618**	.552**	1				
	Sig. p (2-tailed)	.007	.332	.000	.315	.199	.003	.000	.000					
	N	93	93	93	93	93	93	93	93	93				
INVSECTOR	Pearson r	-.131	-.205	-.028	-.509**	.100	-.246	-.197	-.347**	.005	1			
	Sig. p (2-tailed)	.212	.048	.791	.000	.341	.017	.058	.001	.959				
	N	93	93	93	93	93	93	93	93	93	93			
INVREGION	Pearson r	-.253	.121	.254	-.143	.100	.096	-.263	-.391**	-.055	.371**	1		
	Sig. p (2-tailed)	.015	.246	.014	.171	.338	.359	.011	.000	.601	.000			
	N	93	93	93	93	93	93	93	93	93	93	93		
INVSTAGE	Pearson r	-.087	-.309**	.080	-.263*	.139	-.105	.116	.040	.389**	.505**	.078	1	
	Sig. p (2-tailed)	.407	.003	.448	.011	.185	.318	.268	.704	.000	.000	.457		
	N	93	93	93	93	93	93	93	93	93	93	93	93	
BYTOBILD	Pearson r	-.031	.061	.005	.052	-.160	.067	.139	.198	.053	-.040	-.279**	.082	1
	Sig. p (2-tailed)	.771	.564	.960	.619	.126	.521	.185	.057	.617	.705	.007	.436	
	N	93	93	93	93	93	93	93	93	93	93	93	93	93

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 5: Analysis of Correlations between Strategic Variables

The correlation analysis also shows a strong positive relationship between INVSIZ and the degree of organizational centralization ($r = .503, p < .001$), capital supply ($r = .618, p < .001$), and deal flow ($r = .552, p < .001$). This finding suggests that the PE firm with more capital supply invests in larger deals in a more centralized model.

A strong inverse correlation can be observed between the firm's investment sector focus and its institutionalized experience ($r = -.509, p < .001$). Although the causality direction is unknown, it appears more plausible that it runs from institutionalized experience toward sector focus, given that the PE firm will barely get younger, or older, from changes in investment sector concentration, except for the possibility of higher chances of survival. Either way, the effect implies that an older PE firm is, on average, less sector focused relative to its younger peers.

The analysis also shows a positive correlation between investment stage concentration and investment sector concentration, suggesting that the PE firm which is more (or less) concentrated sector wise is also more (or less) concentrated in terms of investment stage. The effect is strong and significant ($r = .505, p < .001$). The correlation between investment stage focus and institutionalized experience is weaker ($r = .263, p < .05$) relative to the relationship

between INVSECTOR and INSTEXP, suggesting that with growing age the PE firm has a tendency to decrease its concentration both in terms of investment sector and in terms of investment stage, while sector diversification appears to be more pronounced.

The strong positive relationship between strategic space fuzziness and organizational footprint in the US ($r = .471$, $p < .001$) is an interesting finding which sheds some light on the central research puzzle under investigation in this study. As laid out above, the US is the most mature traditional PE market (see chapter 2.1.3) so the strategic variable ORGFOOT also implies how much exposure the PE firm has to possibly more advanced PE business models in its primary market. The higher SSFUZZ the more non-traditional PE activities are bundled under the corporate umbrella of the PE firm. Therefore the strongly pronounced and highly significant positive relationship between SSFUZZ and ORGFOOT implies that the puzzling evolution of the monolithic PE entity toward the multi-business model perhaps is an early herald of a natural evolutionary step of the PE species over the course of its life cycle.

The moderate correlations between capital supply and firm dependency ($r = .377$) and between deal flow and firm dependency ($r = .400$) are also significant at $p < .001$. Again, the results do not indicate the causality direction. Nevertheless, it appears fairly counterintuitive that firms voluntarily give up control rights. Therefore one may carefully imply that the direction of the causality runs from FIRMDEP to CAPSUP and from FIRMDEP to DLFLOW, suggesting that the average PE firm which is more affiliated with other institutions such as banks, pension funds, or family offices, shows a tendency to enjoy both higher capital supply and higher deal flow.

Another noteworthy correlation can be observed between investment region focus and deal flow. The inverse relationship ($r = -.391$, $p < .001$), suggests that PE firms who are regionally more concentrated have lower deal flow, and that firms with higher deal flow are less concentrated in terms of region. The positive correlation between investment region focus and investment sector focus ($r = .371$, $p < .001$) suggests that the average PE firm expanding its boundary in terms of investment region (or investment sector) has a tendency to expand its boundary in terms of investment sector (or investment region) in tandem.

Taken together, the effects of the correlation analysis allowed for an adjustment of the variables concerning multi-collinearity. Upon completion, the conceptual and data related preparatory groundwork allowed for a robust and controlled strategic grouping analysis, which will be presented in the following section.

5.3.2 Clustering Analysis

Guided by recommendations from methodology experts, this study applied hierarchical clustering algorithms in tandem with non-hierarchical clustering algorithms. Necessary incremental research effort is well invested considering the higher validity of the cluster solution (Punj et al. 1983; Daems et al. 1994; Ketchen et al. 1996). A hierarchical clustering analysis, notably Ward's method based on squared Euclidean distance between groups,

allowed for a grouping of firms with respect to their strategic distance from the monolithic PE model and provided the required input for the strategic dimension SSFUZZ. Subsequently a non-hierarchical clustering algorithm, notably K-means using 100 iterations, ran through the whole dataset and suggested the incidence of strategic groups.

The advantage of non-hierarchical clustering is that it produces higher homogeneity within groups and higher heterogeneity between groups while outliers create less noise. However, non-hierarchical clustering algorithms require a predefined number of clusters as input. A triangulation of all available data sources of this study in a comparative-corroborative manner suggested the existence of three to ten strategic groups in the PE sector. Methodology experts suggest to perform a cluster analysis multiple times with different parameters to substantiate evidence of grouping stability (Ketchen et al. 1996).

A five cluster solution shows the strongest effects. The distribution of the firms across the five SGs in the five cluster solution is relatively balanced (see Figure 40). Of the 93 firms in the sample, 19 firms are in SG1, 21 firms in SG2, 22 firms in SG3, 14 firms in SG4, and 17 firms in SG5, corresponding to a frequency of 20%, 23%, 24%, 15%, and 18%, respectively.

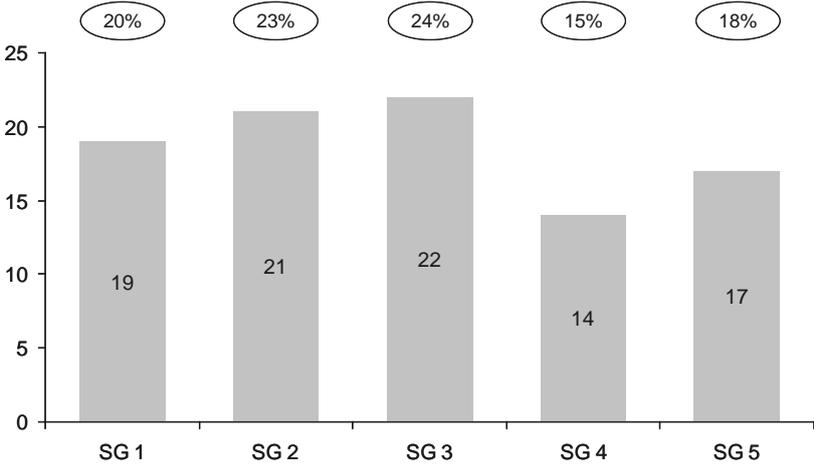


Figure 40: Distribution of PE Firms in Sample by Strategic Group

For each of the dependent variables including OPEREFF, INVPERF, MKTSHARE, and BRAND, an ANOVA validated that the clusters group firms that are different from each other, significant at $p < .001$ (see Table 6). A correlation analysis between the dependent variables showed that only one strong positive relationship exists, notably between MKTSHARE and BRAND, while the other relationships between the dependent variables are weaker or negligible. This low level of collinearity further increased the validity of the finding, recognizing that the strategic grouping effect can be observed for each one of the four dependent variables. Therefore it appears legitimate to suggest that the strategic grouping effect overall is very robust.

		Sum of Squares	df	Mean Square	F	Sig.
OPEREFF	Between Groups	27.792	4	6.948	9.838	.000
	Within Groups	57.208	81	.706		
	Total	85.000	85			
INVPERF	Between Groups	17.880	4	4.470	5.909	.000
	Within Groups	43.120	57	.756		
	Total	61.000	61			
MKTSHARE	Between Groups	53.023	4	13.256	29.928	.000
	Within Groups	38.977	88	.443		
	Total	92.000	92			
BRAND	Between Groups	41.455	4	10.364	18.043	.000
	Within Groups	50.545	88	.574		
	Total	92.000	92			
CEV	Between Groups	21.124	4	5.281	27.771	.000
	Within Groups	16.734	88	.190		
	Total	37.858	92			

Table 6: ANOVA of External Variables between Strategic Groups

Note: df = degrees of freedom, F = F statistics, Sig. = significance level.

Caution is required because ANOVA is an omnibus test, increasing the possibility that results show an effect which in reality might not exist. Subsequent tests, notably the Welch robustness test and the Brown-Forsyth robustness test, for each of the dependent variables further validated the robustness of the results (see Table 7). For the dependent variables OPEREFF, MKTSHARE, and BRAND, both tests confirmed that the means between firms grouped by the clusters are different at $p < .001$, and for INVPERF both tests suggested that the inter-group difference is significant at $p < .01$.

		Statistic ^a	df1	df2	Sig.
OPEREFF	Welch	9.626	4	34.472	.000
	Brown-Forsythe	9.217	4	57.668	.000
INVPERF	Welch	5.211	4	24.021	.004
	Brown-Forsythe	5.540	4	41.427	.001
MKTSHARE	Welch	22.283	4	40.051	.000
	Brown-Forsythe	27.335	4	51.633	.000
BRAND	Welch	47.981	4	42.356	.000
	Brown-Forsythe	18.169	4	55.605	.000
CEV	Welch	31.069	4	41.800	.000
	Brown-Forsythe	27.401	4	72.786	.000

a. Asymptotically F distributed.

Table 7: Robustness Tests (Welch Test and Brown-Forsythe Test)

Note: df = degrees of freedom, Sig. = significance level.

Taken together, the results show that there are significant differences between firms grouped by SGs of the five cluster solution. The possibility that these differences can be observed by chance alone is less than 0.1%. Therefore hypothesis A0 can be rejected and A1 accepted. In contrast to the prevailing view, strategic groups do exist in the PE sector.

This result does not only substantiate the heterogeneity view of the PE firm but also the observation of many industry experts, including a Senior Partner and Managing Director of one of the oldest and most recognized PE firms in the US who noticed that “*the great myth about PE is that everyone is doing the same thing*”.

The mathematically calculated center points (centroids) of each SG are shown in Table 8. It should be mentioned that a centroid does not represent one specific ‘real world’ PE firm. A centroid is rather a synthetic strategic pattern on the strategic coordinate system. The strategic coordinate system is reflected by the strategic dimensions used in this study, which build on the generic business model of the PE centered investment firm. Although centroids do not exist in reality, they represent tangible business model reference points of firms affiliated to a specific SG. In other words, a centroid can be seen as the tangible equivalent to the tacit strategy of a homogeneous group of PE firms.

The pattern of the centroid of each SG in this study builds on the 13 independent strategic dimensions presented above (see Table 8). All variables are standardized and normalized, allowing for a comparison of magnitudes of strategic variables across strategic patterns. For example, the SG3 DLFLOW number .0055 suggests that the deal flow of firms affiliated to SG3 is very close to the average deal flow of all firms, while the SG4 CAPSUP number 2.7940 suggests that capital supply of firms affiliated to SG4 is 2.7940 standard deviations higher than the capital supply of all firms. The SG5 INVSTAGE number -3.3775 suggests that the investment stage concentration of firms affiliated to SG5 is 3.3775 standard deviations lower than the investment stage concentration of all firms in the PE sector.

	Strategic Group Centroids				
	SG1	SG2	SG3	SG4	SG5
FIRMDEP	-.3202	-.5516	.0199	.8111	.3457
ORGFOOT	.5666	-.7644	-.4262	.6865	.2973
ORGCENT	.2715	-1.6098	.9346	2.0085	-1.1784
INSTEXP	-.3988	-.3280	.0716	.3179	.4965
SSPROX	-.0240	.3848	-.0029	-.4049	-.1114
SSFUZZ	1.3453	-.8868	-1.3776	2.4778	-.6659
CAPSUP	-.6532	-1.4982	.7113	2.7940	-.6405
DLFLOW	-.3665	-.3422	.0055	1.2388	-.1950
INVSIZE	-.7812	-.7711	.8395	3.3199	-1.9948
INVSECTOR	-.0610	.5261	.2020	-.2849	-.6085
INVREGION	.5181	.1286	-.2319	-.0661	-.3833
INVSTAGE	-.2381	1.3738	1.1341	.5815	-3.3775
BYTOBILD	.0874	.1371	.0236	-.1381	-.1839



Table 8: Center Points of Strategic Groups

The SGs are arranged by age from left to right, as can be seen by the increasing INSTEXP. The rationale for choosing this sequence is based on the insight from both the preparatory historical and industry analysis presented above. These suggest that the evolution of

monolithic PE firms into multi-business investment firms perhaps constitutes a natural evolutionary path of the PE firm. SG1 and SG2 comprise younger firms. SG3 firms have roughly average sector tenure, and SG4 and SG5 comprise more mature firms in the PE sector. The centroids of SG1 and SG2 can be seen the equivalents to ‘entrants’, while the centroids of SG3, SG4 and SG5 can be seen as the equivalents to ‘incumbents’.

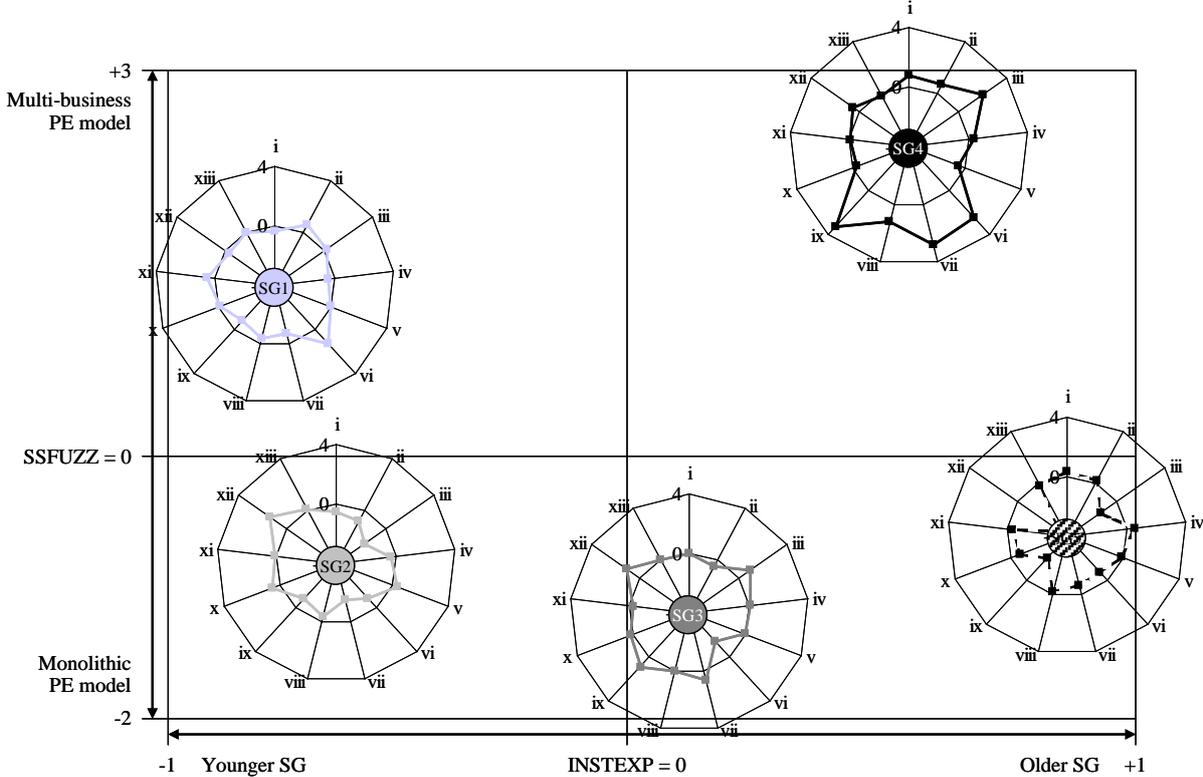


Figure 41: Spider Matrix of Strategic Groups

Note: i = FIRMDEP, ii = ORGFOOT, iii = ORGCENT, iv = INSTEXPT, v = SSPROX, vi = SSFUZZ, vii = CAPSUP, viii = DLFLOW, ix = INVSIZ, x = INVSECTOR, xi = INVREGION, xii = INVSTAGE, xiii = BYTOBUILD.

A spider graph (see Figure 41) illustrates the pattern of each centroid relative to the position of other centroids. Each axis represents one of the thirteen independent strategic variables in the order as presented in Table 8. INSTEXP was chosen for the x axis for the same reason as was just laid out in the last paragraph, while SSFUZZ was chosen for the y axis due to its central relevance for this research endeavor. The spider graph indicates that SG1, SG2 and SG3 show more balanced patterns across all strategic dimensions relative to SG4 and SG5. SG4 is expanding on many dimensions, showing abnormal high scores notably on the strategic dimensions SSFUZZ, CAPSUP, DLFLOW, and INVSIZ. In contrast, the SG5 centroid pattern is shrinking on many dimensions, notably with respect to scores on the strategic dimensions INVSIZ, INVSECTOR, INVREGION, and INVSTAGE.

The strategic patterns of SG4 and SG5 suggest that from a certain tenure threshold onward, the PE firm develops into two different models. One model, represented by the

centroid of SG4, has industry leading organizational centralization (ORGCENT = 2.0085), shows massive expansion into non-traditional PE products and services (SSFUZZ = 2.4778), has industry leading capital supply (CAPSUP = 2.7940), industry leading deal flow (DLFLOW = 1.2388), and highest average investment size (INVSIZE = 3.3199), while at the same time keeping investment sector concentration relatively focused (INVSECTOR = -.2849), investment region concentration relatively focused (INVREGION = -.0661), and investment stage concentration strongly focused (INVSTAGE = .5815).

In contrast, the other seasoned model represented by the centroid pattern of SG5 is organizationally relatively decentralized (ORGCENT = -1.1784), has remained relatively focused on traditional PE (SSFUZZ = -.6659), has relatively smaller supply of capital (CAPSUP = -.6405), relatively smaller deal flow (DLFLOW = -.1905), industry smallest average investment size (INVSIZE = -1.9948), and at the same time has lost focus in terms of investment sector concentration (INVSECTOR = -.6085), investment region concentration (INVREGION = -.3833), and investment stage concentration (INVSTAGE = -3.3775).

The two strategic patterns of SG4 and SG5 are quite diametric. SG4 remains fairly focused on sector, region and stage, while expanding its boundary into non-traditional PE businesses. And SG5 remains relatively focused on traditional PE, while heavily expanding its boundary in terms of sector, region and stage.

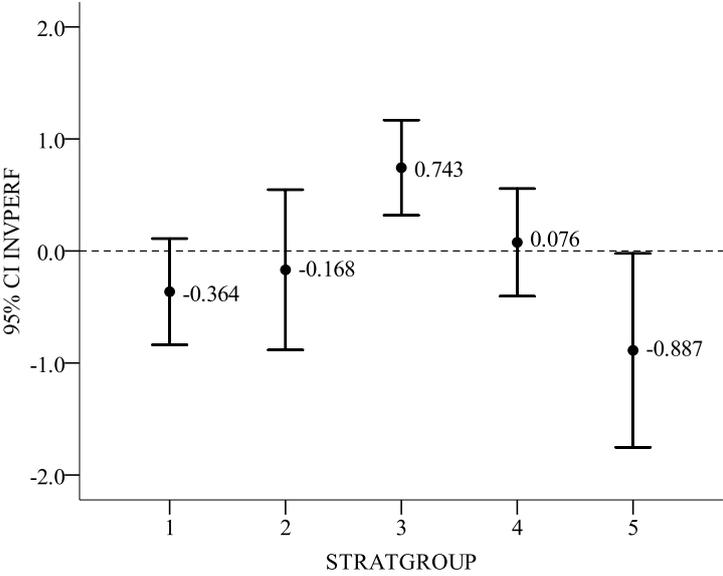


Figure 42: 95% Confidence Intervals of Investment Performance by Strategic Group

The centroid of SG4 outperforms SG5’s investment performance by about one standard deviation of average investment performance in the PE sector, while the volatility of SG4’s investment performance is only half of the volatility of SG5 (see Figure 42). In other words, PE firms pursuing the strategic pattern of SG4 generate, on average, considerably higher investment returns under considerably lower risk than PE firms pursuing the strategic pattern of SG5.

Concerning market share, SG4 outperforms all other SGs second to none (see Figure 43). Although the confidence interval of SG4's market share is broader than for any other SG, its lower bound is still about one standard deviation above PE sector average. So the centroid of SG4 is superior to the centroid of SG5 on both investment performance and market share.

Considering that the density measured by number of firms per SG is higher in SG5 relative to SG4 (see Figure 40), in summary the evidence implies that more mature PE firms affiliated with SG4 appear to be in a better competitive position than more mature PE firms affiliated with SG5. Yet, caution is required. The results can only indicate positions of PE firms relative to each other. Even if SG5 shows a lower investment performance level relative to another SG, it would be false to conclude that the investment performance of SG5 is bad in absolute terms. The results say nothing about the investment performance of SG5 relative to other asset classes in the investable universe.

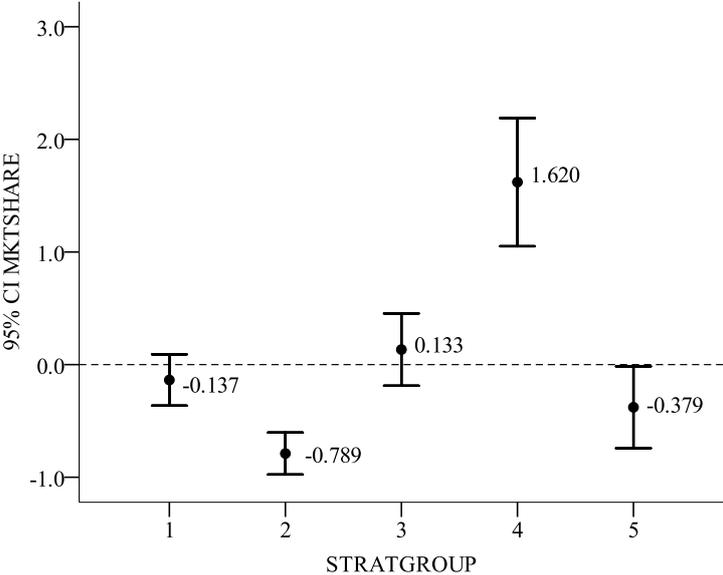


Figure 43: 95% Confidence Intervals of Market Share by Strategic Group

The strategic patterns of SG1 and SG2 also represent two fairly diametric models (see Table 8). SG1 has a relatively strong footprint in the most mature market ($ORGFOOT = .5666$), the second highest degree of strategic space fuzziness ($SSFUZZ = 1.3453$) after SG4, below industry average capital supply ($CAPSUP = -.6532$), below average deal flow ($DLFLOW = -.3665$), and below average investment size ($INVSIZE = -.7812$). Both investment sector concentration ($INVSECTOR = -.0610$) and investment stage concentration ($INVSTAGE = -.2381$) is below industry average, while SG1's regional concentration is the highest in the industry ($INVREGION = .5181$).

In contrast, SG2 has the smallest footprint in the most mature market ($ORGFOOT = -.7644$), the smallest degree of organizational centralization ($ORGCENT = -1.6098$), the highest focus on traditional PE ($SSPROX = .3848$), and a relatively low degree of strategic space fuzziness ($SSFUZZ = -.8868$). SG2's capital supply is substantially lagging behind all

other SGs (CAPSUP = -1.4982), deal flow is relatively low (DLFLOW = -.3422), and also investment size is relatively low (INVSIZE = -.7711). SG2 cultivates industry leading focus in terms of sector concentration (INVSECTOR = .5261) and also in terms of investment stage concentration (INVSTAGE = 1.3738).

In summary, the results suggest that with respect to their strategic positions the two ‘entrant’ models are also diametric to each other. SG1 has a strong regional focus with some overlaying sector themes, while expanding into non-traditional PE businesses. In contrast, SG2 is strongly focused on traditional PE and also has a fairly strong sector focus while being regionally more diversified than SG1.

The investment performance confidence interval of SG2 is slightly broader relative to SG1 offering marginally more upside, while the investment performance mean of SG2 is also marginally higher relative to SG1 (see Figure 42). In terms of market share, SG1 outperforms SG2 (see Figure 43), and SG1 also outperforms SG2 in terms of operational efficiency (see Figure 44).

Taken together, the evidence suggests that younger PE firms can successfully pursue both the SG1 and the SG2 model, though better performance of SG1 relative to SG2 with respect to market share and operating efficiency, and slightly lower firm density in SG1 relative to SG2, suggest that firms affiliated with SG1 perhaps are in a comparatively stronger competitive position relative to SG2 affiliates.

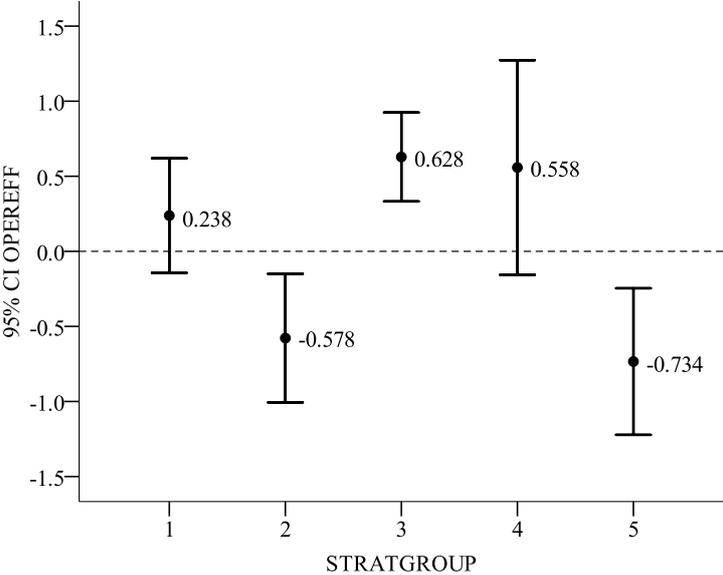


Figure 44: 95% Confidence Intervals of Operational Efficiency by Strategic Group

The centroid with the best investment performance is affiliated with SG3 (see Figure 42), and overall the strategic pattern of the SG3 centroid is quite distinct (see Table 8 and Figure 41). It is more pronounced toward regions where the PE sector is less mature (ORGFOOT = -.4262), while maturity of SG3 itself is closer to industry average (INTEXP = .0716). Also the share of traditional PE activity of the SG3 centroid is close to industry average (SSPROX = -.0029),

and the strategic fuzziness of SG3's non-traditional PE activity is lowest in the strategic space of PE ($SSFUZZ = -1.3776$). SG3 enjoys second largest capital supply ($CAPSUP = .7113$), second largest deal flow ($DLFLOW = .0055$), and second largest investment size ($INVSIZE = .8395$), following SG4, the centroid leading the space with respect to these three strategic dimensions. Investment sector concentration of SG3 is slightly above industry average ($INVSECTOR = .2020$) and investment region concentration is slightly below industry average ($INVREGION = -.3219$).

Though SG3 outperforms all other SGs in terms of investment performance (see Figure 42), it lags behind SG4 in terms of market share (see Figure 43) and also in terms of reputation (see Figure 45). Concerning operational efficiency SG3 is at par with SG4, although SG4 has a broader confidence interval (see Figure 44).

Taken together, the strategic pattern of the SG3 model represents firms that are moderately old, more concentrated on traditional PE and specific sectors, more exposed toward less mature PE markets, and otherwise cultivate a quite balanced business model.

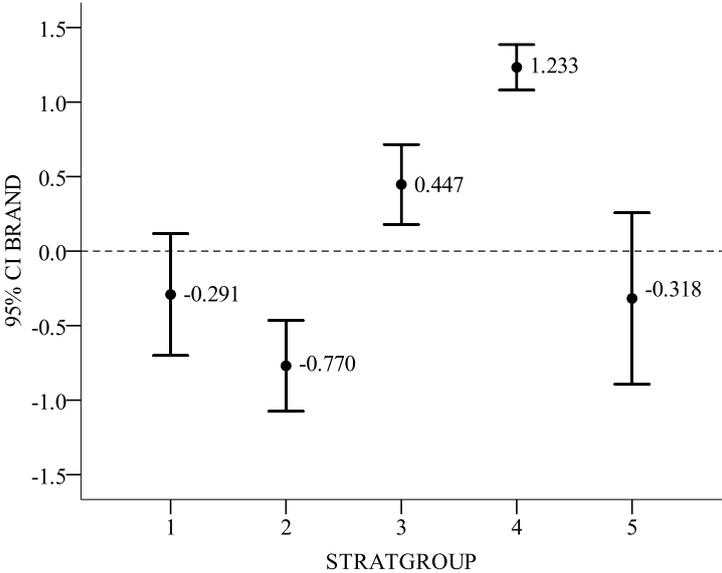


Figure 45: 95% Confidence Intervals of Reputation by Strategic Group

Overall, the synthesized results suggest that one can reject hypothesis B0 and that B1 can be accepted. The inter-group and intra-group comparison of dependent variables across the five SGs suggests that several successful strategies exist for groups of firms in the PE sector, which is in line with the heterogeneity view of the PE firm.

In order to investigate whether firms affiliated to a specific SG converge to its centroid over time, the development of the dependent variable $INVPERF$ was compared across two different time periods. While one time period included all vintages, the other time period included only post 1996 vintages. 1997 as a vintage threshold was chosen in order to obtain most recent performance data along a full PE sector cycle. Though the performance data was drawn from Preqin in 2010, no post 2007 vintages showed 'payout to investors' ratios of 60%

or more of fund value, and payout ratios below 60% make performance data not really meaningful.

Figure 46 shows a comparison of the variances of investment performance by SG between all vintages and post 1996 vintages. The variance of SG1, SG2, SG3 and SG4 has decreased over time, while the variance of SG5 has increased over time. As a second measure, the development of the investment performance mean between the two vintage groups was plotted on the right axis. The result suggests that the investment performance variance of firms affiliated with increasingly successful SGs converges to the mean over time, while the investment performance variance of firms affiliated with the decreasingly successful SG diverges over time. The possibility that this effect would occur across all five SGs at the same time by chance alone is 3.125%. Therefore, one can reject hypothesis C0 at $p < .05$ and accept hypothesis C1. Empirical evidence implies that PE firms affiliated with increasingly successful SGs converge to the SGs centroids over time. One may speculate that perhaps the PE firm even uses the strategic pattern of the centroid consciously or unconsciously as a dynamic reference point.

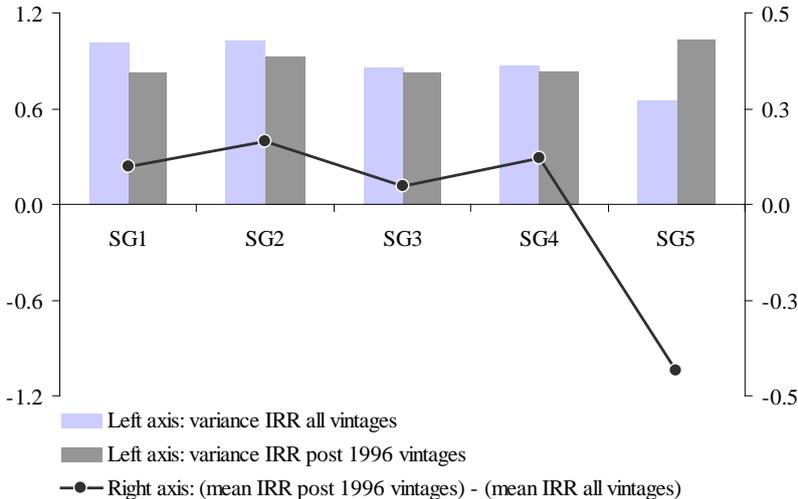


Figure 46: Comparison of IRR Variances by Vintage Group and by SG

Having presented evidence for the existence of strategic groups in the PE sector, the following section will present the results from investigations on whether one or more SGs traverse the strategic space of traditional PE. It is puzzling that many PE firms have been expanding their corporate boundaries into non-traditional PE businesses, often leading to massive organizational transformations.

The most relevant strategic dimension within this context is SSFUZZ. It is the mathematically approximated equivalent of the corporate boundary of the PE centered investment firm. It allows to measure the distance of an SG toward the center point of the traditional PE model. SSFUZZ is an independent variable and was linked to the dependent variable CEV, which comprises all four dependent variables. CEV can be seen as a synthetic success variable, integrating a variety of success measures. The centroid of each SG was

plotted in a matrix with SSFUZZ on the horizontal and CEV on the vertical axis (see Figure 47). The color scheme of each bubble in the matrix corresponds to the color scheme of each SG as presented above (see Table 8). The size of the bubble represents the SG wide aggregated assets under management in PE. Given that all strategic variables are standardized and normalized, the vertical dotted line in the matrix, cutting the horizontal axis at 1.96, represents the upper bound of the 95% confidence interval of SSFUZZ of all PE firms in the sample. In other words, the likelihood of a group of firms to traverse the dotted line by chance alone is less than 5%.

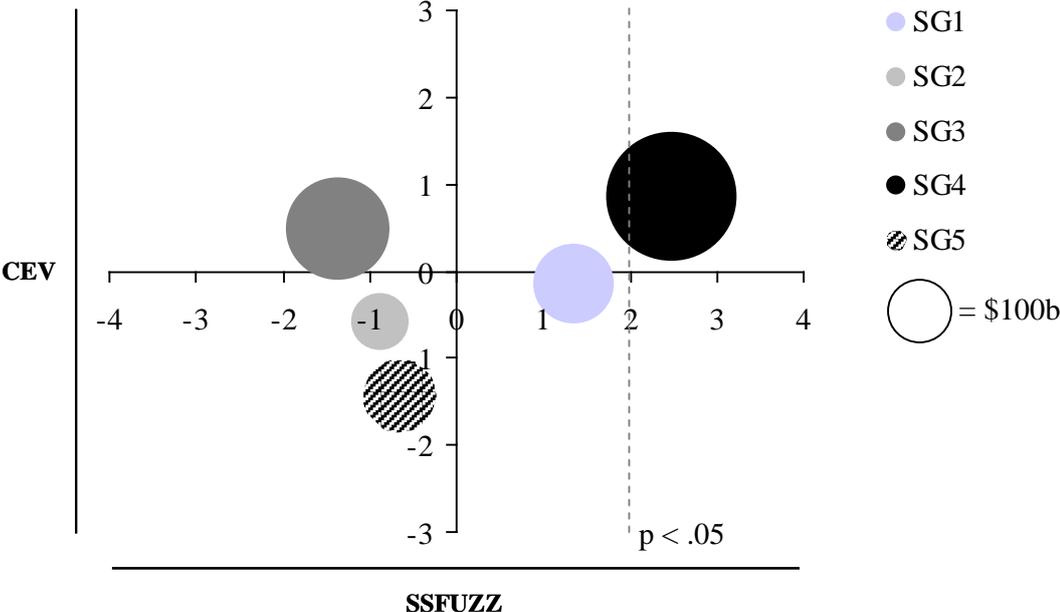


Figure 47: SSFUZZ and CEV Matrix

Note: Size of bubbles corresponds to aggregated traditional PE AuM of firms in SG.

The SSFUZZ and CEV matrix shows that in fact one SG, notably SG4, is traversing the strategic space of the PE sector significant at $p < .05$. Therefore hypothesis D0 can be rejected, and D1 accepted.

Except for SG4, all other SGs are within the 95% confidence circle of the center point of the PE sector. The matrix shows that the least fuzzy model (SG3) together with the most fuzzy model (SG4) lead the PE sector, both in terms of CEV scores and in terms of assets under management in PE. The two ‘entrants’ SG2 and SG1 have lower CEV scores and show close strategic proximity to SG4 and SG3, respectively. SG5, the most mature SG, appears rather ambivalent with respect to SSFUZZ, has the second lowest aggregated amount of assets under management in PE, and is less successful (lowest CEV scores) relative to all other SGs.

SG4 comprises PE firms such as The Blackstone Group, Bain Capital, or KKR. The empirical finding that with SG4 a considerable share of the PE universe is traversing the strategic space of the PE sector leads to relevant questions. Will this evolution possibly reshape the boundary of the PE sector? Is SG4 perhaps the herald for a new financial species?

Or will SG4 firms simply traverse to an adjacent strategic space such as asset management or investment banking?

Another matrix facilitates the investigation of these matters. This time the strategic dimension capital supply (CAPSUP) is represented by the vertical axis. Some experts argued that capital supply is perhaps the most important strategic dimension in the PE sector, second to none. The SSFUZZ by CAPSUP matrix (see Figure 48) shows that SG4 is not only managing the most aggregated assets under management in PE but also has more PE capital commitment than any other SG in the PE sector. Given that SG4 enjoys such a considerable share of PE capital commitment, one may speculate that the SG4 centroid may not only become a more relevant reference point for firms affiliated to SG4 but perhaps even for firms beyond SG4. Such a new center of gravity within the PE sector would imply that E0 can be rejected and E1 accepted.

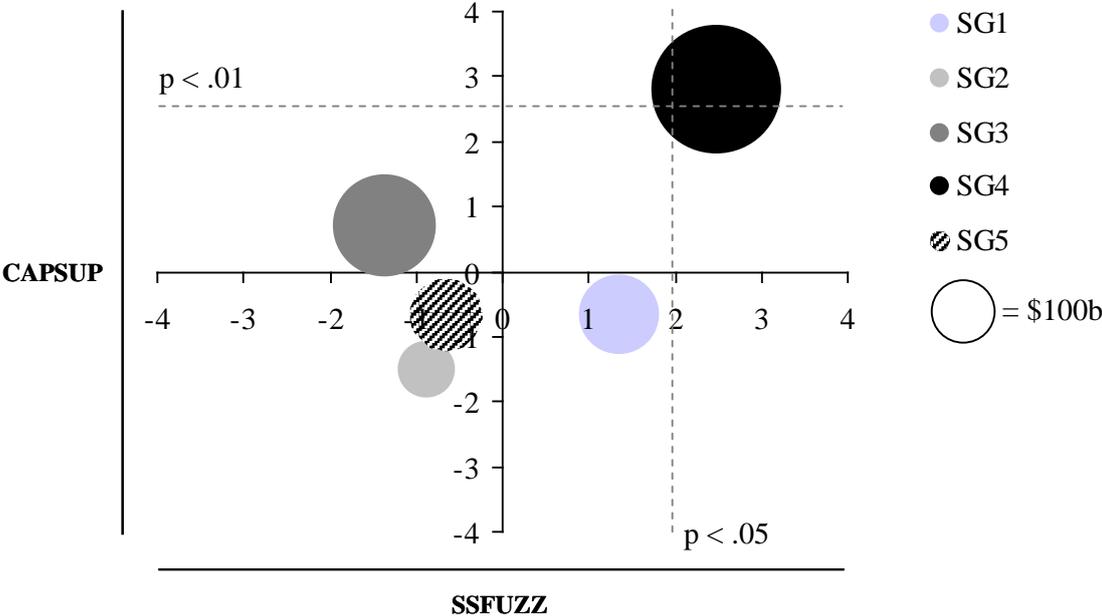


Figure 48: SSFUZZ and CAPSUP Matrix

Note: Size of bubbles corresponds to aggregated traditional PE AuM of firms in SG.

Nevertheless, this conclusion would not hold up against scrutiny. CAPSUP measures the amount of PE capital commitment made to each firm in the sample between 2005 and 2010, so during a time period when the prevailing view of the PE sector was still highly homogeneous and dominated by the monolithic PE firm paradigm. Investors’ interest for PE was traditionally driven by investors’ appetite for alternative specialty investments.

At the time of writing, it was unclear to what extent the strategic fuzziness of SG4 possibly can alienate investors away from SG4 and toward other more monolithic SGs. If this should happen, the center point of the PE sector could also move back toward the more traditional and more monolithic PE model. Another uncertain factor is regulation. Changes in regulation could make the pursuit of SG4 less attractive or virtually impossible for some

financial institutions. At the time of writing the implications from changing regulation on the merchant banking activity of Goldman Sachs were quite instructive.⁴⁰ Taken together, the results with respect to the confines of the boundary of the strategic space of PE are too inconclusive and will be investigated in more detail in chapter 6.

5.4 Interpretation and Discussion of Results

5.4.1 Summary

In contrast to the prevailing homogeneous view of PE, this study shows that strategic groups exist in the PE sector, substantiating the heterogeneity view of the PE firm. This study also initiates strategy research on the corporate level of the PE centered investment firm.

Based on a unique dataset comprising thirteen strategic dimensions of the 130 largest PE firms worldwide, of which 37 had to be excluded due to incomplete datasets, a strategic grouping approach shows a stable five cluster solution for each one of four performance variables of the PE firm, including operational efficiency, investment performance, market share, and reputation. The effect is strong and the possibility that this observation would occur by chance alone is less than 0.1%. An overview of the 93 PE firms in the final sample arranged by the strategic grouping approach is presented in Table 9.

Strategic Group 1	Strategic Group 2	Strategic Group 3	Strategic Group 4	Strategic Group 5
Oaktree Capital Management	Bridgepoint	Apax Partners	Goldman Sachs PE	Warburg Pincus
TA Associates	Doughty Hanson	First Reserve Corporation	The Carlyle Group	Advent International
Silver Lake	Barclays PE	Hellman & Friedman	KKR	General Atlantic
EQT Partners	Vestar Capital Partners	Permira	TPG	3i
Welsh Carson Anderson & Stowe	Arcapita	Terra Firma Capital	Apollo Global Management	HarbourVest Partners
Oak Hill Capital Partners	Triton Partners	Charterhouse	CVC	Lone Star Funds
Sun Capital Partners	LS Power Group	Fortress	The Blackstone Group	Investcorp
One Equity Partners	HgCapital	Cinven	Bain Capital	Sequoia Capital
Summit Partners	Altor Equity Partners	BC Partners	Cerberus	New Enterprise Associates
MatlinPatterson Global Advisers	Mid Europa Partners	Nordic Capital	Providence Equity Partners	Darby Overseas Investments
ArcLight Capital Partners	MBK Partners	PAI Partners	Clayton Dubilier & Rice	Draper Fisher Jurvetson
CCMP Capital	The Jordan Company	Lindsay Goldberg	Madison Dearborn Partners	SAIF Partners
TowerBrook Capital Partners	Advantage Partners	AlpInvest Partners	Thomas H. Lee Partners	Kleiner Perkins Caufield & Byers
Avista Capital Partners	Yucaipa Companies	Onex	AXA Private Equity	Accel Partners
Francisco Partners	Montagu Private Equity	Leonard Green & Partners		Oak Investment Partners
Berkshire Partners	TDR Capital Partners	Kelso & Co.		BAML Capital Partners
GTCR Golder Rauner	Affinity Equity Partners	New Mountain		Charlesbank Capital Partners
Irving Place	Unitas	Eurazeo		
Audax Group	Platinum Equity Partners	Candover		
	KRG Capital	Pacific Equity Partners		
	LBO France	Abraaj Capital		
		Lion Capital		

Table 9: PE Firms in Sample by Strategic Grouping Approach

The evidence suggests that considerable shares of the PE universe are migrating toward diametric strategic centroids. The centroid (alias ‘center point’) of each strategic group (SG)

⁴⁰ The possible impact from regulatory changes on the merchant banking activity of Goldman Sachs will be covered in more detail in chapter 7.

represents the mathematical equivalent of the strategy of a homogeneous group of firms (see Table 8). The following section summarizes the strategic pattern of each centroid. Moreover, the empirical results section of chapter 6 provides in-depth cases studies of selected firms in order to make the interpretation of the results more tangible.

The centroid of SG1 can be coined as ‘product specialist’. Compared to sector average, the product specialist is of younger tenure, has more exposure to more mature PE markets, and pursues a more extensive corporate expansion into non-traditional PE businesses. Oaktree Capital Management, for example, offers a broad range of products in the universe of alternative asset classes comprising high yield debt, convertibles, distressed debt, traditional PE, real estate, and public equity. Silver Lake focuses on large cap technology investments through Silver Lake Partners, on middle market technology investments through Silver Lake Sumeru, and on credit opportunities through Silver Lake Financial. Silver Lake itself claims to source undervalued, stressed and distressed debt opportunities through the proprietary Silver Lake network. Another example is Audax Group, which was established in 1999 and as of 2010 manages over \$4b of capital in traditional PE funds, mezzanine, and senior secured debt, while claiming on its website that its debt business benefits from the middle market expertise and transaction sourcing capabilities of the group. Overall, the centroid of SG1 shows a strong focus on mid cap transactions and moderate investment sector concentration.

The centroid of SG2 can be coined as the ‘sector specialist’. The sector specialist is also of younger tenure, yet otherwise the strategic pattern of the sector specialist (SG2) is quite diametric to the strategic pattern of the product specialist (SG1). Unlike the centroid of SG1, the centroid of SG2 has more exposure to less mature PE markets, is focused on traditional PE, and pursues industry leading sector focus relative to all other SGs. Bridgepoint, for example, the largest PE firm affiliated with SG2 is exclusively focused on traditional PE. HgCapital, another European SG2 firm, also focuses exclusively on traditional PE, while over 70% of HgCapital’s investments are concentrated on its top three sectors, notably industrials, computer software, and healthcare. Mid Europa Partners is a monolithic PE firm focused on investments in Central and Eastern Europe and has over 90% of its investments concentrated in the telecom sector.

While the ‘sector specialist’ centroid (SG2) is more focused on building out domain expertise in specific investment sectors, the ‘product specialist’ centroid (SG1) is more focused on building out a broader and more integrated capital intermediation platform.

The centroid of SG3 can be classified as the ‘sector-focused investment firm’. It is the more mature and more advanced business model version of the sector specialist (SG2). The centroid of SG3 also shows a relatively high investment sector concentration, yet it targets larger deals while pursuing a moderate corporate expansion into non-traditional PE businesses. First Reserve, for example, one of the largest SG3 firms, has over 90% of its investments concentrated in one primary sector: energy. First Reserve manages \$13b of capital in traditional PE and \$8b in infrastructure. Onex is another representative example of the SG3 firm. Founded in 1984 as a monolithic PE firm, today Onex manages about \$12b of capital through four investment platforms: Onex Partners (large cap traditional PE), Oncap (mid cap

traditional PE), Onex Real Estate Partners, and Onex Credit Partners. In spite of this expansion into non-traditional PE activity, Onex still has 95% of its investments concentrated in three sectors: healthcare, consumer related, and transportation. Abraaj Capital, the Middle Eastern SG3 firm, manages traditional PE, infrastructure, and real estate funds, while 90% of its investments are concentrated on three sectors: transportation, financial services, and consumer related.

The centroid of SG4, the ‘multi-business investment firm’, can be seen as the more mature and more advanced version of the centroid of SG1. SG4 comprises PE firms such as Carlyle, KKR, Apollo, Blackstone, and Bain Capital. The centroid of SG4 is characterized by the highest degree of bundling of traditional PE and non-traditional PE businesses. The centroid has industry leading capital supply, industry leading deal flow, and industry leading investment size. In spite of its broader expansion into non-traditional PE, the multi-business investment firm centroid still remains moderately disciplined in terms of investment sector concentration and investment region concentration. In fact, a strong positive correlation exists between the existence of SG4 firms and their regional presence in more mature PE markets. The SG4 centroid also operates more centralized relative to all other centroids.

SG5 represents the ‘small cap generalist’ model. The centroid of SG5 is the oldest centroid and its strategic pattern is quite distinct from all other centroids. The small cap generalist centroid is characterized by a moderate focus on traditional PE. At the same time it shows lowest investment size, lowest sector concentration, lowest regional concentration, and lowest investment stage concentration. The average concentration of all PE firms in the whole sample on each firm’s top two sectors, top two regions, and top two stages, is 63%, 87%, and 90%, respectively. Warburg Pincus, for example, has a concentration of 29%, 72%, and 69% on these three strategic dimensions, i.e. 34%, 15%, and 21% below average. One of the oldest PE firms, 3i, has a concentration of 28%, 53%, and 85% on the three strategic dimensions, i.e. 35%, 34%, and 5% below average. HarbourVest Partner, another SG5 firm, has a concentration of 30%, 68%, and 54% on the three strategic dimensions, i.e. 33%, 19%, and 36% below average. The investment size of centroid SG5 is almost two standard deviations below average. Overall the firms affiliated with SG5 appear to be branching out on primary strategic dimensions of the monolithic PE model, yet at the same time they remain rather focused on traditional PE.

Comparing the two most mature SGs, i.e. SG4 and SG5, it appears that after a certain threshold in their life cycles PE firms naturally start branching out, either by bundling traditional PE with other businesses (SG4) or by diversifying heavily in terms of investment sectors, investment regions, and investment stages (SG5).

In terms of performance of the different models, measured by operational efficiency, investment performance, market share, and reputation, overall the evidence suggests that there is not one best strategic pattern in the PE sector. The centroid of SG3 and the centroid of SG4, in fact the most diametric centroids, are both comparably successful and both outperform all other centroids. The small cap generalist is the least successful centroid.

Over time the investment performance of the centroids of SG1, SG2, SG3, and SG4 increases while investment performance of the SG5 centroid decreases. Not only investment performance but also intra-group investment performance homogeneity increases in more successful groups over time, suggesting that firms affiliated to successful SGs converge toward their strategic center points, while consciously or unconsciously picturing them as their strategic reference points.

The findings also confirm that the boundary of the strategic space of PE is fuzzier than might immediately appear. The multi-business investment firm centroid (SG4) is traversing the confines of the traditional PE sector. The possibility that this observation occurred by chance alone is less than 5%. Not only holds SG4 the largest share of aggregated assets under management in PE relative to all other SGs, the multi-business investment firm model also leads the industry in several other strategic dimensions such as capital supply, deal flow, investment size, market share, and reputation, while ranking only second (after SG3) in terms of investment performance.

Taken together, hypotheses A1, B1, C1 and D1 can be accepted. Strategic groups do exist in the PE sector, several successful strategies can be pursued, PE firms converge to the center point in successful SGs over time, and one SG, in fact the industry leader, is traversing the confines of the traditional PE sector.

The results concerning hypothesis E1 are inconclusive. This study cannot validate whether the traversing group (SG4) is shaping the boundary of the PE sector, or whether it will migrate to another strategic space, e.g. investment banking or asset management. Uncertainty with respect to future investor sentiment and regulatory changes do not allow for a robust conclusion at this point, while an in-depth investigation of potential actions of investors and of regulators would go beyond the scope of this study.

Until now, most, if not all, PE related studies have focused on traditional monolithic PE activity. However, the findings suggest that the relevance of the SG4 model can no longer be ignored. In the words of a Senior Managing Director of a leading PE firm: *“The days of the one trick pony are over”*.

5.4.2 Limitations

This study has several limitations. Some are inherent in the data. Although the final sample represent two thirds of the PE universe by assets under management, one should not ignore that at the time of writing there were some 13,000 active PE funds worldwide (including non-traditional PE funds as presented in chapter 2). Therefore the results of this study are biased toward larger PE entities. Given that the concentration of smaller PE firms is arguably higher in SG1 and SG2 relative to e.g. SG4, the weight of SG1 and SG2 is possibly underrepresented.

Data used in this study is sourced from commercial databases and from public filings. There were many inconsistencies in the data which needed to be adjusted based on researcher judgment, which can be biased. The performance data may be biased due to ‘window

‘dressing’, although for relative comparisons of performance data this effect should at least partially net out.

Information feeding the strategic variable SSFUZZ is based on hand collected information from websites, public filings, press releases, equity analyst reports, and expert interviews. There is no worldwide standardized taxonomy for products and services in the investment management and financial services industry. Therefore it was also up to researcher judgment to decide on a case-by-case basis whether and how each business activity should be interpreted.

Cluster analysis can be a valuable tool for strategy research given the method’s unparalleled ability to classify a large number of observations along multiple variables, yet researchers must take steps to overcome its weaknesses (Ketchen et al. 1996). The main problem is cluster analysis’ reliance on researcher judgment, making the validity of results subject to serious doubts. The key to surmounting this problem is vigorous pursuit of triangulation, which was extensively applied throughout this study. Nevertheless, the limitations of this study due to researcher (mis-)judgment for the mentioned reasons should not be ignored.

Some methodology experts suggest identifying stable time periods prior to carrying out cluster analyses. A commonly used approach is to think in term of ‘punctuated equilibria’. Periods of stability are punctuated by periods of change within which strategies are changed, new positions taken up, and rivalry adjusts in response. When the equilibrium ends some firms change their strategies, new strategic groups are formed, and others disappear. Statistical techniques can be used to find the relatively stable sub-periods within which strategic groups are identifiable (Bogner, Thomas et al. 1996). However, when studying strategic groups in the PE sector over the last decades, it is virtually impossible to find stable periods. This is due to an unparalleled evolutionary pace. In the words of Ferguson: *“In evolutionary terms, the financial services sector appears to have passed through a twenty-year Cambrian explosion, with existing species flourishing and new species increasing in number ... funds are the Galapagos islands of finance ... the rate of innovation, evolution, competition, adaptation, births and deaths, the whole range of evolutionary phenomena, occurs at an extraordinarily rapid clip”* (Ferguson 2008, p. 359). Therefore this study avoids the illusion of stable time periods which in fact do not exist.

5.4.3 Implications

This study leads to several implications for research in the discipline of strategic management. One major implication is that recognized approaches to strategy need to be adjusted to account for the increasing fuzziness of sector boundaries. Many prevailing conceptual frames are deeply rooted in traditional IO view.

It can no longer be ignored that the species ‘industrial organization’ of the 1960s is not the same species as the ‘investment firm’ in 2010. For firms in the financial sector the general concept of confined boundaries is misleading and hinders research progress. The design of a

new generation of strategy frameworks is overdue. We need more frameworks and concepts which allow for more integrated and more iterative strategy analyses, e.g. allowing for the reiteration of strategic considerations to their initial starting point where the space under investigation had been defined.

The investigation of the PE sector shows an example where a strategic space had been defined at one point of time, frozen, and unwarily copied and pasted for decades. This study suggests an adjusted approach to strategy, mitigating some of the most severe limitations of strategy frameworks rooted in traditional IO, notably their rigidity with respect to sector boundaries (see chapter 4).

Perhaps it was possible in the 1970s to draw a conceptual border between the strategic space of a car manufacturer in Michigan and the space of a whisky manufacturer in Scotland. But how do you draw a conceptual border between the strategic space of an active equity fund manager based in New York and the strategic space of a credit fund manager based in Dubai, who both raise capital from the same sovereign wealth fund in China and who both financially sponsor the same business in Germany?

This example implies that many established strategy frameworks are not too helpful, not to say useless, for strategy analyses of investment management firms. This study advocates and suggests a more dynamic and iterative strategy approach for the investment firm.

The implications for the PE firm from investigations based on this new approach are multi-layered. Overall the evidence suggests that the life cycle of the monolithic PE species is passing the maturity threshold in more mature PE markets. Two successful types of more mature firms in the PE sector exist, with fairly diametric business model center points. One centroid is represented by the ‘sector-focused investment firm’ model, while the other is represented by the ‘multi-business investment firm’ model. Entrants into the PE sector also gravitate toward two fairly diametric strategic centroids, notably the ‘sector specialist’ model and the ‘product specialist’ model. While the ‘sector-focused investment firm’ model is a more mature species of the ‘sector specialist’, the ‘multi-business investment firm’ is a more mature species of the ‘product specialist’. For the PE firm, this finding leads to specific strategic imperatives.

Younger PE firms have a tendency to either prioritize sector domain expertise build-up or niche financing expertise development, using either the ‘sector-focused investment firm’ model or the ‘multi-business investment firm’ model as a reference point for their long-term strategic trajectory. More established PE firms seem to be facing the same decision juncture.

In fact, expert interviews suggested that more mature PE firms positioned somewhere in-between the distinct strategic center points of SG3 and SG4 experience more business instability relative to their peers who are strategically closer to either SG3 or SG4. Expert interviews also suggested that PE firms migrating too fast toward the multi-business investment firm centroid face considerable migration risks.

Overall, it is still unclear whether SG4 will remain within the confines of the PE sector by shaping its boundary or whether it will migrate toward another strategic space. The first scenario would imply that firms who already are strategically close to SG4 have a competitive

advantage. The latter scenario would imply that the center point of the PE universe returns back to more monolithic PE models with deep domain expertise.

The third scenario, which is not unlikely, would be that SG4 firms manage to pioneer a new innovative strategic space for a new financial species.

In the wake of the most recent economic downturn, it seems legitimate to assume that new regulation will increasingly hinder member banks in the Federal Reserve System to pursue traditional PE activity. At the time of writing, these banks started unwinding their proprietary investment activity, forcing them to leave the classic merchant banking sweet spot of bundling financial services and own investment activity into commercial businesses. Evidence suggested that synergies in this sweet spot are real and considerable (Puri 1996; Puri 1999; Yasuda 2005; Ivashina et al. 2009; Ivashina et al. 2010). Perhaps this increasingly vacant juicy pasture can be penetrated by less regulated financial species such as PE centered investment firms, subject to regulatory approval. Ferguson's view on the evolution of financial services suggests that *"in the evolutionary process, animals eat one another, but that is not the driving force behind evolutionary mutation [...] more often, the real drivers are the process of speciation – whereby entirely new types of firms are created"* (Ferguson 2008, p. 354). It appears legitimate to imply from the results presented in this study that the puzzling phenomenon in the PE sector, with SG4 at its center, provides a rich medium for financial speciation.

5.4.4 Further Research

There is subliminal critique that authors of studies often suggest topics in 'further research' sections that they themselves found either too complex or too cumbersome to be investigated. Rest assured this study is not an exception. Still, there are of course several important areas where further research could add value, though it should be emphasized that a pursuit requires an investment of considerable research time and research resources.

For one, it can no longer be ignored that the existing toolbox of strategy frameworks is by and large inappropriate for strategy analysis of investment firms. Strategic grouping helps to analyze multi-layered phenomena, while future PE related studies might include strategic group membership as one of several factors in a structural equation or path analysis model designed to predict performance. This study offers an adjusted strategic grouping approach for future strategy analysis, which can be combined with other methods and other strategy frameworks. Academics, practitioners and regulators should be involved in jointly developing this new general strategy framework for the investment firm.

With respect to the puzzling phenomenon in the PE sector, this study can merely offer a starting point for a string of further studies investigating the heterogeneity of the PE firm. It is a fascinating starting point, recognizing the new and fairly unexplored territory. The heterogeneity of strategic groups in the PE sector offers a rich research ground for investigations on life cycles, business model innovation, and forces shaping boundaries of

investment firms and of fuzzy strategic spaces. Centroids in the PE universe, notably SG3 and SG4, offer rich distinct and diametric poles allowing for comparisons of strategic thrusts and their effectiveness on the performance of PE firms and of portfolio companies. Also the influence of various organizational structures on the effectiveness of specific strategic patterns is virtually unexplored. Finally, the bundling of traditional PE with non-traditional PE businesses and our understanding of the economic viability of specific combinations offers another relevant area for further research. Some of these topics will be investigated in greater detail in chapter 6.

Overall, this contribution implies that the design of men-made financial species is far from completion and in fact highly ‘work in progress’. At the same time, some underlying success principles of financial species, such as the effective interchange of money, credit and trust, seem to endure. The PE approach, which in fact can be traced back to merchant banking activity in medieval Europe, might represent one of the enduring managerial principles in the market for corporate control (see chapter 2). The PE approach is also ‘work in progress’, but perhaps it is one of the more effective prototypes which we currently possess.

The speciation of PE, and notably of the centroid of SG4, perhaps can be linked to the speculation that *“it also seems possible that wholly new forms of financial institutions will spring up in the aftermath of the crisis ... this might be just the perfect opportunity to set up an old-fashioned kind of merchant bank, and aiming to build the trust that so many established banks have forfeited”* (Ferguson 2008, p. 359).

6 Empirical Part II: Boundary of the Investment Firm

6.1 Exploratory Framework

Confines of segments within the financial services sector are quite fuzzy. So is the boundary of the PE universe, where some firms even appear to be traversing the strategic space of traditional PE. This study initiates research with respect to this puzzling phenomenon by investigating the boundaries of the sector which is rooted in traditional PE. To avoid confusion with prevailing PE taxonomy, which often uses the term PE as a synonym for VC or LBO activity, in the following the term ‘investment firm’ (IF) will be used as a working title for firms who have considerable exposure to traditional PE activity.

Recognizing that the boundaries of the IF sector are linked to the confines of its participants, this exploratory study investigates forces shaping their boundaries. Before analyzing the boundary of the investment firm, the study anchors its exploratory framework based on existing concepts on the boundary of the firm. Taking a step back is sometimes the best way to take the next step forward. It is worthwhile to clarify the prevailing tacit understanding of the firm, the determinants of its boundaries, and what distinguishes a firm from other kinds of activities.

Why do firms exist at all and what should be the range of their activities? Some might argue that legal grounds such as antitrust laws or foreign ownership restrictions ultimately determine boundaries of corporate entities. Without a doubt, the design of a legal system is intertwined with the nature of the firm, yet it is rather difficult to distinguish between cause and effect inasmuch legislators often are more reactive than prescriptive in legal matters (Faulkner et al. 2003). The concept of the firm, alias company (or corporation), alike the PE approach, is more complex than that, and will be investigated in the following sections.

6.1.1 The Nature of the Firm

Some of the first thoughts with respect to the concept of institutionalized organizations had been contemplated over a century ago. One school of thought argued that the reason for the existence of a firm is to be found in the division of labor, recognizing that the growth of economic differentiation creates the need for some integrating force without which differentiation would collapse into chaos, while another school of thought argued that there is no reason to suppose that specialization must lead to chaos, assuming that the integrating force in a differentiated economy already exists in the form of market price mechanisms (Clark 1899; Usher 1920).

The debate went on for decades. The reasoning that firms exist due to the coordination of specialized labor has had been effectively disputed for a long time to the extent that

proponents could not explain why the entrepreneur, as a coordinating force, should be a better substitute for the coordinating force of price mechanisms.

The idea of a self-regulating nature of the marketplace was initially framed by Smith and is known as the 'invisible hand' (Smith 1759; Smith 1776). Smith argued that the forces of self-interest, competition, and supply and demand, are capable of allocating resources in societies, providing the conceptual justification for the 'laissez-faire' economic philosophy. Smith noted that "*it is not from the benevolence of the butcher, the brewer or the baker, that we expect our dinner, but from their regard to their own self interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages [...] it is the highest impertinence and presumption, therefore, in kings and ministers, to pretend to watch over the economy of private people [...] by pursuing his own interest he [the entrepreneur] frequently promotes that of the society more effectually than when he really intends to promote it*" (Smith 1776, p. 19, p. 381, p. 488).

At the end of the 19th century, Marshall formalized organizational talent as the fourth factor of production, in addition to labor, capital, and land (Marshall 1890), yet his idea never quite caught on in orthodox economic theory. Building on Marshall's school of thought, Clark introduced the entrepreneur as the central force of coordination (Clark 1899).

With the introduction of uncertainty and risk to the debate, Knight conceptualized one of the strongest arguments on why managers are important economic intermediaries of coordination (Knight 1921). With no uncertainty every individual would be in possession of perfect knowledge and there would be no occasion for management or control of productive activity. The flow of materials and services to the consumer would be entirely automatic. Every worker would be doing exactly the right thing at the right time in a sort of a 'pre-established' harmony with the work of others. With uncertainty, however, according to Knight the actual execution of activity becomes a secondary part of life and the primary function is deciding what to do and how to do it. Not everybody is willing to take the responsibility for forecasting future consumer demand. Those who are willing, under uncertainty, to take the responsibility for forecasting of what the consumer wants in the future, create the economic rationale for an entrepreneur. Knight observed the existence of a "*system under which the confident and venturesome assume the risk or insure the doubtful and timid by guaranteeing a specified income in return for an assignment of the actual results*", and argued that the manager must have authority given that "*with human nature as we know it, it would be impracticable or very unusual for one man to guarantee to another a definite result of the latter's actions without being given power to direct his work*" (Knight, p. 268-295). Nevertheless, even Knight's idea still did not sufficiently justify why management resources could not be simply bought on the open market, without the need for boundaries of a firm.

It was the young Coase, who in 1937 framed our understanding of the corporate entity. He defined the natural boundary of the firm by aggregating activities under one coordinating center where marginal intra-firm coordinating mechanisms can be conducted cheaper intra-firm as opposed to on the open market through price mechanisms, so that a firm will expand its size and its range of operations until the marginal cost of using internal authority

relationships is equal to the marginal cost of using the market (Coase 1937). It became generally accepted that the growth of entities must be limited based on observations which showed that the cost of organizing and the losses through mistakes increase with an increase in the spatial distribution of the transactions organized, in the dissimilarity of transactions, and in the probability of changes in the relevant prices (Robinson 1931). Coase concluded that, *ceteris paribus*, a firm will tend to grow the less the cost of organizing and the slower these cost rise with an increase in the transactions organized, the less likely the manager is to make mistakes with an increase in the transactions organized, and the greater the lowering – or the less the rise – in the supply price of factors of production (Coase 1937).

Coase's idea was original and powerful in the sense that it could explain broader entities. Orthodox economic view is rather one-dimensional and can only explain how a firm's optimal size is confined to the optimal output of one product (e.g. monolithic VC firm or monolithic LBO association). Instead, Coase suggested that the firm's cost-minimizing calculations will also determine whether a firm should be a multi-business firm (e.g. multi-business PE centered IF), how many and what kind of products to produce, how far forward and backward the firm should vertically integrate, and what functions the corporation should outsource and what functions it should retain in-house.

6.1.2 Conceptual Frames for the Boundary of the Firm

Coase's paradigm is seminal, yet at the same time it can not be easily operationalized. How should the cost of market transactions vs. internal transactions be specified and measured? A string of efforts tried to specify this over the course of the second half of the 20th century.

Richardson agreed that orthodox economic theory had little to offer in the analysis of important areas of economic behavior. Nevertheless, in his view the dichotomy between "*the islands of conscious power and the ocean of unconscious co-operation*" (Coase 1937, p. 388) was too simple. Building on Robinson's work and in a foreshadowing of the 'core capabilities' philosophy, Richardson drew a distinction between activities that were 'similar', in that they required similar skills, abilities, and competencies to perform, and activities that were 'complementary', in that for production or marketing purposes the activities needed some coordination. If the degree of coordination required was more complex inter-firm than in the open market, network relationships would be formed through e.g. long-term contracts, sub-contracting, technical cooperation, and JVs (Robinson 1931; Richardson 1972).

Also along the lines of Robinson's thinking, Chandler argued that it was not just the size of a firm that mattered but also the overall complexity of the operation, assuming that business matters of a large single-product firm might be easier understood by the coordinating manager than business matters of a multi-business firm. In Chandler's view it was the growing complexity of corporations, as much as their size, shaping their boundaries (Chandler 1962; Chandler 1977).

Within the context of conversations on complexity, Penrose emphasized that management structures could only be expanded slowly, recognizing that management teams have to learn to work with each other, the culture and informal networks of the organization, and the specifics of a firm's market. Rushed expansion may not leave enough time for team and trust building and can lead to poor decision making and mistakes. At the same time Penrose argued that it is the very nature of management teams to solve problems so that fewer resources are needed for coordinating tasks in the future. This would naturally lead to the build-up of managerial spare capacity over time which could be employed by expanding the firm's boundaries. Penrose moved the managerial diseconomies argument from a static equilibrium to a dynamic story, suggesting that firms could not instantly, although they might ultimately, achieve any size they desired (Penrose 1959).

Williamson detailed the transaction cost theory of Coase and built in two behavioral assumptions: bounded rationality⁴¹ and opportunism.⁴² Williamson also delineated the cost into production cost, implied by available technology, and transaction cost, implied by institutional structures within which resources are gathered and products marketed. He argued that institutional decisions are driven by the attempt to minimizing the total burden of transaction cost, and are being influenced by the degree of asset specificity, by the degree of uncertainty, and by the frequency and duration of transactions (Williamson 1985).

Property rights theory then added the implications from indivisible ownership to the string of concepts on the boundary of the firm. Alchian and Demsetz observed that perhaps the most distinct mark of capitalistic societies is that considerable resources are owned and allocated by individuals, nongovernmental organizations, firms, households, and markets, and asked who owns what at a given point of time in the allocation process. In capitalistic societies individual productivity gets remunerated by private ownership rights. The crux is that with team production it can be difficult to measure individual productivity. One popular analogy aptly illustrates that *"two men jointly lift heavy cargo into trucks, though solely by observing the total weight loaded per day, it is impossible to determine each person's marginal productivity"* (Alchian et al. 1972, p. 779). The production of outputs in a wholly disintegrated manner, with each input-owner performing her individual task and contracting to sell on the resulting intermediate product to the next input-owner, may be highly costly or virtually impossible. Property rights theory suggests that an important rationale for the existence of firms can be derived from the inability to meter individual performances (Alchian et al. 1972). The firm members voluntarily agree to give up their freedom to a monitor, so that each agent has a contract solely with this monitor and not directly with other team

⁴¹ Bounded rationality means that economic agents are rational yet they do not have perfect information or the cognitive capacity to make use of perfect information, even if they had it. They cannot calculate the absolutely optimal course of action, they can easily make mistakes and be surprised by eventualities they had never anticipated. Yet knowing of their limitations they will try to make themselves less vulnerable to such surprises.

⁴² Williamson defines opportunism as 'self-interest with guile', i.e. a certain amount of deviousness as well as straightforward honest self-interest should be expected from trading partners, e.g. provision of false information if there are no penalty cost, or renege on a contract if it turns out to be in his interest to do so.

members. Following their own logic, Alchian and Demsetz then wondered: yet, who will monitor the monitor?

A closely related question was how to structure effective incentives within firms? A unifying framework for this matter is the principal agent approach, where a principal appoints an agent to perform a task. Agents on flat fees have an incentive to economize on time and cost, possibly producing poor quality. The principal can prevent this by monitoring, which can be expensive, or alternatively, by optimizing the incentive system. The amount of information available to the principal is crucial within this context, and generally, the more complex the firm the more difficult it will be to keep the incentive structures efficient, which in turn might impose natural boundaries to the size and scope of a firm.

This brought the debate back to a point where intra-firm relations and open market relations appeared equally contractual, and indeed some suggested that the firm constitutes an economizing device in contracts. However, a production effort organized through bilateral contracts among n independent team members would require $n(n - 1)/2$ bilateral contracts. If all individuals negotiate with one central counterparty, only n contracts are needed (Faulkner et al. 2003). This leads to considerable cost savings but also to challenges in terms of coordination for the firm, with limiting implications for its boundary.

A common definition of ownership is the power to exercise all aspects of control of an asset other than those which have explicitly been ceded elsewhere. One of the important aspects of control is the ability to grant others access to the use of assets or to exclude them from the use of assets. Ideally contracts could be specified in every respect, meaning that all rights and responsibilities under every conceivable eventuality would be written down. But for this to work all eventualities and actions would have to be perfectly observable. They are usually not, and such contracts would be far too circumstantial. Recognizing that contracts are almost always incomplete, an important consideration of ownership is to look at who owns the 'residual rights' in the unspecified circumstances (Grossman et al. 1986; Hart et al. 1990). Therefore the center of the firm has an incentive to expand its authority range through an expansion of its boundary in order to expand its residual rights.

In summary, Coase's seminal idea and its extensions present a broad array of conceptual frames on the boundary of the firm, offering this study valuable reference points for the investigation of the boundary of the investment firm.

6.1.3 Six Decades of Firm Boundary Seesaw

The boundaries of firms can be a rich source for diversity analyses within a sector. The nature and extent of related and unrelated diversification, the extent of vertical integration, and the nature of contracts with supplying firms or with customers, all these basic firm characteristics can help to define corporate and industry boundaries (McGee et al. 1986). Related to Penrose's thinking on spare capacity of management which can be utilized by an expansion of the firm's boundaries (Penrose 1959), the enduring justification for the diversified company is

built on the argument that some people possess valuable general management skills that can contribute to the overall performance of a company and therefore should be spread to the greatest extent possible.

Andrews, a business school Professor, argued that the establishment of business schools in the early twentieth century created the basis for the education of professional managers (Andrews 1951; Andrews 1969). In the 1950s and 1960s the belief in the superpowers of general management skills went so far that ‘businessmen’ were encouraged to apply their skills to improve the effectiveness of charities, universities, and government (Maynard 1960; Andrews 1969; Shetty et al. 1976).

The rise and fall of the conglomerate firm in the 1960s offered a ‘case study’ to put these claims to test. Firm expansions into new areas and corporate diversifications were justified by a belief in synergy, which for some stood at the center of corporate strategy (Ansoff 1965). Corporations with related subsidiaries and those diversified through numerous acquisitions into unrelated businesses were highly admired. Both types often grew rapidly and profitably for many years (Rumelt 1986). State-of-the-art general management techniques included tight financial controls, budgetary systems, face-to-face meetings, as well as group vice presidents who were appointed from outside the company and who acted as overseers and consultants to the divisions (Faulkner et al. 2003).

By the late 1960s, many of these companies were beginning to encounter performance problems. For example, GE discovered that its management approach had resulted in ‘profitless growth’, and ITT’s consistent record of increased quarterly earnings over 58 quarters was broken in 1974 (Geneen et al. 1984). Corporations turned to new techniques of portfolio planning developed by firms such as The Boston Consulting Group or McKinsey in the 1970s (Goold et al. 1994). Some argued that the best course for conglomerates would be to pursue a financial holding like asset management model (Attiyeh 1969).

During the 1970s and 1980s, widespread skepticism about the ability of conglomerates to add value to diverse portfolios gained ground. KKR was founded in 1976 and corporate raiders such as Carl Icahn demonstrated that it is possible to acquire even the largest companies, to break them up, and to realize large profits. The sentiment was less and less favorable to diversification. Rigorous portfolio planning, restructuring, headquarter cost cutting, delayering, downsizing, and value-based planning became popular, which led to a reversal of the diversification trend of the previous two decades. The ‘core business’ and ‘stick-to-the-knitting’ philosophy gained popularity (Goold et al. 1994). Also in the financial services space, companies such as Prudential and Merrill Lynch first sought to bundle different types of financial businesses, and later found that businesses such as insurance, brokerage, and banking, though all in the financial services industry, nonetheless required very different approaches, resources, and skills (Campbell et al. 1992).

Where is the corporate boundary seesaw today? Ever since the early 1990s, management thinking has been converging toward a view which can be summarized by three principles. First, synergy remains a powerful concept though it is not the only way to create value in a multi-business company. Second, companies need to know their core capabilities and exploit

these across different businesses. Third, multi-business firm expansions are more successful if they suit the ‘dominant logic’ and the ‘management style’ of top management teams, and more generally, where firms have a ‘parenting advantage’ in the sense that their corporate ‘center’ is superior at adding value to certain kinds of businesses.

6.1.4 The Monitor of the Monitor

Building on existing theories, the previous sections framed the prevailing understanding on why firms exist at all and what determines their boundaries. Nevertheless, the question on who should monitor the firm has not been answered yet. Literature on organizational structuring also does not really solve the puzzle, but at least offers helpful clues.

The firm boundary teeter-totter is inherent in Mintzberg’s thinking about the boundary of the divisionalized organizational structure. Mintzberg saw real economic advantages in the divisionalized form, which he saw as a firm with virtually infinite boundaries. He argued that strategic diversification, because it leads to divisionalization, encourages the efficient allocation of resources within the organization, headquarters can ‘milk’ surplus of some divisions in favor of others, opportunities to run individual businesses help to train general management, risk spreading occurs more effectively, and strategic responsiveness increases given that divisions can fine-tune their bureaucratic machine while the center concentrates on its strategic portfolio (Mintzberg 1979; Miller et al. 1984). At the same time Mintzberg argued that once an organization is divisionalized, the better alternative from society’s perspective becomes the one of taking one further step to the point of eliminating the ‘center’ and allowing the divisions to function as independent organizations: *“Overall the pure Divisionalized Form may offer some advantages over a weak system of boards of directors and inefficient capital markets; but most of those advantages would probably disappear if certain problems in capital markets and boards were rectified”* (Mintzberg 1979, p. 423).

Recognizing that capital market inefficiencies would not disappear in the foreseeable future, Mace proposed a system of professional directors, notably individuals who work full time as directors of a few companies, and so would have the time to get to know each of the firms well enough to exercise their directorship functions effectively (Mace 1971). The Senior Managing Director of a leading PE firm expressed a related thought during an interview for this study: *“I like to say that when I’m on a board it’s my day-job ... well, I have most of my net worth tied up in our companies ... so when I say I own a private company, this is the most important thing I do ... that’s not true with directors on public boards, they meet four times a year ... it’s not the most important thing they do”*.

One may imply that the PE approach perhaps provides a part of the solution which Alchian, Demsetz, Mintzberg, Mace, and others were seeking. Not only the existence but also the expansion of the PE firm is justified as long as the marginal monitoring provided by the PE firm is more efficient than the marginal monitoring through open market mechanisms.

Many research endeavors already started conceptualizing the economic rationale for the existence of the firm. This research endeavor goes one step further and investigates the economic rationale for the monitor of the firm. The question will be analyzed in this exploratory study by investigating the determinants of the boundary of the IF.

Conceptually this is a complex endeavor, given that the boundaries of the IF are on multiple layers. One boundary layer is on the portfolio company level, where some research already exists (Lossen 2006; Klier 2009; Klier et al. 2009).

The second layer is on the corporate level of the IF. Mintzberg noticed how ironic it is that many times a divisionalized corporation that does such an effective job of monitoring the performance of its divisions is itself so poorly monitored (Mintzberg 1983). During an interview for this study the Director of a US PE firm noticed: *“This whole idea is unbelievably ironic that you have these [PE] firms that are set-up to be professional managers ... and internally, often, it’s a [lousy] shop ... not good in managing internally because you spend so much time thinking about these companies and where you invest”*.

This study intends to shed light on the second layer, i.e. on the corporate boundary of the PE centered IF. In other words, one can say that the study aspires to sharpen our view with respect to the nature of the monitor of the monitor.

6.2 Methodology

6.2.1 Research Design

This part of the study belongs to a larger concurrent mixed methods research design, integrating insights from a quantitative strategic grouping approach which covers two thirds of the PE universe. The central phenomenon under investigation, notably the evolution of monolithic PE firms toward the multi-business model was observed in 2007. Preparatory conversations with PE professionals, academics, and sector experts started in 2008, and their suggestions were integrated into the study. During 2009, the relevant strategic dimensions of the generic business model of the PE centered IF were defined based on a synthesis of PE related literature, in tandem with an evolutionist approach, empiricist approach, and essentialist approach. In the second half of 2009 and in the first half of 2010 the quantitative strategic grouping approach was carried out.

The primary source of information for this part of the study was a battery of focused in-depth interviews with senior PE investment professionals, conducted between February 2010 and June 2010. All interviews were fully transcribed and reviewed by the interview participants. Along recommendations from social scientists (Merton et al. 1990), the experts were interviewed for a short period of time, typically 60-120 minutes, the interviews were open-ended and assumed a conversational manner, while the interviewer followed a certain set of questions derived from a research protocol. With such short time frames and the fairly broad and conceptually abstract object under investigation, the questions needed to comprise

certain facts which the interview participant would be able to corroborate. In spite of this preparatory framing of the questions, the interviewer still had to appear genuinely naïve about the topic and allow the interview participants to provide fresh commentary (Yin 2009).

In total 18 in-depth interviews were conducted with PE professionals in the two largest PE markets, the US and Europe, although the majority of conversations was held in person in New York. Recognizing that methodology experts suggest that the interviewer should highlight if a person was interviewed but declined his statements to be used (Yin 2009), it should be noted here that one interview participant withdrew the use of his statements due to internal compliance restrictions.

Examining rival explanations can increase research validity. Two polarizing explanations with respect to the boundary of the IF span between the monolithic IF model to the multi-business IF model. One should vigorously pursue the information collection throughout the research as if trying to prove the potency of rival explanations rather than rejecting them (Patton 2002; Rosenbaum 2002). Therefore interview participants were selected from all strategic groups which had been discovered by the concurrent strategic grouping study. Information from investment professionals affiliated with PE firms pursuing distinct business model configurations strengthened the potency of rival explanations.

PE professionals participating in conversations for this study at the time of the interview or shortly prior to the interview were affiliated with SG1 (EQT, Irving Place, Oaktree Capital Management, TA Associates), SG2 (Bridgepoint, The Wicks Group, *anonymous US PE firm*), SG3 (Apax), SG4 (Apollo Management, Bain Capital, The Blackstone Group, The Carlyle Group, Clayton Dubilier & Rice, CVC London, CVC New York, KKR), and SG5 (Investcorp). One can say that 24% of statements were influenced by SG1, 18% by SG2, 6% by SG3, 47% by SG4, and 6% by SG5. This corresponds roughly to the overall distribution of PE assets managed by each SG with 12% by SG1, 16% by SG2, 8% by SG3, 40% by SG4, and 24% by SG5. This fairly represented weight of rival views intended to increase the validity of the results.

In terms of seniority, the interview participants included eight Senior Managing Directors, one Managing Director, three Principles, one Vice President, and four Associates. Each one of the eight Senior Managing Directors was or still is member of a committee which is responsible for competitive strategy and business model decisions of the PE firm. Figure 49 provides an overview of the exploratory investigation and of the primary information sources.

Prior to the conversation with each interview participant, it had been agreed that her identity will remain anonymous, and that no references will be made between any statement and the name of her PE firm. This was an important prerequisite, given that this study investigates some of the most proprietary strategic dimensions of the PE firm which also touches upon organizational matters.

Though experts emphasize that recording and transcribing of interviews takes enormous time and energy, it also provides a more accurate rendition of interviews than any other method (Yin 2009). Therefore all interviews were recorded and transcribed. Methodology experts also suggest that although the interviewer should pursue a consistent line of inquiry, at

the same time the actual stream of questions in an interview should be fluid rather than rigid (Rubin et al. 1995). Therefore a conversation guideline was designed based on the exploratory research framework and the generic business model of the PE centered IF (see chapter 3.2.3). A more detailed description of the interview guideline will be presented further below.

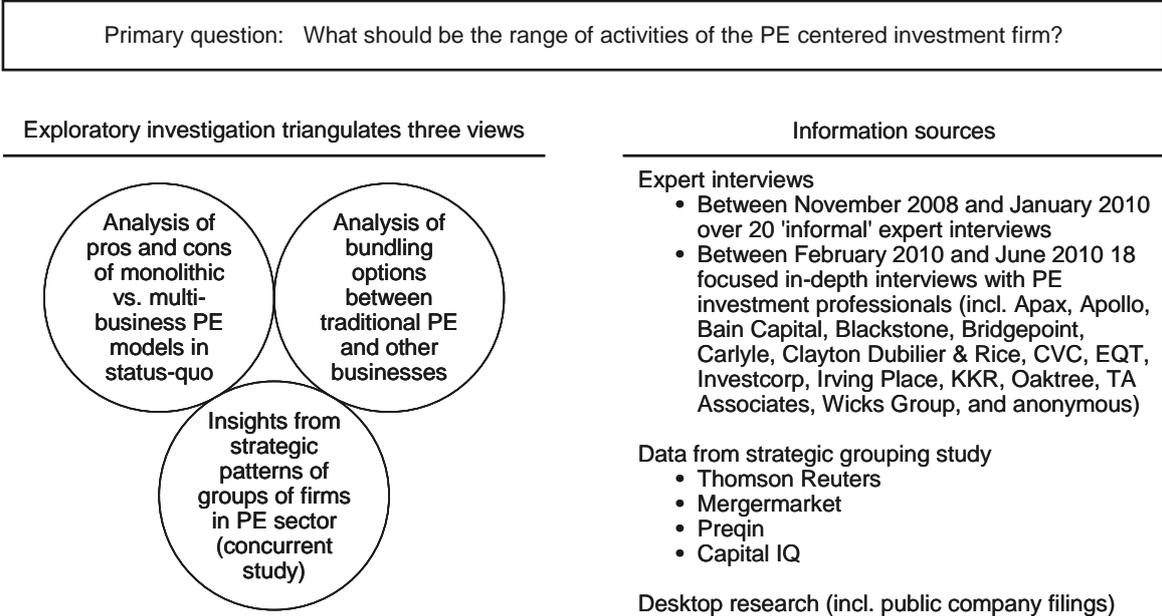


Figure 49: Exploratory Investigation and Information Sources

Some noteworthy specifics with respect to the information gathering process will be outlined in the following. Covering the complexity of the boundary of the monitor of the monitor in a 60-90min. interview is challenging alone for the scope and abstract nature of the topic. Therefore the amount of preparatory research groundwork for each individual interview was substantial, including focused research on each PE firm’s context.⁴³

Extraordinary attentiveness was dedicated to the individual state of mind of each interview participant in order to make her tacit knowledge tangible in the most effective way. Each expert was asked to provide some basic personal and IF context information so that her statements could be calibrated, and each one was encouraged not to restrict her statements due to structural confines of her IF. With some interview participants this approach worked well and they enjoyed discussing e.g. the bundling of financing activities and provided rich perspectives such as “if I was at firm x then y would make sense” or “being here at firm z, this business model alternative is simply out of question for us, but it could become more relevant if ...”. However, some interview participants were more hesitant to hypothetically

⁴³ Research efforts which pursue a methodology along the lines of this study must plan for a very generous time frame. Often interviews were scheduled and rescheduled several times. For example, one interview was rescheduled five times over the course of four months, after three follow-up emails, several follow-up calls, and two personal recommendations from company insiders. Another interview was rescheduled seven times. This is not unusual and manageable, yet it needs to be considered in the research planning process with sufficient buffer.

compare rivaling business model options and abstract conceptual frames. Instead some rather ‘defended’ the current model of their firms. Psychologist Gilbert coined this natural human trait as the ‘psychological immune system’, basically operating as a self-defense mechanism of our brains (Gilbert 2007).⁴⁴ Recognizing this human trait, the interviewer should carefully calibrate each statement against the background of the interviewee’s personal situation and within the context of her firm. For example, those investment professionals who just left their previous firms were much more open for discussing hypothetical business model scenarios. An activated defense-mechanism can create ‘noise’, and therefore the interviewer should for example avoid ‘why’ questions by posing ‘how’ questions whenever possible (Becker 1998).

In addition to the common problem of bias, statements of interview participants may also be subject to poor recall and poor or inaccurate articulation (Yin 2009). A reasonable approach is to corroborate information from interviews with information from other sources, which was ensured in this study through the concurrent mixed methods research design.

The next sections will provide a detailed overview of the conversation guideline and a synthesis of the findings from the concurrent strategic grouping study which are most relevant for this part of the study.

6.2.2 Conversation Guideline

Focused conversations with experts offer a rich pool of valuable tacit knowledge. They help to explore important strategic dimensions and they also provide rich context-specific descriptions and qualified arguments. Thorough preparations of all interviews intended to facilitate the highest possible quality of research results. A conversation guideline had designed, tested, and refined prior to the interviews. The interview guideline was also presented as a PowerPoint presentation during the interviews.

The first section covered an introduction to the study. The boundary of the IF requires a high degree of conceptual abstraction. Although briefing materials had been provided upfront, most of the interview participants arrived to the meetings, as expected, without major preparation. To ensure that still each interviewee had enough necessary context information, the introductory part synthesized the relevant strategic dimensions. Subsequently, the current phenomenon in the PE sector was framed by a synthesis of the evolutionist approach. For the purpose of establishing a common taxonomy during the interview, the introductory section also presented major constituents of the PE business model (see chapter 3.2.3), including investors, owners, 3rd parties, center of IF, traditional PE business, and non-traditional PE business.

⁴⁴ It makes us believe that things are fine in our lives to avoid unhappiness (and eventually depression) due to inalterable situations or with situations where change can be very cumbersome such as changing employers or PE firms. The stickier the situation (e.g. spouse or employment) the more active a healthy brain will become in developing psychological ‘defense stories’ on why the situation is fine after all.

The interview consisted of two major blocks. The first block covered the status quo of the IF, its characteristics and specific circumstances. The second block covered more hypothetical scenarios on the possible range of activities of the IF.

At the beginning of the first block, the objective was to investigate the background of the interview participant and the way she perceives the general mindset in her PE firm. While being interviewed, a slide in the background showed topic suggestions in order to provide the interview participant reference points. On background, the slide suggested experience (e.g. industries, functions, and regions), education (e.g. universities, specializations), special skills, interests, and role models (though no one disclosed any role models). On current role, the slide suggested responsibilities (e.g. asset classes, services, clients, and regions), and other responsibilities (e.g. marketing, recruiting, staffing, and operations). Upon completion, four analogies with respect to PE business-related mindset traits suggested innovator, fire-fighter, discoverer, and optimizer. Figure 50 suggests that the ‘optimizer’ mindset prevails.

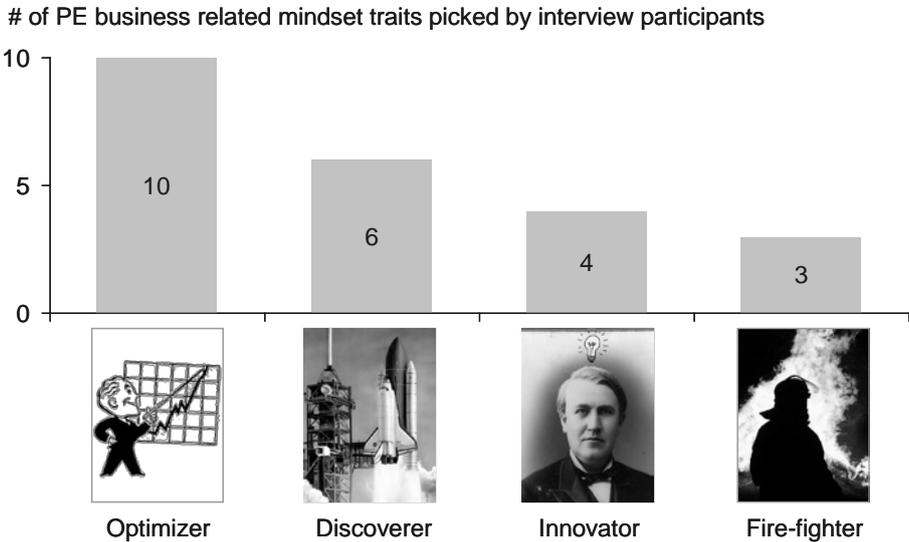


Figure 50: Mindset Traits of PE Firms in Sample

Note: Interview participants could pick more than one trait.

The rationale of the mindset question was to allow for the calibration of other statements made by the interview participant during the interview. The underlying framework assumes that risk affinity combined with revolutionary attitude is more linked to a discoverer mindset, that risk affinity combined with evolutionary attitude is more linked to a fire-fighter mindset, that risk aversion combined with revolutionary attitude is more linked to an innovator mindset, and that risk aversion combined with evolutionary attitude is more linked to an optimizer mindset.

The subsequent question of the conversation touched on essential roots of the IF. The respective slide suggested founders, owners, growth phases, core capabilities, and affiliations to other firms, and also vision, value creation, and principles.

The next section became more specific in covering the organizational structure of the IF. The slide suggested business units structure, office structure (e.g. centralized, decentralized), and also definition of the center (e.g. headquarters, upper echelon, principles), parenting (e.g. active, passive), and centralized capabilities (e.g. marketing, PR, investor relations, controlling, HR, treasury). Moreover, the slide covered key decision procedures.

Then the interview participant was asked to describe each business line under her corporate umbrella, including major products, services, clients, and regions. While this slide covered each of the business lines stand-alone, the subsequent slide covered horizontal linkages between the business lines in connection with the interview participant's views on the current corporate set-up with respect to each of the major constituents of her firm's business model.

The final section of the first block of the interview covered an assessment of the competitive position of the IF relative to major competitors and whether particular business model configurations exist which are generally admired in the PE centered IF universe.

In the second block of the interview, which was more hypothetical and more scenario-based, the interview participant was specifically asked to abstract her statements from the context of her firm. In order to facilitate this abstraction, the interviewee was asked to build the blueprint of a hypothetical new PE firm, while considering several parameters.

First, the new entity already had to comprise traditional PE as one business pillar. Second, the new blueprint had to be designed for steady state, so that constraints of a typical 'greenfield' IF with e.g. only one or two vintages and yet to be developed track record would not distort the statements. Third, ten non-traditional PE businesses had to be rated concerning their strategic fit with the traditional PE business pillar, including infrastructure funds, real estate funds, hedge funds, mutual funds, debt funds, underwriting, capital markets, operational advisory, private banking, and corporate finance advisory (e.g. M&A, restructuring). This selection was derived from the concurrent strategic grouping study, showing which traditional PE and non-traditional PE the 130 largest PE firms worldwide hold under their corporate umbrellas. The interview participants could also add additional businesses, if they felt that some PE related activities would be missing. The rating scale of the strategic fit between the traditional PE business pillar and each of the non-traditional PE business pillars ranged from minus three to plus three, while a minus three (plus three) suggested that marginal corporate synergy from bundling the traditional business with a non-traditional business is much smaller (much larger) than marginal cost. Figure 51 provides an overview of the potential building blocks for the design of the new PE centered IF. Finally, the fourth parameter was that interview participants should ideally differentiate their assessment with respect to each of the constituents of the firm's overall business model.

PE Centered Investment Firm	Private Equity Funds	Vehicles that typically invest directly into companies by acquiring controlling equity ownership for longer time periods, often 5-10 years and longer
	Infrastructure Funds	Vehicles that typically finance projects or companies that focus on infrastructure projects, goods, or services
	Real Estate Funds	Vehicles that typically finance projects or companies that focus on real estate projects, goods, or services
	Hedge Funds	Typically less regulated vehicles that use advanced trading strategies, more speculative and technicalities driven, catering to sophisticated investors
	Mutual Funds	Typically more regulated and more conservatively managed vehicles that invest in securities such as stocks or bonds, catering to retail investors
	Debt Funds	Funds that typically invest in fixed income investments such as short-term or long-term bonds, securitized products, or floating rate debt
	Underwriting	Process of raising capital for an entity by lending money to the issuer instantly and by selling down equity/ debt securities to investors later
	Capital Markets	Typically origination, distribution and trading of securities and derivatives, advanced prime brokerage services, also custody, clearance, and settlement
	Private Banking	Personalized wealth management and banking services for (ultra) high net worth individuals and family offices
	Corporate Finance Advisory	Advisory in areas such as M&A (incl. origination, fairness opinion, process management), restructuring, reorganizations, placement services
	Operational Advisory	Advisory in areas such as corporate and business strategy, revenue growth, cost optimization, optimization of organizational structures and processes
	Other	<i>Interview participants could add other businesses</i>

Figure 51: Building Blocks of PE Centered Investment Firm

The conversation about the new blueprint of the PE centered IF covered the essence of this study, offering a rich source of tacit knowledge on the boundary of the investment firm. Already during the conversations some interview participants explicitly acknowledged the practical relevance of the thought process. One Senior Managing Partner mentioned: *“I sit on the operating committee of our firm and I think about this stuff all the time, this is highly interesting”*, while a more junior interview participant noticed more ironically that it is *“good to think through, at least every five years, what we’re actually doing here”*. At the end of the interview, each participant was asked toward which of the rivaling poles, i.e. monolithic vs. multi-business, her firm would migrate in the future.

6.2.3 Concurrent Strategic Grouping Approach

In tandem with these focused conversations and deep dives on specific cases, the strategic grouping study was carried out, investigating strategic patterns of groups of PE firms. As laid out above, a dataset on the largest 93 PE firms worldwide comprising data on thirteen independent strategic dimensions and four dependent strategic variables (see chapter 5.2.2) provided a comprehensive source of information on each firm and allowed for an effective preparation of each interview and for the validation of specific statements made by the interview participants. Insights from the strategic grouping study about affiliations of PE firms to particular strategic groups also helped to identify firms with diametric strategic patterns. For example, comparing statements from a sector specialist IF (SG2), i.e. an IF

which is characterized by a strong focus on traditional PE and high investment sector concentration, with statements from a multi-business IF (SG4), i.e. an IF which is characterized by moderate investment sector concentration and broader bundling of traditional PE and non-traditional PE businesses, intended to increase the validity of this study.

Vice versa, the focused interviews also enriched the strategic grouping study. Quite often data inconsistencies needed to be resolved in the dataset of the strategic grouping approach. Statements of interview participants presented another source of information for triangulation purposes. Overall the deep domain expertise generated in the qualitative part of this study enriched the strategic grouping approach at relevant junctures in the overall research process, such as the selection of number of strategic groups.

Taken together, iterating the two studies in a concurrent mixed methods approach creates considerable research synergy. The focused conversations provide rich descriptions and context-specific connections and thereby are better suited as the primary source of information for the exploratory theory building on the boundary of the investment firm. The following section synthesizes the empirical results.

Forces shaping the boundary of the PE centered IF will be presented in the first part of the next section and will be linked to a new unified strategy framework on the forces shaping the boundary of the IF. Subsequent sections summarize new knowledge with respect to specific options on bundling traditional PE and other business. Overall, this endeavor builds toward a new trust-based theory of the investment firm, whose plausibility will be demonstrated on four PE firms, each being affiliated with one of the more successful centroids which were discovered during the concurrent strategic grouping approach.

6.3 Empirical Results

6.3.1 Forces Shaping the Boundary of the Investment Firm

Contemporary management thinking on the boundary of the firm is influenced by Coase's paradigm (Coase 1937). Coase's idea and its derivatives imply that the boundary of the firm is determined by the cost efficient optimum between diametric forces. Building on this conceptual reference point, this study asks: which forces shape the boundary of the investment firm? The classic answer: it depends.

Notably it depends on the constituent of the IF business model. To account for this heterogeneity, the results of this study do not only unveil forces expanding the boundary of the IF toward a multi-business model and antipodal forces pushing the boundary back toward a narrower model, it also differentiates the forces with respect to each major constituent of the IF business model (see Figure 52).

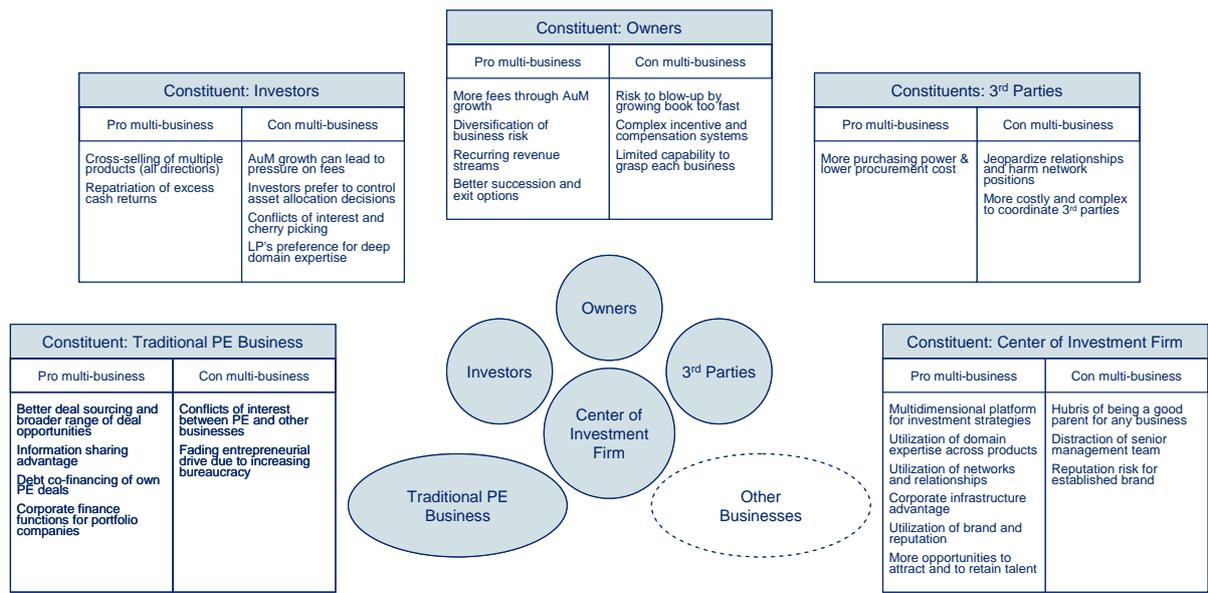


Figure 52: Pros and Cons of Multi-Business PE Centered Investment Firm Model

For each major constituent of the IF business model, Figure 52 illustrates the pros for the multi-business (cons against the monolithic) and cons against the multi-business (pros for the monolithic) IF model. In the following section each determinant will be presented in greater detail, followed by an aggregated synthesis of the strongest underlying forces that supposedly shape the boundary of the IF.

Constituent: Owners

Overall the evidence suggests that owners have a natural tendency to expand the boundary of the IF. Supposedly there is also a positive relationship between the magnitude of this tendency and increasing seniority. At the same time, the majority of interview participants had concerns regarding potential parenting disadvantages and growing conflicts of interest with other constituents, notably investors.

Marginal doubts remain concerning the view that the broad multi-business IF model is mostly attractive for its most senior GPs. Offering incremental revenue streams on an existing business platform, forays into non-traditional PE businesses allow the IF to tap ‘more fees through AuM growth’. Some believed that this is one of the major determinants motivating owners to drive transformations of their firms. In the words of the Senior Managing Director of a US PE firm: *“Everyone wants to grow and diversify. The reason they’re doing it at the GP level ... is not because it makes a difference to return, it’s because they get more assets under management. They can get more assets, more fees, and it becomes an asset aggregation business. The question then is, are you making more on your investments or are you making more on your management fees. The management fees keep the lights on, and that’s a big, big, difference. It’s comforting”*.

Moreover, it may also be comforting for owners that revenues from multiple businesses are ideally not correlated, creating a natural hedge. Therefore the expansion of the boundary of the IF can be driven by a ‘diversification of business risk’ incentive. For example, lower volatility of mezzanine returns relative to PE returns as an asset class can offer downside protection in economic downturns. Mezzanine historically underperformed PE. So the upside is also capped, yet it offers the owners more business stability.

More than half of the investment professionals also explicitly shared the view that the typical lumpiness of revenue streams from PE can get mitigated through the broader multi-business model, provided it can facilitate an inflow of more ‘recurring revenue streams’. Many assessments confirmed this view, such as the conclusion from the Senior Managing Partner and Operating Committee Member of a US IF: *“We’re still very much PE fund centric. A lot of our value comes from the carried interest which is very lumpy revenue. You may sell a couple of deals and there’s a huge amount of revenue from them, but you can’t run your business by timing if you look at your revenue streams and they go up and down like that. Businesses that may not be as dependant on such incentive streams and are just flat fee based can help smooth things out. For example, I wish we had Blackstone’s FoHF business. It’s huge. It’s a very nice counterweight to the PE model. It’s not high incentive fee oriented, it’s an asset aggregation business, with a steady fee stream, with assets that pretty much stay in place and compound. It’s not permanent capital, in the sense that most investors past the lock up can come in and say, give me my money back. In that sense it’s less locked up than PE is ... and as a practical matter it tends to be fairly sticky, and some people take out and some people grow. It’s a big pile of capital that sits there and it’s not like a PE fund where it goes through one big long cycle, and then it’s gone, so you have to go and raise the next one. All those attributes I think make it attractive from a business model perspective to have as a counterweight to the PE business”*.

Several views suggested that in fact the whole migration of PE firms toward the multi-business model is heavily motivated by owners’ interests to maximize fees. The Managing Partner of a US based IF concluded: *“From a value of the business model, it’s pretty impressive what the Blackstone guys have built. I think the benefits of what they’ve built as a PE practitioner, are not quite as substantial. Their position in the debt markets through GSO and being the big mezz lender, is that the key to unlocking value in most deals? No, it’s not. Does their advisory platform show them into the deals, make them understand on how to buy a company in bankruptcy better? I don’t think so. I think as an owner of the holding company, having a variety of earnings stream that might not all act in sympathy, that’s a good thing. And, having the position they had in real estate helped them to do a deal like Hilton, being able to do both corporate buyout and real estate buyout. On these deals it helps you”*.

It also seems that seniority can function as a determinant driving owners’ appetite for a broader multi-business IF model. Few disagreed that the expansion of the monolithic PE model toward a multi-business platform can offer substantial economic advantages for the owners, provided the transformation succeeds. Yet, younger partners of PE firms appeared less willing to take on such a business model engineering risk compared to their more senior

partners. The Managing Director of a US IF noticed: *“Look, owners like it [multi-business model]. The owners see an advantage because it removes cyclicalities, and it puts more AuM, which is what they care about. If it’s not diminishing their core franchise there is no reason for them not to like it. They should like it. And let me just add one more point. It’s a distinction, between senior partners and younger partners at PE firms. There are generational shifts. The younger people are a little less focused on just building AuM instead of building a franchise that’s portable”*.

Generational shifts are also naturally connected to succession matters. At later stages of their career, owners may have a growing interest to cash out a share of their wealth as opposed to repatriating it into the next illiquid PE fund with a long investment cycle. Recognizing the considerable aggregated wealth of some senior partners, it would be quite difficult for younger partners to buyout more senior partners, a modus operandi often used in partnership firms such as law firms or consulting firms. Some comments of interviewees suggested that senior owners have an incentive to transform their firms toward the multi-business model in order to expand their own exit options and to exit gradually. In the words of the President of a US PE firm: *“Many owners have become really wealthy individuals. What’s happening in the industry is a succession. And more assets, more liquidity gives [the owners] more capital and they can kind of exit over time vs. if you have a private fund, how do you get out of it”*.

The transformation toward a broader multi-business IF may be conceptually interesting, though some experts had doubts with respect to its feasibility. Few examples exist which would prove that the model really works. Goldman Sachs was often mentioned as one of the few functioning prototypes. However, current regulatory changes, inter alia, impose restrictions on its proprietary investment activity. Recently it was proposed that banks should no longer be allowed to market their PE funds under their bank brand, which would minimize the reputation and branding advantage of the multi-business IF model. Perhaps Blackstone can become another prototype of a well functioning multi-business IF model, although many experts felt that it is too early for making conclusions.

However, with respect to the constituent owners a string of counterarguments also pushes against the boundary of the IF. For one, the ‘risk to blow-up by growing too fast’ is considerable and apparently gets frequently underestimated, as the experience of the Senior Managing Director of a US PE firm illustrated: *“If you grow in fixed income too fast you will fail ... you grow too fast and you fail and you blow up and you’re gone ... the list goes on and on of guys who were fixed income lenders, and were blown up by going too fast”*. It is unclear to what extent these failures were driven by the recent financial turmoil and to what extent the bankruptcies can be linked to flaws in business models. Either way, for owners the transformation from a narrow IF model toward a broader model supposedly bears considerable implementation risk.

Owners of a broader multi-business IF can also face value destroying and costly friction due to increasingly ‘complex incentive and compensation systems’. A Senior Partner of a US IF felt that when it comes to incentive systems *“it’s unclear. For owners it’s all about*

compensation, and that tends to be a very complicated question. In the old PE model everybody was investors in everything. In a business that was quite healthy you'd do very well and the alignment was straight forward. When you have other asset classes then the question is, OK, how are people being compensated? Then you also get into structural questions. I don't think it's so straightforward ... I think the notion at [our firm] is, that in order to successfully navigate the future you've got to become a multi-product firm. The world has gotten more competitive, it has gotten more complex and therefore you have to move to a more complex model. If we have to move to a more complex model, we can make that work just fine. But it's not out of simple desire. It's out of necessity that you have to move to a more complex model".

Such statements imply that the phenomenon under investigation might be less driven by economic rationale and perhaps is more an expression of the PE firm's organizational expansion dilemma, which Mintzberg in a comparable context described as "*damned if you do, damned if you don't*" (Mintzberg, 1989, p. 172).

With each additional business, supposedly the owners' parenting capabilities decrease. The 'limited capability to grasp each business' is a frequent argument against the broader IF model. In the words of an Associate of a European PE firm: "*From an owner's standpoint, the potential disadvantages would be lack of expertise. A classic PE fund trying to get into the hedge fund space might play it wrong and [mess] it up. If you look at Carlyle's credit fund, that's what basically happened. A bunch of guys went into the product which they did not properly understand and they blew it up heavily. These are the disadvantages. All those segments have different dynamics, different risks involved, and you have to be mindful of them, and the problem with risk is, you can not make a mistake twice, once you make a mistake it's over*". Based on such concerns on increasing incentive system complexity and decreasing parenting advantage, some interview participants expressed a more skeptical view on the multi-business PE model from the perspective of the constituent owners. Given that at the time of writing there was no long-term operating performance data which would allow for a controlled comparison of the models, the general sentiment was rather cautious.

Constituent: Investors

There are mixed views with respect to the constituent 'investors'. Investors' preferences can considerably influence the boundary of the IF. The evidence suggests there is a tendency of investors to prefer narrower and more monolithic IF models. In the wake of the most recent economic downturn this tendency supposedly even intensified. Although the respective counterforce on the boundary of the IF is considerable, the general view suggested that it is still rather manageable.

One of the major economic advantages of the multi-business IF model is the potential of 'cross-selling of multiple products'. About half of the interview participants supported the view that customer acquisition cost and customer relationship management cost can be better

spread through a broader IF platform and that the bundling of financial products and services can tap new income streams. The overall positive, yet at the same time mixed view, is also reflected by the statement of a Senior Managing Director and Corporate Officer of a US IF: *“From a client perspective, this [multi-business model] is both a synergy and a dissynergy ... you cross-sell product, on the other hand, you keep going back to the same client with products, it’s hard to know, when they are at capacity for [our] product ... mostly I think it’s a synergy ... you’re in there for a few years with a hedge fund product, and then you can introduce a PE product ... about two thirds of our clients have more than one asset class with us, and I’d say we’re far from fully penetrated”*.

This statement is quite representative and also in line with the conclusion from a Senior Partner of a US PE firm: *“In terms of servicing investors you obviously can do a better job if you can offer them multiple products, but they all start off skeptically, as to whether you’ll be good in other products. It’s sort of: show me ... there are mixed views on that. They judge you based on the performance in one asset class as opposed to overall ... other people have been doing [another asset class] for 20, 30, 50 years. If I’m going to the same investors and they have a twenty years experience with somebody else [in another asset class] and a twenty years experience in PE with me, they get nervous if they worry about us being distracted ... so they may think it’s great that we’re doing a variety of things ... if we’re doing them well”*.

The cross-selling advantage can also be seen from another perspective, given that GPs are also co-invested ‘clients’. In some cases GPs as one investor group hold the largest positions. Over longer time periods of ten or twenty years, successful GPs can aggregate considerable wealth. These investor owners may prefer a ‘repatriation of excess cash returns’ within the boundary of their own IF platform, eventually expanding the platform’s boundary to comply with the diversification requirements of the IF platform’s own wealth. Rather than diversifying her net worth through external asset managers, the GP diversifies within the confines of her own IF. A Senior Managing Director and Corporate Officer of a US PE firm described this natural evolutionary step for her firm in the following way: *“The firm started as an M&A firm, and very quickly migrated into PE ... [ever since] there was always some type of product being launched or fund being raised, and they were mostly born out of ideas that presented themselves in the core business ... for example, we’re now the largest [asset class] manager, and that was a business that started really to manage [our firm’s] excess cash, and then partners started putting money in it, and the investors, our LPs in PE, asked if they could invest alongside the partners, and then it became a much more institutionalized business”*.

Apparently this cross-selling to internal clients applies for all levels of the organizational hierarchy, including the Senior Associate of a US based PE firm: *“It’s surprising, but the really big argument [for the multi-product model] is that some senior guys have made a lot of money and they see it as a tremendous plus, if their money gets managed by people they know, by people that went through our firm’s school. They want to diversify their assets, and at the same time they want to keep them under our umbrella. I can also invest in our sister funds,*

which is nice, because I don't get charged the same fees which I would usually have to pay for a comparable quality service".

However, an investment firm expanding its boundary too assertively can also face heavy head wind from the constituent investors. One determinant decelerating the expansion of the IF can be growing aggregated pressure on investment management fees. The more capital a client allocates to an IF e.g. due to investments across multiple products, the better will be her position to renegotiate investment management fees. Such renegotiations can also lead to broader price deteriorations, so in general 'AuM growth can lead to pressure on fees'. Several interview participants expressed this view, including the President of a US PE firm: *"I can tell you everyone in PE wants to become an asset management business. You have to diversify away from just PE. For mega sponsors like us, there is limited growth in PE. We're not going to raise another \$20b fund next time. It is just not going to happen. You need asset growth, and if you can grow two and twenty, that's the nirvana. But the LPs are pushing back now. We just renegotiated with an LP. They say, OK, we give you \$1b [in AuM] so we want less fees. It's a tense relationship between the LPs and GPs these days. PE is what it is, it is in transition, it is changing. How much capital is available for the mega sponsors or the buy-outs? We don't know yet. So in interim we tap markets where it makes most sense and where we have the ability to grow that business by doing different asset classes"*.

The expansion of the boundary of the multi-business IF also faces a counterforce because 'investors prefer to control asset allocation decisions', while a related counterforce is based on investors' concerns with respect to 'conflicts of interest and cherry picking'. The two investor driven matters are interrelated. The Senior Partner of a US IF argued that *"[those guys] who invest in our hedge funds do not invest in our PE. They may have the same name, but it's a different group. The CIO of fixed income is a different person than the CIO of alternative assets. People don't want conflicts of interest from cross-selling. They want to give you money, and they say, OK, I expect you to provide this return, to be transparent, to have liquidity provisions. I don't really want to know what's going on in your other funds. I only want to know what's going on over here. And then you go through consultants, the consultants are managing a bit of a barrier. I don't see an advantage from an investor's perspective to have multi asset classes. They may see some slight disadvantages that you may be conflicted. You may know that you're not, but they may perceive you to be cherry picking, the whole allocation procedures. And, you may have the best processes and you may really feel like you're doing all well. But they may say, I'm not so sure, I want to pick a manager who does just that"*.

It should be noted that the complexity can aggravate even more if conflicts exist within the boundary of the investor, given that an LP can also be seen as an institutionalized multi-business IF on yet another level of the capital supply chain. Some interview participants also felt that a broader IF creates more investor concerns with respect to 'cherry picking', e.g. of the best investments or the best investment professionals. Although a Senior Managing Partner and Operating Committee Member of a US PE firm also noticed the tension between investors and owners, at the same time she suggests that it can be mitigated to some extent,

especially when working with investors who understand how to take advantage of a multi-product platform: *“There is a bit of a tension between the two camps, owners and investors. If you’re an LP in a fund, what you care about most is the performance of that fund, and you want to make sure that there are qualified people running that fund, that they have incentives around the fund, that they have a lot of their net worth tied up in that fund, to align their interests with yours as much as possible. And there is potential tension between that sort of narrow minded objective with blinders on that you might have as an LP of a fund, and what the owners of a diversified firm might want in terms of deploying personnel. Like, that’s a really talented guy in that fund but I’d like to take him out of that to go start up some other business. So, you have tensions, not only over fees, but also over where the fees are going and if you’re using fees out of one fund to subsidize other businesses. That’s what I would call the low level conflicts that are inherent in [the multi-business IF]. Low level but manageable, and some of our LPs think more broadly about these issues and are able to get some benefits out of the [diversified] growth of the firm”.*

Low level conflicts can escalate to high level conflicts if the IF itself goes public. Adding the expectation treadmill of public shareholders to LPs’ and GPs’ preferences naturally creates a triumvirate of three shareholder groups with misaligned interests. It becomes very difficult to rectify these interests and some argued that it is almost impossible: *“The tension gets magnified for firms that are public. When you add the temptations, which LPs believe are there, for firms to run their business to satisfy public stock holders, producing quarterly earning streams, booking a profit every quarter, as opposed to dealing with the lumpiness of the natural fee streams of PE, that tends to bother LPs much more. And that’s what I would call high level tensions”.*

This view was shared by most interview participants and also by the Senior Managing Director and Corporate Officer of a US PE firm: *“LPs are not always crazy about diversity. I think they like to focus on what you know. The investors in PE would be fine if all was in PE. That said, a lot of them do own or do invest in multiples of our products, and I think they do at some level understand the synergies and the benefits to them of having us in these different business lines. But still, they range from ambivalence to preferring focus”.*

Some investment professionals also considered ‘LP’s preference for deep domain expertise’ as another argument for a narrower IF. The Managing Director of a US based PE firm observed that investors are more reluctant to allocate capital toward investment managers who can not demonstrate deep expertise in a particular domain: *“You may be asking the wrong guy, because I’m very risk averse, but I think the last thing [investors] want to see is that you’re building an asset management power house for yourself if you’re not posting great returns for them in the interim. If it’s adjacent than there is room from an investor’s perspective, but if it’s a far flung operation I think it is a disadvantage for the investors. If a firm specialized in PE suddenly sees an opportunity to go into some abstract type of lending or buying mortgage backed securities, if I were an LP, I’d be very upset”.*

Constituent: 3rd Parties

What goes around comes around. The saying applies in many contexts. At the time of writing it was uncertain how it might play out for the relationship between the multi-business IF and its 3rd parties, e.g. investment banks, given that the relationship dynamics are changing with a changing PE model. Although many investment professionals saw tangible and considerable procurement cost advantages resulting from an expanded boundary of the IF, the interviewees also emphasized that the broader IF may turn 3rd parties into competitors.

A multi-business IF platform can aggregate procurement of supplies across various areas including capital which arguably is the major factor of production for investment firms. The determinant ‘more purchasing power and lower procurement cost’ can create a strong incentive to expand the boundary of the IF. Almost all interview participants strongly supported the view that purchasing cost synergies are real, also the Senior Managing Partner of a US PE firm: *“We as a firm pay billions of dollars to Wall Street in fees. So I have phenomenal access and relationships and capital providers from all the Wall Street firms. Because we paid them a bunch of money on one end, we can say, OK, we give you a billion dollars and we want you to give us our revolver, I want to have CLO deals before everybody sees them, I want a good allocation on a transaction, so that kind of economics. Your purchasing power as a firm can drive down costs across all your funds, and we can benefit from that, cost of our capital, cost of our insurance, procurement cost”*. The Vice President of an Asian IF shared this view: *“An advantage of having multiple businesses is that you have more touch points and better pricing, for example, a law firm would give you a 20% discount”*. Some supposed that it may not always be easy to quantify some of the ‘soft’ purchasing cost synergy, including the Senior Managing Director and Corporate Officer of a US PE firm: *“Because we’re a bigger customer for them, it’s good for us because of leverage and in terms of pricing, and it’s good for them because we’re a very big fee payer. Some of it is soft, in that when credit is pretty scarce we’ll have a better shot at getting it”*.

However, forays of PE firms into adjacent business areas may overlap with activities of their own 3rd party services providers. Some interview participants emphasized that this can ‘jeopardize relationships and harm network positions’. For example, an investment bank concerned about being squeezed out by a broad multi-business IF in the investment bank’s own core business might be less willing to provide proprietary information or might be less willing to provide financing when the IF needs it. The Managing Director of a US IF perceived that *“the Wall Street community is pleased about [multi-business IF models] all day long, to the extent it doesn’t compete with them. I’m sure many investment banks are not thrilled by this whole KKR underwriting initiative. It becomes a disadvantage for the 3rd parties, if they become so big that they don’t need the 3rd parties anymore. If you have your own mezzanine group and your own dip fund or whatever it is, the third parties can get squeezed out”*. Many interview participants shared this view, including the Associate of a European IF: *“From the perspective of 3rd parties, like investment banks, well, it is a pretty complicated issue. The PE firm is a competitor in the credit fund and it could be the bank’s*

client. So, it can mix things up, when you are competing for assets in the market. Conflicts need to be checked and managed properly”.

Another argument against the multi-business IF model is that it makes it ‘more costly and complex to coordinate 3rd parties’. This point is also reflected by the statement of a Senior Managing Partner and Operating Committee Member of a US IF with respect to the broader IF model: *“Advantages far outweigh the disadvantages, you have many more touch points with these firms [3rd parties], you are able to offer them more business in different areas and then hopefully get more value back from them in various ways. I think it’s a hard thing to manage those relationships, when you have all these multiple touch points. It’s something we are still trying to optimize in our knowledge base, how we deal with them. And it makes it sometimes hard for them to deal with us because we’re so far flung that they’re not always sure where to go”.*

Constituent: Traditional PE Business

With respect to the constituent ‘traditional PE business’, views on potential linkages between the traditional PE business and other businesses were quite dispersed, notably concerning the magnitude of the linkages. Nevertheless, just a minority of investment professionals considered the linkages to be negligible. The majority agreed that the synergy between the traditional PE business and other business can be moderate to strong.

One of the frequently stated arguments for the multi-business model was that it would enable ‘better deal sourcing and broader range of deal opportunities’, creating considerable economic advantages for the PE centered investment firm. A large majority of interview participants supported this argument, including the Senior Managing Director and Corporate Officer of a US PE firm: *“Having the information flow so that it creates a virtuous cycle is embedded in the culture ... there is no tolerance for holding back information ... the information flow helps you source deals, it helps you think of new ideas, it prevents mistakes ... what you would find in most PE firms is that they tend to do the same deal over and over again, they do large deals or they do mid-sized deals, or they do energy deals ... we’ll do growth equity, we’ll do mid-cap deals, we’ll do platform deals, we’ll do large LBO deals, we’ll do loan to own, depending on where we are in the cycle ... it’s a very flexible investment strategy that takes advantage of the best opportunities at a given time ... senior bankers talking to CEOs means more feet on the street for our investing arms”.*

A related and also frequently stated argument for the broader IF model is based on advantages from knowledge sharing across the investment firm. Almost all interview participants expressed the view that the PE business, its portfolio companies, and other sister businesses can benefit from the ‘information sharing advantage’. The Senior Managing Partner and Operating Committee Member of a US PE firm noticed *“that there are certainly knowledge transfers [between businesses]. The [debt] business provides a whole lot of expertise to our buyout funds in terms of the financing side of their business. So they’re on the*

buy-side of debt offerings that are being done by PE firms, not just us, but all of our competitors ... they understand the structuring of those deals very well, and they can help advise us what is going to clear in the market ... conversely, the PE industry experts can talk to them generally about certain industry sectors and enhance their knowledge base". Although ideally such firm-wide advantages are understood by every professional in the organization, they do not necessarily have to be relevant on all levels of the organizational hierarchy. This was captured by the view of an Associate of a European PE firm: *"From the perspective of our senior professionals it [bundling of PE and other businesses] gives you a tremendous upside, because they have visibility in so many different asset classes, it allows them to spot trends better on what is happening in the markets, they see activities and opportunities on the credit side, the guys on top of the investment committee they can make better investment decisions ... for me a guy from the credit fund doesn't mean much, but for the guys who make decisions at the top, that can mean a lot".*

The existing theories laid out above substantiate the economic value of the 'information sharing advantage', implying that perhaps a positive relationship exists between the magnitude of information sharing advantages from expanded IF boundaries and the height of capital markets inefficiencies, possibly being moderated by the influence of capital markets technicalities and sentiment due to information asymmetries. In other words, perhaps the expansion of the boundary of the IF can mitigate information asymmetries within the triangle of issuers, debt investors, and equity investors, in a more cost efficient way than capital markets.

The Managing Partner and Executive Committee Member of a leading US based PE firm, who was trained on Wall Street in the 1970s, noticed tangible benefits in such a free flow of information: *"The knowledge that we get from our debt business guys about what's going in the debt market and how those assets are performing, that's helpful to the PE business. The [debt] business is getting the same thing from PE, in terms of what do we see across the portfolio and what are we worried about. We're in control of these companies, so we're generally getting better information and faster than the [debt] business would. So, we're seeing this, what's two months down the road, that's an advantage".* She also considered 'debt co-financing of own PE deals' as a related advantage of the multi-business IF model, suggesting that *"the PE investments also benefit when the debt business participates in our deals".* In fact, many interview participants shared the view that traditional PE and debt funds are quite synergistic.

The representative view of a Managing Director and Corporate Officer of a US PE firm also added the notion of synergy on the portfolio company level from expanded IF boundaries: *"If there is an adjacent business, that makes a lot of sense, because of information sharing, because of building the executive network ... a lot of firms, including us, we have a portfolio wide purchasing, we aggregate credit card transaction fees to reduce those, shipping fees, we do contracts with UPS, plastic bags ... there's a million areas where you can save, the bigger the portfolio".*

A general observation of several senior investment professionals, mostly trained on Wall Street in the 1970s and 1980s, was that currently there is too much emphasis in the financial community on being short and on packaging and repackaging of abstract products. Often the underlying argument was that being long requires a different set of fundamental credit skills which are not restricted to one financial product and actually can be applied across a whole variety of financial products. For some interviewees, the conceptual barrier between equity and debt seemed artificial, implying that equity and debt are merely abstract contracts specifying residual rights.

For example, for the Managing Director and Partner of a US PE firm equity and debt is one bundled product: *“For us the PE fund and the debt fund are really the same, they’re managed by the same people. There are some [portfolio companies] who don’t want to go out and speak to another institution to get third party debt. In many cases the only debt our companies use is our debt. From the equity’s perspective, it gives you access to deals you might not ordinarily have, and you have a lender who might be more willing to work with the company, a friendlier lender ... it’s a nice stapled product, there is no separate investment team, it doesn’t take any extra management or any extra attention, as to doing credit analysis on top of the other analyses you ordinarily do ... it gives you an advantage, you might be able to close deals ... we’re all money managers, so it gives you access to additional assets to manage and additional fees”*. This substantiates the finding that in fact a broader IF platform, simultaneously servicing portfolio companies, debt investors, and equity investors, can reduce transaction cost.

Some investment professionals saw the bundled supply of capital across a broader IF platform as a tangible cost advantage. The multi-business IF model can effectively bundle the refinancing of portfolio companies and it can also provide ‘corporate finance functions for portfolio companies’. The Managing Partner of a US based PE firm clarified that *“we let the management team focus on running the company ... we basically take over the corporate finance functions ... [in downturns] we recapitalize, and then, when we come out of the cycle, we make money on the back end”*. This view pictures PE firms as ‘corporate headquarters’ providing centralized corporate finance functions to business units.

However, several arguments explicitly supported a narrower and more monolithic PE model. One of the strongest concerns all IF professionals expressed was related to ‘conflicts of interest between PE and other businesses’. Conflicts of interest can be multi-dimensional. They can occur, for example, during the investment allocation process. In broader IFs, new transactions or investment opportunities can be interesting for multiple fund managers and internal competition about the best assets can create costly friction. Conflicts aggravate when investments come into financial distress. Also the allocation of legitimate residual claims can increase internal friction losses. A Senior Managing Partner of a US PE firm supported the view that *“if you have a debt business, and you can apply that to PE, there really are synergies. We don’t have an exclusive right in PE to find good businesses. The debt guys can find them as well. There is a way to build out multiple asset classes where there really are benefits ... [but] investors worry about multiple business lines and whether there might be*

some conflicts. It's sort of the Goldman Sachs model. Goldman is going to find the deal for somebody who is it's client and they do the financing and this and that, and it's kind of like they are going to do everything ... but, if somebody sits back and says, don't they have all these conflicts? And the answer is: they do ... the more of these things you do, especially when you are providing services, you just have to be very mindful of that ... it's not that you can't do that. It's not that you can't structure it properly and make sure that the PE investment for example gets the best execution. We would argue that there are reasons to think that we will get better execution by participating. We just have to watch it".

An Associate from a European PE firm felt that such conflicts are actually quite visible among industry participants: *"It always amazes me how aggressive Goldman is in passing on information from their M&A team to the PE fund guys ... some people in the industry say, that when you have really valuable proprietary information you have to think twice whether you want to share it with Goldman".* Apparently such conflicts are not only visible but they also create irritation among industry participants. This implies that synergy advantages of the broader IF platform should be compared with internal and market friction losses. Some IF professionals felt that some firms can push the boundary more than others, such as the Senior Managing Director of a European PE firm: *"Everybody in the industry feels uncomfortable with Goldman, but nothing ever happens".*

The Managing Director and Partner of a US PE firm pictured analogies between the current evolution of some PE firms to Wall Street firms thirty years ago: *"For example, Apollo has got many funds structured in different areas, distressed debt, mezzanine, senior debt, convertibles on common equity ... if things go south on an investment you have the departments fighting over the pie ... it's like the old days in the '80s when the banks were doing everything, bridge financing, subordinated debt, senior debt ... and when things went south, you had the 22nd floor arguing with the 32nd floor or the 15th floor, who gets what ... I think that for funds that have such broad asset classes along with it come inherent conflicts of interest, because they are generally drawing the committed capital in all of those classes from the same pool of investors ... each fund has its legitimate interest which is contrary to the other funds".*

At the same time, the view of a Senior Managing Director and Corporate Officer of a US PE firm suggested that at her firm such conflicts only occur between debt and equity positions: *"We don't have a conflict in joint equity investing, for example, [portfolio company] is owned by both our PE fund and our real estate fund ... but we would not invest in debt and equity at the same time, that's actually a conflict ... we would co-invest in different debt liens or in different equity classes".* The organizational expansion of a broader multi-business IF model also raises concerns about increasing bureaucracy and 'fading entrepreneurial drive due to increasing bureaucracy', although only few shared this concern, including the Corporate Officer of a US PE firm: *"Cons for the PE guys of a multi-product firm are, because we're a bigger firm, they say, that it just feels more bigger and is more bureaucratic".*

Constituent: Center of Investment Firm

With respect to the constituent ‘center of IF’, most interview participants supported the view that a broader IF model can offer tangible advantages compared to a narrower model, especially when the IF is at scale and when it has an established track record.

One of the frequent arguments for the broader model was that it creates a platform for a variety of investment options. Rather than following the ‘one-size-fits-all’ approach at all time, it supposedly allows for a broader range of investment opportunities depending on specific circumstances. A large share of interview participants agreed that considerable value can be generated through such a ‘multidimensional platform for investment strategies’. Some investments professionals perceived specific investment strategies such as ‘loan to own’ or ‘distressed for control’ as not quite noble, while others emphasized the high returns and the attractiveness of such deals, implying that perhaps also perception differentials on the role of PE influence the range of activities of the PE centered IF. With few exceptions, most appreciated the additional opportunities of a multidimensional investment platform, such as the President of a US IF: *“We’re buying distressed bonds, with two distinct outcomes, if they recover then we’ll make a return, if they don’t recover we’ll convert our sub debt into ownership, so distressed for control type of a business. So in good times we can be active and make money, in tough times, we can make money. We bought many bank loans at a [cheap] price, now they’re back to par, we used the capital out of our PE fund and we made a huge return. We’ve moved billions of dollars in debt in companies that we now own the equity of, we bought them, they got stressed, and we exchanged debt for equity”*.

A related frequent argument supporting the expansion of the IF toward a broader model was that it could generate considerable value if the domain expertise of an IF such as deep knowledge about a specific sector or about a specific region can get utilized across multiple businesses and multiple financial products and services. The potential parenting advantage of the center across multiple businesses may also be determined by the ‘utilization of domain expertise across products’, as the President of a US PE firm outlined: *“If I’m looking at a company in the [x] space, we own more companies in that space for 20 years than anybody else. When investment bankers try to sell products and they talk about companies, they’re always short in that industry, because they are selling the investment in that debt or in that company. All of our executives, all of our investment professionals, we’re long in those industries. So if I want to really know what’s going on in the [x] space, I want to pick up the phone and call [person] who runs [company]. I’ll tell you what’s going on in the [x] space, good and bad, from the guy who actually runs the biggest company. We have access not just to folks on the investment teams but to the CEOs, CFOs, we have that kind of direct access to people. That’s a huge competitive advantage. Once we find out what’s really going on in an industry, then we use that information to hopefully make a good decision, on where we want to put our capital, how much we should get paid, how much we should restructure, how much debt should be ahead of us, how much debt should be below us, [and how much] equity [is] required”*.

Such comments further substantiate the growing string of evidence that perhaps the expanded boundary of the IF can facilitate not only capital flows more cost efficiently than the open market but also the allocation of information and domain expertise. The ‘utilization of networks and relationships’ across multiple activities also determines the ability to allocate capital and information in a more cost efficient way. The Senior Managing Partner and Operating Committee Member of a US IF articulated the view of several investment professionals: *“The knowledge sharing aspects of [the multi-business model] are important, also networking effects with outside providers. This is a benefit that drives more from our PE part of the firm to other parts of the firm. If we’re doing x million dollars in business with bank x because we have a huge buyout fund that uses them, it gives the real estate fund or the debt fund the ability to ride on that in terms of their own relationships and getting outsized attention and benefits from a bank or other service providers. Also the ‘who knows who’ effect, which is very powerful if you multiply it across hundreds of investment professionals in different asset types”*.

Most investment professionals also emphasized that the broader IF platform can create a ‘corporate infrastructure advantage’. The Senior Managing Director and Corporate Officer of a US PE firm concluded: *“There is an advantage in marketing when you have multiple products, because we have relationship people who can overlay several products and act as relationship managers. There is also cost synergy across more businesses in corporate spreading out, for example in legal and compliance”*. Closely related is the argument that the broader IF model would allow for a better ‘utilization of brand and reputation’ across multiple products and services. The Associate of a US IF supported the view that *“if you have developed a reputation over several decades, there are for sure synergies to use the brand for other businesses and to let them develop and grow with the branding umbrella of the mother ship”*. Also the view that the broader platform offers ‘more opportunities to attract and to retain talent’ is a relevant argument for expanding boundaries of the IF. It was supported by several conversation participants and also by the previous one: *“The multi-product platform allows the firm to keep talent, that at one point of their career maybe wanted to move on into hedge funds, debt funds or VC. If some PE guys were really good, the multi-business platform would allow them to set-up their start-up under our umbrella”*.

However, with respect to the constituent ‘center of IF’ several arguments also support a narrower and more monolithic IF model, notably the tendency of the investment professional to overrate her own expertise and her ability to manage any financial business or any combinations of financial businesses simultaneously. Some interview participants had quite strong views on this matter, including the Senior Managing Partner of a US IF: *“PE guys can’t do mezzanine. Everybody wanted to become a Goldman Sachs. It was easier for Goldman Sachs as a bank to become a PE fund, than it is for a hedge fund or PE to become a bank. KKR is trying to do it with their capital markets business now, but they are using their own mandates to win deals. But it’s really hard. Citadel is never going to build out a real leveraged finance business. It’s just not going to happen. What I admire about Blackstone is that they hired Tony James years in advance of them becoming a multi asset class business. I*

do admire that they [Blackstone] brought in professionals in advance. But, a lot of guys are kind of like, 'catching up, let's get the money and we'll figure it out later'. KKR has probably done a good job last year of bringing in talent [from J.P. Morgan] around that".

Some investment professionals were also quite self-critical in reflecting their own abilities and how they had managed some of their own strategic forays from PE into adjacent strategic spaces in the past. The Senior Managing Partner and Operating Committee Member of a US IF mentioned: *"During the last five years we have had a couple of unsuccessful forays into other types of alternative asset classes. For example, we started for a very brief period another business and ended up divorcing fairly quickly. But the point for your study is that, I think, our failures there had been more in the sense that we have made a lot of mistakes the way that we went about doing it, but it's not something we couldn't do. So, it remains out there as a possibility for the firm"*. A fairly large amount of statements of PE professionals supported this gist. It appears legitimate to imply that perhaps the relatively small amount of known well functioning multi-business IF prototypes is not so much determined by structural defects of the broader IF model than by the lack of expertise and capability to design and to implement a well-balanced multi-business IF platform. The interviews suggest that many investment professionals underestimated these challenges.

A related counterforce against the expansion of the IF, which is also amplifying the previous argument, are concerns of investment professionals with respect to potential friction losses due to 'distraction of senior management team'. Several interview participants concurred that the limited time and attention of senior IF management can hinder the expansion of an IF even more than limited TMT expertise, implying that strategic forays into adjacent spaces are more likely to succeed if senior management paces the business expansion in line with own expertise expansion. For example, the Managing Director of a US IF felt that the disadvantages of the multi-business IF model *"all have to do with time and attention. If you're sending the message to the world that your senior management is distracted, that's the big disadvantage. But I do think within a certain area of expertise, if you can leverage it more, the multi-business model is good for both [GP and LP]"*.

Another relevant argument against a broader IF model architecture formalizes along potential negative implications from 'reputation risk for established brand'. The Managing Director of a US IF recalled a situation where this potential threat reversed the initial expansion of her firm to avoid reputation risk: *"We had a subsidiary ... it just wasn't successful because it wasn't complementary ... it took management attention. We helped them to raise money with our name, and it wasn't successful. In the end we thought it had reputation risk. We thought it would be the best to get out of it"*.

As illustrated above, there is a general tendency to forget that money is just an abstract concept and that it represents the mathematical equivalent for trust (see chapter 2.1.1). At the same time, the findings presented in this section show that many forces shaping the boundary of an investment firm in fact can be directly linked to the concept of trust. So perhaps the investment firm can be seen as an economic device for trust.

Trust is indivisible. Even with the most efficient systems one can not simply divide trust. Either trust is there or it is not. Perhaps the indivisibility of trust at the center of a new trust-based theory of the investment firm can be a powerful lens to better understand corporate phenomena, notably with respect to the barely understood puzzles on the monitor of the monitor. The following section presents a first building block of this trust-based theory by synthesizing forces which shape the boundary of the PE centered investment firm into a unified framework.

Synthesis of Forces Shaping the Boundary of the Investment Firm

The results presented above show a string of arguments for a narrower and a string of arguments for a broader IF platform. Figure 53 presents a unified conceptual framework which synthesizes the supposedly strongest forces shaping the boundary of the IF. The framework integrates existing theories on the boundary of the firm with new tacit knowledge from experienced IF professionals, whose knowledge was made tangible within the context of a larger concurrent mixed methods research endeavor.

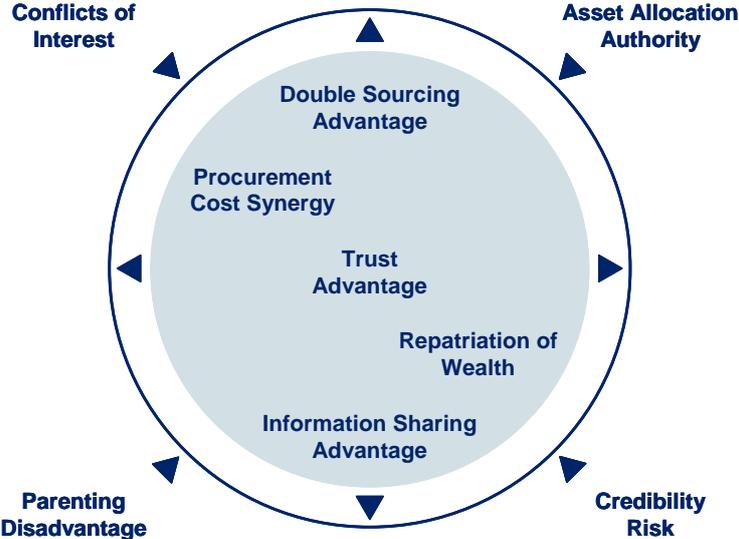


Figure 53: Forces Shaping the Boundary of the Investment Firm

The enhancer ‘double sourcing advantage’ represents both deal sourcing advantages and capital sourcing advantages, alias cross-selling advantages. The potential economic benefit from larger double sourcing advantages due to the bundling of activities provides a considerable incentive for the IF to expand its boundary.

The enhancer ‘procurement cost synergy’ covers procurement advantages on both the portfolio company level and on the corporate level of the investment firm. A broader IF has

more opportunities to bundle procurement of production factors, notably the commodity capital. Evidence confirmed that cost barriers inherent in capital markets (pricing of lender's risk) offer some of the greatest advantages to established firms over new firms (Caves et al. 1977). The established IF with lower cost barriers with respect to capital supply, *ceteris paribus*, has an incentive to expand its activities.

The enhancer 'trust advantage' is at the center of the IF. The idea that money is primarily a measure for trust never quite caught on (see chapter 2.1.1). Trust is indivisible. It can not be simply cut into pieces and used in many investment firms. Therefore the IF has an incentive to leverage its trust advantage by expanding the range of its activities, *ceteris paribus*, at virtually zero marginal cost.

The enhancer 'repatriation of wealth' naturally expands the boundary of the IF to the extent that the capitalist assumes that the marginal cost of using internal authority to manage her own wealth is lower than the marginal cost of using the market, which is in line with Coase's view of the firm. If it is more cost efficient than alternatives, the capitalist has an incentive to repatriate profits into sister businesses by expanding the boundary of her own investment firm.

Last but not least, the enhancer 'information sharing advantage' comprises advantages from more cost effective flow of information, e.g. proprietary domain expertise on sectors or regions, relative to information flow in the market. Some argued that PE activity can be investigated as a legal form of insider trading (Gompers et al. 1998a). The term insider trading raises negative connotations given its frequent use in illegal contexts. Nevertheless, the central essence of the 'information sharing advantage' is that an investment firm apparently has a considerable incentive to expand its boundary in order to 'legalize' valuable information sharing.

Recent research on concurrent lending and underwriting substantiates the view that the bundling of financial businesses can create value, notably through trust and information sharing advantages (Yasuda 2005; Ivashina et al. 2009; Ivashina et al. 2010). If it is true that the expansion of the boundary of the IF can create value for the IF, the question then from society's perspective is whether this is incremental value or merely transferred wealth, and how the generated wealth should be allocated. These questions also influence the forces pushing against the boundary of the IF, which are also conceptualized in the framework presented above (see Figure 53).

The inhibitor 'conflicts of interest' can be seen as the aggregated economic friction loss due the effect that the more financial products and services one investment firm bundles under its corporate umbrella, the more difficult it becomes to keep incentive structures rectified so that every stakeholder gets fairly rewarded, and the more difficult it becomes to allocate property rights and residual claims. Notably battles about residual claims with respect to investments in financial distress can create costly friction if the investment firm represents several counterparties who all have legitimate legal claims. Some larger banks facing conflicts of interest often have compliance teams comprising thirty or forty employees, adding a relevant cost factor.

The inhibitor ‘asset allocation authority’ represents the aggregated reluctance from investors to transfer potentially value creating asset allocation rights to broader PE centered IF platforms. One can imply that a positive relationship exists between investors’ own IF capabilities and investors’ desire to aggregate asset allocation authority.

The inhibitor ‘parenting disadvantage’ aggregates friction loss based on both hubris of investment professionals who have a tendency to overestimate their parenting capabilities, and limited capacity in terms of time and attention from senior management of the PE centered IF.

Finally, the inhibitor ‘credibility risk’ can be seen as the aggregated determinant impairing the central indivisible production factor of the investment firm: trust.⁴⁵

Taken together, the framework suggests that the efficient trade-off between these enhancers and inhibitors determines the shape of the boundary of the PE centered IF. At the time of writing it remained unclear what the optimal efficiency measure should be, given that any money-based measure (e.g. transaction cost) through its reliance on the concept of money ultimately links back to the concepts of credit and trust. Nevertheless, until this conceptual puzzle gets resolved in the future, the new framework presented here can still be applied by using e.g. ‘lowest transaction cost’ or ‘concentration of power’ as the efficiency measures of the boundary of the IF.

6.3.2 Bundling of IF Activities

The previous section presented and synthesized universal and quite abstract factors that shape the boundary of the IF. This section considers specific asset classes, products and services, and investigates whether and to what extent the bundling of traditional PE and other financial businesses makes economic sense.

The underlying determinants shaping the boundary of the IF presented in this section are related to the previous sections, accordingly there are some natural overlaps. Yet the approach in this section takes a different view on the research topic and complements the overall study. Figure 54 provides a summary of the economic fit between traditional PE and other businesses under investigation, measured on a scale from minus three (cost of bundling higher than synergy of bundling) to plus three (cost of bundling lower than synergy of bundling), based on individual assessments of PE investments professionals.

⁴⁵ Trust allows the human to deal with complexities that would require an unrealistic effort in rational reasoning. During a conference in Munich on October 15, 2008, Stephen Schwarzman, co-founder of The Blackstone Group, highlighted: *“Finance is like religion, it’s all about beliefs”*.

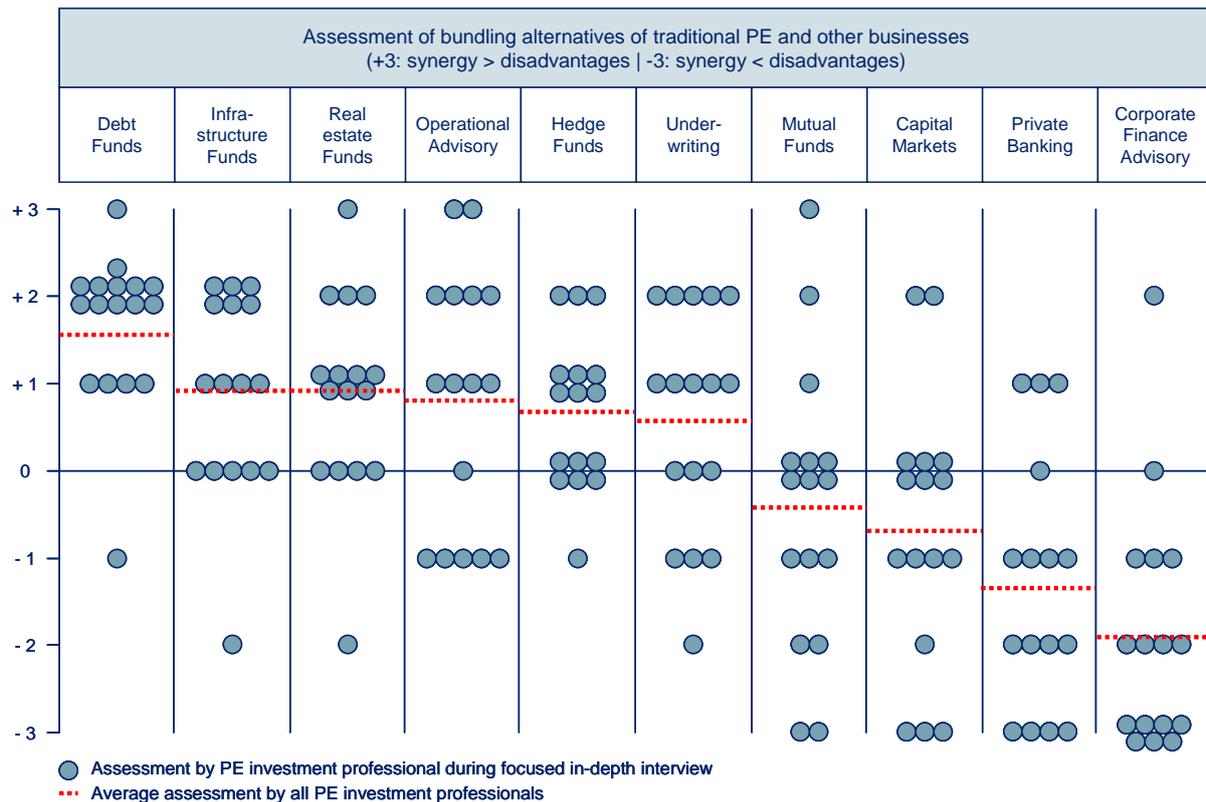


Figure 54: Fit between Traditional PE and Other Businesses

In summary, the exploratory results suggest that there can be an economic rationale for bundling traditional PE with debt funds, infrastructure funds, and real estate funds, and to a lesser extent, with operational advisory, hedge funds, and underwriting. The dispersion of assessments on the bundling of traditional PE and mutual funds is fairly high, and the consensus indicates that the bundling of traditional PE and mutual funds under one corporate investment firm umbrella creates more marginal cost than marginal synergy. The results also indicate that the bundling of traditional PE and capital markets, private banking, and corporate finance advisory can create more disadvantages for the IF than synergy.

It is important to highlight that these results can be indicative only. They could be influenced by unobserved variables and they may show a different ranking and magnitude for firms having e.g. different scale, different capabilities, or different regional footprints. The following section presents the underlying logic for each bundling alternative in more detail.

The results suggest that the bundling of traditional PE and debt funds can be more synergistic than other bundling options. Apparently the PE centered IF can leverage information sharing advantages across the two businesses, notably on credit markets domain expertise. The Senior Partner of a US based IF argued that “*since PE is so driven by mezzanine and credit, it helps to have that expertise. If you’re using those arms to actually place money or to underwrite the credit, then there are some conflict issues, but I do think there is value in having it*”. Although the pro PE and debt bundling view was supported by almost all interview participants irrespective of the strategic group affiliation of their firms, in

praxis a foray from traditional PE into the debt business requires cautious optimism. For PE firms lacking adequate debt skills an expansion into the debt funds business can lead to value destroying distraction of senior management and to substantial business risk. The Managing Director of a US IF shared her view on two recent experiences: *“I just went through an exercise where I really was so against it. At [another firm] I would scream from the top of my lungs, that we don’t know anything about debt, who are we to time a credit fund, let’s Apollo do that. At this firm a credit fund is a great idea. This is a firm that assesses financial assets for living. In terms of valuing debt assets, I think there is real value. I think any PE firm that is specialized in financial assets could do well with it. But if you take the other firm’s old PE model, if they do a credit fund it’s just a timing trade”*. The necessity to differentiate between PE firms whose senior management knows how to operate debt funds was also emphasized by the Senior Managing Partner and Operating Committee Member of a US IF, who cautiously supported the view that the bundling of traditional PE and debt funds can create more synergies than marginal cost: *“This is slightly over into the positive side. It isn’t necessarily something that a PE firm knows how to do naturally, but, it has some of the synergies, like the fact that you’re in the debt markets through the buy side, and it creates both relationships and knowledge transfers, that’s valuable”*. In spite of the outlined implementation risk due to potential parenting disadvantages, overall the consensus suggested that traditional PE firms can benefit from tangible synergy from bundling traditional PE and debt funds, provided they already possess or can build up necessary capabilities at reasonable cost.

The infrastructure fund business was assessed as a close second adjacent strategic space for traditional PE. In fact, some investment professionals do not even differentiate between the two asset classes and rather consider infrastructure as a special sector within PE. Other experts see infrastructure funds more distinct, yet still with considerable potential for operational overlap with a traditional PE business, notably concerning deal sourcing synergy. A large share of investment professionals shared the view of a Senior Managing Director and Corporate Officer of a US IF who argued that between traditional PE and *“infrastructure is a strong synergy. The deals tend to be larger and a bit lower returns than what we’ve had in PE, but they are deals that we come across. It’s actually pretty good synergies there”*. Infrastructure investments (e.g. toll road) are less risky than traditional PE investments (e.g. software developer), on average, and also have a lower IRR threshold, on average. A few interview participants perceived this lower and narrower return corridor as too restrictive, being out of place for traditional PE. The Managing Partner of a leading US IF criticized infrastructure investments, given that *“mathematically I’ve got regulatory limits as to what I can make on the investment, because the authorities tell me what I can charge to the consumers, cost inputs many of which I can’t control. Infrastructure would be the least attractive adjacent fund I would want to commit my pool of capital to”*. However, such a polarizing aversion against infrastructure investments was rather the exception. The prevailing view suggested that the PE centered IF can quite benefit from bundling traditional PE with infrastructure funds. In the word of a Senior Managing Partner and Operating Committee Member of a US IF: *“Infrastructure fund is very close to the PE model. It’s*

almost like having another industry sector. It's an easy product extension. It's not highly diversified in my view, it's very similar to the PE base, and it's giving you another revenue stream".

The assessment of real estate funds as a potential sister business for traditional PE is quite similar to the assessment of the infrastructure funds business. The underlying economic bundling rationales laid out above also apply for real estate funds. The President of a US based IF also supported the view that traditional PE and real estate funds are complementary and added that relative to infrastructure funds *"brand is more important for investors from a real estate perspective. If you have a brand and a legacy, and you can attract talent, it's a great non-conflicted separate fee stream"*. Also the Senior Managing Partner and Operating Committee Member of a US PE firm shared the view of many investment professionals: *"There are certainly synergies in the investor base and raising capital for it, also in the way the funds are structured and in some of the basic investment competencies. Although you certainly need a very different team to run a real estate fund than you do to run your PE fund, but it's complementary, and there are knowledge transfer benefits"*. There is also a small share of investment professionals who had stronger views against the bundling of traditional PE with real estate funds, suggesting that real estate should be managed by specialist real estate firms. The Managing Director of a US IF said: *"I believe that there are people who are doing real estate very well, you can rely on those people, negative two"*. Overall the views suggested that bundling traditional PE with real estate funds can create more synergy than cost. The majority of investment professionals supported the view of the Senior Managing Director and Corporate Officer of a US IF: *"Very strong synergies, almost all of the PE deals we have looked at have a real estate component. There is often joint investing"*.

Views got more mixed when it came to potentially bundling of traditional PE with an operational advisory business. Some consider the case of Bain Capital, actually migrating from operational advisory into traditional PE and later separating the two, as instructive. Other investment professionals saw a dilemma in the decision on whether the operational advisory business should be exclusive or not. The operational advisory business being a captive business can create conflicts of interest with investors who might be worried about hidden fees. The Senior Managing Partner and Operating Committee Member of a US IF emphasized that *"the conflicts created by trying to run an advisory business alongside a principal business outweigh the value of doing it. If exclusive, just as sort of a buy and build model to get valuable service for your companies, and it's cheaper, and if you feel like you have more control over running it yourself, that's fine. The issue is, if it's really a business you're forming as a profit center, and all you're doing is providing business to your own companies, then you're creating a lot of tension with the limited partners about whether it's just another way to charge more fees. If you're going to run those businesses to really be profitable as a business, I think it has got to be more than a captive business. It has got to serve real clients. But when you start doing that, you have conflicts"*.

Conflicts of interest were also a matter of concern for a Senior Partner of a US IF, who in fact defended exactly the opposite view: *"If they're integrated with our teams the strategic fit*

is very high and very effective. But if I was taking my people and they would be doing outside work that changes the dynamics 100%. Now who gets the good people? Where is the focus? If you look at the consulting model, partners spend 10% doing real work, 90% they're trying to find the next assignment. Our guys spend 100% on work, because they never have to find the next assignment, there is always the next assignment".

Besides of the irritation on whether the operational advisory business should be captive or not, overall there was more consensus than dissent that the bundling of traditional PE with operational advisory can create net economic benefits for the PE centered IF. This view was also supported by the Senior Managing Director and Corporate Officer of a US IF: *"Highly synergistic, others like Capstone, Bain, actually also have it, our folks are on the deals from the due diligence on, they are on the boards, it's exclusive for our own portfolio, it's a plus three"*. The President of a US IF shared this view: *"I think it's a two. We don't have that because we have investors who have experience, but I think you can do it, if you do it right. A lot of guys say they do it, but they don't do it, especially in the middle market where the PE guys don't have the experience"*. Based on the overall results, it seems quite plausible that operational advisory as a captive business can be synergistic with traditional PE, provided the investment firm is at scale to run captive advisory resources on capacity. Otherwise it may be better to outsource advisory services, as was pointed out by an Associate of a European IF: *"It does not pay off with our size. We are generalists and the investments are in such niches that it makes more sense to have a network of external consultants. It makes more sense if you're larger or more specialized like a Lion Capital"*.

Almost all conversation participants suggested that bundling a hedge fund business with traditional PE within the corporate boundary of an investment firm can offer net benefits. The underlying logic is that the broader multi-business IF platform can leverage information sharing advantages. The Managing Director of a US PE firm suggested that *"hedge funds can be synergistic in your key areas. If you have a sector that you're strong in, if you're doing it in the same area, hedge funds can be quite beneficial"*. The caveats with hedge funds are twofold. First, it is unclear how regulatory restrictions may affect potential synergy from bundling traditional PE with hedge funds, as was pointed out by the President of a US IF: *"I'd put hedge funds as a one, and the reason why it's not a two, because I think that there is a lot of regulation coming and I see more conflicts between hedge funds and PE funds, they sometimes step on each other"*. Second, a considerable disadvantage with respect to traditional PE and hedge fund bundles can be parenting disadvantages, notably lack of expertise. The Senior Managing Partner and Operating Committee Member of a US IF who has experience with the traditional PE and hedge funds bundle outlined her lessons learned: *"Hedge funds help even more in terms of the diversified fee stream aspect. Although, the typical hedge fund, if you're talking about direct hedge fund management which is running a single hedge fund, it still has the lumpiness aspect of running a PE fund. I would rank it high in terms of that diversification of fees model, but, I think most PE firms, including us, don't know how to run a hedge fund. It doesn't have a lot to do with our core competencies of*

running a [PE] business. And, if it's a direct hedge fund, I think there's a whole lot of more risk of it being blown up when being run badly".

Although the average score of bundling traditional PE with underwriting is slightly positive (see Figure 54), the high dispersion of views perhaps calls for more caution than bundling action. The underwriting business offers multiple interesting features. For one, it lures with high fees. And the traditional PE business can feed it with deals. Moreover, its distribution platform and sales force can be leveraged as an additional capital sourcing channel. The Managing Director and Partner of a US IF acknowledged that *"you wouldn't give up the fee pie, underwriting is not that hard, it's just that you need the relationships and the accounts to do it. They pay for equity 6-7% to take a company public, and it's not that difficult. The disadvantages: it's a different business line, staffed by different people and compensation structures have to be different"*.

Not only is underwriting a different business, it is also a business which would require the investment firms to take risky assets on its own books, at least temporarily before they can be sold down. To do that, the IF would need to comply with capital adequacy ratios and maximum single counterparty exposure ratios which are determined by regulatory regimes. The capital adequacy ratio prescribes how much Tier 1 capital the IF has to preserve relative to total IF assets, i.e. it determines the maximum size of the balance sheet. The maximum single counterparty exposure ratio prescribes how big the underwriting exposure can be to one single issuer, i.e. it determines the maximum deal size with each individual issuer. The full risk of each transaction gets underwritten by the IF. Obviously this is a completely different business, also in terms of IT and security systems infrastructure, compared to traditional PE, typically leveraging a special purpose vehicle which had been collateralized by the assets of the target. The Senior Managing Director and Corporate Executive Officer of a US IF laid out that *"we've opted not to go down the underwriting path, it's just not our core competency, there could be dissynergy and there could be balance sheet risk"*.

Another Managing Director of a US IF highlighted the challenges for smaller firms: *"I'm a small firm guy, that's a mega fund type of animal. For a bigger firm, something like that can help them close deals, but in my world, that just gets you into trouble"*. Even those interview participants who were in theory more positive toward bundling traditional PE with underwriting acknowledged that the bundle yet has to demonstrate its viability. This view was also expressed by the President of a US IF who also raised concerns concerning conflicts of interest with respect to 3rd parties: *"Underwriting, like the broker-dealer model, I'd put that as a two. I think that it should be highly synergistic. It's just that there is a resistance from Wall Street to allow it to happen. I mean it's good if you can capture those fees. If you're doing a deal and you're going to generate more fee income, you've done it right. But the issue you have is, the money is going to come right down on the risk, you have the downside, if you're wrong, you're stuck. So, it should be a two, I've only seen until today it to be a zero. KKR is trying to push the envelope to make it a one. We have talked a lot about it. But where is the capital coming from to underwrite the risk, and are you prepared to wear that risk? It's probably a zero in the industry"*. The Senior Managing Partner and Operating Committee

Member of a US IF concluded that underwriting perhaps is more of a secondary extension, than a direct adjacent strategic space for traditional PE: *“If you can do it successfully, and you have the right personnel, particularly if you have credit funds, credit underwriting is a natural extension of that. It’s less jumping directly from the PE center to credit underwriting, but if you know how to run credit funds, than that gives you some base to do credit underwriting. It does create some conflicts, but I think they are manageable”*.

The results with respect to the remaining bundles of traditional PE with mutual funds, capital markets, private banking, and corporate finance advisory, suggest that the synergy from bundling is lower than marginal cost. Yet the views were quite dispersed.

The President of a US based IF argued that traditional PE and *“mutual funds can be very synergistic. I think they should be a three, but they don’t make a lot of money, you have to scale it. But I think BlackRock has done a phenomenal job”*. Others argued that some segments of the mutual funds universe could be synergistic such as high yield credit long only products. The Senior Managing Director and Corporate Officer of a US based IF said: *“Mutual funds are interesting. I have to divide it. There are some credit long only products that are interesting where you could have synergies, especially if they were high yield, to our credit business. But with typical long only equities, there probably would be zero synergies, so I’d split it that way, so plus one for credit and zero for equity”*.

The bundling of traditional PE with a capital markets platform was seen more in the negative by most interview participants. The Senior Managing Partner and Operating Committee Member of a US IF argued that *“my current inclination is to put in the zero to negative one category, just because the conflict is starting to get more difficult to get managed”*. Also the Senior Managing Director of a European IF was rather reserved: *“I see only conflicts of interest, minus three”*. Just a small share of investment professionals suggested that under certain circumstances this bundle can create more synergy than cost, such as the Senior Partner of a US IF: *“If you’re doing it for your own portfolio, the fit is beautiful, if you’re doing it for advising others, it has got to be managed really carefully”*.

The views suggested that bundling traditional PE and private banking supposedly creates more incremental cost than synergy. Only a few supported the opposite view, such as the Vice President of an Asian IF: *“Private banking makes sense, we’re doing it ... if it’s private banking with ultra high net worth individuals, then this is an interesting additional source of capital”*. By and large investment professionals felt that this option to expand the boundary of the PE centered IF would face too many inhibitors, notably the aggregated costly friction due to conflicts of interest. The Senior Managing Partner and Operating Committee Member of a US IF said: *“There might be some synergies, but it creates conflicts ... if you can manage the conflicts, there could be synergies”*. An Associate of a European IF felt that this bundling option *“has nothing to do with PE”*. Overall, most interview participants supported the view that the conflicts are too difficult to being managed, including the Senior Partner of a US IF: *“Private banking, wealth management, I have a real personal problem with us creating a family office where we stuff products into people. Goldman Sachs makes a lot of money having a wealth management group where they shove their PE into these people. Strategically*

does it work? Yeah, it works well for them. But, the conflicts are very serious. I think Goldman Sachs can get away with it because they have created relationships with people that are probably generational”.

The lowest ranked expansion alternative for the monolithic PE firm is the bundle of traditional PE and M&A advisory. Almost all conversation participants had strong aversions against it. Conflicts of interest creating considerable friction losses were the primary concern. The Senior Managing Partner of a US IF saw no gray areas: *“Either the M&A group is involved or it is not involved. Either they should be working exclusively with the PE or they can’t have anything with it at all”*. Also the Managing Director and Partner of a US IF shared the view that there are *“clear conflicts of interest with the client, this has been tried by every investment bank and it never seems to work”*, while the Managing Director and Partner of a leading US IF added: *“I’d put that in the broader investment banking category. Why would I want to compete with the guys who I’m hiring all the time to do this, I don’t see the overlap. Show me how there aren’t incredible conflicts, when you’re dealing with that. Fine, we set up an M&A group but who are they working for? It’s impossible for me to answer that question, because it’s extreme, it’s either very high or very low, and there’s no in between”*. Another Senior Managing Director of a European IF who already tried to expand into M&A advisory with her PE firm argued that the strategic fit *“is a zero, at best. We tried this already. At the end of the day, as soon as you try to get synergy you run into conflicts. There are just few such as Goldman who can do this”*. The Managing Director of a US IF concurred: *“You run into conflicts and it’s hard to get scale. Over the last few years, it’s one of these things where everyone has hung up a plate saying I’m an M&A firm as well”*. Also the Senior Managing Partner and Operating Committee Member of a US IF felt that this bundling option is *“the most negative due to conflicts of interest”*. In addition to conflicts, some experts also noticed challenges to establish a separate corporate finance advisory business without overpaying for its set-up. The President of a US PE firm said: *“Blackstone has had it for years, and has done a good job with it, it is good diversity. But the problem with M&A advisory is to build it organically, it’s impossible. It is like the FoF business, if you’re not on it, you can’t get in. You know if we acquired an M&A boutique, the problem is, all the money you’re making you have to pay for it. Building it, there’s not much about it, you need a couple of people and you have sure income. It’s the people you buy. Right now, there are just so many boutique advisory businesses. I just don’t see it”*.

In quite some contrast to the dominating view, the Senior Managing Director and Corporate Officer of a US PE firm strongly argued that synergy on bundling traditional PE with M&A advisory outweighs cost: *“plus two, in terms of deal sourcing”*. Taken together, the results suggest that a PE firm expanding its boundary toward a PE centered IF platform may find it difficult to generate net benefits from bundling traditional PE and M&A advisory.

6.3.3 Four PE Centered Investment Firm Models

The previous two sections showed empirical evidence on forces shaping the boundary of the PE centered investment firm and the assessment of bundling options between traditional PE and other businesses. In the following section the new unified framework (see Figure 53) will be applied on four cases, each one representing one of the successful strategic groups in the PE sector. The information is sourced from the proprietary data set, press releases (Factiva), and public company filings. A summary of the cases is presented further below in Table 10.

Product Specialist: Oaktree Capital Management

Oaktree Capital Management was founded in 1995 with headquarters in Los Angeles. As of June 2010, the firm had over 600 employees located in 14 cities worldwide, managing over \$75b assets of which \$13b were in traditional PE. Oaktree's heritage is rooted in high yield bonds and distressed debt investing and trading. 15 years after inception, the boundary of the IF comprises a variety of asset classes including high yield debt, convertibles, distressed debt, PE, real estate, and public equity.

The firm claims to possess a superior domain expertise with respect to distressed and mispriced assets. Respectively Oaktree's foray into the PE business grew out of its distressed investment activity, notably in cases where debt positions in temporarily distressed companies allowed Oaktree to obtain equity control in fundamentally healthy businesses. Such 'distressed for control' or 'loan to own' opportunities often come with attractive returns, given that this investment strategy can benefit from less competitive or captive deal sourcing.⁴⁶ The attractive returns from captive deal origination in turn attract more investments, which overall fosters the 'double sourcing advantage' and the expansion of Oaktree's boundary.

The broader business model also allows Oaktree to leverage 'procurement cost synergy', notably when it comes to the supply of debt for its own companies. For example, in July 2010 Oaktree backed the recapitalization of Nordenia International, one of its European portfolio companies which Oaktree owns as an equity holder. Nordenia plans to use €80m from a seven year high yield bond issue to repay all of its outstanding debt and to fund a €95m equity distribution to Oaktree, exceeding Oaktree's original investment made in 2006. This deal was one of the first dividend recaps seen in the European high yield bond market in 2010 and interviews with market participants suggest that it is not surprising that Oaktree is one of the first PE firms to take advantage of the strengthening high yield markets, given its distinct expertise in the high yield domain.

Oaktree's exposure to multiple asset classes and its deep understanding of market technicalities for decades also provides track record spill-over effects across its platform, i.e.

⁴⁶ In colloquial language 'debt for equity' swaps are often called 'vulture investments'.

‘trust advantage’, and overall makes the platform more flexible for the firm’s ‘repatriation of wealth’. For example, in September 2010 Howard Marks, Chairman and Founder of Oaktree, announced that his firm will make a modest shift to investing in convertibles from high yield bonds, deeming fixed income instruments’ valuation more expensive than stocks. Without its broader platform, Oaktree would not be in the position to carry out such shifts in-house.

One of Oaktree’s core investment philosophies formalizes the firm’s strong focus on market inefficiencies. Once Oaktree has identified pricing arbitrage opportunities, it applies this ‘knowledge advantage’ to leverage ‘information sharing advantages’ across a variety of products and investments. Oaktree puts a lot of effort into the identification of market inefficiencies and knows that the development of such knowledge advantages comes at a substantial cost. Once the firm has developed or acquired the intelligence on particular market inefficiencies, Oaktree has an incentive to utilize this knowledge on the broadest investment platform possible, naturally further expanding its boundary.

The study of the Oaktree case, its growth in 10 years to \$28b in AuM and in 15 years to over \$75b in AuM through a range of synergistic investment strategies, implies that the firm has also consciously or unconsciously been managing the forces limiting the expansion of its boundary. In April 2005 Howard Marks reflected Oaktree’s first 10 years since inception and emphasized one of his key business principles, notably that conflicts of interest get resolved in favor of the client every time. In its formative years Oaktree did not have a business plan focused strategic planning process and was rather built on a set of business principles. The paradigm to always avoid ‘conflicts of interest’ with clients and to resolve ‘asset allocation authority’ matters through real partnerships with investors is deeply embedded in its business principles. It appears that the mitigation of these forces may have helped Oaktree’s expansion.

However, in other areas Oaktree failed to manage the counterforce successfully. For example, the settlement between Oaktree and the US Securities and Exchange Commission in 2005 with respect to accusations that Oaktree had realized illegal profits from ‘sham transactions’ notably due to prohibited short selling of stocks within the time period of five businesses days prior to their public offering, implies that the pace of Oaktree’s expansion may have left room for management mistakes creating compliance gaps, overall signaling ‘parenting disadvantage’. Although Oaktree admitted no wrongdoing and argued that the charges were related to unintentional trade errors, such accusations of securities violations also limit Oaktree’s expansion due to associated ‘credibility risk’.

In summary, many facets of the Oaktree case demonstrate the applicability of the new strategy framework, which helps to distill some of the relevant forces shaping the boundary of Oaktree. The following section will analyze the case of HgCapital. While Oaktree’s investment strategy can be marked as a rather dispassionate ‘avoid the losers and the winners will take care of themselves’ approach, the HgCapital investment approach is diametric in the sense that it strongly emphasizes the active influence of companies in selected sectors. As laid out above, the results of all cases are summarized in Table 10.

Sector Specialist: HgCapital (former Mercury PE)

HgCapital was established in the year 2000. Its predecessor Mercury Private Equity was founded in 1985, in 1997 acquired by Merrill Lynch, and in December 2000 its employees bought the business from Merrill Lynch and renamed it to HgCapital. Headquartered in London, as of June 2010 the firm had some 50 investment professionals located in London and Munich, and over \$4b in AuM exclusively in traditional PE. For HgCapital deep sector specialization is core. The firm claims that this distinct domain expertise in specific sectors allows its investment professionals to act as value adding active equity investment authorities. HgCapital supposedly has domain expertise in healthcare, industrials, services, TMT (incl. computer software), and renewable energy projects. In fact, 72% of the firm's investments are concentrated on industrials (42%), computer software (16%), and healthcare (13%).

A recent transaction illustrates how this sector concentration is linked to some of the forces shaping HgCapital's boundary. In August 2010, HgCapital announced the acquisition of TeamSystem, an Italian computer software maker, from Bain Capital in a deal worth \$740m. TeamSystem sells software to about 80,000 small and medium-sized enterprises in Italy and was the latest in a string of software buyouts sponsored by HgCapital including Iris Software and Computer Software Group in the UK, Addison Software in Germany, and Visma in Norway. The secondary buyout valued TeamSystem at more than 11x EBITDA, so 2x EBITDA higher than the average multiple paid by financial sponsors in 2007. HgCapital justified the price by the opportunity to cross-sell some of Visma's products to TeamSystem's clients in Italy and by transferring some of Visma's technical know-how into the less developed Italian market. This suggests that HgCapital leveraged some deal pricing advantages based on industrial logic. Adding the notion of HgCapital's affiliation with HgCapital Trust, a public investment trust listed in the UK which invests alongside with HgCapital, it also appears that HgCapital has implemented a business design which nicely fosters the 'double sourcing advantage'.⁴⁷ The linkages between TeamSystem and Visma also imply that HgCapital is leveraging 'procurement cost synergy' across portfolio companies, e.g. by supplying proprietary technology or by saving customer acquisition cost, while the deep sector focus allows HgCapital to utilize 'information sharing advantages' by transferring proprietary industry know-how across firm barriers in industries such as computer software.

The flipside of such a sector focus is that HgCapital controls quite many assets in confined strategic spaces, creating friction losses due to 'conflicts of interest'. The focus on specific market niches can lead to a high concentration of market power through direct and indirect ownership which can create antitrust issues and possibly lengthy and cumbersome processes in order to sort out 'asset allocation authority'. Although these matters might be manageable, they still can create considerable transaction cost and therefore formalize a

⁴⁷ The trust was awarded 'PE investment trust of the year' for five consecutive years, arguably adding to HgCapital's 'trust advantage'. This is a quite handy example illustrating the interchangeability of the concepts of 'money' and 'trust' with tangible implications for the boundary of HgCapital.

counterforce against HgCapital's expansion. Perhaps it was HgCapital's motivation to mitigate some of these dynamics which drove the sale of a 76.9% stake of Visma to KKR for \$1.9b in late September 2010, of course in addition to the attractive exit multiple of 12.5x EBITDA. The Visma exit will produce an IRR of 37% for HgCapital, indicating how well the firm's conscious focus on a few particular niches can pay off.

At the same time, this focus forces HgCapital to be rigorously disciplined in order to avoid 'parenting disadvantage'. How many niches can an investment team of 50 professionals really penetrate with superior market intelligence? In early February 2009 HgCapital believed that it should not penetrate more than four niches and therefore disbanded its consumer and leisure team and closed its Amsterdam office. At the end of September 2010 the IF revived its consumer team again, which shows how elastic HgCapital's boundary actually reacts on its 'parenting disadvantage' force.

Overall, the comparison of Oaktree and HgCapital highlights how distinct the patterns and characteristics of forces shaping the boundary of various investment firms can be. The cases also confirm that quite distinct strategic patterns can be rationalized in a comprehensive manner with the new strategy framework (see Figure 53). The following section will apply the boundary framework on the case of First Reserve Corporation.

Sector-Focused Investment Firm: First Reserve Corporation

First Reserve Corporation exists since 1983, and is headquartered in Greenwich, Connecticut. As of September 2010, the firm had about 70 employees in Greenwich, Houston, and London, and estimated \$21b AuM of which \$13b were in traditional PE and \$8b in infrastructure. First Reserve Corporation focuses exclusively on energy and energy related transportation investments. Given the overlap between PE assets and infrastructure assets in the energy sector, First Reserve utilizes both deal origination synergy and capital supply synergy between the two asset classes, fostering its 'double sourcing advantage'.

In May 2010, First Reserve acquired a majority stake in Calibre Global, illustrating how the investment firm utilizes 'procurement cost synergy' across its investments. Calibre Global is an international provider of project management, engineering, and consultancy services to the resources and infrastructure sector. Not only Calibre's know-how but also Calibre's list of resources and infrastructure projects of some \$18b are quite valuable and complementary to First Reserve's other and future potential investments. Such aggregation of domain know-how also helps First Reserve to cultivate its reputation and 'trust advantage' to be the 'world's leading PE firm throughout the energy value chain'. In fact, in September 2010 First Reserve was inducted into the Private Equity Hall of Fame of Dow Jones Private Equity Analyst. Another driver expanding First Reserve's boundary is based on the 'repatriation of wealth' principle. For example, First Reserve controlled the equity of Scotland based international drilling contractor KCA Deutag, formerly known as Abbot. At the same time, rather than

using 3rd party investment firms, First Reserve also canalized its own wealth through alternative channels, notably mezzanine investments into KCA Deutag.

First Reserve also leverages ‘information sharing advantages’ through so called ‘platform strategies’. The firm has made about 100 platform acquisitions and some 300 add-on transactions through its portfolio companies. The underlying rationale is also rooted in First Reserve’s distinct domain expertise in energy. The sector-focused investment firm claims that possessing superior information on e.g. technology, industry trends, or regulatory changes, enables First Reserve to establish strategic positions prior to other industry participants. This sounds quite reasonable, recognizing that First Reserve’s portfolio includes specialty investments such as a nuclear fuel supply company.

Although the concept of platform strategizing sounds interesting on the face of it, the implementation takes time and carries implementation risks. For investors who are interested in more specialty investment or co-investment opportunities, and not so much in lengthy platform investment strategies, this approach creates ‘conflicts of interest’ with their priorities. Therefore, this approach will only allow First Reserve Corporation to expand its boundary to the extent of sufficient investors’ appetite for this ‘conglomerate-like’ corporate building investment approach.

Moreover, resources and energy investments are heavily regulated and often intertwined with political interests. Respectively First Reserve has to face potential friction due to matters concerning ‘asset allocation authority’. In potential or completed investments where friction losses become too costly, too political, or both, First Reserve has an incentive to advance backward, which rather limits its boundaries.

First Reserve appears to actively control potential ‘parenting disadvantage’ by being so rigorously disciplined with respect to its sector focus. As laid out above, the investment firm has over 90% of its investments concentrated in two sectors: energy and energy transportation. Yet, this concentration also carries downsides in the sense that it creates lumpy ‘credibility risk’. In case First Reserve for some reason would lose ‘trust advantage’ in the energy sector, the negative implications on its boundary would be rather erratic and not gradual.

In summary, the First Reserve case demonstrates another example how the new strategy framework on the boundary of the investment firm can be applied. The following section illustrates its application on the case of the multi-business investment firm Blackstone.

Multi-Business Investment Firm: The Blackstone Group

The Blackstone Group was founded in 1985, with headquarters in New York. As of March 2010, the firm had about 1,300 employees located in 17 offices worldwide, and about \$98b in AuM of which \$25b were in traditional PE as an asset class. Blackstone started as an M&A firm, entered the traditional PE business with the fund Blackstone Capital Partners I in 1987, and ever since expanded its boundary by adding sister businesses.

In 1990 the firm launched Blackstone Alternative Asset Management (BAAM), a FoHF business, which initially served to repatriate and to diversify Blackstone's own wealth. Later external investors joined BAAM, the business became more institutionalized, and in 2010 BAAM was the largest FoHF worldwide. This expansion provides a good example on how the driver 'repatriation of wealth' can lead to the expansion of an investment firm's boundary. During the expert interviews for this study, several practitioners referred to BAAM as an attractive business which creates a stabilizing counterweight to the PE business. In 1991 Blackstone added a corporate restructuring business, in 1992 a real estate group, in 1999 a corporate debt and mezzanine business, in 2005 a placement business, and in 2008 a credit-oriented alternative asset management business and a charitable foundation. Most of these activities are promoted by using the brand 'Blackstone', signaling that the multi-business investment firm leverages 'trust advantages' across its platform.

Blackstone's culture, which is rooted in the M&A school of thought, is driven by the belief that the free flow of information and capital across multiple businesses within the boundary of a firm is better than keeping these information clusters separate. The cultivation of the 'information sharing advantage' is deeply embedded in the firm's business principles. Blackstone claims on its website that *"investors and clients benefit from synergies across our spectrum of businesses, including alternative asset management, principle investing, advisory, financing and restructuring activities. We have a culture and organizational structure that facilitates the appropriate sharing of insights and knowledge among all of our businesses"*.

In fact, not few investment professionals who contributed to this study expressed some degree of admiration for the Blackstone model, though to a lesser extent for Blackstone's capabilities as a PE practitioner than for its overall business model. The bundling of its advisory business with the investment businesses leverages 'deal sourcing advantages', while cross-selling of Blackstone products to its investors utilizes 'capital sourcing advantages', which taken together fosters the 'double sourcing advantage'. For example, both Blackstone's PE fund and the investment firm's real estate fund are invested in Hilton. Also Blackstone's access to high profile M&A deals suggests that the deal sourcing advantages across its platform seem to work. In 2009 Blackstone advised Xerox Corporation on its \$8.3b acquisition of Affiliated Computer Services, which was the largest M&A transaction in the technology sector in 2009 and the largest Business Process Outsourcing transaction ever. In the same year Blackstone advised Nestlé S.A. on the acquisition of Kraft Food's Frozen Pizza business, which was a \$3.7b transaction.

Blackstone also appears to be leveraging 'procurement cost synergy' across its platform. For example, GSO, Blackstone's credit-oriented business, can help the traditional PE business with respect to execution and with market intelligence on the depth and pricing of credit. During an earnings call in July 2010, Blackstone announced that it has reduced, refinanced or extended more than \$52b of debt across its business since 2009. The value of products, services, and capital, which Blackstone supplies across its broad investment platform and across its portfolio companies aggregates negotiation power.

However, the expansion of Blackstone's boundary also creates considerable friction loss and transaction cost. For one, the multi-business platform has to manage and rectify multi-layered 'conflicts of interests' between various constituents with legitimate claims. Not only internal conflicts between various businesses but also conflicts of interest between Blackstone's public shareholders, investors, and owners aggravate tensions. It is generally known that public shareholders' growth expectations can incentivize companies to pursue diversification as a means of meeting corporate growth objectives (Goold et al. 1994). Naturally this dynamic creates tensions, notably if investors in traditional PE suspect that Blackstone might be less committed to maximizing PE investment returns than to meeting growth expectations of public shareholders.

There are also 'asset allocation authority' related tensions between Blackstone's leadership and society's representatives in Washington. At the time when this study was written, rigorous debates were underway about the taxation of PE earnings. These debates can be seen as the tangible arena where the question gets resolved on how resources in the form of economic surplus should be allocated in society. In referring to these political debates, Blackstone's co-founder Stephen Schwarzman said: "*It's war ... it's like when Hitler invaded Poland in 1939.*" Although Mr. Schwarzman later expressed regret for using an "*inappropriate analogy*" with respect to the tax policy debate, the case illustrates how the aggregation of wealth, and respectively the investment firm's boundary, is linked to debates concerning the concentration of wealth and power in nations.

Another force pushing against the expansion of Blackstone's boundary is linked to 'parenting disadvantage', which can often be observed in broader IFs. This lead, for example, to the spin-out of Centerbridge Partners, an IF which was founded in 2005 by former head of Blackstone's PE program Mark Gallogly and former distressed securities expert at Angelo Gordon Jeffrey Aronson. Considering Mr. Gallogly's and Mr. Aronson's backgrounds, it is not surprising that Centerbridge is also mimicking a multi-business PE centered investment model like Blackstone or Oaktree. More surprising is perhaps the observation that the Blackstone platform does not appear to be the best parent for Centerbridge's leadership. Not only does this reduce Blackstone's boundary by some \$5b AuM, more recently also the head of investor relations at Blackstone's London office, Maryfrances Metrick, left Blackstone to join her former Blackstone colleagues at Centerbridge.

A situation where a Senior Managing Director of Blackstone was accused of 'sham transactions' illustrates an example where an arguably aggressive personnel expansion of Blackstone created 'credibility risk'. In 1994 Blackstone hired Mikael Salovaara, a former Goldman Sachs Partner who joined Goldman Sachs in 1980 and then later ran the IF's LBO group. Already during his tenure at Goldman Sachs, Mr. Salovaara earned a reputation as a shrewd practitioner of the art of 'vulture investing', using sophisticated analysis and knowledge of bankruptcy laws to reap considerable profits by picking clean dead and dying companies, while his partners at Goldman Sachs complained that he was making hard-nosed deals at the expense of the firm's clients. Mr. Salovaara stayed with Blackstone only for two years. In 1996 he resigned from Blackstone due to pending lawsuits and accusations on sham

transactions including a wire of \$1.5m from a Blackstone account to Mr. Salovaara's mother-in-law, intending to hide Mr. Salovaara's identity on arbitrage transactions. As a result, Peter Peterson, co-founder of Blackstone, had serious concerns that this could tarnish Blackstone's reputation. Blackstone supposedly had nothing to do with the accusations, yet the case shows how quickly the 'credibility risk' counterforce can build up against the boundary of an investment firm due to e.g. rushed or assertive expansion in terms of investment personnel.

Taken together, the four case studies presented above validate the applicability of the new strategy framework on forces shaping the boundary of the investment firm. Notably the Blackstone model is an interesting prototype for academic research on the evolution of investment firms. Some interview participants speculated that the PE centered investment firm seems to be gradually moving toward the strategic space of Goldman Sachs. These highly dynamic structural parameters and the fast evolving habitat of traditional PE creates a rich research environment.

6.4 Summary and Discussion

The expansion of traditionally monolithic PE firms into a wide range of activities is puzzling and not covered by existing PE related literature. Until now, the central concept of the boundary of the PE centered investment firm lacked a comprehensive frame. This is not surprising, given that our investigation on the boundary of the firm in general has a quite short history. Coase's idea and its derivatives are merely a century old, and the experiments with the PE approach and related PE centered business models were reinitiated just a couple of decades ago (see chapter 2.1). Building on existing theories on the boundary of the firm, this study explores forces shaping the boundary of the PE centered investment firm and synthesizes these into a new unified framework (see Figure 53).

The results suggest that one group of forces, including 'double sourcing advantage', 'procurement cost synergy', 'trust advantage', 'repatriation of wealth', and 'information sharing advantage', incentivizes the narrower PE firm to expand its boundary toward a broader multi-business investment firm model. At the same time, a second group of forces, including 'conflicts of interest', 'asset allocation authority', 'parenting disadvantage', and 'credibility risk', creates friction losses facilitating strategic and organizational transformations toward a narrower investment firm (IF) model. Most of these forces can be conceptually linked to existing theories of the firm. For example, one of the central themes suggests that an investment firm has an incentive to expand its boundary if it can thereby legalize value creating insider trading or if it can facilitate the flow of information and capital across mobility barriers more efficient than the open market.

This study also sheds light on 'trust advantage' as a central theme shaping the boundary of the investment firm. The indivisibility of trust is not sufficiently framed by existing theories. This implies that the boundary of the investment firm perhaps is determined by a different set of forces than the confines of other firm types. A new trust-based framework on

the boundary of the investment firm developed in this exploratory study intends to offer a building block toward the theory of the investment firm.

Further research will have to keep up with the rapid ongoing evolution of the object under investigation whose development pace was compared to the Cambrian explosion (Ferguson 2008). In the words of a Senior Managing Partner of a US PE firm: *“Within our firm there are people who would be much more aggressive on how many businesses we should have and how fast we should go there, things change over time, if you roll this down ten years, I am not even vaguely able to predict. Everything I said you can probably throw out the window, we could be in every business you mentioned”*.

Conceptually anchored by the new framework on the boundary of the investment firm, the study investigates the attractiveness of different bundling options of traditional PE and other businesses. The results can be indicative only, and should not be generalized for other investment firms without appropriate adjustments. Still, the ranking and the comparison of incremental synergy and cost of each bundling option adds new knowledge to our understanding of the PE centered IF and also on the optimal range of its activities.

The study also applies the new framework on four PE centered investment firms, each being affiliated to one of the successful strategic groups which were discovered during the concurrent strategic grouping approach (see Table 10).

Forces Shaping Boundary of the Investment Firm	Oaktree Capital Management	HgCapital (former Mercury PE)	First Reserve Corporation	The Blackstone Group	
	Double Sourcing Advantage	'Loan to own' can originate attractive captive deals, attracting more investment	Sector focus creates deal origination and bidding advantages	Utilizes deal and capital supply synergy between PE and infrastructure	Bundling creates deal origination and cross-selling advantages
	Procurement Cost Synergy	Can facilitate cheaper recaps of own companies through high yield expertise	Leverages procurement cost synergy across portfolio companies	Acquired engineering company serving resources and infrastructure sector	Procurement across platform aggregates negotiation power
	Trust Advantage	Track record spill-over effects across platform	Awarded PE investment trust of the year for five consecutive years	Inducted into PE Hall of Fame by Dow Jones Private Equity Analyst	Leverages Blackstone brand across the platform
	Repatriation of Wealth	Has flexibility to shift capital from higher valued to less expensive asset classes	Management buyout of HgCapital repatriated their wealth into the firm	Channels own wealth through other asset classes into own investments	Launched FoHF business to manage own wealth
	Information Sharing Advantage	Utilizes costly knowledge on market inefficiencies across broader platform	Transfers proprietary sector know-how across firm barriers	Utilizes information advantages through platform strategies	Cultivation of free flow of information one of BX's key business principles
	Conflicts of Interest	Mitigates force by resolving conflicts of interest in favor of clients	Control of too many assets in confined strategic space creates friction losses	Platform integration misaligned with investor appetite for specific assets	Business complexity aggravates tensions between constituents
	Asset Allocation Authority	Mitigates force by cultivating partnership model with investors	Focus on niches leads to concentration of power and antitrust friction	Energy related investments are often intertwined with political interests	Concentration of wealth and power leads to heated debates with Washington
	Parenting Disadvantage	Pace of expansion speed created compliance gaps	Disbanded consumer and leisure team and closed Amsterdam office	Mitigates force by having 90% of investments concentrated in energy	Centerbridge (BX spin-out) with est. \$5b AuM left boundary of Blackstone
	Credibility Risk	Had to settle with SEC on 'sham transactions' and securities violations	General aversion against bundling of banking and PE in 2000 drove spin-off	Concentration creates lumped credibility risk	Accusations that Senior MD was involved in 'sham transactions'

Table 10: Evaluation of Investment Firms with New Approach

The plausibility test substantiates the applicability of the new approach and confirms that it can serve as a helpful conceptual block in the future development process of the theory of the investment firm, and as a helpful strategy tool for practitioners engaged in strategy analyses.

Overall the results imply that expanding the boundary of the IF can be attractive for multiple reasons, however, implementing a well-balanced multi-business IF model remains a major challenge. The President of a US IF emphasized: *“You could add FoHF, Blackstone has done it successfully, but you can’t build it new ... all these models you could build in the 1990s, but you can’t build them in 2010 ... there is a lot to do in PE to understand corporate expansion”*. The Senior Managing Partner and Operating Committee Member of a US PE firm noticed that *“there may not be one right answer for every firm. In theory, it might be great to have a link with the mutual funds, with hedge funds, with FoF, and other things, if they all work well. But that’s a big if. Getting from here to there is very tough”*.

Future research in PE can no longer ignore the heterogeneity between PE firms and between the primary objectives of GPs. The Managing Director and Partner of a US PE firm emphasized that *“PE firms have been run recently to maximize fees, if the goal is to maximize returns it’s a completely different set of answers”*.

Moreover, further research on the existence of the PE centered investment firm and on the range of effective combinations of traditional PE with other businesses is long overdue and needed in order to increase the value creation potential of these important financial intermediaries in the market for corporate control. The expansion of the boundary of the investment firm leads to a reallocation of e.g. conflicts of interest and wealth transfer mechanisms from the open market into the confines of the institution. This can save considerable transaction cost, optimize the flow of information and capital, yet at the same time it also increases power clusters within the confines of private institutions. Once a multi-business investment firm becomes too powerful, government opposition arises inevitably. So, although it might be cost efficient to have just one mega-IF in one nation, or in the world, public resistance against such a concentration of power would ultimately create a counterforce.

Future research in the discipline of strategic management (alias business policy) faces huge research gaps with respect to our understanding of the nature of monitoring entities. What should be the range of activities of the monitor of the monitor? Who should monitor the monitor of the monitor? When should a government entity become the monitor? How do political systems, e.g. democracy vs. authoritarian capitalism, influence the boundary of the monitor of the monitor?

The indivisibility of trust as the central production factor of the monitor of the firm, and the interchangeability of credit, money, and trust, perhaps can offer a relevant new trust-based view on why PE centered monitors in the market for corporate control exist and what the range of their activities should be.

7 Conclusion and Outlook

This thesis attempts to make a contribution toward our understanding of puzzling phenomena in the PE sector, notably the expansion of traditionally monolithic PE firms into a wide range of activities. At the same time the study initiates strategy research on the corporate level of the PE firm. Building on the same preparatory research and adding concepts from existing theories of the firm, this endeavor also explores a broader research theme: notably forces shaping the boundary of the PE centered investment firm. The contributions fill multiple knowledge gaps in both theory and practice.

7.1 Academic Contributions

One of the overarching academic contributions of this study is that it conceptually refines the prevailing view of PE. It was argued that PE once was a skill-based alpha investment strategy and is increasingly becoming a traditional beta asset class, and shortly after the pinnacle of the most recent mega-buyout era some even predicted the eclipse of PE due to tight credit and regulatory changes (Cheffins et al. 2007; Idzorek 2007). Although this may appear exaggerated, it is undisputed that the traditional monolithic PE model will face severe challenges in the foreseeable future.

Nevertheless, it can no longer be ignored that the debate about PE is by and large myopic. Based on a triangulation of insights from PE literature, an evolutionist, empiricist, and essentialist approach, and expert interviews, this study sheds light on enduring principles of the PE approach. Some exist ever since the 14th century. This study suggests that a better comprehension of these fundamental principles can sharpen our conceptual lens with respect to striking puzzles in contemporary PE, and more general in contemporary IF entities.

This comprehension helped in discovering strategic groups in the strategic space of PE. New empirical evidence presented in this context supports the heterogeneity view of the PE firm. Based on an investigation of two thirds of the PE universe, measured by assets under management, this study discovers that strategic center points (centroids) exist in the PE sector, including the ‘sector specialist’, the ‘product specialist’, the ‘sector-focused investment firm’, the ‘multi-business investment firm’, and the ‘small cap generalist’. A centroid can be seen as the mathematical equivalent of the strategic pattern of a group of firms. Inter-group differences are significant, and the possibility that this finding occurred by chance alone is less than 0.1%. The evidence also suggests that PE firms affiliated to more successful strategic groups gravitate toward their centroids over time. One of the strategic groups, formalized by the ‘multi-business investment firm’ centroid, is leading the sector in terms of PE assets under management, capital supply, deal flow, and investment size, and at the same time appears to be traversing the confines of the strategic space of traditional PE. With respect

to the confines of the strategic space of PE, it remains a puzzle how this transformation will influence the sector's boundary in the future.

Building on the same preparatory research groundwork, this study also attempts to make an academic contribution toward the theory of the investment firm, by exploring forces shaping the boundary of the PE centered investment firm. Most notably firms within the strategic group which is traversing the confines of the strategic space of PE provide a rich object for investigation. The results suggest that the boundary of the investment firm is determined by an efficient trade-off between an expanding force and a counterforce. The expanding force comprises a group of determinants, including 'double sourcing advantages', 'procurement cost synergy', 'trust advantages', 'repatriation of wealth', and 'information sharing advantages', incentivizing the narrower monolithic PE model to broaden its range of activities, while the counterforce comprises a group of determinants, including 'conflicts of interest', 'asset allocation authority', 'parenting disadvantages', and 'credibility risk', incentivizing the broader IF platform to transform toward a narrower model. This exploratory part of the study attempts to contribute more conceptual bandwidth and depth toward existing theories on the boundary of the firm. The research is focused on the PE centered investment firm, yet some of the findings can also be generalized for other types of investment firms.

Overall, the study shows that while the traditional monolithic PE model might get increasingly commoditized, PE as a management approach of governing investments in the market for corporate control has just begun.

7.2 Implications for Practitioners

While this study is primarily directed toward making a contribution to academic research, it also offers tangible implications for practitioners, notably for those who have touch points with the PE approach.

7.2.1 Implications for Investors

Chief Investment Officers of banks, charities, family offices, foundations, governments, insurance companies, pension funds, or university endowments, typically do not have the necessary resources in-house to manage investments across their whole range of targeted asset classes. Though direct investment or co-investment activity of e.g. pension funds has gained momentum recently, often Chief Investment Officers have to invest indirectly through external investment managers, such as PE firms. Picking the right investment manager can be tricky, a fortiori when the PE firm is undergoing a major business model transformation. Will key persons be distracted? Whose interests will the PE firm put on top? What implications will this have on investment returns?

While this thesis is primarily concerned with strategy analysis on the corporate level of the PE centered investment firm, it also distills new relevant considerations allowing investors to scrutinize the stability and the economics of the PE platform. A well-balanced PE centered investment platform can actually be interesting for investors, e.g. if the traditional PE assets can benefit from information sharing advantages or procurement cost advantages, notably cheaper and better access to the production factor capital. At the same time investors can benefit from the findings in that they create more transparency on distinct PE business model architectures which can misalign interests between investors and other stakeholders.

Overall, this study attempts to upgrade taxonomy and to establish a common conceptual frame for conversations between investors and other stakeholders of the PE model, notably owners, which hopefully can facilitate a better rectification of interests.

Investors can also benefit from the study's contributions in situations where they pursue direct investments or co-investments. For example, between December 2009 and August 2010, the \$94b pension fund Teacher Retirement System of Texas invested \$160m alongside KKR, Warburg Pincus and Apollo Global Management.⁴⁸ Other pension funds also expressed their interest in moving more toward co-investment and direct investment, such as the California Public Employees' Retirement System, being motivated by the opportunity to create more individualized structures with lower fees and more customized portfolios.

The more investors move into this direction, i.e. the more they expand their range of activities by integrating traditional PE activity, the more they can benefit from a better understanding of strategy and business model matters on the corporate level of a PE centered investment firm. Strategic forays of e.g. pension funds or sovereign wealth funds into PE can be seen as strategic vertical integration moves. In other words, the business models of investors, notably those of captive or sovereign investors, actually converge with the PE centered investment firm model.

7.2.2 Implications for PE Centered Investment Firms

This is the first controlled public study which investigates strategy on the corporate level of the PE firm. The preparatory research groundwork is based on a new strategy approach, conceptually comprising a considerable though barely understood part of the PE universe. While the prevailing view perceives PE firms in a rather undifferentiated way, this study offers a new strategic coordinate system, allowing for a differentiated analysis of a variety of PE firms' strategies. This refined conceptual grid also allows for an investigation of current puzzles in the evolution of the PE sector, notably the branching out of traditionally monolithic PE firms into new areas such as debt funds, hedge funds, underwriting, or advisory.

Based on strategic grouping approach, this thesis unveils generic competitive strategies of PE firms and describes each strategic pattern in detail. The evidence suggests that there is no

⁴⁸ See <http://www.privateequityonline.com/Article.aspx?aID=5815&article=55443>.

one best strategy in the PE sector. Various strategies can lead to success. Similarities between firms are captured within group structures and are formalized by mobility barrier differentials between groups. The existence of these barriers enables strategies to be sustained over time, offering explanations for persistent performance differences. The positioning of the strategic groups in various strategic sub-grids provides new powerful descriptive frameworks for strategy analyses while allowing for prescriptive conclusions and portrayals of future competitive dynamics. The strategic grouping approach also allows for a richer portrayal of different types of entrants and paths of entry.

This study also provides a new strategy framework for the analysis of corporate strategy of the PE firm. With an increasing horizontal and vertical convergence of financial intermediaries in the alternatives space, it will become increasingly challenging for the leadership of a PE firm to conceptualize essential strategic questions.

Based on expert interviews with senior investment professionals from recognized PE firms, this study synthesizes primary drivers whose efficient trade-off determines the optimal corporate boundary of the PE centered investment firm. This study is the first known attempt to make tacit knowledge of senior investment professionals on corporate strategy of the PE firm more tangible.

While this study covers a quite broad range of topics related to the strategy of PE, it should be acknowledged that strategy is not everything, nor are strategic groups or corporate boundaries everything related to strategy. The contributions of this thesis can merely complement other approaches to strategy.

7.2.3 Implications for Portfolio Companies

For management teams of portfolio companies a better understanding of the strategic thrusts and business model characteristics of their financial sponsors can empower them to be more aware of potential linkages between their activities and other activities or businesses of their parents, both on the corporate level of the PE firm and on the portfolio company level.

Depending on which strategy and business model the potential parent pursues, the range of value enhancing opportunities for the portfolio company changes respectively. For example, having a platform specialist as a parent might offer great opportunities for the portfolio company with respect to 'buy and build' initiatives. However, perhaps the portfolio company does not need 'smarty-pants' strategic ideas from a sector focused parent and rather seeks the partnership with a more impassionate owner who can effectively lead the refinancing of maturing debt facilities in the most efficient way.

In other words, a deep understanding of the motives and capabilities of their financial sponsors can allow portfolio companies to better and more proactively utilize the platforms which their parents, sometimes unknowingly, possess.

7.2.4 Implications for Regulators

For regulators this thesis contributes toward their understanding of the heterogeneity of the universe of established PE entities. Due to fairly extensive research over the last two decades, our understanding of causalities between the traditional monolithic PE model as a niche financing technique and its economic impact has made good progress, presumably helping regulators in making their decisions.

However, this thesis suggests that PE as a multi-layered PE centered investment approach is barely understood, let alone the role of PE as a management approach of governing investments in the market for corporate control. Niall Ferguson, one of Britain's most renowned historians, pointed out that lessons from history suggest that financial species are vital to creating the wealth of nations (Ferguson 2008). Until we have a better understanding of the complexity of the PE approach, from a society's perspective it will be difficult for us to understand its economic role and to incentivize it appropriately.

The Gramm-Leach-Bliley Act of 1999 was the regulatory capstone repealing the Glass-Steagall Act of 1933. The debate, whether the Glass-Steagall Act was justified, or whether its repeal, the Gramm-Leach-Bliley Act, contributed to the recent turmoil in the financial markets is ongoing. At the time of writing, the 'Volcker Rule' was one of the prominent tips of the iceberg of this debate, being part of what US President Barack Obama called the toughest financial reforms since the 1930s. A regulatory revamp framed by the Volcker Rule wants banks to unwind their principal investment activities such as hedge funds and PE funds. It is yet unclear how many years the banks including Goldman Sachs, Morgan Stanley, J.P. Morgan, and Citi, will have to cut down their stakes in affiliated hedge funds or PE funds so that their direct or indirect exposures do not exceed 3% of their capital.⁴⁹ The investigation of the origin of PE, of its break-up and of its renaissance in the 20th century (see chapter 2.1), implies that between the 1930s until the 2010s the PE related regulation has completed one full, almost century long, regulatory cycle in the US.

This thesis synthesizes knowledge about both the origin and about current distinct forms of PE activity. It appears legitimate to suggest that our economy and society can benefit from increasing regulatory heterogeneity considering different types of PE activity. The evidence suggests that the bundling of financial products and services is not necessarily detrimental to the stability of a financial system. In fact, this thesis shows where such bundles can create economic value from society's perspective, for example through the more cost efficient facilitation of information and capital flows. At the same time this study outlines the challenges and risks of bundled models, notably with respect to conflicts of interest and wealth transfers. Overall, the knowledge presented in this thesis can further empower regulators to design more differentiated and more effective regulatory architecture.

⁴⁹ See <http://www.businessweek.com/news/2010-06-29/volcker-rule-may-give-goldman-citigroup-until-2022-to-comply.html>.

7.3 Outlook for Future Research

Free of doubt, this thesis can only constitute a first step toward research on strategy on the corporate level of the PE firm and toward our understanding of PE as a management approach. While this study makes several academic contributions with tangible implications for practitioners and regulators, further research is needed.

This thesis is based on constructivist and pragmatic worldviews. Our understanding of the object under investigation would benefit from a comparison of the presented findings with results from studies which build on more deterministic worldviews. Perhaps diversification literature could provide an interesting alternative starting point for such a study. The phenomenon of corporate diversification has sparked interest of researchers in numerous areas and there are several established theories offering comprehensive conceptual frames with reasons and motives for corporate diversification: the market-power view, the agency view, and the resource-based view (Ansoff 1958; Gort 1962; Bettis 1981; Bettis et al. 1981; Montgomery 1982; Rumelt 1982; Varadarajan et al. 1987; Goold et al. 1993; Montgomery 1994). The conceptualization of a more quantitative corporate diversification model for the multi-business PE centered investment firm, integrating general diversification literature and this thesis, could establish a complementary frame for a battery of empirical tests with respect to the diversification phenomenon in the space of PE.

There is general agreement that it is the firm, its boundaries and its essential nature, differentiated from one firm to another, that is the true study of strategic management (Faulkner et al. 2003), while competitive strategy is concerned with superior positions in multivariate strategic coordinate systems (Caves et al. 1977; Caves 1980; Porter 1980). It would be worthwhile to expand research about the PE centered investment firm within and also beyond these two approaches, notably by investigating the relationship between corporate strategy and corporate performance and between corporate strategy and corporate organizational structures in greater depth.

Based on a strategic grouping approach this thesis discovers groups of PE firms and links each group to performance data. However, at the time of writing very little operating performance data was publicly available on the corporate level of the PE firm. With increasing transparency of PE firms with respect to corporate operational performance data, it should become increasingly possible to conduct even more accurate investigations of corporate strategy and corporate performance relationships in the future.

The investigation of relationships between corporate strategy and corporate organizational structure of the PE centered investment firm constitutes another promising avenue for future research. This is another quite unexplored territory. Research pursuing this path at one point will ultimately run into problems with the concentration of power in nations. While discussing puzzling features of his 'divisionalized' form, Mintzberg pointed out in 1979 that "*if Beatrice Food can really control 397 divisions, what is to stop Washington from believing that it can control 397 Beatrices*" (Mintzberg 1979, p. 428). In 1985 Beatrice was acquired by KKR's PE fund, effectively making KKR's leadership the monitor of Beatrice. 25 years later we

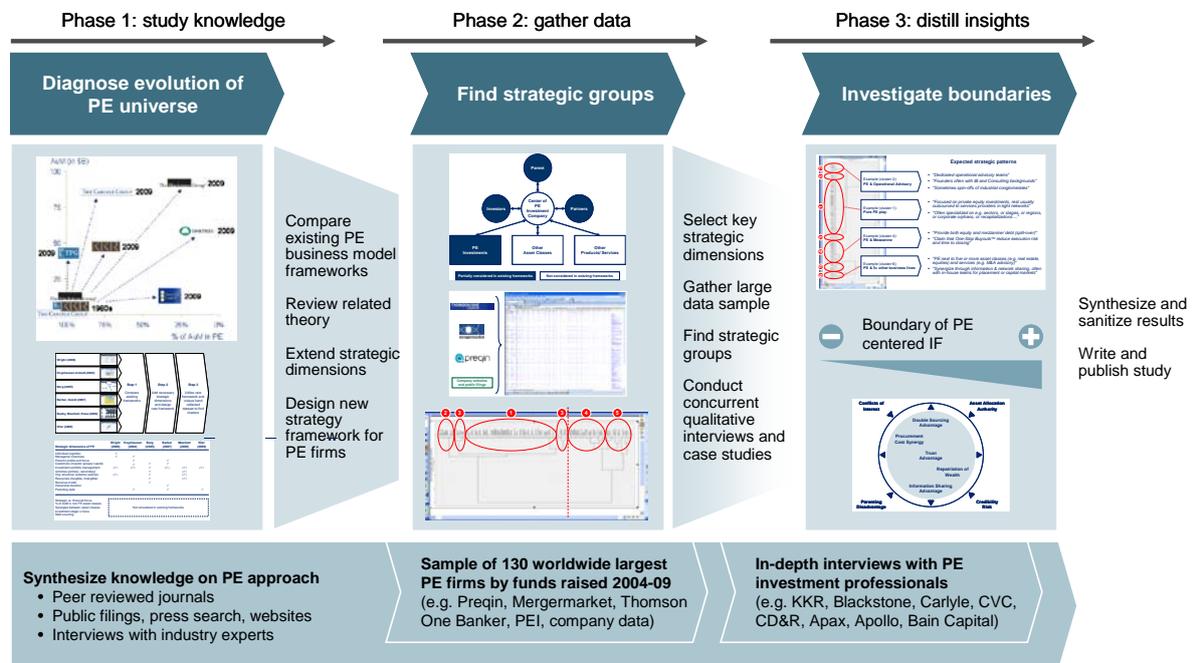
know little about organizational structures of PE centered monitoring entities. We also know little about the role of governments within this context, and at what point they should step in as the monitor in the corporate governance hierarchy and how government backed monitoring organizations should be structured effectively. The PE centered investment firm and even more PE as a management approach in governing property rights offers a rich area for research on relevant contemporary economic and managerial puzzles.

On the corporate level of the PE entity, this thesis explores themes which conceptualize our understanding of the boundary of the investment firm. Linking the provided exploratory groundwork to empirical quantitative research could broaden our insights in this area. For example, future research endeavors could quantitatively investigate whether PE firms with in-house debt business units get credit faster and cheaper than monolithic PE firms. One could also compare the quality and quantity of deal flow of multi-business investment firms with the deal flow of monolithic control groups. It would also be worthwhile to investigate quantitatively the magnitude of information sharing advantages of various PE models, or the magnitude of any of the determinants presented in Figure 52 and in Figure 53.

The fascination of comparisons between corporate management and PE leadership is growing (Barber et al. 2007; Achleitner et al. 2008; Baker et al. 2009; Klier et al. 2009; Acharya et al. 2010). This thesis goes one step further by suggesting that corporate strategy and PE as a management approach are two sides of the same coin. Perhaps future research investigating PE as a management approach to corporate strategy will offer new conceptual clues broadening our understanding of one of the central unresolved puzzles of the theory of the firm: who can effectively monitor the monitor?

Appendix

A.1 Major Phases in Research Process



A.2 Strategic Dimensions of PE Centered Investment Firm

Strategic dimensions	Sub-dimensions
Investors	<p>Groups</p> <ul style="list-style-type: none"> Type of investor Geographic scope Fund size Minimum investment fund <p>Needs</p> <ul style="list-style-type: none"> Investments via first-order intermediary Debt/ mezzanine capital investment opportunity Co-investment opportunity Access to industry intelligence Service for fund investors Acquisition of equity stake in buyout firm
Owners	<p>Public</p> <p>Private</p> <ul style="list-style-type: none"> Origin Profile
3 rd Parties	<p>3rd party services providers</p> <ul style="list-style-type: none"> Accountants HR consultants Industry experts Investment banks Lawyers Strategy consultants <p>Co-investors</p> <ul style="list-style-type: none"> Corporate investors Investment firms

A.2 Strategic Dimensions of PE Centered Investment Firm (continued)

Strategic dimension	Sub-dimensions
Center of PE Firm	<ul style="list-style-type: none"> Corporate boundary of the investment firm <ul style="list-style-type: none"> • Single-product • Multi-business Parenting style <ul style="list-style-type: none"> • Active • Passive Organizational structure and infrastructure (systems, policies) <ul style="list-style-type: none"> • Basic organizational structure <ul style="list-style-type: none"> • Degree of outsourcing <ul style="list-style-type: none"> • System integrator • Process integrator • Office structure <ul style="list-style-type: none"> • Centralized • Regional • Country-wise • Sub-country-wise • Communication & coordination • Decision & governance structure • Incentive & compensation structure Resources <ul style="list-style-type: none"> • Tangible resources • Intangible resources <ul style="list-style-type: none"> • Skills (know-how, culture) • Intellectual property rights • Reputation • Relationships & networks Revenue model <ul style="list-style-type: none"> • Management fee • Performance linked fee (carried interest) <ul style="list-style-type: none"> • Calculation base • Preferred return • Reimbursement of expenses • Distribution • Advisory fee <ul style="list-style-type: none"> • Types of fees • Allowance
Traditional PE Business	<ul style="list-style-type: none"> Investment portfolio strategy <ul style="list-style-type: none"> • Investment duration <ul style="list-style-type: none"> • Buy to keep • Buy to sell • Monitoring style <ul style="list-style-type: none"> • Active • Passive • Sector <ul style="list-style-type: none"> • Focused • Opportunistic with preferences • Opportunistic • Stage <ul style="list-style-type: none"> • Seed • Early stage • Expansion • Bridge • Buyout • Distressed • Region • Size • Rationale • Type <ul style="list-style-type: none"> • Efficiency oriented investment • Revitalization oriented investment • Investment failure • Entrepreneurial investment • Risk-return profile • Value creation approach <ul style="list-style-type: none"> • Financial arbitrage (e.g. changes in market valuation, superior market information) • Financial engineering (e.g. optimizing capital structure, reducing corporate tax) • Operational effectiveness (e.g. cost cutting, margin improvement, working capital) • Strategic distinctiveness (e.g. corporate refocusing, buy-and-build strategies) • Agency cost reduction (e.g. incentive alignment, improving monitoring and controlling) • Parenting effect (e.g. restoring entrepreneurial spirit, advisory)

A.2 Strategic Dimensions of PE Centered Investment Firm (continued)

Strategic dimension	Sub-dimensions
Traditional PE Business (cont'd)	<p>Activities</p> <ul style="list-style-type: none"> • Primary <ul style="list-style-type: none"> • Fundraising • Investment portfolio management <ul style="list-style-type: none"> • Invest (source/ select deals, source debt, structure financing) • Monitor • Exit • Secondary <ul style="list-style-type: none"> • Finance & administration • HR management • Public Relations <p>Organizational structure and infrastructure</p> <ul style="list-style-type: none"> • Basic organizational structure <ul style="list-style-type: none"> • Degree of outsourcing <ul style="list-style-type: none"> • System integrator • Process integrator • Office structure <ul style="list-style-type: none"> • Centralized • Regional • Country-wise • Sub-country-wise • Communication & coordination • Decision & governance structure <ul style="list-style-type: none"> • Autocratic • Committee-based • Democratic • Incentive & compensation structure <ul style="list-style-type: none"> • For partners of PE investment company <ul style="list-style-type: none"> • Single-tier partnership structure • Two-tier partnership structure • For non-partners of PE investment company <ul style="list-style-type: none"> • Carried interest based • Co-investment based • Bonus based <p>Resources</p> <ul style="list-style-type: none"> • Tangible resources <ul style="list-style-type: none"> • Financial • Physical • Intangible resources <ul style="list-style-type: none"> • Skills <ul style="list-style-type: none"> • Know-how <ul style="list-style-type: none"> • Strong financial • Partially operational • Strong operational • Culture • Intellectual property rights • Reputation <ul style="list-style-type: none"> • From past performance • From past transaction • From past interaction with stakeholders • From key personnel • Relationships & networks
Other businesses	<p>Major constituents of each other business</p> <ul style="list-style-type: none"> • Customers <ul style="list-style-type: none"> • Groups (internal, external) • Needs • Activities • Organizational structure and infrastructure <p>Potential synergy with PE business</p> <ul style="list-style-type: none"> • Investors <ul style="list-style-type: none"> • Cross-selling • Greater variety of investor leads (e.g. family offices, investors who are not in PE asset class yet) • More and better investment opportunities <ul style="list-style-type: none"> • Greater deal flow • Opportunity to be more selective • Parent <ul style="list-style-type: none"> • Risk reduction through diversification • Larger growth potential • 3rd parties <ul style="list-style-type: none"> • Variety of partners (e.g. real estate developers, asset managers, corporations) • Bargaining power • Center of PE firm <ul style="list-style-type: none"> • Stronger market position and brand awareness <ul style="list-style-type: none"> • Financial markets • Deal flow markets • Labor markets • Better utilizations of capabilities <ul style="list-style-type: none"> • Financial and physical resources • (Regional) market and industry expertise • Intellectual property rights and licenses • Reputation • Relationships & networks • PE business <ul style="list-style-type: none"> • Greater deal flow • Better investment opportunities • Better performance

Source: Author based on Wright et al. (2000a), Berg (2005), Knyphausen-Aufseß (2005), Barber et al. (2007), Klier (2009)

A.3 Sample of PE Firms for Strategic Grouping Approach

ID	Firm	FIRMDEP	ORGFOOT	ORGCENT	INSTEXP	SSPROX	SSFUZZ	CAPSUP	DLFLOW	INVSIZ	INVSECTOR	INVREGION	INVSTAGE	BYTOBUILD	OPEREFF	INVPERF_ALL	INVPERF	MKTSHARE	BRAND
1	Goldman Sachs Principal Investment Area	38%	1	20,056	24	37%	1	5.06%	310.53%	242.82%	60.17%	95.02%	83.37%	92.25%	692	12.57%	13.55%	2.33%	-1.53%
2	The Carlyle Group	36%	5	2,931	23	72%	1	4.44%	339.18%	136.15%	38.05%	77.63%	93.89%	87.27%	94	21.88%	21.40%	3.87%	-3.05%
3	Kohlberg Kravis Roberts	36%	4	4,038	34	74%	1	4.36%	255.53%	384.59%	62.34%	92.05%	95.18%	103.62%	131	17.05%	18.08%	2.46%	-4.58%
4	TPG	34%	5	3,462	18	99%	2	4.18%	230.32%	346.69%	44.36%	86.94%	89.52%	91.00%	n/a	25.18%	24.18%	2.82%	-6.11%
5	Apollo Global Management	36%	1	41,500	20	82%	2	3.22%	156.99%	310.20%	52.75%	99.65%	98.35%	88.51%	n/a	20.30%	22.09%	2.15%	-7.63%
6	CVC Capital Partners	34%	1	2,207	29	96%	3	3.17%	242.93%	94.04%	66.82%	58.27%	96.68%	128.33%	269	31.49%	32.36%	2.56%	-9.16%
7	The Blackstone Group	36%	7	9,233	25	22%	1	2.89%	237.20%	322.83%	47.41%	81.77%	96.52%	88.34%	109	26.22%	25.15%	1.55%	-10.69%
8	Bain Capital	38%	2	6,333	27	67%	2	2.71%	187.93%	313.01%	41.55%	89.91%	93.51%	87.27%	190	37.90%	37.90%	2.40%	-12.21%
9	Warburg Pincus	36%	2	2,875	39	99%	4	2.13%	159.28%	61.76%	28.64%	71.73%	68.79%	112.15%	105	16.64%	11.73%	1.44%	-13.74%
10	Apax Partners	34%	1	3,500	41	100%	5	2.02%	367.83%	130.54%	34.37%	66.47%	79.18%	123.35%	117	27.66%	26.92%	2.21%	-15.27%
11	First Reserve Corporation	34%	2	7,000	30	62%	6	1.77%	53.86%	63.72%	90.13%	99.73%	98.18%	80.34%	313	36.43%	38.28%	0.82%	-16.79%
12	Advent International	34%	1	930	26	100%	5	1.69%	215.43%	31.44%	43.73%	60.97%	83.31%	108.78%	121	50.69%	56.64%	0.88%	-18.32%
13	Hellman & Friedman	32%	2	2,667	26	100%	5	1.61%	115.73%	162.40%	39.95%	84.72%	83.41%	135.08%	154	31.43%	31.91%	0.51%	-19.85%
14	Carberus Capital Management	36%	1	12,000	17	100%	2	1.38%	105.42%	164.22%	86.61%	88.74%	99.67%	104.51%	n/a	28.10%	28.10%	0.76%	-21.37%
15	General Atlantic	36%	4	1,444	30	100%	5	1.36%	66.46%	32.28%	55.03%	79.85%	63.28%	102.02%	173	n/a	n/a	0.82%	-22.90%
16	Permira	34%	2	1,930	25	100%	5	1.20%	195.95%	229.21%	43.04%	32.38%	97.65%	125.13%	190	29.52%	30.28%	1.47%	-24.43%
17	Providence Equity Partners	36%	3	3,500	21	100%	2	1.12%	203.97%	228.93%	67.11%	69.56%	94.19%	91.18%	339	24.62%	19.26%	1.33%	-25.95%
18	Clayton Dubilier & Rice	34%	1	4,113	32	100%	5	1.09%	83.65%	464.46%	43.49%	92.38%	98.01%	92.78%	343	12.99%	10.00%	0.73%	-27.48%
19	Terra Firma Capital	34%	0	8,355	16	100%	5	1.08%	45.84%	208.02%	98.07%	100.00%	100.00%	88.51%	239	37.17%	16.00%	1.06%	-29.01%
20	Bridgepoint	32%	0	1,603	27	100%	5	1.04%	209.70%	28.35%	42.15%	76.34%	99.42%	121.93%	183	24.62%	24.62%	0.81%	-30.53%
21	Teachers' Private Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-32.06%
22	Charterhouse Capital Partners	34%	0	8,215	76	100%	5	1.00%	90.52%	138.54%	97.67%	98.03%	100.00%	87.98%	n/a	38.10%	36.21%	1.04%	-33.59%
23	Fortress Investment Group	34%	7	2,600	12	35%	4	0.99%	43.54%	116.92%	85.64%	96.54%	100.00%	125.31%	248	33.93%	33.93%	0.93%	-35.11%
24	Madison Dearborn Partners	34%	1	16,900	18	100%	2	0.98%	100.84%	330.69%	54.05%	95.65%	83.93%	97.58%	n/a	14.91%	13.91%	1.07%	-36.64%
25	Oaktree Capital Management	34%	3	4,067	15	19%	1	0.98%	65.32%	26.81%	31.63%	94.24%	83.65%	91.18%	181	16.66%	17.74%	0.73%	-38.17%
26	TA Associates	34%	2	4,000	42	92%	2	0.98%	57.29%	30.88%	43.95%	95.65%	73.52%	93.14%	267	23.91%	19.08%	0.93%	-39.69%
27	Citi Alternative Investments	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-41.22%
28	Thomas H. Lee Partners	34%	1	20,000	36	81%	2	0.94%	147.82%	407.89%	49.38%	96.47%	97.58%	121.04%	435	12.55%	7.28%	1.03%	-42.75%
29	Riverstone Holdings	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-44.27%
30	Cinven	34%	0	2,193	33	100%	5	0.89%	168.45%	199.17%	57.36%	73.88%	98.71%	96.16%	169	23.30%	23.72%	0.55%	-45.80%
31	AXA Private Equity	38%	1	3,250	15	60%	3	0.88%	350.64%	491.69%	67.87%	82.21%	84.18%	85.14%	111	34.86%	34.86%	0.98%	-47.33%
32	JC Flowers & Co.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-48.85%
33	Silver Lake	34%	4	2,167	11	100%	2	0.86%	63.02%	116.92%	56.81%	100.00%	85.34%	77.67%	186	25.20%	25.20%	0.82%	-50.38%
34	BC Partners	32%	1	2,320	24	100%	5	0.83%	122.61%	253.91%	70.56%	78.67%	95.70%	111.26%	296	24.08%	24.08%	0.88%	-51.91%
35	3i	36%	1	500	65	3%	6	0.77%	442.31%	24.28%	28.39%	53.32%	85.22%	113.04%	45	17.28%	17.28%	0.40%	-53.44%
36	Nordic Capital	34%	0	1,546	21	100%	5	0.77%	79.07%	96.43%	66.00%	78.22%	98.94%	121.04%	235	32.49%	32.49%	0.68%	-54.96%
37	HarbourVest Partners	34%	1	11,000	27	10%	7	0.74%	112.30%	0.98%	30.00%	68.06%	54.22%	127.26%	143	10.28%	9.65%	0.22%	-56.49%
38	PAI Partners	36%	0	2,099	20	100%	5	0.74%	98.55%	141.06%	61.81%	90.80%	98.09%	124.06%	294	25.09%	25.09%	0.93%	-58.02%
39	Lindsay Goldberg	34%	1	9,830	8	100%	5	0.72%	30.94%	35.51%	67.17%	100.00%	100.00%	88.87%	393	35.70%	35.70%	0.62%	-59.54%
40	NGP Energy Capital Management	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-61.07%
41	Lone Star Funds	38%	1	4,320	15	54%	8	0.70%	34.38%	12.07%	99.75%	76.16%	77.63%	117.13%	n/a	29.32%	30.36%	0.74%	-62.60%
42	Alpinvest Partners	34%	1	10,000	11	15%	7	0.69%	182.20%	179.10%	43.23%	73.53%	93.11%	118.91%	519	n/a	n/a	0.38%	-64.12%
43	EQT Partners	38%	1	1,073	16	87%	3	0.68%	145.53%	118.61%	69.47%	71.82%	99.80%	127.79%	125	n/a	n/a	0.76%	-65.65%
44	Welsh Carson Anderson & Stowe	32%	1	20,000	31	85%	2	0.68%	42.40%	96.99%	46.88%	97.83%	85.02%	108.42%	500	11.45%	9.07%	1.08%	-67.18%
45	Onex Partners	36%	1	5,000	27	71%	9	0.68%	50.42%	132.36%	78.59%	100.00%	99.85%	76.43%	133	43.70%	43.70%	0.45%	-68.70%
46	Marlin	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-70.23%
47	WL Ross & Co.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-71.76%
48	Oak Hill Capital Partners	32%	3	8,333	17	34%	2	0.61%	69.90%	66.25%	69.43%	86.99%	75.91%	155.70%	543	9.80%	9.80%	0.53%	-73.28%
49	Sun Capital Partners	32%	3	1,400	15	100%	2	0.60%	83.65%	41.97%	98.16%	99.92%	99.00%	101.84%	72	n/a	n/a	0.62%	-74.81%
50	Doughty Hanson	32%	0	901	24	82%	4	0.60%	80.21%	65.83%	43.35%	60.59%	91.13%	134.37%	72	17.82%	13.59%	0.33%	-76.34%
51	Ares Management	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-77.86%
52	One Equity Partners	38%	2	1,600	9	100%	5	0.56%	66.46%	51.51%	40.42%	98.33%	90.69%	88.69%	190	n/a	n/a	0.51%	-79.39%
53	CPPI Investment Board	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-80.92%
54	Summit Partners	32%	2	2,780	26	80%	2	0.53%	30.94%	18.11%	34.37%	99.46%	76.27%	79.98%	111	30.23%	15.20%	0.42%	-82.44%
55	Barclays Private Equity	38%	0	826	31	100%	6	0.51%	232.61%	23.30%	61.06%	67.97%	99.47%	99.89%	147	20.24%	20.24%	0.42%	-83.97%
56	Investcorp	36%	1	4,267	10	37%	4	0.50%	136.36%	56.85%	75.21%	78.51%	67.77%	102.38%	32	n/a	n/a	0.30%	-85.50%
57	Leonard Green & Partners	32%	1	9,000	21	100%	5	0.49%	38.96%	80.01%	68.81%	100.00%	99.76%	143.44%	375	24.01%	86.90%	0.57%	-88.02%
58	Sequoia Capital	34%	1	703	38	100%	5	0.49%	28.65%	3.93%	50.22%	94.48%	66.01%	50.83%	134	68.02%	62.95%	0.36%	-88.55%
59	Energy Capital Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-90.08%
60	MatlinPatterson Global Advisers	34%	1	2,957	9	100%	5	0.48%	25.21%	27.23%	100.00%	100.00%	100.00%	97.58%	296	16.40%	16.40%	0.56%	-91.60%
61	Kelso & Co.	34%	1	7,230	39	100%	5	0.48%	49.27%	77.76%	44.21%	95.15%	91.53%	107.35%	213	24.40%	n/a	0.46%	-93.13%
62	New Mountain Capital	34%	1	8,500	10	87%	5	0.48%	49.27%	35.23%	71.17%	100.00%	99.73%	71.10%	177	14.30%	14.30%	0.47%	-94.66%
63	Quantum Energy Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-96.18%
64	New Enterprise Associates	32%	3	1,840	32	100%	5	0.46%	13.75%	5.05%	37.69%	95.20%	63.90%	57.94%	133	14.82%	2.80%	0.58%	-97.71%
65	Eurazeo	36%	0	2,970	10	65%	9	0.46%	93.96%	209.14%	95.30%	100.00%	99.68%	83.00%	165	n/a	n/a	0.12%	-99.24%
66	Actis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-100.76%
67	HIG Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-102.29%
68	Candover	36%	0	1,803	30	100%	5	0.45%	122.61%	96.99%	45.48%	49.42%	98.51%	94.02%	451	20.03%	18.03%	0.68%	-103.82%

A.3 Sample of PE Firms for Strategic Grouping Approach (continued)

ID	Firm	FIRMDEP	ORGFOOT	ORGCENT	INSTEXP	SSPROX	SSFUZZ	CAPSUP	DLFLOW	INVSIZE	INVSECTOR	INVREGION	INVSTAGE	BYTOBUILD	OPEREFF	INVPERF_ALL	INVPERF	MKTSHARE	BRAND
56	Pacific Equity Partners	32%	0	5,750	12	100%	5	0.45%	35.52%	39.86%	55.97%	71.89%	100.00%	70.74%	359	n/a	n/a	0.36%	-105.34%
	EnCap Investments	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-106.87%
	Stone Point Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-108.40%
57	Vestar Capital Partners	32%	3	1,030	22	100%	5	0.43%	89.38%	88.85%	74.27%	92.06%	97.81%	106.29%	75	16.92%	13.66%	0.39%	-109.92%
58	Darby Overseas Investments	38%	3	138	16	60%	3	0.42%	10.31%	1.68%	50.46%	39.81%	76.62%	112.15%	36	-5.70%	-5.70%	0.07%	-111.45%
59	Abraaj Capital	36%	0	2,950	7	76%	8	0.41%	21.77%	21.90%	74.87%	67.38%	95.19%	81.58%	111	45.72%	45.72%	0.28%	-112.98%
	Technology Crossover Ventures	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-114.50%
60	Arcapita	36%	1	1,275	13	58%	4	0.41%	22.92%	13.19%	77.93%	94.35%	99.61%	128.51%	46	n/a	n/a	0.19%	-116.03%
61	Triton Partners	32%	0	131	11	100%	5	0.41%	46.98%	3.79%	85.50%	100.00%	100.00%	101.67%	94	n/a	n/a	0.04%	-117.56%
62	LS Power Group	34%	1	1,200	5	100%	5	0.40%	9.17%	126.47%	100.00%	100.00%	100.00%	72.34%	16	n/a	n/a	0.08%	-119.08%
63	HgCapital	34%	0	1,400	25	100%	5	0.40%	124.90%	28.91%	58.25%	85.42%	94.97%	114.29%	64	17.14%	17.14%	0.18%	-120.61%
64	Altor Equity Partners	30%	0	1,230	7	100%	5	0.39%	65.32%	26.25%	69.56%	76.81%	100.00%	80.34%	176	37.80%	37.80%	0.31%	-122.14%
65	ArtLight Capital Partners	32%	2	3,400	9	100%	5	0.39%	6.88%	38.74%	100.00%	100.00%	100.00%	111.98%	189	18.85%	18.85%	0.43%	-123.68%
66	CCMP Capital	34%	2	2,800	4	71%	2	0.39%	160.42%	96.71%	98.59%	98.59%	100.00%	114.11%	264	n/a	n/a	0.63%	-125.19%
67	TowerBrook Capital Partners	30%	2	1,593	15	100%	5	0.38%	61.88%	51.51%	43.59%	81.06%	81.72%	108.95%	159	41.40%	41.40%	0.30%	-126.72%
	Babson Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-128.24%
	CDH Investments	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-129.77%
	Crestview Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-131.30%
68	Avista Capital Partners	32%	2	1,900	5	100%	5	0.35%	46.98%	8.84%	80.70%	95.81%	88.42%	97.76%	115	n/a	n/a	0.24%	-132.82%
69	Lion Capital	32%	0	3,910	6	100%	5	0.35%	41.25%	102.88%	84.11%	80.68%	98.86%	57.41%	170	23.07%	23.07%	0.25%	-134.35%
70	Mid Europa Partners	32%	0	983	5	100%	5	0.35%	46.98%	52.78%	97.79%	93.29%	100.00%	124.42%	140	n/a	n/a	0.19%	-135.88%
71	MBK Partners	30%	0	790	5	100%	5	0.34%	46.98%	60.92%	100.00%	100.00%	100.00%	44.08%	109	n/a	n/a	0.20%	-137.40%
	Denham Capital Management	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-138.93%
	Citadel Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-140.46%
72	The Jordan Company	30%	2	1,700	28	100%	5	0.33%	33.23%	28.21%	100.00%	100.00%	100.00%	134.90%	196	n/a	n/a	0.32%	-141.98%
73	Draper Fisher Jurvetson	30%	1	1,500	24	100%	5	0.32%	16.04%	2.81%	55.21%	95.36%	69.17%	97.76%	102	n/a	n/a	0.38%	-143.51%
74	Advantage Partners	34%	0	2,010	18	100%	5	0.32%	24.06%	38.74%	73.43%	100.00%	100.00%	87.27%	54	n/a	n/a	0.13%	-145.04%
	Kayne Anderson Capital Advisors	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-146.56%
	GI Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-148.09%
75	Francisco Partners	30%	1	2,400	11	100%	5	0.31%	38.96%	22.32%	76.64%	100.00%	85.05%	80.34%	171	4.90%	4.90%	0.30%	-149.62%
	Tenaska Capital Management	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-151.15%
76	SAIF Partners	34%	0	333	9	100%	6	0.30%	18.33%	1.82%	45.70%	78.81%	76.82%	111.26%	40	n/a	n/a	0.13%	-152.67%
77	Yucaipa Companies	34%	1	2,250	24	100%	5	0.30%	17.19%	17.55%	88.53%	100.00%	100.00%	86.56%	n/a	0.02%	0.28%	0.28%	-154.20%
	Centerbridge Capital Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-155.73%
	GP Investments	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-157.25%
78	Berkshire Partners	34%	1	6,520	26	100%	2	0.29%	50.42%	26.95%	50.03%	98.72%	90.33%	115.71%	136	24.36%	21.21%	0.41%	-158.78%
	Court Square Capital Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-160.31%
	Softbank Group	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-161.83%
	Lime Rock Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-163.36%
79	Montagu Private Equity	34%	0	950	42	100%	5	0.28%	105.42%	86.46%	34.24%	94.53%	98.69%	84.25%	99	22.45%	22.50%	0.30%	-164.89%
	Clessidra SGR	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-166.41%
80	TDR Capital Partners	34%	0	2,850	8	100%	5	0.27%	34.38%	87.45%	100.00%	100.00%	100.00%	90.65%	143	n/a	n/a	0.18%	-167.94%
	Aquiline Capital Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-169.47%
81	Affinity Equity Partners	34%	0	875	6	100%	5	0.26%	34.38%	70.60%	95.77%	98.69%	98.59%	128.86%	135	n/a	n/a	0.22%	-170.99%
82	Unitas Capital	34%	0	1,000	11	100%	5	0.26%	43.54%	84.78%	40.96%	34.46%	87.55%	109.13%	148	n/a	n/a	0.25%	-172.52%
83	GTCR Golder Rauner	32%	1	8,000	30	88%	2	0.26%	49.27%	47.58%	35.81%	100.00%	89.53%	122.64%	205	20.91%	21.07%	0.45%	-174.05%
84	Platinum Equity Partners	30%	2	1,150	15	100%	5	0.26%	26.36%	30.04%	97.87%	100.00%	100.00%	112.69%	119	59.20%	59.20%	0.22%	-175.57%
	Hony Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-177.10%
85	Irving Place	34%	2	2,100	13	100%	5	0.25%	58.44%	32.28%	64.65%	95.22%	89.94%	84.78%	98	8.60%	8.60%	0.27%	-178.63%
86	KRG Capital	30%	3	1,100	11	100%	5	0.25%	52.71%	22.74%	53.07%	100.00%	93.68%	110.20%	89	24.15%	24.15%	0.21%	-180.15%
87	Kleiner Perkins Caufield & Byers	36%	1	1,363	38	100%	5	0.25%	11.46%	1.97%	39.24%	98.22%	64.28%	70.21%	93	50.98%	50.98%	0.26%	-181.68%
88	Accel Partners	34%	1	1,408	27	100%	5	0.24%	16.04%	4.07%	61.25%	95.11%	66.01%	59.72%	147	23.63%	3.60%	0.45%	-183.21%
89	LBO France	32%	0	2,205	26	70%	9	0.24%	111.15%	48.71%	75.12%	99.92%	100.00%	88.69%	245	n/a	n/a	0.19%	-184.73%
	Trilantic Capital Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-186.26%
90	Oak Investment Partners	30%	3	2,310	32	100%	5	0.24%	49.27%	13.47%	40.46%	94.27%	61.10%	79.09%	277	54.99%	60.43%	0.44%	-187.79%
	Gavea Investimentos	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-189.31%
91	BAML Capital Partners	38%	1	2,220	17	100%	1	0.23%	215.43%	35.09%	45.72%	99.06%	54.75%	95.98%	89	n/a	n/a	0.14%	-190.84%
92	Charlesbank Capital Partners	34%	2	1,150	19	100%	5	0.23%	52.71%	4.91%	65.71%	100.00%	64.18%	115.71%	58	20.70%	20.70%	0.15%	-192.37%
	Hopu Investment Management	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-193.89%
	Mount Kellett Capital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-195.42%
	Unison Capital Partners	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-196.95%
93	Audax Group	34%	2	1,000	11	86%	2	0.22%	69.90%	10.81%	37.50%	100.00%	78.87%	77.14%	87	11.51%	11.51%	0.22%	-198.47%

Note: For detailed description of data, sources and definitions see chapter 5.2.1, Table 3 and Table 4. All variables are standardized and normalized.

Source: Thomson Reuters, Mergermarket, Private Equity Intelligence, Private Equity International, company data, desktop research

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