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*EN CASA DE HERRERO, CUCHILLO DE PALO :
ORGANISATIONAL BARRIERS TO THE
SURVIVAL OF PRIVATE EQUITY FIRMS AND
WHAT WE CAN LEARN FOR PARTNERSHIPS
AS A WHOLE*

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***EN CASA DE HERRERO, CUCHILLO DE PALO¹:
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PARTNERSHIPS AS A WHOLE***

Gonzalo Alende Serra

¹ Spanish language idiomatic expression to denote the paradox of missing things in places where they should abound and which can be compared to the expression in English: “**there’s none worse shod than the shoemaker’s wife**”

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THE SURVIVAL OF PRIVATE EQUITY FIRMS AND WHAT WE CAN LEARN FOR
PARTNERSHIPS AS A WHOLE

Volume 1 of 1

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2025

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Embarking on a Doctoral programme at past 50 years old has been an experience that has provided me with the opportunity for an in-depth reflection of a lifetime of work experience through the filter of rigorous science. It has, however, required substantial effort.

As the exercise has involved revisiting many years of professional life, there are many people that wittingly or not, have contributed to the distillation of the present work. Naturally, my colleagues at Southern Cross -both my partners throughout the years and all my collaborators within the admin and legal teams- provided, through their everyday contributions and virtuous contrast to other firms out there, a number of perspectives that were useful to understand private equity. Yet others, from earlier job affiliations and many others from the industry have found their way into the reflections herein; too many to name. Some other people contributed through valuable discussions that straddled the corporate and academic world, to embolden me to pursue this project: among them, César Pérez, Ariel Yukelson and Ezequiel Szafir stand out.

Yet, this project started long before that, spurred by the versatile perspective that my parents, Nelly and Emilio, imbued on me and that has caused me to seek a scientific explanation to the everyday reality and a pragmatic application to scientific knowledge. And not less to my brother Diego, who forever remains my farthest-reaching teacher.

More recently, I found my Virgil in Laszlo Polos, a veritable mentor, always eager to understand more from the real world I brought to the discussion; ever generous in sharing his knowledge humbly; and always well disposed to invest a significant amount of time on this, our “joint” project.

This dissertation involved, as I mentioned at the beginning a desire to learn and a lot of effort. Neither would have been at my disposal without the everyday teachings and unwavering support of my wife Flor and our three children, Lola, Ana (especially given her direct involvement in assisting with the data search and population for months) and Juani. Their relentless inquisitiveness, their wise balance to maintain tradition without relinquishing a desire to push barriers forward, their steadfast regard for healthy rule-abiding and their constant search for higher, better adapted knowledge is an everyday lesson to me. Only one who can fathom and seek the value of understanding change in organisations can measure the collaboration that your own family can bestow; only in interactions with them can you really understand how roles evolve, how much you can learn from others now “holding the position” you once held and what the true nature of partnership is.

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I ABSTRACT

We tend to conceive professional firms and partnerships as permanent organisations, assigning to them an expectation of limitless life. We do the same with corporations, but in this latter case, the physical endowments which are separated from those of their members warrant the assumption to some extent. Partnerships, at a certain point may look like permanent organisations but not be so; just like tadpoles and frogs. The organism is there and is similar, but they are not exactly the same.

Private equity firms are one such type of partnership that can look like a different animal depending on the stage they are in. They can be at times project and in more developed stages, full-blown organisations. They initially consist of partnerships of executives who raise third-party money with the objective of acquiring large stakes in private companies (and sometimes large blocks of publicly-traded ones, without the aim of trading them in the open market) to improve their outlook and sell them at a gain.

Although they have enjoyed years of approval in the 1990s and others of public reprieve following the 2008 meltdown, private equity managers have been widely considered to add shareholder value; in addition, the impact they cause in the industries in which they invest has been generally assessed as positively. They achieve this by bringing institutionalisation, reliability and accountability to the companies they manage. However, demographic and industry structural factors impair their ability to do unto their own firms, as they do to others, reducing the survivability of private equity firms. This results in a mortality pattern in which, unlike the ones observed for corporations, ageing is not necessarily a sign of survival.

This dissertation identifies two key aspects that characterise the process by which private equity firms emerge and die. At their outset, firms rely significantly on the network and other endowments of their founding partners; external constraints and opacity leads these latter to maintain political and economic power concentrated in them, extracting value and precluding the institutionalisation and creation of organisational capital required to turn the firms into adaptable organisms.

In the absence of organisational studies in the field of private equity, this study consisted of a systematic exploratory exercise. It started by observing the demographic trends of private equity firms and where they did not match received knowledge. It then involved a qualitative exercise of seeking explanations in insights received from years of personal observation. Turning experience and insight into scientific conclusions implied identifying potential variables, seeking data to construct non-existing databases and painstaking tabulation. Armed with these, quantitative analysis enabled generalisations to prove the formulated hypotheses.

The findings herein simultaneously provide an answer to some of the issues above and open the gate to a deeper foray into the organisational dynamics of the “half-baked” nature of partnerships in organisational terms.

Keywords: *private equity, organisational demographics, networks, liability of newness, institutionalisation, de alio entrance, investor pressure, tacit knowledge, sampling bias, signaling, imprint, power concentration*

Caution: like any industry, private equity is fraught with jargon. In search of a better immersion into the subject matter, I have attempted to use as much of it as possible. Whenever an industry-specific meaning is introduced, I have capitalised it. Finally, Section XII includes a glossary of

the main industry terms for faster consultation, if needed. Also, to facilitate navigation of the conceptual framework, Section XI includes a thematic index.

II INTRODUCTION

I am the son of a biology teacher and the husband of a biologist; as such, I have always had the benefit of the life sciences insight into the world at the dinner table. Early in my university life, as an Accounting undergraduate, I took a seminar in ecology. It was not the most popular course among students who were keener to focus on finance and the like; but I did find it very enlightening to see the theory behind animal populations and their similarities with other organisms, the organisations in the business world. Later in life, at one such dinner table, my wife helped me understand that cancer did not behave like an infection but was essentially unbridled growth.

Such notions of business world and natural world analogies have always nagged me. But it was not until I took a course in organisation demographics as part of the doctoral programme that I became aware of how deep the research body on them was. And so, I ditched my original plan for a survey on Latin American private equity and decided to study how demographics applied to private equity. Being private equity organisations both actors in the growth of other organisms and organisms themselves has proven a fascinating application.

Change and growth are two of the most repeated words in the business world. Successfully identifying, planning for and enacting the changes that enable growth are generally considered a feat worth of praise. Since the late 1970s, the private equity industry developed to address an opportunity to enact change in companies. Unlike consultants and other advisors, private equity set out to do it from the inside, by owning the companies.

As discussed in Section III.b, private equity firms improve the efficiency, productivity and alignment of interest with shareholders of the companies they invest in. Companies in which private equity firms invest outpace the growth of family-run and government-run ones. And by the time they are past the growth phase and are sold in the public markets, such companies attain a higher IPO-price. To achieve this, private equity firms provide for the institutionalisation of the companies in their portfolio: they instil processes that can repeat the execution of transactions reliably and accountably; and they accelerate the development of trade partner networks for the portfolio companies by contributing the value of their own networks. These networks provide access to business opportunities and valuable market information. Finally, private equity firms also bring know how in areas the companies may have not yet been exposed to; for instance, young companies that have not previously gone through the process of raising funds in the capital markets, “piggy-back” on the expertise and networks of their private equity owners.

In other words, private equity firms, or private equity managers, bring to the table of their portfolio companies, their prior experience in the industry, in management consulting and in investment banking, among other areas. Perusal of the marketing media (placement memoranda, presentations, webportals) that these managers employ to attract investors is eloquent on these skills and endowments and how valuable they have been in prior instances.

It follows that private equity managers have a distinct set of variable skills and attributes and that they enable the companies in which they put them to use, to prosper, to survive better than competitors. But when one looks at the mortality rate of private equity firms, it is paradoxical

to see that it does not fit into the typical secular reduction in mortality rate that organisational demographics has shown for other industries. As can be seen in Section III.c., death rates have fluctuated around a mean of 4% to 6% without and secular decrease over the past thirty years. Moreover, the death trend has been increasing at a growing rate. Why is it then, that private equity firms with a proven toolbox to improve the survival of portfolio companies cannot put it to work on their own organisations?

The answer originates in demographic and organisational dynamics further stressed by restrictions inherent to the industry, which may cause investors to display a certain myopia.

Organisational theory would have us expect to see firms surviving initially with the stock of endowments received and reduce mortality by replenishing them through sustained high performance (that is, high fitness with environmental changes). In PE, however, two factors combine to keep mortality high. In the first place, endowments do not occur at the very beginning, but shortly after the first successful fundraise and they translate into a few years of expense budget; therefore, the decline is postponed, and so is the inertia of the partners. The second is that the flow of organisational capital (or replenishment of endowments) fails to materialize as existing partners, with lower environmental fit, dominate the scene. Knowledge endowments not only become obsolete, but fail to attach to the organization, as partners, perceiving the abovementioned dynamic, hold on to them individually.

To understand how demographic, organisational and industry-specific factors combine to reduce mortality, we need to set the stage on how private equity firms operate. Private equity

firms are not real “owners” of the companies they acquire; rather, they consist of a group of executives with a certain set of skills and attributes who raise funds from high net-worth families and, typically later, from institutions to acquire stakes large enough to provide them with control or significant influence enough to command the changes required at the companies they invest in. Since the investments by those families and institutions are sizeable and illiquid, the private equity industry has developed over the years, certain widely used legal formats and forced certain limitations to provide these investors with an element of control over the managers. This sets the first restriction: as discussed in Section III.b., the private equity industry has evolved into firms that raise funds which are time-limited; that is, firms, raise funds to acquire certain companies, manage and sell those companies. Once the portfolio of a fund is realised, the fund is liquidated and the manager concentrates on its remaining funds and, most importantly, on raising new funds. There are exceptions, called evergreen funds, but as it will be shown, they are a distinct minority.

So, executives partner with each other to form private equity firms with other executives with similar or complementary skills and attributes. A key aspect to understand the survival of a private equity organisation lies in their fundraising ability: in order to survive, private equity organisations or firms need to successfully fundraise repeatedly; and, as discussed before, to accomplish this a private equity firm needs to elicit from its key stakeholders (the investors selecting to invest in them) a high level of trust; in other words, that it will not be a “one off” event, but rather, that it will behave coherently and perform persistently. Moreover, the overall interest from investors in private equity is affected by cyclical exogenous factors like the general state of the economy, the level of capital markets and the supply limitation by private equity incumbents. The latter is originated in the aforementioned time-restrictions of funds but

also in the industry-rigid pricing mechanisms that limit shifts in the equilibrium. Since the requirements of a private equity manager overlap rather well with attributes and capabilities of executives in neighbouring industries, barriers are low for *de alio* entrance into the fold. These executives “toe the water” of private equity endowing their newly created firms with their own network of business contacts for deal origination and market information as well as their know-how.

Low barriers posed to executives from neighbouring industries results in private equity firms emerging during sudden increases in the carrying capacity originated in a context of simultaneous positive macroeconomic environment, supply limitations by incumbents and industry-rigid pricing mechanisms which limit shifts in the supply and demand equilibrium.

The combination of sudden capacity increase and low barriers to entry originates the first cause of mortality: the high intensity or organisational density environment causes private equity firms to be imprinted with the attributes of their founding partners at inception. The density also leads managers to postpone investments in institutionalisation. The context is one of violent growth in opportunities that require new firms to adapt to the environment with little time to think ahead. With one or two funds under their belts, managers take stock of sampling mechanisms in their favour and bank on a combination of realised and interim performance of their prior funds, they tap investors to join in the next fund, especially to those “re-upping” on the back of a status quo bias. Sampling mechanisms work on their favour because investors create a pecking order of first firms with positive past performance; second, firms without

direct performance but positive signals from the managers' past; and leave out firms with negative past performance.

However, it is industry-specific dynamics of the fundraising exercise I have observed, as described in Section IV.a., that the second cause for high mortality arises. The fundraising process is characterized by investors' putting pressure to avoid strategic drift limiting flexibility in the exploration of alternatives which may make better economic sense in the years the fund will be deployed; and pressure to define key persons in the organisation they invest with. Both points of pressure reflect the past capabilities of the firm (strategic selection and locus of investment knowledge and networking). But they build up organisational inertia and creating drift from environmental changes. Since key person definitions are highly related to wealth and power distribution, wealth maximizing strategies by founders and senior partners will congeal the organisation into a brittle existence. Extractive attitude has nothing to do with poor morals or a sustained justification for initial fears; it favours a "power concentration trap" that reduces the ability to institutionalise the firm to adapt to changes in the environment. It is true that psychological factors could potentially explain some of the limitations at each firm level, but the dynamics are so generalised that only demographic factors are a reliable explanation. The cause at the root is the imprint of initial conditions.

Investors unwittingly create an environment of higher mortality by favouring a higher new firm birth rate rather than letting microeconomics operate through price to reduce supply. In this, they may simply display myopia: on the one hand, existing investors who have made significant effort to know (and trust) existing managers simultaneously subject them to long-standing price

limitation and pressure to maintain the organisational structure (through the selection of key persons). So, existing firms are induced to stick to their guns and reduce exploration of other strategies that could enable the survival of already vetted firms. Combine this with negative sampling mechanisms favouring new managers over existing firms with less than salient track record (but arguably more experience) and the result may be that the overall process may prove too expensive for the industry as a whole. Because, ultimately, the low barriers create a cycle in which new firms are formed by a reshuffling of existing and neighbouring industries' executives, which will ultimately mostly expire to create fertiliser for a new cycle when capacity surges.

Only firms with high institutionalisation may escape from the power concentration trap created by imprint and investor myopia for a sustained period of time. Others may benefit from an early exit into a larger organisation, but even pricing in these acquisitions poorly reflects the organisational limitations that would have otherwise led the firms into demise. From observations, not proven in the present dissertation, I have reasons to suspect that the value of private equity firms in the long-term is only related to the size of their assets under management. And, consistent with the investor-driven value extraction mentioned above, a recent paper on the compensation of different partners suggests it is founding and senior partners who receive the lion's share of the value when firms are ultimately sold (or taken public).

The chart in Figure 1 provides a schematic of the forces that result in high mortality in private equity.

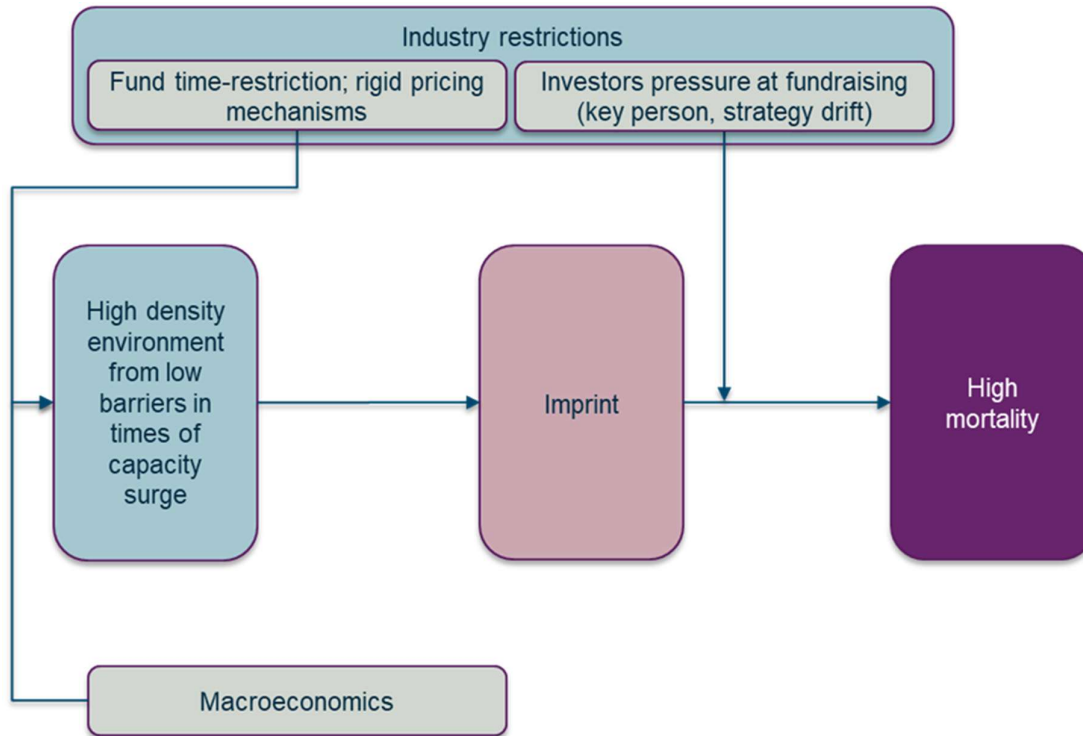


Fig 1-Imprint of organisational characteristics in the context of high density at founding, further stressed by investors' practices in fundraising cause private equity firms to display high mortality

Despite the sustained mortality and the paradoxical groundhog day preference of investors towards new firms, empirical research has mostly ignored the demographic aspect of private equity. Substantial research exists on the private equity industry, primarily focused on its impact on other industries and on performance vis-à-vis other investment alternatives. In addition, there have been numerous studies that address the key aspect of fundraising, but very few focus on the organisational aspects of it and none from a demographic perspective. None of them can answer why, if private equity is so adept at enacting change and institutionalisation successfully for others, it fails to do so “in-house” increasing the mortality rate of firms. The

object of this dissertation lies in small, subtle yet significant organisational mechanisms of social nature.

Given the lack of preexisting data, I have combined my personal observations from within the private equity industry for over eighteen years, with a thorough quantitative analysis to come up with a pilot study to address this inconsistency. I have put together my own database of fundraising events focusing on two key aspects: firstly, the data is dense as it considers granular data of the components of each organisation, i.e., the people; secondly, it is longitudinal, as the study needs to understand the evolution of firms throughout their lives.

What I have found is that at the birth of firms, the diversity of the founding partners' network is a significant predictor of successful fundraising, hence survival. The endowments by partners and fluid nature of boundaries between the private equity industry and other neighbouring industries creates a constant supply of new firms.

As firms mature, their level of institutionalisation (or lack thereof) is a significant predictor or fundraising capacity. In other words, firms that rely less on the attributes of its founders have a greater chance for long-term survival. This statement would seem hardly unusual for any industry...if it were not that only the minority of firms in this industry survive; and that death rate seems to increase. Findings suggest that there is a "power concentration trap" originated in the imprint caused at the time of foundation and fuelled significantly by long-standing industry practices that prevents firms from keeping pace with the environment.

The quantitative data in this dissertation suggests that in private equity, older organisations do not enjoy a higher likelihood of survival as Stinchcombe (1965) would suggest. And this may partly be explained by their very embryonic nature; they may not even be fully-fledged organisations but rather projects. These findings suggest a possible alternative to survival of the firm by partners actively taking a role in the survival of the firm’s genes in the constant life cycle of private equity.

As shown in Figure 2, the dissertation follows the systematic approach of a quali-quantitative study in the absence of prior research in private equity from an organisational studies viewpoint. Actually, the initial concern was about understanding the factors that affected fundraising; but as soon as I submerged into the analysis, I realised that fundraising had a profound impact on the survival of firms and that the demographic dynamics of private equity organisations did not conform with general demographic trends; this first phase enabled me to present research questions to address.

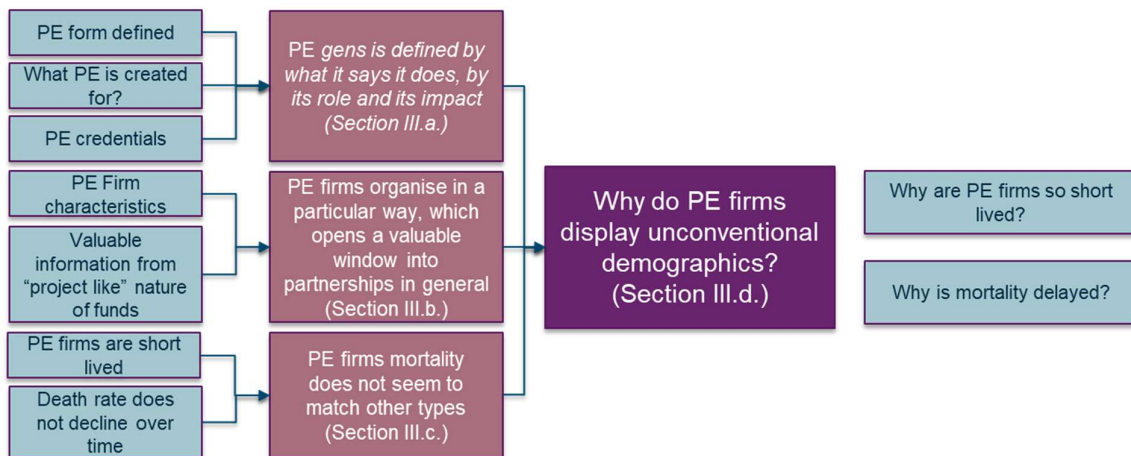


Fig 2- The roadmap that raised the research questions for the dissertation involved identifying what the form of private equity organisations is, understanding their characteristics, evaluating their demographics and identifying their inconsistencies with other types of organisations

Addressing the research questions in generalisable form required testing an existing theory through quantitative analysis of a meaningful data base. But in the absence of either of them, the study called for a two-step approach. First, in the absence of theory on organisations for partnerships and/ or private equity, I systematically conducted a qualitative analysis of potential causes nurtured on my personal immersion in the field to bring forth some granular insight. The observations were not strictly a source of data for the conclusion but rather an attempt to address the research questions. As described further in Section IV, these observations could be described as somewhere between those of a Complete Observer and that of a Non-Participant Observer (Saunders et al, 1997). Such insight was then put to the sift of quantitative analysis to test the informational quality of the observations into generalisable conclusions. It was at this point that the true nature of private equity firms emerged in my mind and that the notion that they lay somewhere between projects and full-fledged organisations was conceived. This led me to understand that the granular quantitative information of private equity could be extrapolated to other partnerships and service firms.

As shown in Figure 3, the second step first consisted in taking stock of the body of knowledge in organisational studies and state-of-the-art of private equity; then systematically looking for and tabulating data on private equity firms -which included a virtual immersion into each of them from publicly-available data-; and amalgamating the observational insight and data into a novel theory to be tested quantitatively. The theory and the hypotheses therein were subsequently tested using multiple regression.

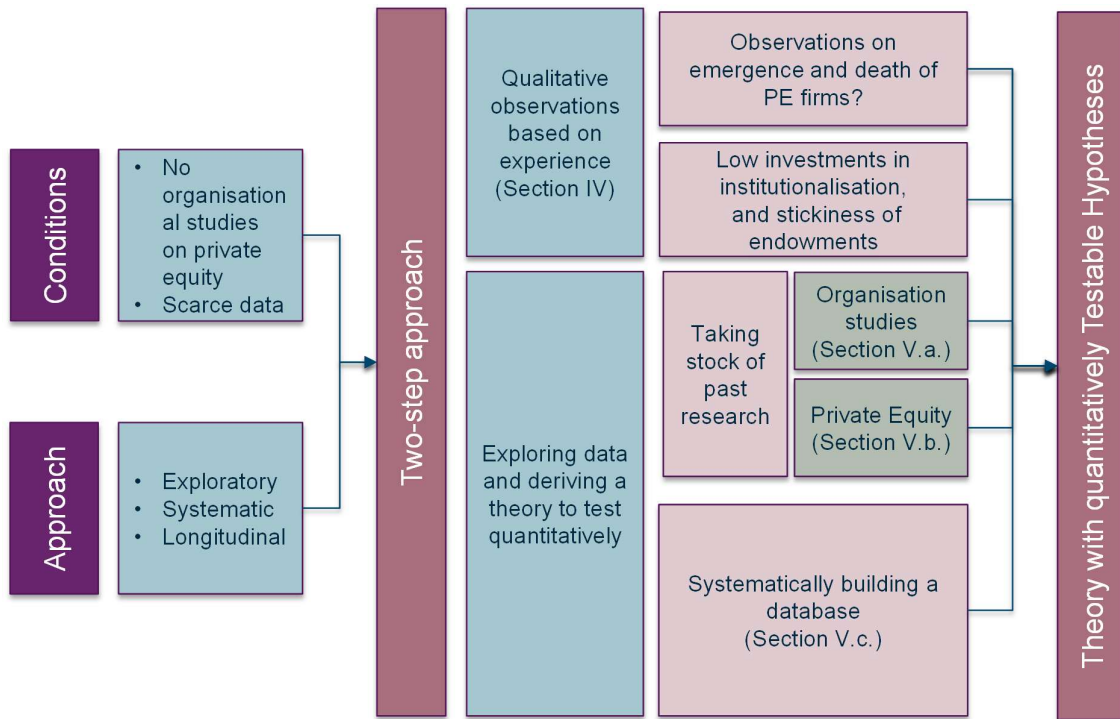


Fig 3- Deriving generisable conclusions on the survival of private equity partnerships and their extension to other similar organisations entail acknowledging the limitations in both data and theoretical conceptualisation through a two step, systematic, quali-quantitative analysis which included building an extensive databasens

Section III provides an introduction to the industry, a characterisation of private equity industry and a general analysis of private equity demographics. Section IV summarizes my personal observations on the formation and survival of private equity firms and pose the research questions for the dissertation. Section V summarizes the lay of the land in empirical evidence both on the theories affecting the formation and survival of business units is presented; and a thorough review on the literature of the industry and connected industries; and includes the exploratory work on variables following a very detailed information gathering for 114 fundraises from 109 firms and 647 executives is made to identify the variables that could explain the organisational dynamics, cleared of data insufficiency and internal correlation.

Armed with this, Section VI formulates a theory under the name “En casa de herrero, cuchillo de palo” to denote the paradox of executives showing an extremely successful track record to change other firms and failing to do so unto themselves. Section VII includes the data analysis and testing.

Finally Sections VIII and IX the discussion and outline a path to further research, respectively.

III THE ATYPICAL DEMOGRAPHICS OF POPULATIONS OF PRIVATE EQUITY FIRMS

III.a. DEFINING PRIVATE EQUITY

a) Private equity: an asset class on its own

Private equity (henceforth “PE”) is one of the alternative asset classes present in any diversified investment portfolio. Knowledgeable investors (also known as institutional investors), like endowments, insurance companies, sovereign wealth funds, pension funds, etc., allocate a portion of their portfolios to investments other than the typical shares traded in public exchanges, bonds and sovereign debt, in an attempt to achieve higher/ diversified returns. These, so called, alternative investments include real estate, commodities, hedge funds, foreign currencies and also investments in PE and venture capital (“VC”). PE and VC investments are almost exclusively the purview of high-net worth portfolios, as their minimum investment size is normally measured in millions of US dollars and, given their higher risk profile and low liquidity, a properly conceived portfolio including PE and/ or VC would necessarily be sizeable to allow for diversification. As such, all considerations of investment selection herein are based on the premise that the investment managers agreeing to contribute to a fund are sophisticated investors.

PE consists of investments in equity securities of companies not publicly traded and thus less liquid and with less available information, which makes them riskier. Since it consists of acquiring large stakes in companies, it is also referred to as “BuyOut” (or “BO”). VC consists of investments in early stages of high-risk start-up projects, which, if successful, can return capital many times over, but which, by and large, fail to see the light of day. The mission of

both PE and VC is to provide investors with long-term gains (expected to be) in excess of what other liquid investment in public equities could provide. They are even structured in a similar way and they can be seen as investments in different stages of the evolution of a company. PE and VC are sometimes studied jointly both at the industry level -for instance, the leading association of PE and VC alike in Europe is the European Venture Capital Association -as well as in academia (Harris et al, 2014). As a result, some of the reference in the literature review may refer to or include VC. A number of existing studies referenced as private equity encompass as their object both buyout and venture capital (e.g., Korteweg and Sorensen 2000; Balboa and Martí 2003; Lerner and Schoar 2003; Kaplan and Schoar 2005; Metrick and Yasuda 2010; Lerner 2010; Robinson and Sensoy 2012; Harris et al. 2014, 2020; Gejadze et al. 2017; Vanacker et al. 2020).

Other studies, when referring to private equity solely deal with buyout funds (e.g., Cressy et al 2007, Kaplan and Strongberg 2009; Sorensen et al. 2014, Bloom et al. 2015; Gompers et al 2016 Bernstein et al. 2017, Cornelli et al. 2019; McGrath and Nerkar 2023). Even a minority of studies include titles that refer to private equity, yet are focused exclusively on venture capital (e.g., Busenitz et al. 2005; Hüther et al. 2019).

This lack of clarity in the definition may stem from their common origin; from their common adoption of the limited partnership as their legal structure; from their shared category as non-publicly traded equity securities; or from the blurred limits between late venture capital and private equity (which reflect more a frontier than a boundary and could be even construed as two strategies of the same type of asset -see Cumming et al 2009). But in industry lingo, unless

specified, private equity has evolved to be considered a synonym of buyout and thus separately from venture capital.

It is this classification of private equity, that of buyout (i.e., excluding venture capital) that I base my study on.

b) The role of Private Equity is to bridge financing sources from embryonic stages of companies to well-established ones through institutionalisation

According to Berger and Udell (1998)-Figure 4-, firms are viewed through a financial growth cycle paradigm in which different capital structures evolve as optimal at different points in the cycle. As firms grow, they gain access to intermediated finance on the equity and debt side.

In this paradigm both VC and PE are the earlier forms of funding sources in the cycle, beginning with VC (or even earlier stages), going through PE to finalise, through public offerings, as public companies. This stems from the belief that innovation is vitally dependent on an entrepreneurial section, at the core of which are the different types of financing providers that companies need.

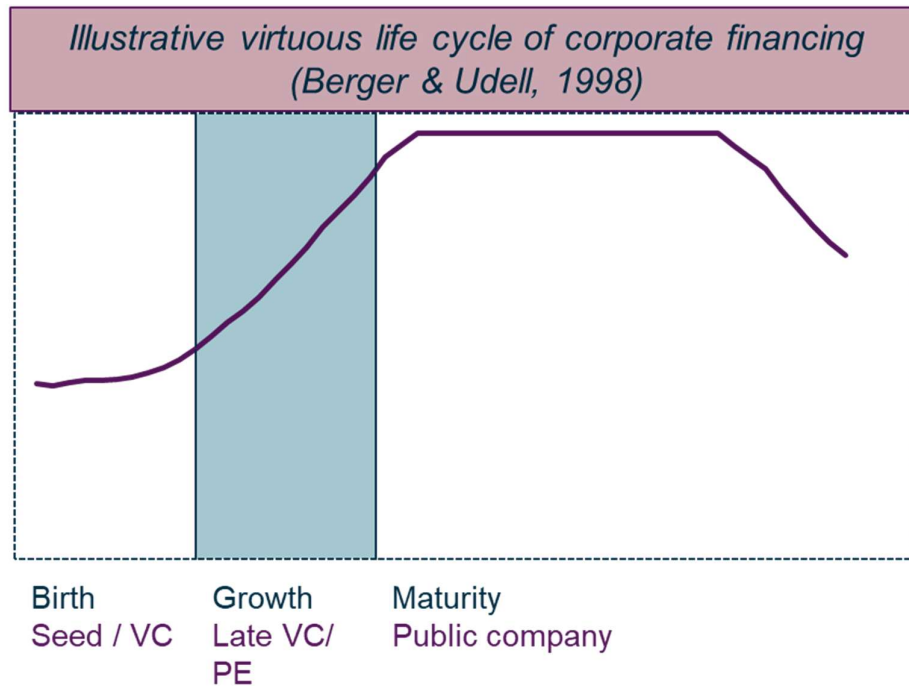


Fig 4- Berger & Udell's virtuous life cycle of corporate financing places PE and VC between seed financiers and public securities

Their different investment focus requires a distinct set of investment management skills. Along this cycle, PE provides a bridge by preparing the organisation by institutionalising it to be ready to address the needs of public investors, while supporting its growth. The contribution of PE firms to their portfolio companies is to institutionalise their know how and networks so that it continues to be adapted to their environment.

The way PE firms -we call a "PE Firm" an organisation which manages more than one fund-prepare their invested organisations comes in different fashions and is case specific. Kaplan and Stromberg (2009) indicate that on average, PE Firms add significant and permanent value to the companies they support, especially by way of improving the capital structure of portfolio companies; hiring, coaching and firing key members of the management team and developing

their incentive mechanisms; and establishing best-practices in corporate governance. Janney and Folta (2005) refer PE Firms' roles as providers of more rigorous governance practices to their portfolio companies as the latter prepare for their IPOs, enabling them to signal to the market endorsement from reputable investors. Cressy et al. (2007) contribute to their portfolio firms, through better general governance and advice, from enacting operational efficiency, and by reducing uncertainty and informational asymmetry.

c) The impact of Private Equity is related to their improving efficiency at the companies they invest in and returns to shareholders

The impact of PE has been assessed both positively and negatively in different empirical studies. In a review of PE, Wood and Wright (2009: 361) indicate that "Buyouts have variously been presented as driving more efficient use of organisational resources, or thinly concealed asset stripping, with deleterious consequences for employees and other stakeholders". In 1989, Michael Jensen published an article entitled the "Eclipse of the Public Corporation" praising the form of ownership of PE funds as conducive to more efficiency, productivity and better aligning of investor and management interests. Since then, several studies have been put forward to test his claim. Thirty years after Jensen's prediction, Morris and Phalippou (2020), indicate that although much research has been conducted, the argument of PE backed companies being better run has not been conclusively proven.

On the one hand, Bloom et al. (2015) find evidence that management practices in companies owned by PE firms rank as high as those of public companies and higher than those of family-run, founder-run and government-run companies. Bernstein et al., (2017) conclude that

industries where PE funds invest grow more quickly and that PE investments are associated with faster growth. Gompers et al. (2016) report on several studies of significant increases in productivity and operating performance. Kaplan and Stromberg (2009) indicate that private equity adds value on average and a significant part of the growth that PE-owned firms achieve during their tenure is permanent. Accioli et al. (2013) report evidence that PE-backed IPOs outperformed non-PE-backed ones in Brazil.

Other studies have focused on the human capital impact of PE investments. Antoni et al. (2019)'s study of the impact of PE buyouts in Germany report evidence of reduction in overall employment and increase in employee turnover. In contrast, Davis et al. (2014)'s study of the US market reports evidence only of modest job loss following an investment by PE firms in the corporate sector, along with substantial job creation and job losses, and increases in productivity for larger firms. McGrath and Nerkar (2023) report evidence of improved safety and maintenance practices while referring to earlier studies suggesting a neutral to negative impact of PE on environmental aspects.

But beyond the impact on the managed companies, the ability of PE investors to provide excess returns to the investor has been studied. Among the studies, Harris et al. (2014) report consistent outperformance by PE over benchmarks, if uneven. Sorensen et al. (2014) find PE performance to be superior to public equity investments, but not necessarily sufficient to compensate the added risk. Importantly, Kaplan and Schoar (2005) find PE performance to be only in line with public benchmarks, but displaying high variance among managers, which. Despite differing conclusions about the industry overall, results seem to coincide on a pattern

of high variability among PE manager performance. This would reinforce the need to select managers adequately, and therefore the need for PE firms to survive to be selected and raise funds every three to five years, also confirmed by Metrick and Yasuda (2010) and Gompers and Lerner (1997).

III THE ATYPICAL DEMOGRAPHICS OF POPULATIONS OF PRIVATE EQUITY FIRMS

III.b. SPECIFIC CHARACTERISTICS OF THE PRIVATE EQUITY INDUSTRY AND VALUE TO ORGANISATIONAL THEORY

a) Characteristics and implications of PE organisations

PE investments are not readily available like shares in the public markets for anyone to buy; in order to acquire them, substantial effort is involved in sourcing the transactions and negotiating the acquisition. Similarly, after acquisition, substantial effort is required to monitor and/ or transform the underlying companies, to find potential alternatives for exiting and negotiate their private or public sale. As a result, investments in PE are only economically viable if a sizeable investment is made. This is undertaken by the PE manager, who raises PE funds from highly specialised investors.

VC and PE share several traits that merit their consideration as close relatives. Both share a common structure of authority, a common mission (to provide investors with long-term gains in excess of that generated by other, more liquid investments), a common compensation structure (highly geared towards a share of the profits), similar marketing (to specialised investors). Sorensen et al. (2014) summarise the four key institutional features of PE: risky, requiring an additional premium to public equities; management is delegated, compensated by a type of option; manager needs to generate sufficient risk-adjusted alpha.

According to Gompers and Lerner (1997 and 1999), from the first modern VC firm -American Research and Development, in 1946-, in terms of their structure of authority and compensation

structure, both PE and VC have generally evolved into a similar legal form, which -adjusted to different geographies- has the key characteristic of being time-limited and differentiate between the investors (Limited Partners or “LPs”), who contribute capital taking a passive role and limiting their liability to such contribution, in a manner not dissimilar to shareholders in a corporation; and the investment manager or general partner (the “GP”), who takes the active role of selecting, managing and disposing of the investments. These limited partnerships, which were still a minority of the venture pool in the 1960s and 1970s, became the most common of these legal constructs according to Metrick and Yasuda (2010), when the changes in the Department of Labor legislation regarding pension fund management and tax changes favouring long term investments gave a strong boost to the industry (Gompers and Lerner, 1997 and 1999).

Each PE fund is typically structured as a separate limited partnership -Figure 5-, after which the fund is liquidated. The GP organizes itself in a firm, which raises and manages one or more limited partnerships and is compensated with a combination of fees and a portion of the value created (known in the industry as “carried interest” or “carry”). The most common compensation agreement is 2/20/1, where management fees are set at 2% of fund commitments; carry, at 20%; and the GP contributes 1% of total commitments out of their own pocket (Robinson and Sensoy, 2012) and that this combination reflects the skills, agency concerns and demand for PE manager services. Buchner and Wagner (2017) suggest that both the combined fees and carry structure and the expectation of fees from successive fundraising mitigate potential excessive risk taking by the PE Manager.

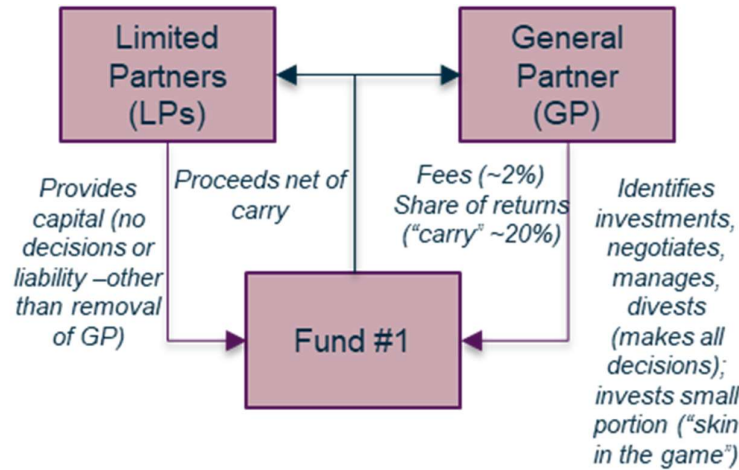


Fig 5-The structure of a typical limited partnership

PE managers are highly specialised and do not manage liquidity; they receive binding commitments from investors, which they draw upon, when they identify and negotiate an opportunity; that is, an LP commits to a certain amount (the total commitment) and funds it as the GP sends drawdown notices, with the unfunded amount usually being termed the “Dry Powder”. This has a relevant implication: LPs do not know ex-ante, what their money is going to be invested in, so they have to rely on the GPs’ capacity to secure valuable deals.

Since they do not manage liquidity, VC and PE funds are required to distribute the proceeds from each investment out to investors, as they are received by the fund (rather than reinvesting them), which has resulted in funds being legal constructs limited in time for a specified number of years (typically, but not exclusively, ten years).

The provisions governing PE Funds are specifically agreed upon with the investors in limited partnership agreements, or “LPAs”. Partnership agreements generally establish limitations upon the raising of a new fund until a certain percentage of the committed capital of the prior fund has been invested, to ensure that GP pay sufficient attention to the interests of the investors. Since most PE and VC LPAs provide for a 10-year term, divided into a 5-year investment phase and a 5-year harvesting phase, it would generally be expected for a GP to raise a new fund every no longer than 5 years.

The fact that each fund has limited life (every time an investment is sold, the proceeds are distributed to investors, rather than re-invested) has a significant impact on the organisational structure of a PE firm; it makes the concept of fundraising critical for the survival of a PE firm. That is, a GP engaged in managing PE needs to raise a new fund every so often to ensure a constant flow of fees and carry to survive. Failing to do so, would preclude a GP from attracting executives to undertake the activities of sourcing, negotiating, closing, managing and selling investments. Cornelli et al. (2019) suggest that firms failing to raise larger funds experience extensive staff turnover and ultimately become troubled. Finally, in order to manage the career of executives and avoid cannibalisation of fees and carry among the members of the GP, a GP would be expected to raise newer funds of sizes equal to or larger than the prior ones. Froud et al. (2012) found that the nature of a PE firm, with so many relevant decisions distributed among the partners requires a very high level of trust, but that such trust is brittle and easily broken when mistakes are made.

Figure 6 shows an illustration of what the total management fee revenue of a PE firm with the standard “2/20/1” economics configuration would look like over several years, assuming whether the PE firm is successful or not in raising a new fund and depending on the size of the subsequent fund.

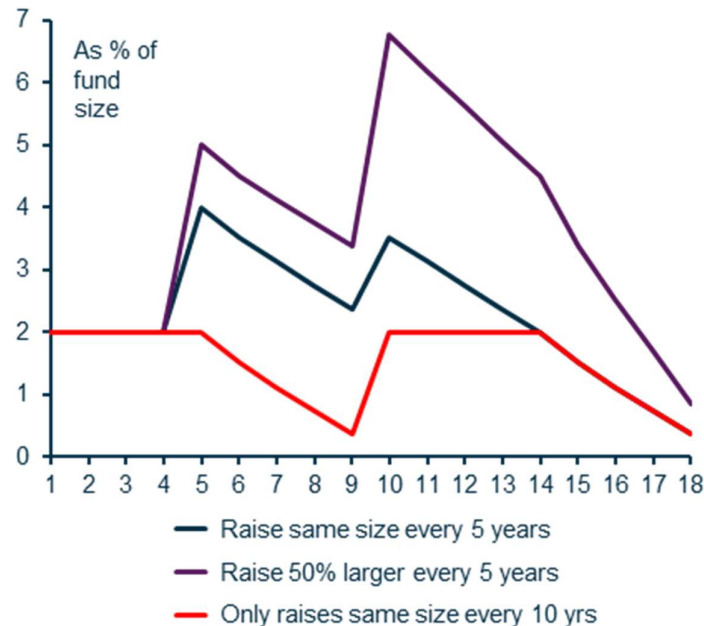


Fig 6-an illustrative chart showing the typical flow of management fee revenue, based on a standard 2% of commitments fee arrangement, and how total revenues to the PE firm would evolve if the firm raises only a similar fund every ten years (red), a same size fund every five years (blue) or a 50% larger every five years. Note how the total firm fee revenues decline -putting pressure on attracting investment professionals- if a new/ larger fund is not raised in a timely fashion

Given that demand for PE funds rises at times of economic boom and that successful PE managers are scarce, the question of raising the amount of GP share in the economics (fees and carried interest) naturally arises. Empirical evidence by Metrick and Yasuda (2010) suggests that GPs do not usually respond by increasing fees; there is a certain inertia in the stipulated contracts (they have evolved from Venetian Merchants in the Middle Ages), but instead look to raise funds of greater size. Hochberg et. al (2014) suggest a possible explanation underlying

this inertia, by pointing out that since fundraising occurs in a context of asymmetry with current investors holding more information about the manager than prospective investors, the former put pressure on the manager not to raise fees.

PE or Buyout firms can hardly be considered all the same; as a vehicle to assist business to navigate from more embryonic stages to a more developed entity, different strategies emerge. Classifications may involve whether they are industry specific or agnostic; whether they are focused on growth investment or value investment; regional focus may be broader (even global) or specific to a State or region. Hoskinsson et.al. (2013) classified firms based on their use of financial leverage and their exploitation of a broad industry scope or a niche and identified different waves in the development of PE, which were first characterised by finance-oriented players, then operations-based, drawing on resource based theory. This is consistent with McGrath and Nerkar (2023) report that founders with financial background emphasise financial value and founders with operational background, emphasise operational value.

Despite the pivotal role of fundraising for the survival of PE firms, studies focused on this process has been limited. Most of them have approached the subject from the perspective of traditional economics but few from the viewpoint of organisational demographics. A study by Lahr and Trombley (2020) on VC fundraising success focuses on the perceived quality of the underlying investments, but no attention has been given to the firm in it. Whilst the study of context and past performance have provided valuable insights, the mechanisms that enable investors to tell a PE manager from another beyond performance have been largely overlooked

by empirical studies. This is especially relevant as most PE firms are single-fund firms, i.e., they have no prior track record to show.

The table in Figure 7 below shows the variables employed in main studies addressing fundraising. As it can be seen, none of them has focused on organisational structural attributes as an independent variable:

Research	Independent variables	Fundraising success
Gompers and Lerner (1999)	Regulatory and tax incentives	New Funds raised
Balboa and Martí (2003)	Macroeconomic indicators, Industry volume, IPO volume	New Funds raised
Balboa and Martí (2007)	Managers experience, investment activity	New Funds raised
Barber and Yasuda(2017)	Age, Size, Interim Performance	Hazard measure of fundraising
Gejadze et al. (2017)	Investment specialisation: stage of investment, industry, geographic focus	Fund size, time since prior, Dummy of new fundraise
Vanacker et al. (2020)	Unrealized and realized performance	Dummy: of new fundraise
Lahr and Trombley (2020)	Style drift, follow on investments, investments in which the firm is not the lead investor	Fund size

Fig 7-list of relevant industry research focused on explaining fundraising; none of the identified independent variables were descriptive of the organisational dynamics at the PE firm level

b) Why study Private Equity?

From an organisational perspective, understanding PE firms by studying the process of fundraising can shed light where the study of corporations as organisation types, may create barriers. Limited partnerships have features that make them attractive like defined compensation for an individual project, during the entire life of the project (fund), which can be observable and verifiable (Gompers and Lerner, 1997), through legally separated and reported information, allowing the use of comparative information and benchmarks; and on the individuals responsible for the outcome of such investments (Gompers et al., 2009). Moreover,

projects/ funds are measured individually over time without cross subsidies among them, as rules are externally enforced to preserve the interest of different investors separate. Finally, pressure by investor in defining who among the members of the GP is a “key person”, which affects the economic attribution of compensation to each of them (their “carry allocation”) provides valuable hard data on organisational dynamics.

III THE ATYPICAL DEMOGRAPHICS OF POPULATIONS OF PRIVATE EQUITY FIRMS

III.c. PRIVATE EQUITY POPULATIONS AND ORGANISATIONS

Despite the substantial impact that PE Firms exert on business and on their investors, and the benefits in measuring data set forth below, there is no precedent in literature of a study of PE from a demographic perspective. This becomes both baffling and urgent, when we realise that most PE firms fail to raise more than three funds.

Accessing population data on PE firms has not been easy. As mentioned before, understanding PE organisations and their survival requires us to focus on the key process of fundraising. Even there, looking at fundraises has its limitations.

Preqin is a private investment data company that provides data and insight on alternative assets. As of May 13, 2022, its data base recorded 46,856 fundraises of private capital. These capital fundraises span activity recorded from 1971 until early 2022 for a number of alternative assets globally. To start making sense of PE it is probably advisable to look in North America, because it was in the United States that they originated and later became more profuse, especially bolstered by two regulatory changes: the clarification of the prudent man rule by the Department of Labor in 1979, which made it possible for institutions to invest in PE; and the 1993 reduction in the tax rate applicable to PE investments (Gompers and Lerner, 1997).

So, of the total fundraises recorded by Preqin as of May 13, 2022, PE fundraises totaled 21,204, approximately half of which were raised in North America. Disregarding fundraises of funds aimed at investing in other funds (Funds of Funds), the total number of records for PE firms raised in North America was 7,382. This relatively limited number is still a large sample when one considers that another prominent data base, reports performance on PE in the USA calculated on a base of 3,741 funds as of June 30, 2022.

Information on the 7,382 reported needs to be considered with care. For one thing, data is reported voluntarily by fund managers, so, although managers would typically like to see their activity reported by the prominent information service, any assertions made on the base of this data need to consider its inherent sampling limitation. In addition, as Preqin has gained recognition over the years, it is highly likely that fundraising occurrences are reported more profusely in recent years than before, as can be seen in Figure 8.

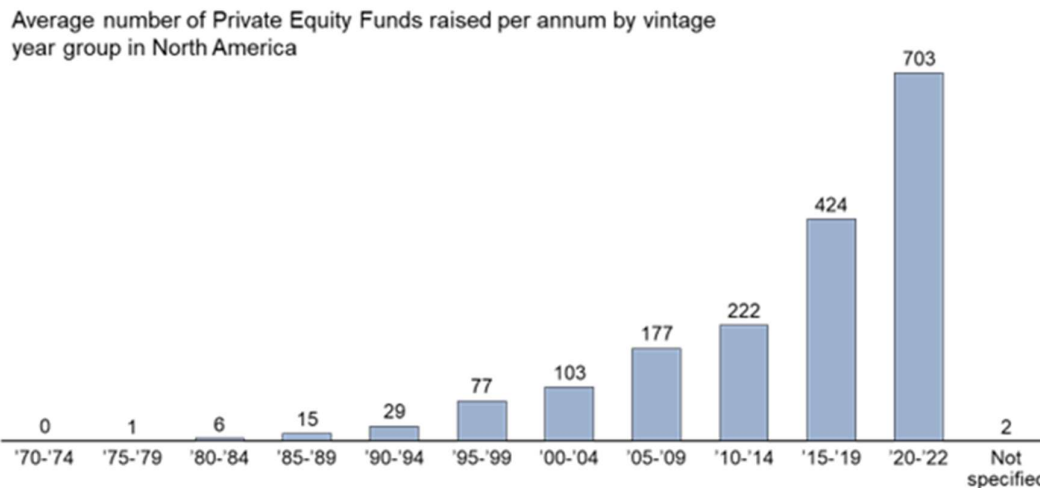


Fig 8. An analysis of average reported fundraises by five-year vintage groups based on Preqin funds base as of May 13, 2022 shows a steady increase in PE fundraising

Even though, from a population perspective the data needs to be handled with care, from an organisational perspective, the underlying dynamics are still valid to explore. For instance, the inherent sampling limitation of the database suggests that it is either funds which failed to complete their fundraising or firms that failed to survive by raising later funds that are not captured in the reported population. This would entail that any conclusion on the survivability, if anything, would be further stressed if perfect population information was available. As the chart in Figure 9 shows, even when looking solely at the reported fundraises, we see that 70% of firms only raised one, two or three funds. To stress the point, 39% of the firms raised only one fund (which would be tantamount to saying that they only survived for roughly 5 years). This percentage would likely be larger if we had access to all the population.

Private Equity firms by number of funds raised in '71-'22

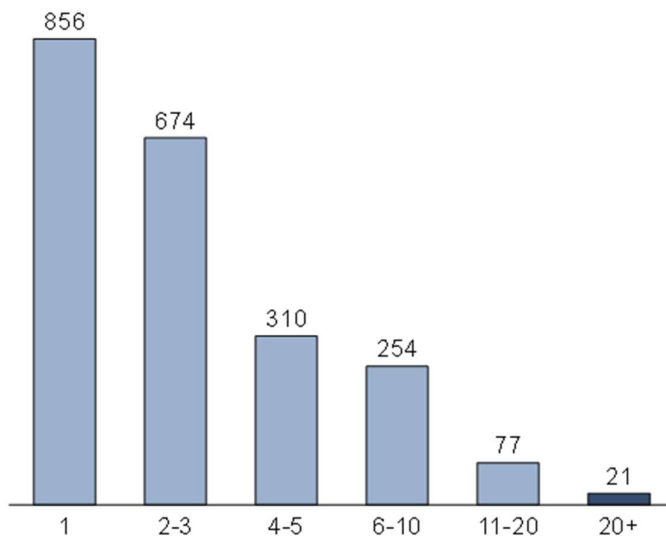
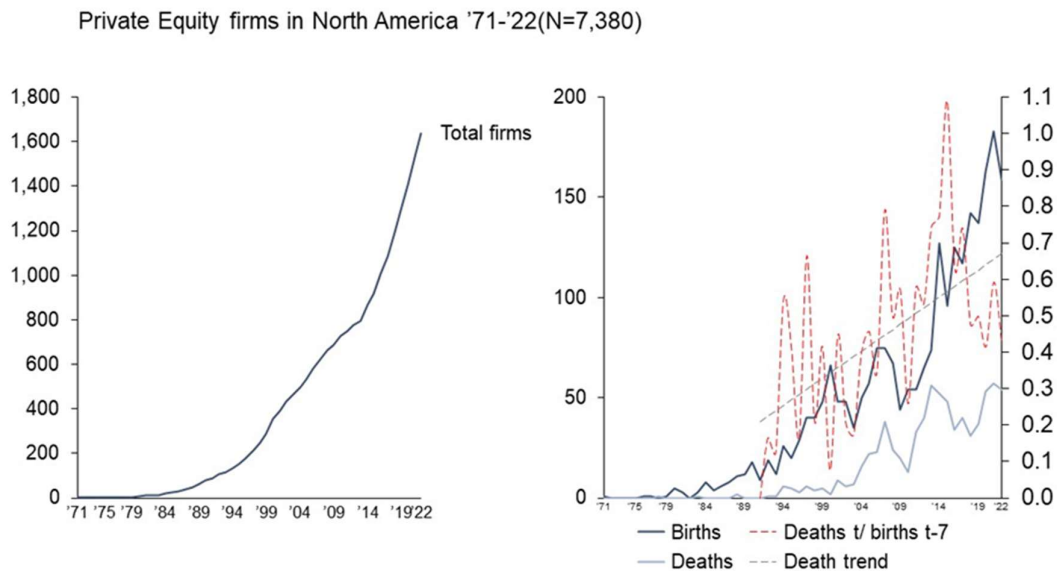


Fig 9- An analysis of funds raised by North American PE firm based on Prequin funds base as of May 13, 2022; 70% of the firms have not raised more than 3 funds, which means they are only embryonic types of organisations

Another interesting revelation from Preqin’s base is that 83% of the funds raised, which reported the type of legal structure, were limited-life organisations, consistent with previous academic literature mentioned above and relevant for the study of survivability of firms.

The key in analysing the survivability of PE firms is to consider how long a firm can reasonably remain alive without a subsequent fundraising. Although the ultimate answer to this is firm-specific as it relates to the capacity and desirability of partners to remain affiliated to the specific PE firm, as well as to the personal alternatives they face, based on the analysis in Figure 6, an assumption could be made that a firm that has not raised a fund in five years is dead, dormant or zombie, as suggested by both Metrick and Yasuda (2010) and Gompers and Lerner (1997). Adding a safety margin to the analysis by considering the magical number to be seven years, the chart of alive firms, births and deaths would look like the ones in Figure 10.



Fig

10-an analysis of PE firms operating in North America using the assumption of the need to raise a new fund every seven years based on the Preqin’s fund base as of May 13, 2022. The graph on the left shows the steady creation of new firms; a closer look at the dynamics of births and deaths shows how the death rate (as a percentage of births seven years before) trends upwards rapidly

The charts in Figure 10 show a positive trend accelerating in the XXIst century².

A closer look shows that there is an acceleration of the death-to-birth rates (lagged by 7 years), suggesting that survivability of PE firms is becoming increasingly challenged. What then becomes evident is that despite their role in financing the evolution of companies and the overall positive impact identified with them, PE firms are by and large short lived. Although there may be multiple reasons as to why this may be the case, the answer may lie in the organisational structure of the PE firms and of the industry constraints that shape them.

The statistics in Figure 10, above, also suggest that the death rate of PE firms (i.e., the ratio of deaths in year n to the number of firms in the industry in year $n-1$; and also calculated for firms in year $n-7$) has fluctuated but in no case declined. In other words, the mortality -which can be seen in Figure 11- does not follow a traditional pattern. Mortality in PE firms does not seem to decline with age.

²² Although the increasing death rate may be affected by the inherent sampling limitations mentioned in the preceding paragraph, the fact that very recently more funds have been reported as raised -especially since 2015- makes the death count lag as some of those firms should exit the population after the horizon under review. At any rate, when a firm starts to report on Preqin, it typically reports back to their past funds, so a part of this sampling limitation would likely be mitigated.

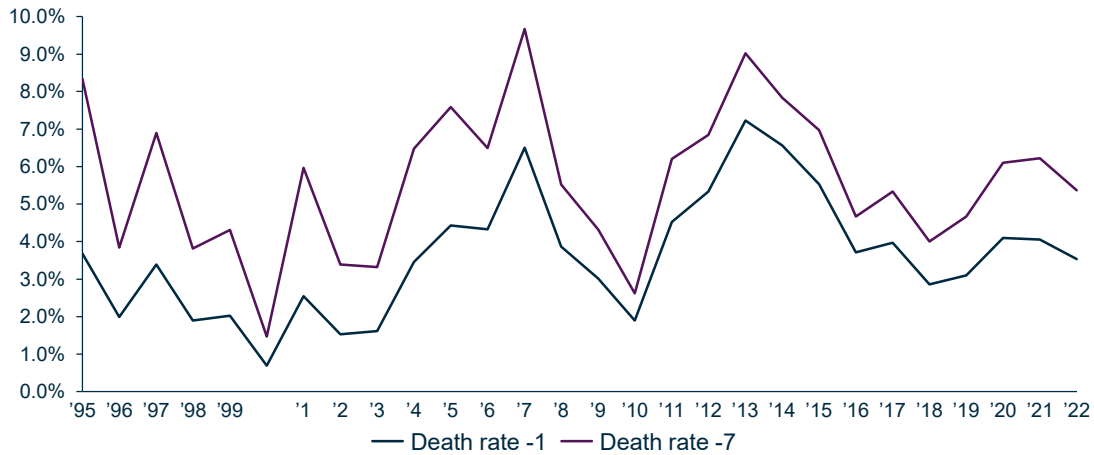


Fig 11-evolution of PE firms' mortality over '95-'22 period computed based on the size of the population the year before and seven years before. The mortality in the PE industry does not seem to decline with age.

The still high birth rates partially mask what would otherwise be an increase in death rates.

The death to 7-year-lagged birth rates have averaged 63% in the 2012-2022 period, suggesting that were it not for the intense environment of constant birth, death rate would not only remain stable (as opposed to that of other industries), but rather grow with age.

Since the present analysis is not based on total population but an estimation of the number of PE firms in the US, a proper demographic analysis using the tools conceived for total populations is not possible. However, the significant size of the base and the resulting estimations enable valuable preliminary conclusions regarding the fact that the mortality of PE firms seem to increase with age, as opposed to Stinchcombe's postulate of the liability of newness.

III THE ATYPICAL DEMOGRAPHICS OF POPULATIONS OF PRIVATE EQUITY FIRMS

III.d. RESEARCH QUESTIONS: WHY IS PRIVATE EQUITY FIRMS DEATH RATE NOT FALLING?

The preceding description of the PE industry and organisations provokes relevant questions to guide research:

- a) What is the reason behind the observed constant death rate of private equity firms?*
 - b) If PE firms are credited with such an overall overwhelming positive impact on both the industries they affect and on their investors, why do PE firms fail to use their skills to curb their death rate?*
-

IV QUALITATIVE ATTEMPT ON THE REASONS FOR THE ATYPICAL DEMOGRAPHICS OF POPULATIONS OF PRIVATE EQUITY FIRMS

IV.a OBSERVATIONS ON THE SURVIVAL OF PRIVATE EQUITY FIRMS

Beyond the cold aggregate numbers of organisation populations, the social mechanisms that cause demographics to behave that way are best understood by looking deep into the workings of organisations. The present chapter describes my personal observations on the organisational dynamics in the industry. I base these insights on qualitative observations from my involvement in the PE industry for over eighteen years with a focus on the operations of firms in Latin America.

These observations are not intended to result in quantitative data and have not therefore followed a structured approach. The process I followed could be described as unstructured and half-way between that of a participant and an outright observer (Saunders et al., 1997); this is so, because as an industry incumbent I cannot rule me out as a participant; but since, to avoid observer bias, I have decided to use data on North America, I can neither be claimed to be a full participant. Assuming this ethnographic involvement allows for my high level immersion to attain a nuanced understanding of the social situation. Following the broad description of the observations identified in Private Equity in this Section IV.a. I have looked for observable patterns in Section IV.b. and have supplemented them in the resulting theoretical Section VI with the information obtained from the Literature Review in Section V.

Understanding the demographic dynamics of PE firms requires making sense of the interrelation between the capabilities gap in the corporate sector. This gap creates an opportunity for PE firms to be formed by executives and for investors to deploy capital. The interaction between these two groups primarily occurs in the fundraising phases along the lives of the PE firms.

a) The emergence of the PE opportunity for investors and executives

i) The capabilities gap in the corporate sector creates the opportunity...

As discussed in Section III.a., PE firms fulfil a role in the corporate markets, enabling growing companies in their portfolios to structure themselves into institutionalised, process-driven organisations, reducing their risk profile and hence their financing cost. The PE contribution to their portfolio companies can be better conceptualised as replenishing the endowments or organisational capital which is eroded as time goes by. The emergence of opportunities in PE coincides with increases in the overall growth of the economy and the expectations surrounding the public equity markets, that improve the outlook of portfolio companies but at the same time, puts pressure for them to adapt to make the most of environmental changes.

Opportunities in the market create a sudden surge in capacity that affects the demographics of the industry in a manner different from the generalised downward sloping mortality cases -see Carroll and Hannan (2000)-. Instead, as shown in Figures 10 and 11, the pattern of mortality seems to fluctuate around a stable 4-5%.³

³ just like a springtime surge in temperature causes the population of mosquitoes to suddenly increase, only to fall with an equally sudden drop, market conditions favouring PE firm emergence causes the total population of the industry to increase into a second, third and subsequent waves of cohorts, fluctuating upwards before declining.

The PE industry therefore displays a “fluctuating carrying capacity”, rather than a stable one; and over the past few years, capacity has been in a growing phase. As markets give subsequent waves of cohorts a chance to enter from neighbouring industries, the generally declining shape of the population curve is given a breath of air to see their numbers increase, creating the fluctuating pattern and showing, in certain periods, upward curves. The newcomers in these periods are entering in a context of high density, reaping the benefits that being actors in neighbouring industries provide and of the interest by investors in novel players.

ii) A new alternative for investors

An increased number of opportunities bestowed by a surge in the carrying capacity moves more investors to demand private equity investments from established players; that is, if they have the access to them. However, in such a context of constrained supply from incumbents, investors will also patron newcomers. What’s more, in the frenzy to deploy investments into the growing PE space, investors look to new PE firms with better eyes than previously existing PE firms with poor past performance.

The process that investors conduct to assess incumbents and newcomers is fraught with noise. Firstly, information is scarce; finding a benchmark to test the performance is challenging, funds in PE (as in VC) are not invested on day one but rather over an investment period so that even comparing with funds raised in the same year (“Vintages” in the PE parlance) and may not be directly comparable. Without better information, investors tend to evaluate the performance of the prior funds of the same manager, which are, more often than not, largely unrealised, so they

need to rely on interim information. Finally, since investments are made for the long-term (as a result of the transformational processes in the underlying assets) remain illiquid for years, pressure mounts on the investors to make solid decisions. In the case of newcomers, information is non-extant to investors need to rely on signals from the partners forming those new PE firms in terms of their knowledge, network, commitment and ethics. And they will pay particular attention to endorsement from third parties to signal the quality of such information.

iii) A new alternative for executives

From the viewpoint of the PE Firm formation opportunity, successful executives operating in neighbouring sectors leverage their network of connections and expertise to profit from the increase demand for capabilities. They do so by raising funds from investors and make investments in target companies, (henceforth called “Portfolio Companies”), to source them, transform them and negotiate the investment and divestment transactions. The private nature of these investments makes information about them scarce, too.

The lack of publicly-available information on prospective portfolio companies requires substantial efforts by the managers to put together a mosaic of less-than-perfect data. Often times, gathering information about potential transactions or information to assess them requires executives to tap on their networks. This effort (and capabilities) means that the effort is only economically viable to do it if the acquisition is sizeable enough. And they need to be sure that, when the time comes to execute the acquisition, the investors will be there to provide the funds.

GPs launching PE efforts partially reduce the inherent risks of these investments endowing valuable “sweat equity” (i.e., their experience contributed into the firm) for some time, attracting other younger members in similar lower-cash outlay arrangements, effectively temporarily protecting the firm from demise. These capabilities of PE managers constitute, to a large extent, a hard-to-codify knowledge as the environmental conditions are constantly changing and transferring knowledge requires direct observation.

Beyond the very specific set of skills associated with a particular strategy or industry, I have observed two key characteristics of PE managers to succeed: fundraising capabilities and “investment versatility” in balancing emotional attachment to the investment and rational/critical assessment of it.

The key role of fundraising for a PE firm entails convincing investors that the partners of the firm have the right capabilities of knowledge and access to information to cause the transformation in the portfolio companies that will result in profitable investments. This activity can be integrated with the investment function or managed by specialised partners. The degree of integration depends on the closer or further the investment process is to the specific assets.

Whichever way the function is arranged, fundraising means essentially “selling the fund”; it comprises both the actual process of reaching out to potential investors to promote the funds and the inter fund marketing activities (media or reporting, investor relations, etc.). It requires

adequate communication skills that both engage the investors and can interact with them in a specific code or language. It aims to convey to investors the merits of investing with the manager, which depending on the type of PE fund, may involve a deep knowledge of specific assets (secondary funds), of specific strategies or processes (Funds-of-Funds) or the capabilities of the Firm (traditional buyout).

Investment Versatility has to do with the investment mindset that the executives need to display at different stages in the life of each company. That is, a PE Firm's investment process consists of essentially acquiring, managing and selling companies. Each of these three processes require specific skills, some of which may conflict with one another. Investing requires having access to deals, knowledge of industry process and economics, capacity to evaluate the deal and negotiate the lowest possible price. This phase requires PE managers to simultaneously develop interest/ attachment to the opportunity (to understand the upside) as well as an acid/ skeptical stance towards committing to it (to understand the risk and seek the lowest possible price). These two stances entail a conflict in itself, by simultaneously requiring the executive to be emotionally invested to generate the energy to promote the investment and cold and detached to assess its merits rationally. In turn, managing the investment requires a direct involvement in the asset or the team managing the asset, deep diving into multiple specific issues, creating empathy but also shunning a more forest-type view of the investment. This empathy or attachment has to partially replace the acid/ skepticism in the prior phase. Finally, selling the investment requires understanding what the investment value is to the market participants, the ability to communicate such value, to access potential investors (or channels, in the case of IPOs) and the ability to successfully negotiate the highest possible sale price. Selling is a

process that i) needs to be conducted from the acquisition phase -the firm needs to be conscious of the need and possibility to sell at every juncture- and ii) needs to be built into the wider portfolio strategy of the firm -e.g., a sale may not maximise the individual value but may reduce the overall portfolio risk-. This readiness to sell implies another conflict with the empathic/emotionally involved stance in the prior section, so much so, that one can obscure the other.

Investment Versatility may also be located at the partner level or at the firm level. Put it another way, a firm may have an “acquisition team”, a “management team” a “divestment team”, with each taking over in the right phase. A common practice is clear to see in the management phase, in which firms often have “Operating Partners”, who oversee the investment, rather than “dealmakers”. These Operating Partners typically have industry expert knowledge or functional knowledge (IT, processes, marketing, etc.). This approach, however, may stress the conflicts described before. Aside from the internal conflicts that may appear within each phase, having different teams take over in the different phases may cause friction as a partner (deeply involved) may not see the investment as ripe for exit while another may see the opportunity as it contributes to the portfolio; however, the latter may have “surface level knowledge” only, whilst the former can get into a more intelligent discussion of second and third derivatives of the potential outcome of a sale process.

Having a versatile partner who can handle all three processes is the Holy Grail. This “Investment Mindset” requires the person to become excited and turned off alternatively in the acquisition phase, to become deeply involved in the managing phase, and to constantly have an eye on sale opportunities. It is easier said than done, but it may be worth aiming for. The

natural supplement to this nice-to-have/ hard-to-get alternative is to clearly define the role of other partners along the process to act as cooling down mechanisms in the acquisition phase, provide the forest view in the managing phase, and the time keeper role in the portfolio management process overall.

iv) Eggs, tadpoles and frogs to address the opportunity

The “fluctuating carrying capacity” of the PE industry creates a situation in which PE firms in their initial phase are better regarded as projects and only upon confirmation of their survival be seen as fully-fledged organisations. Like tadpoles and frogs⁴, they are the same organism, but only those that live into adulthood will survive with their feet on the ground. One could even expand the analogy to eggs, to characterise the proto-organisational phase of PE firm preparation which precedes their existence as projects and which consists of the evolutionary *de alio* entry from a neighbouring space.

This dissertation seeks to analyse the evolution of PE firms along their different phases: young firms or “tadpoles”; established firms or “frogs”; and introduce the concept of death of PE firms. For the purposes of this study, I have omitted the “egg” phase of failed first fundraises on account of the limited information.

The next two sections provide a summary of my observational insights into the birth of a firm (the initial funds) and the formation or institutionalisation of firms.

⁴ The concept of tadpoles and frogs was conceptualised by Laszlo Polos upon discussion of this facet of PE firms

b) Observations on the birth of a PE firm

i) Birth of a firm described

As discussed before, the birth of a PE firm occurs in a context of positive economic cycles in which a sprint race is unleashed to secure a portion of the opportunity. This increases the “carrying capacity” of the industry. Tempted by the opportunity, executives in neighbouring industries put to work their capabilities to raise a fund. In so doing, they reach out to potential investors aiming to project signals about how their prior experience and networks can result in positive investments; given the surge in capacity, they may also “piggy-back” (contagion) on the positive stories of established PE firms. In addition, they seek endorsements from relevant investors, agents and other trade partners.

The fundraising process can be characterised as a “two-step dance”, in which the manager first seeks the support of anchor investors to break the colossal barrier of raising the first fund; that is, attracting anchor investors is beyond a mere source of funds. In the absence of hard information about the newly created partnership, having anchor investors is valuable as an endorsement of the genuine quality of the manager.

Bringing anchor investors into the fold typically entails bouncing the idea for a fund or strategy with the manager’s closely-knit network who have seen the manager in action (albeit, in a slightly different one in the neighbouring industries). In a way, the anchor investors are themselves entering *de alio*; they are an investor, but with a greater bearing on the firm. This greater bearing stems from their sizeable initial fund contribution but also from the fact that

the intimacy with the founders cause the latter to adopt styles, policies, routines, etc., codes that are known and acceptable to the anchor; that is, the anchor shapes or co-creates the firm as well.

Once anchor investors have committed to the fund, finding additional investors relies, *ceteris paribus*, on displaying the endorsement of anchor investors. At this stage, the assessment of the founders' skin in the game becomes the key indicator for commitment to the endeavour; and the endorsement by anchor investors, the third-party stamp of approval. Needless to say, the anchor will unwittingly be ultimately affected by the outcome of the investment beyond the financial return, as a provider of such endorsement.

Investors decisions to commit to a fund entails first allocating a portion of their portfolio to the asset class PE (and possibly to a sub asset class like PE in the US); and only that major decision has been made, to screening the manager along four categories: (Figure 12):

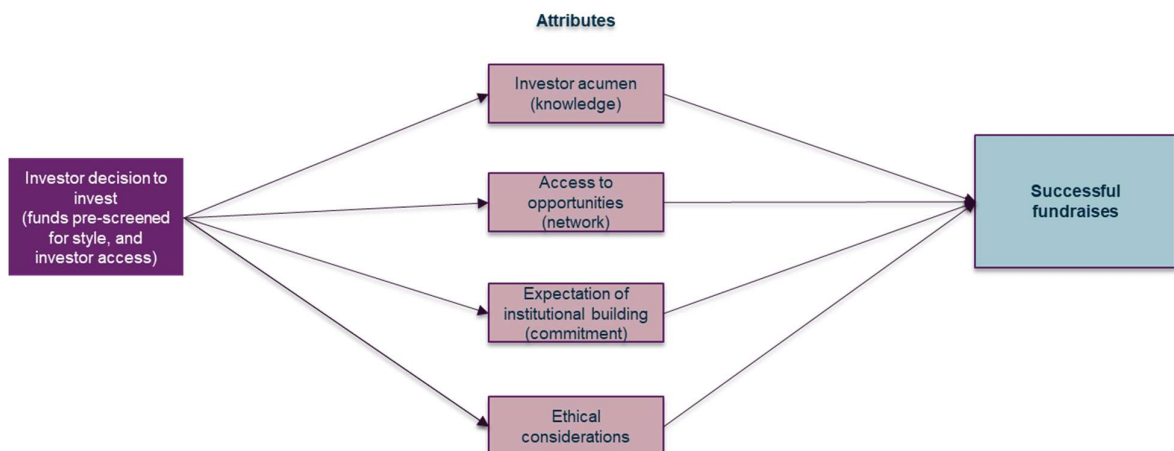


Fig 12- Investors screening process

i) the investment acumen of the GP, in other words, its perceived capacity to make investment decisions that are better than its peers or any other measuring rod. I term this as “Knowledge” and it responds to investors’ question: “will the manager know what to do with my money?”

ii) the access to investment opportunities; I mentioned at the beginning that by their nature, PE investments require much deal to source, they are not available over the counter. Therefore, networking to originate investments, also to find potential buyers, sources of financing and credibility to exit at the IPO markets is relevant. I term this “Network” and it responds to investors’ question: “will the manager have valuable opportunities to invest or will they be sitting on my money?”

iii) the expectation of institutional building comes from the long term, illiquid nature of the investment. Investors are blind as to how long GPs will be there after they commit their funds and whether they will be there for the long run. This “Commitment” from GPs can signal the absence of initial organisational capital and it responds to investors’ question: “will the manager be there to look after my money in the long run?”

i) The fourth element is the “Ethical” dimension. It responds to the investors’ question: “will the manager walk away with my money or do anything unseemly?”. The ethical dimension comprises the evaluation of whether the policies of the manager fit with the values of the investor.

This topic has been expanded in the past two decades to encompass a wealth of “generally accepted” minimum principles regarding environmental concerns, governance practices to protect minorities and social issues. But beyond the more “check the box” nature of general

practices, ethics relates to the possibility of the manager putting its own interests ahead of those of the investors. Although extremely relevant, I believe this is a go/ no-go lever and therefore assume, along with the access and style, that is there all the time (or conversely, that when not perceived, no investment is made with the GP)

ii) Observed patterns in PE Firm formation

Given the volatility of the opportunity window to create a new PE firm and the number of limitations imposed, GPs are only able to form half-baked partnerships managing a first fund; they do not invest heavily in creating their own PE Firms⁵. Furthermore, This lack of investments precludes the PE Firm from crystalizing its own organisational capital. The. As *de alio* entrants, GPs do not identify fully with the category; they are “former bankers”, “former consultants”, “former C-level executives of so and so”, so their membership to the private equity category is not yet fully crystallised.

That is, endowments of the partners stick to them rather than to the PE Firm while they assess whether the gamble is a value generating one for themselves. This “toeing the water” attitude and the postponement of judgment on whether the venture will see the light of day precludes efforts to invest in organisational capital and locks in a brittle organisational structure. The poor organisational capital bestowed ultimately lowers the probability of creating a PE Firm beyond the first fund.

⁵ The formation of PE firms emulates r-selected species emergence in biology (Pianka, 1970). R-selected species are governed by their maximum reproductive capacity, produce numerous new members to the population exponentially, but mature rapidly and have short life spans. R-selected species are contrasted by K-selected species, which fluctuate near the carrying capacity of the environment where they reside and have typically longer gestation periods to make a greater genetic investment to their offspring

From the perspective of the investor first time fundraise efforts focus on obtaining information about the GP's capabilities to provide superior returns. Since the economics of PE firms are rather stable and emergence is sudden, a shortage of PE firms supply tends to occur when demand overshoots, effectively converting PE allocations into luxury items. In this context, signals and endorsements are accentuated. LPs assess information of two main types: indirect information and third-party signals. Information is conveyed indirectly, because it is not attributable to the PE firm, but rather to the partners, and consists of the investors' evaluation of the elements that founding partners contribute to the new PE Firm in terms of Knowledge and Network. Third party signals consist of the investors' evaluation of endorsements by third parties and from partners themselves in terms of their long-term commitment to the PE Firm, their skin in the game. Finally, Ethical considerations relate mostly to the avoidance of reputational concerns on the partners.

The elements that make the birth of a firm less stabilized and hence comparable to a tadpole relate to the difficulty in maintaining a team of executives with the necessary knowledge in the absence of subsequent fundraising. This is challenging because favouring knowledge accumulation at the organisation level when the latter has not been bestowed with processes and policies to do so requires a constant level of fee revenues to retain individuals; and this is impossible without fresh funds. A new fundraise to maintain a team in place is required to fund their cost (and avoid excessive turnover). Thus, the knowledge "sticks" at the founder level; it is them that endow the reputation to the new firm.

b) Observations on the the growth of a PE firm

i) The Tensions in Building a Firm

Once a PE firm is past its birth phase, challenges emerge as the stickiness of the organisational capital to the people collides with the requirements to build a firm. This is particularly evident in the tension between wealth allocation among partners and investment management capabilities. The challenge for the institution is to reproduce past performance irrespective of the individuals; that is, after being born, firms increase viability by accumulating organisational capital (funds, capabilities, performance).

Raising a follow-on fund is not dissimilar from the initial one, but instead of focusing on the partners, investors increasingly focus on firm-specific measures of knowledge (past performance), network (volume of past transactions, presence in the market) and commitments (the size, brand name of the firm, partner turnover, processes, etc.). Anchor investors in prior funds do not necessarily disappear, but are rather joined by the cadres of other prior investors, who “re-up” their commitments to the firm. Reputable investors and placement agents have an increasing bearing on the volume of third-party endorsement.

ii) Observed patterns in the construction of PE firms

As discussed before, if the firm prior fund(s) are assessed as unsuccessful, LPs are unlikely to participate in a successive fund reducing the survival chances of the PE Firm. This negative sampling bias is made more complex by the fact that such evaluation is made on the basis of interim information, which at best can be a poor predictor and in its worst assessment, affected

by the agenda of the GP. So, LPs are more likely to participate in fundraisings by past successful managers; they display positive sampling bias by electing to stick to GP with positive past performance and disregard those with negative performance; this is exacerbated by the LPs' own involvement with the GP in such past performance. And as stated before, LPs in this phase shift their attention to PE Firm performance (the past performance of the PE Firm, rather than the performance of the partners involved in investment decisions). They also assess the attribution of past performance among the different partners that participated in it (even if the quality of such allocation is unreliable at best).

But even if the original fund is perceived as successful -or final judgment is postponed-, some of the choices PE firms make (or the impositions LPs make) challenge survival and ultimately affect the very outcome to the LPs. Key among the choices that affect the survivability of PE firms are pressure against strategic drift and the imposition of key persons within the PE firm.

In terms of pressure against strategic drift, investors favour PE Firms that maintain their existing strategy (remain in their niche); remaining specialised puts additional pressure on the PE Firm's viability as it limits the exploration of other verticals. This causes an additional negative sampling bias, because if the area of specialisation is not favoured by the market at the time of fundraising, it draws LPs away, even if the past performance of the PE firm were positive.

But more importantly, LPs may unwittingly also put pressure on the PE firm to maintain a rigid organisation through key person rules. Since fundraising is so critical, most senior members/ founding members (henceforth generalised as “Founders”) are under pressure to assume the role of promoting/ showcasing past successes (taking relative distance from investment roles). However, as the environment changes, the investment ability -knowledge- may have shifted towards younger executives (henceforth generalised as the “Other Partners”), more closely aligned with those fast changes. But since it is the Founders that are the showcased parties responsible for past successes, LPs require them as Key Persons, further consolidating their position in the organisation. Assuming economic logic, Founders seek (negotiate or award themselves depending on the relative positions) a larger (or non-decreasing) share of profits to match the “externally imposed” key person position. Greater wealth allocation to the Founders reduces resources allocable to the Other Partners and available to attract new members, limiting the possibility of a certain level of staff turnover required to keep up with changes in the market conditions. This, in turn, is exacerbated by the fact that the PE Firms have not invested in procedures and processes capable of turning volatile inputs into consistent outputs (further stressed by the type of knowledge required to discharge the GP duties).

The LP pressures above increase the mismatch between capabilities and wealth allocation between Founders and Other Partners/ new members and causes the latter to leave/ not join the PE firm). The dynamics for the loss of fitness may be disguised over one or two fund sequences by operation of the *status quo* bias of investors (and the lead time between information and new funds), but in the end, only by taking a short term opportunity (when markets are heated) to sell the PE Firms or go public can PE Firms survive. Thus, it is under LPs’ pressures, the

organisation pays the delayed cost of its brittle nature. And it is this lack of institutionalisation underlies the empirical fall in persistence.

c) Tension observed at the death of a PE Firm

The definition of death of a firm is usually a complex matter. Firms do not generally die on a specific date unless they are liquidated. But from the viewpoint of actors in a market, a firm may be dead (or in a coma) long before that; they may be legally extant but without operations (latent or dormant). With PE firms there is another potential category: firms that manage funds which have either portfolio companies that have proven hard to sell and remain in the portfolio long after the stipulated investment term (through extensions or other mechanisms); or they have provisions outstanding from a contract to sell a company (deferred provisions for presentations, warranties, indemnities or claims). These funds are customarily known as “zombie funds”; their managers -unless they have other funds under management- are either comatose or approaching such stage. This is to illustrate that death is but a clear-cut definition in PE, possibly even more than for corporations in general.

For the purposes of this study, I consider death to occur: a) when a firm is acquired by another one; or b) when seven years have elapsed without the PE firm raising a new fund, at which time it would be expected that the PE firm’s structure would be substantially dismantled.

In a way, PE firms are somewhat of a short-term anomaly. They resemble a project that once completed (one or a handful of funds), they cease to exist. With such an outlook investments

in knowledge and network capabilities cannot be easily standardised and built into organisational capital.

Some PE Firms do escape this fate. Some are successful enough to manage the transition into a “successful” death by merging into a larger one. But even in this “success” exceptions, the capacity of the executives to contribute their capabilities in the same way they do to their Portfolio companies is in doubt.

Larger PE Firms acquiring smaller PE Firms are typically after their investment capabilities (larger PE Firms arguably already have a scale advantage in fundraising). But by acquiring smaller PE Firms in full -with the staff dedicated to fundraising, i.e., typically the Founders-acquiring firms are paying for skills they already have in house. And they are also buying into a complex problem of instilling their well-developed processes into the acquired investment capabilities. The acquired PE Firms have investment capabilities which were developed unencumbered by such PE Firm policies; integrating them into the acquiring PE Firm may cause some of these capabilities to be numbed by the acquiring PE Firm’s policies. In summary, that there is a tension between the “assets” an acquiring firm can obtain in PE mergers and acquisitions (M&A) and the price it pays for them.

The PE Firm acquisition price tension or overpayment arise because PE compensation rewards past sophisticated decisions, typically consisting of tacit knowledge (addressed to deal with changing environmental conditions which require observation to transmit knowledge) and such

knowledge is difficult to standardise. As a result, carried interest provisions have evolved to compensate on actual value created (not prospective), even if this was not predetermined by design. This means that pricing of an acquisition that reflects future value creation may be unwarranted, because those capabilities still stick to the members (not to the PE Firm). In addition, acquiring a smaller PE Firm's own constraints embedded on their networks limit the investment management capabilities of target to the acquiring entity. Barring short term pricing anomalies, in the long run, the price of PE Firm should only reflect its fee generating capacity (AuMs) and not the carry (expected value of investment decisions). But from my participation in prospective PE M&A deal discussions with banks and advisors, price do include expectations of carry. Since investment decision capabilities buttressed on tacit knowledge are hardly transferable, pricing transactions incorporating carry expectations may actually destroy value; at best, PE M&A transactions should instead be priced on the basis of AuMs and a random walk of returns on existing portfolios.

The fact that PE M&A transactions should only reflect pricing of AuMs should be observable in PE firms going public ("IPO"). Even if firms going public is hardly a qualification of death, IPO pricing data is and it can be used as a proxy for valuations of firms at the time of their transition (into public company survival as much as into the absorption into larger organisations).

In summary, my observations suggest that there is no equity value -i.e., value beyond its fee generation capacity- of a PE Firm other than that attributable (and accruable) to the investment management members so pricing this equity is futile.

IV QUALITATIVE ATTEMPT ON THE REASONS FOR THE ATYPICAL DEMOGRAPHICS OF POPULATIONS OF PRIVATE EQUITY FIRMS

IV.b. FROM INSIGHTS TO TESTABLE HYPOTHESES

The observations described in Section IV.a. represent a subjective view of different processes in the organisations I have had contact with or been a member of. They do not stem from a predefined framework of analysis or from a carefully planned exercise, but rather from the recollection of repeated circumstances over years of practice. Conclusions of general application can only be derived from them in that state with a grain of salt. However, their scope and depth invite a rigorous process of further analysis to attain such generalisations, the first step of which consists of seeking out what “truths” can be found in the observations, regarding the research questions posed in Section III.d..

Distilling the observations on the PE opportunity for investors and firms and the analysis of the different stages in the lives of those firms, two common themes can be identified:

- a) PE investment characteristics causes PE firms founders’ endowments to stick to them rather than to attach to the firm
- b) Despite being knowledgeable about the benefits of institutionalisation, PE firms founders invest little effort in institutionalizing their organisations

a) Narrowing down the research field

i) *Observed stickiness of PE firms founders' endowments*

Breaking down the barrier to raise the initial fund entails a significant effort and a very broad set of skills. Founders contribute their networks to access capital, deals and market information; their past experience; and their economic and time commitments to this endeavour. After successfully completing this initial phase, two factors combine to simultaneously increase mortality: the erosion of the value of knowledge and networks over time and founders attitude towards transferring knowledge to the firms.

On the one hand, executives who succeed at raising funds through the use of their knowledge, network and commitment endowments become entrenched in their comfort zone and over time lose fit with the pace of environmental changes. Over time, the value of those endowments erodes and their replenishing becomes a necessity.

On the other hand, the founders' attitude towards a total transfer of such endowments to their firms is shaped by the conditions at the time of birth which become imprinted in the organisation. Those conditions are characterised by a sudden opportunity available to players in neighbouring industries with high expected mortality, causing executives to “toe the water” rather than commit fully. They need to make sure that if the odds work against them (as they most often do), they can pack their endowments and apply them elsewhere in the neighbouring industries. So the contribution to the firm is actually more of a loan; and executives remain zealous of giving it up entirely.

The limited willingness to fully transfer endowments to the organisation is further stressed by industry practices. Since the skills the firm needs to showcase to its potential investors is not yet resident in the organisation (or in second and third funds is identified primarily with founders) it is the founders themselves that are showcased. As mentioned in Section IVa, investors put pressure for those executives with past involvement, to be hailed as key persons for the future endeavour, whether their skills are best suited for the environment or not; and they additionally put pressure on the firm by requesting the firm's strategy to remain as unchanged as possible, regardless of its fitness to the environment. The key person rules drive wealth allocation and prevent a development of the organisation with increasing input from more environmentally-adapted executives.

ii) Observed low investments in institutionalisation of PE firms

In order to keep pace with the environment, the option for organisations is to replenish their endowments by bringing in new executives with additional knowledge, newer networks, energetic commitment. Bringing in new endowments also entails creating the processes to harness them into processes and policies. But the fact that PE fundraising results from "fluctuating carrying capacity" limits the ability to invest significantly in processes, policies and knowledge-collection and transmission mechanisms. High density and competition and the

effort required to break the colossal barrier to obtain the initial fundraising shifts entrepreneurs' focus away from long-term planning⁶.

A key characteristic of the inherent difficulty in early institutionalising lies in the type of knowledge that endowment represent. The versatile investment mindset required to master the art of sourcing, managing and selling investment is hard to obtain and expensive; instilling this versatility into the firm's processes is even harder and fraught with friction. The actual knowledge required to discharge these functions is hard to codify⁷. Endowments of partners approximate "tacit knowledge" because much of the assessment of investments outcomes entails an understanding of macroeconomic and industry future outlooks, behaviour of management teams and trade partners; much of the decisions "in the middle of the river" can be characterised as judgment calls both relating to the strategies that companies take as to the recruitment, management and termination of the teams involved in enacting them. Moreover, the trust placed in and obtained from trade partners (bankers, potential acquirees, potential buyers, advisors, information sources) is built upon years of relationship and their difficult transmission can be regarded as tacit knowledge for the purposes of this analysis.

Even firms that do succeed in raising a few funds but that have failed to provide an adequate institutional foundation to the firm lack the processes to turn highly volatile inputs from an evolving environment into consistent outputs. In the medium term, such inability causes firms to disappear. The single external factor generating pressure to institutionalise the firm is the

⁶ PE firms at this stage behave like r-strategic populations; they are fast to appear under a sudden change in conditions, but their reproductive investment is low and the investment in preparing the organism for environmental changes, scarce.

⁷ This is what Polanyi (1958) described as "tacit knowledge"; that is, skills, ideas and experiences that may be possessed but are harder or impossible to articulate and communicate verbally, and as such, impossible to codify.

existence of institutional investors; but many of the initial efforts are focused on compliance rather than on institutional foundations.

In summary, although, there can surely be psychological biases affecting the attitude of partners towards their endowments and their preference for or against increased institutionalisation, the aggregate birth and death rates of the industry suggest that the higher mortality is rooted beyond an “epidemic” of overconfidence or hubris and instead in demographic explanations. My observations suggest that myopia may lead LPs to incorrectly assume partners’ endowments and tacit knowledge are institutionalised; and the conditions imposed by LPs precludes partners at PE firms from precisely achieving that institutionalisation, that is, doing to their own firms what they succeed in doing to portfolio companies.

b) Turning observations into science

Out of the “subjective” truths obtained from granular observations from my immersion into the industry, some of the information can be distilled to obtain general conclusions. Obtaining external data to test most of these observations to attain generalizable conclusions is challenging. However, based on public-access information a measure of institutionalisation and a measure of endowments can be essayed to compare against the fundraising success of firms.

But in order to properly frame the generalisation, I conducted a deep analysis of how organisational theory explains the phenomena I have observed and recorded; and of how the

private equity industry knowledge has to offer as results for the fundraising efforts. Sections V.a. and V.b. include the review of the status of knowledge.

Following that I have proceeded to avail myself of information on a large sample of fundraising events and reconstructed -from external data sources- information about each of the organisations conducting the fundraising to come up with a data base upon which to identify representative variables for institutionalisation and the power of endowments in the context of fundraising. Section Vc includes the process conducted for and the cleansed data obtained. And finally, in Section VI, I have run my observations through the sift of published empirical research and preliminary observed data into a into a theory capable of quantitative testing for generalisation.

V DERIVING A TESTABLE THEORY ON PRIVATE EQUITY DEMOGRAPHICS

V.a. LITERATURE REVIEW ON ORGANISATIONAL THEORY BUILDING BLOCKS TO BUTTRESS AN UNDERSTANDING OF PE DEMOGRAPHICS

Section IV laid out the patterns that distilled from my observations of why PE managers fail to curb mortality of their firms, like they successfully do for other companies. These can be summarized as a perceived stickiness of partners' endowments -or, conversely, an unwillingness to fully transfer them to their fledging firms-; and to a perceived lack of investment in institutionalisation at those firms.

As mentioned before, there is no precedent in literature of a study on the mortality of PE firms. However, the substantial body of knowledge in organisational ecology is the correct starting point to fill this gap. Organisational ecology aims to explain the evolution of populations of organisations in different industries by looking at their institutional environments, the density of such populations at the inception the birth of the industry and resource mobilisation. In looking at the latter, the concepts of networks, community ecology and -given the importance of fundraising- sampling provide valuable insight, too. The fact that PE firms lie in the frontier between projects and full-blown organisations may explain why some of its longstanding precepts apply or not in hybrid institutional settings like partnerships.

The aspects of organisational theory that are relevant to the evolution and survival of PE firms are as follows:

- a) Organisational demographics and mortality dynamics

- b) Institutionalisation processes and the impact of change on mortality
- c) Life cycle stages and behaviours favouring and avoiding mortality
- d) Impact of community demographics and network dynamics on organisational birth
- e) Impact of resource mobilisation from signalling and sampling processes

a) Organisational demographics and mortality dynamics

PE is a rather new industry, with embryonic developments starting after World War II and certain regulatory changes triggering acceleration during the late 1970s. To frame an understanding of major demographic changes affecting the survival of PE type of organisations, the work of Polos and Hannan (2002) and Hannan et al (2007) are a good starting point for two reasons: on the one hand, by working on the major contributions in organisational demographics, they developed a veritable summary of the field -see below and Hannan (2005); in addition, working on their logical structure, the authors proposed a nonmonotonic theory to unify the different theories' seemingly contradictory postulates, inspiring my effort to provide an all-encompassing theory for PE, as well.

Stinchcombe (1965) argued for the liability of newness, according to which, a higher proportion of new organisations fail than old ones, especially in new organisational forms. This results from the greater focus a new organisation has to devote to learn or invent new roles, to obtain skills produced outside of the organisation, to gain trust with social relations outside the organisation and create new business partners. The increased liability originated in newer organisational form stems from the fact that the past history of organisational forms is not trivial as they are better adapted to deal with problems.

Freeman, Hannan et al. (1983) elaborated on the concept of liability of newness by introducing the notion of age dependence; they focus on three types of processes: internal transformation, competition and selection and the interaction between those two. They find a correlation in structural differences and initial size, also introducing the notion of liability of smallness and that the strength of age dependence depends on the type of death (merger or dissolution).

Brüderl and Schüssler (1990) introduced a nuance to Stinchcombe's concept of newness. They found that that mortality does not peak at the beginning of the life of organisations, but rather two years after that, as founders contribute endowments to the organisation reducing their initial mortality risk. In this phase decision makers monitoring performance are postponing their ultimate judgment on the venture. Over time, as founders' endowments start to deplete, organisations are subject to the usual risks of failure.

The survival of organisations, past the initial phase is affected by population structural and organisation-specific struggles to avoid mortality. On the former, Carroll and Hannan (1989) settled the matters on pre-existing debate on the validity of the theory of opposing legitimation competition forces, by conducting research on the full lifetime of newspaper organisations. This theory states that when organisations are created in the context of low density, legitimation processes dominate due to the difficulty to mobilise resources for new entrants. Resources are subject to intense exploitation and few resources go unexploited; since new entrants can seldom compete with established ones, they are pushed to the margins where they can only exploit thinly spread ephemeral resources; subsequent efforts to shift towards the richer centre will

command a higher mortality risk. When organisations are created in the context of high density, it is competition that takes over, displaying a concave pattern of growth and decline. The authors added a nuance to the liability concepts and constraints identified before by adding the notion of density dependence, which postulates that survival depends on the combination of the legitimation and competition forces and that these, depend on the density of organisation populations at founding.

Carroll and Hannan (1989b) further added that density does not only operate contemporaneously but operates as a “time bomb” or delayed mechanism (density delay), with organisations being particularly sensitive to density at their time of founding. Density at founding, they add, can hamper an organisation’s ability to move quickly to full-scale and their inertial forces may affect their capacity to re-organise rapidly in tune with environmental changes. Furthermore, they indicate that older cohorts of organisations have lower fitness (they become obsolete) with changes in the conditions of the current environment (drift) (Carroll and Hannan, 2000). Hannan (2005) adds that aging does not play a causal role per se, but it tracks the difference between environmental pace and adaptability. As time passes, the tastes of the audience drift but the organisation remains imprinted. Imprint and inertia preclude organisations from keeping pace with drift (Hannan et al., 2007). Older populations eventually lose their competitive edge as new tastes and technologies emerge.

Baron et al. (1999)’s study on managerial intensity at the birth of organisation provided a valuable insight for PE as an industry being created from neighbouring organisations: new organisations are imprinted with the founders’ own prior employment model.

Le Mens et al. (2011) revisited the concept of age dependence focusing on the ability of firms to replenish their organisational capital. They view social capital in two ways: the accumulated social (a.k.a., organisational) capital (stock or endowments) and the flow of social capital (capability or performance). The capability argument assumes that the past evolution of those capabilities does not have an impact and only the current one does. However, if the mortality hazard depends on the stock of resources, then past evolution should necessarily have an impact. Replenishment of endowments can be achieved by adaptation and learning processes. Over the life of an organisation, organisational capital operates in a similar fashion as endowments do at birth.

Le Mens et al. (2015) combined the notion of obsolescence as a result of environmental drift with that of organisational capital and focused on the capacity of the organisation to adapt its offering or obsolescence. Environments drift because competitors introduce technology and audience tastes change. Organisations cannot adapt well because of inertial pressures. When tastes drift, an aging producer has more trouble adapting. The authors claim that failure hazard decreases with the stock of organisational capital which in turn results from the combination of intrinsic appeal of the product and level of engagement with the audience; and with age, as learning processes enable organisations to more rapidly adapt to taste changes.

b) Institutionalisation processes and the impact of change on mortality

The concept of obsolescence is directly linked to the concept of inertia. Hannan and Freeman (1984) postulated that adaptation (and survival) of organisational structures occurs at the population level, as organisations themselves are fraught with what they term structural inertia (such as sunk costs, equipment, investment in staff, etc.); they see rational adaptation as an exception rather than the rule and that learning and adjusting the structure can only enhance survival if the speed of response is commensurate with that of environmental change. Inertia does not imply lack of change, but rather a slower pace of adaptation with respect to the pace of environmental change.

Selection eliminates organisations with low reliability and accountability; institutionalisation can provide for this, but only at the expense of increased inertia (Hannan and Freeman, 1984). Changing the core features of an organisation (from less to more flexible, mission, forms of authority, basic technology, marketing strategy) identified by Stinchcombe (1965) entails a risk. Changing the mission (a more core feature) of an organisation can be harder than changing its form of authority; this latter, in turn, harder than changing core technologies and marketing strategies.

Four processes can delay or prevent change (and hence increase mortality). Institutional changes or identities (the moral character of structural arrangements), structural processes (the delegation and authority structure), political processes (vested interest of subgroups within the organisation) and learning processes.

In addition, the capacity of the leadership to anticipate or assess these limitations (opacity of the change process) and the degree of infusion of moral values in the architecture of the organisation (asperity) will affect the duration of a change process. Selznick (1957) defined the infusion of moral values as the spontaneous process of institutionalisation that governs the formation of an entity, as opposed to the organisation itself, which is a conceited effort to engineer the mobilisation of human energies towards a set of aims. The institution results from the natural product of social needs and pressures; an organic adaptive response.

Organisation-specific efforts to address the environmental drift introduce two additional conditions affecting mortality: Creative self-destruction and tight-niche packing.

Carroll and Teo (1996) introduced a paradoxical twist to inertia by addressing the relationship between survival and efforts to adapt. They found that rules and routines gradually accumulate causing rigidity and limiting change (senescence) and may even cause efforts to change to result in creative self-destruction and rather than protect the organisation. They termed creative self-destruction to the process whereby for organisations that do not survive, efforts to adapt may speed up the failure process. Barron and Hannan (2002) built upon the concept of creative self-destruction and identified patterns to anticipate and solve for organisational limitations to survival. Based on the notion that the costs and risks of transitioning to a new organisational model might outweigh the advantages, they identified certain organisational models or blueprints for long term development of VC firms. They established that VC firms developed on the basis of dimensions related to the basis of attachment to the firm, criteria for executive selection and means of control. They found that companies that selected an initial blueprint

that suited their present and anticipated strategy and their environment could avoid disruptive changes in the future.

Carroll and Hannan (1989) focused their attention on where those efforts to survive were aimed at and added the notion of tight-niche packing, which describes the process through which, new organisations are limited from competing head-to-head with established ones.

I have referred to studies that research the impact of structural inertia in the context of survival. The concepts that underlie the inertia of an organisation are intimately related to the development of institutions within the organisation. Institutions are humanly devised constraints that reduce uncertainty and provide a stable structure to guide interaction (North, 1990). Certain key elements on the search for institutionalisation -or build-up of organisational capital- have been given attention by empirical studies.

March (1991) addressed inertia from the standpoint of the barriers it creates to the development of new strategic options for the organisation. The author identified a tension in the allocation of resources between exploration of new possibilities and exploitation of old certainties. Although a stable equilibrium is hard to achieve as returns from exploration are systematically less certain, while an emphasis on exploitation compromises competitive positions. According to the author, organisations store knowledge in their procedures, rules, norms and forms; they accumulate such knowledge over time learning from their members and simultaneously among them. As a result, moderate turnover can increase adaptability to new environments without inordinate depletion of organisational capital.

Levinthal and March (1993) analysed the capacity of organisations to both exploit and explore through their ability to learn and codify knowledge. They argue that the cognitive and inferential limitations on individuals are accentuated by organisational limitations and found that they and their members improve performance over repetitions of the same tasks and the mechanisms of simplification, replacement and specialisations. They found that organisations engage in activities in which they are more competent; their knowledge about and use of old competencies sets them a competency trap which inhibits efforts to change due to the self-reinforcing nature of learning. Thompson (1967) conceptualised the need for adaptability and flexibility in organisations subject to fast changing environments.

Denrell and Le Mens (2019) revisited the concept arguing that the preference for established competencies may be grounded on misplaced confidence in performance measures (especially of short-term performance), which do not properly evaluate the long term potential of the new activity.

c) Life cycle stages and behaviours favouring and avoiding mortality

Other authors have concentrated on diagnosing patterns of behaviour as organisations evolve. Adizes (1979) addressed the concept of environmental fit from the life-cycle perspective of understanding how the latter evolved along the stages in the life of an organisation. The author claimed that each organisation has four patterns of behaviour (Produce, Administer, Entrepreneurial, Integrate) and that as the different (nine) stages in the evolution of

organisations occur, activating/ emphasizing the right patterns improve environmental fit. In the initial stages leading to maturity the patterns of greater adaptability like production and entrepreneurship are present in high-performing entities; while in those approaching and past maturity, institutionalisation (Administration) becomes the staple behaviour. Of note, he introduces the concept of “founder’s trap” which may lead to mortality in early stages if the originator(s) of the organisation fails to de-personalise processes. Complementing Adizes (1979), Jawahar and McLaughlin (2001) focused not on the organisation per se, but on the identification of how its key stakeholders mutate and how survival depends on adequately prioritising dealings with them along the way.

d) Community demographics and network impact on organisational birth

i) Community demographics impact the way organisations in neighbouring spaces populate an industry

Studies in Community Demographics shed light on how opportunities can be accessed by organisations and how they may enter neighbouring spaces. Ruef (2000) argued that the aggregate density and size of organisations with similar identities increase the probability of form emergence. The emergence of forms is thus evaluated in the context of a network of suppliers, consumers, regulators, financiers.

Freeman and Audia (2006) explain this process arguing that populations are viewed as differentiated not on absolute terms, but according to function, where the unit character is

inferred from the interdependency resulting in symbiotic forms (in which the organisations are complementary) or commensals (common features).

Baum and Oliver (1991) complemented that entering and survival in the organisational space is enhanced by institutional linkages -the legitimacy, social support and approval obtained from an institution in the environment- by establishing collaborative links legitimated by the community as a means to achieve reliability and accountability.

Krug and Polos (2000) explored specific mechanisms that can be used to enter into neighbouring spaces by studying the interaction of social institutions and economic institutions in the Chinese entrepreneurial sector and found that forming a new entrepreneurial sector resulted from the combination of reviving old economic institutions, high-jacking social institutions not created for the economic purpose and building up new practices.

Finally, McKendrick et al. (2003) provided colour on the process of emergence of *de alio* entrants. They sustain that individual organisations will more readily cohere into a distinct collective identity and that the density of organisations with such focused identities will facilitate the emergence of an organisational form, which implies legitimation and social-taken-for-grantedness. A legitimized organisation form appears unproblematic to the outside observer. This identity formation will gravitate in the emergence of *de novo* entrants, but less so in the context of *de alio* entrants, who will benefit from a less than distinctive prevailing organisational form.

ii) Networks as a source of opportunities and resources

Existing research covered so far refers to organisational demographics and the impact that endowments have in building organisational capital and reducing mortality. Endowments are normally considered in terms of capital infusion; but broadly speaking, endowments extends beyond capital infusion to social capital, especially in service partners. The network capital of partners is one such manifestation of endowments.

The network of relations of organisations and their members impacts the way in which they communicate information about themselves to mobilise resources and also the opportunities they have access to.

The interaction of organisations with their peers affects their social capital. According to Burt (2000) the exchanges in the market far exceed the interchange of goods and services. While human capital explains imbalances in returns from market activity on the basis of capacity or merit, social capital complements this by adding the dimension of connection, that is, holding a position is an asset in itself. Social capital comprises features such as trust, norms and networks, that can improve the efficiency of interchange in society by facilitating coordination and increasing information access. Burt identifies different models of network structure: the models of contagion (also known in institutional theory as imitation) replace information on an organisation by observing their peers as a proxy; the models of prominence (also known as reputation and status in economics) replace information on the performance of an organisation by taking its prominence as a signal of quality; finally, models of range, focus not on information replacement but rather on information flow control.

Granovetter (2005) added that networks impact the economic outcomes of organisations. He posits that the denser the network, the more firmly norms (the perceived proper way to behave), are held; this means that as far as trust goes, the density of the network becomes relevant. Yet, he contributes that more novel information flows through weak ties in networks than strong ties (as “friends typically move in the same circles”) and that when economic and non-economic activities are intermixed, non-economic activities affect the cost and techniques of the economic activity. This means that in terms of access to information, the diversity of the network and the brokerage position of an organisation with respect to structural holes in it (Burt, 1992) rather than the density itself. He also indicates that whilst economic models attribute productivity to personal traits, many tasks, especially those that can be described as “tacit knowledge” (a term coined by Michael Polanyi), cannot be completed without cooperation and that loyalty networks can act as a substitute for control in the context of agency theory.

Building on Burt, Jensen (2008) studied the use of relational discrimination to manage market entry and concludes that incumbent firms decide to collaborate (inclusion) with entering firms or not (exclusion) based on the latter’s threat to their market position.

e) Signalling and sampling explain mechanisms of resource mobilisation

- i) Signaling quality and deference by other organisations helps mobilise resources, which may reduce mortality*

The process of fundraising entails showcasing the power of an organisation's knowledge, network and commitment endowments. These traits, especially that of network, are not easily discernible for potential investors. Instead, the latter rely on signals from the firm and, most importantly, from third parties to project their legitimacy.

Signalling is an important part of the interaction with constituents by firms, in the context of information asymmetry between the organisation and its business partners. According to Spence (1973), organisations invest in acquiring signals to communicate reputation when they operate in a market repeatedly; in the context of unobservable attributes, these signals take the form of observable characteristics to replace them. Baum and Oliver (1991) focused on the fact that signals originated in external sources further increase legitimation.

Podolny and Phillips (1996) building on Spence signaling and Burt's network theories, contributed on the differentiation between reputation and status. The authors propose that market exchanges involve matters beyond the transfer of goods and contribute that status becomes one such commodity if observed by third party. Markets thus become also determinants of identity; how an actor is perceived is affected by those whom the actor selects as business partners. Status is linked to the concept of deference and carries with it the attribution of a superior quality. Although it may be determined by past demonstrations of quality, but if status was only so characterised, then it would be no different from reputation. Thus, status depends as much on the status the organisation exchanges with, which becomes even more critical in the absence of past performance. Status confers clear benefits such as

the willingness to commit resources to the actor (which can in turn be used to improve performance and build social capital).

Sauder et al. (2012) also addressed status as the accumulation of deference behaviours and emphasises the role of arbiters and critics, which they report as especially relevant in the case of luxury items. They go on to identify the advantages of high-status firms as increased revenues, lower transaction and staffing costs and access to survival-enhancing opportunities and resources (referred to as the Matthew Effect⁸)

Signaling is closely related to the concept of category. Hsu et al. (2011) addressed the impact of categorisation on legitimacy, pointing towards a trade-off between specialisation -which confers legitimacy on the one hand, but as they exert strong constraints on firms to conform to institutionalised expectations and gains audience attention, it limits the range of future possibilities.

According to Negro et al. (2015), category memberships beyond serving as signs of aesthetic or technical properties, serve as means of communicating market signals; high-contrast categories are more likely than low-contrast ones to become signals, and once in place, they prevent free riding from low quality producer.

⁸ The Matthew Effect describes the phenomenon that in societies, the rich tend to get richer and the potent even more powerful. It is closely related to the concept of preferential attachment in network science, where the more connected nodes are destined to acquire many more links in the future than the auxiliary nodes. The name refers to the Gospel of St Matthew, which states: 'For to all those who have, more will be given

Along similar lines, Zuckerman (1999) focused on the third-party observation in his study of security analysts' rating and concludes that there is a cost of illegitimacy paid by firms that fail to attract the attention of those witnesses who confer status. Firms and practices are homogeneous as a shortcut to enable third parties to understand them; failing to meet those institutionalised expectations are viewed as illegitimate.

Finally, signaling is also related to the concept of authenticity, (the) "...claim and associated belief about an organisation or person" ...being "genuine", "real"... (Carroll and Kovacs, 2021). These authors studied the different conceptions of the word and focused on how the relationships with other organisational partners combine to produce authenticity, that is which set of characteristics in each case, led them to be regarded as such by the audience and third parties. Verhaal and Carroll (2022) used the concept of essentialism to identify unobservable features of authenticity by the audience.

ii) Sampling decision making processes shed light on sequential adherence processes which may also affect mortality

Signaling can explain behaviour from the standpoint of the organisation aiming to mobilise resources to itself, as in the fundraising process. Sampling mechanisms help understand the patterns of behaviour of the owners of such resources that are liable of being mobilised.

Le Mens et al. (2016) studied the process of evaluation of novel alternatives and concluded that customers tend to avoid alternatives they dislike, without regard to whether additional exposures to the source of discontent would have generated a more positive evaluation on a second instance. This leads to precluding further feedback on the quality of alternatives that led to poor satisfaction and thus a certain persistence of negative quality evaluation. The reason for this bias lies in the sequential nature of the sampling process. They subsequently (Le Mens et al., 2019) found that when socially exposed to avoided alternatives, then evaluations can become more positive; conversely, people are likely to resample options with which they have had positive experiences leading to corrections in overestimations. Finally, information sampling is not only shaped by current evaluations but also by the interaction between evaluations and popularity as people may go along with majority choices to avoid being perceived as deviant.

V DERIVING A TESTABLE THEORY ON PRIVATE EQUITY DEMOGRAPHICS

V.b. LITERATURE REVIEW ON PRIVATE EQUITY AND RELATED INDUSTRIES

There is no precedent in literature of a study of PE from a demographic perspective. However, it is valuable to review the state of knowledge on the key dynamics behind PE fundraising, as it is pivotal for the development and survival of PE firms. I have reviewed over fifty research studies on different aspects of PE to inform my dissertation, a selection of which is summarized in the seven groups of elements affecting fundraising. In order to ensure valuable theoretical background is not missed out, I have searched not only in research dealing with PE but also in connected or similar industries like VC and mutual funds:

- a) Macroeconomic factors affecting fundraising
- b) The impact of performance and persistent performance on fundraising
- c) The direct and indirect impact of investment manager specialisation on fundraising
- d) The direct and indirect impact of prior experience and networking on fundraising
- e) The direct and indirect impact of third party endorsement selection on fundraising
- f) The direct and indirect impact of other internal reputation signals from the organisation
- g) The impact of GP compensation on performance and fundraising

a) Fundraising is related to both the economic cycle and the activity in the public markets

Whilst the study of context and past performance have provided valuable insights, the mechanisms that enable investors to tell a PE manager from another beyond performance have been largely overlooked by empirical studies. This is especially relevant as most PE firms are

single-fund firms, i.e., they have no prior track record to show. Studies focused on the macroeconomic context include Balboa and Martí (2003) who correlated fundraising activity to lagged aggregated investments and divestment activity of the PE firm, to the evolution of gross domestic product and gross domestic savings; and report on other studies which relate fundraising to initial public offering (“IPO”) activity, capital gains taxation, regulation of pension funds, growth of gross domestic product, interest rates on Treasury bonds, growth of market capitalisation, returns of the stock market, rigidity of the labour market and the reliability of accounting procedures. In a similar direction Gompers et al. (2008) also found a relationship between venture capital activity and changes in public market activity and valuations.

b) The bulk of research on fundraising has dealt with performance and empirical evidence indicates that performance persistence over time seems to decline or at best, be unreliable

Although not directly relatable due to the noise implicit in the time lag between fundraising and performance, it can be safely assumed that in discharging their own fiduciary duties, institutional investors’ expectations of fair returns underlie their investment allocations, which can be considered the other side of the mirror of PE firms’ fundraising success (Lerner, 2010). Drawing on the mutual funds industry, Gompers and Lerner (1999) indicated that there is a positive relationship between past performance and investments, where top performing funds have substantial new commitments, but the reputation of the firm also has influence.

Leading authors coincide that PE has met or outperformed the returns of investments in public equities. Kaplan and Schoar (2005) found that net returns to investors approximately equal the S&P 500 index and that better performing partnerships are more likely to raise follow-on and larger funds. Harris et al. (2014) and Sensoy et al (2014), both indicated that PE funds have consistently exceeded public markets. Sorensen, M. et al. (2014) agreed that the average return of PE investment is generally accepted as exceeding market returns but point out that the issue of whether these excess returns (or “alpha”) are sufficient to compensate investors for added risk and -especially- illiquidity, remains controversial. Robinson and Sensoy (2016) further stressed that seemingly poor performance by PE funds raised during hot markets (i.e., before a decline in overall equities) still outperform public equities. This, notwithstanding, Gompers et al. (2016), found that investors focus more on absolute performance as opposed to risk-adjusted returns. A more recent study by Kurtovic et al (2023), indicated that PE performance is not significantly different from the market at large, despite having twice as much leverage (risk).

Since a new fund is raised while prior funds are still unrealised, the impact of interim investment performance is relevant. Barber and Yasuda (2017) studied this impact and concluded that it is greatest when backed by exits, as investors are sceptical of upstart PE managers and more willing to invest in their follow-on when the interim performance of the current fund is backed by realisations, as a result of which, performance indicators tend to increase prior to fundraising. Gompers and Lerner (2000) further studied the relationship between interim and ultimate performance in VC funds and concluded that they are unrelated, casting doubt on the reliability of decisions based on interim performance when not backed by exits. Vanacker et al. (2020), however, found that unrealised performance *per se* is a relatively weak signal if not buttressed by media coverage.

However, perhaps the most relevant aspect of performance from the fundraising viewpoint is that of persistence, i.e., the ability of top performing PE managers to be equally successful in subsequent funds. In his post-Prime Crisis review, Lerner (2010) identified the sustainability of returns as a key factor for the recovery of the, then, ailing PE sector. Several studies address this issue and the consensus seems to be that although performance persistence existed in prior decades, it has substantially receded and even when present, it is not investable performance, i.e., information valuable for decision making, underscoring the importance of other elements to use as basis for investment decisions. Kaplan and Schoar (2005) found that returns in PE and VC over 1980-2001 persisted across subsequent funds of a partnership so that better performing firms are likely to raise follow-on and larger funds; in line with this, Gompers et al. (2010) studying VC entrepreneurial activity, found that those with a track record of success were much more likely to succeed than first-time entrepreneurs or those with past failure. Korteweg and Sorensen, M. (2017) and Harris et al. (2023) found that even if persistent, performance is so noisy that investors find it difficult to identify the firms with top quartile expected performance (as measured at the time of fundraising), leaving little investable persistence. More recent studies by Braun et al (2017) found that persistence in PE -studied by looking through the legal structure into the underlying investments- has substantially declined in developed markets as the industry has matured, whereas it has remained higher in low competition regions; while Roggi et al (2019), found a good estimator of future performance in past fund performance.

c) Specialisation of the PE firm is generally considered to be valuable although the mechanisms through which reputation results in more successful fundraising have not been addressed at length

Studies have identified benefits from specialisation of PE firms: Gompers et al. (2009) found a strong positive relationship between specialisation and investment returns. Other studies have focused on other benefits such as the fundraising capacity of firms, ability to exit companies, and operating performance of companies. Gejadze et al. (2017) added that specialised PE and VC firms during 1980-2012 raised funds more quickly than generalists; while, Rigamonti et al. (2016) indicated that PE specialisation increases the likelihood of exits via IPOs, which bestows upon PE managers greater publicity and market approval. Cumming et al. (2009) found a higher probability of experienced PE managers to avoid drifting in investment strategy as investors look for consistency to facilitate their own risk screening process; and reports on Coller Capital 2008 Global PE Barometer which states that style drift is perceived negatively by 84% of PE investors. Cressy et al. (2007) found that companies held by specialised PE firms display better operating performance as a result of improved governance and to reduced uncertainty.

d) Prior work experience and networks has been found to project positive signals for fundraising, access to deals and correlate to the success of endeavours

Studies report the benefits of prior experience networking with past employers. Securing financing from third parties occurs in a context of information asymmetry. Huang and Shi

(1982) found that past employment networks mitigate concerns from potential financiers; in addition, the prominence of the former employer signals favourably about the quality of new ventures and attracts investors. Kuhnen (2009) found that business connections mitigate agency conflicts by increasing information (also favouritism) and that fund directors and advisory firms hire each other preferentially based on the intensity of their past interactions. Siming (2013) found that social networks arising from prior labour affect private equity firms' choices of financial advisors, as well as the sourcing, pricing and performance of deals, and that this value may be more relevant when the firm is new. Gompers and Mukharlyamov (2022) found strong correlation in the likelihood of VC fundraising from prior founders of VC-start-ups and that founders who have failed in the past have lower success rates than first time entrepreneurs, which would indicate that skill is conducive to performance. Using graph theory to measure the concept of centrality in past relations including head-hunters, investment bankers, management consultants, syndication co-investments and placement agents Hochberg et al. (2007), found that better networked VC firms experience better performance (more IPOs or strategic sale).

Cohen et al. (2008 and 2009) studied how the networks established through academic institutions impact information asymmetries in mutual fund and analyst outperformance, concluding on a significant flow of information among executives in shared educational networks. Abovementioned studies by Siming (2013) and Gompers and Mukharlyamov (2022) confirmed the value of academic networks on deal access and performance.

- e) **Investors seek to ascertain the level of long-term commitment (or otherwise survival capacity of the PE firm) to see their investment through the “long haul”.**

Research has found a positive relation from third-party endorsement, although this type of signal is not unequivocal and affected by inherent characteristics of PE investments.

In general, third-party and public-market endorsement has been shown to correlate positively with fundraising. Davila et al. (2003) found that financing by VC funds sends a positive signal and is highly correlated to the growth of a VC-backed start-up. Janney and Folta (2003 and 2005) find that companies electing to fund themselves through PE rather than IPO directly send a signal that professional investors' endorsement is valuable and achieve ultimately better results, and that firms that disclose the presence of more prominent investors are better able to attract subsequent financing. Along similar lines, Elitzur et al. (2003) reported that entrepreneurs struggling fund a start-up can improve their fundraising by approaching an angel, even if that means incurring in some dilution cost. Unsuccessful founder-VCs actually have lower success rates than professional VCs. Once again, in his industry review, Lerner (2010) identified the fidelity of existing investors (“re-upping”) as a key factor for the recovery of the industry. Janney and Folta (2005) found that firm level mortality is higher for smaller firms (i.e., firms that have raised less capital) and that have raised it more sparsely over time.

Certain studies have looked at investments by reputable investors as positive signals for resource mobilisation and greater access to additional sources of capital. Stuart et al. (1999), found that privately held biotech firms with prominent strategic alliance partners and

organisational equity investors go to IPO faster and earn greater valuations at IPO than firms that lack such connections. Lerner et al. (2005) found that for the 1992-1999 period university endowments (NB: as in type of investor, not endowments of organisational capital in general) in PE achieved dramatically superior returns and attained a reputation of knowledgeable investor; having such an investor in a fundraise could then act as a gate opener by facilitating the demand from other “less reputable” investor who follow the leader. He also found endowments less likely to invest, which can be understood as a mechanism to maintain their reputation (if the successive fund is deemed underperforming).

The reputation of these different types of investors is built upon superior past performance and has also been object of research. Sensoy et al. (2014) attributed the superior performance mostly to greater access by these university endowments to top performing VC firms, since access is the only lever fund managers can use to contain demand and signal their quality, as the standard terms of compensation have been rather indelibly defined and are hard to change. McGrath and Nerkar (2023) indicated that pension plans with large PE holdings earn better returns because their scale gives them experience, due diligence skills and information processing abilities.

Other studies have focused on the investment selection process. Friburg and Grichnik (2013) found evidence that institutional investors strongly prefer private equity firms in which they have invested before, thus making re-upping status quo biased. Also the lack of endorsement can be used as a signal, as proposed by Lerner and Schoar (2003) who reported that PE

managers can use transfer restrictions to smoke whether decisions by incumbent investors not to re-up are related to their poor performance or liquidity constraints.

- f) **Other signals of long-term commitment are internally generated by the firms. However, despite empirical studies pointing in the general direction of reputation as facilitating fundraising, some of the most relevant findings seem to equate it to size and age somewhat tautologically, as though reputation was the result of a firm's ability to raise funds, their size or the age of the firm, rather than acting as a signal to investors to select it**

Gompers and Lerner (1999) analysed VC fundraising over 1972-1994 period and found that reputation -measured by the age of the firm and its assets under management ("AuM"-improved fundraising, drawing on similar dynamics from the mutual fund industry, in which performance led to fundraising and past fundraising (i.e., AuM) created a lagged correlation on present fundraising. Balboa and Martí (2003 and 2006) also correlated the reputation of PE managers - to their past fundraising capacity. In addition to the size-age measures of reputation, they add the volume of past investments, the ratio of investments to managers in a firm, the number of exits via IPO and belonging to trade associations and regulatory status as additional measures.

Other studies like Barber and Yasuda (2017) and Vanacker et al. (2020) pointed to a similar correlation between fundraising and age-size, adding colour to mechanisms such as seeking

lower investment volatility to protect reputation and the moderating impact of reputation and media efforts to complement the limited power of interim performance.

Firm-generated signals sometimes relate to the investment opportunity and past experience of the partners. Kaplan et al. (2009) argued that successful investors elect business ideas rather than blind pools of cash, suggesting how difficult is to well place trust in a PE manager. Gompers and Mukharlyamov (2022) submitted that skill is conducive to performance; founders who have failed in the past have lower success rates than first time entrepreneurs.

g) Empirical evidence from the economic commitment of the managers and compensation terms for the General Partner and their correlation to performance as a proxy for fundraising success is not conclusive

Leland and Pyle (1977) found that the willingness of the entrepreneur/ manager to invest in a project/ investment positively affects performance, as do Deeds et al (1997) in their study of equity retained by the entrepreneur and its relation to the value of firms in IPOs. Braun et al. (2011) approach it from the viewpoint of risk appetite and find that PE managers are more risk averse the higher their stake in the fund.

However, Busenitz et al. (2005) study of VC funds revealed that the level of personal investment (“skin-in-the-game”) does not indicate value, although it theoretically signals commitment. Along the same lines, Robinson and Sensoy (2012) found no evidence that funds with low GP ownership underperform; in fact, for buyouts, low ownership funds overperform.

In terms of the economic compensation of PE managers, Gompers and Lerner (1997) found not significant effect between incentive compensation and performance, because reputational concerns induce managers to discharge their duties notwithstanding; however, they indicate that newer organisations may be more inclined to accept lower fixed/ higher performance-based economic arrangements to prove their ability, and then weigh in higher fixed compensation in subsequent funds. Metrick and Yasuda (2010) developed a model to study the expected revenue to PE managers and conclude that the majority of manager compensation is not sensitive to performance; successful firms stay in business by raising a new fund every three to five years and will adjust the target size of their fundraising -rather than the economic terms, as stated before- to investor demand. Hüther et al. (2019) and Robinson and Sensoy (2012) find evidence suggesting that agreements providing higher or faster compensation to the GP are either positively related or unrelated to net of fees performance, but in no case correlative with worse performance. Braun et al., (2019) compared fund deals with those of parallel co-investments (without fees or carry) and found no adverse selection mechanisms that would suggest superior performance to the same deals paying fees and carry.

But seeking information beyond fund aggregate conclusions, Ivashina and Lerner (2019) accessed an investor's proprietary set of confidential information on several PE firms and produced a comprehensive study of the economics within the PE firm. They concluded that the allocation of fund economics to each partner is uneven and divorced from past success as an investor and more to status as founder and that ownership of the firm is more concentrated than carried interest allocation. They also found that inequalities fall as firms mature and have

declined industry wise and that firms are more egalitarian after founders leave. Senior staff departures are rare, are negatively related to the funds' ability to raise capital and not conducive to starting a new firm by and large.

Figure 13 shows a summary of the identified and proven factors that affect PE fundraising:

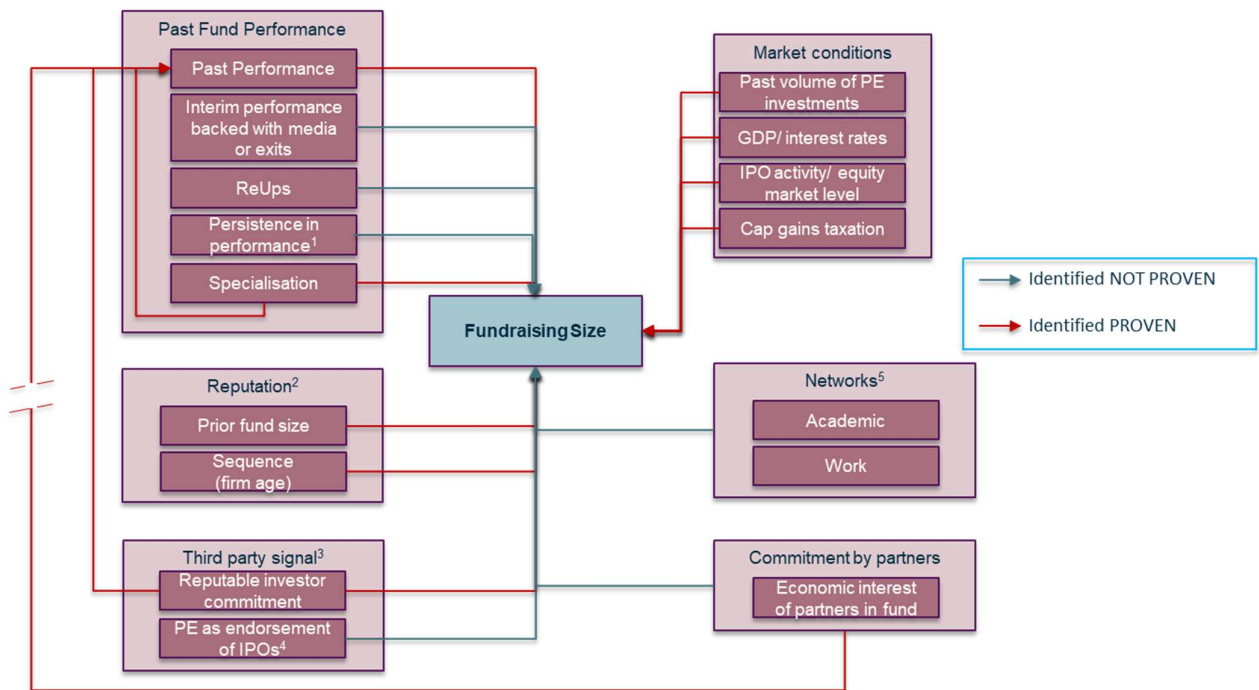


Fig 13-The chart above shows the identified (and not proven) factors that affect PE fundraising in Magenta; and the identified and proven factors that affect PE fundraising in red. As it can be seen, network, commitment and signalling factors have not been significantly found to correlate with fundraising. (1) Persistence in performance has been found to decline over time, which should be less correlated in long-term studies; (2) reputation has been tautologically defined as size; (3) reputable investor commitment has been found to decline in new funds of the same manager (i.e., less likely to re-up); (4) the existence of a PE investor in the capital structure of companies has been positively correlated with IPO success, showing the importance of endorsement, although not proven for PE as a beneficiary of fundraising; (5) studies on academic and prior-work networks have been found to correlate positively with business access but not studied as a factor in PE fundraising

V DERIVING A TESTABLE THEORY ON PRIVATE EQUITY DEMOGRAPHICS

V.c. METHODOLOGY AND DATA

a) Methodology and data strategy

The aim of the dissertation was to obtain evidence of observable attributes to help explain how PE Firms survive and how those attributes behave over the life of the firms. I sought to derive general conclusions which may be used to predict PE Firms ability to successfully raise funds, thus ensuring their continuity.

My personal observations on the factors affecting the mortality of PE Firms have been set out in Section IV.a. and b. Such observations include descriptions that are more easily quantifiable for testing and some others that are not. In order to distil the observations into a theory capable of being generalised, variables need to be identified. The present Section V.c. outlines the process I have followed to explore a large number of variables related to the concepts of knowledge, network, institutionalisation and ethics, as well as moderators to measure the differences along the lifetime of PE firms.

I have sought to collect multiple variables that characterise the conformation of the PE firms at the time of fundraising. The process of reconstructing such conformation was arduous and exploratory in nature. In other words, it was not possible to ascertain *prima facie* for which variables there would be sufficient data and for which not. Given the exploratory nature of the exercise, I attempted to tabulate data that was available even if it was not evident that they related directly to the research questions for two reasons: a) this pilot study aims at opening the

door for deeper studies on the direct research questions; and b) it also aims to facilitate data for other studies in connected areas of the industry to be launched.

So, the process started by identifying a number of potential explanatory variables buttressed on my observations described in Sections IV.a. and b. and the literature reviews in Sections V.a. and b., conducting substantial data collection and then using them to test their correlation to measures of successful fundraising. Since the aim was to understand how organisations behave throughout their lifetime, the sampling exercise considered organisations of different ages (as denoted by how many funds they had raised until the fundraising event under analysis); this was elected as an alternative to a longitudinal analysis on a smaller sample of specific organisations.

In order to attempt law-like generalisations, the strategy was to conduct a multiple regression on a subset of relevant variables. Obtaining measures for the variables consisted of a combination of data published by industry information services and a more intensive dive into objective data of each of the sampled organisations; this entailed identifying the moment of fundraising under analysis, accessing public information on the members of each organisation and their ranks as of such date and compiling and summarising such data.

I anticipated that some of the variables identified as part of my direct observations could be challenging to populate. This project has been characterised as a deep dive to recreate the characteristics of the PE firms. As such, it is only after gathering, observing and manipulating variables that a clearer picture of what the ultimate explanatory variables were, would be

possible to be drawn. It is predicated upon this characteristic that I sought to identify and populate a large number of potential variables to account for the difficulty in finding data or their ulterior lack of explanatory power, rather than having to go back to gather new information. In any case, I believe much of the data that was ultimately gathered will be useful for subsequent research projects.

b) Variable identification process

The absence of prior organisational dynamics studies on the PE or similar industries required me to embark on a variable seeking exercise. The effort was focused on understanding the variables affecting the fundraising capabilities of PE Firms as a means to understanding their chances of survival.

Based on the four types of attributes of the fundraising process identified in Figure 12, I set out to compile a list of potential variables. I based this process of identifying variables on the questions, inquiries, comments and requests received from investors throughout the years, including, but not limited to, questionnaires received from reputable investment advisors included in Appendix B. Conceptually, since I observed that PE Firms evolve through different phases of institutionalisation (which I nicknamed eggs, tadpoles and frogs), some of the attributes that investors assess to make their decision to subscribe an investment are resident in the firm per se; while others, remain with the partners of the PE firm.

In seeking to identify the potential explanatory variables, I acknowledge that most of these variables have not been tested. As such, coming up with a catalogue resulted in an ambitious data gathering process, which entailed looking at measurable data which might represent the desired variables directly or alternatively present some valuable signal of an indirect representation. For instance, a key variable to understand for this study was the power concentration within the firm. Typically, wealth allocation within the firm can be assumed to be directly related to power concentration; however, such information is hardly publicly available. Instead, deriving a measure of concentration of the firm based on the number of senior versus junior partners, was identified as a signal.

Finding certain PE Firm aggregate data was possible as a result of Preqin's industry information service who compiles information on fundraises, dates, size of funds and similar data. However, to obtain a bona fide x-ray of each sampled PE Firm at the time of fundraising required deep diving into additional data. First, ancillary in-depth data on the firms could be obtained from the Preqin but only in cumulative data as of the time of the database, not of the sampled fundraising event (i.e., as of May 2022); obtaining data as of such date, required to "double click" and make calculations and estimations. For instance, obtaining information relating to how many portfolio companies a particular PE Firm had at the time of fundraising a specific fund, I had to identify all the portfolio companies the firm had reported until May 2022, identify (or estimate) when each of them had been acquired and sold, to obtain a balance of companies as of the analysis date. Second, and most importantly, information on the profile of the partners of each firm at the time of fundraising, required identifying from public sources (or prompted by the information service) who were partners in the firm at the time of the analysis (not at the current job), dive into the profile of each partner, obtain biographical data

(past jobs, past university affiliations), weighing them and compiling aggregate values for the firm. For this I have used LinkedIn as the main⁹ source. I also looked at the profiles of the executives on the websites of the firms to a) understand the way each PE Firm addresses seniority (what titles in one firm are more better representation of Founders/ Seniors or Others/ Junior).

Figure 14 shows a schematic of the variable model used:

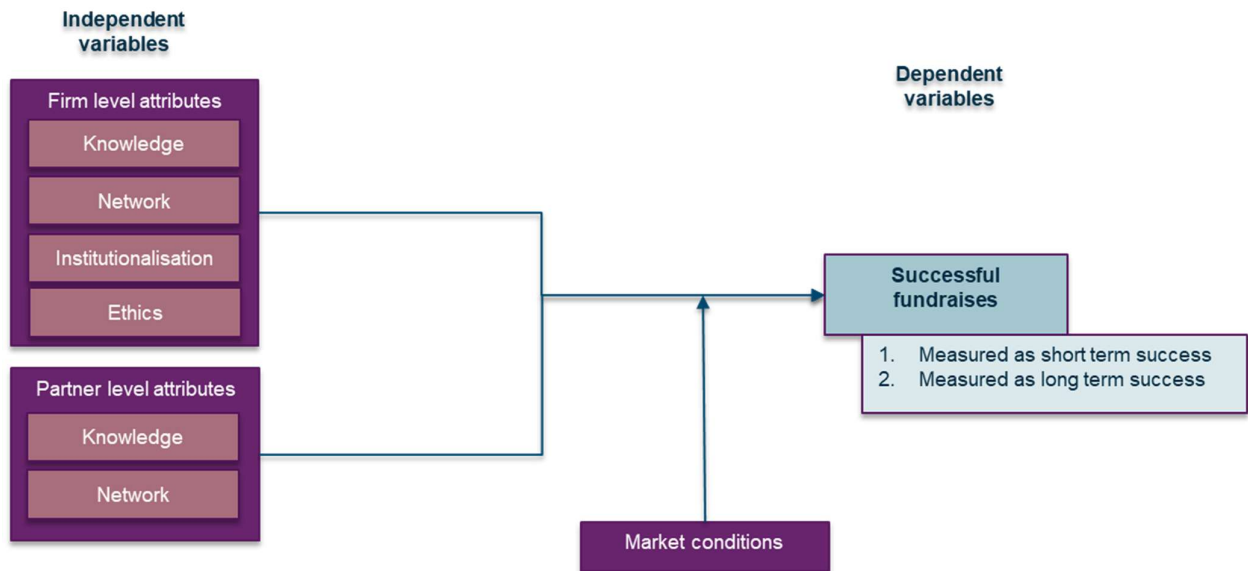


Fig 14-General preliminary regression model based on industry observations, identified and proven fundraising variables

The conceptual model in Figure 14 was used to identify, estimate, populate and test observations for independent, dependent, control and moderating variables. At all times, the objective consisted in deriving a robust predictive model. In the absence of a pre-existing model

⁹ When LinkedIn prove less useful, I checked Pitchbook and Crunchbase, or the website of the firm

that addresses the research questions, a pilot study was conducted to prune down variables from a larger set to a robust one. The relevance of each of the variables was assessed as part of the variable analysis, cleansing and final multiple regression. As a result many of the variables were discarded for use in addressing the research questions and hypotheses during the cleansing process. I believe that much of the data collected will be useful for further research identified further down.

As I conducted this pilot study, I collected information for variables which were ultimately not used in it, but which open the possibility for further research. For instance, in identifying the composition of the partners for each firm at each time under analysis, I noted the gender of the partners, so that potential studies on the gender dynamics in the PE industry could benefit from them. Also, the geographic location of each PE Firm, which was irrelevant for the purpose of this study, was noted down to nurture potential studies on the relation between specific academic institutions and PE firms. Finally, the identity of such institutions could be used to study which schools evidence a body of study/ network capabilities more attractive to PE Firms.

Once the variables were identified and populated, testing each of the variables and their interaction became necessary to prepare to seek predictive information. Appendix A, includes a catalogue of all variables considered, including a log of their modification/ evolution for final consideration.

*EN CASA DE HERRERO, CUCHILLO DE PALO-Gonzalo Alende Serra
V Deriving a Testable Theory on Private Equity Demographics
V.c.: Methodology and Data*



Doctorate in Business Administration

i) Dependent variables

Different measures were considered to represent successful fundraising; as part of data gathering for further studies, performance-related variables were identified and populated.

Several iterations were considered to measure fundraising success. The challenge arose in trying to identify a variable that would work uniformly for a first time fund and later sequences. For firms with prior funds raised, the measure of percentage change to prior dollar fund size was self-evident; but it did not work out for first-time funds. For the latter, using a measure of dollar size versus market average first-time fund dollar size prevailing at the time of fundraise made sense, but it was meaningless for established firms.

The short-term measure was finally settled on the absolute dollar size of the fund raised modify to enable linear regression, as will be more fully explained later. A long-term fundraising success measure was identified.

The measures identified for analysis were as follows:

1. Ten measures of dependent variables (six for fundraising and four for performance, which are available for further research):

Short term success measures

- (a) Fund size (DV0): the absolute size of the fund was considered despite the fact that it lacks a parameter to measure against. Its use was predicated on the fact that it is the only fundraising measure used in prior studies, it is available for new and existing firms alike and self-explanatory;

- (b) Fund size to first time fund average (DV1): the ratio of the size of the fund raised to the average size of first-time funds in the Preqin base;

- (c) Fund size to prior fund and to fund prior to last size (DV2 and DV3): the size of the fund raised to the size of the prior fund raised by the firm and the fund raised prior to the last by the same firm. This measure is not available for new firms and partially for firms with only one prior fund raised;

- (d) Fund size versus target (DV4): the ratio of fund size to target fundraising size as reported by the manager to Preqin; on observing the data I paid attention to central measures rather than the absolute ratio, to account for managers' understating of targets (or lowballing) to reflect in higher perceived success;

Long-term success measures

- (e) Long-term fundraising success (DV5): information on whether a manager is successful beyond the specific fundraise under analysis can identify how long-term signals and endowments behave. A ratio of subsequent fundraise to expected fundraises has been built based on i) the number of Funds raised by the manager between the fundraise under analysis and May 2022 -the cut off date of the data base; and ii) a theoretical number of expected funds to raise which is calculated as one fund every three years (the market expectation) during the same period; and broken down into quartiles;

Fund performance

- (f) Certain measures of fund performance were identified and data for them sought.
- (i) DPI (DV6): The ratio of distribution to paid in capital (known in the industry as DPI) for the three prior sequences. DPI is a relevant measure of performance assessed by investors, inasmuch as it reveals how much of a reported performance is actual realised cash (after considering general partner incentive), as opposed to the unrealised portion of the portfolio, which the general partner reports at a fair value that is more susceptible to manipulation;
- (ii) Performance quartile (DV7): The quartile performance of the fund or how the fund fared in terms of net internal rate of return as compared to other funds in the same vintage. This is published by Preqin, which reporting shows whether a specific fund was in the first (best), second, third or fourth (worst) 25% of the universe of reported funds
- (iii) MoIC (DV8): the ratio of reported proceeds from the fund over invested capital (“MoIC”) multiple is a very much used performance metric in the PE industry;
- (iv) Net internal rate of return, or “IRR” (DV9): The performance of a fund is measured in terms of MoIC and also IRR, these being the drivers for the calculation of carried interest. Although measured in absolute terms it is less relevant, given its widespread understanding I have considered it for research purposes.

Caution should be exercised when considering fund performance information. All performance information in Preqin is produced by voluntary contribution. Although it relies mostly on the contribution by the managers themselves, it also obtains information from investors, which may enrich/ confirm the information provided by managers. However, where information is only reliant on contribution by managers, lack of information (e.g., on performance) may indicate overstatement of reported performance, as a) firms may be more readily willing to contribute good news than bad ones; and b) firms going out of business will cease to contribute information on their final deals, funds, etc.

Figure 15 depicts the preliminary dependent variables identified:

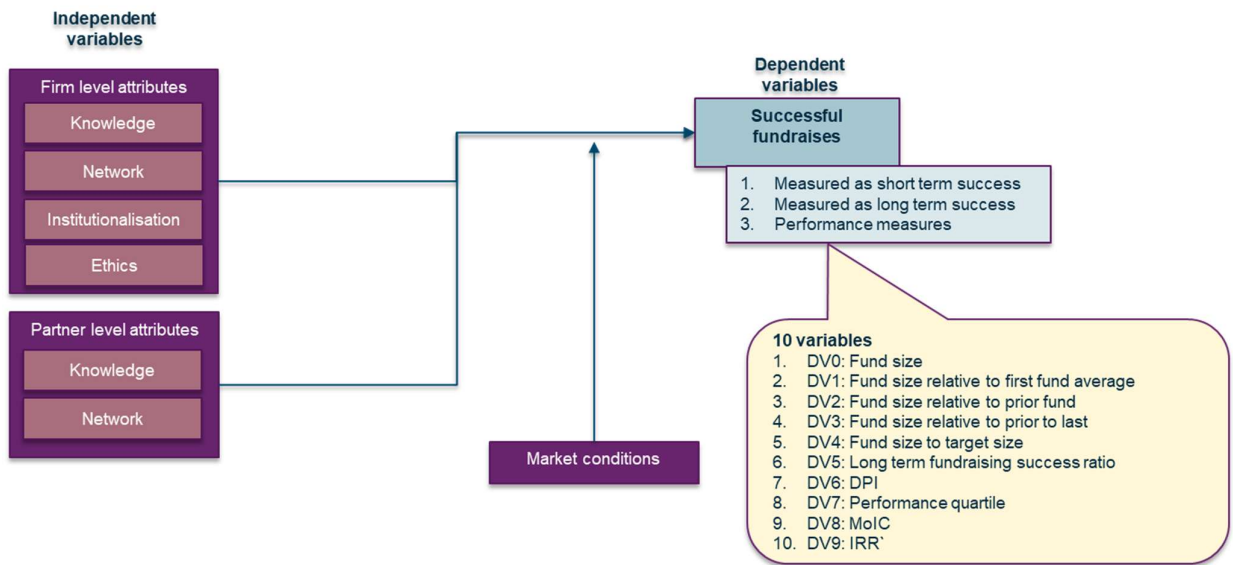


Fig 15-Preliminary dependent variables that were considered and pruned down as part of the pilot study based on whether they provided uniform measures for first funds and later sequences and whether sufficient data was available

ii) *Independent variables*

As mentioned before, the independent variables are conceptually located at the firm level or the partners' level. At the firm level, all four attributes (Knowledge, Network,

Institutionalisation and Ethics) can be measurable; at the partner level, Knowledge, Network and Ethics seem easier to identify; institutionalisation is not a concept which would reside at the level of the members, but at the firm itself.

The measures identified for analysis were as follows:

1. Firm level, 30 potential independent variables: (four for knowledge, eleven for network, thirteen for institutionalisation and two for ethics):

Knowledge: the knowledge resident at the firm level is represented by four measures

(a) Quartile of prior funds (FK1 -s-1; s-2; s-3-): The quartile performance of prior funds was individually for the three prior funds -a.k.a., prior sequences (s-1, s-2, s-3) of the firm;

(b) MoIC of prior fund (FK1i and iii -s-1-): the MoIC of the immediately preceding fund (blank for new funds)

(c) IRR of prior fund (FK1ii and iii -s-1-): the net IRR of the immediately preceding fund (blank for new funds or unavailable information)

(d) DPI of prior funds (FK2 -s-1; s-2; s-3-): The DPI for the three prior sequences of the firm;

Figure 16 depicts the preliminary firm knowledge variables identified:

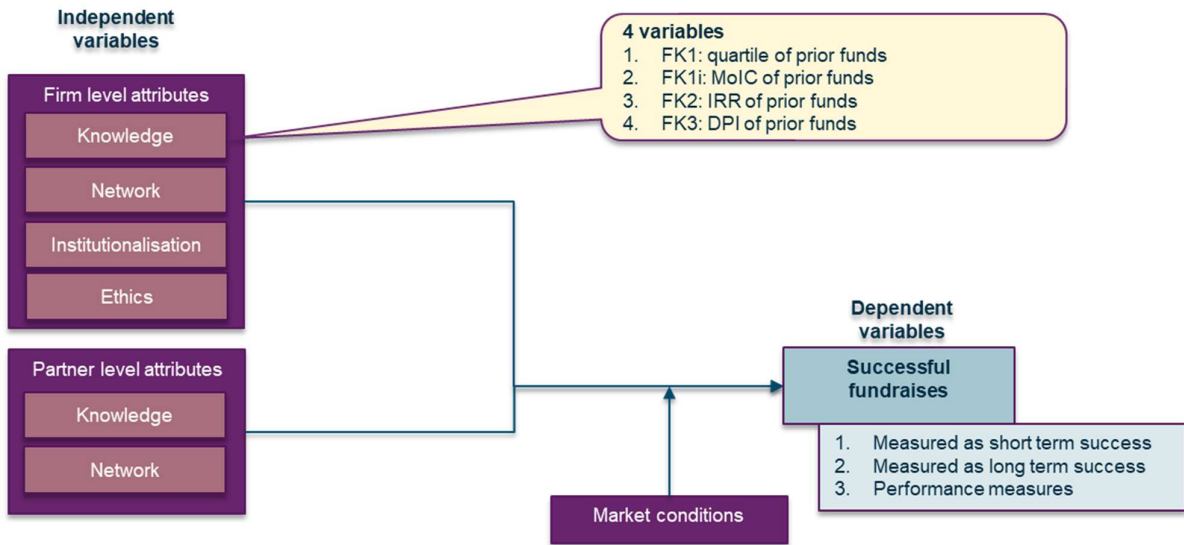


Fig 16-Preliminary firm knowledge variables

Network: the network value resident at the firm level is represented by eleven measures. Conceptually, they may be grouped into measures of Reputation, status and reach.

Other than the reputation bestowed by performance, which is herein considered as part of the expertise of the firm, reputation at the firm level is identified with its presence in the market and ability to dispose of companies. I have identified three preliminary variables:

- (a) Number of portfolio exits (FN1, FN1i): The absolute number of companies a firm has sold, or exits, prior to the time of the fundraising event
- (b) Percentage of exits (FN2): The number of exits as a percentage of the total companies a firm had acquired prior to the fundraising event

Both FN1 and FN2 were tried because individually, they may signal an incorrect dynamic. For instance, only considering the percentage may rate a firm with a single exit on its only single prior acquisition, as more prominent than a firm with numerous -although less than 100%- exits; conversely, only focusing on the absolute number may rate better a large firm with poor exit track record than a medium sized one, with a better one. For each firm under analysis, Preqin provides a table of deals (past and active). The focus is primarily on the circumstances surrounding the acquisition and so, although marked as active or realised, as the case may be, the tabulated data includes acquisition date but not sale date. In order to estimate the sale date, each company in a firm's Deals roster is assigned to the latest possible fund that could have been used to fund the acquisition (i.e., if a firm had vintages in 2009, 2011 and 2013, a deal acquired in 2012 is assumed to have been funded by the 2011 vintage -the latest fundraise before the deal) and the average holding period for such fund -also reported by Preqin, used to estimate the exit date by counting such average holding period from the acquisition date. In cases where the information on the average holding period was not available in Preqin, the information for the immediately preceding fund was considered; if this information was not available either (e.g., in cases of a first fundraise), the years between the fund and the successive fund were considered.

(c) IPO presence (FN3): a firm's track record as one which successfully takes companies public provides it with substantial public presence. A dummy variable (1=Yes, 0=No) was derived contemplated using a Google search with the firm's name and the word "IPO" restricted to news prior to the fundraising event. Upon such a search, either press releases or SEC filings showing evidencing IPO activity tend to appear and are

so considered. Given the nature of a Google search and the possibility of other news appearing before on the initial pages -which were the ones considered- the reliability of this method is lower than the information provided by Preqin and, as such, its ultimate consideration as a variable was scrutinized.

Status is identified with nine preliminary variables:

- (a) Percentage of past investor endorsement or “reup” (FN4): investors assessing a fundraise look at the list of other investors coming on board and pay special attention to those who were present in prior funds to "piggy back" on their past experience with the general partner

- (b) Percentage of reputable investor endorsement or “reputable” (FN5): as in the case of reups, potential investors also look to "piggy back" on the due diligence undertaken by reputable investors, generally recognized for their superior knowledge in the industry. The catalogue of reputable investors used, shown in Appendix B is made up of a search for the largest PE investors according to Preqin, with special consideration of Endowments, drawing on the reviewed literature that regards endowments as the more knowledgeable investors, and pension funds, given their visibility as a result of freedom of information act provisions. In addition, reputable investment advisors like Cambridge Associates, Stepstone or Hamilton Lane are seldom reported as investors and carry similar weight.

Information on investors names can be elusive; firstly, investors typically require confidentiality on the use of their names; secondly, managers may not want to divulge

sensitive information beyond specific fundraising interactions. The information in Preqin is obtained from a combination of data furnished by the investors themselves when they are U.S. public pension funds due to Freedom of Information Act requirements and voluntary manager data submission. As a result, a generalised understatement of investor endorsement may be reflected in Preqin's reports, which may even be reinforced for firm with reputable investors that are not public pension funds. Accordingly, central measures rather than absolute ratios will be considered and even those, were scrutinized

(c) Interaction between reups and reputable (FN6): the interaction on other investors' endorsement: it may be the case that individually, neither reups nor reputable investors alone are capable to explain the firm network status, so I calculated the interaction between FN4 and FN5 by multiplying these factors and test the product as an interaction variable. Since many reports or FN4 and FN5 are zero, the relevance of this measure was scrutinized after reviewing the overall statistics

(d) Brand recognition from partners becoming partners in other firms (FN 7): Brand recognition resulting from partners at the time of the fundraise subsequently becoming partners in other PE firms. The sum of absolute number of partners fulfilling that characteristic (3=reputable firms; 1=other firms) for the firm were obtained from the by partner analysis

(e) Brand recognition from partners founding new firms (FN 8): Brand recognition resulting from partners at the time of the fundraise subsequently founding new PE

firms with successful subsequent fundraises. The sum of absolute number of partners fulfilling that characteristic (1=Yes; 0=no) for the firm were be obtained from the by partner analysis. A variation (FN8i), was introduced to combine Brand Recognition from partners becoming either partners (FN7) or founders (FN8) in other firms.

(f) Inherited status-financial services (FN9): a firm's status will be affected if it is a *de alio* extension of an already prominent firm. A dummy variable (1=Yes, 0=No) has been assigned if the firm is the spin off/ PE-arm extension of a pre-existing financial services firm

(g) Inherited status-other (FN10): similar to the case below, a firm may have evolved as the investment arm of a large corporation, benefitting from its business ties (i.e., GE Capital, Bain Capital). A dummy variable (1=Yes, 0=No) has been assigned if the firm in such cases. A variation (FN10i), was introduced to combine Inherited status from financial services (FN9) and inherited status from corporate (FN10)

(h) Broker signal status (FN11): a signal of endorsement similar to the one emitted by the investor endorsement is that of reputable placement agents (brokers assisting fund managers to raise a fund by liaising them with investors). Placement agents are subject to SEC scrutiny and their association with success stories is critical for future engagements, so they are naturally selective in engaging general partners. A similar signal is emitted if prominent investment advisors (Cambridge Associates, Stepstone, Hamilton Lane) are participating as either agents or discretionary managers for other investors. A dummy variable (1=Yes, 0=No) has been assigned if the firm has engaged

a reputable agent. The catalogue of reputable agents used, shown in Appendix B is made up of a search for the largest agents according to Preqin.

Figure 17 depicts the preliminary firm network variables identified:

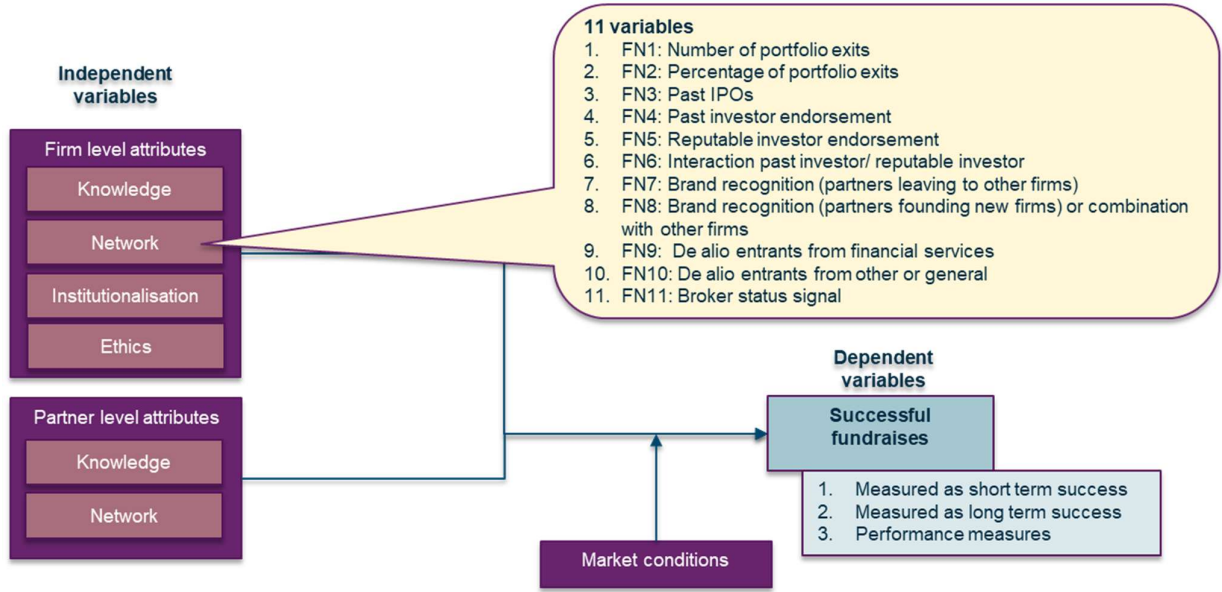


Fig 17-Preliminary firm network variables

Institutionalisation: the measures of institutional strength resident at the firm level are represented by 13 variables. Certain of them -M1 to M4- were originally identified as potential moderators, hence their different notation. Upon successive review of literature, I found that Balboa and Martí (2003) had used size as a predictor for fundraising and decided, instead, to change it to an independent variable.

(a) Trust (FI1): the number of years of partners working together is a measure of trust and one prospective investors tend to inquire about; given the inherent tacit nature of PE knowledge, many small -and not so small- decisions need to be made by individuals, not necessarily with the benefit of time and a collegiate process. Being aware of the

power and limitations other partners' skills and being able to interact in a coordinated way takes time to develop. The total number of years of partners working together is obtained from the by partner information on the by partner section below;

(b) Firm life (years) (FI2): the life of the firm may send a signal of reliability and as such has been considered;

(c) Trust: average of years partners working together as a percentage of the firm life (FI3): As a variation on (FI2) the number of years of partners working together as a percentage of the life of the Fund (obtained from Preqin) was considered as well;

(d) Power concentration at the firm (FI4): One of the key tenets of this study is to understand the structural differences within firms, which can be approached by the differential status between senior partners and other partners. For first time funds, "Senior Partners" are those listed as founders; for firms with prior funds, a review of the titles of all partners and their tenure was made to define who was senior and who was not at the time of fundraising. Review of the website of the team section of each firm generally indicates the title bestowed upon the most senior members, which for some may include the word "managing", "founding", a "C-level" indication or other; reading the "about" section of the website of each firm enabled also to understand the history and identify the way each firm denotes seniority. Ideally, one would benefit from having full information on the designation of Key Persons in the funds' documents and/ or the economic allocation of carried interest; unfortunately, such information is extremely confidential. In lieu, relative power has been modelled by

assigning a value equal to 3 to the senior partners/ founders; and equal to 1 to the other/ junior partners. Based on the by partner information obtained as part of the analysis in the by partner section below, a Herfindahl-Hirschmann coefficient was obtained for each firm to denote the level of power concentration;

(e) Firm size (FI5): The size of a PE firm can be used as a proxy for its expected survivability. Larger firms command higher absolute management fee revenues capable of attracting executives to look for development options. The most common way of denoting a firm's size is by the value of its assets under management, or "AuMs". AuMs for private equity have been defined by the U.S. Securities and Exchange Commission (the "SEC") as the fair market value plus the unfunded commitments of the funds under management. SEC records are available -if hard to find- for the reported AuMs of all registered private equity firms starting 2015; for prior fundraises I have estimated the value of the AuMs of a firm prior to fundraise as the size of the prior fund multiplied by its reported money over invested capital ("MoIC") multiple. Rather than using the absolute value of the firm, I have computed the multiple of the firm's size relative to the average AuMs of PE firms as published by Preqin since 2000 (and using 2000 value for prior fundraises), denoted as (FI5i). For the purposes of correlation, I considered an index with a minimum size of 0.25 and a maximum size of 2.0, since there are thresholds in which the perception will cease to be correlated to the actual size but rather to clusters of "small", "medium" and "large"

- (f) Number of partners (FI6): the overall number of partners can be a measure of both the size of the firm and of its long-term commitment and as such, it has been considered for correlations;
- (g) Ratio of Seniors:Other (FI7): On the data gathering exercise I have noted that many firms are "Head Heavy". This imbalance may be a signal of succession issues and as such, the ratio between the number of senior/ founder partners and other/ junior partners were also considered;
- (h) Firm size-partners (FI8): Another potentially relevant measure is the relative size of the firm. I have calculated the AuM per partner as such measure;
- (i) Bandwidth (FI9): One way to gauge how committed a firm is to its long-term future is to analyse how many partners the firm has to manage its outstanding portfolio of companies. Firms incapable of raising new funds will inevitably see their partners migrate to other firms due to the lack of resources; therefore, firms with high portfolio companies per partner (low bandwidth) would send a negative signal for prospective investors. The number of partners per firm at the time of fundraise was obtained from the by partner information on section; the number of companies, from the calculations for (FN2);
- (j) Sequence (M1): the number of funds the firm under analysis raised including the current observation was considered. Earlier sequences (1, 2, 3) denote younger firms;

while higher sequences represent more established firms. The database obtained from Preqin indicates the fundraising sequence of each fund. A variation using logarithm of sequence was computed (M1i) and clusters of sequences greater than 3 and smaller or equal than 3 were established for “established” and “younger” firms, respectively;

(k) Time since preceding fundraise (M2): I have considered the potential impact of lags from prior fundraises greater or less than the five years that represents the general investment period in funds' terms, which sets the alarm clock for the survival of the firm if a new fund is not raised. This data can be obtained from Preqin's Funds Performance section for each firm;

(l) Firm size before fundraise (M3): another measure of life stage is the size in terms of the size of the fund raised. A variation (M3i) was compiled with three clusters based on size ranges as follows:

- (i) Small firms: AuM from \$0 million to \$1,000 million
- (ii) Medium sized firms: from \$1,000 million to \$3,000 million
- (iii) Large firms: over \$3,000 million

(m) Size of preceding fund (M4): size of the prior fund raised by the same firm. A variation (M4i) was computed using the logarithm of (M4)

Figure 18 depicts the preliminary firm institutionalisation variables identified:

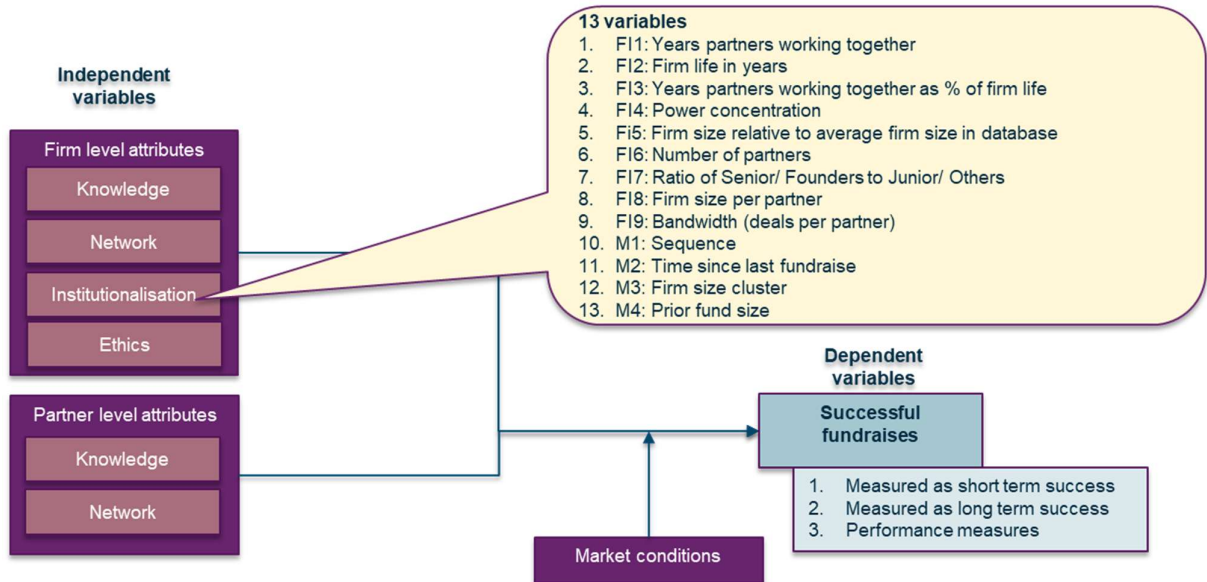


Fig 18-Preliminary firm institutionalisation variables

Ethics: the potential ethical challenges of firms were represented by two variables

(n) Change of auditors (FE1). firms in general tend not to change their auditing firms. I have identified for each fundraise whether the auditor is the same as for prior funds of the same firm and marked it as a dummy variable (1= No change, 0= Change), as a change of auditor may be a negative signal of potential ethical/ fraud issues;

(o) Firm good name (FE2): although this variable is being computed as a dummy variable, the expectation was from the outset that it would not be used. The rationale behind it is the belief that a firm with a tainted name will find it impossible to raise funds. If this were true, one would not find fundraising events for firms with negative public reputation. The analysis on 114 firms and 647 executives has not yielded a single case of a fundraise in which a google search of the firm name (and its partners’

individually) together with the words “corruption”, “fraud” and “ethics” resulted in findings of public claims against them.

Figure 19 depicts the preliminary firm ethics variables identified:

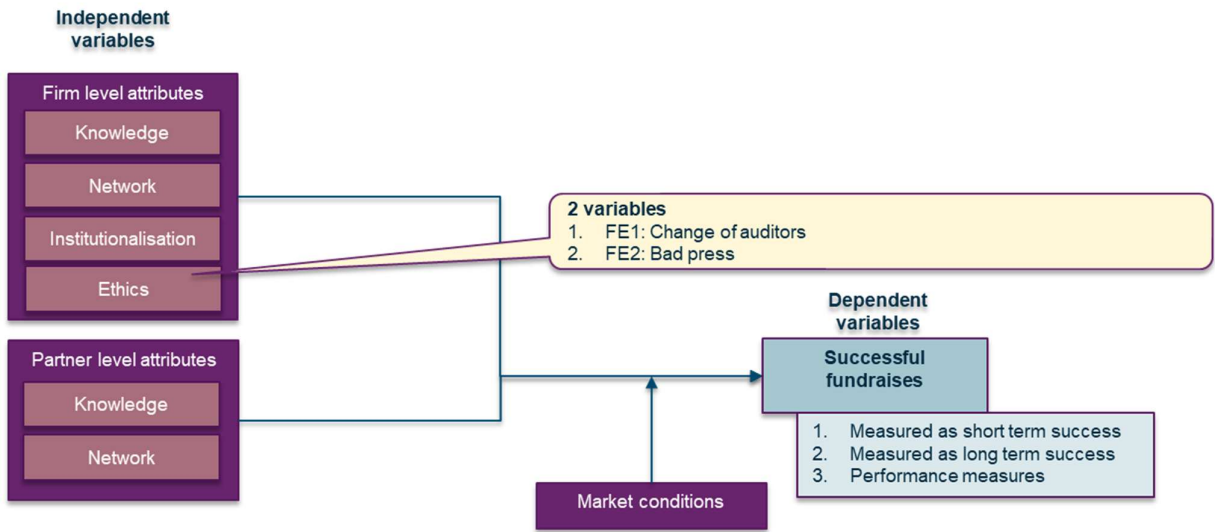


Fig 19-Preliminary firm ethics variables

2. Partner level, nine potential independent variables: (two for knowledge and seven for network):

Knowledge: the knowledge resident at the aggregate partner level is represented by two measures

(a) Quartile of average calibre of prior affiliations (PK1): The caliber of prior affiliations of a partner is measured on a declining scale with the more recent experience receiving a higher weight. The declining scale has been defined as 1 per year for the most recent five years, 0.83 for the sixth preceding year; 0.67 for the seventh preceding year; 0.50 for the eighth preceding year; 0.33 for the ninth preceding year; 0.17 for the tenth-preceding year; and zero for any experience over ten years old.

These yearly weights were multiplied by the caliber of the organisation in which such knowledge has been attained, as follows:

- 5 points for high caliber organisations, which generate the perception of high-competence: these consist of i) reputable PE managers, ii) prominent investment banks (or “Big Bulge Bracket Firms”), iii) leading management consulting firms and iv) C-level positions in public companies;
- 3 points for mid-caliber organisations: i) other PE managers, ii) reputable PE investors and iii) lead PE legal firms;
- 1 point for other engagements.

The list of reputable PE managers, Big Bulge Bracket Firms, leading management consulting firms and leading PE legal firms are listed in Appendix III; the list of PE reputable investors is listed in Appendix B

I have disregarded the use of academic acumen as a measure of competence - originally considered- for two reasons: a) knowledge is not only captured by the expertise in relevant who tested for competence -firms will conduct their assessment on this knowledge so using it in two variables would theoretically lead to multicollinearity -but also applicability in the everyday environment; b) knowledge may become stale so the use of a declining scale on older knowledge as sifted by employers seems like a better measure. Nonetheless, the academic affiliation remained valuable for networking purposes, as discussed further below.

In addition, selecting the categories of firms above as measures of superior caliber does not purport to suggest that other experiences are less valid (e.g., the M&A expertise of a mid-level executive in the M&A area of a large corporation may provide high competence), but that they are less likely to be so assessed (arguably because they are harder to measure) by prospective investors.

A variation was computed as (PK_i) grouping the calibre of the different executives by quartile.

(b) Variance of calibre of prior affiliations (PK₂): The variance on the caliber of prior affiliations. Having a more diverse partner base may be more attractive for investors than having all similar cadres. The variance was estimated as the coefficient of variation (standard deviation divided by the mean value) of (PK₁).

Figure 20 depicts the preliminary knowledge at the partner level variables identified:

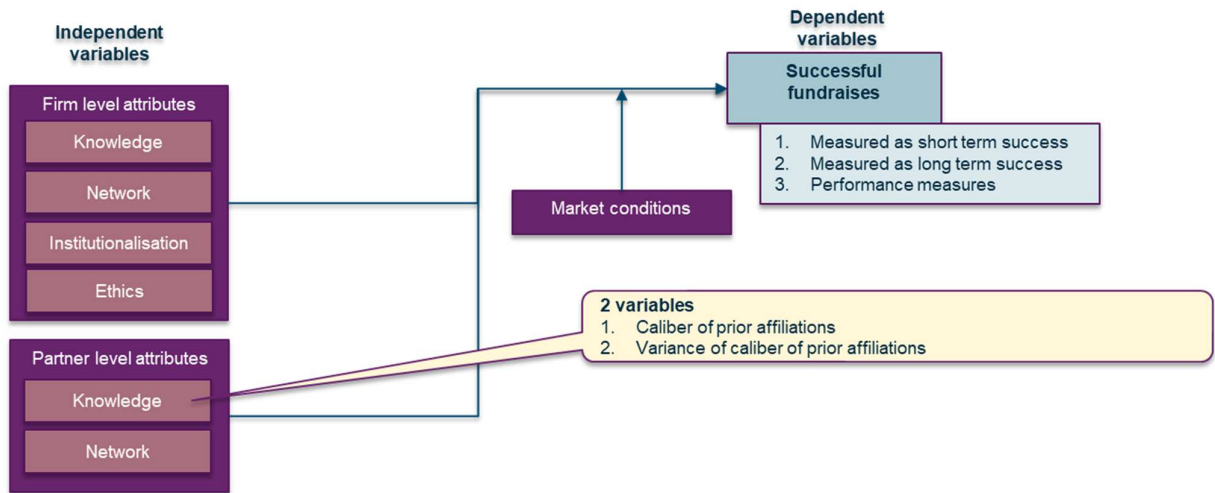


Fig 20-Preliminary variables for knowledge at the partner level

Network: the value of the network resident at the aggregate partner level is represented by eight measures. The preliminary variables I have identified to measure the strength of the portion of network attributes residing at the aggregate partner-level, is related to i) the points of network access or communities bestowed from the partners to the firm and ii) the average value and variance of such connections. Those connections relate to the partners' academic alma mater and one to prior job affiliations.

Network points: The notion that underlies this section relates to the fact that firms benefit from the use of connections of their members to their academic and prior work communities for deal and investor access. The computation of these variables is a simple count (without double counting; i.e., if two members attended one college or firm the community value is only one) of high calibre firms (as described in PK1) and schools (see PN3 and PN4 below).

(a) Number of school community access points (PN1): results from counting the number of high-ranked and high-aged schools partners in a firm attended. A variation (PN1i) -an a logarithm variation of it, (PN1ii)- was computed to add (PN1) and (PN2) as the number of total network access points.

(b) Number of prior work community access points (PN2): results from counting the number of high-calibre firms partners in a firm worked before the fundraise

Quality of university networks: Underlying this notion is the fact that college ties last long and are a very powerful network. The nature of the ties, which by the passage of time can render them increasingly weak, provides additional value to the network. The college affiliations will be perceived as more valuable the higher consideration investors place upon universities. Potentially two measures (and their respective variances) were considered:

(c) Average affiliation(s) to top ranked universities. The affiliation to universities ranked by prominent global lists of business schools/ schools of economics result in assigning 5 points to universities ranked in the top five places of such rankings -on average -in the five years preceding the fundraise (available rankings from 2000 means that fundraises until 2004 used the 2000 ranking, see Appendix B); 3 points were assigned to universities in the next 20 (i.e., places 6 to 25) positions on average; and 1 point otherwise. One such value was attributed to the partner for each degree to account for multiple networks. Average of partners ratings on this category was fed as a firm aggregate variable;

- (d) Variance of top ranked universities (PN4): The coefficient of variation (standard deviation dividend by the mean value) of (PN3) has been considered as the variability of university caliber may result in an alternative measure of the concept described by (PN1);
- (e) Average affiliation(s) to high status universities (PN5): As a complement to (PN3) universities were be ranked by years of history, the age of a university used as proxy for its status. Universities with over 250 years of existence were assigned 5 points; those with over 125 years, 3 and the rest, 1. Average of partners ratings on this category were fed as a firm aggregate variable;
- (f) Variance of high status universities (PN6): The coefficient of variation (standard deviation dividend by the mean value) of (PN5) has been considered as the variability of university caliber may result in an alternative measure of the concept described by (PN1);
- (g) Quality of prior work networks (PN7). The considerations used for calibrating prior work knowledge were used to measure prior work networks. A single point was assigned to each partner for their experience in high caliber organisations (reputable PE managers, prominent Big Bulge Bracket Firms, leading management consulting firms, C-level positions in public companies) and mid-caliber organisations (other PE managers, reputable PE, lead PE legal firms) as sources of networking for transaction opportunities, that do not erode over time. Average of partners ratings on this category were fed as a firm aggregate variable;

(h) Variance of prior work networks (PN8): The coefficient of variation (standard deviation divided by the mean value) of (PN7) has been considered as the variability of prior work networks may result in an alternative measure of the concept described by (PN2). As commented in the knowledge section, selecting the categories of firms does not purport to suggest that other networks are less valid (e.g., involvement in politics, NGOs, independent board memberships), but that they are less likely to be so assessed by prospective investors.

The variables included as (PK1), (PK2), (PN1), (PN2) and (PN3) were also computed separately for Senior/ Founder partners (codified as “S”) and Other/ Junior partners (codified as “O”).

Figure 21 depicts the preliminary network at the partner level variables identified:

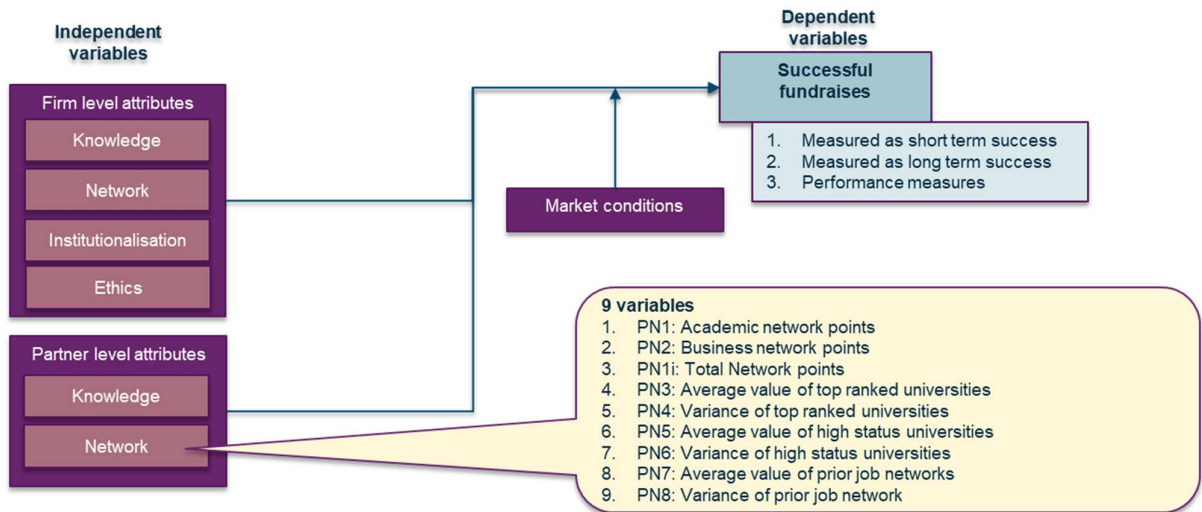


Fig 21-Preliminary variables for network at the partner level

iii) *Market conditions (control)*

Three variables measuring market momentum measures were identified to explore if they affected fundraising:

1. Equities market momentum (M5): The ease of fundraising can finally be compared to the general level of equities. As equity prices in the public markets rise, the prospect of successful valuations and exits emboldens investors to seek fundraising (NB: although rising equity prices should deter investors, fundraising activity in general correlates well with public equity indices). In order to measure the “ease” of fundraising at any given point, the level of the S&P 500 (as reported by Capital IQ) has been used. For each year, a ratio of the level of said year compared to the three-year moving average has been estimated, resulting in a range 0.71 to 1.51. I have thus identified three environments:

- a. Challenging: 0.71 to 0.98
- b. Average: 0.98 to 1.24
- c. Favourable: 1.24 to 1.51

Figure 22 shows the time series for the evolution of the public market environment:

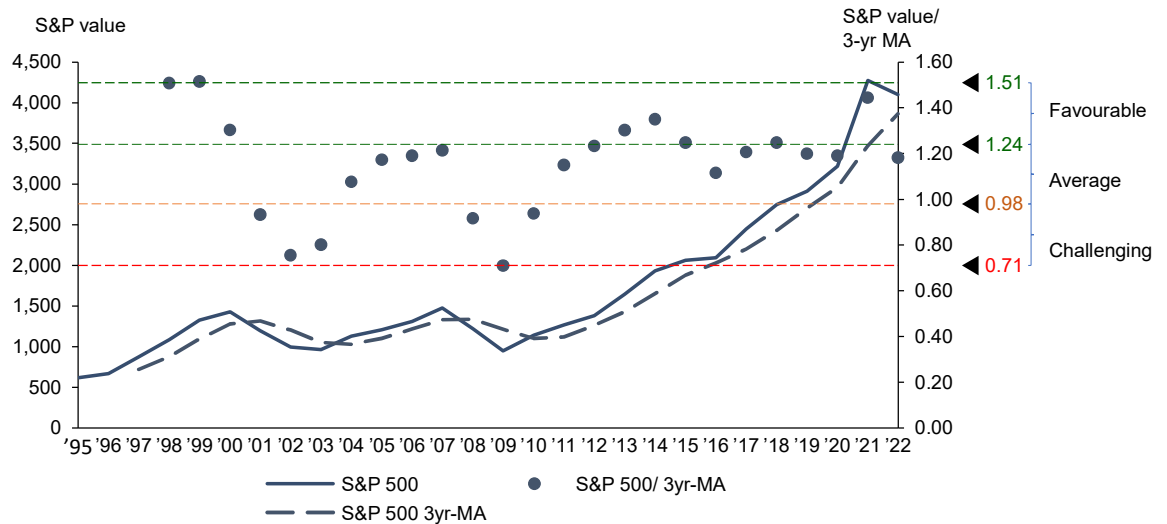


Fig 22- Evolution of the equity market environment control variable, showing a ratio of current to 3-year moving average ranging from 0.71 (most challenging market level) to 1.51 (most buoyant market moment) (Ratio of S&P 500 at time_n into 3-yr moving average_{n-3,3-2,n-1}), Source: CapitalIQ

2. PE Market Fundraising (M6): In order to measure the “ease” of fundraising at any given point, the total fundraising level (as reported by Preqin) has been used. For each year, a ratio of the level of said year compared to the three-year moving average has been estimated, resulting in a range of 0.50 to 2.59. We have thus identified three environments:

- a. Challenging: 0.50 to 1.20
- b. Average: 1.20 to 1.89
- c. Favourable: 1.89 to 2.59

Figure 23 shows the time series for the evolution of PE market environment:

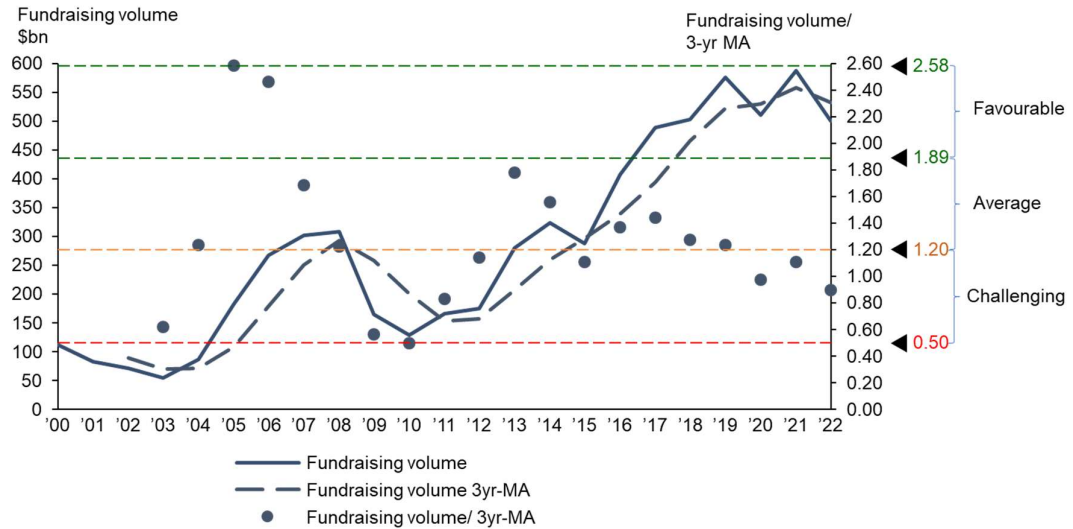


Fig 23-Evolution of the fundraising environment control variable, showing a ratio of fundraising level to 3-year moving average ranging from 0.50 (most challenging market level) to 2.59 (most buoyant market moment) (Ratio of fundraising volume at time_n into 3-yr moving average_{n-3,3-2,n-1}), Source: Preqin

3. PE Market Supply (M7): the ease of fundraising was also measured in terms of the volume of unused commitments in existing funds (otherwise known as “dry powder”). In order to measure the “ease” of fundraising at any given point, the level of dry powder (as reported by Preqin) has been used. For each year, a ratio of the level of said year compared to the three-year moving average has been estimated, resulting in a range of 0.81 to 1.80. We have thus identified three environments -in which the greater the dry powder, the more challenging the environment, as there is more competition from unused funds and lower allocations to new fundraises-:

- a. Challenging: 1.47 to 1.81
- b. Average: 1.14 to 1.47
- c. Favourable: 0.81 to 1.14

Figure 24 shows the time series for the evolution of PE market environment:

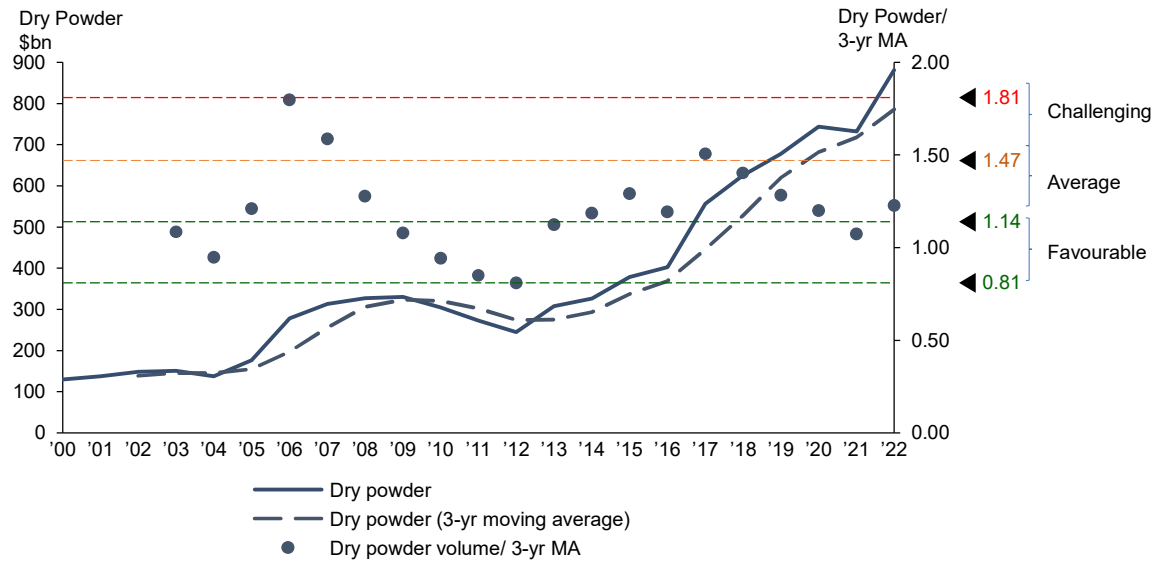


Fig 24-Evolution of the dry powder environment control variable, showing a ratio of current to 3-year moving average ranging from 1.81 (most challenging market level) to 0.81 (most buoyant market moment) (Ratio of dry powder at time_n into 3-yr moving average_{n-3,3-2,n-1}), Source: Preqin

Figure 25 depicts the market conditions variables identified:

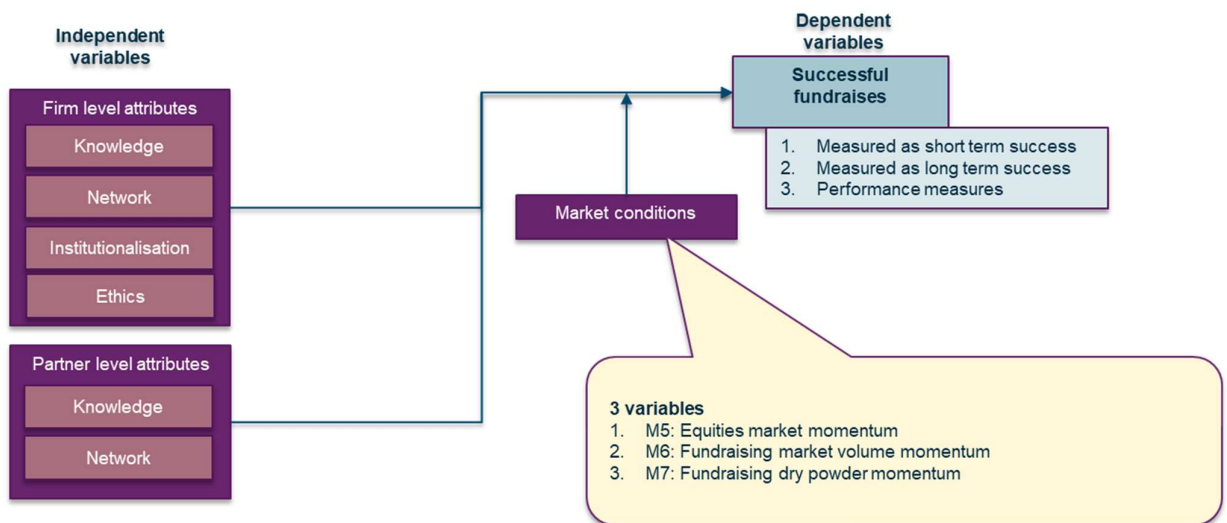


Fig 25-Preliminary variables for measuring market conditions

b) Data sourcing and sampling

i) Sourcing

As mentioned before, I used Preqin as the primary source of data to identify and sample fundraises for analysis. The choice of Preqin as the main data source for the firm seems a robust one, when one compares the size of its database to some others used in past research, as shown in Figure 26:

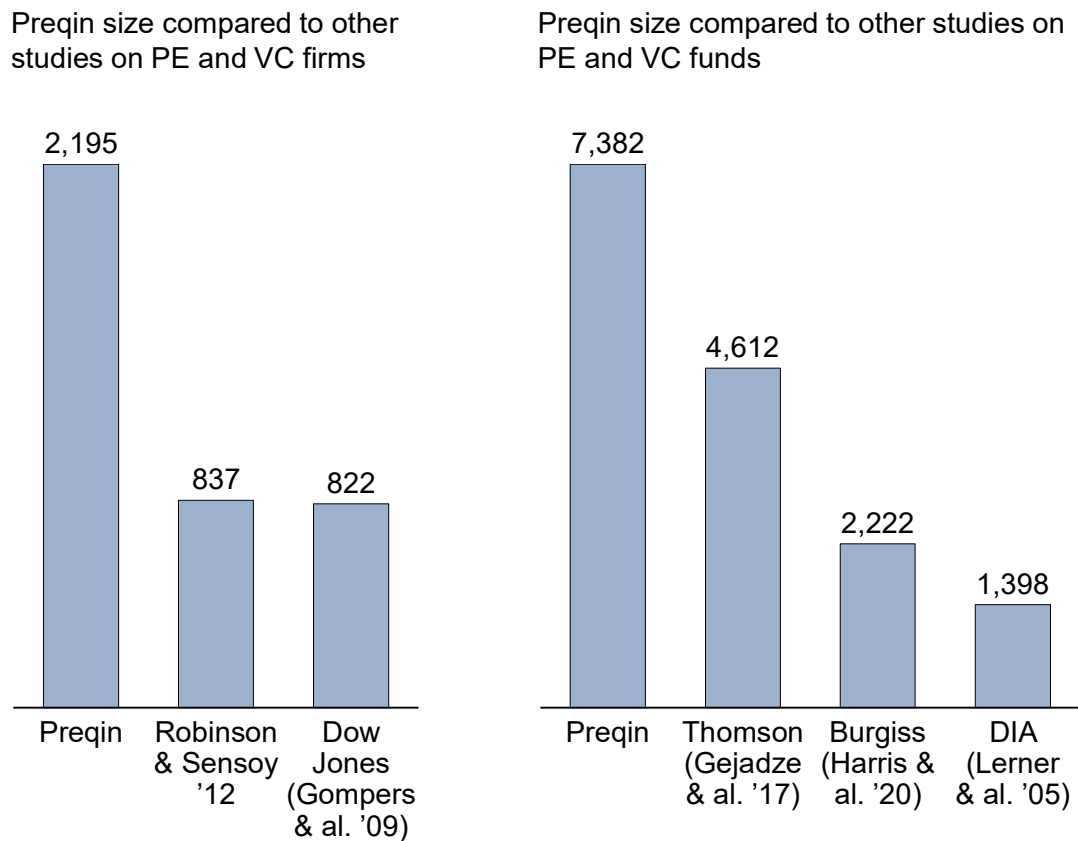


Fig 26- Comparable size of Preqin database. Despite it not being an official and complete record of all firms in the PE industry, its size suggests it is a robust source of data for empirical studies

Although it is a database in constant expansion, the Preqin database, however, does not yet capture many of the organisational data that I used to form the indexed independent variables about the conformation of organisations. That type of data, by and large, relates to biographical information of the founders and other partners at each fundraising event. To obtain this information I conducted a manual search of Linked-In's vast biographical database (as well as other alternative sources, when the information was not available or comprehensive). For information on general public market variables I have used my access to S&P Capital IQ information system.

ii) Sampling

From the 7,382 fundraise events in the Preqin dataset I attempted to build a representative sample to test the formulated hypotheses. The objective was to come up with a base of no less than 100-150 occurrences to run multiple correlations. In addition, I need to ensure that the control variables are adequately represented as well. For this reason, I aimed to have the following minimum occurrences:

Variable	Minimum number in sample
Fundraise events	150
Firms	100
Firms that are part of a larger organisation	10
Funds of less than \$100m	20
Funds of between \$101-\$500m	20
Funds of between \$501-\$1,000m	20
Funds of more than \$1,001m	20
Firms with only one reported fund	20
Firms with 2 or 3 reported funds	20
Firms with 4 or more reported funds	20
Funds with single industry focus	20
Funds introducing a new industry focus	20

1. Initial sampling process

I started the process by downloading the May 13, 2022 Preqin Fund Database into excel (2022-10-25-GAS-Preqin Population from Sorted Firms.xls). With this excel database (renamed 2023-01-30-GAS-DBA Regression Sheets). I set out to create a 200 fund initial base (to provide extra occurrences to meet the 150 target). Given that the base totals 7,382 cases and the initial sample is 200 cases, I put the base in random order and selected each 36th ($7,382/200=36.91$) occurrence.

Once the preliminary 200 occurrence selection was made, I re-sorted the base in ascending order considering first Firm ID, then Fund ID, then Vintage/ Inception Year. The first sampling filter resulted in 185 different firms, 77 of which were first-time fundraisers; 42, firms with a

second or third fundraise; 32, with four or more fundraises; and 55 without reported sequence, which had to be cleansed. In terms of size, 101 observations corresponded to funds with a size of \$100 million or less; 58 with funds of between \$100 million and \$500 million; 21, with funds of between \$500 million and \$1,000 million; 26 with funds of greater than \$1,000 million.

2. Data Cleansing

After this initial sampling exercise, a line-by-line process to eliminate cases with little validity started. The following are characteristics that I believe would make their inclusion noisy and the reasons why:

- **Co-Investment:** funds that were raised as complements to other funds do not add to fundraising activity (they are simply another vehicle for the same fundraising event the principal fund represents). Identifiable by their name as “co-Investment”;
- **GP-Vehicle:** side vehicles funded by the GP (also as co-investments), generally a very small portion of the principal fund (bears no relation with the fund size). Generally identified by the small size compared to another fund of the same firm and the same vintage, but with a very small fundraise;
- **Still raising:** the information for fundraises which are still ongoing tends to be volatile and not relate well to past information (e.g., the size of an ongoing fundraise may change subsequently and render the conclusions invalid). Generally identified if marked “ongoing” or “first close” as status;

- Lack of relevant data: lack of relevant reported data such as size warranted the replacement of randomly selected occurrences; and
- VC: There was one case for which the name of the fund suggested it was VC rather than PE.

3. Initial resulting sample

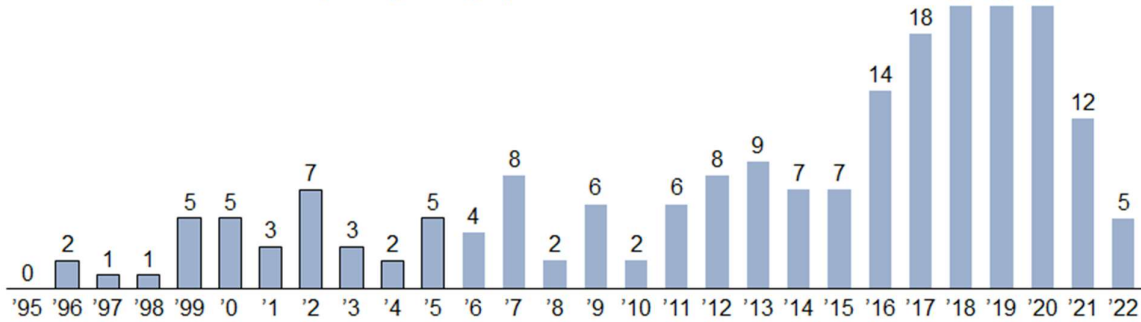
After the cleansing process, a database of 209 fundraising events was obtained, from which all funds prior to 1995 were eliminated on the grounds that data on partners is likely to be harder to fund. The result is a fundraising events sample of 202 firms with fundraising events spanning the 1995-2022 horizon. This base involved 180 different firms, corresponding to 159 firms with a single fundraiser in the sample, 20 firms with two fundraises in the sample and a firm with three fundraises in the sample. The sample is larger than the target in case the LinkedIn search fails to generate information on some of them.

The sample appears strong as -in general terms- it fulfilled the diversity objectives set forth at the beginning:

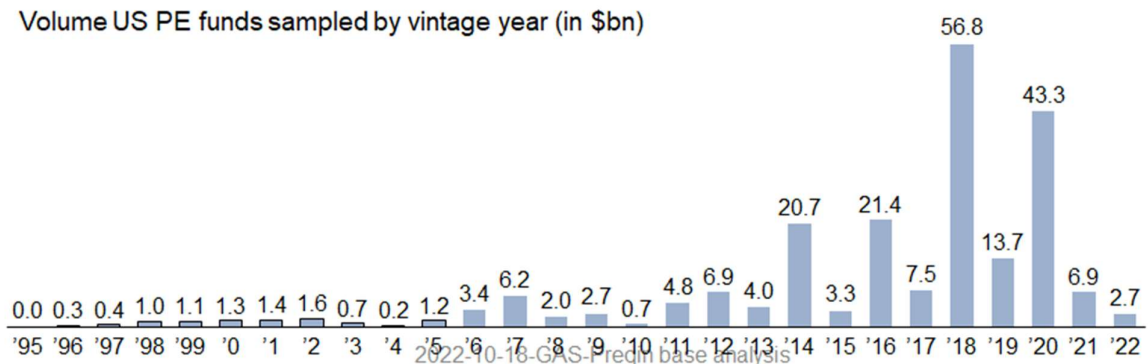
Variable	Target number in sample	Preqin sample
Fundraise events	150	202
Firms	100	180
Firms that are part of a larger organisation	10	9
Funds of less than \$100m	20	57
Funds of between \$101-\$500m	20	80
Funds of between \$501-\$1,000m	20	23
Funds of more than \$1,001m	20	42
Firms with only one reported fund	20	60
Firms with 2 or 3 reported funds	20	60
Firms with 4 or more reported funds	20	82
Funds with single industry focus	20	n.a.
Funds introducing a new industry focus	20	n.a.

Figures 27 and 28 below describe the fundraising events and firms that were sampled for the research process:

Number US PE funds sampled by vintage year



Volume US PE funds sampled by vintage year (in \$bn)



Average size of US PE funds sampled by vintage year (in \$m)

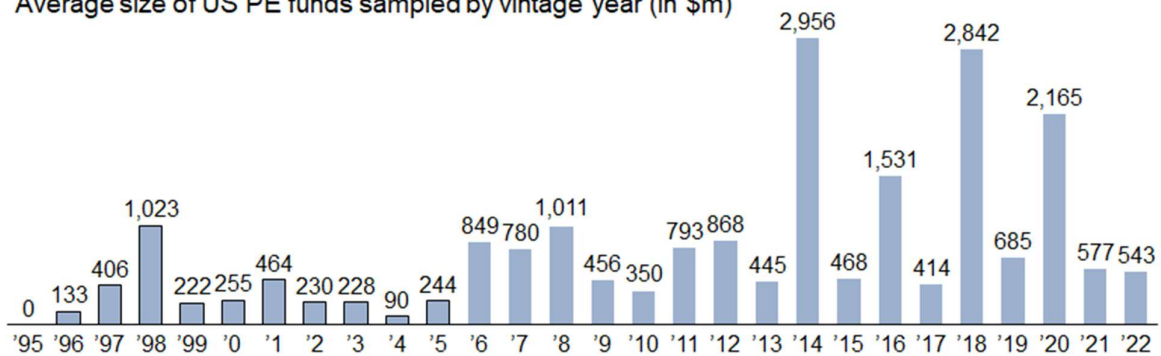


Fig 27-Breakdown of funds sampled by vintage year by number, total size and average size: Fundraises from most years since 1995 were statistically selected for the research sample

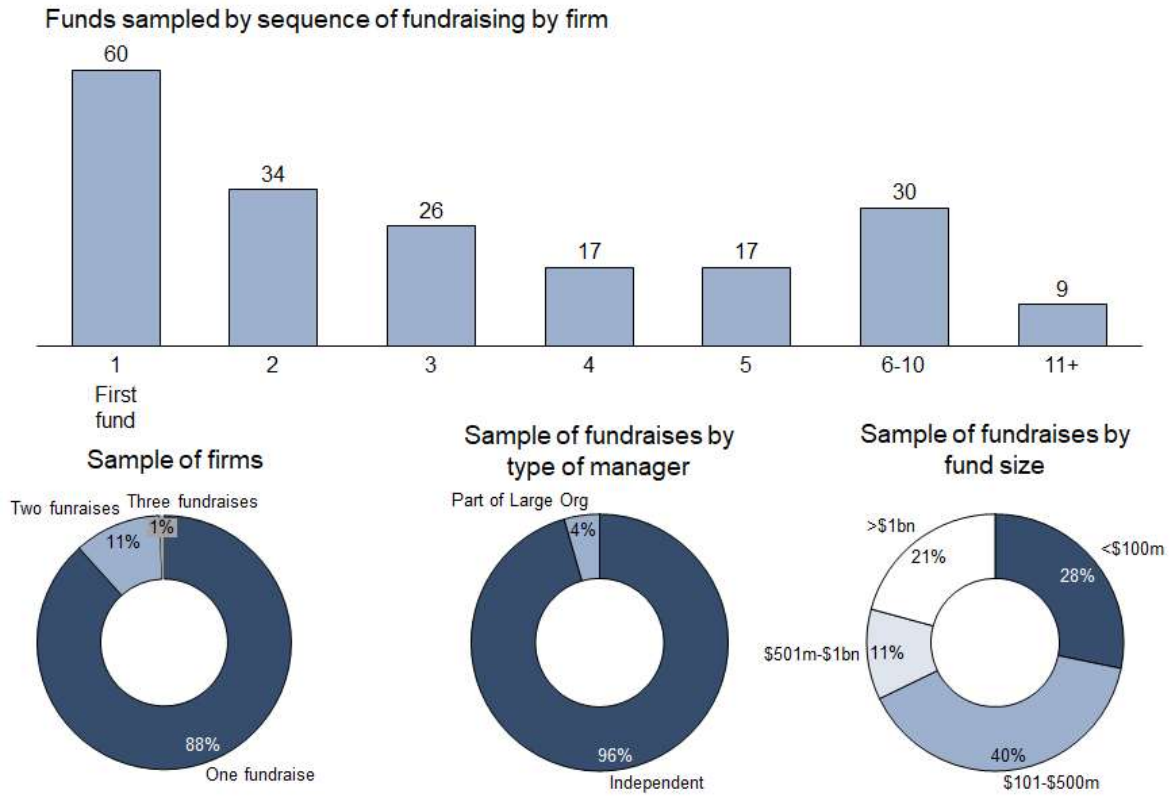


Fig 28-Breakdown of funds sampled by sequence, type of manager and size: The sample is also rich in terms of sequences (number of funds raised by each firm) and size of the fund

4. Additional cleansing as part of the data population process

As indicated, before, the objective was to come up with a base of no less than 100-150 occurrences to run multiple correlations. Throughout the data gathering process, detailed information about the funds and firms is being discovered that ruled out some of the originally sampled fundraises.

Fundraises of Secondary funds (i.e., funds raised to acquire limited partnership interests in other funds), Funds of Funds, Venture Capital Funds, GP related funds, Co-Investment Funds, Real Estate and funds announced but not completed were identified and taken out of the sample,

as such funds and firms do not reflect the intrinsic dynamics of the buyout PE firms under study. In addition, 88 funds without the minimum data for the analysis and funds incorrectly labelled as North American when their geographical focus was outside of the region were also eliminated.

5. Final resulting sample

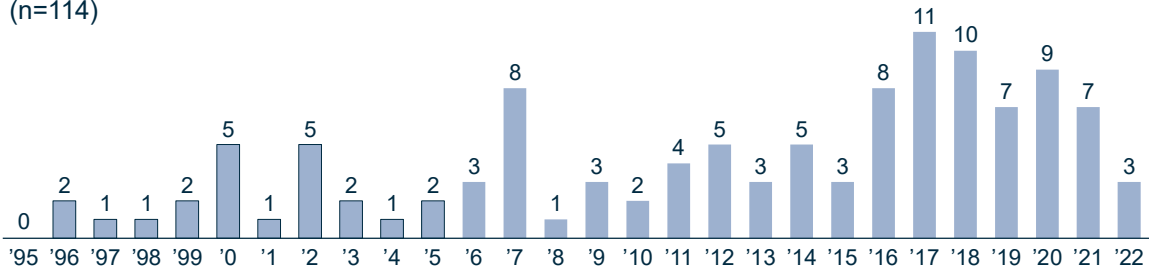
From the 202 fundraising events spanning the 1995-2022 period described in III. D and the cleansing during data gathering and population described in III E. we have a final resulting sample of 114 fundraises, corresponding to 109 different firms, including biographical information from 647 executives.

The sample fulfilled the diversity objectives set forth at the beginning:

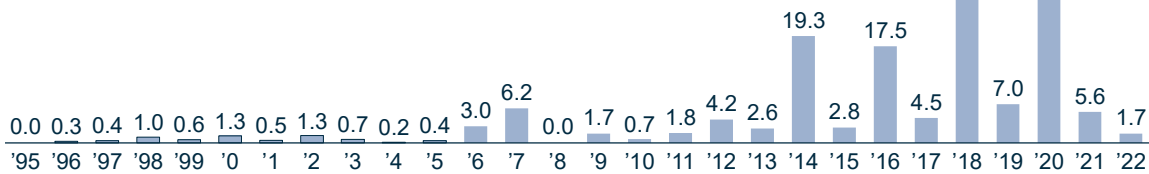
Variable	Target number in sample	Final base
Fundraise events	150	114
Firms	100	109
Funds of less than \$100m	20	15
Funds of between \$101-\$500m	20	55
Funds of between \$501-\$1,000m	20	15
Funds of more than \$1,001m	20	29

Figures 29 and 30 describe the fundraising events database:

Number US PE funds sampled by vintage year in final database (n=114)



Volume US PE funds sampled by vintage year (in \$bn) in final database (n=114)



Average size of US PE funds sampled by vintage year (in \$m) in final database (n=114)

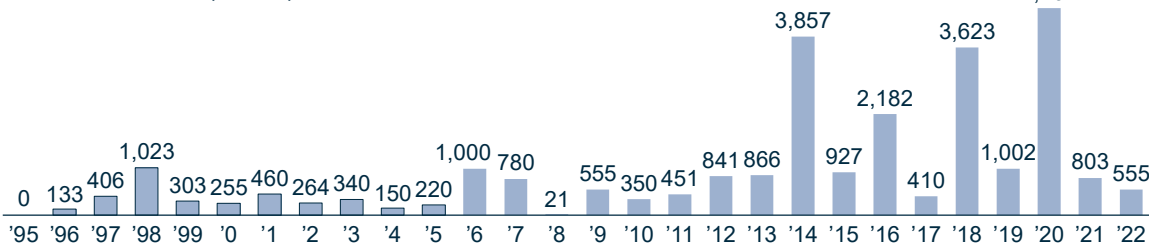


Fig 29-Breakdown of funds sampled by vintage year by number, total size and average size

Funds by sequence of fundraising by firm in final database
(n=114)

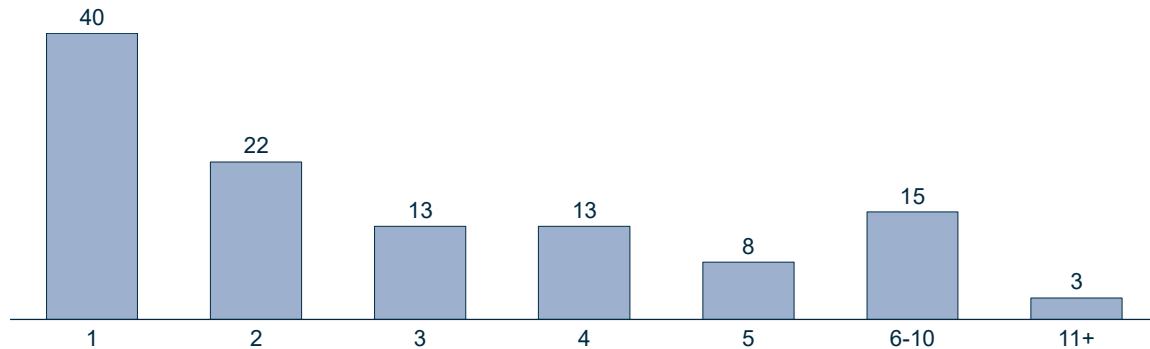


Fig 30- Funds by sequence of fundraising by firm in final database; the sample is also rich in terms of sequences (number of funds raised by each firm)

c) Data collection and cleansing:

i) Collection and population

In order to populate the data base which would be then used for correlation, for each PE manager related to a sampled fundraising, four different data files were created in Microsoft Excel:

- Fund Series file, containing the summary information of each of the funds raised by the PE Manager, including the one under sample. This file was populated with information such as the date for each fund, its size, performance, auditors, etc.; such data enabled the identification of prior fund size and performance, of the performance of the fund under analysis, the average holding period for the investments, of the number of funds from the one under analysis until the end of the database horizon (2022), etc. It was also used to estimate or obtain from the SEC, the amount of AuMs;

- Portfolio file, containing the list of all the companies a PE firm has owned, along with their date of acquisition. Their sale date was estimated identifying, from their acquisition, the fund from the PE firm each portfolio company was associated with; using the holding period obtained from the Fund Series file. Knowing the acquisition date and the estimated sale date enabled me to compute how many portfolio companies a PE firm had owned until the date of the fundraising under analysis, how many it had sold, how many remained in the portfolio. A google search enabled me to identify if the PE Firm had made IPO exits before such date;
- Investor Evolution file, containing the reported composition of investor rosters by fund of a PE Firm. By tabulating the names into the file, I was able to identify “reups” and reputable investors and calculate their percentages of the fund under analysis; and
- Executives file, the one with information about the organisation and its internal demographics. The Executive file for a PE Firm consists of a summary sheet listing all the partners (which were identified from the Preqin PE Manager site) and the summary information about their past employment, academic history, gender, seniority position, as well as the averages, coefficients of variation and totals for such information. The file then consists of one tab with the detailed biographical information of each of the partners (their jobs, positions, dates -weighted as described in the variables section-, and their academic history, titles, dates). It finally includes a tab which computes the network points by avoiding repetition of the same schools or companies for partners in the same PE firm

The summary information on the Fund Series, Portfolio, Investor Evolution and Executives for each PE firm was then transferred on to the Data Base. This process was carefully made with

one assistant, following detailed instructions from a Handbook for Data Population, which remains available for review, under request, as does the full data base and all the files by PE Firm.

ii) Cleansing and variable filtering

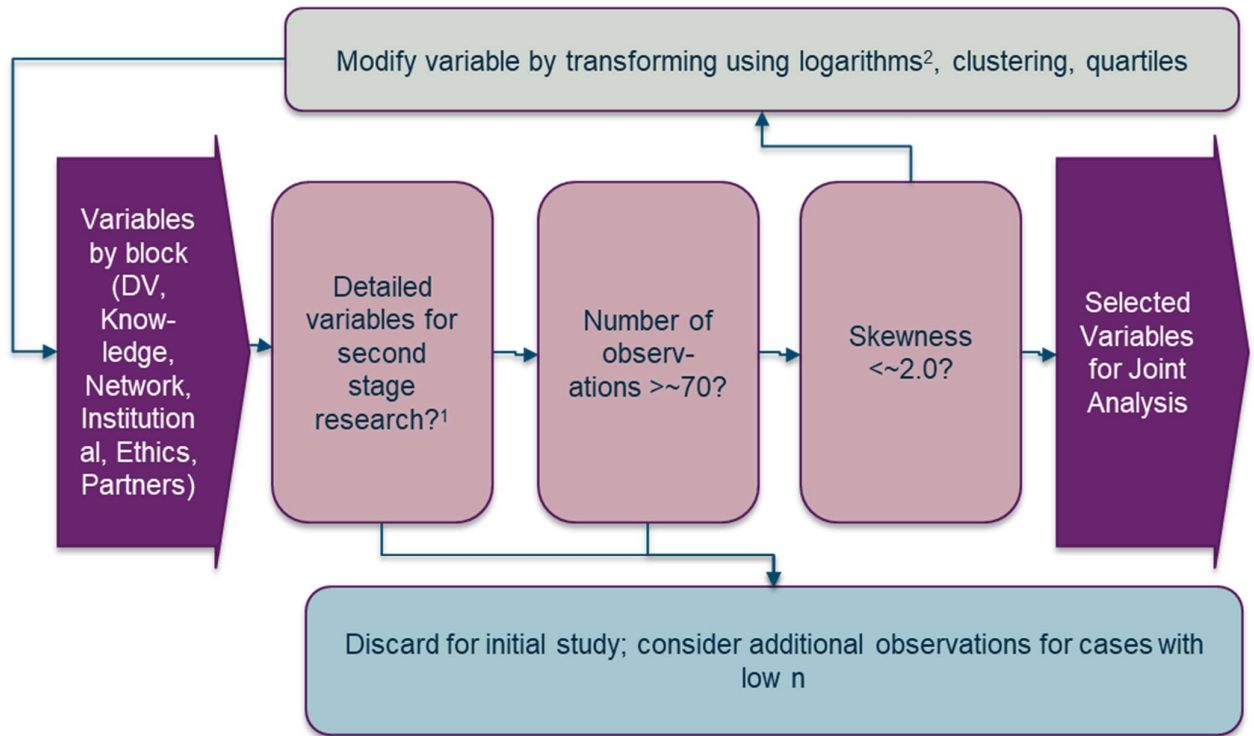
The data collection and population process resulted in a rich database with information on 44 potential independent variables to explain the success of a fundraise, measured potentially by six variables and four additional ones for performance. Availability of data for each of the variables was not always possible, sometimes as a result of them not being reported and other times as a result of them being observations of a sequence that does not capture information on a variable because it simply does not make sense (e.g., if an observation is a first sequence - i.e., the first fund of a firm-, then returns of prior fund(s) are nonextant).

As a result of the above, after completing the database, the effort consisted in cleansing the data to identify which variables had enough relevant data; and also to assess whether the variable had the adequate characteristics for a multiple linear regression. For instance, some variables were discarded because a very limited number of observations were obtained. Nonetheless, they remained as part of the descriptive process because they theoretically present valid attributes for potential explanatory power to be derived from future research with a larger data base.

The effort to cleanse the base consisted of first analysing each variable separately and then, only with respect to those that survived the individual filter, assess their correlation and collinearity to avoid noise in the explanation by the regressed model.

1. Individual analysis

Figure 31 depicts the process undertaken for the identification of the individual variables to then analysed jointly as part of a second step:



1 in the case of dependent variables, "valid only for certain sequence"?

2 Used MacCune transformation for series with observations equal to zero

Fig 31-Schematic of the individual variable cleansing and filtering process; the process involved transforming certain variables and pruning down variables with low population and high skewness

Given the substantial number of potential variables, the individual analysis was conducted considering the different blocks of variables: dependent variables, independent variables of firm knowledge, of firm network, of firm institutionalisation, of firm ethics, of partners and finally of moderators.

As shown in Figure 31, the filtering exercise begins by identifying whether, from a theoretical perspective, the variables make better sense for a derivative study, rather than the main/ broad explanations. For instance, the consideration of an independent variable related to network points originated in academia or in business, may make better sense to be treated as an aggregate and only in a subsequent stage, to be moderated or treated separately. In the case of dependent variables, also, when they are only meaningful for certain sequences (e.g., when they are not for new fundraises), the general case cannot be tested and as such, they have been left for subsequent research. The full detail of the filtering and cleansing process, including the statistics of the removed variables is incorporated as Appendix C.

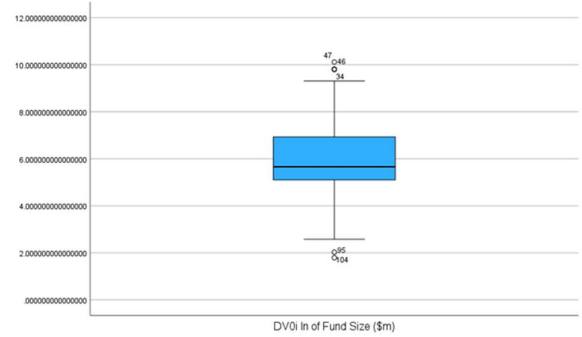
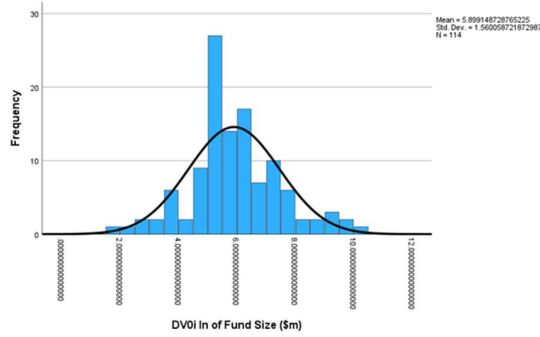
(a) Dependent variables

Three groups of potential dependent variables were compiled: short term fundraising success; long-term fundraising success and performance.

From the ten potential dependent variables, the four performance variables were not considered at this stage for two reasons: a) none of the variables provided more than 70 observations; this

is sensitive because the study aims not just at identifying explanatory variables for fundraising, but also to moderate using different sequences, to identify how these behave over the lifetime of firms. Having such low number of observations would, when broken down by sequence groups, provide a rather low number of observations for the subgroup to make it reliable for predictive purposes; and b) the ulterior performance of the fund would not *per se* provide information on the fundraising event, but rather on how accurate the decisions of the investors, ultimately were. The two dependent variables related to fund size compared to prior funds are only valid for sequences higher than 1, and as such were disregarded for the initial study. Similarly, the ratio of fund size to average is less theoretically meaningful for higher sequences and has equally been disregarded. Finally, the measure of size against the target was disregarded initially because of a potential bias by the fact that absence of actual target is sometimes replaced by the fundraisers with the ultimate size thus artificially increasing their accuracy. Since this may require further refinement it was initially disregarded, as was the estimate of long-term fundraising success, on the same count.

The resulting independent variable for analysis was the fund size of the fundraise, which has also been used in prior studies in fundraising (although not with an organisational focus). A modified version using the normal logarithm was computed to avoid skewness problems. The statistics for the resulting dependent variable are shown in Figure 32.



Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
DV01 In of Fund Size (\$m)	114	1.7917594692	10.115117071	5.8991487288	1.5600587219	.252	.226	.708	.449
Valid N (listwise)	114								

Fig 32-The descriptive statistics of the ln of Fund Size show a normalised pattern (low skewness)

(b) Independent variables

From the forty four preliminary independent variable, seven were disregarded for providing a low number of variable observations. Eighteen variables were disregarded as others represented their concept more closely or on an aggregate basis, which was considered more suitable at this stage; for example, *de alio* entrants from different types of organisations were considered on the aggregate rather than separately, leaving the more detailed variables for further analysis; or IRR versus MoIC as a measure of knowledge. Also, certain variables which operate other variables, like average partners years working together as a percentage of firm age, were disregarded in favour of the separate variables of average years and firm age. The same occurred at the Partner Level, with averages of network points contribution by partners and their variance.

As in the case of the dependent variable, in order to improve the normalisation of the filtered variables, a combination of logarithmic operation, clustering or the computation of quartiles was used. In the case of logarithms, some of the original variables had observation values equal to zero; for them, the computation of logarithm was not possible. In order to overcome this limitation, the McCune & Grace (2002) (“McCune”) transformation was used to obtain the logarithm.

The sixteen resulting variables (with their statistics), are shown below:

(i) Firm Knowledge: ln of MoIC of prior fund (Figure 33)



Fig 33-The descriptive statistics of the McCune transformed ln of MoIC of the prior fund show a normalised pattern (low skewness)

(ii) Firm Network

1. Number of portfolio exits -logarithm (Figure 34)

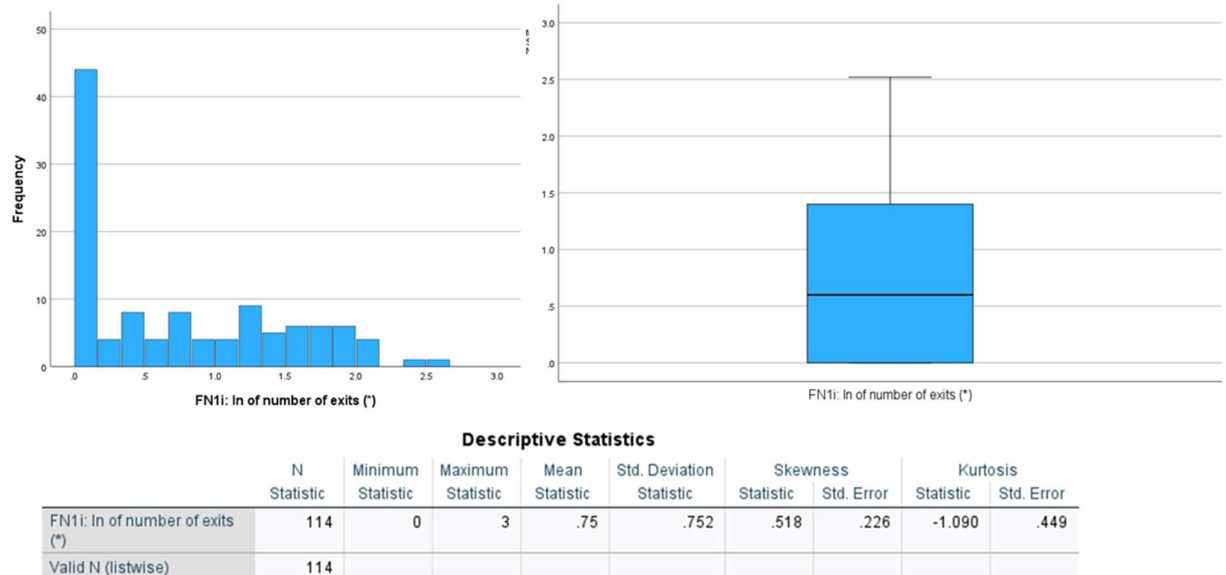


Fig 34-The descriptive statistics of the McCune transformed ln of Portfolio exits show a normalised pattern (low skewness)

2. Past IPOs -dummy variable (Figure 35)
3. Brand recognition -dummy variable (Figure 35)
4. *De alio entrant* -dummy variable (Figure 35)
5. Reputable bróker -dummy variable (Figure 35)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
FN3: IPO (Y=1; N=0) [ESTIMATE %?]	114	1	0	1	.21	.409	1.439	.226	.072	.449
Valid N (listwise)	114									

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Combination of FN7 and FN8	114	.00	1.00	.3333	.47349	.717	.226	-1.513	.449
Valid N (listwise)	114								

Descriptive Statistics

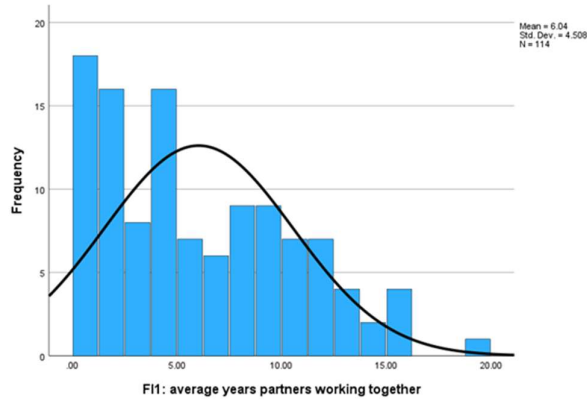
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
FN10ii: de Alio General (combination of FN9 and FN10)	114	.00	1.00	.2105	.40948	1.439	.226	.072	.449
Valid N (listwise)	114								

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
FN11: status -reputable agent (Y=1; N=0)	114	1	0	1	.22	.416	1.375	.226	-.112	.449
Valid N (listwise)	114									

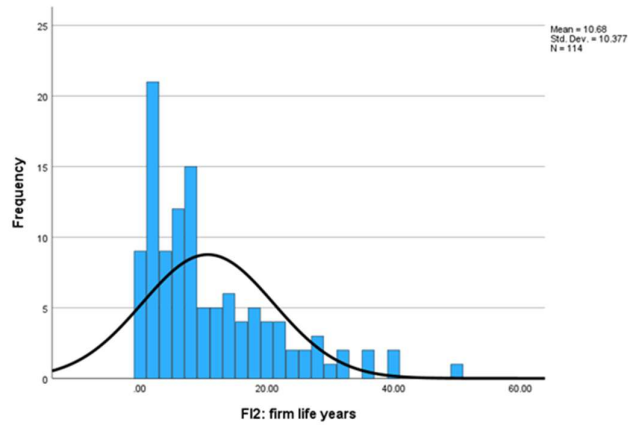
Fig 35-The descriptive statistics the other Network variables show fitness to regress (normally distributed)

- (iii) Firm Institutionalisation
1. Average years working together (Figure 36)
 2. Firm life in years (Figure 36)
 3. Power concentration (Figure 36)



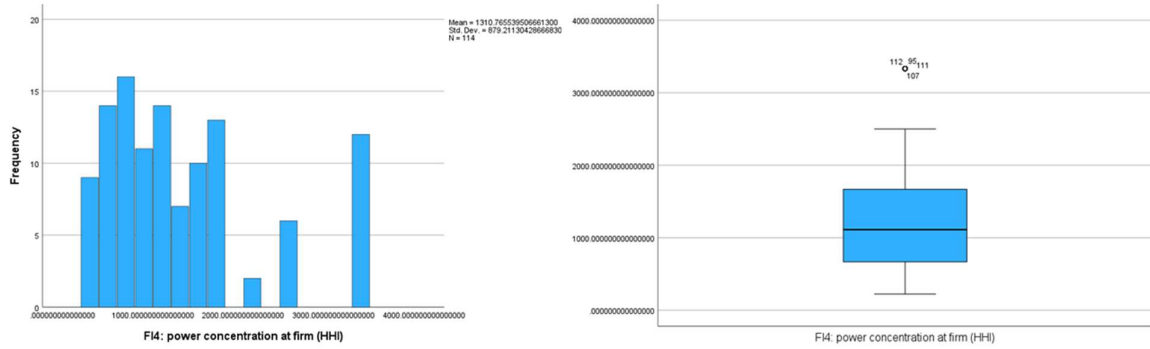
Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
F1: average years partners working together	114	19.00	.00	19.00	6.0404	4.50795	.551	.226	-.572	.449
Valid N (listwise)	114									



Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
F12: firm life years	114	50.00	.00	50.00	10.6754	10.37739	1.341	.226	1.625	.449
Valid N (listwise)	114									

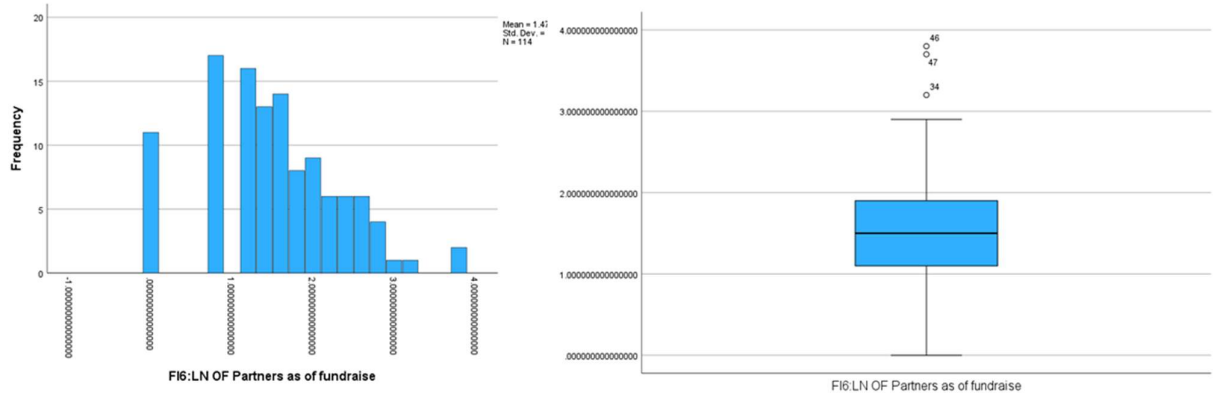


Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
F14: power concentration at firm (HHI)	114	222.00000000	3333.00000000	1310.7655395	879.21130429	1.184	.226	.528	.449
Valid N (listwise)	114								

Fig 36-The descriptive statistics of the average years of partners working together, firm life in years and power concentration show normalised patterns (low skewness)

4. Number of partners -logarithm (Figure 37)

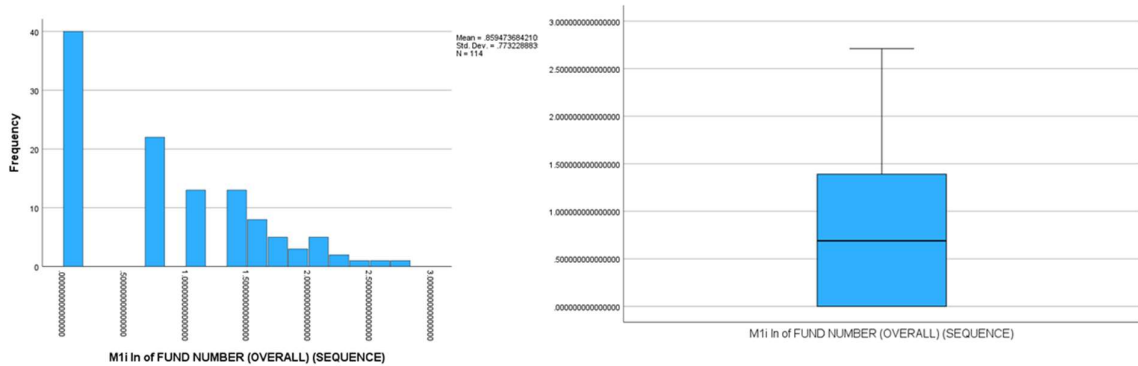


Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
F16:LN OF Partners as of fundraiser	114	.00000000000	3.80000000000	1.4798245614	.81839253456	.159	.226	.031	.449
Valid N (listwise)	114								

Fig 37-The descriptive statistics of the ln of number of partners at fundraiser show a normalised pattern (low skewness)

5. Sequence -logarithm (Figure 38)



Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
M11 ln of FUND NUMBER (OVERALL) (SEQUENCE)	114	.00000000000	2.71000000000	.85947368421	.77322888357	.363	.226	-.978	.449
Valid N (listwise)	114								

Fig 38-The McCune transformed logarithm sequence number provides a much lower skewness statistic, normalising the distribution of the variable

6. Firm size -clusters (Figure 39)

	Descriptive Statistics								
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
M3i Firm size cluster	114	1.0000000000	3.0000000000	1.4035087719	.72526221374	1.477	.226	.559	.449
Valid N (listwise)	114								

Fig 39 -The descriptive statistics of the clustered sizes for firms display a significantly lower skewness

7. Prior fund size-logarithm (Figure 40)

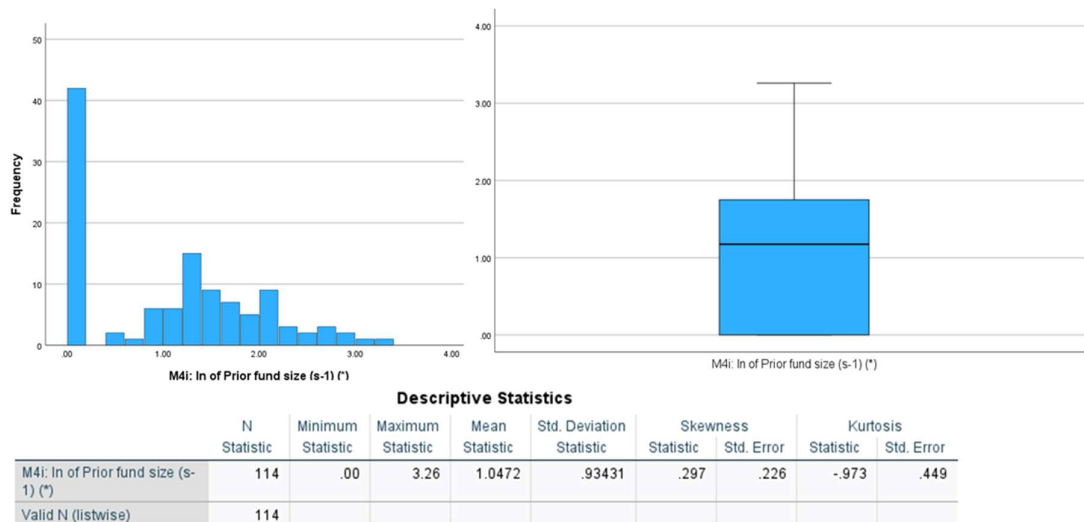


Fig 40-The descriptive statistics of the McCune transformed ln of prior fund size show a normalised pattern (low skewness)

(iv) Partner-Level Variables

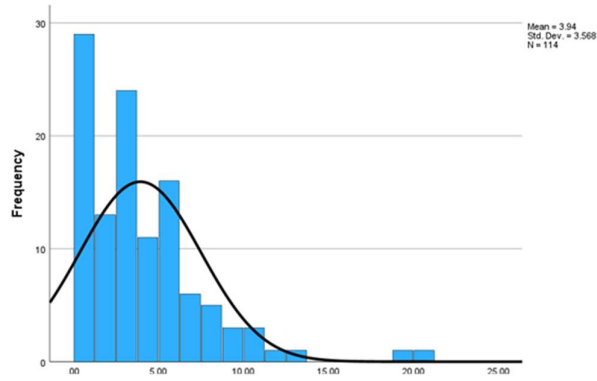
1. Caliber of partner experience -quartile- (Figure 41)

	Descriptive Statistics								
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
PK1i: average caliber of prior affiliation (quartile)	114	1.0000000000	4.0000000000	2.5000000000	1.1308231789	.000	.226	-1.386	.449
Valid N (listwise)	114								

Fig 41-the descriptive statistics of the quartiles of average prior affiliation show that the skewness has been removed, making it fit for regression

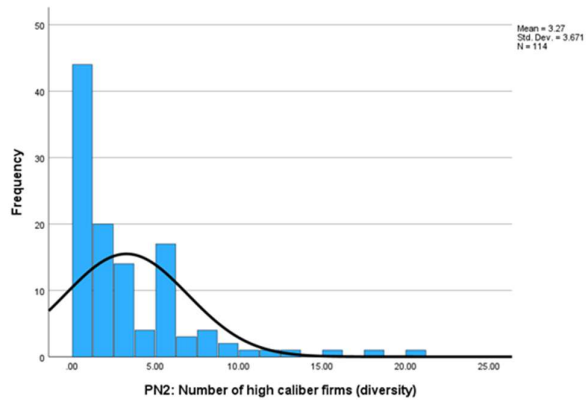
2. Academic network points (Figure 42)

3. Business network points (Figure 42)



Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
PN1: Number of top school networking (diversity)	114	20.00	.00	20.00	3.9383	3.56848	1.861	.226	5.200	.449
Valid N (listwise)	114									



Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
PN2: Number of high caliber firms (diversity)	114	20.00	.00	20.00	3.2714	3.67051	2.094	.226	5.636	.449
Valid N (listwise)	114									

Fig 42-The descriptive statistics of the partners' academic and business network points show reasonable skewness statistics

(c) Market environment control variables

From the three preliminary control variables, the one for PE industry momentum Dry Powder was disregarded for the more directly relevant PE Fundraising level. The two resulting variables (with their statistics), are shown below:

- (i) General equity market momentum (Figure 43)
- (ii) General fundraising momentum (Figure 43)

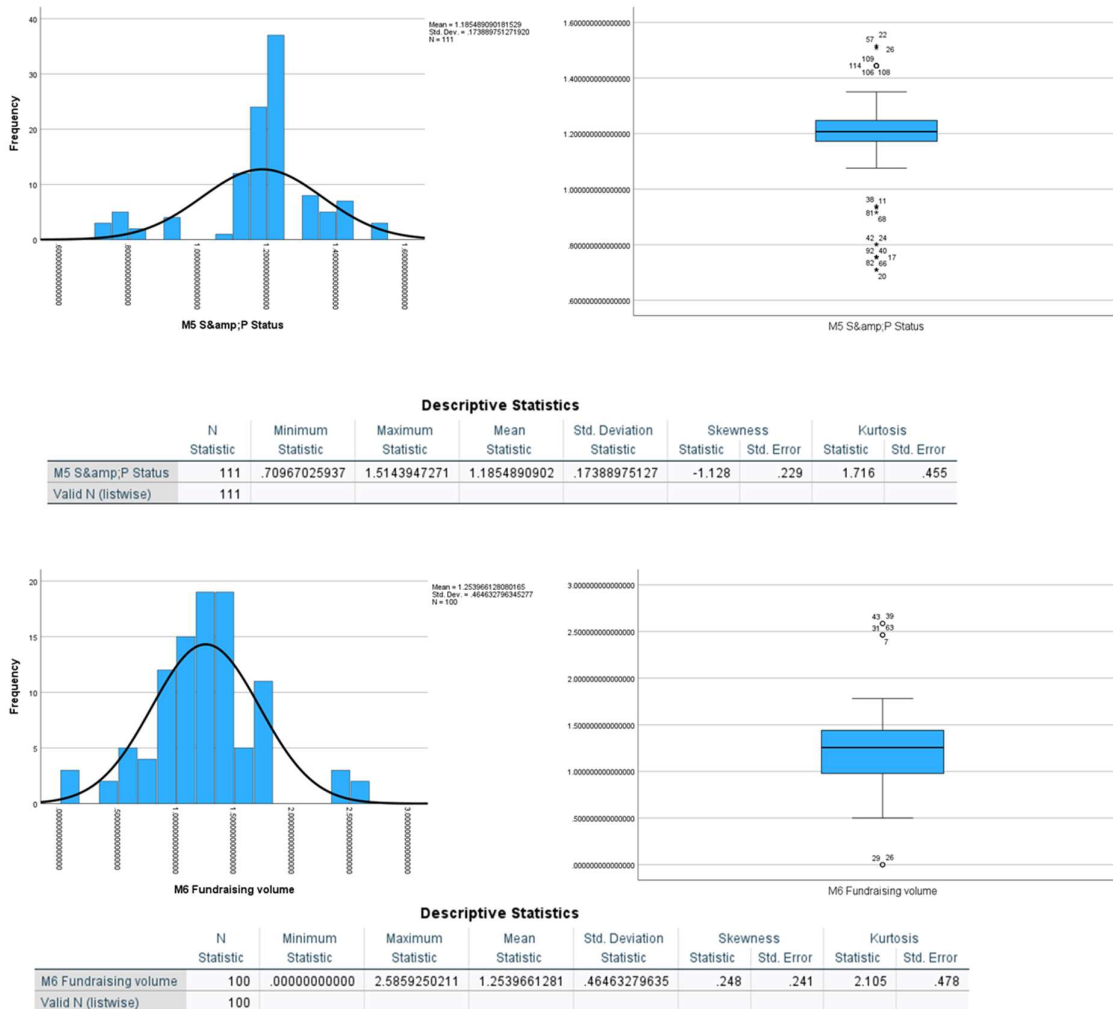


Fig 43- descriptive statistics of market momentum variables are normalized (low skewness)

Figure 44 shows the statistics of the filtering of the original fifty-four variables and the resulting nineteen variables, including the eighteen independent variables to be assessed for collinearity.

	Preliminary Variables by block	Detailed variables for second stage research?	Number of observations <~70?	Selected Variables for Joint Analysis
Independent variables	10	7	2	1. Fund size (ln) DV0i
Firm knowledge	4	1	2	1. MoIC of prior fund (ln) FK1iii
Firm Network	11	3	3	1. Number of portfolio exits FN1 2. Past IPOs (dummy) FN3 3. Brand recognition (dummy) FN8ii 4. <i>De Aljo</i> entrant (dummy) FN10ii 5. Reputable broker (dummy) FN11
Firm Institutionalisation	13	6	-	1. Average years working together FI1 2. Firm life in years FI2 3. Power concentration FI4 4. Number of partners (ln) FI6 5. Sequence (clusters) M1ii 6. Firm size (clusters) M3i 7. Prior fund size (ln) M4i
Firm Ethics	2	-	2	-
Partner level	11	8	-	1. Caliber of partner experience (quartile) PK1i 2. Academic network points PN1 3. Business network points PN2
Market environment	3	1	-	1. General equity market momentum M5 2. General fundraising momentum M6

Fig 44-The variable individual analysis reduced the overall universe from 54 variables to 19 with adequate levels of skewness and observations

2. Covariate analysis

Figure 45 depicts the process undertaken for the identification of the final variables to regress against the dependent variable:

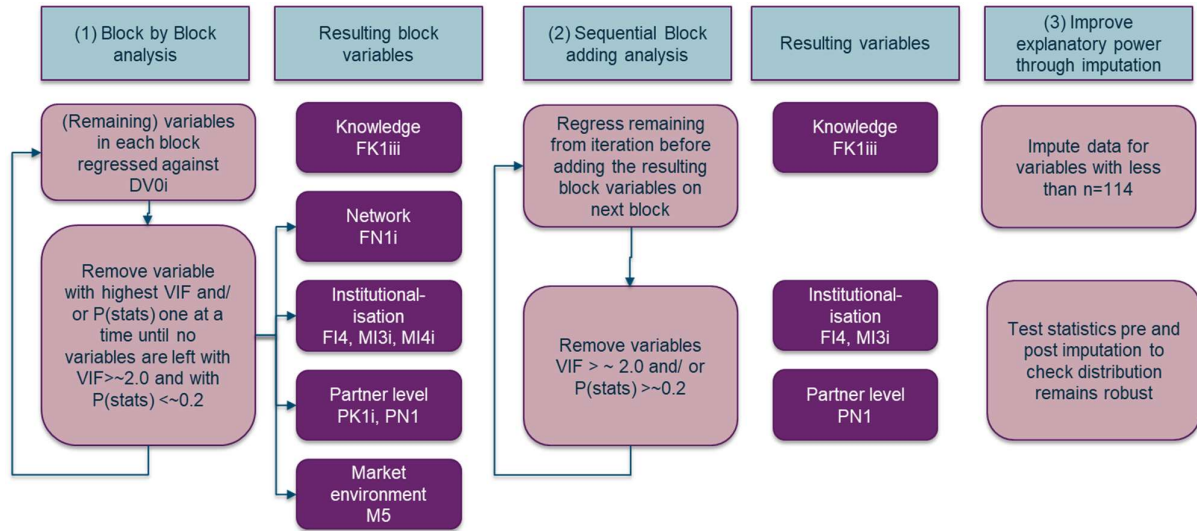


Fig 45-Schematic of the covariate filtering analysis process; the process consists of an iteration of analysis by block of variables (knowledge, network, etc.), pruning the variables that only add noise through collinearity and adding one block at a time; then for variables with less than the total number of observations data was imputed and the resulting base of observations compared with the original one to ensure that statistics remain substantially unchanged

As shown in Figure 45, the Knowledge block has only one variable and, as such, did not require any analysis at the first stage. For the rest, of the blocks, all variables in the block (e.g., all Network variables obtained from the individual filtering shown in Figure 43), were regressed against the dependent variable. At each iteration, the P-test statistic and Variance Inflation Factor (“VIF”) were analysed, and the highest variable of the set was removed (unless their P-test was below 0.2, which made them individually potentially significant; and their VIF, below 4.0).

This process resulted in the following variables as preliminary significance, for joint block analysis:

- Ln of MoIC of prior fund (FK1ii)
- Ln of number of exits (FN1i)
- Aggregate brand recognition (FN8ii)
- Power concentration (FI4)
- Firm size cluster (M3i)
- Ln of prior fund size (M4i)
- Average caliber of partner prior affiliation (PK1i)
- Number of top school networking (PN1)
- General equity momentum (M5)

These variables were regressed against the dependent variable, by sequentially adding the ones from a new block and analysing the P-tests and VIFs, using the same considerations mentioned above.

Four resulting meaningful variables for the regression were identified; Figure 46 shows the coefficients of the exploratory regression:

- Ln of MoIC of prior fund (FK1ii): as a measure of performance, the return on the immediately prior fund is taken as a firm signal of the capacity of the firm to make adequate investment decisions, as defined by the Knowledge category

- Power concentration (FI4): as a measure of the locality of decisions on senior partners, power concentration acts as a signal of low institutionalization, since a more institutionalised firm would be expected to have decisions more imbued into their processes
- Firm size cluster (M3i) : size acts as a signal of organizational capital and as such, as a measure of institutionalisation and longevity expectation of the firm
- Number of top school networking (PN1) : the exchanges in the market far exceed the interchange of goods and services (Burt, 2000); social capital complements it through the operation of networks. Academic networks, or the “Alma Mater” has been found to accelerate significantly the exchange of information flow (Cohen et al. 2008 and 2009) and so the number of academic institutions a firm has access to by the fact that its partners are alumni of such institutions operates as a signal of network capacity to access potential investments, information and exit opportunities

		Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	4.287	.398		10.780	<.001						
	FK1iii In of MoIC prior fund (s-1) (*)	.795	.579	.117	1.374	.173	.541	.145	.090	.589	1.698	
	FI4: power concentration at firm (HHI)	.000	.000	-.167	-1.963	.053	-.531	-.205	-.128	.590	1.696	
	M3i Firm size cluster	1.155	.192	.529	6.023	<.001	.742	.540	.394	.556	1.800	
	PN1: Number of top school networking (diversity)	.061	.038	.138	1.614	.110	.571	.170	.106	.586	1.707	

a. Dependent Variable: DV0i In of Fund Size (\$m)

Fig 46-Statistics for the resulting variables of the interblock filtering; all variables present adequate significance level and reasonable VIF statistics

The statistics for the full sequence of the interblock filtering process are incorporated as Appendix D.

The knowledge variable “ln of MoIC of prior Fund” (FK1ii) had only 93 observations. In order to improve the explanatory power, an imputation process was undertaken to obtain estimates for the whole 114 observations in the rest of the variables. Once obtained, the statistics of the imputed versus original regression were compared to confirm the robustness of the model, which is reflected in the similar statistics in the comparative table, incorporated as Figure 47.

	NOT IMPUTED	General Model
Page		2.00
n	93	114.00
r ²	0.606	0.56
Significance		
FK1iii-ln of MoIC prior Fund-past performance	0.173	0.08
F14-Power concentration	0.053	0.09
M3i- Firm size cluster	<0.001	<0.001
PN1-number of top school networking (diversity)	0.11	0.05
Standardized Coefficient Beta		
FK1iii-ln of MoIC prior Fund	0.117	0.143
F14-Power concentration	-0.167	-0.139
M3i- Firm size cluster	0.529	0.468
PN1-number of top school networking (diversity)	0.138	0.168
VIFs		
FK1iii-ln of MoIC prior Fund	1.698	1.70
F14-Power concentration	1.696	1.73
M3i- Firm size cluster	1.8	1.87
PN1-number of top school networking (diversity)	1.707	1.86

Fig 47-Statistics for the final variables before and after imputing data; as it for the resulting variables of the interblock filtering; the table shows that the statistics resulting from the imputation are not significantly modified

Figure 48 shows the final variables for the regression

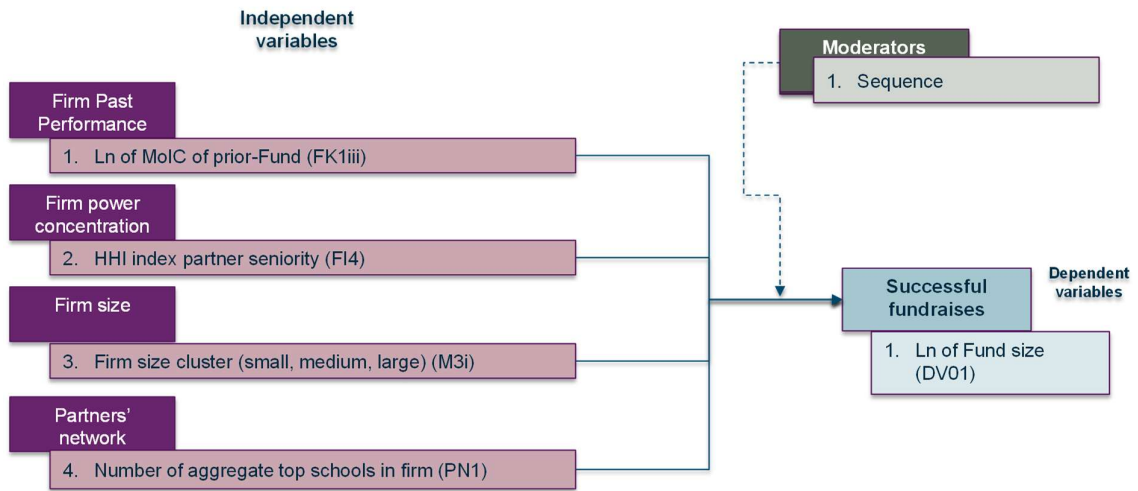


Fig 48-Final variable model

VI A THEORY OF THE SURVIVAL OF PRIVATE EQUITY FIRMS: *EN CASA DE HERRERO, CUCHILLO DE PALO*

Now that the literature underpinnings have been identified and the direct observations described, it is time to go back to the research question. Why does the death rate of PE does not fall? And what causes the departure from mortality to be slightly delayed compared to other industries?

The failure of PE managers to instill into their own firms what they so successfully instill in their controlled portfolio companies is what underlies the higher mortality of PE firms. As firms dedicated to helping portfolio companies navigate the cycle that takes them from emergence all the way to maturity as public companies (Berger and Udell, 1998), PE firms add significant and permanent value to them by improving their capital structure, management teams and improving internal processes (Kaplan and Stromberg, 2009). The impact of their intervention in terms of permanently improving productivity and better aligning interests between management and investors has been proven (Gompers et al, 2016; Kaplan and Stromberg, 2009). And this impact has generally resulted in higher performance for investors, if uneven (Harris et al., 2014; Sorensen et al, 2014). In turn, this makes the choice of PE manager for investors and the need for PE firms to survive to be selected critical.

It follows then, that understanding why PE managers fail to do unto their own PE firms as they do to their portfolio companies calls for understanding how PE firms emerge and then to understand what their demographic evolution looks like. I have done this by considering how

the general case of organisations would behave and what particular observations are differential to private equity.

I called this theory “En Casa de Herrero, Cuchillo de Palo”, which is an idiomatic expression in Spanish to denote the difficulty for an expert to exercise its skill when in domestic settings. The expression is equivalent to the one in English that goes: “There is none worse shorn than the wife of the shoemaker”.

a) Firm emergence

The “fluctuating carrying capacity” of private equity...

According to general microeconomics, when the overall demand in an industry increases are met by a shift to a new equilibrium in the same supply curve with *-ceteris paribus-* a higher price and higher quantity. Traditionally, based on general demographic theory, serving that increased demand is limited by the carrying capacity of an industry, i.e., the number of players it can sustain without degrading. In the case of PE, an increase in demand is not met by a move along the existing supply curve, because as stated in Section III, the pricing characteristics of the industry have been around for centuries and are hard to move. In this context a shift to a higher supply curve is experience by the emergence of new players entering from neighbouring industries. These new players bring in a substantial endowment of monetary and non-monetary resources or a combination of both. *De alio* entrance (i.e., from neighbouring industries) exploits similar identities (Ruef, 2000) and revives existing institutions modifying them to address the current specific needs (Krug and Polos, 2000).

In the case of private equity, what can be seen is a “*fluctuating carrying capacity*” phenomenon resulting from new bouts of equity investment bonanza bloom (Balboa and Martí, 2003; Gompers et al, 2008). For actors in the neighbouring areas, such as investment bankers, management consultants and executives with recent positive gains from successful endeavours, this opens the opportunity to “try out” their fortunes in the private capital market. As markets give subsequent waves of cohorts a chance to enter from neighbouring industries, the generally declining shape of the population curve is given a breath of air to see their numbers increase, creating the fluctuating pattern and showing, in certain periods, upward curves. Traditional microeconomic solutions to attain a new equilibrium by raising fees or accommodating more investors in their new funds are somewhat limited to PE incumbents by a time-old convergence into to the 2/20/1 rule (Metrick and Yasuda, 2010) and by pressure by investors for PE firms to stay consistent to their proven strategy (Cumming et al., 2009).

...creates a ripe environment for de alio entry by players in neighbouring industries.

With a PE industry displaying excess demand, the actors in the neighbouring areas find low barriers to entry; what they have to offer is what they were successful in their prior experience, re-formatted into a different legal packaging, according to function rather than an absolute copy (Freeman and Audia, 2006). The process essentially entails replicating those greatest hits that satisfied clients, directors, shareholders for the benefit of a slightly different set of stakeholders: investors. For these new entrants the prospects are higher than in their prior endeavours, as managing investor capital is typically a superior alternative to a fee-based business. But even there, they leverage their past success, as shareholders of their past employers often times

organise their personal estates in family offices, who are the typical anchor investors that private equity firms first approach in their fundraising efforts.

The low barriers to entry into PE stem from a fluid identity of private equity.

As a narrowly-defined fully legitimized category (McKendrick et al., 2003; Hsu et al., 2011) private equity invites embryonic forms capable of discharging the skills required of it, some of which overlap with investment banking, some with management consulting, etc. At the same time, its high contrast send a clear signal for potential investors (Zuckerman, 1999; Negro et al 2015). In the context of the “fluctuating carrying capacity”, PE firms are formed, seemingly out of nowhere¹⁰. And this process of emerging “out of nowhere” also means that incumbents need pay attention not only to actual competition but to eventual emerging competition. The fluctuating nature of carrying capacity resulting from fluid borders between PE firms and neighbouring industries enable the executives to move in as partners of PE firms and out of the industry-back to investment banking and consulting- with a certain ease.

Executives in neighbouring industries endow fledging projects with valuable (tacit) knowledge...

The endowments that these executives bring to the table, would, for service organisations like PE firms substantially take the shape of contributions of the usufruct of the founders’ accumulated knowledge and network, as opposed to -but not limiting- financial capital.

¹⁰ The process is analogous to the increase in mosquito population during a sudden rise in temperature,

The knowledge endowments of partners, as stated earlier in the dissertation, approximate “tacit knowledge”, that is judgment calls both relating to the strategies that companies take as to the recruitment, management and termination of the teams involved in enacting them. By “tacit knowledge” we mean skills, ideas and experiences that may be possessed but are harder or impossible to articulate and communicate verbally, and as such, impossible to codify (Polyani, 1958). Tacit knowledge is particularly difficult to be completed or thoroughly used without cooperation (Burt, 1992). This is where the value of the endowed networks of partners becomes evident.

...and, most importantly, the executives endow the enterprise with the value of their ubiquitous networks.

The contribution by the partners of the emerging PE firm in the shape of their network is also key to accelerate the process for the emerging firm to develop trust with social relations outside and to create new business partners (Stinchcombe 1965) and to increase its legitimacy in the eyes of the environment (Baum and Oliver, 1991). These networks affect the outcome of economic interchange by facilitating the information flow, the adoption of form by contagion from established competitors and the early receipt of signals of status by endorsement from external reputable trade partners (Burt, 2000; Granovetter, 2015); these latter two become especially relevant in such closely-knit fluid communities that are formed by PE, investment banking and management consulting.

The networks the partners place at the service of the organisation may be composed of stronger or weaker ties. A large number of weaker ties, i.e., a more diverse network, is more valuable

to develop the roster of business partners that an emerging organisation requires (Granovetter, 2005). In sophisticated services, substantially characterized as tacit knowledge, the brokerage position of the firm in structural holes throughout the network (Burt, 1992) will also entail a competitive advantage. In other words, it will not suffice to know where the opportunities are, but to have a differential in capitalizing such opportunity by driving other peers out and by accessing cooperation from outside agents. For PE firms, both weak and strong ties have a significant impact. Weak ties will provide a wealth of access to transaction opportunities and information on how similarly complex issues embedded in them have been solved in the past. Strong ties, however, become especially relevant as they command trust, and trust is of paramount importance to break the inertia to bring the anchor investors onboard. It is the strong ties that lend credibility to the portable prior performance mentioned before.

In the case of PE firms, the duration of the knowledge and network is not simply determined internally by what the founders contribute; or rather, it does only when they have yet to raise a fund and are still kernels of a PE project, or eggs. Once PE firms have managed to raise a fund, they turn into a tadpole of sorts, neither a project anymore nor a fully-fledged organisation; this is so, because they have managed to “guarantee” a revenue stream from the investment period of their initial fund, which typically takes five years (Metrick and Yasuda, 2010). In other words, endowments in PE come as much from the founders as from the generalised legal framework adopted by firms.

Investors perceive the value of partners' knowledge and networks through signals...

With only limited information about the newcomers (including young firms), investors fill the gap with endorsement signals from reputable third parties (Podolny and Phillips, 1996; Baum and Oliver, 1991). These signals become increasingly important given the potential cost of regret of missing the opportunity to beat the market that private equity has, which makes it comparable to a luxury item (Sauder et al., 2012). For PE firms, this consists of signals of reputation derived from prior performance -PE managers typically present themselves with reference to their past achievements. They also consist of endorsement from early investors (e.g., a family office affiliated to a shareholder in a company a PE firm founder is the former executive of) and affiliations (e.g., an investment bank a founder worked for in the past can be a major source of deals).

...and the barriers lowered by endorsement signals and by positive sampling bias by investors.

One final aspect of the emergence process relates to the decisions by third parties to choose to do business with the new PE firm. Assuming a certain amount of endorsement by reputable or anchor clients (investors), new firms are likely to benefit from sampling dynamics where customers avoid alternatives they disliked in the past in favour of new, unblemished opportunities (Le Mens et al., 2016).

In PE the sampling mechanisms are affected by the nature of the past performance information.

For initial funds, only performance of past endeavours will be available and is naturally handpicked to be positive. In other words, since this is a de alio entrance, and the identify of the PE firm and the prior experience is not exactly the same, only certain aspects will be

selected by the founder (those meaningful ones they are confident their strong network ties will endorse); for firms with only one or two funds, interim performance (i.e., not fully realised) will be presented, which is again more malleable than final one by comparison (Barber and Yasuda, 2017; Gompers and Lerner, 2000). So, the sampling bias exists both in general terms and the negative sampling bias that would otherwise operate, is delayed a few fundraises until the reupping tolerance of investors is eroded.

In summary, the miracle of birth combines the force of the aggregate density of the networks endowed by partners (Ruef, 2000) and the strength of the status of distinct members of such networks (Podolny and Phillips, 1996).

After emerging, these organisations in the process of emergence or founding are imprinted with the conditions that surrounded them during this period

Once emerged, service firms are subject to the mortality risks of any new endeavour (Stinchcombe, 1965). Finding their feet in the process of turning networks into leads, leads into targets, targets into deals is a lower-stakes game for the established player; for the newcomer, it is unsurmountable, because the actors in the organisation are simultaneously making sense of their new roles, which spontaneously (Selznick, 1957) imprint the culture of founders and anchor clients/ investors. The new firms are also affected by the lack of organisational capital to endure (Freeman, 1983). This liability of newness is somewhat mitigated by the endowments of founders (Brüderl and Schüssler, 1990), who have in general cases prepared for a long stretch without alternative sources of income and are therefore willing to contribute not just their network contacts, but their valuable time (or “sweat equity”). The longer they are prepared

to “wait it out” the longer the mortality will take to reveal itself-and the ultimate judgment on the overall outcome of the new firm- is postponed. PE firms, on top of this, are born in the context of high density, which becomes imprinted into a short-term focus and away from investments in organisational capital.

PE firms mitigate this risk partially by endowments from the partners which, as was stated before, are both internally and externally generated. But the high-density environment of a capacity surge makes the investments by founders in institutionalisation rather low. Mortality will both show in general terms and will set in for density delay mechanisms to operate down the line. Size of the firm (for the firms that are raising a second or third fund) also acts as a protection mechanism.

Mustering the power to raise the first few funds entails requires that such energy is not dissipated by organisational politicking. The founders of the firm need to operate in lockstep and coordination; they understand each other and operate as one, as suggested by Adizes (1979) in the GoGo stage. Understandably, this is harder to accomplish in too diverse and atomized an environment and would only be expected to succeed in a concentrated group. It is likely that, as a result of prior experience together, in this concentrated space, much of the practices will be implicitly understood by the participants with little need to focus on the development of policy or processes. Finally, any fledging firm emerging at a time of such population density will be imprinted with the abovementioned conditions, which will have a bearing on how the firms develop in the following stages, as will be explained in the next section.

PE firm emergence in the context of high density and low organisational capital building is reflected on the model created to test the variables. Testing the variables enabled me to define a tentative limit of three fundraises as the threshold to differentiate between a young or embryonic firm and an established or mature one. Performance of a prior fund has a causal effect on the size of the fund being raised, moderated by size. For a young firm, the performance should be relevant. It is true that for first time funds, the performance of the firm is non-extant; but with little or other information, it is likely that investors investing in a sequence 2 or 3 of a firm, will take the performance of the immediately preceding fund as a very strong signal of knowledge. Hence,

Hypothesis 1: For a young PE firm, the performance of prior fund is positively and significantly related to the ultimate size of the fund since the performance of a prior fund acts as a signal of reputation (Podolny and Phillips, 1996) and investors request information on prior funds as reference of the firm's past achievements.

As stated before, the value of the endowed networks are of paramount importance to crank the emergence and survival of the new firms. Networks have a causal effect on the survival of the firm as measured by its fundraising success. In the dearth of general information prevailing in young firms it seems natural to expect that the value of the networks, the endowments generated by the partners (and sustained indirectly by the resources that investors pour into the firm in endorsement of them) be relevant. Hence,

Hypothesis 2: For a young PE firm, the strength and diversity of the partners' network is positively and significantly related to the ultimate size of the fund since, as mentioned in

Section V.c., the power of the firm's network results in access to deals and opportunities and according to En Casa de Herrero, Cuchillo de Palo, it is the partners that endow these networks

Size acts both as a protective cushion that reflects the organisational capital of the firm and an indicator that investors will look at when deciding to invest in a PE firm. Firm size drives the capacity of a firm to attract new investors to contribute to the offering and acts as a signal of stability to facilitate fundraising. As measured by the assets under management -or AuMs-, implicit in the size of a firm are the sequence of funds previously raised and still operating; the size of those funds and their unrealised performance. Size, therefore, acts as a signal of organisational capital or stock of resources. In addition, size acts in the financial markets as a signal of status, attracting opportunities for new transactions (likelihood of being presented deals by banks and other intermediaries; being in the radar, in industry jargon), capacity to raise debt to leverage the portfolio, reputation with the market to place portfolio companies through IPOs or sell them to strategic investors, access to resources, etc.

Size also provides indirect information of a possible strategy or regional drift (Gejadze et al., 2017; Cumming et al., 2009); it can also provide information about the lack of consistency in the pace of growth of the organisation and the assets it has to manage (the bandwidth of what each partner can handle); and investors want to make sure that the PE manager is not getting too big for its breeches. Hence,

Hypothesis 3: For a young PE firm, the size of the firm is positively and significantly related to the ultimate size of the fund since, as reported by Balboa and Martí (2003), the size of a

firm is a predictor of its fundraising capacity; moreover, size reflects a signal of reputation (Podolny and Phillips, 1996).

Finally, the ability of the organisation to institutionalise properly should reflect the success of the fundraising endeavour. Although a portion of this may be captured indirectly through the size of the firm, in the absence of such information, investors rely on the endowments that partners contribute to the firm become relevant.

Networks age and become obsolete with respect to the environmental change. Building an organisation more in synch with the changes in the environment through knowledge management processes ought to solve for this. But PE is predominantly a tacit knowledge environment and so the only way to inoculate against drift may be to have a partner base that is constantly up to date. Power concentration generates inertia and obsolescence and has a negative impact in the survival of the firm. Hence,

Hypothesis 4: For a young PE firm, the power concentration of the firm is significantly negatively related to the ultimate size of the fund as power concentration precludes adaptation to a changing environment by favouring senescence (Carroll and Teo, 1996) and is expected to result in difficulties for a firm to raise funds

b) Demographics of consolidating and dying firms

The dynamics of an emerging PE firms involve an increase in capacity enabling newcomers to benefit from positive sampling mechanisms by providing endowments of knowledge and

network. As these PE firms age, the environment that was once ripe with the opportunities that welcome the emergence of such organisations shows signs of displacement, evolution, change. Similarly, the tastes of the target audience for the organisation morph as technology provides alternative products, delivery formats, production processes more effective or efficient (Hannan, 2005). *In the case of PE, appetite for a certain sector, asset class or region can change very fast.*

The inability of PE firms to keep pace with the changes in the environment is a recipe for demise. Older cohorts of population members have more difficulty in maintaining fitness to keep with the pace of change and become obsolete (Carroll and Hannan, 2000). Inertia and imprint preclude organisations from keeping pace with drift (Hannan et al 2007).

Inertia precludes adaptation because efforts to institutionalise the organisation, to increase the reliability and accountability of its processes and reduce uncertainty, rely on methods and equipment that are ill tuned to the new requirements. This is especially relevant if what needs to be changed is the mission or the chain of authority (North 1990, Hannan and Freeman, 1984).

Imprint operates like a time bomb. Survival of the organisations depends on a combination of higher legitimation and lower competition which were present at the time of founding and forged their nature and identity (Carroll and Hannan, 1989 and 1989b). These conditions that prevailed at the formation of the organisation become imprinted and harder to modify. The process resembles the evolutionary lag between biological gene development and social changes; human beings may be subject to new social environments, but the biological genes

they are equipped with to deal with such environment are the product of evolutionary changes thousands of years ago, in response to the environment prevailing at that moment.

An incapacity of firms to enact changes in their organisations at the same pace as the environmental change leads to obsolescence making older cohorts of firms less fit to survive.

In PE the imprint of founders is stronger than for average organisations; as the organisational capital is formed primarily by network and knowledge endowed, the spontaneous institutionalisation of the PE firm will likely take on a semblance of the DNA of the founders. Moreover, since many of them bring along former shareholders as anchor investors, the imprint the founders give to the emerging firm will resemble the culture they thrived in at the firms of such former shareholders now investors, as it will make their selection process more palatable as well.

The process of obsolescence is somewhat masked by the organisational capital a company is capable of developing through adaptation and learning over time (Le Mens et al., 2011 and 2015) in a similar way as founders' endowments do at the time of emergence.

Organisational capital is made up of resources human, technological and financial. The existence of financial capital to mobilise resources and send out a signal of strength to the market may for a time, fool the market into thinking that the human and organisational shortcomings will eventually be overcome. In PE, the age and size of the firm is relevant

(Barber and Yasuda, 2017; Vanacker et al., 2020). This results from the PE firm indirectly signaling the market that prior, reputable investors as well as agents elected to endorse the firm (Gompers and Lerner, 1999; Davila et al., 2003; Janney and Folta, 2005). It also acts in the financial markets as a signal of status, attracting opportunities for new transactions (likelihood of being presented deals by banks and other intermediaries; being in the radar, in industry jargon), capacity to raise debt to leverage the portfolio, reputation with the market to place portfolio companies through IPOs or sell them to strategic investors, access to resources, etc. Because size is ultimately a function of the past number of funds (sequence), size can also project information about the firm's ability to raise funds in the past (trajectory), which reflects the absence of ethical issues, the firm's ability to stay alive in the long-term (commitment) and, to some extent, its performance.

Becoming obsolete is not a discrete status but rather a slow process that results from the constraints imposed by internal rigidity. The accumulation of rules and routines, known as senescence (Carroll and Teo, 1996) may cause efforts to change to result in creative self-destruction and actually speed up failure. The costs and risks of transitioning may outweigh advantages (Barron and Hannan, 2002) or force firms with lower organisational capital to remain confined to their niches, lest they face much stronger counterparts in centre positions and run into demise (Carroll and Hannan, 1989). Change can also fail by a poor combination of opacity (lack of proper knowledge about the impact of change) and asperity (cultural opposition to architectural change) in the organisation (Hannan, Polos and Carroll, 2003)

In the specific case of PE firms obsolescence is further affected by external requests by investors to elevate senior partners to the condition of “key persons”, which acts as a third-party confirmation of the distribution of political power (and related economic distribution) within the firm; and this confirmation, because of the external duration of the endowments mentioned before, extend the time-bomb mechanism. At the same time, networks age and become less relevant.

PE firms showcase their capabilities in the shape of prior performance. When the reupping of investors erodes and the interim information becomes a reality, the lack of institutionalisation favoured by the power concentration starts to show. This “power concentration trap” may be akin to Adizes (1979)’s founder’s trap. In this context, PE firms, who are apt to take a dynamic view of the companies in their portfolio and enact the disruptive actions necessary to help them adapt and remove the imprints and spontaneous institutionalisation, fail to do so in their own backyard. In order to keep pace with the environmental change, the better adapted knowledge by younger partners is key. But the externally-favoured political power and economic distribution creates an incentive for senior partners to impose their (outdated) solutions.

PE Firms face the alternative to exploit their resources, their comfort zone, efficiently depleting the opportunity; or explore new alternatives (March, 1991), which may envisage a new dawn for the organisation to enjoy a longer life, but at the same time risking the status quo, as results from exploration are undoubtedly less certain. In PE firms, opacity is amplified by the “key man” dynamics, while more environmentally adaptable junior partners with less-than-desired

involvement display asperity. This asperity is further fueled in the face of a potential low-barrier alternatives to turn into the makers of their own destiny outside of the organisation.

In summary, PE firms either fail to move out of the tadpole stage and fail to raise more than a limited number of funds (in my observations, 3) and die; of they do break the divide and become frogs. But if the institutional limitations persist, they achieve a certain size and die by incorporation to another firm or, in very rare cases, become public companies. This is only possible by achieving a certain size. Achieving a certain size enables a PE Firm's dominant partners to ultimately exploit the status quo by extracting value through a sale of the firm or an IPO. Junior partners, with less of a say in the new firm leave for greener pastures (Ivashina and Lerner, 2019).

The dynamics of the firm consolidation and death described above reflect on the model to be tested. For an established firm (i.e., sequence 4 or higher) investors, take the performance of the immediately preceding fund as relevant and they focus on the persistence of performance. At any rate, firm size as a composite of prior funds raised and performance, giving additional information on the variance of such performance (i.e., immediately prior fund may have not been a star but if the firm has been out there long enough to have had several positive ones, it may transmit information about the capacity to learn and make changes for the future). Hence,

Hypothesis 5: For an established firm, the performance of the prior fund is positively related to the ultimate size of the fund, but less than for a young firm as, like in the case of

Hypothesis 1, performance is expected to be a predictor and it is a factor investors consider it and especially focus on persistence (Lerner, 2010), but they may be more amenable to focus less on the immediately preceding fund if the firm is established

Hypothesis 6: For an established firm, the size of the firm is positively and significantly related to the ultimate size of the fund, more than for a younger firm like in the case of Hypothesis 2, the size of the firm is expected to be relevant; in this case, in addition, by operation of both the restriction imposed by investors to avoid raising funds too far away from their recent past and by the fact that size may replace prior performance as discussed in Hypothesis 5.

As stated before, with age, networks lose value. The ability of a firm to institutionalise itself should render the value of the partners networks less relevant. Hence,

Hypothesis 7: For an established firm, the strength and diversity of the partners' network is not significantly related to the ultimate size of the fund like in the case for younger firms described in Hypothesis 2. However, as the firm becomes established, investors focus gravitates more towards the organisation than to the partners (see Section IV.a.b) i))

Finally, by the time a PE firm becomes of age, the ability of the organisation to institutionalise is imperative. If the firm is going to make it out of the tadpole stage into the frog stage, then the reliability and accountability of its processes should reflect in a lower identification with partners themselves and more with “the brand”. Institutionalisation is affected when an organisation is reliant on specific people rather on processes. Hence,

Hypothesis 8: For established firm, the power concentration of the firm is negatively and significantly related to the ultimate size of the fund, more than for a young firm as the trap proposed by En Casa de Herrero, Cuchillo de Palo suggests that senescence is built up by decisions being located in a group of partners who may be less adaptable to the changing environment. The need for partners to operate in lockstep to overcome the initial challenges which might be acceptable for a young firm is a cost for the organisation that no longer provides sufficient benefits

Figure 49 provides a schematic summary of the *En Casa de Herrero, Cuchillo de Palo* theory.

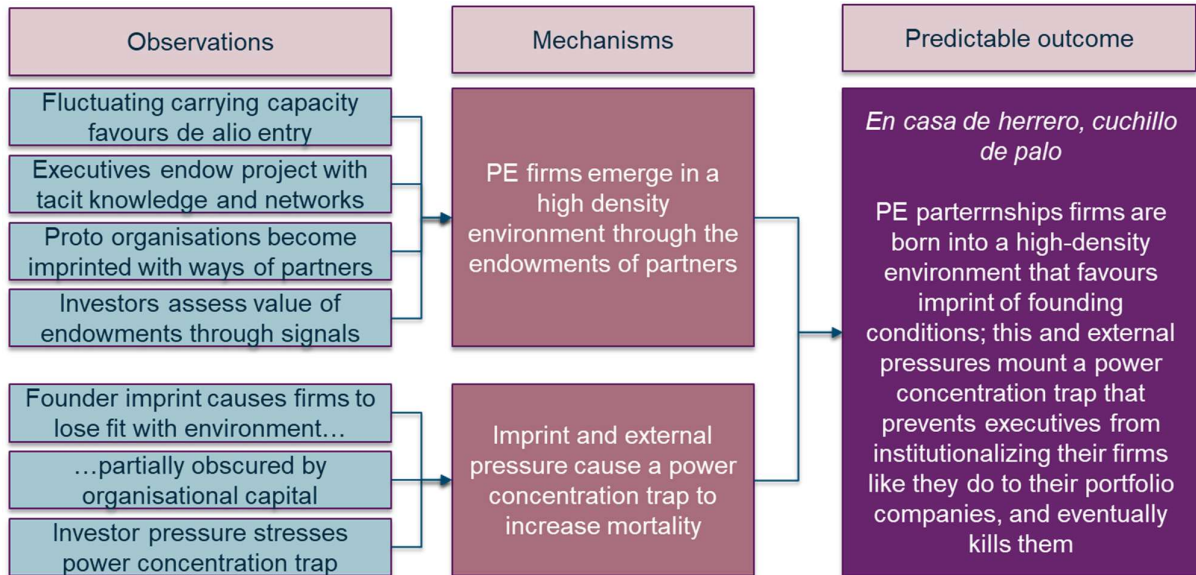


Fig 49-The observations and mechanisms that facilitate the survival of PE firms differ depending on their stage. In younger firms industry-wide factors enable the rapid creation of firms by exploiting the endowments of founders; but in more mature firms, the time-bomb mechanisms of density at founding and imprint have an impact on survival.

VII QUANTITATIVE TESTING OF THE THEORY ON THE SURVIVAL OF PRIVATE EQUITY FIRMS: ANALYSIS AND RESULTS

Armed with the data collected for the relevant variables, I then proceeded to test the model for explanatory power, first on a general basis and then separately for young and established firms to address the hypotheses formulated in Section VI.

For the multiple regression I have used a single-tailed test to explain the directional value of the explanatory variable and using a $p < 0.1$ significance level.

a) General Model

The regression of the four final independent variables against the dependent variable is shown in Figure 50 below.

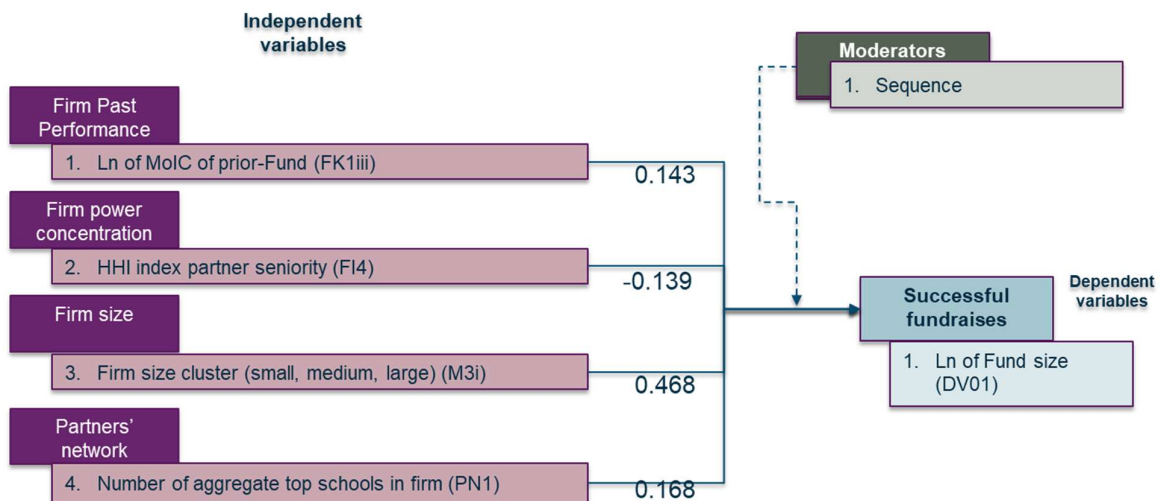


Fig 50-General model for all sequences

For PE firms of all ages, the survival of the PE firm (as measured by the size of the fundraise) is positively impacted by the performance of the prior fund, the size of the firm and to the diversity of the academic networks that partners bestow upon the PE firm. Simultaneously, the survival is negatively related to the level of power concentration within the firm. Figure 51 includes a selection of the statistics for the regression obtained from SPSS, a more comprehensive version of which is incorporated as Appendix E-1.

The regression with a sample of $n=114$ shows a high level of explanatory power, with an adjusted R^2 of 0.561 and an F-value of 37.1. The individual coefficients are significant at the $p<0.10$ level (one-tailed). Please, refer to Appendix E-1 for a more detailed description of the regression statistics.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.759 ^a	.577	.561	1.0332890	.577	37.146	4	109	<.001	1.751

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, FI4: power concentration at firm (HHI)-RESCALED, M3i Firm size cluster

b. Dependent Variable: DV0i In of Fund Size (\$m)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error				Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	4.265	.369		11.570	<.001						
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.994	.565	.143	1.759	.081	.538	.166	.110	.587	1.703	
	FI4: power concentration at firm (HHI)-RESCALED	-.247	.146	-.139	-1.695	.093	-.512	-.160	-.106	.578	1.730	
	M3i Firm size cluster	1.006	.183	.468	5.488	<.001	.707	.465	.342	.534	1.872	
	PN1: Number of top school networking (diversity)	.073	.037	.168	1.976	.051	.585	.186	.123	.539	1.856	

a. Dependent Variable: DV0i In of Fund Size (\$m)

Fig 51-Statistics for the general model for all sequences, which show a high explanatory power, high significance coefficient and low multicollinearity as shown by the VIF statistics.

b) Model for Young PE Firms

Rerunning the regression only considering Young PE Firms, defined as those that, at the time of fundraising had only raised three or less funds (including the one under analysis; i.e., Sequences=1, 2 or 3). The regression of the four final independent variables against the dependent variable is shown in Figure 52 below.

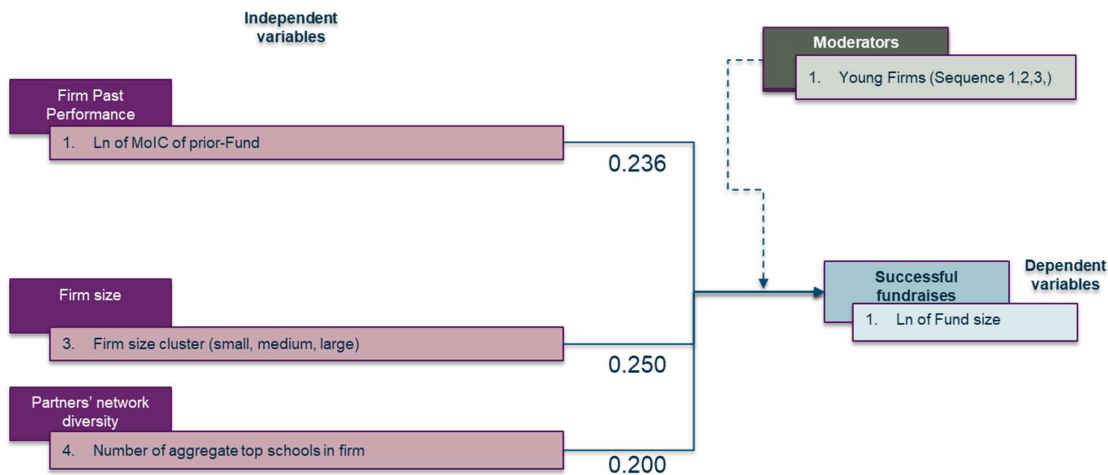


Fig 52-General model for young firms

The survival of the PE firm (as measured by the size of the fundraise) is positively impacted by the performance of the prior fund, the size of the firm and to the diversity of the academic networks that partners bestow upon the PE firm. However, the multiple regression suggests that the level of power concentration at this stage is not significant. Figure 53 includes a selection of the statistics for the regression, a more comprehensive version of which is incorporated as Appendix E-2.

The regression with a sample of n=75 shows a moderate to high level of explanatory power, with an adjusted R² of 0.304 and an F-value of 9.1. The individual coefficients for the variables

related to prior fund performance, firm size and the diversity of the partners' network are significant at the $p < 0.10$ level (one tailed). Please refer to Appendix E-2 for a more detailed description of the regression statistics.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.585 ^a	.342	.304	1.0000388	1.631

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED

b. Dependent Variable: DV0i In of Fund Size (\$m)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.221	.503		8.384	<.001					
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	1.386	.642	.236	2.160	.034	.415	.250	.209	.789	1.268
	FI4: power concentration at firm (HHI)-RESCALED	-.185	.156	-.134	-1.182	.241	-.378	-.140	-.115	.737	1.358
	M3i Firm size cluster	.801	.355	.250	2.257	.027	.448	.260	.219	.767	1.304
	PN1: Number of top school networking (diversity)	.106	.060	.200	1.782	.079	.407	.208	.173	.744	1.343

a. Dependent Variable: DV0i In of Fund Size (\$m)

Fig 52-Statistics for the general model for sequences 1, 2 and 3 show a high explanatory power, high significance coefficient and low multicollinearity as shown by the VIF statistics.

c) Model for Established PE Firms

Rerunning the regression only considering Established PE Firms, defined as those that, at the time of fundraising had already raised three or more funds (including the one under analysis; i.e., Sequences=4 or greater). The regression of the four final independent variables against the dependent variable is shown in Figure 54 below.

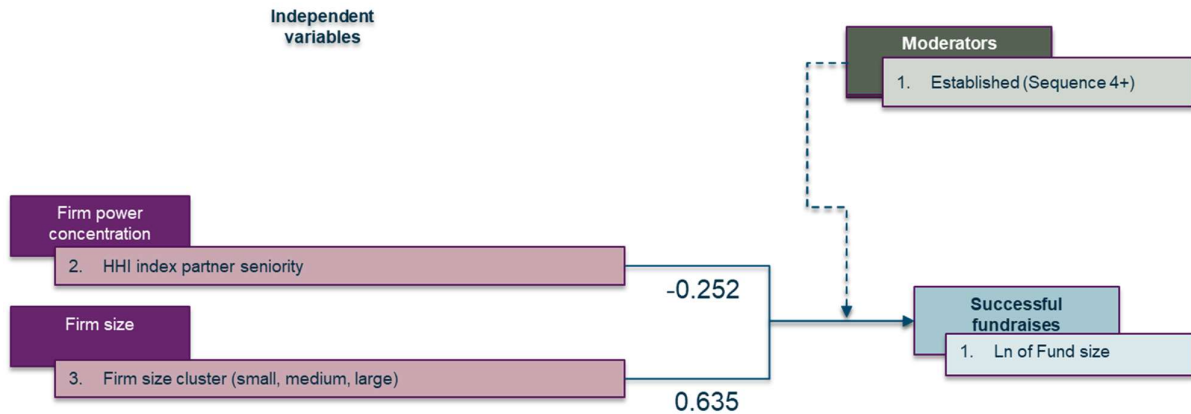


Fig 54-General model for sequences 4 and higher

The survival of the PE firm (as measured by the size of the fundraise) is positively affected by the size of the firm and significantly negatively related to the level of power concentration of the partners. Figure 55 includes a selection of the statistics for the regression, a more comprehensive version of which is incorporated as Appendix E-3. In addition, Appendix E-4 includes the statistics for the regression of sequence 1 and Appendix E-5 includes the statistics for the regression of sequences 2 and 3, which were used to assist in identifying where a plausible demarcation between young and established firms could be set.

The regression with a sample of n=39 shows a high level of explanatory power, with an adjusted R² of 0.510 and an F-value of 10.9. The individual coefficients related to firm size and power concentration are significant at the p<0.10 level (one tailed). Please refer to Appendix E-3 for a more detailed description of the regression statistics.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Durbin-Watson	
						F Change	df1	df2		
1	.749 ^a	.561	.510	1.1071586	.561	10.883	4	34	<.001	2.322

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, F14: power concentration at firm (HHI)-RESCALED
b. Dependent Variable: DV0i Ln of Fund Size (\$m)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.921	1.083		5.469	<.001					
	FK1 iii ln of MoIC prior fund (s-1) (*)-IMPUTED	-2.128	1.820	-.159	-1.169	.251	.198	-.197	-.133	.699	1.431
	F14: power concentration at firm (HHI)-RESCALED	-.615	.380	-.252	-1.619	.115	-.417	-.268	-.184	.532	1.880
	M3i Firm size cluster	1.170	.251	.635	4.660	<.001	.699	.624	.529	.695	1.439
	PN1: Number of top school networking (diversity)	.031	.055	.086	.557	.581	.507	.095	.063	.539	1.854

a. Dependent Variable: DV0i ln of Fund Size (\$m)

Fig 55-Statistics for the general model for sequences 4 and higher show a high explanatory power, high significance coefficient and low multicollinearity as shown by the VIF statistics.

VIII DISCUSSION AND CONTRIBUTION

a) Discussion of results

Section IV summarized the “gut feelings” that observations from being immersed in the industry could rehearse by way of answers to the unusual demographics of private equity. These observations put forward the argument for the low level of institutionalization resulting from a stickiness of the endowments to the partners; and introduced the concept of the potentially myopic pressure exerted by investors. Section VI put those observations in order by linking them to theoretical foundations and presented a number of hypotheses to test them.

Section VII attempted to digest those gut feelings into statistical information by running a multiple regression of a key set of summary variables following a methodical cleansing process from an original broad set of variables. The results obtained provide sufficient evidence to support most of the hypotheses formulated and open the door for further research to expand this pilot study.

The results for the whole sample indicate that in general, PE firms survive (i.e., successfully continue fundraising) on the basis of hijacking the value of their partners’ networks, on building organisational capital reflected in the size of their funds and firms, and on the degree of successful institutionalization/ de-personalisation reflected in the declining power concentration within their firms. But the most valuable insight is to be able to conclude what happens as organisations age.

For young organisations, past performance, the survival of the PE firm is dependent on size and the diversity of partners' network confirming hypotheses 1-3; at this stage power concentration does not seem to affect survival, which has led to the rejection of hypothesis 4. This can be interpreted as the PE firm initially needing more cohesion and being less exposed to obsolescence given the short span of time since founding.

For established organisations, neither past performance nor the diversity of partners' networks appear significant, rejecting hypotheses 5 and 6. This can be interpreted as a measure of organisational stock capital which has over time been absorbed into the firm and reflected in size. In fact, firm size is shown to be positively strongly correlated to the PE firm's survival as proposed by hypothesis 7. Interestingly, at this stage, the level of power concentration of the firm shows a significant negative correlation with survival as proposed by hypothesis 8. A number of claims can be made as a corollary of these results:

i) Claim 1: The ability of young firms to successfully raise funds relates to their ability to leverage their partners' networks at firms and then to their incipient firm capital and early performance

The fundraising capacity of a young firm is related to the diversity of its partners' network, or their endowments. Although it could be argued that the knowledge partners bring about is theoretically relevant, the difficulty in properly attributing performance to the individual executives on projects that are inherently collaborative in nature, renders information on past performance substantially anecdotal. The partners' network reach, on the other hand provides an insight into the business development capabilities the partnership will have and into the

informational resources to address the complexities of managing the firm's business. Highjacking partners' networks acts as a shortcut to developing the new roles and interactions that new organisations need to come up with to avoid early demise (Stinchcombe, 1965). Using well-oiled network connections to attain market information, technical knowledge and avail the organisation with resources, reduces such risk.

As firms mature, the endowed networks are confounded into the firm. From an investor's standpoint, it is reasonable to believe that the individual partners' networks will cease to gravitate as much. Firms will be seen by external constituents as having appropriated the benefits of such networks and built them into the organisational capital. However, power struggles within firms, originated in the distribution of political rights and economic benefits, fueled by externally imposed limitations, cause partners to resist that process to maintain their network value for their own potential inroads in other firms.

ii) Claim 2: Once firms become established, performance is built into the firm's size and becomes individually less relevant

Firm size is a measure of organisational capital. Organisational capital can be considered in terms of a stock or a flow (cumulative past evolution or capability). As survival depends on a stock of organisational capital (Le Mens, 2011), the firm's own past performance accumulates in the form of assets under management. Capital that is internalised can theoretically be accumulated, but past performance will only be relevant if the knowledge that generated it has been built into learning processes. Size operates in this case as a signal, a shortcut of information for third parties to infer what is otherwise unobservable, that is, whether the knowledge has been truly institutionalized (Spence, 1972). In other words, size as a stock can

act as a promotion signal for investors but it is important to notice that future investment performance is unrelated to size. Institutionalised knowledge only can deliver that performance.

iii) Claim 3: Also, from an organisational perspective, once firms become established and the relevance of the partners' networks decreases, the power concentration of the partners in the organisation becomes a determinant for success

Power concentration, the ability of partners to anticipate how their peers will act in any given situation is of significant importance when a firm is created. This is especially valid to mobilise resources in a context of density, where a sprint for the available capital from investors is the race to be won. But as time passes and the market environment changes, their congealment creates inertia and destroys value, because as *the organisational capital is formed primarily by network and knowledge endowed, the spontaneous institutionalization of the PE firm will likely take on a semblance of the DNA of the founders*. This congealment causes firms to gradually become obsolete as their efforts to adapt and misguided anticipations of opacity and asperity increase their rigidity and speed up failure (Carroll and Teo, 1996).

Figure 56 depicts a summary of the forces driving mortality (red) and survival (green) as part of the *En casa de herrero, cuchillo de palo* theory.

Young firms enter *de alio* into a high density environment are faced with significant liability of newness. They are favoured by the surge in “carrying capacity”, by the endowments of partners (through the hijacking of their network and individual past performance) and the material endowment that the PE form provides (with its “guaranteed” fees for an initial period”; partners’ networks provide deal access and access to anchor investments whose judgement is postponed by sampling dynamics. These firms, endowed with an alleged expertise in institutionalising portfolio companies, stand to survive, but...

...they mostly fail to do so. They fail to implement into their own firms, the same institutionalization of processes they successfully contribute to the companies they manage. The low barriers to exit, the stickiness of the networks “loaned” to the firms, the difficulty in codifying knowledge and the external pressure by investors to replicate the past both in terms of structure as in power concentration, direct partners towards an extractive status quo that increases opacity, forcing junior partners out.

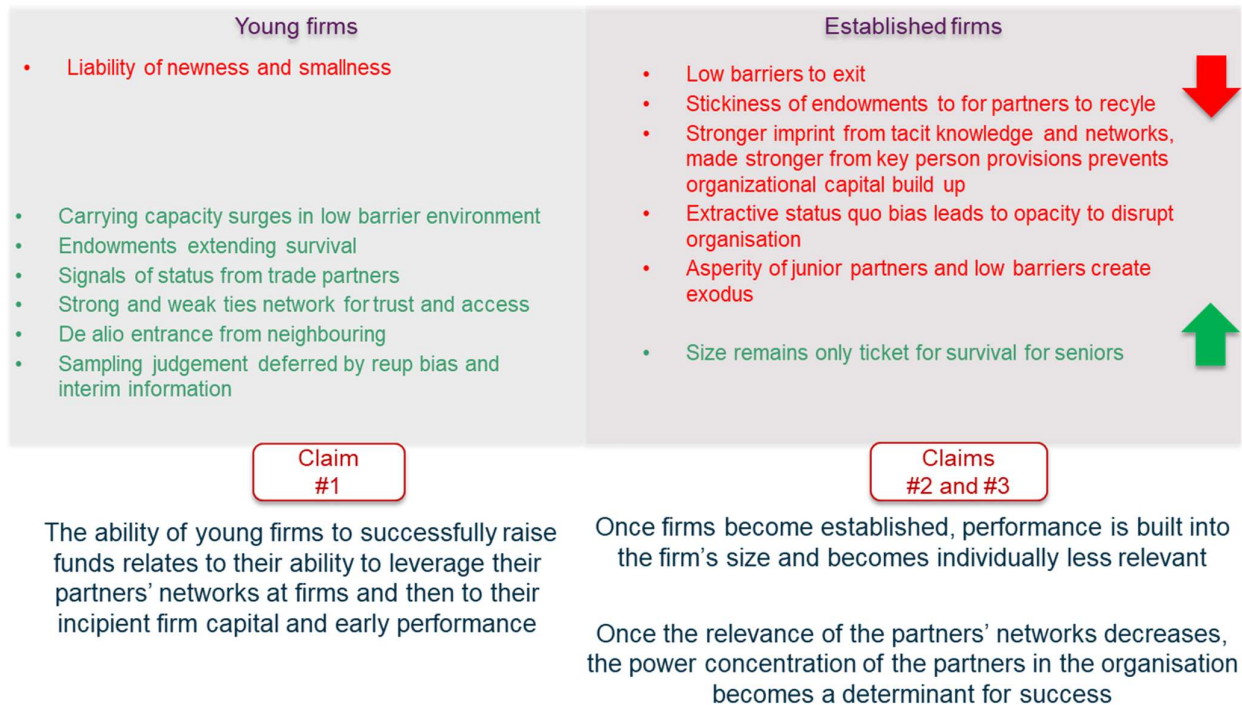


Fig 56-En casa de herrero, cuchillo de palo: Young PE firms depend on the ability to leverage partners' networks to make the best of the opportunity at hand; once established, the survival of PE firms is affected by the limits that power concentration pose on their ability to keep up with environmental changes

b) Contribution

The present dissertation contributes to the field of demographics and the understanding of private equity in several ways. But even if, as discussed in Section III.b., private equity provides meaningful ways of measuring “projects”, some of the identified dynamics can arguably be extended to organisations as a whole, especially service organisations.

This dissertation initiated as a quest to understand the nature of the fundraising process in PE. Along the way, understanding the population dynamics, I characterised fundraising as the mechanism for survival of PE firms and explained the failure to fundraise/ survive in terms of a paradox: the very expertise that enabled executives to raise a fund and enter the PE arena were incapable of ensuring the survivability of their invention. But exploring the dynamics

as to why this was so, enabled me to understand two salient propositions of general application:

- 1) Business entities range from ad-hoc projects to full blown organisations with a separate identity from that of their founders, owners, components and the dynamics in the spectrum between the two ends has somewhat escaped deep research; and
- 2) In the continuum between projects and full-blown organisations the tension arises between increasing reliability, accountability and de-personalisation through institutionalisation, on the one hand; and avoiding rigidity and inertia to keep pace with the violent changes in the business environment. A power concentration trap can appear over time that stresses the latter and increases mortality, despite the time-proven concept that “new is always more vulnerable”.

i) Partnerships lie somewhere between a project and an organisation; PE firms are one such type

Studies in business focus primarily on one end of the spectrum, projects; or on the other, large, institutionalised organisations. The former delve mostly on project management and entrepreneurship. The latter endows the organisations with a sort of anthropomorphism, giving the organisational construct a sense of individuality and separability from its members that can hold water in only the most developed stages. In the spectrum between, lies a metamorphosis that has been studied piecemeal, but probably not addressed as a form.

Partnerships are one form of intermediate organisations; they cannot be treated as projects because their aim is eternal; but they can hardly be wrenched away from their founding and

composing members for they are vascularly tied to them. PE is but one example, with valuable measurements that may help quantitative study. In PE, the low expectation of longevity that seals their fate. Would-be PE managers are members of a fluid community of service providers which can easily try out their fortune in a fundraising process. PE is simultaneously a high-contrast organisational form which increases its legitimacy and form with a vibrant neighbouring community with low entry barriers. If they can avail themselves of a dense network of contacts, the ultimate cost of attempting to raise a fund seems low, despite the low probability of success.

This lack of visibility or long-term expectation causes efforts by founders to instill caution and postpone the build-up of organisational capital. As a result, despite being seen by the market as organisations, PE firms are somewhat in the middle of the continuum between organisations and projects or collections of projects. Despite their ultimate fate, organisations project an expectation of eternal duration; what is sometimes referred to as “a going concern”. Projects, on the other hand, are ephemeral constructs with a definite time-horizon. PE firms lie somewhere in the middle. And it is this embryonic nature that affects their longevity.

It is not difficult to venture similar conclusions to other types of organisations in the service space. Full-blown organisations have value propositions, products and manufacturing processes to act as the repositories of firm knowledge; removing members may make complicate operations, but these repositories remain and give organisations intrinsic value. Ensembles in the middle of the spectrum, like partnerships, lack those repositories. People, instead, become the repositories; extensions such as policies and procedures can become such

a repository; but where knowledge has a large tacit component, like in professional service firms, investment advisory firms, the repositories will continue to be in the members.

This proposition of the repositories of knowledge is extremely tied to the notion essayed in Section IV.a. that service firms lack equity value and that M&A transactions of them only make sense from a size signal and administrative efficiency, but not significantly as a knowledge acquisition mechanism. Prices in such transactions should reflect this lack of equity. Interestingly, many partnerships in the professional services do circumvent this lack of equity by bringing into their ranks the children of founding partners, but it is yet to be confirmed whether the performance of the “second generation” matches that of the prior one.

In PE, after years of successful fundraising by independent firms, it seems as if the current environment is showing once again the fluctuating nature of carrying capacity. The bulk of fundraising in the past years has concentrated on secondary transactions and single-deal funds, both of which diversions in the road of traditional 2/20/1 funds raised by managers on the back of trust on their capacities and with the resulting funding to attempt organisational emergence. The market seems to be correcting against tacit knowledge.

ii) Nuance to the understanding of liabilities of newness and smallness and the “power concentration trap”

Stinchcombe (1965) and Freeman et al. (1983) claim that older and larger organisations have lower mortality, respectively. The dynamics of survival of firms require an understanding

beyond age. A claim could be made that every year a firm survives is a signal of organisational capital, hence the “Since...” labels in marketing materials. This cannot escape service firms, which, have comparatively less substance to show and need any such signals.

But there is a tension between institutionalisation, reliability, accountability and the inertia and rigidity it may create (Carroll and Teo, 1989). The moderate turnover postulated by March (1991) as an antidote to structural inertia can be arguably more relevant for firms in the intermediate of the development continuum like partnerships, especially where they rely on tacit knowledge. The reason for this is that these firms needs a configuration where the pace with market evolution is kept and this can only be made by the contribution of newer, younger executives. The “power concentration trap” that hails the ways of old is the direct threat to such an effective moderate turnover.

According to this study, PE firms demographics do not seem to fully reflect the Stinchcombe (1965) and Freeman et. al. (1983) postulates. Given the constantly changing environment of the industry, aging organisations do not seem to survive in private equity. In general, organisations proliferate by being more reliable and accountable (institutionalised); but in an ever changing environment, younger organisations, more in synch with change (i.e., with endowments to address current problems) may have a better shot. As proposed by this study, the explanation to higher mortality as firms age lies in the existence of a “power concentration trap”. The relevance of power concentration at the beginning of an organisation’s life can threaten its very existence down the line if not properly phased out. In the context of a r-

strategic non-resilient population, the temptation to extract value out of a concentrated position by founders can catalyse the demise.

Size does act as a safety net, but in the long term, only if it reflects the ability to instill a learning process capable of keeping up with environmental pace, which does not seem to be the case. I submit that investment banking “boutiques” and legal and accounting firms follow the same path. The problem with them is finding quantitative information to nurture the analysis before they are too large and appear “in the radar”.

iii) Organisation succession or gene succession as a long-term objective of PE firms

Firm survival is a Holy Grail, which ought to be sought conscienciously. But in PE the external pressure to “keep things consistent” may prove unsurmountable. Investor-imposed fixed-terms, limitations to and/or pressure against term extensions, impositions against strategic drift and definitions of key persons collectively increase inertia. Add to it the “tacit” nature of PE knowledge and zealouslyness of own networks and building an environmentally-fit organisation may prove impossible.

Perhaps the answer lies in the Darwinian concept of genetic (rather than species) survival. If it is the fate of PE firms to fail to survive by and large, partners should focus their efforts in attempting to promote the survival of their “genes”, their code, their DNA by managing the dismantling of the firm gracefully. As the death of a PE firm is sure to release resources into the market (human, knowledge, etc.), firms should identify what the best fit for each of their partners is and support their path. Survival may lie in the reputational genes dispersed in new ventures more frequently than in bona fide PE going concerns. Either way, the study stresses the importance of succession planning/ wealth reallocation in the development of PE firms.

Afterthought: Is firm mortality good for the PE industry

As an afterthought, we should question whether the industry-wide preference for limited-life arrangements is beneficial to either GPs and investors or whether the latter pay the price for this through less reliable information on hoards of new GPs entering the PE space every time equities generate the ripe conditions.

What we see in private equity, ultimately, is a circle of life, in which market conditions favour the emergence of firms, wooing with low barriers of entry executives from neighbouring industries and disenchanted junior partners from other private equity firms. They start the painful process of breaking the barrier of the initial fundraise by addressing the concerns of their potential investors, first approaching those with whom their ties are already strong based on past affiliations. Those successful in meeting early performance will have the chance to move on to new funds. Investors seeking them out for these later funds will place restrictions cementing the power distribution of founding/ senior partners, further imprinting the firm with the ways and knowledge of the latter and preventing the young firms from securing the more updated networks and tacit knowledge of younger partners, to keep pace with environmental changes. Those firms that do make it to later stages will reflect their value in their size making it economically convenient for those partners holding the bulk of power to extract value by selling their firms. Younger partners, not participating significantly in the spoils, will leave the firm and become fertiliser for new firms.

What remains to be properly understood is, in the context of such tacit knowledge governing the industry, how much investors lose by preventing firms from adequately institutionalising

themselves by the imposition of Key Person provisions and similar constraints? On the other hand, this trashing process of discarding firms may be the requisite to maintain the industry adapted to the environment. The jury is still out.

However, what remains is that some of the personal benefits may or may not accrue to the industry as a whole. The Agricultural Revolution of 12,000BC changed the life of hunter-gatherers making their lives more mechanical and social, thus reducing part of their individual self-dependence to the immense benefit of society in the aggregate; in the case of PE, is the inability of partners to institutionalise their emerging firms adequately (fueled by external constraints), accruing to their individual benefits at the expense of the aggregate industry?

Figure 57 shows a schematic of the private equity life cycle.

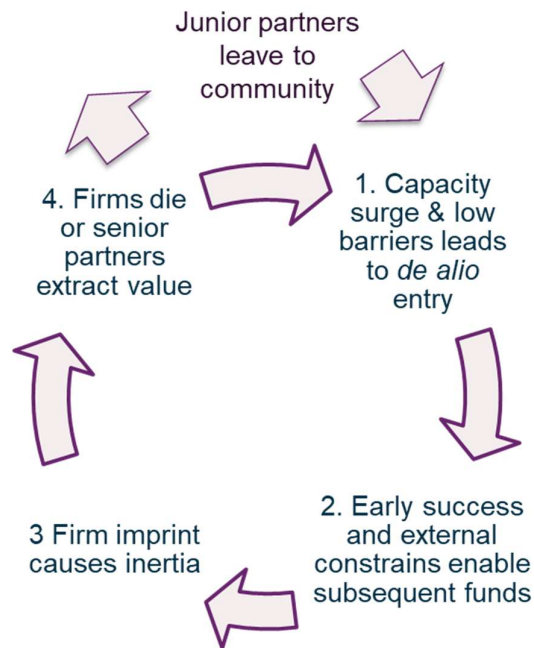


Fig 57-The private equity organisational dynamics create a need for investors to devote substantial resources to continuously get acquainted with the managers. Although it may be justified on the basis of survival and adaptation, it remains to be seen whether, for the industry as a whole, the cycle is cost effective

IX FURTHER RESEARCH

This dissertation consists of a pilot study into organisational demographics of PE Firms and provides a valuable insight: structural factors beyond the customarily empirically tested attributes of past performance affect the capacity of GPs to be selected and survive. The novel approach of reconstructing the firms' organisations at a point in time using publicly-available provide much meaningful information about the firms to continue exploring. However, I believe that this dissertation just opens the door in a handful of other directions.

a) Increasing the depth of the study

As an exploratory process, I used my observations and the published empirical research to come up with a number of variables that could be measured from publicly-available information. This was important to me to avoid subjectivity. But as Section V.c. shows, for some of the variables only limited information was available. Given more time and human power, additional access to data could result in even more robust databases capable of drilling down into some of the concepts that I evaluated. A deeper study would, I believe, confirm the hypotheses presented in this study; and in addition, provide nuances to aspects which I could only theorise about by using some of the variables I identified but finally did not use. And could help reject some of the findings herein and provide further food for thought. The exploratory work herein has helped identify many variables; hopefully, further studies can rely on this and focus on deepening them. This deepening could, I believe, be done by both furthering the collection of external data, but also by venturing internally into a host of firms. Finally, some kernels of potential other research paths have been identified.

i) *From outside data*

Furthering the collection of external data, beyond confirming or rejecting some of the conclusions herein, could be used to look for network patterns in school/ prior firm preferences for careers private equity, and more importantly, what successful deviations from those patterns consist of, to attempt a definition of what tacit knowledge really is in PE. Based on the importance of networks, such preferences might behave differently when analysing nationwide data or by region of influence.

Another benefit of a larger, more granular base would consist of breaking down the stages more narrowly (not in clusters, but using the actual number of sequences) and distinguishing by strategy, region, etc. This could shed light on aspects of evolution related to geographical expansion and strategic drift, and enable to test how, for instance, the “power concentration trap” behaves in such transitions.

Finally, information on attempted fundraisings (starting not just from a sample of fundraising events, but from a sample of fundraising effort announcements) could significantly add to this study in two ways: on the one hand, it would enable a truly longitudinal analysis of a sample of firms, evaluating how each of them behaved along their different sequences (rather than drawing inference on how general firms behave in a given sequence -or cluster thereof-). And very importantly, it would add a very important sequence of fundraising: number zero, the egg, the moment in which the *de alio* entrance is conceived, to form a full life cycle. On this count, the host of other earlier, less structured financing forms like angel/ seed capital and single-company funds (commonly known as “pledge funds”) could be construed as types of “eggs”.

ii) Venturing internally to obtain firm information

All of the information used in the present study has been derived from published databases, sometimes including inferences, as described in Section V.c.. A key piece of information used herein relates to power concentration and I believe it is a very useful one. An alternative approach could be to access a host of firms and either obtain their private marketing materials- typically the PPM for each fundraise- and/ or prepare questionnaires for them to fill to tabulate information on the characteristics of the firm organisation (specialised vs versatile), definition of Key Persons, economic wealth allocation. Obtaining this type of data could provide nuances to the power concentration trap conclusions of this study and help identify patterns of successful organisations.

Another benefit of additional information would result from obtaining more granular information into the endorsements that firms receive at each fundraising event. Information on reputable investors of prior funds and re-ups has been scarce and not comprehensive (mostly derived from investors' own reporting to Preqin). Given the pivotal importance of endorsements to breaking the barriers to fundraising, access to this data might add explanatory power to the regressions and confirm the network hypotheses.

b) Expand the scope of the study

i) Geographical expansion

Moving slightly out of the focus of the study, PE in the US, extending the study to other geographies might be useful to understand whether cultural differences have an impact on the perception of power concentration (and internal fairness or, poetically, equity). It would also be valuable to identify what makes networks valuable in those regions; one could hypothesise that in Israel, the tenure and branch of the Armed Forces each executive served in must be relevant; for emerging markets, having been part of a community of expatriates in Wall Street might weigh more than the reputation of the local schools attended.

ii) Scope expansion

Private equity is one, key, type in the fund management organisation universe. And the contours of the definition of this type are fluid as discussed in the dissertation. This, among other things, facilitates the *de alio* entrance. The border between private equity (in the buyout sense of the word, as described in Section III.a.) is not always clear cut; neither is the border between buyout (which are mostly blind pools resulting in higher levels of trust in the capacity of the manager to procure deals) than secondary funds (in which the assets are identifiable and the transaction is more of a restructuring of investors). Expanding the study conducted in this dissertation to samples of venture capital and secondaries fund would, I surmise, provide differing results, stressing the importance of trust in the GP in VC more, and secondaries, less than in PE, respectively. Furthermore, deep diving into VC should also provide valuable differences in the relationship between power concentration and environmental fit, which is

inherently more critical than in PE, as technological developments in the underlying portfolios change ever so more rapidly.

Section IV.a. sets out a theoretical conceptualisation of the price dynamics in private equity deals. Conducting a research on the correlation between the price of private equity IPOs (as proxies for the death of the buyout firm) and the size of AuMs at the time and subsequently would be interesting field to continue research; in other words, is there value in PE beyond the size of the firm? Is the value of knowledge and network, so reliant on tacit knowledge, that has been a pivotal part of this dissertation be portable? I surmise that quantification of this matter would put to the fore the issue of value extraction (exploitation) versus exploration. Such a study would quantitatively prove that the value of partner capacity (carry generation) is composed mostly of tacit knowledge incapable of being measured by the market; and it would open the question as to where the value of a private equity firm's brand lies.

c) Further research paths beyond private equity

As specifically indicated in Section III.b., the private equity industry provides valuable measurement for dynamics which in other areas of organisations can be harder to quantify. This is because by treating each fund as a separate construction and having clear information on the performance of such fund and on the organisational resources allocated to such fund, is like having an MRI scan on a partnership. Other types of partnerships -I submit- have similar dynamics. But obtaining such granular data on the different projects may prove more difficult, especially where the verdict of performance is concerned.

The notion of value extraction versus exploration exceeds the realm of private capital firms; building on the preceding paragraph and on the studies on private equity, research (and conclusions) could be extended to other types of service firms, especially those in the neighbouring space, like consulting firms. The application of the “power concentration trap” to test the success of firms against the average tenure of partners (or their wealth allocation) would be telling. The considerations to the value of the brand mentioned above, would apply here similarly.

Another interesting path to follow is to conduct a succession study. Using network theory and methods, and possibly going into the persons rather than the firms, it would be interesting to identify patterns of coming in and out of the PE zone to understand the birth process more deeply and the survival from defunct firms into the same or neighbouring space; and whether performance can also be predicted from it.

I concluded Section VIII with an open question on the intrinsic good or bad consequences of high mortality for PE. A study with access to a handful of investors’ longitudinal information on fundraising processes assessed, approved and their performance could shed some light on the efficiency of putting pressure on managers to stick to too rigid guidelines and whether, in the end, being locked to the sampling bias of the unknown was better for them in terms of portfolio performance.

Finally, in the process of gathering by firm information, I noted down the dearth of female partners. My database includes information that could be used for (and expanded) to understand this phenomenon, hypothesize underlying causes and gauge their evolution in time; from observations, it seemed that the trend was lately changing, but further analysis would be required -and possibly on a larger database- to draw valuable conclusions.

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XI THEMATIC INDEX

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XII GLOSSARY OF PRIVATE EQUITY TERMS

2/20/1: Typical configuration of PE economics to the GP consisting in 2% management fees; 20% carried interest on returns; 1% skin-in-the game by the GP

Alternative investments, also referred to as AI: The riskier asset class in an investment portfolio comprising investments in real estate, commodities, private equity, venture capital and hedge funds, among others

Anchor investor: an investor that is sought before others because of a contribution beyond the sheer capital contribution; said knowledge may relate to the industry, to the manager, etc.

Assets under management, also referred to as AuMs: The fair value at any given date of the investments held by an investment manager; in PE they typically also include the amount of Dry Powder

BuyOut, also referred to as BO: Sub class of investments consisting in acquisitions of equity in private companies or sizeable portions of public companies; used interchangeably for PE

Carried interest, also referred to as Carry: Also known in places as "promote", it is the portion of the returns in excess of cost (and generally a minimum return) that is paid out to the GP for its management of the investment

Dry Powder: The amount of commitments in a Fund which have not been drawn down and invested in Portfolio Companies

Funds of Funds: Funds raised to acquire shares of other PE funds (i.e., only indirectly exposed to the Portfolio Companies)

General Partner, also referred to as GP: The investment manager in a PE Fund

Institutional investors: Knowledgeable managers of third party investments (like pension fund or sovereign wealth managers)

Initial Public Offering, also referred to as IPO: The process to sell shares of a company into the market effectively turning it publicly traded

Key Person: Members of the GP who are by definition of the LPA required to remain at the PE firm (and/or be free from certain deviant behaviour) to avoid an early liquidation of the Fund or removal of the GP

Limited Partner, also referred to as LP: Passive investor in a PE fund

Limited Partnership Agreement, also referred to as LPA: Agreement between the LPs and GP setting forth the investment guidelines, requirements, obligations and limitations of the GP and their economic arrangement

Management fees: A part of the economic arrangements of an LPA consisting in a percentage of either the size of the Fund, the cost or outstanding value of investments, or a combination thereto

mPME: Methodology to estimate a performance benchmark for a PE Fund essentially consisting in calculating the returns that would have been obtained if the flows to and from the fund had been invested in a public equity index

PE firm: An organisation managing one or more PE funds

PE fund, also referred to as Fund: A partnership set up with a mandate to invest in the equity securities of private companies or sizeable blocks of shares of public companies

PE Manager: Another way to refer to a GP

Persistence: Ability of a GP to maintain a superior investment performance fund after fund

Portfolio Companies, also referred to as PortCos: Issuers of equity securities (companies) in which PE firms invest (and usually enact changes given their sizeable position)

Private Equity, also referred to as PE: See BuyOut

Re-ups: The action of an LP of subscribing an interest in a new PE fund managed by a GP with which the LP invested in prior funds (especially if a larger commitment is made)

Sequence: The number of funds issued by a PE firm

Skin-in-the-game: The percentage size of a PE Fund subscribed by (members of) the GP as enticement for other investors to follow suit, signalling the GP's confidence in the Fund

Sweat equity: Work carried out by an executive that is not compensated in cash or salary, but rather as a portion of the returns on the related endeavour

Venture Capital, also referred to as VC: Sub class of investments consisting in funding of early stage projects (usually, although not exclusively) based on emerging technologies

Vintage: The year in which a PE fund is raised; the cohort of all PE (or VC) funds raised in a given year is called a vintage. And a PE Fund is typically referred to being a "200x vintage" if raised in that year

Zombie funds: Funds managing Portfolio Companies that have proven difficult to sell and remain extant for many years without substantial investment/ divestment activity

Appendix A: LIST OF VARIABLES

Dependent Variables

#	Code	Name	Definition	Observations
1	DV0	Fund Size	Dollar size of fundraise	Highly skewed (Skewness=4.49); Discarded and transformed in 1 by logarithm
1i	DV0i	LN of Fund Size	Logarithm of dollar size of fundraise	
2	DV1	Fund size versus first time average	Calculated by dividing the fund size into the average size of all funds in the database (n=7,180) before sampling with sequence =1 (first time funds)	Highly skewed, (Skewness =4.396), Discarded; not theoretically meaningful for higher sequences
3	DV2	Fund size versus Prior fund	Ratio of fund size as part of fundraise to the size of prior fund	No data for sequences =1, n=73, Discarded
4	DV3	Fund size versus prior to last fund	Ratio of fund size as part of fundraise to the size of prior to last fund	No data for sequences =1,2, n=53, Discarded
5	DV4	Actual size to target	Ratio of fund size to PE Firm disclosed target fundraising size	n=80, Discarded
6	DV5	Long term fundraising success	Ratio of funds raised after fund under analysis divided by number of normal funds raised (1 every three years) since fundraise until the end of measurement	Highly skewed, (Skewness =5.139), Transformed into quartiles
6i	DV5ii	Long term fundraising success (Quartiles)	Quartiles of ratio of funds raised after fund under analysis divided by number of normal funds raised (1 every three years) since fundraise until the end of measurement	For further research
7	DV6	DPI	Cash distributions from fundraise	For further research
8	DV7	Quartile	Performance quartile of fundraise	For further research
9	DV8	MoIC	Ratio of funds proceeds to capital contributed	For further research
10	DV9	IRR	Net IRR of fundraise	For further research

Appendix A: LIST OF VARIABLES

Independent variables: Firm level-Knowledge

#	Code	Name	Definition	Observations
1	FK1 (s-1, s-2, s-3)	Quartile prior funds	The quartile performance of prior funds. Considered individually for the three prior funds -a.k.a., prior sequences (s-1, s-2, s-3).	i n=44 (discarded) ii n=32 (discarded) iii n=19 (discarded) Replaced by #2 and eventually by #2i
2	FK1i (s-1)	MoIC of prior fund ¹¹	Money on Invested Capital cash performance of the immediately preceding fund raised by the firm	Replaces 1; replaced by 2i
2i	FK1iii (s-1)	Ln of MoIC of prior fund	Logarithm of MoIC of the prior fund, to mitigate asymmetry.	Operation on #3, FK1i to normalise distribution. I applied MacCune et al (2002) log transformation solution for distributions with observations =0
3	FK1ii (s-1)	IRR of prior fund ⁴⁾	IRR or internal rate of return is the reported performance of the immediately preceding fund	Not used as #3 (FKi) has more observations
4	FK2 (s-1, s-2, s-3)	DPI of prior funds	DPI or the ratio of distribution to paid in capital. Considered individually for the three prior funds -a.k.a., prior sequences (s-1, s-2, s-3).	i n=51 (discarded) ii n=33 (discarded) iii n=23 (discarded)

¹¹ Knowledge information unavailable has been marked “blank”; if the information is inexistent because the firm did not have a prior sequence, the value has been marked as zero. All information in Preqin is produced by voluntary contribution. Although it relies mostly on the contribution by the managers themselves, it also obtains information from investors, which may enrich/ confirm the information provided by managers. However, where information is only reliant on contribution by managers, lack of information (e.g., on performance) may indicate overstatement of reported performance, as a) firms may be more readily willing to contribute good news than bad ones; and b) firms going out of business will cease to contribute information on their final deals, funds, etc.

Appendix A: LIST OF VARIABLES

Independent variables: Firm level-Network

#	Code	Name	Definition	Observations
1	FN1, FN1i	Number of exits and Ln of number of exits ¹²	The absolute number of companies a firm has sold, or exits, prior to the time of the fundraising event	Operation on #6, FN1 to normalise distribution. I applied MacCune et al (2002) log transformation solution for distributions with observations =0
2	FN2	Percentage of exits	The number of exits as a percentage of the total companies a firm had acquired prior to the fundraising event	Highly correlated to #6 FN1; Disregarded for now
3	FN3	Past IPOs (Dummy)	IPO presence; a firm's track record as one which successfully takes companies public provides it with substantial public presence. A dummy variable (1=Yes, 0=No)	
4	FN4	Past investor endorsement ¹³	The percentage of past investor endorsement or (reup)	90% of observations without data or 0%; Discarded
5	FN5	Reputable investor endorsement	The percentage of reputable investor endorsement or (reputable)	90% of observations without data or 0%; Discarded
6	FN6	Interaction of reputable investors and reups	The interaction on other investors' endorsement and reups	90% of observations without data or 0%; Discarded
7	FN7	Brand recognition; partners eventually becoming partners in other firms	Brand recognition resulting from partners at the time of the fundraise subsequently becoming partners in other PE firms. A value of (1=Yes; 0=no) for the firm were obtained from the by partner analysis	At an initial consideration, whether the partners left for a new firm or an existing one is less relevant; #7 and #8, considered jointly in #8i; Postponed use in case #8i proves meaningful

¹² Both [FN1] and [FN2] are calculated because individually, they may signal an incorrect dynamic. For instance, only considering the percentage may rate a firm with a single exit on its only single prior acquisition, as more prominent than a firm with numerous -although less than 100%- exits; conversely, only focusing on the absolute number may rate better a large firm with poor exit track record than a medium sized one, with a better one. For each firm under analysis, Preqin provides a table of deals (past and active). The focus is primarily on the circumstances surrounding the acquisition and so, although marked as active or realised, as the case may be, the tabulated data includes acquisition date but not sale date. In order to estimate the sale date, each company in a firm's Deals roster is assigned to the latest possible fund that could have been used to fund the acquisition (i.e., if a firm had vintages in 2009, 2011 and 2013, a deal acquired in 2012 is assumed to have been funded by the 2011 vintage -the latest fundraise before the deal) and the average holding period for such fund -also reported by Preqin, used to estimate the exit date by counting such average holding period from the acquisition date. In cases where the information on the average holding period was not available in Preqin, the information for the immediately preceding fund was considered; if this information was not available either (e.g., in cases of a first fundraise), the years between the fund and the successive fund were considered.

¹³ Information on investors names can be elusive; firstly, investors typically require confidentiality on the use of their names; secondly, managers may not want to divulge sensitive information beyond specific fundraising interactions. The information in Preqin is obtained from a combination of data furnished by the investors themselves when they are U.S. public pension funds due to Freedom of Information Act requirements and voluntary manager data submission. As a result, a generalised understatement of investor endorsement may be reflected in Preqin's reports, which may even be reinforced for firm with reputable investors that are not public pension funds. Accordingly, central measures rather than absolute ratios will be considered and even those, will be scrutinized

Appendix A: LIST OF VARIABLES

Independent variables: Firm level-Network

#	Code	Name	Definition	Observations
8	FN8	Brand recognition; partners eventually becoming founders in other firms	Brand recognition resulting from partners at the time of the fundraise subsequently founding new PE firms with successful subsequent fundraises. A value of (1=Yes; 0=no) for the firm were be obtained from the by partner analysis	At an initial consideration, whether the partners left for a new firm or an existing one is less relevant; #7 and #8, considered jointly in #8i; Postponed use in case #8i proves meaningful
8i	FN8ii	Brand recognition; partners eventually becoming founders or partners in other firms (dummy)	Brand recognition resulting from partners at the time of the fundraise subsequently founding new PE firms or joining other PE firms. The sum of absolute number of partners fulfilling that characteristic (1=Yes; 0=no) for the firm were be obtained from the by partner analysis	Combination of #7and #8
9	FN9	De Alio from financial services	Inherited status-financial services: a firm's status will be affected if it is a <i>de alio</i> extension of an already prominent firm. A dummy variable (1=Yes, 0=No) has been assigned if the firm is the spin off/ PE-arm extension of a pre-existing financial services firm	At an initial consideration, whether <i>de alio</i> comes from corporations or financial services is less relevant; #9 and #10, considered jointly in #10i. Postponed use in case #10i proves meaningful
10	FN10	De Alio from Corporations	Inherited status-other: similar to the case below, a firm may have evolved as the investment arm of a large corporation, benefitting from its business ties (i.e., GE Capital, Bain Capital). A dummy variable (1=Yes, 0=No) has been assigned if the firm in such cases	At an initial consideration, whether <i>de alio</i> comes from corporations or financial services is less relevant; #9 and #10, considered jointly in #10i. Postponed use in case #10i proves meaningful
10i	FN10ii	De Alio from either financial services or corporations (dummy)	Inherited status-financial services or other corporations: A dummy variable (1=Yes, 0=No) has been assigned if the firm is the spin off/ PE-arm extension of a pre-existing financial services firm or corporation	Combination of #9 and #10
11	FN11	Broker status signal	A signal of endorsement similar to the one emitted by the investor endorsement is that of reputable placement agents (brokers assisting fund managers to raise a fund by liaising them with investors). A dummy variable (1=Yes, 0=No) has been assigned if the firm has engaged a reputable agent	

Appendix A: LIST OF VARIABLES

Independent variables: Firm level-Institutionalisation

#	Code	Name	Definition	Observations
1	FI1	Trust: Average of years partners working together	The number of years of partners working together	
2	FI2	Firm Life (years)	The life of the firm may send a signal of reliability and as such has been considered	
3	FI3	Trust: Average of years partners working together as a percentage of firm life	The number of years of partners working together as a percentage of the life of the Fund was considered as well	Preliminary discarded as it operates two other variables
4	FI4	Power concentration	Herfindahl-Hirschmann coefficient of Founder/ senior to Other/ junior partners concentration	
5	FI5ii	Relative firm size	Relative AuM measure ratio to average size AuM (obtained as M3 in #12) in database; For the purposes of correlation, I have considered a minimum size of 0.25 and a maximum size of 2.0, since there are thresholds in which the perception will cease to be correlated to the actual size but rather to clusters of “small”, “medium” and “large”	Postponed use in favour of #12i; missing data on pre-1999 fundraises (n=106)
6	FI6	Number of partners	The overall number of partners at the firm	Highly skewed (Skewness=3.405); transformed into #28, FI6i
6i	FI6i	LN Number of partners	Logarithm of the overall number of partners can be a measure of both the size of the firm and of its long-term commitment	Transformed by logarithm from #6
7	FI7	Ratio of Senior/ Founders to Junior/ Other partners	Many firms are “Head Heavy”. This imbalance may be a signal of succession issues and as such, the ratio between the number of senior/ founder partners and other/ junior partners will be considered	Postponed use for in depth analysis
8	FI8	Relative size of the firm	AuM per partner	Discarded use given the fact that it operates other variables and has missing data on pre-1999 fundraises (n=106) Highly skewed (Skewness=4.18); would require transformation

Appendix A: LIST OF VARIABLES

Independent variables: Firm level-Institutionalisation

#	Code	Name	Definition	Observations
9	FI9	Bandwidth	One way to gauge how committed a firm is to its long-term future is to analyse how many partners the firm has to manage its outstanding portfolio of companies. Firms incapable of raising new funds will inevitably see their partners migrate to other firms due to the lack of resources; therefore, firms with high portfolio companies per partner (low bandwidth) would send a negative signal for prospective investors. The number of partners per firm at the time of fundraise was obtained from the by partner information on section	Postponed use for in depth analysis
10	M1	Sequence	The database obtained from Preqin indicates the fundraising sequence of each fund	Originally considered as a moderator. Skewed (Skewness=1.8), to be transformed by logarithm into 10i, M1i
10i	M1i	Logarithm of Sequence	Logarithm of the fundraising sequence	
10ii	M1ii	Sequence-based firm tenure	Firm tenure grouped by sequence for moderation: firms with lower sequence numbers considered “young” or “growing”; firms with larger sequence numbers, considered “established”	
11	M2	Time since prior fundraise (Years)	Lags from prior fundraises set the alarm clock for the survival of the firm if a new fund is not raised. Reported by Preqin	Postponed for in depth analysis/moderation
12	M3	Firm size before fundraise	Firm AuMs obtained/ estimated as of fundraising date under analysis	Grouped into size clusters in #12i
12i	M3i	Firm size clusters	Cluster of firm size based on AuMs being less than \$1bn, between \$1-3bn or larger than \$3bn	
13	M4	Prior fund size	Size in \$m of prior fund raised by the same firm	Transformed by logarithm into 13i
13i	M4i	Logarithm of Prior fund size	Logarithm of the size in \$m of prior fund raised by the same firm	Originally considered as a ratio in dependent variable. I applied MacCune et al (2002) log transformation solution for distributions with observations =0

Appendix A: LIST OF VARIABLES

Independent variables: Firm level-Ethics

#	Code	Name	Definition	Observations
1	FE1	Auditor change	For each fundraise whether the auditor is the same as for prior funds of the same firm and marked it as a dummy variable (1= No change, 0= Change), as a change of auditor may be a negative signal of potential ethical/ fraud issues	Only 70 observations, Discarded
2	FE2	Bad Press	The rationale behind it is the belief that a firm with a tainted name will find it impossible to raise funds. A dummy variable (1= negative news, 0= no news) was computed for each firm under analysis	The analysis on 114 firms and 647 executives has not yielded a single case of a fundraise in which a resulted in findings of public claims against executives. Discarded

Appendix A: LIST OF VARIABLES

Independent variables: Partner level-Knowledge

The measures of partner level variables have been computed aggregating the information of all partners and also separately for Senior (S) and Other (O) partners, for potential in-depth analysis further down

#	Code	Name	Definition	Observations
1	PK1	Average caliber of prior affiliations.	Declining scale of past employment value with the more recent experience receiving a higher weight.	Skewed to the right; replaced by #1i PK1i based on quartiles
1i	PK1i	Quartile of average caliber of prior affiliations	Quartile of the average partner caliber of prior affiliations as proxy for investment knowledge	
2	PK2	Coefficient of variance on caliber of prior affiliations	Variance on the caliber of prior affiliations	Discarded for initial study

Appendix A: LIST OF VARIABLES

Independent variables: Partner level-Network

The measures of partner level (PN1, PN2 and PN3) have been computed aggregating the information of all partners and also separately for Senior (S) and Other (O) partners, for potential in-depth analysis further down

#	Code	Name	Definition	Observations
1	PN1	Academic network points	Number of school community access points results from counting the number of high-ranked and high-aged schools partners in a firm attended	
2	PN2	Business network points	Number of prior work community access points results from counting the number of high-caliber firms partners in a firm worked before the fundraise	
3	PN1i	Total network points	Combination (sum) of PN1 and PN2	Preliminary disregarded as the type of network –diversity- may provide insight on whether there are weaker/ more informational links
4	PN3	Average value of top ranked universities	Average coefficient by partner of the value of the affiliation to universities ranked by prominent global lists of business schools/ schools of economics	Postponed for in depth analysis
5	PN4	Coefficient of variance on caliber of prior affiliations	The variance on the average value of top ranked universities. The variance is estimated as the coefficient of variation (standard deviation divided by the mean value) of PN3	Discarded for initial study
6	PN5	Average value of high status universities	Average coefficient by partner of the value of the affiliation to universities based on their age	Postponed for in depth analysis
7	PN6	Coefficient of variance on caliber of prior affiliations	The variance on the average value of top ranked universities. The variance is estimated as the coefficient of variation (standard deviation divided by the mean value) of PN5	Discarded for initial study
8	PN7	Average value of prior job networks	Average coefficient by partner of the value of the affiliation to prior jobs	Postponed for in depth analysis
9	PN8	Coefficient of variance on caliber of prior job networks	The variance on the average value of prior jobs. The variance is estimated as the coefficient of variation (standard deviation divided by the mean value) of PN7	Discarded for initial study

Appendix A: LIST OF VARIABLES

Market conditions (control)

#	Code	Name	Definition	Observations
1	M5	S&P relative level	Ratio of S&P level to three-year moving average of time series	
2	M6	Fundraising volume relative level	Ratio of market fundraising dollar volume level to three-year moving average of time series	
3	M7	Dry Powder relative level	Ratio of market Dry Powder dollar volume level to three-year moving average of time series	Highly correlated to #2, M6, postponed for in depth analysis

Appendix B: CATALOGUE

Reputable private equity investors

Criteria: Preqin search of largest 20 firms by PE allocation, plus largest 5 endowments, 5 pension funds and list of 2017 report not included in first 20

Source: Preqin

Ordered by name	Name	Nickname	Type
1	Abu Dhabi Investment Authority	ADIA	Sovereign Wealth Fund
2	CDPQ	Caisse de Depot	Public Pension Fund
3	CalPERS - California Public Employees' Retirement System	CalPers	Public Pension Fund
4	California State Teachers' Retirement System (CalSTRS)	CalsTers	Public Pension Fund
5	CPP Investment Board	CPP	Public Pension Fund
6	GCM Grosvenor	GCM	Fund Manager
7	GIC	GIC	Sovereign Wealth Fund
8	Horsley Bridge Partners	Horsley Bridge	Private Equity Fund of Funds Manager
9	Maryland State Retirement and Pension System	Maryland State	Public Pension Fund
10	Michigan Department of Treasury	Michigan Treasury	Public Pension Fund
11	Minnesota State Board of Investment	Minnesota SBI	Public Pension Fund
12	MIT Investment Management Company	MIT	Endowment Plan
13	Neuberger Berman	New York	Asset Manager
14	University of Notre Dame Endowment	Notre Dame	Endowment Plan
15	New York State Common Retirement Fund	NY Common Retirement	Public Pension Fund
16	New York State Teachers' Retirement System	NYS Teachers	Public Pension Fund
17	OMERS	Omers	Public Pension Fund
18	Healthcare of Ontario Pension Plan	Ontario Healthcare	Public Pension Fund
19	Ontario Teachers' Pension Plan	Ontario Teachers	Public Pension Fund
20	Oregon State Treasury	Oregon State	Public Pension Fund
21	Pathway Capital Management	Pathway	Private Equity Fund of Funds Manager
22	Public Sector Pension Investment Board	Public Sector Pension Investment	Public Pension Fund
23	StepStone	Stepstone	Fund Manager
24	Teacher Retirement System of Texas	TRS Texas	Public Pension Fund
25	Regents of the University of California	University of California	Public Pension Fund
26	University of Pennsylvania Endowment	UPenn	Endowment Plan
27	University of Texas Investment Management Company	UTIMCO	Endowment Plan
28	Virginia Retirement System	Virginia ERS	Public Pension Fund
29	Washington University in St. Louis Endowment	Washington University St. Louis	Endowment Plan
30	Wells Fargo Bank	Wells Fargo	Bank
31	Wilshire Associates	Wilshire	Fund Manager
32	Washington State Investment Board	WSIB	Public Pension Fund
33	Stepstone	Stepstone	Advisors
34	Cambridge Associates	Cambridge Associates	Advisors
35	Hamilton Lane	Hamilton Lane	Advisors
36	Yale University Endowment	Yale Endowment	Endowment Plan

Appendix B: CATALOGUE

Reputable private equity agents

Criteria: Preqin report on Private Capital Placement Agents and Advisors, 2018

Source: Preqin

Ordered by name	
Name	Nickname
1 Champlain Advisors	Champlain
2 Credit Suisse Private Fund Gi	Credit Suisse
3 Eaton Partners	Eaton
4 Equus Financialo Consulting	Equus
5 Evercore Private Funds Group	Evercore
6 First Avenue	First Avenue
7 Greenstone Equity Partners	Greenstone
8 Growth Capital Services	Growth Capital
9 KB Investment and Securities	KB
10 LarrainVial	LarrainVial
11 M2O Private Fund Advisors	M2O
12 M vision Private Equity Advi	M vision
13 Park Hill Group	Park Hill
14 Park Madison Partners	Park Madison
15 Picton	Picton
16 Principle Advisory Services	Principle
17 Rede Partners	Rede
18 Selinus Capital	Selinus
19 Sixpoint Partners	Sixpoint
20 UBS Investment Bank Privat	UBS
21 Stepstone	Stepstone
22 Cambridge Associates	Cambridge Associates
23 Hamilton Lane	Hamilton Lane

Appendix B: CATALOGUE

Big bulge bracket firms

Criteria: Current list by Investopedia, banks merged into current list and Lehman and Bear Stearns -bankrupted in 2008

Source: *Investopedia, Wikipedia*

	Name	Nickname
1	Advent International	Advent
2	Andreessen Horowitz	Andreessen
3	Apollo Global Management	Apollo
4	Bain Capital	Bain
5	Blackstone Group	Blackstone
6	Blue Owl Capital	Blue Owl
7	Brookfield Asset Management	Brookfield
8	Carlyle Group	Carlyle
9	Clayton Dubilier & Rice	Clayton Dubilier
10	Clearlake Capital	Clearlake Capital
11	Francisco Partners	Francisco
12	General Atlantic	General Atlantic
13	Genstar Capital Partners	Genstar
14	Goldman Sachs Asset Management	Goldman
15	GTCR	GTCR
16	HarbourVest Partners	HarbourVest
17	Hellman & Friedman	Hellman & Friedman
18	Insight Partners	Insight
19	JP Morgan Asset Management	JPM
20	KKR	KKR
21	Leonard Green & Partners	Leonard Green
22	Lexington Partners	Lexington
23	Platinum Equity	Platinum
24	Sequoia Capital	Sequoia
25	Silver Lake	Silver Lake
26	TA Associates	TA
27	Thoma Bravo	Thoma Bravo
28	TPG	TPG
29	Vista Equity Partners	Vista
30	Warburg Pincus	Warburg Pincus

Appendix B: CATALOGUE

Big bulge bracket firms

Criteria: Current list by Investopedia, banks merged into current list and Lehman and Bear Stearns -bankrupted in 2008

Source: *Investopedia, Wikipedia*

	Name	Nickname
1	Bank of America	BofA
2	Bankers' Trust	Deutsche
3	Barclays	Barclays
4	Bear Stearns	Bear Stearns
5	Blackstone	Blackstone
6	Chase	JP Morgan
7	Citigroup	Citi
8	Credit Suisse	Credit Suisse
9	Deutsche Bank	Deutsche
10	Donaldson Lufkin and Jenrette	DLJ
11	First Boston	First Boston
12	Goldman Sachs	Goldman
13	HSBC	HSBC
14	JP Morgan	JP Morgan
15	Merrill Lynch	Merrill Lynch
16	Morgan Stanley	Morgan Stanley
17	Salomon Smith Barney	Salomon
18	Shearson Lehman Brothers	Lehman
19	UBS	UBS

Appendix B: CATALOGUE

Leading Management Consulting Firms

Criteria: MBB firms (the most prestigious) plus Booz; timeframe (2023)

Source: Management Consulting Firms

	Name	Nickname
1	Bain & Co.	Bain
2	Boston Consulting Group	BCG
3	Booz Allen Hamilton	Booz
4	McKinsey & Co.	McKinsey

Appendix B: CATALOGUE

Leading Law Firms

Criteria: Chambers legal rankings/ private equity and fund formation (2023)

Source: Chambers

	Name	Nickname
1	Akin	Akin
2	Choate Hall & Stewart	Choate Hall
3	Cleary Gottlieb Steen & Ham	Cleary Gottlieb
4	Cooley LLP	Cooley
5	Davis Polk & Wardwell	Davis Polk
6	Debevoise & Plimpton	Debevoise
7	DLA Piper	DLA
8	Fried, Frank, Harris, Shriver &	Fried Frank
9	Gibson, Dunn & Crutcher	Gibson Dunn
10	Goodwin	Goodwin
11	Gunderson Dettmer Stough	Gunderson
12	Kirkland & Ellis	Kirkland Ellis
13	Latham & Watkins	Latham & Watkins
14	Paul Hastings	Paul Hastings
15	Paul, Weiss, Rifkind Wharton	Paul Weiss
16	Proskauer Rose	Proskauer
17	Schulte Roth & Sabel	Schulte Roth
18	Simpson Thacher & Barlett	Simpson Thacher
19	Skadden Arps State Meagher	Skadden
20	Willkie Farr & Gallagher	Willkie Farr
21	Winston & Strawn	Winston

Appendix B: CATALOGUE

Top business schools and economy departments by ranking

Criteria: 5 points for applicable time span average (in the case of MBAs) or '20 (in the case of Econ) ranking below 5; 3, below 20; 1, otherwise

Source: *FT and QS*

Ordered by score					
University (College)		'95-'10 Score	'11-'20 Score		
MBA			Econ		
1	Harvard	5	5	1	Harvard
2	U Penn (Wharton)	5	5	2	MIT
3	Stanford	5	5	3	Stanford
4	MIT	3	3	4	UC Berkeley
5	Columbia	5	3	5	London School of Economics
6	Chicago (Booth)	3	3	6	Princeton
7	Northwestern (Kellogg)	3	3	7	Chicago
8	LBS	3	5	8	Yale
9	Insead	3	5	9	Oxford
10	Cornell	3	1	10	Cambridge
11	IMD	3	3	11	Columbia
12	UC Berkeley	3	3	12	NYU
13	NYU Stern	3	3	13	Northwestern
14	Dartmouth (Tuck)	3	3	14	U Penn
15	Duke (Fuqua)	3	3	15	UCLA
16	Yale	3	3	16	Bocconi
17	IE Business School	3	3	17	UCL
18	IESE	3	3	18	NUS
19	CEIBS	1	3	19	Michigan
20	Cambridge (Judge)	1	3	20	Duke
21	HEC Paris	1	3		Rest
22	HKUST	1	3		
	Rest	1	1		
Ordered by name					
Name		Nickname			
MBA			Econ		
1	Cambridge (Judge)	1	3	1	Bocconi
2	CEIBS	1	3	2	Cambridge
3	Chicago (Booth)	3	3	3	Chicago
4	Columbia	5	3	4	Columbia
5	Cornell	3	1	5	Duke
6	Dartmouth (Tuck)	3	3	6	Harvard
7	Duke (Fuqua)	3	3	7	London School of Economics
8	Harvard	5	5	8	Michigan
9	HEC Paris	1	3	9	MIT
10	HKUST	1	3	10	Northwestern
11	IE Business School	3	3	11	NUS
12	IESE	3	3	12	NYU
13	IMD	3	3	13	Oxford
14	Insead	3	5	14	Princeton
15	LBS	3	5	15	Stanford
16	MIT	3	3	16	U Penn
17	Northwestern (Kellogg)	3	3	17	UC Berkeley
18	NYU Stern	3	3	18	UCL
19	Stanford	5	5	19	UCLA
20	U Penn (Wharton)	5	5	20	Yale
21	UC Berkeley	3	3		Rest
22	Yale	3	3		
	Rest	1	1		

Appendix B: CATALOGUE

University score by age

Criteria: 5 points for over 250 years; 3, over 125 years; 1 rest

Source: Wikipedia

Ordered by score				Ordered by name			
	University (College)	Founded	Score		University (College)	Founded	Score
1	Brown	1764	5	1	Brown	1764	5
2	Cambridge	1209	5	2	Cambridge	1209	5
3	Columbia	1754	5	3	Chicago	1890	3
4	Dartmouth	1769	5	4	Columbia	1754	5
5	Edinburgh	1582	5	5	Cornell	1865	3
6	Harvard	1636	5	6	Dartmouth	1769	5
7	Oxford	1096	5	7	Duke	1838	3
8	Princeton	1746	5	8	Durham	1832	3
9	Rutgers	1766	5	9	Edinburgh	1582	5
10	Saint Andrews	1410	5	10	Emory	1836	3
11	U Penn	1740	5	11	Georgetown	1789	3
12	Yale	1701	5	12	Harvard	1636	5
13	Chicago	1890	3	13	LBS	1836	3
14	Cornell	1865	3	14	LSE	1836	3
15	Duke	1838	3	15	Maryland Smith	1856	3
16	Durham	1832	3	16	Melbourne	1853	3
17	Emory	1836	3	17	Michigan	1817	3
18	Georgetown	1789	3	18	MIT	1861	3
19	LBS	1836	3	19	Northwestern	1851	3
20	LSE	1836	3	20	NYU	1831	3
21	Maryland Smith	1856	3	21	Oxford	1096	5
22	Melbourne	1853	3	22	Princeton	1746	5
23	Michigan	1817	3	23	Rutgers	1766	5
24	MIT	1861	3	24	Saint Andrews	1410	5
25	Northwestern	1851	3	25	Stanford	1891	3
26	NYU	1831	3	26	Toronto	1827	3
27	Stanford	1891	3	27	U Penn	1740	5
28	Toronto	1827	3	28	UC Berkeley	1868	3
29	UC Berkeley	1868	3	29	UC Irvine	1868	3
30	UC Irvine	1868	3	30	UC San Diego	1868	3
31	UC San Diego	1868	3	31	UCL	1836	3
32	UCL	1836	3	32	UCLA	1868	3
33	UCLA	1868	3	33	UNC Kenan-Flagler	1789	3
34	UNC Kenan-Flagler	1789	3	34	University of Texas at Austin	1881	3
35	University of Texas at Austin	1881	3	35	Vanderbilt	1873	3
36	Vanderbilt	1873	3	36	Virginia (Darden)	1819	3
37	Virginia (Darden)	1819	3	37	Yale	1701	5

Appendix C: Individual variable filtering process

Figure C1 depicts the process undertaken for the identification of the individual variables to then analysed jointly as part of a second step:

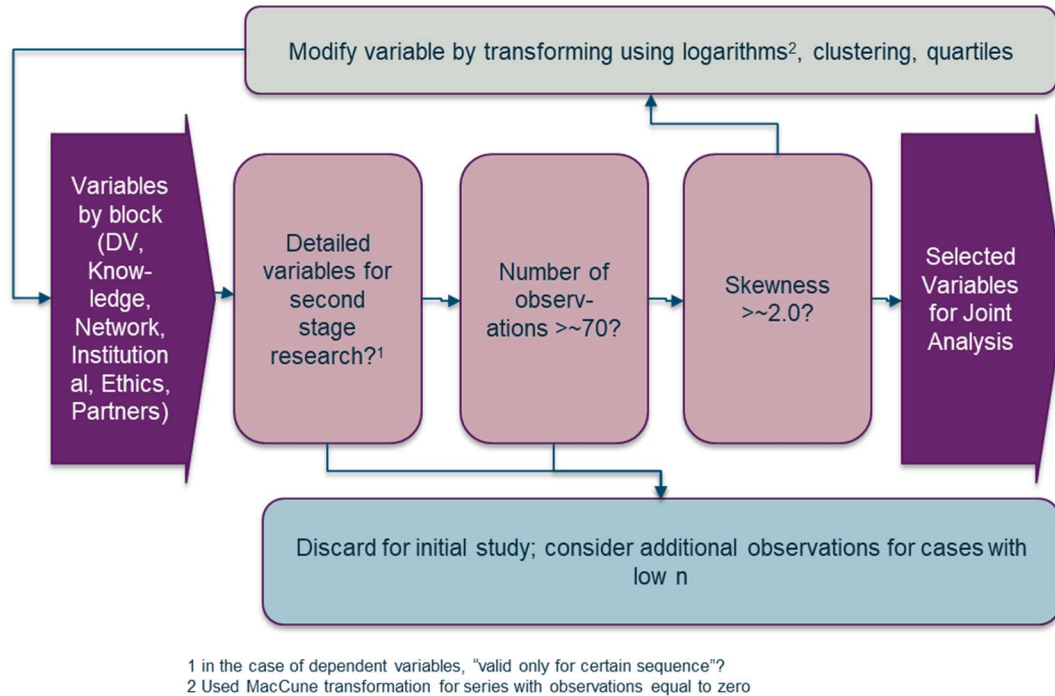


Fig C1-Individual variable filtering

Given the substantial number of potential variables, the individual analysis was conducted considering the different blocks of variables: dependent variables, independent variables of firm knowledge, of firm network, of firm institutionalisation, of firm ethics, of partners and finally of moderators.

As shown in Figure C1, the filtering exercise begins by identifying whether, from a theoretical perspective, the variables make better sense for a derivative study, rather than the main/ broad explanations. For instance, the consideration of an independent variable related to network

Appendix C: Individual variable filtering process

points originated in academia or in business, may make better sense to be treated as an aggregate and only in a subsequent stage, to be moderated or treated separately. In the case of dependent variables, also, when they are only meaningful for certain sequences (e.g., when they are not for new fundraises), the general case cannot be tested and as such, they have been left for subsequent research.

(b) Dependent variables

Three groups of potential dependent variables were compiled: short term fundraising success; long-term fundraising success and performance.

The performance variables (DV6 to DV9) were not considered at this stage for two reasons: a) none of the variables provided more than 70 observations; this is sensitive because the study aims not just at identifying explanatory variables for fundraising, but also to moderate using different sequences, to identify how these behave over the lifetime of firms. Having such low number of observations would, when broken down by sequence groups, provide a rather low number of observations for the subgroup to make it reliable for predictive purposes; and b) the ulterior performance of the fund would not *per se* provide information on the fundraising event, but rather on how accurate the decisions of the investors, ultimately were.

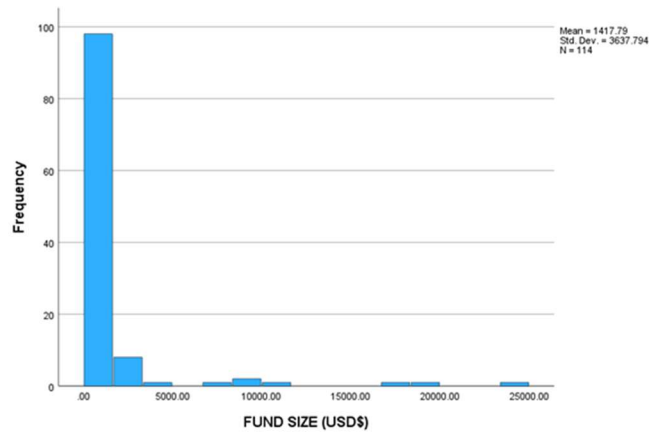
Appendix C: Individual variable filtering process

The dependent variables related to fund size compared to prior funds (DV2 and DV3) are only valid for sequences higher than 1, and as such were disregarded for the initial study. Similarly, the ratio of fund size to average (DV1) is less theoretically meaningful for higher sequences and has equally been disregarded.

The measure of size against the target (DV4) was disregarded initially because of a potential bias by the fact that absence of actual target is sometimes replaced by the fundraisers with the ultimate size thus artificially increasing their accuracy. Since this may require further refinement it was initially disregarded, as was the estimate of long-term fundraising success (DV5ii), on the same count.

The absolute size of the fundraise (DV0), which has also been used in prior studies in fundraising (although not with an organisational focus), has been identified as the measure of fundraising success for the initial study. As can be seen in figure C2, the statistics for the DV0-Fund size variable, show substantial skewness (4.492) rendering it unfit for normalised linear regression.

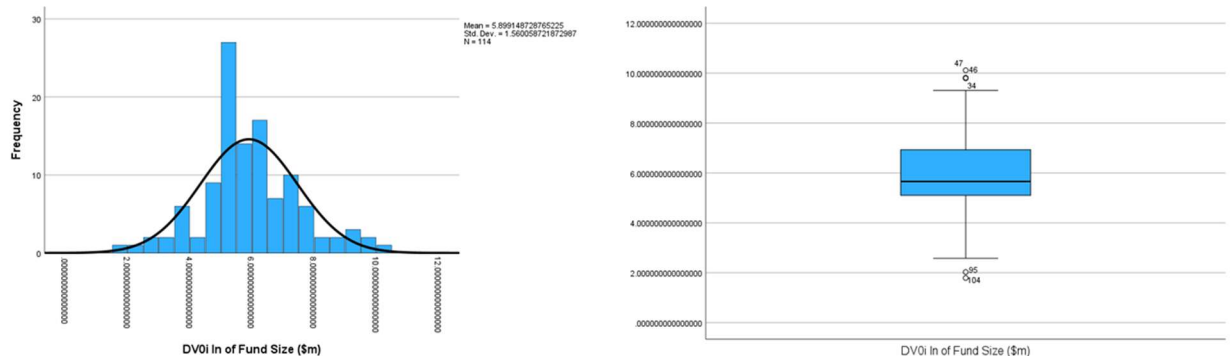
Appendix C: Individual variable filtering process



Descriptive Statistics										
	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
FUND SIZE (USD\$)	114	6.00	24714.00	1417.7895	3637.79428	13233547.212	4.492	.226	21.910	.449
Valid N (listwise)	114									

Fig C2-The descriptive statistics of Fund Size show high skewness

To improve the quality of the variable for linear regression, I transformed it by computing its natural logarithm (as DV0i), the statistics for which can be seen in Figure C3. It becomes both visually evident from the histogram on the left, the box plot on the right and the 0.252 skewness coefficient, that DV0i is fit for regression.



Descriptive Statistics										
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	
DV0i In of Fund Size (\$m)	114	1.7917594692	10.115117071	5.8991487288	1.5600587219	.252	.226	.708	.449	
Valid N (listwise)	114									

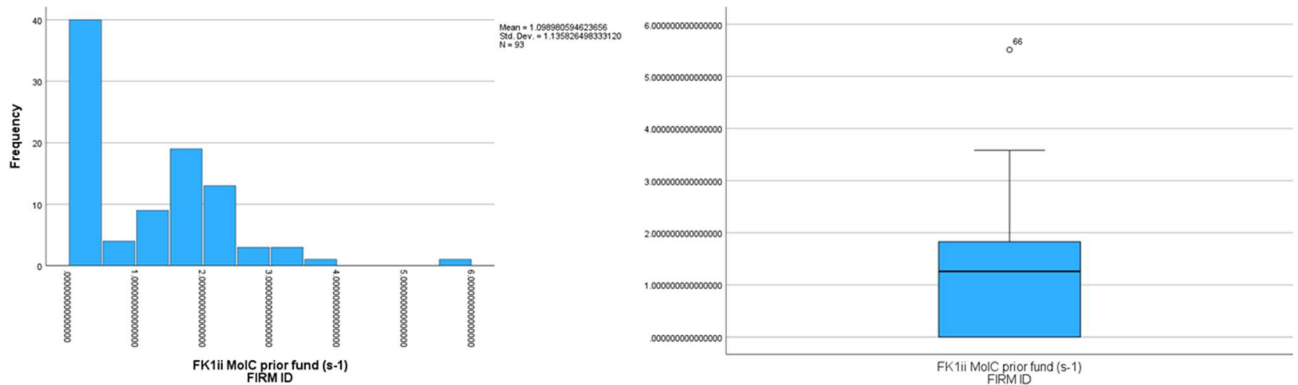
Appendix C: Individual variable filtering process

Fig C3-The descriptive statistics of the ln of Fund Size show a normalised pattern

(c)Independent variables: Firm Knowledge

Four initial variables were used to measure Firm Knowledge: Quartile of prior funds (FK1), MoIC of prior funds (FK1i), IRR of prior funds (FK1ii) and DPI of prior funds (FK2). Quartile and DPI of prior funds were disregarded because of their low number of observations -the largest one was 51-. MoIC and IRR provide essentially the same performance information, so MoIC was used since its number of observations was greater at 93.

As can be seen in figure C4, the statistics for the FK1-MoIC of prior fund variable, show the existence of a number of relevant outliers (both on the left hand and right hand)



Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
FK1ii MoIC prior fund (s-1) FIRM ID	93	.00000000000	5.51000000000	1.0989805946	1.1358264983	.848	.250	.958	.495
Valid N (listwise)	93								

Fig C4-The descriptive statistics of MoIC of the immediately preceding fund depict outliers

Appendix C: Individual variable filtering process

To improve the quality of the variable for linear regression, I attempted to transform it by computing its natural logarithm; however, since there were -numerous- observations with value zero, the ordinary computation of natural logarithm was not possible. To make up for this, I used the [MacCune & Grace \(2002\)](#) (“McCune”) transformation to compute the logarithm (as FK1iii). The statistics for (FK1iii) in Figure C5 show it is fit for regression.

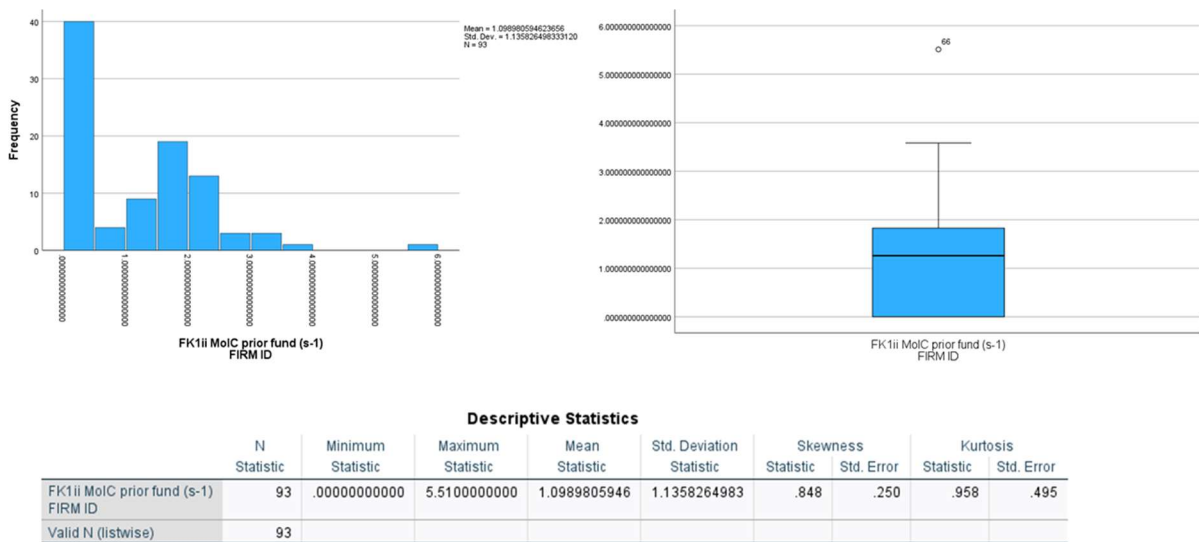


Fig C5-The descriptive statistics of the McCune transformed ln of MoIC of the prior fund show a normalised pattern

(d)Independent variables: Firm Network

Eleven initial variables were used to measure Firm Network: The number of portfolio exits on an absolute and relative fashion (FN1 and FN2, respectively); the existence of past IPOs (FN3); past and reputable investor endorsement and their interaction (FN4, FN5 and FN6, respectively); brand recognition from partners at the fundraising moment later becoming partners of, founders of or either in other firms (FN7, FN8 and FN8ii, respectively); *de alio*

Appendix C: Individual variable filtering process

entrants from other financial services companies, other general companies or either (FN9, FN10 and FN10ii, respectively); and the signal of status from reputable brokers (FN11).

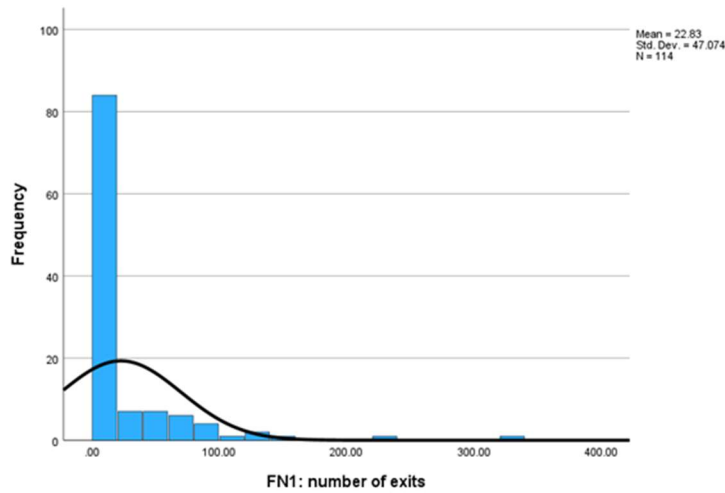
Information on investors was scant. All of the variables representing investors commitments to the funds (FN4 or FN5, and therefore their interaction FN6) resulted in more than 90% of the cases without data or a percentage of zero, and were thus discarded.

For Brand Recognition and *De Alio* entrants, for this initial study I have considered the aggregate variables (FN8ii and FN10ii), leaving the more granular ones (FN7, FN8, FN9, FN10) as derivatives for potential subsequent moderation. The percentage of exits (FN2) is highly correlated with the total number of exits (FN1) and was thus also discarded.

The analysis for the remaining potential variables: Portfolio exits (FN1), Past IPOs (FN3), Brand recognition (FN8ii), *De Alio* entrant (FN10ii) and Signal by reputable broker (FN11) is as follows:

As can be seen in figure C6, the statistics for the FN1-Portfolio exits variable, show substantial skewness (3.826) rendering it unfit for normalised linear regression.

Appendix C: Individual variable filtering process



Descriptive Statistics										
	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
FN1: number of exits	114	328.00	.00	328.00	22.8333	47.07439	3.826	.226	18.790	.449
Valid N (listwise)	114									

Fig C6-The descriptive statistics of Portfolio exits show high skewness

To improve the quality of the variable for linear regression, I transformed it by computing the McCune transformed natural logarithm (as FN1i), the statistics for which can be seen in Figure C7. It becomes both visually evident from the histogram on the left, the box plot on the right and the 0.518 skewness coefficient, that FN1i is fit for regression.

Appendix C: Individual variable filtering process

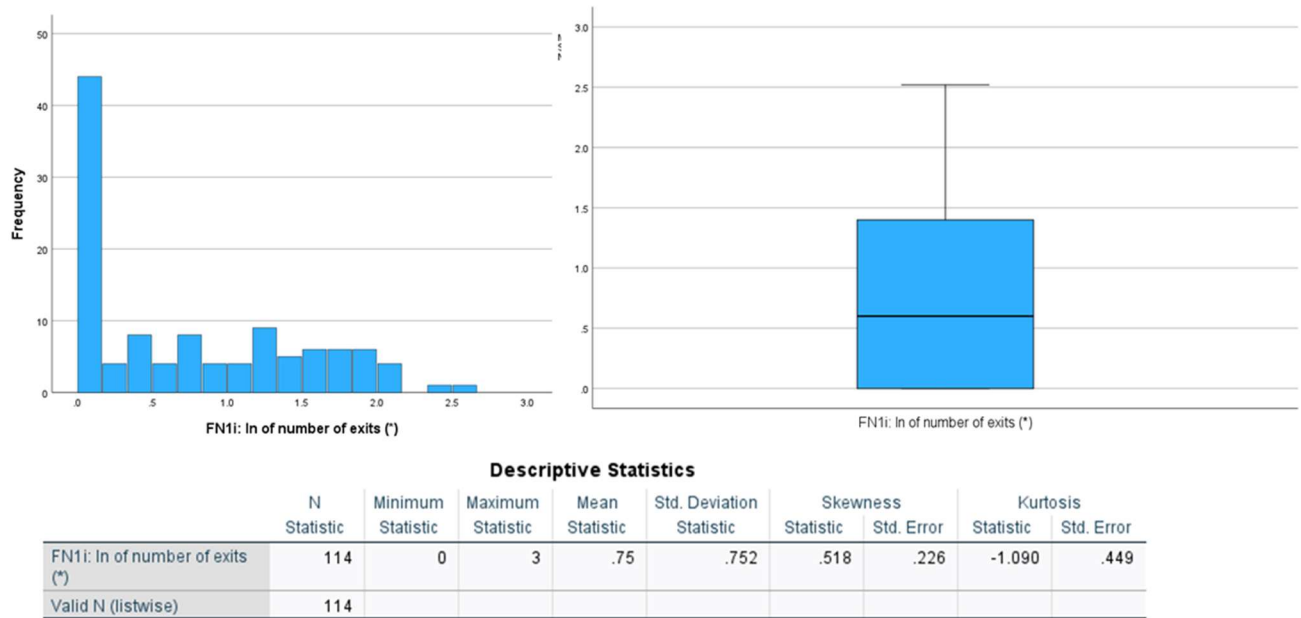


Fig C8-The descriptive statistics of the McCune transformed ln of Portfolio exits show a normalised pattern

The rest of the Network variables were all parametric, dummy variables of the existence of past IPOs (FN3), the occurrence of a partner departing the firm to (found) another (new firm) -Brand recognition (FN8ii), the configuration of a *de alio* entrant (FN10ii) and whether the firm had the endorsement of a reputable agent (FN11). Figure C9 shows that their skewness statistics make them fit for regression.

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
FN3: IPO (Y=1; N=0) [ESTIMATE %?]	114	1	0	1	.21	.409	1.439	.072
Valid N (listwise)	114							

Appendix C: Individual variable filtering process

Descriptive Statistics									
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
Combination of FN7 and FN8	114	.00	1.00	.3333	.47349	.717	.226	-1.513	.449
Valid N (listwise)	114								

Descriptive Statistics									
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
FN10ii: de Alio General (combination of FN9 and FN10)	114	.00	1.00	.2105	.40948	1.439	.226	.072	.449
Valid N (listwise)	114								

Descriptive Statistics										
	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
FN11: status -reputable agent (Y=1; N=0)	114	1	0	1	.22	.416	1.375	.226	-.112	.449
Valid N (listwise)	114									

Fig C9-The descriptive statistics the other Network variables show fitness to regress

(e) Independent variables: Firm Institutionalisation

Thirteen initial variables were used to measure Firm Institutionalisation: The age of the organisation in the absolute years of age of the firm, in years of partners working together and in the percentage of years working together relative to the firm age (FI1, FI2, FI3, respectively); the level of power concentration of the partners and ratio of senior to junior partners (FI4 and FI7, respectively); the size of the firm in number of partners, relative size to average firm size, size per partner and cluster of firm size (FI5, FI6, FI8 and M3, respectively); the bandwidth of partners to companies managed (FI9); the sequence of the firm (M1); the time since the prior fundraise (M2); and the size of the prior fund (M4).

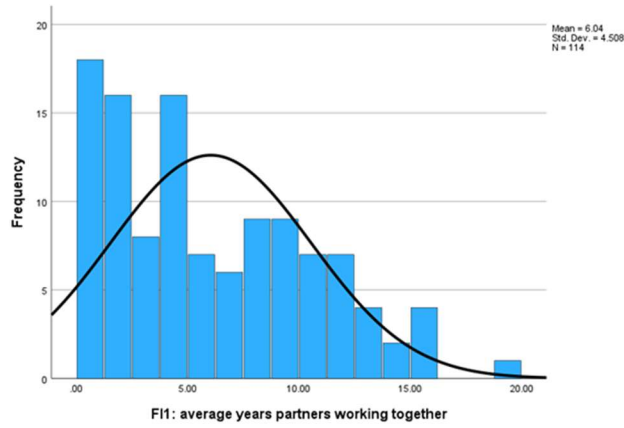
Appendix C: Individual variable filtering process

The average years of partners working together as a percentage of the firm's age (FI3) and the relative size per partner (FI8) were disregarded initially as they operate other variables and better information might be obtained from them separately. Firm size relative to average (FI5) and the ratio of Senior to Junior partners (FI7) were disregarded as they closely approximate the more relevant measures of firm size at the time of fundraise (M3) and power concentration (FI4). The concept of bandwidth of partner time to portfolio companies (FI9) represents a derivative variable better left for in-depth analysis. And finally, time since prior fund (MI2) was considered for potential moderation.

The analysis for the remaining potential variables: Average years partners working together (FI1), Firm life (FI2), Power concentration (FI4), number of partners (FI6), sequence (M1), firm size (M3) and prior fund size (M4) is as follows:

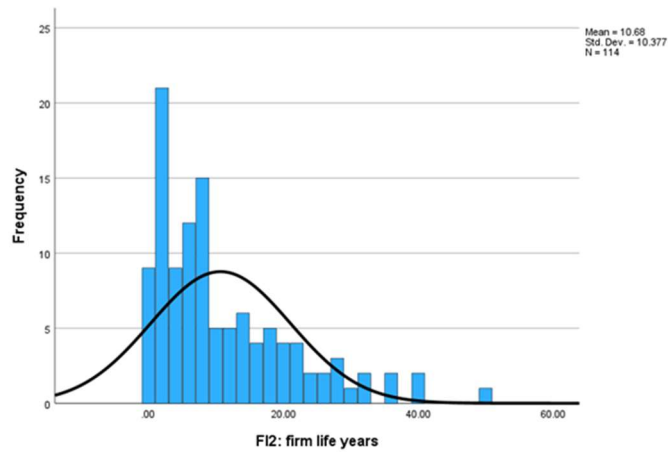
As can be seen in figure C10, the statistics for the Average years partners working together (FI1), firm life in years (FI2) and power concentration (FI4) show reasonably normalised patterns:

Appendix C: Individual variable filtering process



Descriptive Statistics

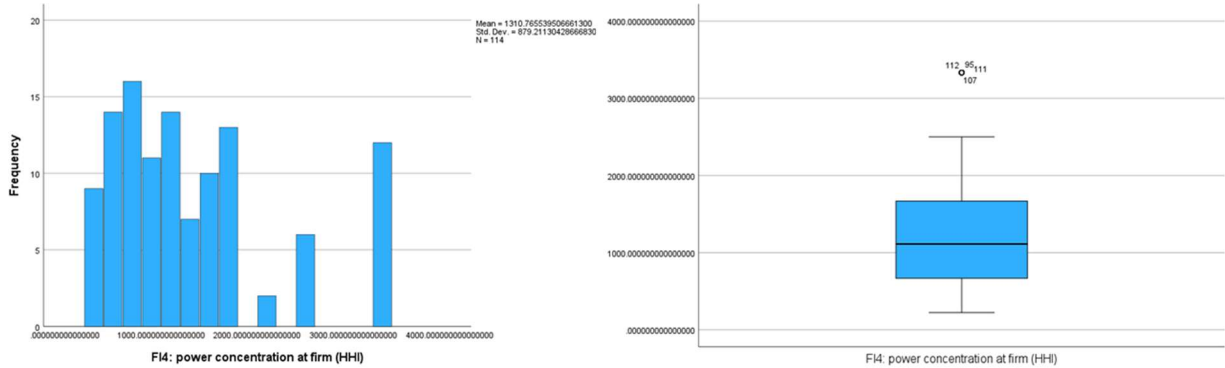
	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
F11: average years partners working together	114	19.00	.00	19.00	6.0404	4.50795	.551	.226	-.572	.449
Valid N (listwise)	114									



Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
F12: firm life years	114	50.00	.00	50.00	10.6754	10.37739	1.341	.226	1.625	.449
Valid N (listwise)	114									

Appendix C: Individual variable filtering process

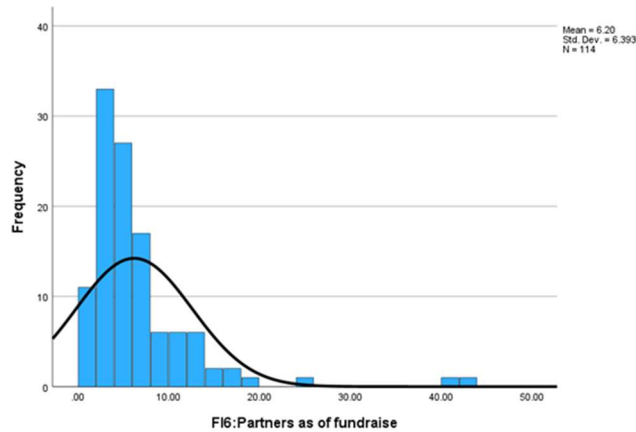


Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
F14: power concentration at firm (HHI)	114	222.00000000	3333.00000000	1310.7655395	879.21130429	1.184	.226	.528	.449
Valid N (listwise)	114								

Fig C10-The descriptive statistics of the average years of partners working together, firm life in years and power concentration show normalised patterns

As can be seen in figure C11, the statistics for the number of partners at the firm (FI6) variable, show substantial skewness (3.405) rendering it unfit for normalised linear regression.

Appendix C: Individual variable filtering process

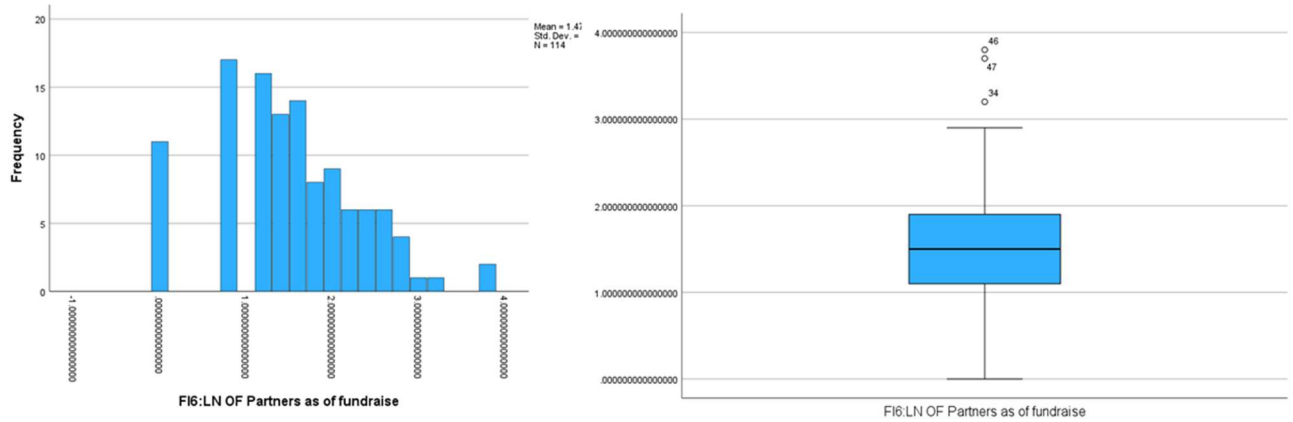


Descriptive Statistics										
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
F16:Partners as of fundraise	114	42.00	1.00	43.00	6.2018	6.39300	3.405	.226	15.540	.449
Valid N (listwise)	114									

Fig C11-The descriptive statistics of Portfolio exits show high skewness

To improve the quality of the variable for linear regression, I transformed it by computing the logarithm (as F16i), the statistics for which can be seen in Figure C12. It becomes both visually evident from the histogram on the left, the box plot on the right and the 0.518 skewness coefficient, that FN1i is fit for regression.

Appendix C: Individual variable filtering process



Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
F16:LN OF Partners as of fundraiser	114	.00000000000	3.80000000000	1.4798245614	.81839253456	.159	.226	.031	.449
Valid N (listwise)	114								

Fig C12-The descriptive statistics of the ln of number of partners at fundraiser show a normalised pattern

As can be seen in figure C13, the histogram for the fund sequence number (M1) variable, shows that despite a moderate skewness statistic (1.863) the variable distribution could be enhanced for linear regression:

Appendix C: Individual variable filtering process

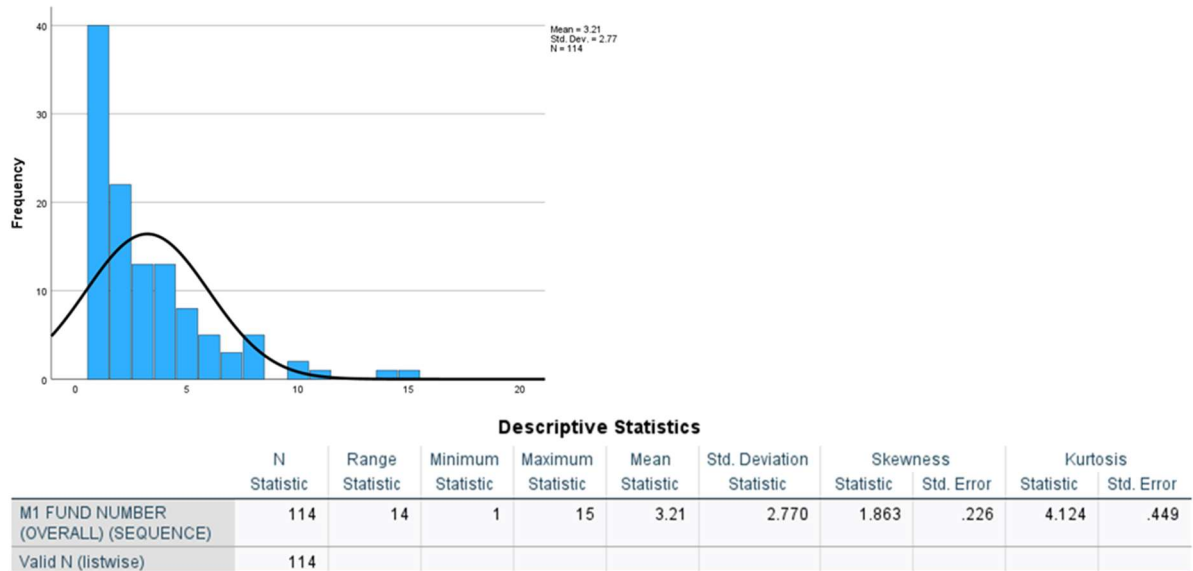
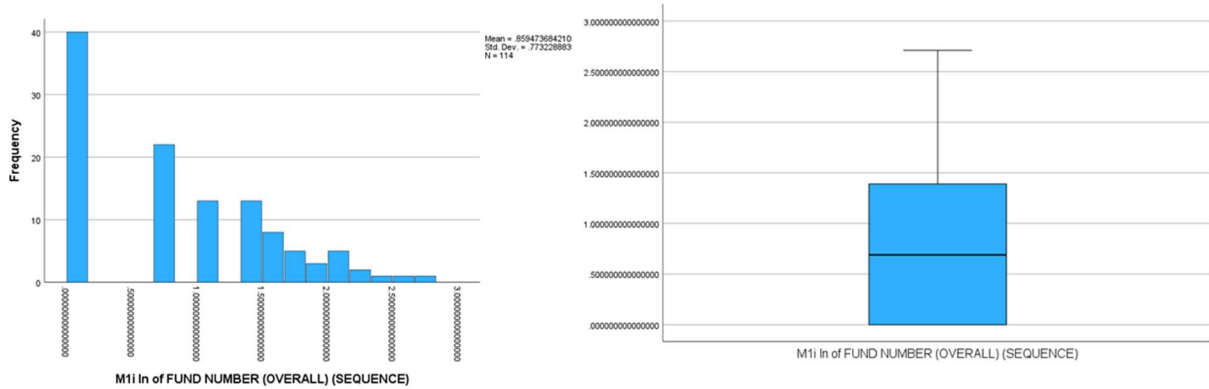


Fig C14-The histogram for the sequence number indicates it could be enhanced for regression despite moderate skewness statistics

To improve the quality of the variable for linear regression, I transformed it by computing the McCune transformed natural logarithm (as M1i), the statistics for which can be seen in Figure C15. The skewness statistic is thus much reduced.

Appendix C: Individual variable filtering process

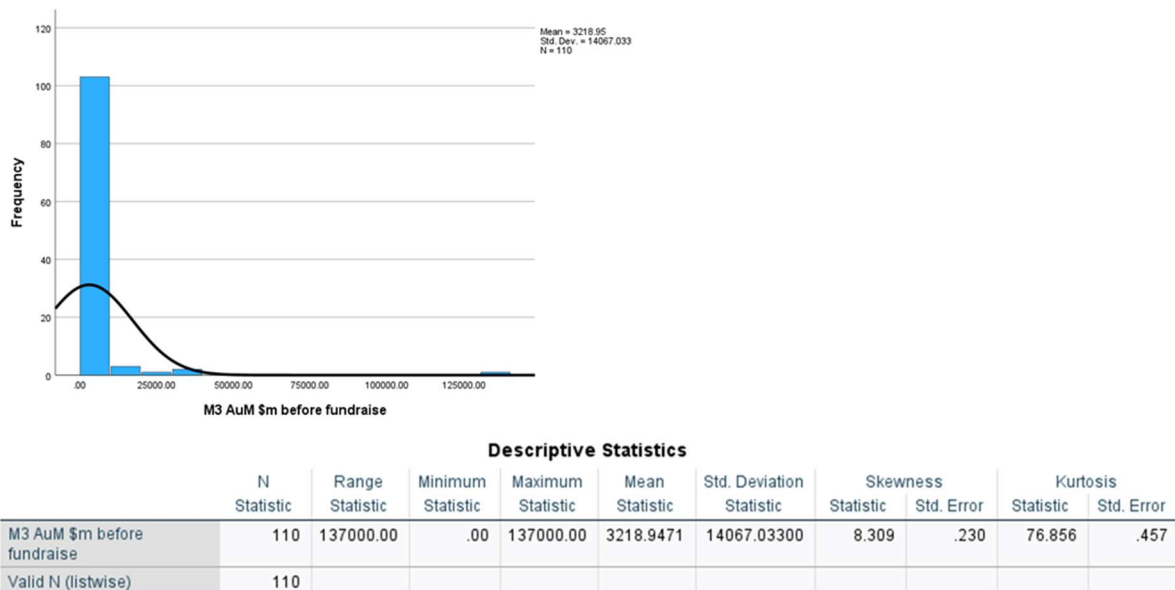


Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
M11 ln of FUND NUMBER (OVERALL) (SEQUENCE)	114	.00000000000	2.71000000000	.85947368421	.77322888357	.363	.226	-.978	.449
Valid N (listwise)	114								

Fig C15-The McCune transformed logarithm sequence number provides a much lower skewness statistic

As can be seen in figure C16, the statistics for the Firm size (AuM) before fundraise (M3), show substantial skewness (8.309) rendering it unfit for normalised linear regression.



Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
M3 AuM \$m before fundraise	110	137000.00	.00	137000.00	3218.9471	14067.03300	8.309	.230	76.856	.457
Valid N (listwise)	110									

Appendix C: Individual variable filtering process

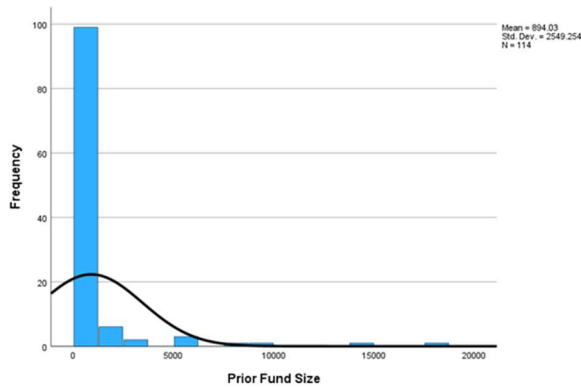
Fig C16-The descriptive statistics of firm size show high skewness

To improve the quality of the variable for linear regression, I grouped the firms size into those below \$1 billion (small), those between \$1 and \$3 billion (medium) and those larger than \$3 billion (large) (M3i). After the clustering skewness is reduced to 1.477, as shown below in Figure C17.

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
M3i Firm size cluster	114	1.0000000000	3.0000000000	1.4035087719	.72526221374	1.477	.226	.559	.449
Valid N (listwise)	114								

Fig C17-The descriptive statistics of the clustered sizes for firms display a significantly lower skewness

Finally, as can be seen in figure C18, the statistics for the Prior fund size variable (M4), show substantial skewness (4.918) rendering it unfit for normalised linear regression.



Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Prior Fund Size	114	0	18380	894.03	2549.254	4.918	.226	27.226	.449
Valid N (listwise)	114								

Fig C18-The descriptive statistics of Portfolio exits show high skewness

Appendix C: Individual variable filtering process

To improve the quality of the variable for linear regression, I transformed it by computing the McCune transformed natural logarithm (as M4i), the statistics for which can be seen in Figure C19. It becomes both visually evident from the histogram on the left, the box plot on the right and the 0.518 skewness coefficient, that FN1i is fit for regression.

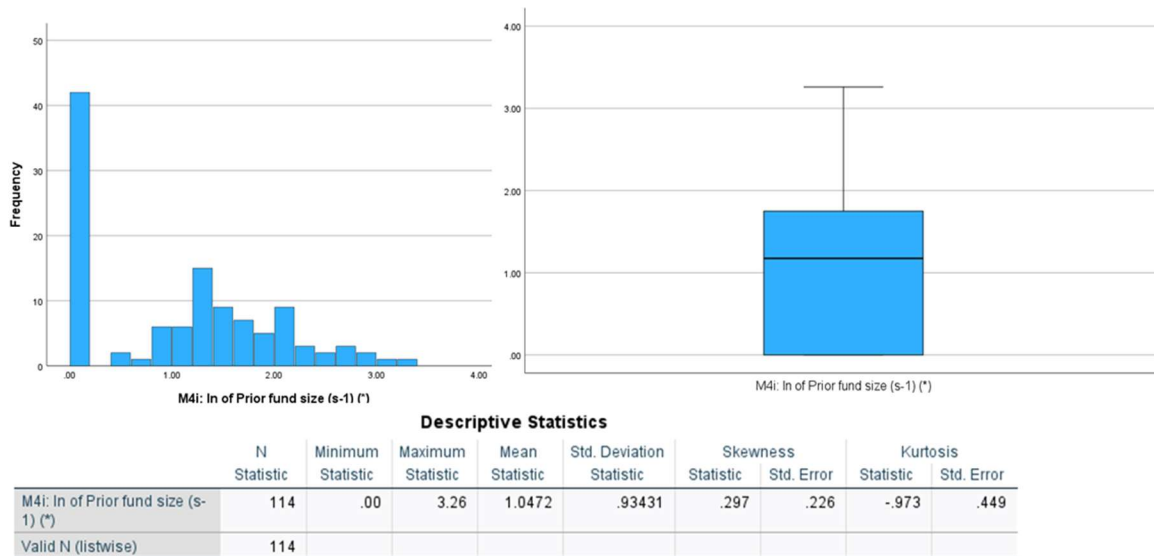


Fig C20-The descriptive statistics of the McCune transformed ln of prior fund size show a normalised pattern

(e) Independent variables: Firm Ethics

Two initial variables were used to measure Firm Ethics: A dummy variable showing whether the firm changed auditors (FE1) and a dummy variable showing whether the firm or its partners had negative press related to corruption, fraud or ethics before the fundraise (FE2). This latter showed no variability; of all the firms sampled I found no publicity of ethical issues. As such, the variable was disregarded. In the case of the change of auditors (FE1), the information

Appendix C: Individual variable filtering process

obtained for the observations was scant, with only 70 fundraises offering data. As such, it was similarly disregarded.

(f) Independent variables: Partner variables

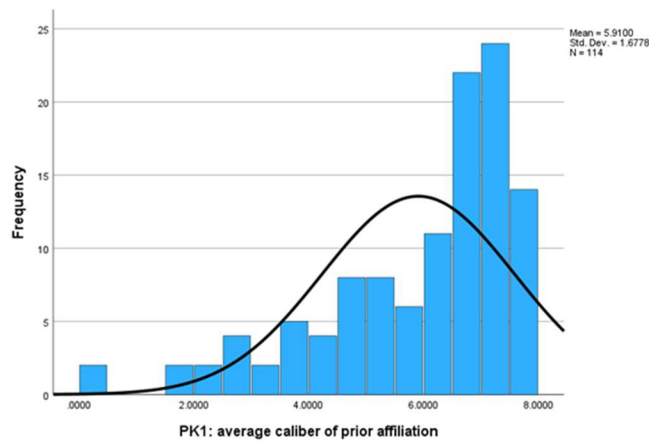
Eleven initial variables were identified to measure Partner level Knowledge and Network attributes: The caliber of prior affiliations, including its variance, as measure of knowledge (PK1 and PK2, respectively); the number of aggregate network points contributed by the partners from their academic, business and aggregate communities (PN1, PN2, PN1i, respectively); the average computed value of the academic network and their variability based on university rankings (PN3 and PN4, respectively); the average computed value of the academic network and their variability based on university ages (PN5 and PN6, respectively); and the average computed value of the business network and their variability (PN7 and PN8, respectively).

All the variance measures (PK2, PN4, PN6 and PN8) were disregarded as they represent a derivative of a function and are more suitable for in-depth study. The computed values for aggregate network points (PN3, PN5, PN7) are similarly derivatives. Finally, given the theoretical relevance of networks for an organisational study, the derivative function of aggregate communities network points (PN1i) was also disregarded.

Appendix C: Individual variable filtering process

The analysis for the remaining potential variables: Average caliber or prior affiliations as a measure of knowledge weighted by the years of each partner in each firm (PK1), the number of academic network points the partners bring to the firm (PN1) and the number of the number of business network points the partners bring to the firm (PN2) is as follows:

As can be seen in figure C20, the statistics for the caliber of prior experience (PK1), show a skew to the right rendering it unfit for normalised linear regression.



Descriptive Statistics										
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PK1: average caliber of prior affiliation	114	7.4500	.2400	7.6900	5.910000	1.6777898	-1.318	.226	1.285	.449
Valid N (listwise)	114									

Fig C20-the descriptive statistics of caliber of prior experience is skewed right

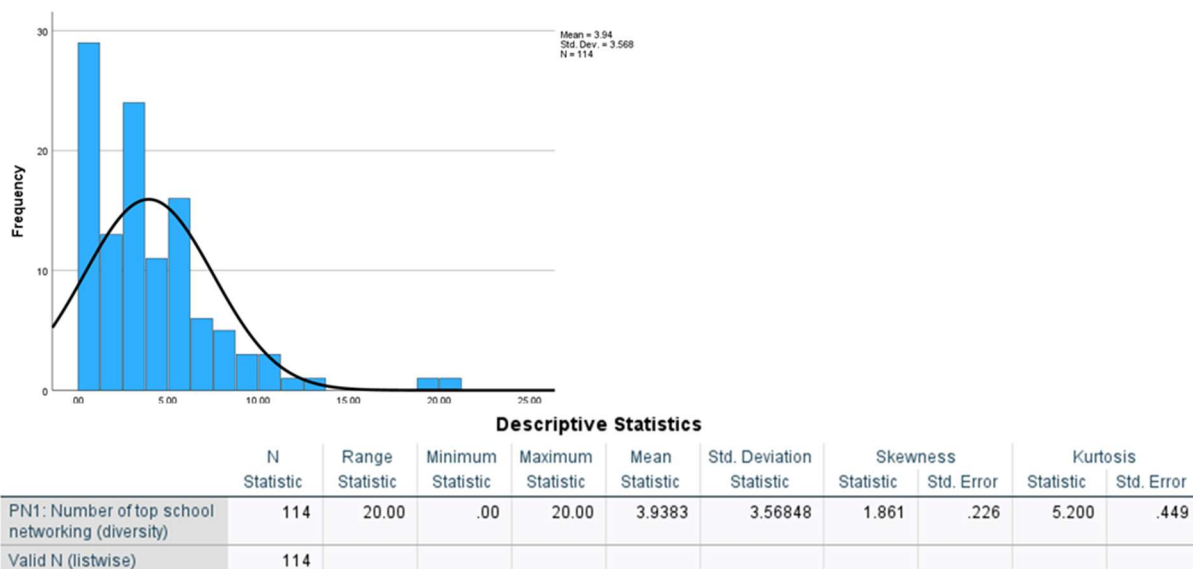
Appendix C: Individual variable filtering process

To improve the quality of the variable for linear regression, I transformed it by computing the quartiles of the distribution, the statistics for which can be seen in Figure C21 and indicate that the skewness is so removed.

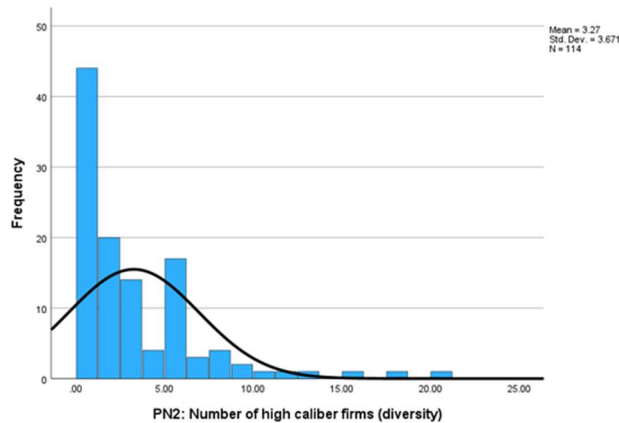
	Descriptive Statistics								
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
PK1: average caliber of prior affiliation (quartile)	114	1.0000000000	4.0000000000	2.5000000000	1.1308231789	.000	.226	-1.386	.449
Valid N (listwise)	114								

Fig C21-The descriptive statistics of the quartiles of average prior affiliation show that the skewness has been removed

Both variables of partner networking (number of academic and business network points contributed -PN1 and PN2-) show fairly reasonable skewness statistics, as seen in Figure C22.



Appendix C: Individual variable filtering process



Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
PN2: Number of high caliber firms (diversity)	114	20.00	.00	20.00	3.2714	3.67051	2.094	.226	5.636	.449
Valid N (listwise)	114									

C22-The descriptive statistics of the partners' academic and business network points show reasonable skewness statistics

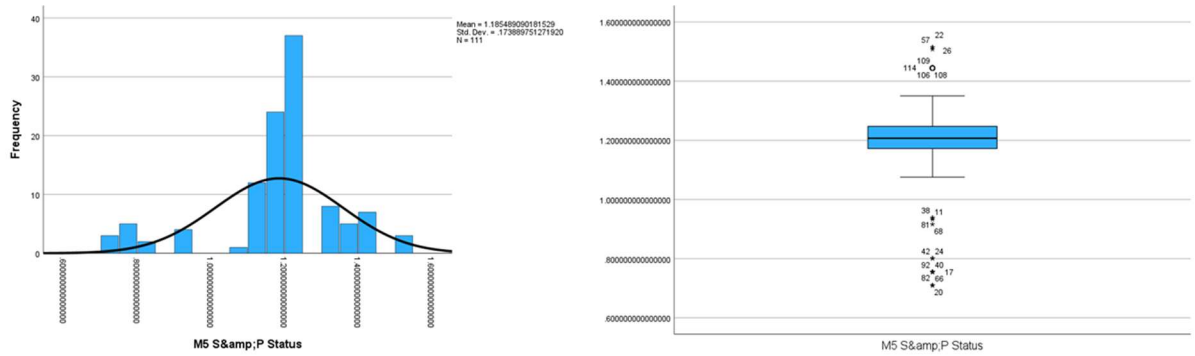
(f) Market environment control variables

Three initial variables were identified to measure the potential impact of market momentum: the general equity pricing level -as measured by the momentum of the S&P index *vis-à-vis* its three-year moving average (M5); and the general PE market momentum measured as the fundraising activity and dry powder *vis-à-vis* its three-year moving average (M6 and M7, respectively). Dry powder (M7), being so correlated to the fundraising level was disregarded for further studies.

The analysis for the two remaining potential variables (M5 and M6) is as follows:

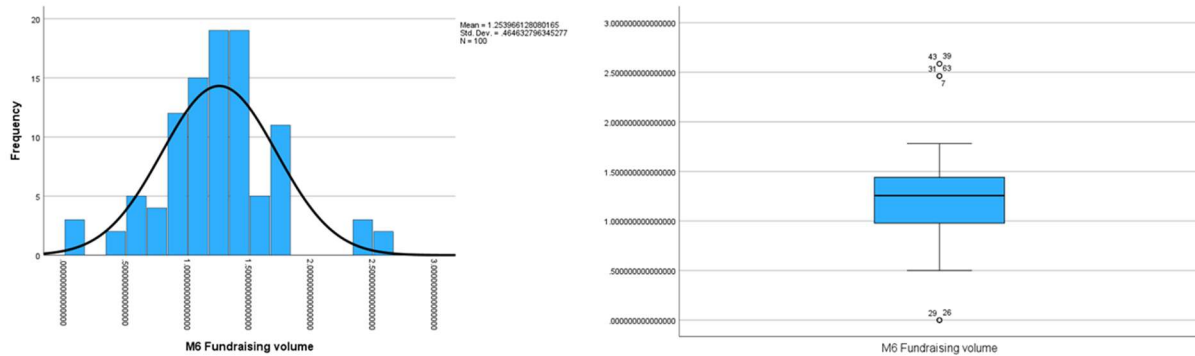
Appendix C: Individual variable filtering process

As can be seen in figure C23, the statistics for the market momentum variables (M5 and M6) seem normalised and fit for linear regression.



Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
M5 S&P Status	111	.70967025937	1.5143947271	1.1854890902	.17388975127	-1.128	.229	1.716	.455
Valid N (listwise)	111								



Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
M6 Fundraising volume	100	.00000000000	2.5859250211	1.2539661281	.46463279635	.248	.241	2.105	.478
Valid N (listwise)	100								

C23- The descriptive statistics of market momentum variables are normalised

Appendix D: Covariate filtering process

Figure D1 depicts the process undertaken for the identification of the final variables to regress against the dependent variable:

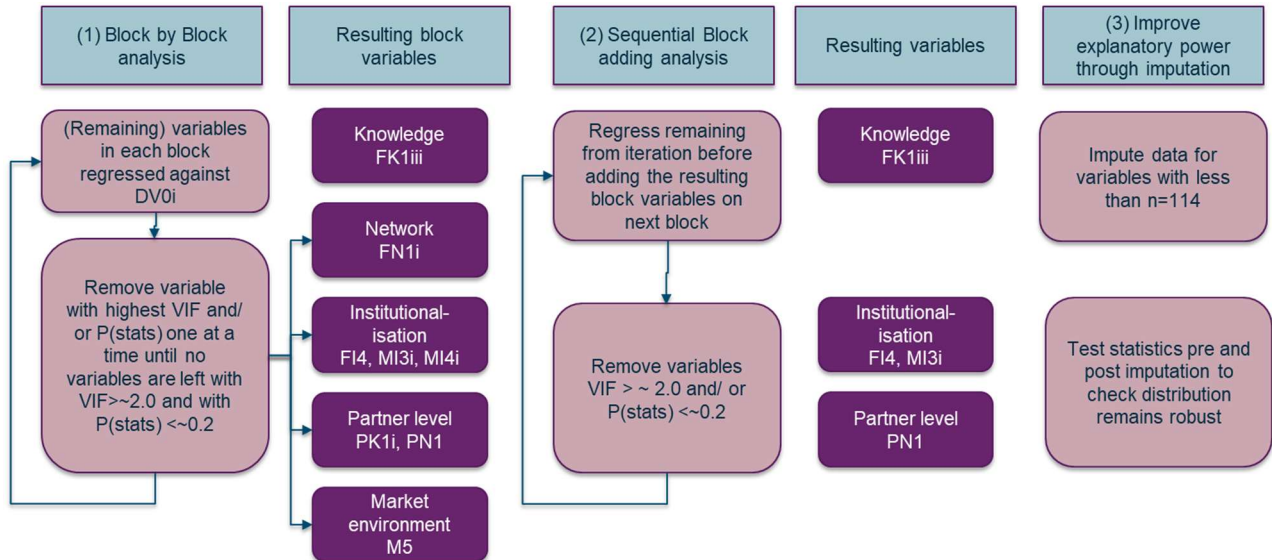


Fig D1-Schematic of the covariate filtering analysis process

As shown in Figure D1, the Knowledge block has only one variable and, as such, did not require any analysis at the first stage.

i) By block analysis:

(1) Below is the sequence of filtering variables for the Network block

(a) Initial selection of all Network variables

Appendix D: Covariate filtering process

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.788	.179		26.747	<.001					
	FN1i: ln of number of exits (*)	1.138	.197	.548	5.764	<.001	.640	.485	.418	.581	1.721
	FN3: IPO (Y=1; N=0) [ESTIMATE %?]	.339	.345	.089	.985	.327	.435	.094	.071	.642	1.558
	FN8ii: Combination of FN7 and FN8 (Brand recognition either partner or founder of another firm)	.339	.244	.103	1.392	.167	.188	.133	.101	.962	1.040
	FN10ii: de alio (combination of FN9 and FN10)	.063	.280	.017	.225	.822	.079	.022	.016	.973	1.028
	FN11: status - reputable agent (Y=1; N=0)	.287	.292	.076	.984	.327	.290	.094	.071	.870	1.149

a. Dependent Variable: DV0i ln of Fund Size (\$m)

Removed FN10 as the variable with the highest P-test

(b) First Network Iteration

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.798	.173		27.743	<.001					
	FN1i: ln of number of exits (*)	1.137	.197	.548	5.788	<.001	.640	.485	.418	.581	1.721
	FN3: IPO (Y=1; N=0) [ESTIMATE %?]	.345	.342	.091	1.010	.315	.435	.096	.073	.646	1.549
	FN8ii: Combination of FN7 and FN8 (Brand recognition either partner or founder of another firm)	.346	.240	.105	1.438	.153	.188	.136	.104	.978	1.023
	FN11: status - reputable agent (Y=1; N=0)	.288	.290	.077	.991	.324	.290	.095	.072	.871	1.149

a. Dependent Variable: DV0i ln of Fund Size (\$m)

Removed FN11 as the variable with the highest P-test

(c) Second Network Iteration

Appendix D: Covariate filtering process

		Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	4.814	.172		27.955	<.001						
	FN1i: In of number of exits (*)	1.199	.186	.578	6.437	<.001	.640	.523	.464	.646	1.548	
	FN3: IPO (Y=1; N=0) [ESTIMATE %?]	.318	.341	.083	.932	.354	.435	.088	.067	.650	1.539	
	FN8ii: Combination of FN7 and FN8 (Brand recognition either partner or founder of another firm)	.367	.240	.111	1.531	.129	.188	.144	.110	.985	1.015	

a. Dependent Variable: DV0i In of Fund Size (\$m)

Removed FN3 as the variable with the highest P-test

(d) Third Network Iteration

		Coefficients ^a									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.803	.172		27.975	<.001					
	FN1i: In of number of exits (*)	1.301	.151	.627	8.631	<.001	.640	.634	.622	.986	1.014
	FN8ii: Combination of FN7 and FN8 (Brand recognition either partner or founder of another firm)	.373	.239	.113	1.557	.122	.188	.146	.112	.986	1.014

a. Dependent Variable: DV0i In of Fund Size (\$m)

Final selection for interblock analysis: FN1i (number of exits), FN8ii (brand recognition)

(2) Institutional variables

(a) Initial selection of all Institutional variables

Appendix D: Covariate filtering process

		Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	3.031	.606		4.999	<.001						
	FI1: average years partners working together	-.034	.040	-.097	-.832	.407	.474	-.081	-.048	.242	4.140	
	FI2: firm life	.028	.017	.183	1.642	.104	.497	.157	.094	.264	3.795	
	FI4: power concentration at firm (HHI)	.000	.000	.147	1.218	.226	-.512	.117	.070	.226	4.421	
	FI6: LN OF Partners as of fundraise	.776	.276	.407	2.816	.006	.671	.264	.161	.157	6.365	
	M1i In of FUND NUMBER (OVERALL) (SEQUENCE)	-.433	.281	-.215	-1.542	.126	.608	-.148	-.088	.170	5.885	
	M3i Firm size cluster	.602	.194	.280	3.105	.002	.707	.289	.178	.405	2.470	
	M4i: In of Prior fund size (s-1) (*)	.778	.219	.466	3.560	<.001	.731	.327	.204	.192	5.211	

a. Dependent Variable: DV0i In of Fund Size (\$m)

Removed FI6 as the variable with the highest VIF

(b) First Institutional Iteration

		Coefficients ^a									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.458	.343		12.992	<.001					
	FI1: average years partners working together	-.045	.041	-.131	-1.096	.275	.474	-.105	-.065	.244	4.095
	FI2: firm life	.036	.017	.240	2.116	.037	.497	.200	.125	.272	3.672
	FI4: power concentration at firm (HHI)	.000	.000	-.127	-1.739	.085	-.512	-.166	-.103	.652	1.534
	M1i In of FUND NUMBER (OVERALL) (SEQUENCE)	-.318	.286	-.158	-1.111	.269	.608	-.107	-.066	.174	5.761
	M3i Firm size cluster	.758	.192	.353	3.958	<.001	.707	.357	.234	.441	2.266
	M4i: In of Prior fund size (s-1) (*)	.799	.225	.478	3.545	<.001	.731	.324	.210	.192	5.205

a. Dependent Variable: DV0i In of Fund Size (\$m)

Removed M1i as the variable with the highest VIF and P-test

(c) Second Institutional Iteration

		Coefficients ^a									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.463	.344		12.991	<.001					
	FI1: average years partners working together	-.058	.040	-.169	-1.474	.144	.474	-.140	-.087	.266	3.760
	FI2: firm life	.031	.017	.209	1.900	.060	.497	.180	.113	.290	3.451
	FI4: power concentration at firm (HHI)	.000	.000	-.126	-1.719	.088	-.512	-.163	-.102	.652	1.534
	M3i Firm size cluster	.769	.192	.357	4.012	<.001	.707	.360	.238	.442	2.261
	M4i: In of Prior fund size (s-1) (*)	.640	.175	.383	3.668	<.001	.731	.333	.217	.321	3.116

a. Dependent Variable: DV0i In of Fund Size (\$m)

Appendix D: Covariate filtering process

Removed FI1 as the variable with the highest VIF

(d) Third Institutional Iteration

Model		Coefficients ^a											
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics			
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF		
1	(Constant)	4.357	.338		12.900	<.001							
	FI2: firm life	.014	.011	.090	1.198	.233	.497	.114	.071	.627	1.594		
	FI4: power concentration at firm (HHI)	.000	.000	-.123	-1.669	.098	-.512	-.158	-.099	.652	1.533		
	M3i Firm size cluster	.767	.193	.357	3.985	<.001	.707	.357	.237	.442	2.261		
	M4i: ln of Prior fund size (s-1) (*)	.579	.170	.347	3.397	<.001	.731	.309	.202	.340	2.941		

a. Dependent Variable: DV0i ln of Fund Size (\$m)

Removed FI2 as the variable with the highest P-test

(e) Fourth Institutional Iteration

Model		Coefficients ^a										
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	4.494	.319		14.107	<.001						
	FI4: power concentration at firm (HHI)	.000	.000	-.146	-2.052	.043	-.512	-.192	-.122	.701	1.427	
	M3i Firm size cluster	.760	.193	.353	3.940	<.001	.707	.352	.235	.443	2.259	
	M4i: ln of Prior fund size (s-1) (*)	.648	.161	.388	4.033	<.001	.731	.359	.241	.384	2.604	

a. Dependent Variable: DV0i ln of Fund Size (\$m)

Final selection for interblock analysis: FI4 (power concentration), M3i (size cluster) and M4i (prior fund size)

(3) Partner-Level variables

(a) Initial selection of all Partner variables

Appendix D: Covariate filtering process

Coefficients ^a											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.377	.328		16.411	<.001					
	PK1i: average caliber of prior affiliation (quartile)	-.162	.101	-.117	-1.593	.114	-.282	-.150	-.113	.931	1.074
	PN1: Number of top school networking (diversity)	.045	.058	.104	.785	.434	.585	.075	.056	.288	3.473
	PN2: Number of high caliber firms (diversity)	.229	.056	.538	4.045	<.001	.656	.360	.287	.285	3.509

a. Dependent Variable: DV0i In of Fund Size (\$m)

Removed PN2; both PN1 and PN2 have similar VIFs but conceptually, PN1 and PK1 originate in the same information

(b)First Partner Iteration

Coefficients ^a											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.469	.349		15.683	<.001					
	PK1i: average caliber of prior affiliation (quartile)	-.206	.108	-.150	-1.919	.058	-.282	-.179	-.145	.942	1.062
	PN1: Number of top school networking (diversity)	.240	.034	.549	7.045	<.001	.585	.556	.533	.942	1.062

a. Dependent Variable: DV0i In of Fund Size (\$m)

Final selection for interblock analysis: PK1i (average caliber of prior affiliation-quartile), PN1 (number of top school networking)

(4)Market environment control

(a)Initial selection of all control variables

Coefficients ^a											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.178	1.348		3.842	<.001					
	M5 S&P Status	.749	1.087	.069	.689	.493	.067	.069	.069	.993	1.007
	M6 Fundraising volume	-.088	.329	-.027	-.267	.790	-.021	-.027	-.027	.993	1.007

a. Dependent Variable: DV0i In of Fund Size (\$m)

Removed M6, the variable with the highest p-Test

(b)First iteration control variables

Appendix D: Covariate filtering process

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.616	1.037		4.451	<.001					
	M5 S&P Status	1.098	.866	.121	1.268	.208	.121	.121	.121	1.000	1.000

a. Dependent Variable: DV0i In of Fund Size (\$m)

Final selection for interblock analysis: M5 (General equity level)

ii) Interblock analysis:

(1) Below is the sequence of filtering variables for all blocks sequentially until a combination with VIF below 2.0 and p-test below 0.2 was found

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.287	.398		10.780	<.001					
	FK1iii In of MolC prior fund (s-1) (*)	.795	.579	.117	1.374	.173	.541	.145	.090	.589	1.698
	F14: power concentration at firm (HHI)	.000	.000	-.167	-1.963	.053	-.531	-.205	-.128	.590	1.696
	M3i Firm size cluster	1.155	.192	.529	6.023	<.001	.742	.540	.394	.556	1.800
	PN1: Number of top school networking (diversity)	.061	.038	.138	1.614	.110	.571	.170	.106	.586	1.707

a. Dependent Variable: DV0i In of Fund Size (\$m)

Figure D2 shows the final variables for regression

Appendix D: Covariate filtering process

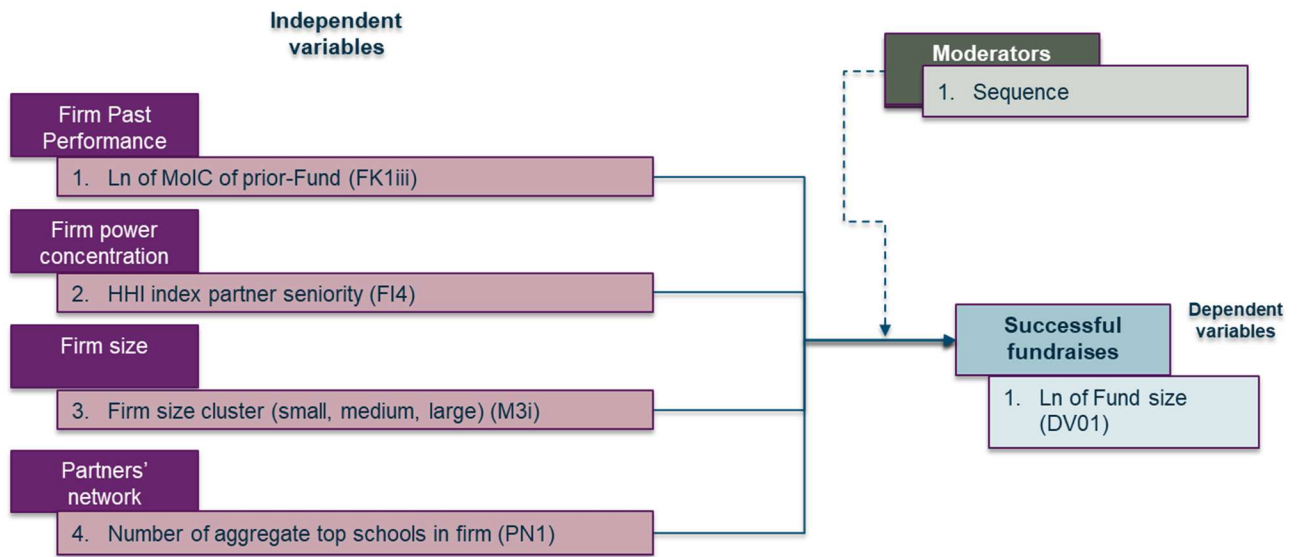


Fig D2-Final variable model

Appendix E-1: Regression output

General model

Descriptive Statistics

	Mean	Std. Deviation	N
DV0i In of Fund Size (\$m)	5.899149	1.5600587	114
FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.257831	.2243656	114
FI4: power concentration at firm (HHI)-RESCALED	1310.765540	879.2113043	114
M3i Firm size cluster	1.403509	.7252622	114
PN1: Number of top school networking (diversity)	3.938333	3.5684773	114

Correlations

	DV0i In of Fund Size (\$m)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	FI4: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)	
Pearson Correlation						
	DV0i In of Fund Size (\$m)	1.000	.538	-.512	.707	.585
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.538	1.000	-.554	.533	.411
	FI4: power concentration at firm (HHI)-RESCALED	-.512	-.554	1.000	-.436	-.536
	M3i Firm size cluster	.707	.533	-.436	1.000	.608
	PN1: Number of top school networking (diversity)	.585	.411	-.536	.608	1.000
Sig. (1-tailed)						
	DV0i In of Fund Size (\$m)	.	<.001	<.001	<.001	<.001
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.000	.	.000	.000	.000
	FI4: power concentration at firm (HHI)-RESCALED	.000	.000	.	.000	.000
	M3i Firm size cluster	.000	.000	.000	.	.000
	PN1: Number of top school networking (diversity)	.000	.000	.000	.000	.
N						
	DV0i In of Fund Size (\$m)	114	114	114	114	114
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	114	114	114	114	114
	FI4: power concentration at firm (HHI)-RESCALED	114	114	114	114	114
	M3i Firm size cluster	114	114	114	114	114
	PN1: Number of top school networking (diversity)	114	114	114	114	114

Appendix E-1: Regression output

General model

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, FI4: power concentration at firm (HHI)-RESCALED, M3i Firm size cluster ^b		Enter

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.759 ^a	.577	.561	1.0332890	.577	37.146	4	109	<.001	1.751

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, FI4: power concentration at firm (HHI)-RESCALED, M3i Firm size cluster

b. Dependent Variable: DV0i In of Fund Size (\$m)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158.640	4	39.660	37.146	<.001 ^b
	Residual	116.378	109	1.068		
	Total	275.018	113			

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, FI4: power concentration at firm (HHI)-RESCALED, M3i Firm size cluster

Appendix E-1: Regression output

General model

		Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	4.265	.369		11.570	<.001						
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.994	.565	.143	1.759	.081	.538	.166	.110	.587	1.703	
	F14: power concentration at firm (HHI)-RESCALED	-.247	.146	-.139	-1.695	.093	-.512	-.160	-.106	.578	1.730	
	M3i Firm size cluster	1.006	.183	.468	5.488	<.001	.707	.465	.342	.534	1.872	
	PN1: Number of top school networking (diversity)	.073	.037	.168	1.976	.051	.585	.186	.123	.539	1.856	

a. Dependent Variable: DV0i In of Fund Size (\$m)

		Coefficient Correlations ^a				
Model			PN1: Number of top school networking (diversity)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	F14: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster
			1	Correlations	PN1: Number of top school networking (diversity)	1.000
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.037	1.000	.407	-.359
		F14: power concentration at firm (HHI)-RESCALED	.362	.407	1.000	-.007
		M3i Firm size cluster	-.472	-.359	-.007	1.000
	Covariances	PN1: Number of top school networking (diversity)	.001	.001	.002	-.003
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.001	.320	.034	-.037
		F14: power concentration at firm (HHI)-RESCALED	.002	.034	.021	.000
		M3i Firm size cluster	-.003	-.037	.000	.034

a. Dependent Variable: DV0i In of Fund Size (\$m)

		Collinearity Diagnostics ^a						
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	F14: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)
1	1	3.876	1.000	.00	.01	.01	.01	.01
	2	.726	2.310	.01	.05	.15	.00	.06
	3	.259	3.867	.00	.52	.00	.00	.43
	4	.089	6.585	.00	.28	.11	.86	.43
	5	.049	8.905	.99	.14	.73	.13	.06

a. Dependent Variable: DV0i In of Fund Size (\$m)

Appendix E-1: Regression output

General model

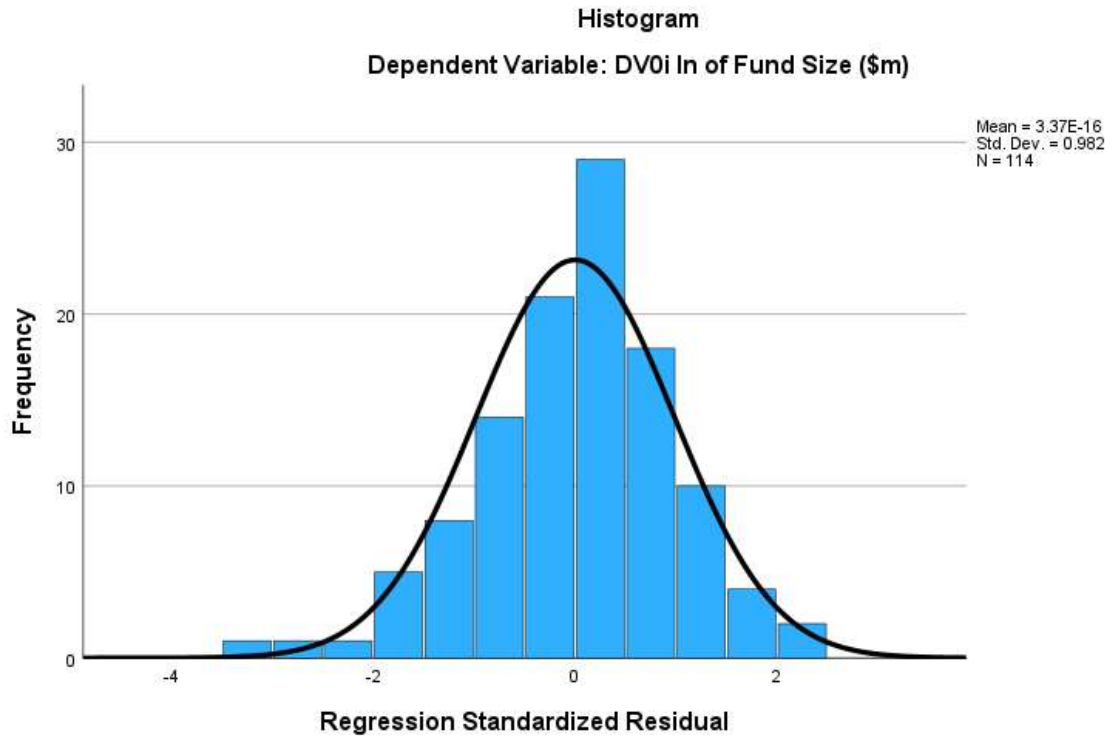
Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.449765	9.156359	5.899149	1.1848592	114
Residual	-3.1513453	2.5779252	.0000000	1.0148359	114
Std. Predicted Value	-1.223	2.749	.000	1.000	114
Std. Residual	-3.050	2.495	.000	.982	114

a. Dependent Variable: DV0i ln of Fund Size (\$m)

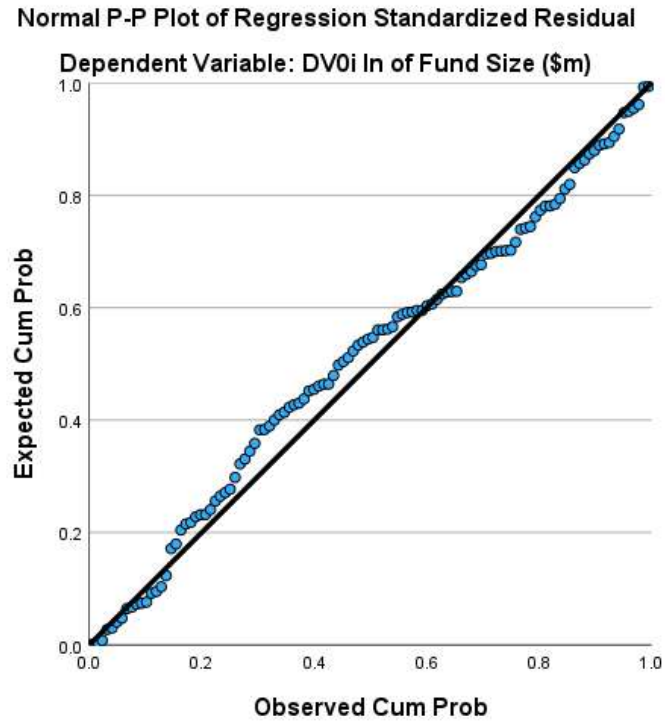
Appendix E-1: Regression output

General model



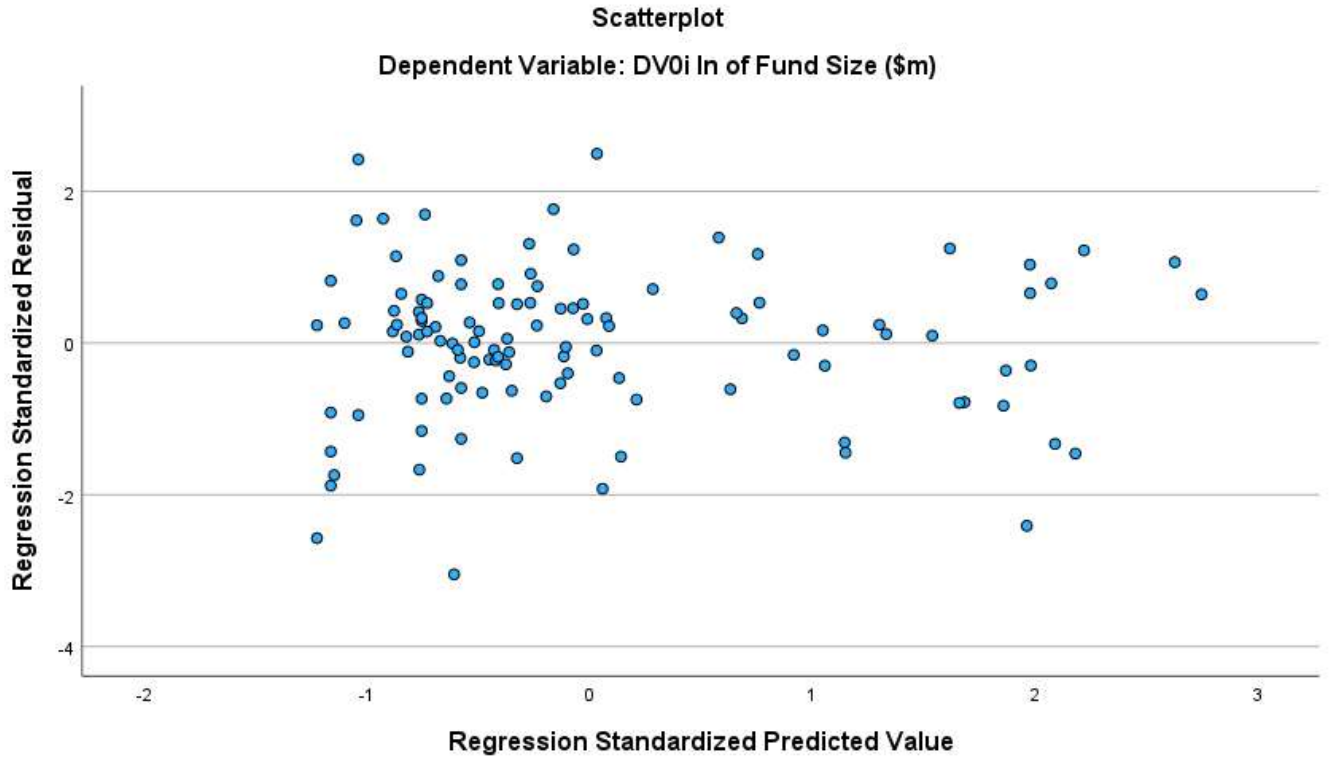
Appendix E-1: Regression output

General model



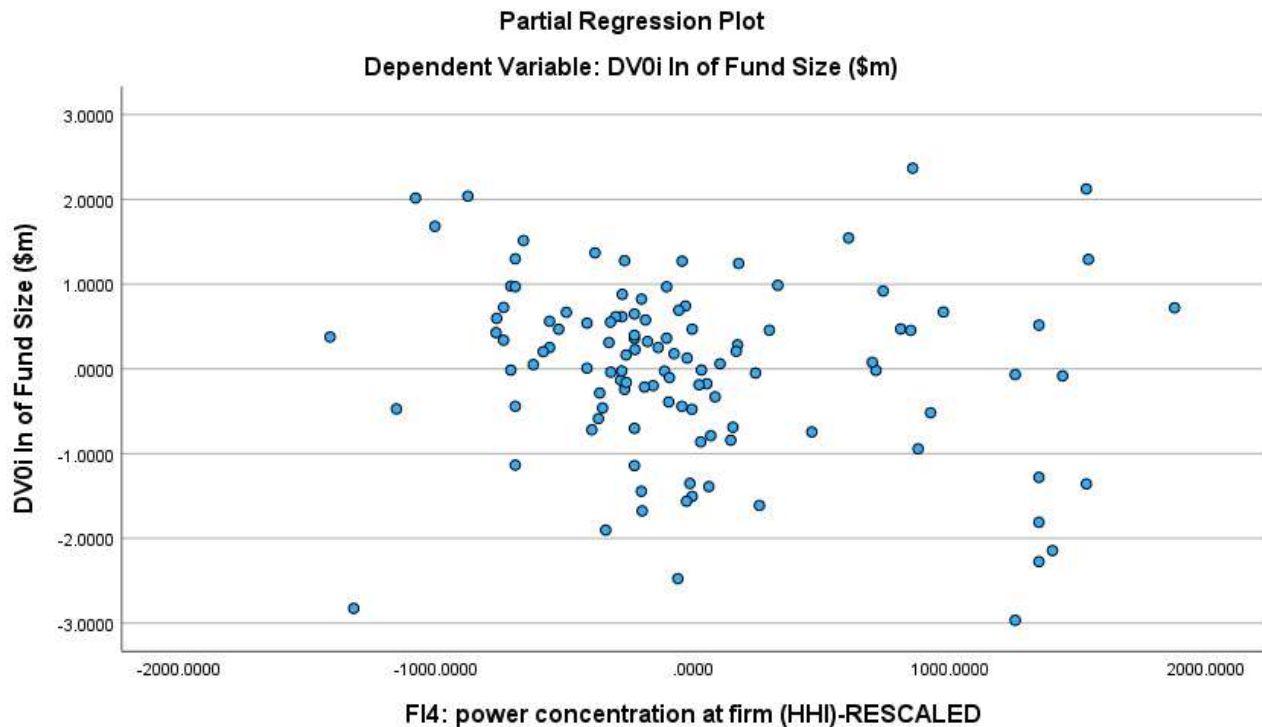
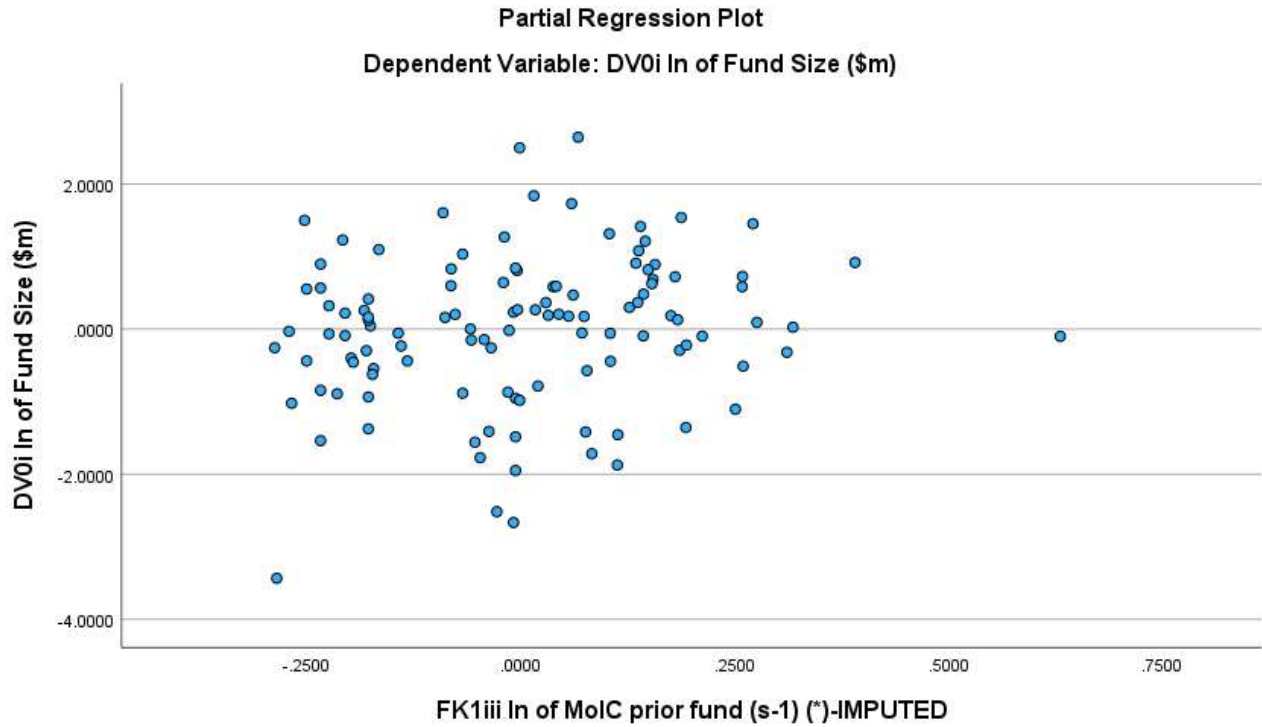
Appendix E-1: Regression output

General model



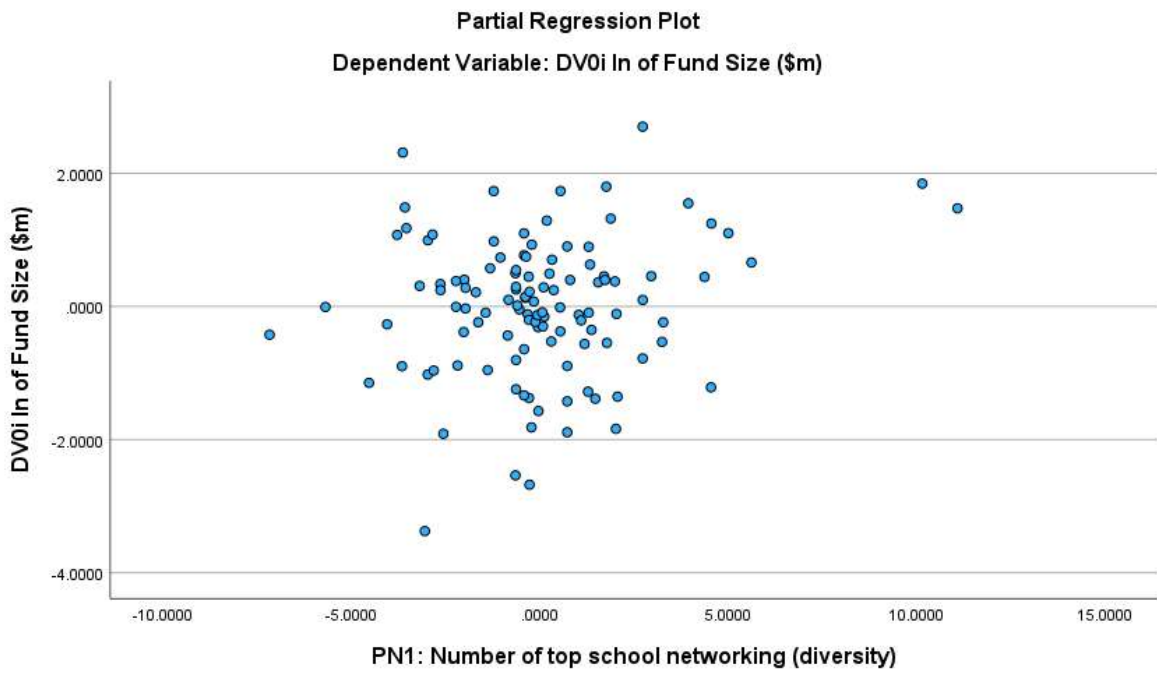
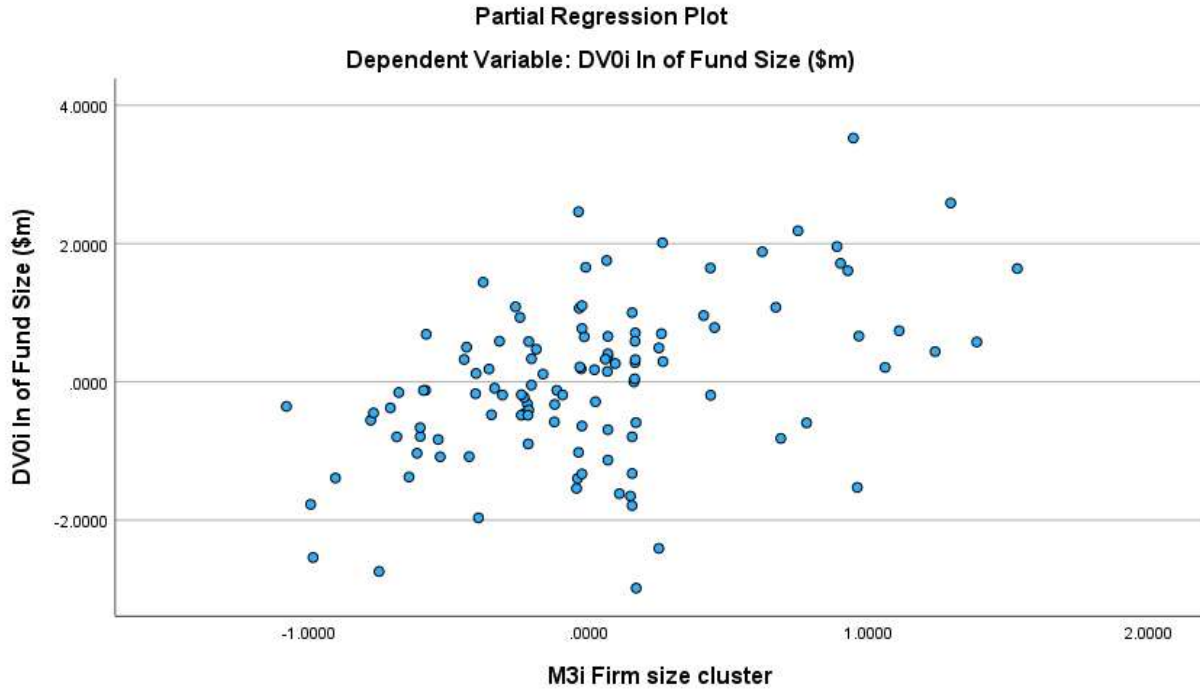
Appendix E-1: Regression output

General model



Appendix E-1: Regression output

General model



Appendix E-2: Regression output

Young Firms

Descriptive Statistics

	Mean	Std. Deviation	N
DV0i In of Fund Size (\$m)	5.319770	1.1990369	75
FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.160424	.2039820	75
FI4: power concentration at firm (HHI)-RESCALED	1.578533	.8662449	75
M3i Firm size cluster	1.093333	.3739249	75
PN1: Number of top school networking (diversity)	2.746667	2.2546848	75

Correlations

		DV0i In of Fund Size (\$m)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	FI4: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)
Pearson Correlation	DV0i In of Fund Size (\$m)	1.000	.415	-.378	.448	.407
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.415	1.000	-.401	.329	.217
	FI4: power concentration at firm (HHI)-RESCALED	-.378	-.401	1.000	-.284	-.396
	M3i Firm size cluster	.448	.329	-.284	1.000	.413
	PN1: Number of top school networking (diversity)	.407	.217	-.396	.413	1.000
Sig. (1-tailed)	DV0i In of Fund Size (\$m)	.	<.001	<.001	<.001	<.001
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.000	.	.000	.002	.031
	FI4: power concentration at firm (HHI)-RESCALED	.000	.000	.	.007	.000
	M3i Firm size cluster	.000	.002	.007	.	.000
	PN1: Number of top school networking (diversity)	.000	.031	.000	.000	.
N	DV0i In of Fund Size (\$m)	75	75	75	75	75
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	75	75	75	75	75
	FI4: power concentration at firm (HHI)-RESCALED	75	75	75	75	75
	M3i Firm size cluster	75	75	75	75	75
	PN1: Number of top school networking (diversity)	75	75	75	75	75

Appendix E-2: Regression output

Young Firms

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	PN1: Number of top school networking (diversity), FK1iii In of MolC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, F14: power concentration at firm (HHI)-RESCALED ^b		Enter

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.585 ^a	.342	.304	1.0000388	1.631

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MolC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, F14: power concentration at firm (HHI)-RESCALED

b. Dependent Variable: DV0i In of Fund Size (\$m)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.384	4	9.096	9.095	<.001 ^b
	Residual	70.005	70	1.000		
	Total	106.389	74			

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MolC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, F14: power concentration at firm (HHI)-RESCALED

Appendix E-2: Regression output

Young Firms

		Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	4.221	.503		8.384	<.001						
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	1.386	.642	.236	2.160	.034	.415	.250	.209	.789	1.268	
	F14: power concentration at firm (HHI)-RESCALED	-.185	.156	-.134	-1.182	.241	-.378	-.140	-.115	.737	1.358	
	M3i Firm size cluster	.801	.355	.250	2.257	.027	.448	.260	.219	.767	1.304	
	PN1: Number of top school networking (diversity)	.106	.060	.200	1.782	.079	.407	.208	.173	.744	1.343	

a. Dependent Variable: DV0i In of Fund Size (\$m)

		Coefficient Correlations ^a				
Model			PN1: Number of top school networking (diversity)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	M3i Firm size cluster	F14: power concentration at firm (HHI)-RESCALED
			1	Correlations	PN1: Number of top school networking (diversity)	1.000
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.017	1.000	-.236	.328
		M3i Firm size cluster	-.336	-.236	1.000	.055
		F14: power concentration at firm (HHI)-RESCALED	.307	.328	.055	1.000
	Covariances	PN1: Number of top school networking (diversity)	.004	.001	-.007	.003
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.001	.412	-.054	.033
		M3i Firm size cluster	-.007	-.054	.126	.003
		F14: power concentration at firm (HHI)-RESCALED	.003	.033	.003	.024

a. Dependent Variable: DV0i In of Fund Size (\$m)

		Collinearity Diagnostics ^a							
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	F14: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)	
1	1	3.854	1.000	.00	.02	.01	.01	.01	
	2	.650	2.435	.00	.43	.09	.00	.02	
	3	.363	3.256	.00	.33	.06	.00	.51	
	4	.097	6.307	.03	.22	.46	.40	.45	
	5	.036	10.405	.96	.01	.38	.60	.01	

a. Dependent Variable: DV0i In of Fund Size (\$m)

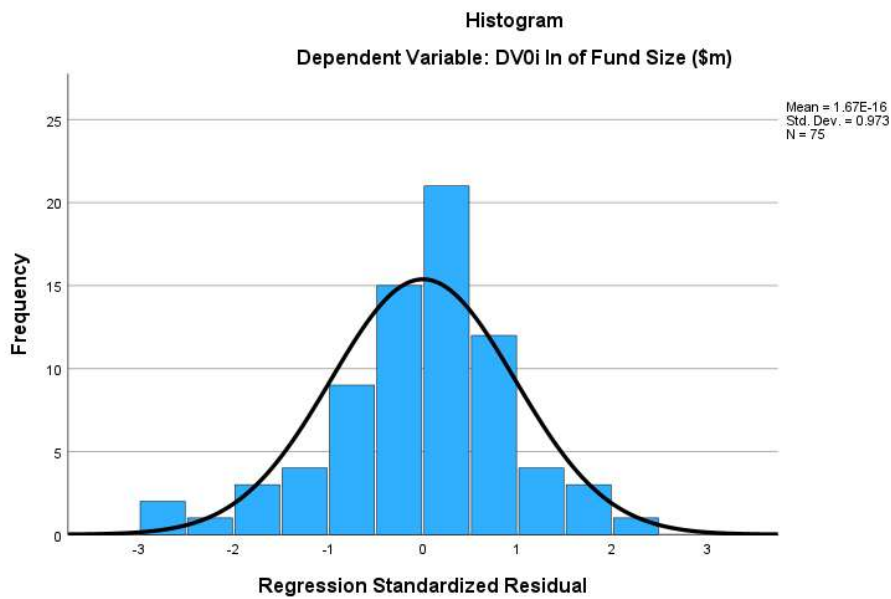
Appendix E-2: Regression output

Young Firms

Residuals Statistics^a

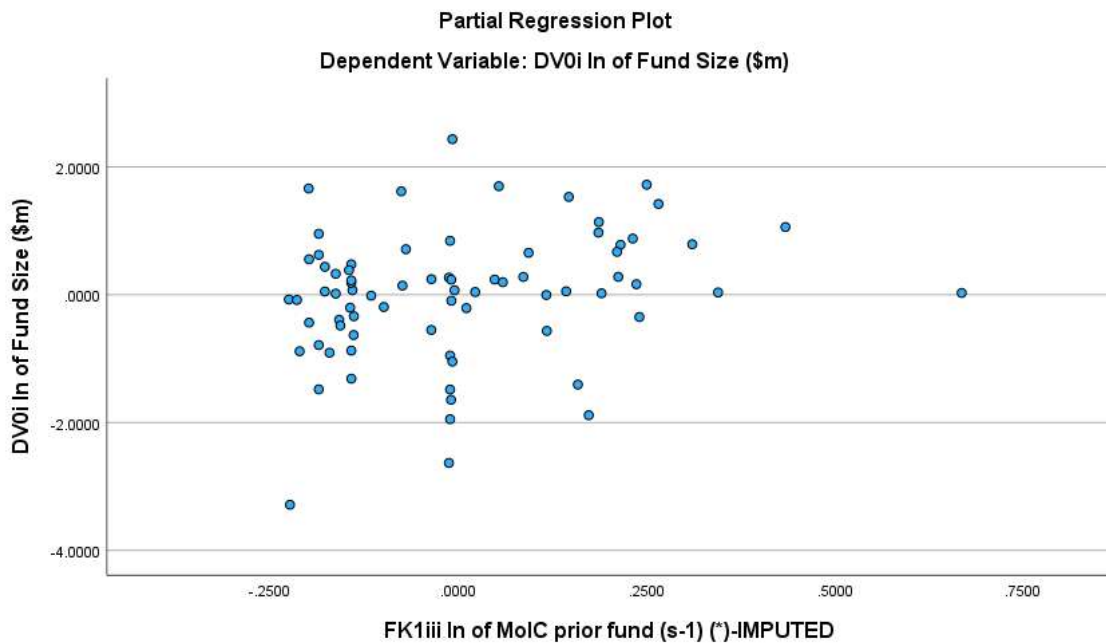
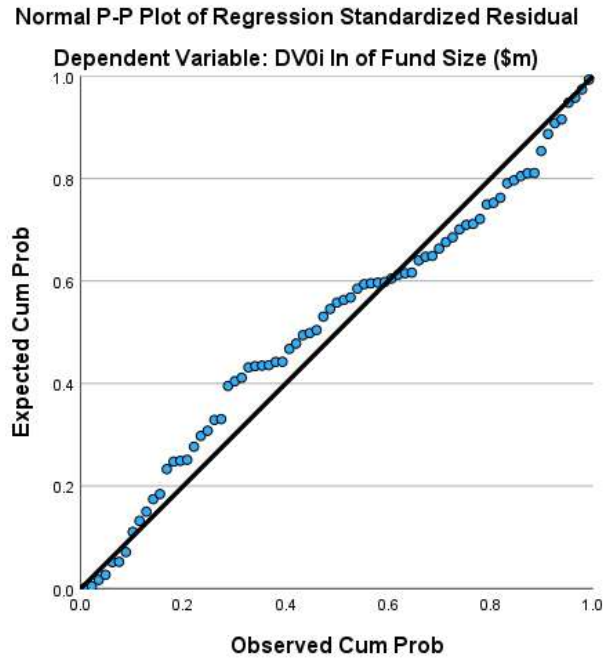
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.406350	7.885892	5.319770	.7011920	75
Residual	-2.9764748	2.4443741	.0000000	.9726353	75
Std. Predicted Value	-1.303	3.660	.000	1.000	75
Std. Residual	-2.976	2.444	.000	.973	75

a. Dependent Variable: DV0i In of Fund Size (\$m)



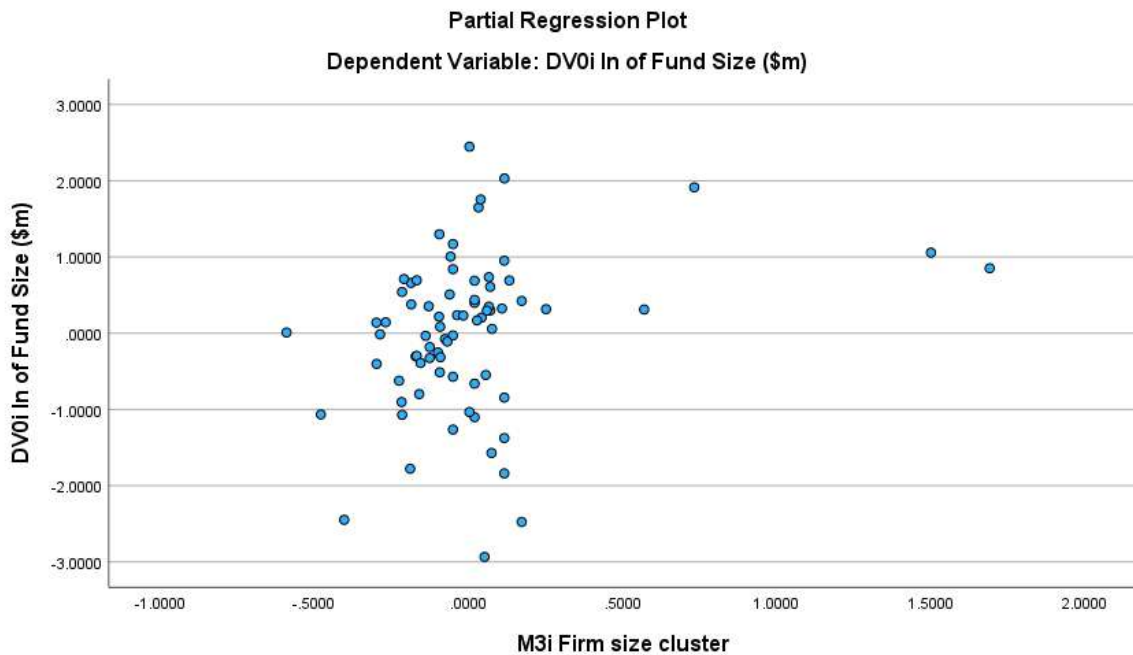
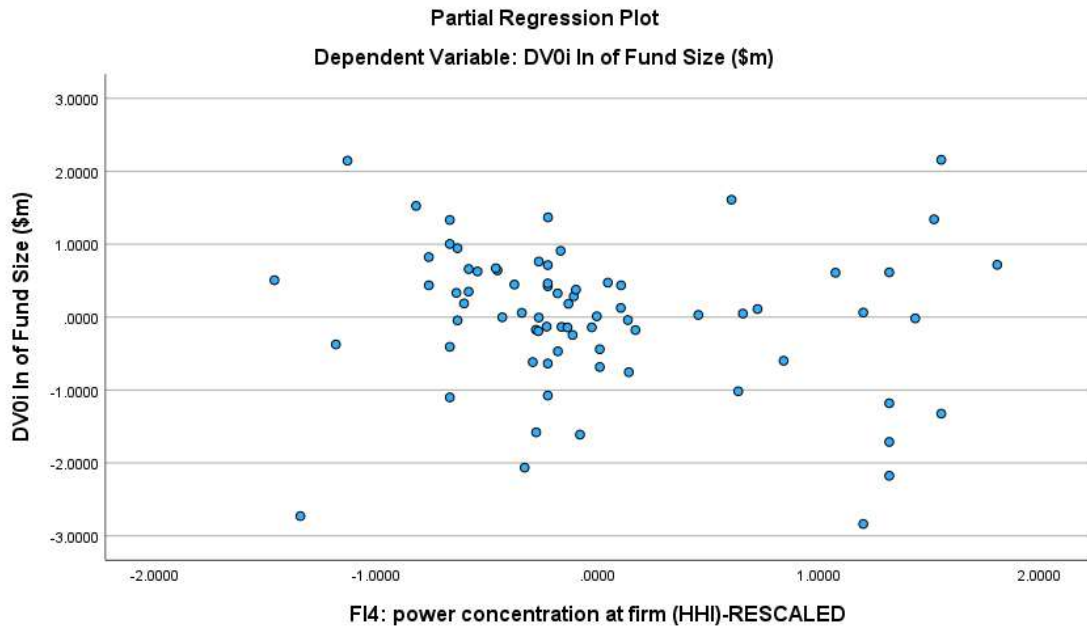
Appendix E-2: Regression output

Young Firms



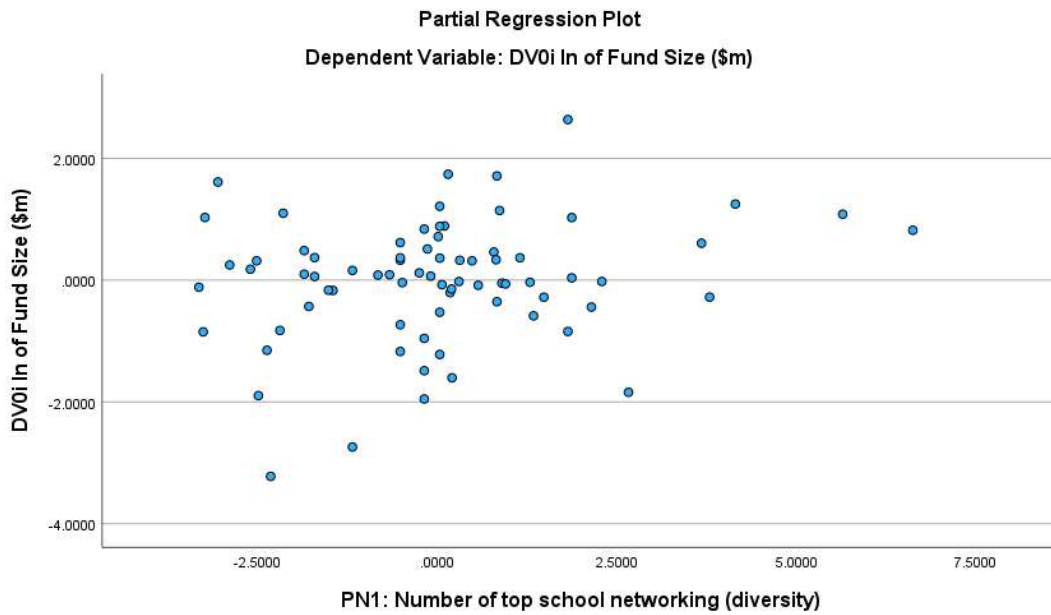
Appendix E-2: Regression output

Young Firms



Appendix E-2: Regression output

Young Firms



Appendix E-3: Regression output

Established Firms

Descriptive Statistics

	Mean	Std. Deviation	N
DV0i In of Fund Size (\$m)	7.013338	1.5814490	39
FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.445151	.1180205	39
FI4: power concentration at firm (HHI)-RESCALED	796.517705	648.9437011	39
M3i Firm size cluster	2.000000	.8583951	39
PN1: Number of top school networking (diversity)	6.230000	4.4468670	39

Correlations

		DV0i In of Fund Size (\$m)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	FI4: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)
Pearson Correlation	DV0i In of Fund Size (\$m)	1.000	.198	-.417	.699	.507
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.198	1.000	-.481	.341	.220
	FI4: power concentration at firm (HHI)-RESCALED	-.417	-.481	1.000	-.302	-.574
	M3i Firm size cluster	.699	.341	-.302	1.000	.489
	PN1: Number of top school networking (diversity)	.507	.220	-.574	.489	1.000
Sig. (1-tailed)	DV0i In of Fund Size (\$m)	.	.113	.004	<.001	<.001
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.113	.	.001	.017	.089
	FI4: power concentration at firm (HHI)-RESCALED	.004	.001	.	.031	.000
	M3i Firm size cluster	.000	.017	.031	.	.001
	PN1: Number of top school networking (diversity)	.000	.089	.000	.001	.
N	DV0i In of Fund Size (\$m)	39	39	39	39	39
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	39	39	39	39	39
	FI4: power concentration at firm (HHI)-RESCALED	39	39	39	39	39
	M3i Firm size cluster	39	39	39	39	39
	PN1: Number of top school networking (diversity)	39	39	39	39	39

Appendix E-3: Regression output

Established Firms

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	PN1: Number of top school networking (diversity), FK1iii ln of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED ^b		Enter

a. Dependent Variable: DV0i ln of Fund Size (\$m)

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.749 ^a	.561	.510	1.1071586	.561	10.883	4	34	<.001	2.322

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii ln of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED

b. Dependent Variable: DV0i ln of Fund Size (\$m)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.360	4	13.340	10.883	<.001 ^b
	Residual	41.677	34	1.226		
	Total	95.037	38			

a. Dependent Variable: DV0i ln of Fund Size (\$m)

b. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii ln of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED

Appendix E-3: Regression output

Established Firms

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.921	1.083		5.469	<.001					
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	-2.128	1.820	-.159	-1.169	.251	.198	-.197	-.133	.699	1.431
	F14: power concentration at firm (HHI)-RESCALED	-.615	.380	-.252	-1.619	.115	-.417	-.268	-.184	.532	1.880
	M3i Firm size cluster	1.170	.251	.635	4.660	<.001	.699	.624	.529	.695	1.439
	PN1: Number of top school networking (diversity)	.031	.055	.086	.557	.581	.507	.095	.063	.539	1.854

a. Dependent Variable: DV0i In of Fund Size (\$m)

Coefficient Correlations^a

Model			PN1: Number of top school networking (diversity)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	M3i Firm size cluster	F14: power concentration at firm (HHI)-RESCALED
			1	Correlations	PN1: Number of top school networking (diversity)	1.000
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.195	1.000	-.292	.454
		M3i Firm size cluster	-.436	-.292	1.000	-.106
		F14: power concentration at firm (HHI)-RESCALED	.537	.454	-.106	1.000
	Covariances	PN1: Number of top school networking (diversity)	.003	.020	-.006	.011
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.020	3.314	-.133	.314
		M3i Firm size cluster	-.006	-.133	.063	-.010
		F14: power concentration at firm (HHI)-RESCALED	.011	.314	-.010	.144

a. Dependent Variable: DV0i In of Fund Size (\$m)

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	F14: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)
1	1	4.172	1.000	.00	.00	.01	.01	.01
	2	.602	2.632	.00	.00	.23	.00	.09
	3	.129	5.684	.01	.11	.25	.02	.63
	4	.080	7.230	.03	.07	.00	.96	.10
	5	.017	15.442	.96	.81	.51	.01	.17

a. Dependent Variable: DV0i In of Fund Size (\$m)

Appendix E-3: Regression output

Established Firms

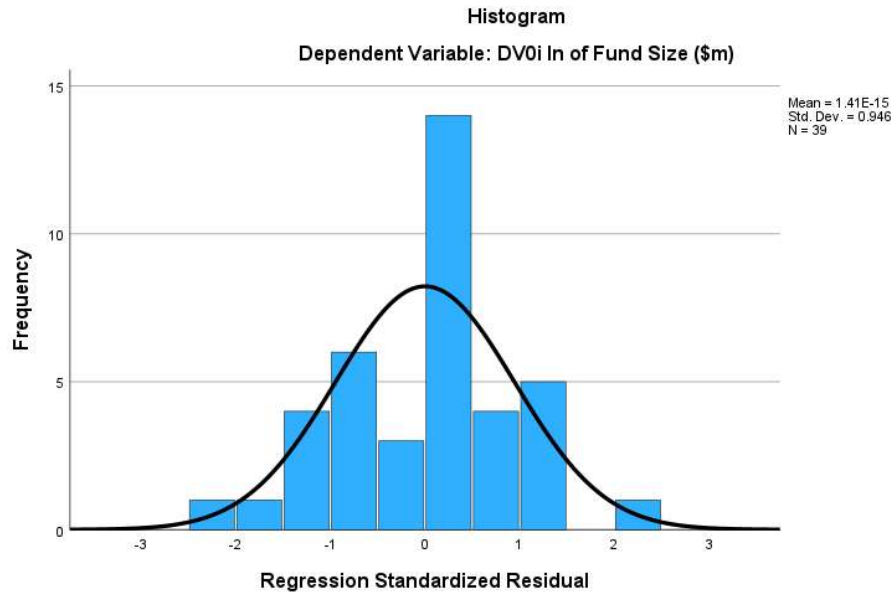
Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.845061	8.881049	7.013338	1.1849946	39
Residual	-2.5749099	2.3896816	.0000000	1.0472672	39
Std. Predicted Value	-1.830	1.576	.000	1.000	39
Std. Residual	-2.326	2.158	.000	.946	39

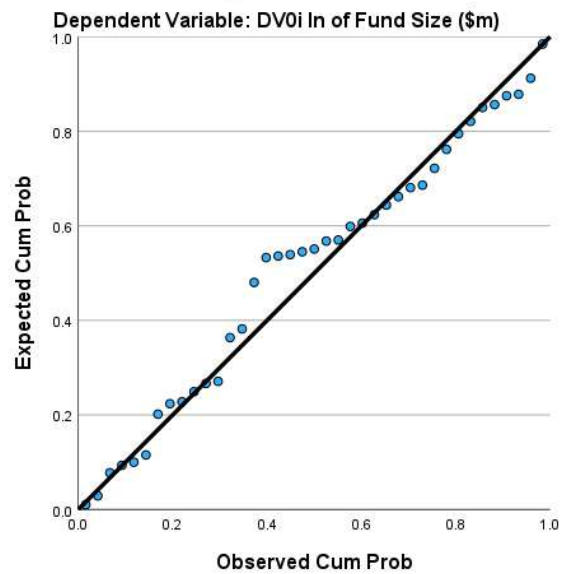
a. Dependent Variable: DV0i ln of Fund Size (\$m)

Appendix E-3: Regression output

Established Firms

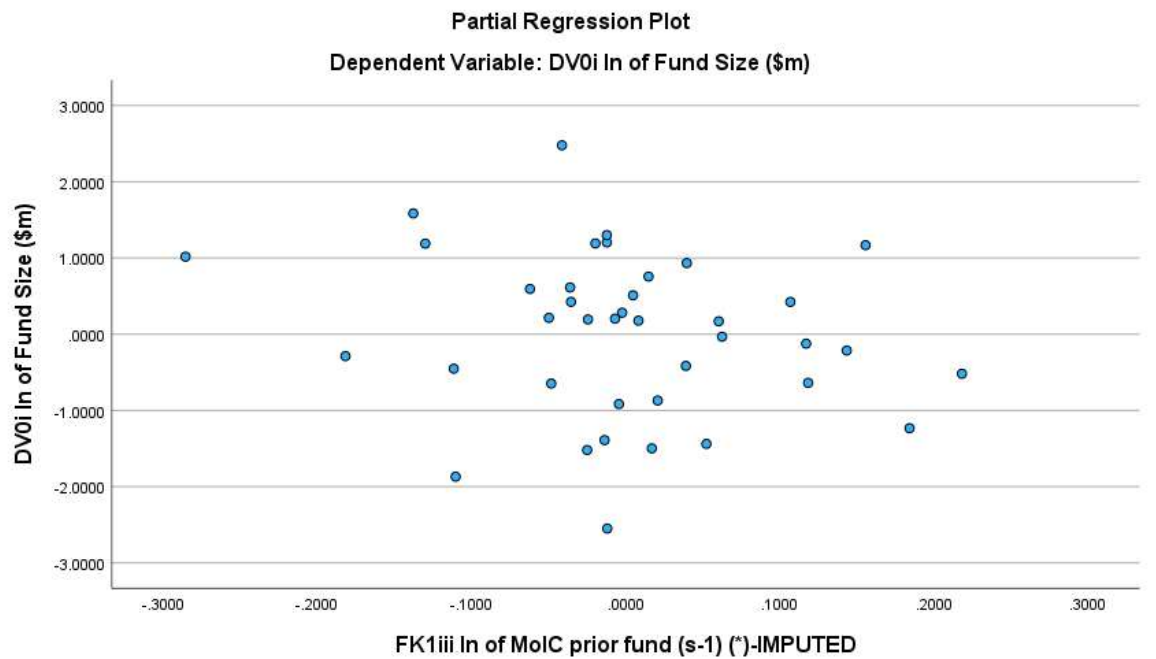
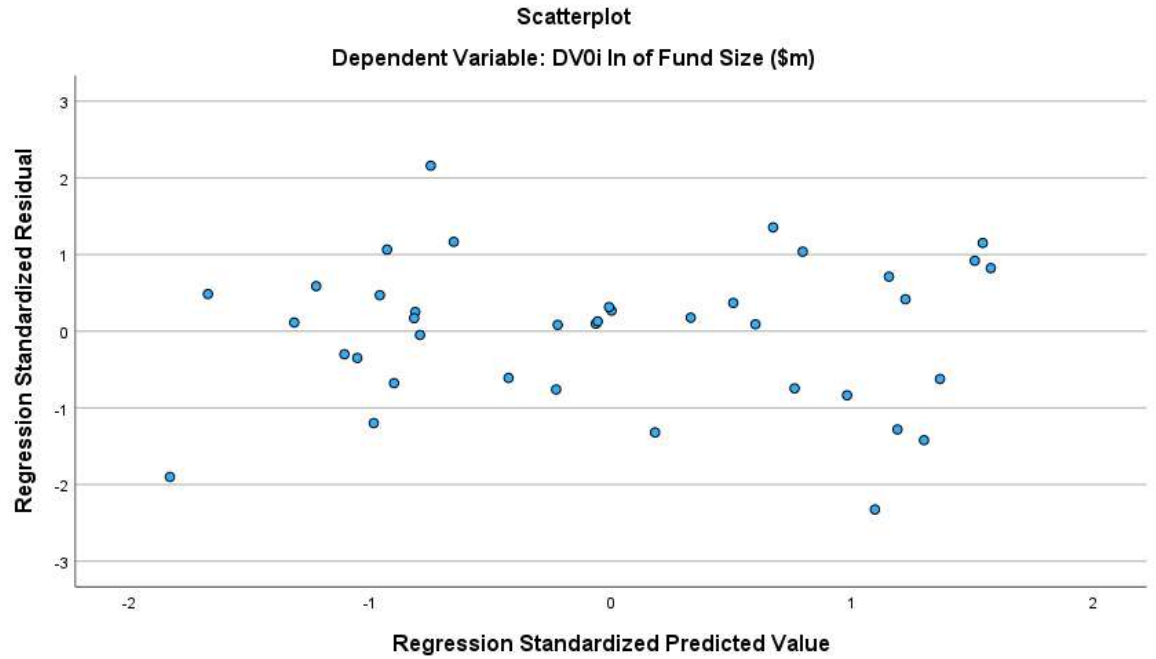


Normal P-P Plot of Regression Standardized Residual



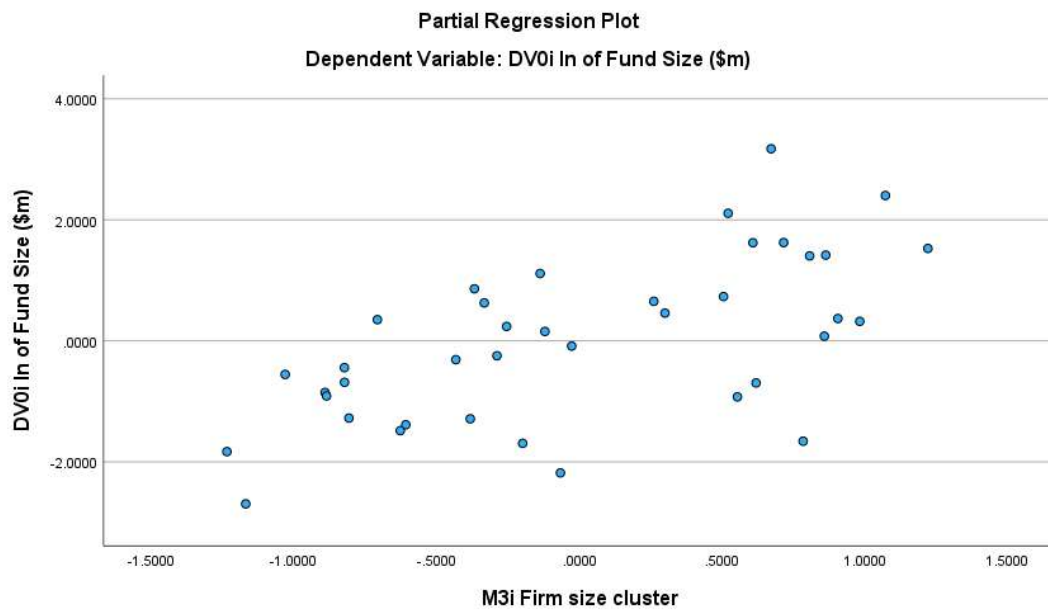
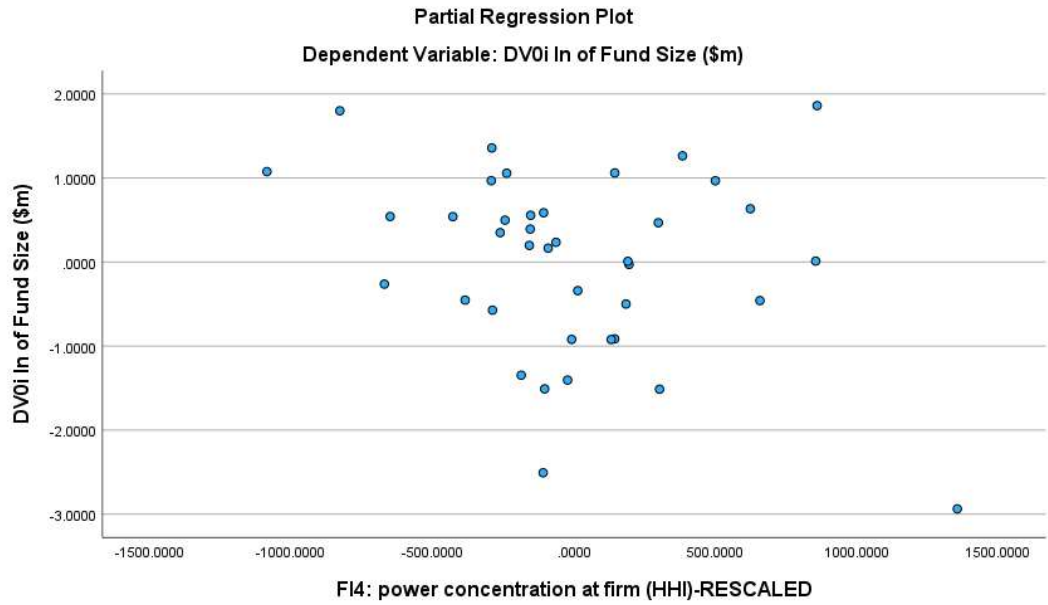
Appendix E-3: Regression output

Established Firms



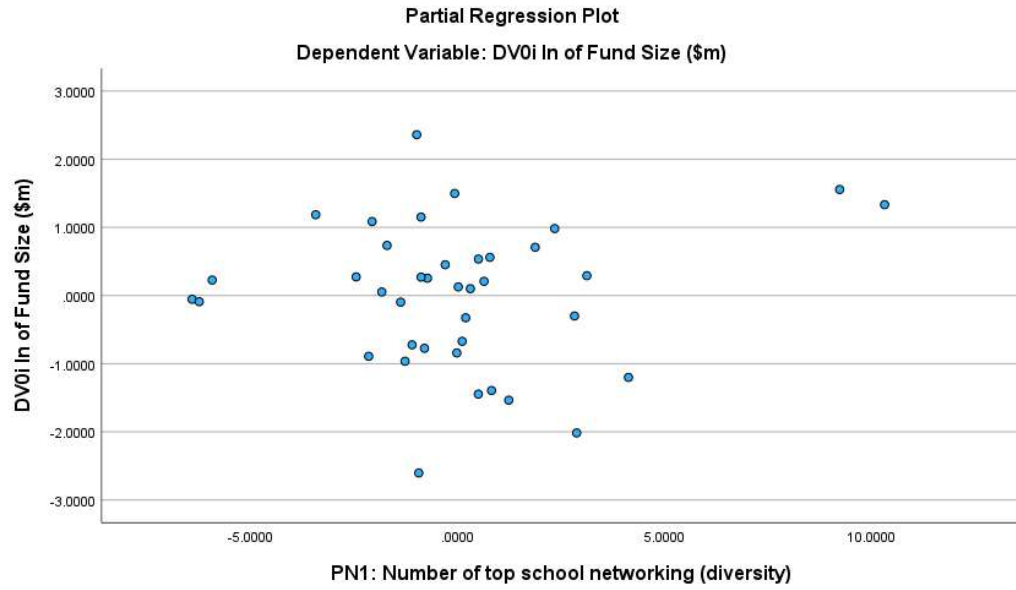
Appendix E-3: Regression output

Established Firms



Appendix E-3: Regression output

Established Firms



Appendix E-4: Regression output

Sequence 1

Descriptive Statistics

	Mean	Std. Deviation	N
DV0i In of Fund Size (\$m)	4.907911	1.1763524	40
FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.000000	.0000000	40
FI4: power concentration at firm (HHI)-RESCALED	1851.531036	921.0509071	40
M3i Firm size cluster	1.000000	.0000000	40
PN1: Number of top school networking (diversity)	2.300000	1.7570371	40

Correlations

		DV0i In of Fund Size (\$m)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	FI4: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)
Pearson Correlation	DV0i In of Fund Size (\$m)	1.000	.	-.270	.	.309
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.	1.000	.	.	.
	FI4: power concentration at firm (HHI)-RESCALED	-.270	.	1.000	.	-.250
	M3i Firm size cluster	.	.	.	1.000	.
	PN1: Number of top school networking (diversity)	.309	.	-.250	.	1.000
Sig. (1-tailed)	DV0i In of Fund Size (\$m)	.	<.001	.046	<.001	.026
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.000	.	.000	.000	.000
	FI4: power concentration at firm (HHI)-RESCALED	.046	.000	.	.000	.060
	M3i Firm size cluster	.000	.000	.000	.	.000
	PN1: Number of top school networking (diversity)	.026	.000	.060	.000	.
N	DV0i In of Fund Size (\$m)	40	40	40	40	40
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	40	40	40	40	40
	FI4: power concentration at firm (HHI)-RESCALED	40	40	40	40	40
	M3i Firm size cluster	40	40	40	40	40
	PN1: Number of top school networking (diversity)	40	40	40	40	40

Appendix E-4: Regression output

Sequence 1

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	PN1: Number of top school networking (diversity), FI4: power concentration at firm (HHI)-RESCALED ^b		Enter

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.367 ^a	.135	.088	1.1233663	.135	2.883	2	37	.069	1.519

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FI4: power concentration at firm (HHI)-RESCALED

b. Dependent Variable: DV0i In of Fund Size (\$m)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.276	2	3.638	2.883	.069 ^b
	Residual	46.692	37	1.262		
	Total	53.968	39			

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. Predictors: (Constant), PN1: Number of top school networking (diversity), FI4: power concentration at firm (HHI)-RESCALED

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error				Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	4.999	.525		9.512	<.001					
	FI4: power concentration at firm (HHI)-RESCALED	-.263	.202	-.205	-1.301	.201	-.270	-.209	-.199	.938	1.067
	PN1: Number of top school networking (diversity)	.172	.106	.257	1.629	.112	.309	.259	.249	.938	1.067

a. Dependent Variable: DV0i In of Fund Size (\$m)

Appendix E-4: Regression output

Sequence 1

Coefficient Correlations^a

Model			PN1: Number of top school networking (diversity)	F14: power concentration at firm (HHI)-RESCALED
1	Correlations	PN1: Number of top school networking (diversity)	1.000	.250
		F14: power concentration at firm (HHI)-RESCALED	.250	1.000
	Covariances	PN1: Number of top school networking (diversity)	.011	.005
		F14: power concentration at firm (HHI)-RESCALED	.005	.041

a. Dependent Variable: DV0i In of Fund Size (\$m)

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions	
					F14: power concentration at firm (HHI)-RESCALED	PN1: Number of top school networking (diversity)
1	1	2.568	1.000	.02	.02	.04
	2	.360	2.670	.01	.18	.59
	3	.071	5.996	.98	.80	.37

a. Dependent Variable: DV0i In of Fund Size (\$m)

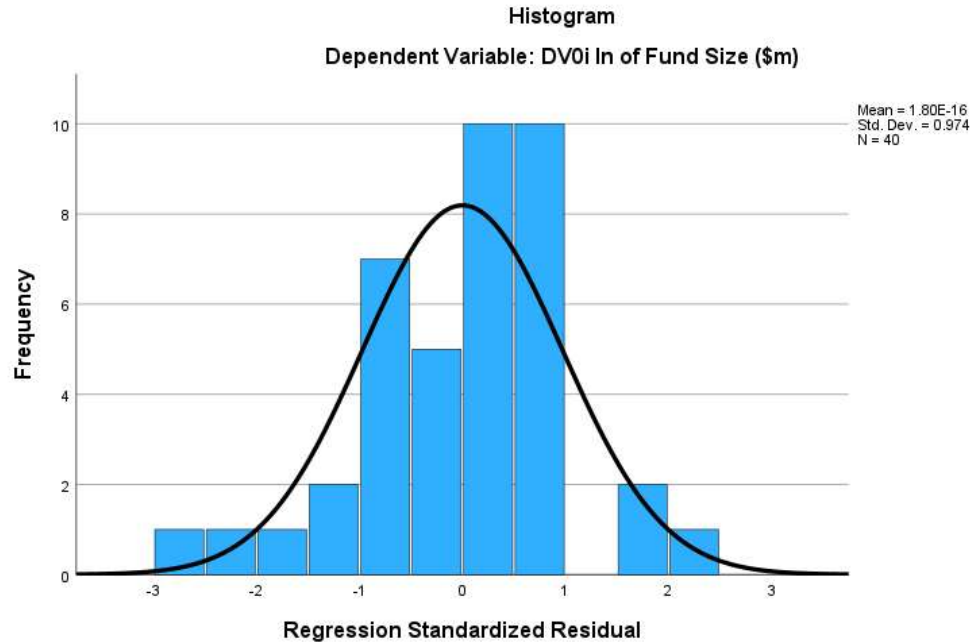
Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.122989	6.028158	4.907911	.4319360	40
Residual	-2.9668391	2.5305455	.0000000	1.0941829	40
Std. Predicted Value	-1.817	2.594	.000	1.000	40
Std. Residual	-2.641	2.253	.000	.974	40

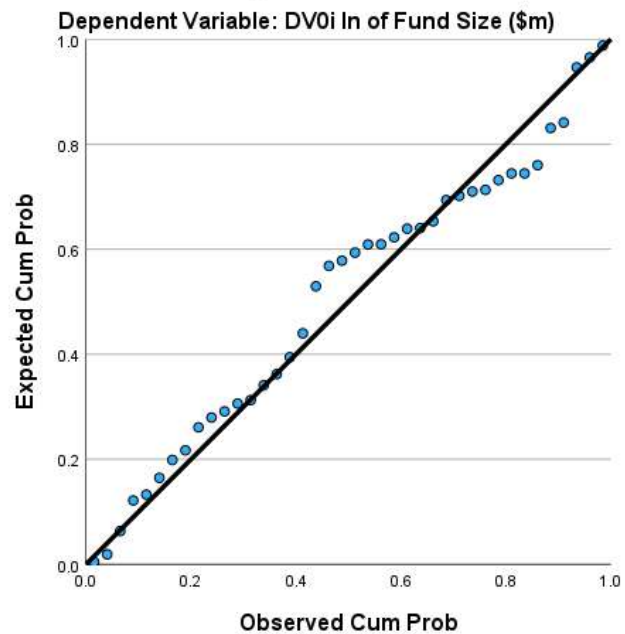
a. Dependent Variable: DV0i In of Fund Size (\$m)

Appendix E-4: Regression output

Sequence 1

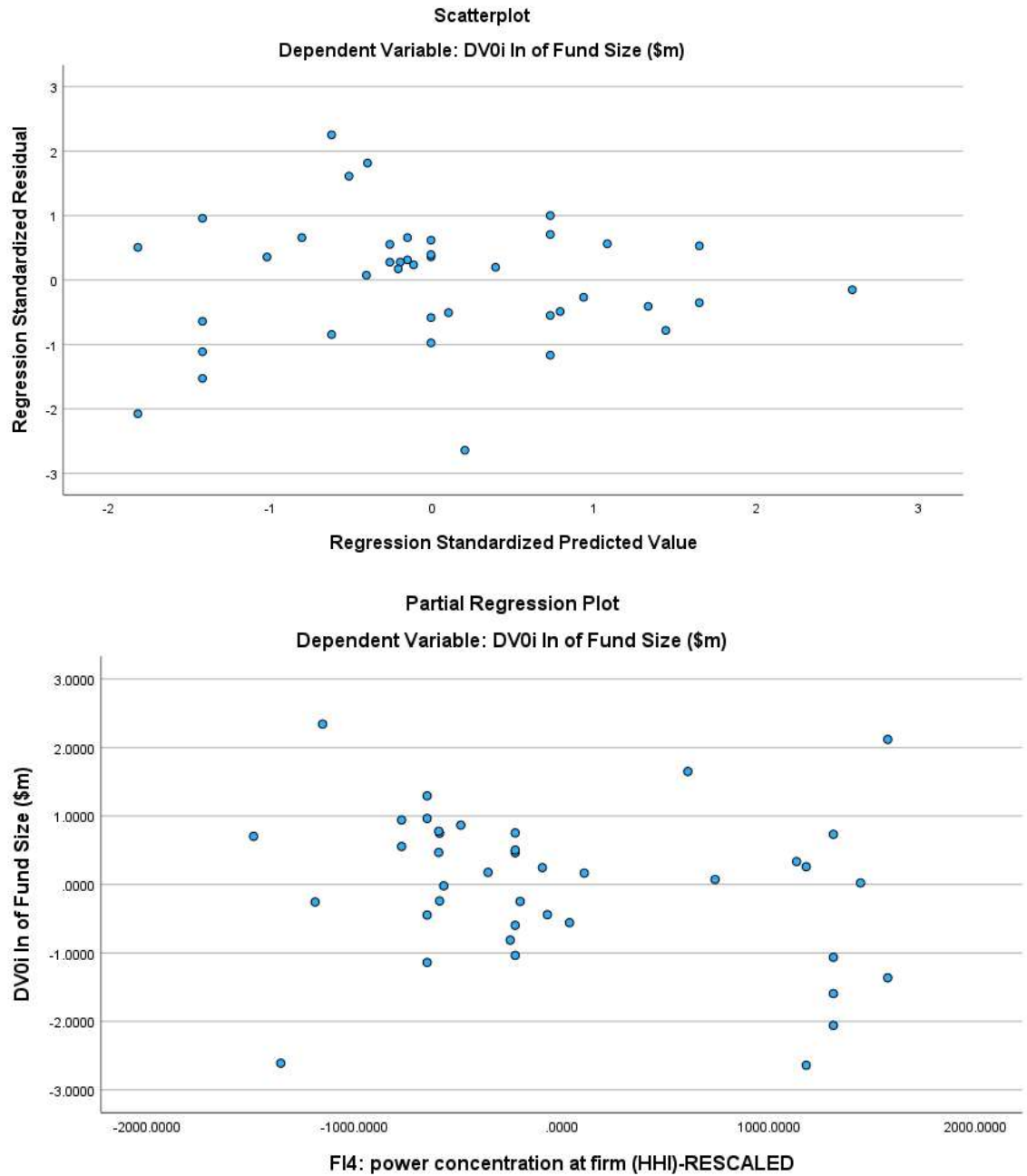


Normal P-P Plot of Regression Standardized Residual



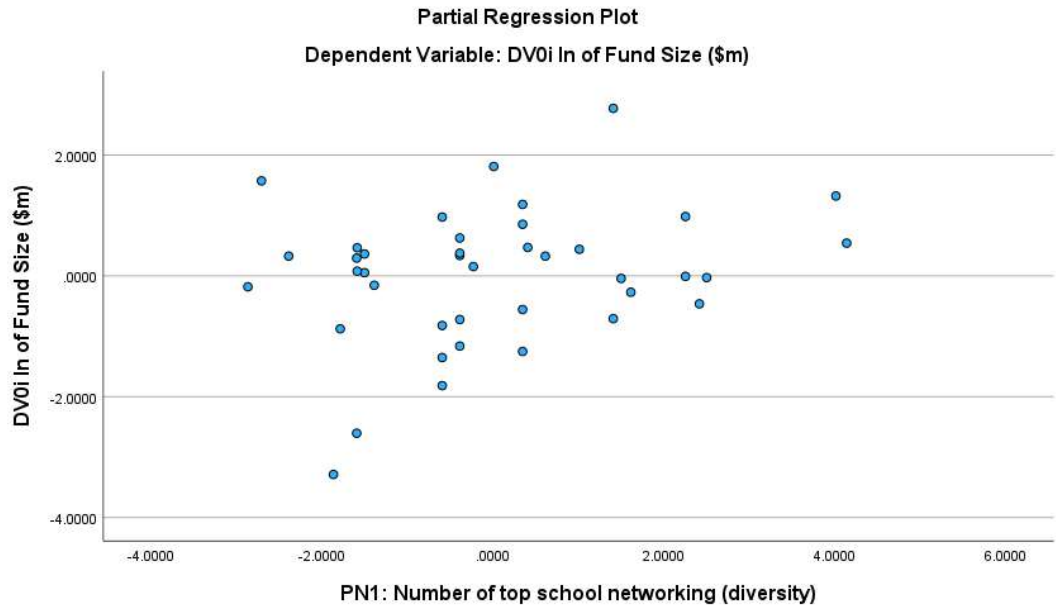
Appendix E-4: Regression output

Sequence 1



Appendix E-4: Regression output

Sequence 1



Appendix E: Regression Output

Descriptive Statistics

	Mean	Std. Deviation	N
DV0i In of Fund Size (\$m)	5.790467	1.0555328	35
FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.343766	.1602489	35
FI4: power concentration at firm (HHI)-RESCALED	1265.766846	689.8625338	35
M3i Firm size cluster	1.200000	.5313689	35
PN1: Number of top school networking (diversity)	3.257143	2.6495600	35

Correlations

		DV0i In of Fund Size (\$m)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	FI4: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)
Pearson Correlation	DV0i In of Fund Size (\$m)	1.000	.321	-.325	.607	.430
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.321	1.000	-.395	.199	.085
	FI4: power concentration at firm (HHI)-RESCALED	-.325	-.395	1.000	-.372	-.500
	M3i Firm size cluster	.607	.199	-.372	1.000	.464
	PN1: Number of top school networking (diversity)	.430	.085	-.500	.464	1.000
Sig. (1-tailed)	DV0i In of Fund Size (\$m)	.	.030	.028	<.001	.005
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.030	.	.009	.126	.313
	FI4: power concentration at firm (HHI)-RESCALED	.028	.009	.	.014	.001
	M3i Firm size cluster	.000	.126	.014	.	.003
	PN1: Number of top school networking (diversity)	.005	.313	.001	.003	.
N	DV0i In of Fund Size (\$m)	35	35	35	35	35
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	35	35	35	35	35
	FI4: power concentration at firm (HHI)-RESCALED	35	35	35	35	35
	M3i Firm size cluster	35	35	35	35	35
	PN1: Number of top school networking (diversity)	35	35	35	35	35

Appendix E: Regression Output

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED ^b		Enter

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.664 ^a	.440	.366	.8405393	.440	5.904	4	30	.001	1.873

a. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED

b. Dependent Variable: DV0i In of Fund Size (\$m)

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.686	4	4.171	5.904	.001 ^b
	Residual	21.195	30	.707		
	Total	37.881	34			

a. Dependent Variable: DV0i In of Fund Size (\$m)

b. Predictors: (Constant), PN1: Number of top school networking (diversity), FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED, M3i Firm size cluster, FI4: power concentration at firm (HHI)-RESCALED

Appendix E: Regression Output

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.760	.750		5.011	<.001					
	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	1.493	.996	.227	1.499	.144	.321	.264	.205	.815	1.226
	F14: power concentration at firm (HHI)-RESCALED	.074	.267	.048	.278	.783	-.326	.051	.038	.615	1.625
	M3i Firm size cluster	.957	.314	.482	3.053	.005	.607	.487	.417	.748	1.336
	PN1: Number of top school networking (diversity)	.084	.068	.211	1.237	.226	.430	.220	.169	.640	1.562

a. Dependent Variable: DV0i In of Fund Size (\$m)

Coefficient Correlations^a

Model			PN1: Number of top school networking (diversity)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	M3i Firm size cluster	F14: power concentration at firm (HHI)-RESCALED
1	Correlations	PN1: Number of top school networking (diversity)	1.000	.174	-.359	.430
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.174	1.000	-.118	.389
		M3i Firm size cluster	-.359	-.118	1.000	.120
		F14: power concentration at firm (HHI)-RESCALED	.430	.389	.120	1.000
	Covariances	PN1: Number of top school networking (diversity)	.005	.012	-.008	.008
		FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	.012	.993	-.037	.103
		M3i Firm size cluster	-.008	-.037	.098	.010
		F14: power concentration at firm (HHI)-RESCALED	.008	.103	.010	.071

a. Dependent Variable: DV0i In of Fund Size (\$m)

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions					
				(Constant)	FK1iii In of MoIC prior fund (s-1) (*)-IMPUTED	F14: power concentration at firm (HHI)-RESCALED	M3i Firm size cluster	PN1: Number of top school networking (diversity)	
1	1	4.180	1.000	.00	.01	.01	.01	.01	
	2	.485	2.937	.00	.00	.14	.01	.24	
	3	.207	4.491	.00	.41	.12	.00	.27	
	4	.101	6.424	.00	.17	.03	.85	.33	
	5	.027	12.522	.99	.41	.71	.13	.15	

a. Dependent Variable: DV0i In of Fund Size (\$m)

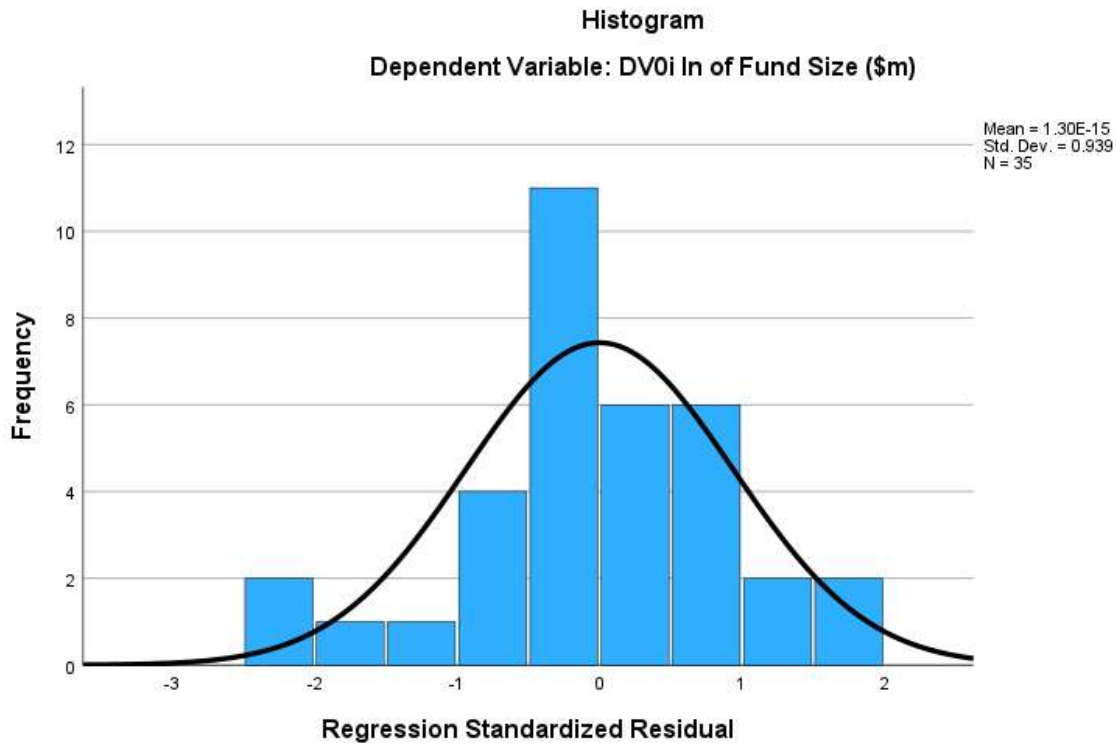
Appendix E: Regression Output

Residuals Statistics^a

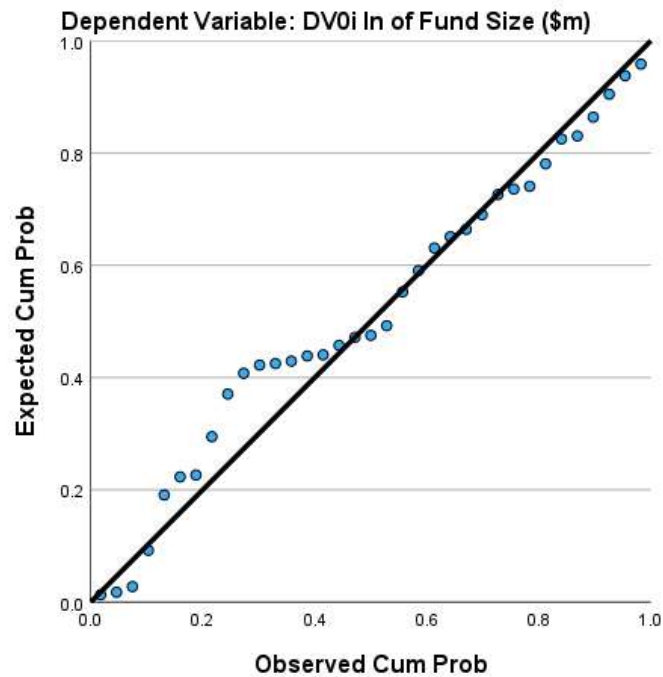
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.043114	7.866882	5.790467	.7005437	35
Residual	-1.8738360	1.4551563	.0000000	.7895492	35
Std. Predicted Value	-1.067	2.964	.000	1.000	35
Std. Residual	-2.229	1.731	.000	.939	35

a. Dependent Variable: DV0i ln of Fund Size (\$m)

Appendix E: Regression Output

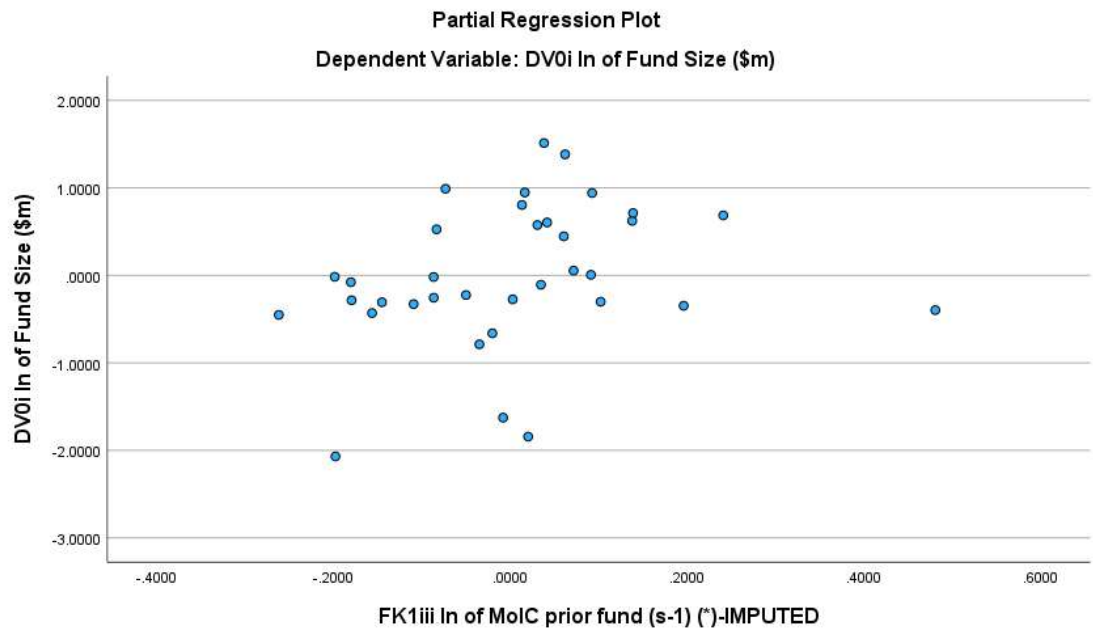
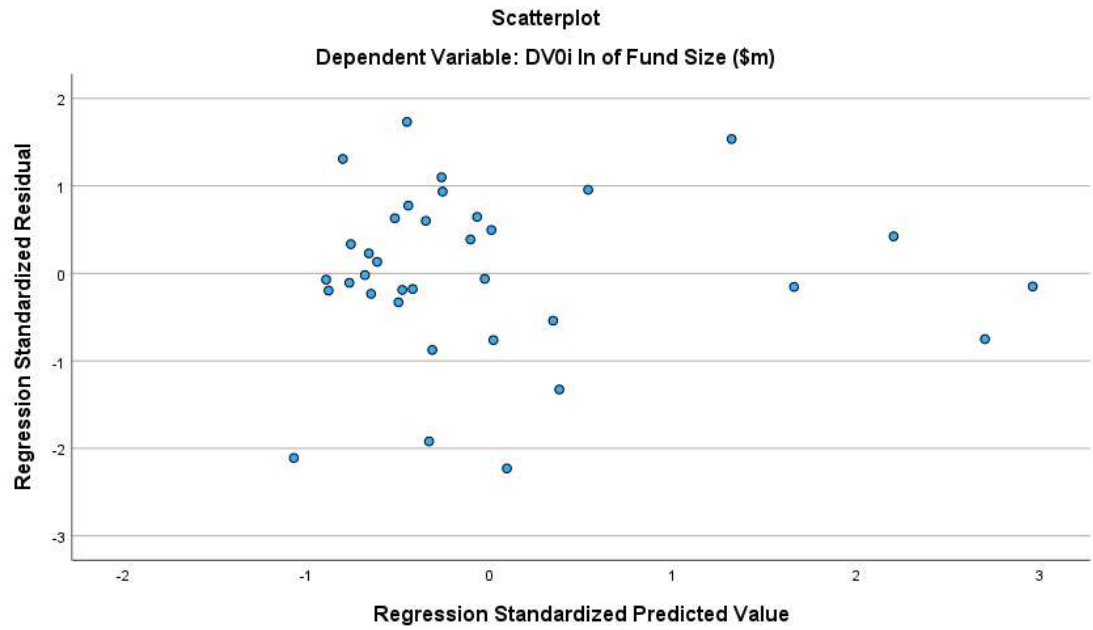


Normal P-P Plot of Regression Standardized Residual

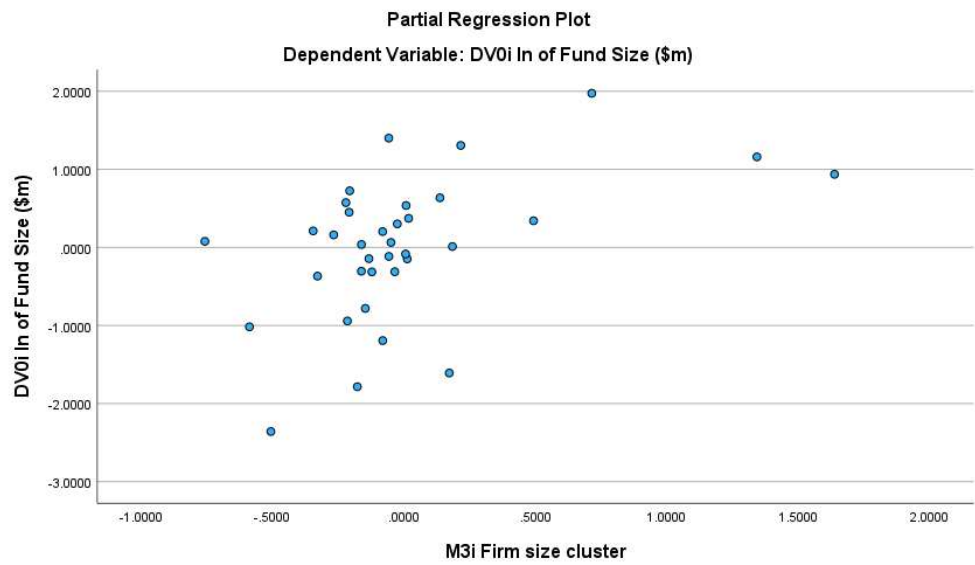
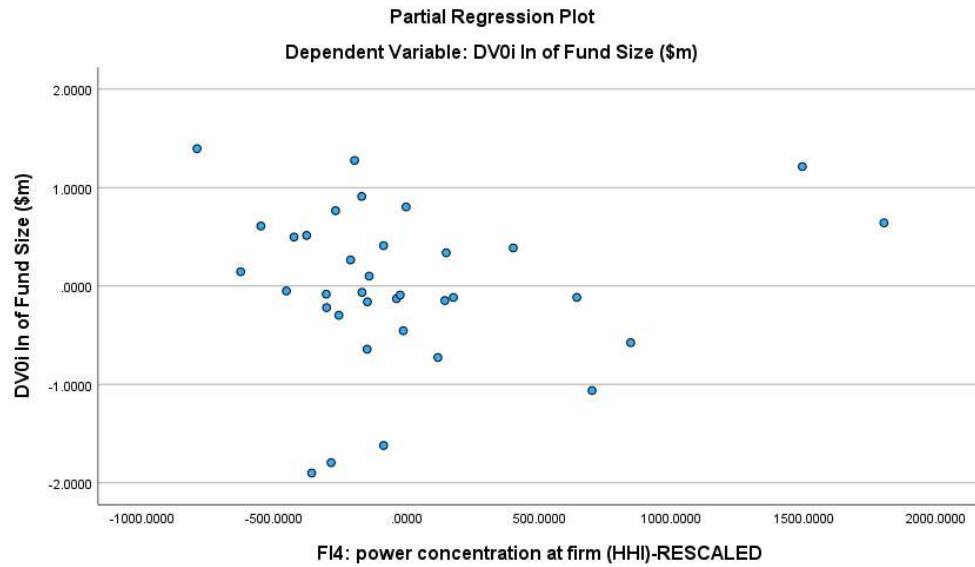


Appendix E: Regression Output

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Appendix E: Regression Output



Appendix E: Regression Output

