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Private Equity Investment in Family Firms: An Investigation of Decision-Making Models and Criteria

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Private Equity Investment in Family Firms: An Investigation of Decision-Making Models and Criteria

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Abstract

Decision making is central to the ability of private equity (PE) investors to choose firms to invest in successfully. This dissertation investigates the selection policies used by PE professionals in their assessment of family firms, in order to understand the underlying rationale and criteria. The theoretical model builds on previous studies on investment criteria focusing on the start-up stage, also drawing on family firm and buy-out literature. Hypotheses are tested using an experimental design based on conjoint analysis. Data are analysed using hierarchical linear models, in order to investigate which criteria are used, assess their relative importance and test whether decision-making models are individual-specific or also influenced by the firm individuals work for.

Findings show that PE investors are boundedly rational individuals using selection criteria in a consistent manner. PE professionals prefer to select family firms that are already managerial, well performing and operating in growing industries, even if this means limiting potential for future growth and cost reduction. This suggests their main concern is to limit riskiness of the prospective investment. The finding is confirmed by the fact that, among other criteria, PE investors value whether many family members wish to sell their shares because, if many do, the PE firm can exercise greater control over the investee firm. Furthermore, likelihood of investment is positively associated with the presence of family members with outside work experience, wishing to stay in the firm. However, the analysis suggests that such resources are considered to be valuable mostly because they can limit risk for the investor (rather than as valuable resources per se, for example for their managerial skills). This is because experienced family members can give the PE firm access to tacit knowledge on the firm, represent continuity in the eyes of stakeholders, and limit potential conflict among remaining family members.

This dissertation adds to literature on equity investors' decision making, by focusing on a different stage of investment: established businesses rather than start-ups. It shows that, although some of the criteria, such as the management team, are common to both stages investors evaluating established businesses also take into account other criteria, such as past profitability and sector growth. Furthermore, even though PE professionals were asked to evaluate family firms, they did not attribute great importance to family-related variables. This contradicts much of the family firm literature, according to which the interaction between family and business can provide competitive advantage to a firm. The findings seem to suggest a negative paradigm with regard to family firms, since the family variable is considered as superfluous. Instead, PE investors focus their evaluation on well quantifiable variables, such as firm profitability or sector growth, and on variables they can easily relate to, such as presence of professional managers.

Through an increased understanding of PE investors' decision making, family firms seeking external capital may be better positioned to address their funding needs, by highlighting criteria that PE firms find most important and addressing criteria that make them less attractive. PE firms may use these findings to improve their understanding of their own decision-making process.

Keywords: decision making, private equity, family firms, conjoint analysis

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Expressed views and any errors remain my own responsibility.

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1 Introduction

"To know what people really think, pay regard to what they do, rather than what they say"

René Descartes

Decision making has been studied by scholars from different disciplines, including economics, mathematics, statistics, organisational theory, sociology, and psychology (Miller *et al*. 1996). It is a fundamental concern also in strategic management, since it has to do with cognitions of executive decision makers as well as strategy formulation and implementation (Fiol and O'Connor 2003, Rajagopalan *et al.* 1993, Schwenk 1988, Stubbart 1989). This dissertation focuses on a specific type of decision making, relating to equity investments. The main objective is to investigate how private equity (PE) investors select target firms for investment, in order to understand the underlying rationale and criteria used[3].

PE firms provide finance in return for an equity stake in potentially high growth unquoted companies. Their objective is to obtain high returns (Mason and Harrison 1999) by selling businesses on to other investors or to industry players or, alternatively, by quoting them on the stock exchange. In order to do so, PE investors need to identify potential investment targets, evaluate them and decide whether or not to invest in them. This type of decision making is a rational process because objectives are set (i.e., taking an equity stake in a firm), alternatives are evaluated (among all business plans that are received) and decisions are made (Cyert and March 1963, Newell and Simon 1972, Simon 1957). Previous research has indicated that equity investors follow sequential steps (Tyebjee and Bruno 1984) in their

[3] As will be seen in Chapter 2, this study specifically focuses on family firms as target companies. This is because they are a major receiver of private equity and represent a predominant form of organisation worldwide.

decision-making process – from screening potential investment targets to carrying out in-depth evaluation through a due diligence process – providing further evidence for the rational nature of their decision making. Literature on a similar type of investor – venture capitalists investing in start-ups[4] – shows that decision makers rely on criteria they perceive as being key success factors in the target firm (Shepherd 1999). It is reasonable to assume that PE investors will behave in the same way, since the only difference is the investee firm's stage of development rather than the type of investment or the investor's objectives. Thus, PE investors are expected to evaluate strategic variables relating to target firms, as they play an important role in the competitive positioning within an industry (Hofer and Schendel 1978). PE investors are also expected to take into consideration the external environment in which the target firm operates, because it plays a key role in firms' ability to add value and achieve competitive advantage, thereby affecting its chances of success (Porter 1980).

In summary, the aim of this dissertation is to study the decision-making criteria used by PE investors in their evaluation of target firms. Whilst previous research has generally considered start-ups, this study focuses on established firms looking for outside equity. Specifically, it studies family firms, which are a prevalent form of organisation worldwide and key recipients of PE capital.

There are two possible ways in which PE investors' decision-making criteria can be studied. The first approach is to "pay regard… to what they say" (using the words from the initial quote, which is attributed to Descartes). In the past, numerous studies have followed this route, relying on questionnaires and similar forms of *post-hoc* data collection (MacMillan *et al*. 1985, 1987, Tyebjee and Bruno 1984). However, asking investors which decision making criteria they use in selecting investment targets can cause biases and errors, since it relies on self-reporting and subjective assessment, and can suffer from recall bias and *post-*

[4] In this dissertation, "venture capital" is used with reference to capital invested at start-up stage and "private equity" is used with reference to capital invested in established businesses.

hoc rationalisation (Sandberg *et al*. 1988, Shepherd and Zacharakis 1999). Therefore, in this study, it was decided to follow an alternative approach to study PE investors' decision making and "pay regard to what they do". Real-time methods have been prevalent in research on investor decision making since the early 1990s (e.g., Shepherd and Zacharakis 2002, Shepherd *et al.* 2003). Rather than studying what people say is at the basis of their actions, trying to capture "espoused theories", this second approach is aimed at studying theories that actually govern behaviour and identifying "theories in use" (Argyris and Schon 1974). This can be done by adopting a positivist approach, which allows researchers to study how individuals actually behave by employing procedures such as experimental designs (Lee 1991). In light of this, the method used for data collection in this dissertation is a simulation, in which respondents are asked to evaluate their likelihood of investment in hypothetical target firms. By developing a representation of respondents' judgement policies, it is possible to decompose and then analyse individual decision-making models (Priem and Harrison 1994).

This research sets out to make a number of contributions. From a theoretical perspective, it contributes to strategic management theory, by analysing individual decision-making models and criteria. It also adds to the prevailing theories on PE investment, which have mainly focused on the evaluation of start-ups. This dissertation also aims to contribute to family business research, by focusing on the variables (including non-economic ones) that make a family firm more or less likely attractive to an outside investor (and thereby more or less likely to grow further, through additional financial and strategic input).

From a methodological perspective, the main contribution is the application of a data collection method – conjoint analysis – to a new setting. Conjoint studies have been used by scholars, since the early 1990s, for the assessment of decision making by venture capitalists

evaluating start-ups. Instead, this study applies a conjoint method to the study of investments in established family firms.

This research also makes managerial contributions, on the one hand, by providing PE investors with more in-depth awareness of their decision-making process. This in turn can help them gain a better understanding of the reasons for their success and further improve their success rates; on the other hand, findings can help family firms develop their understanding of the PE decision process and improve their chances of becoming investment targets (if this is part of their strategy).

This dissertation is organised into six chapters. Following this introductory chapter, in Chapter 2 – Literature review and hypotheses – the theoretical framework is presented. Based on an analysis of rational models of decision making, and of previous investment literature, PE investors (i.e., the individuals making the investment decision) are introduced as the main level of analysis. They are assumed to be rational individuals using a limited number of criteria in their decision making. Selection factors are drawn from mainstream strategic management literature, including industrial organisation and resource-based view theories. Additionally, three prevalent theories on PE investment are introduced: according to these, buy-outs are respectively ways to extract cost efficiencies (Jensen 1993), routes for generating upside revenue potential (Robbie *et al.* 1999, Wright *et al.* 2001) or means for minimising risk while aiming for high returns (MacMillan *et al.* 1985, Zutshi *et al.* 1999). Based on this theoretical background, a decision-making model is proposed, including hypotheses to be tested.

Chapter 3 – Research design – introduces the rationale for using a simulation for data collection. It presents conjoint analysis as the chosen real-time method, consisting of hypothetical profiles of potential target firms. These were presented to respondents, who were asked to rate the likelihood of their investing in each hypothetical firm.

In Chapter 4 – Sample selection – the sample used in the simulation is described. The chapter also reports the response rate and describes the characteristics of PE firms and individual respondents that have taken part in the study.

Chapter 5 – Analysis and discussion – is dedicated to individual- and aggregate-level analysis. The latter also takes into account higher-level variables (relating to the PE firm individual respondents work for) in order to verify if decision-making models are individual-specific or are influenced by such higher-level factors. Findings are discussed with reference, first, to the decision-making model and, second, to the decision-making criteria. This is followed by a discussion of how family firms are likely to change following an external investment.

The last chapter – Chapter 6 – contains concluding remarks and focuses on relevance and contribution of the research. It ends with potential limitations and indications for further research.

2 Literature review and hypotheses

2.1 Introduction

A firm's ability to earn profits above its cost of capital depends on two factors: the attractiveness of the industry the firm operates in and the establishment of a competitive advantage over competitors, which in turn is associated with the firm's resources – the inputs of the production process – and capabilities – the ability to undertake productive activities (Grant 1991). Industrial economics highlights the importance of industry attractiveness as a basis for superior profitability and, throughout the 1980s, strategy research focused on the role of the external environment (e.g., Porter 1980). Later studies showed that the industry does not account for a large proportion of firm profitability and indicated that differences in profitability within industries are more important than differences between industries (Rumelt 1991, Schmalensee 1988). The resource-based view of the firm provided a theoretical framework (Barney 1991) to explain differences in firm performance that were not associated with industry-level conditions, by drawing attention to firm-level resources and capabilities.

This dissertation investigates how external – private equity (PE) – investors[5] select family firms to invest in and focuses on the decision-making criteria used in the process. PE is defined as the investment by professional firms of medium to long term finance, which is provided in return for an equity stake in potentially high-growth unquoted companies (Wright and Robbie 1998). The main aim of PE firms[6] is to make a capital gain by identifying, investing in, being involved in (by participating in firm decision-making), and monitoring investee firms (Wright and Robbie 1998). In this dissertation, it is hypothesised that criteria

[5] In this dissertation, the term "PE investor" is used referring to the individual decision maker (i.e., the person selecting investments), whilst "PE firm" refers to the organisation the PE investor works for.

[6] PE firms typically raise finance from pension funds, insurance companies, banks and other financial institutions. They can be independent companies (public limited-liability or publicly traded company) or captive subsidiaries of large banks and other financial institutions (Mason and Harrison 1999).

PE investors use in their decision-making process are consistent with the antecedents of firm performance that have been identified by strategic management scholars. Thus, PE investors are expected to evaluate, on the one hand, whether the industry in which the target firm operates is attractive and, on the other, whether the target firm has resources and capabilities that give it a competitive advantage over its rivals (Grant 1991).

The aim of this chapter is to discuss decision making, in the context of PE investment choices, and to address limits to human cognition, in order to propose a decision-making model for PE investors. Decision making is a recurrent theme in many different disciplines. Economists have applied rational models to the analysis of choice behaviour; mathematicians and statisticians have used modelling techniques; organisational theorists, sociologists and social psychologists have studied behavioural aspects of decision making; and psychologists have focused on cognitive behaviour (Miller *et al*. 1996). Decision making has also been studied by strategic management scholars. Research has ranged widely, from analysing individual decision making, to focusing on the cognitions of executive decision makers, to investigating decision formulation and implementation in complex organisations (Fiol and O'Connor 2003, Rajagopalan *et al.* 1993, Schwenk 1988, Stubbart 1989). Decision making is an important issue, since it can help explain actions occurring in organisations (Gioia and Poole 1984) and account for how effectively businesses operate (Miller *et al.* 1996). This dissertation focuses on a specific type of decision making, which is related to investment choices. Since PE investors' decisions are guided by an assessment of strategic prospects of target firms, choice models proposed by strategic management literature are a suitable perspective to address such decisions.

The chapter is structured as follows: first (Section 2.2), rational choice models of decision making are introduced, with reference to Simon's (1957) concept of bounded rationality and the use of cognitive mapping (Axelrod 1976) and heuristics (Tversky and

Kahneman 1974). Second, existing literature on investor decision making is reviewed, focusing on differences deriving from the stage of investment i.e., start-ups vs established firms (Section 2.3). Third, reasons for applying the decision-making model to family firms are introduced, reflecting the fact that they are a prevalent form of organisation worldwide (Section 2.4). Fourth, antecedents of firm performance are analysed, from both an industrial economics and a resource-based view perspective, and hypotheses are presented (Section 2.5). The chapter ends with concluding remarks (Section 2.6).

2.2 Rational choice models of decision making

In neo-classical economics it is assumed that individuals are rational decision makers, following a step-by-step process, which is logical and linear, in order to arrive at an optimal solution that maximises their utility (Miller *et al*. 1996). According to this view, decision makers identify the issue to be solved, collect and organise information, identify alternative solutions, compare solutions to pre-defined criteria, rank solutions in order of preference, and finally make an optimising choice. By assuming that individuals are rational utility-maximisers, economists can apply a rigorous theory of rational choice using mathematical models and econometric equations (Stubbart 1989). Until the late 1980s, this assumption was also accepted by many leading strategic management scholars. For example, Schendel and Hofer (1979) corroborated Chandler's (1962) earlier ideas that strategic decision making is an intentional and rational activity whereby managers consciously allocate a firm's resources to ensure its long-term survival potential (Stubbart 1989).

The fact that early strategic management scholars did not explicitly address cognitive aspects of strategy can be seen as a limitation of their theories of rational choice. These theories were not able to explain how individuals make decisions in an uncertain environment, especially considering they are generally unsure about their preferences and

unclear about available alternatives and their effects (Hogarth 1980, Kahneman *et al.* 1982, Simon 1957, Smircich and Stubbart 1985, Thurow 1983). These concerns stemmed from the realisation that individuals are not perfectly rational (Cyert and March 1963, Newell and Simon 1972, Simon 1957) and from the recognition of the importance of cognition in the strategy process (Huff 1990, Schwenk 1984).

Simon (1957) was one of the first scholars to investigate limits to human rationality. These are due, first, to incompleteness of knowledge. Perfect rationality requires complete knowledge and an ability to anticipate all possible consequences that follow a choice. Instead, individuals have a fragmentary understanding of likely consequences of their decisions. Second, individuals have difficulties of anticipation: since consequences of their choices lie in the future, they need to use imagination to overcome this shortcoming. Third, their scope of behavioural possibilities is limited: perfect rationality requires making a choice among all possible alternative behaviours and, in reality, only a limited number of such alternatives come to mind.

Limits to human rationality derive from cognitive limitations i.e., from boundaries in the human ability to know (de Wit and Meyer 2002). One of the main limitations is partial information processing capacity, which causes individuals not to use all the information that might be available to solve a problem or make a decision. Instead, they use cognitive heuristics i.e., mental shortcuts or "rules of thumb" that allow them to simplify the problem (Janis 1989) and deal with potentially large amounts of data that are available to them, by focusing on a few key variables (Tversky and Kahneman 1974).

In order to use heuristics, decision makers need to make some assumptions (Mason and Mitroff 1981), which form the basis for their frames of reference or cognitive maps. Cognitive maps are defined as "concepts about aspects of the decision environment and beliefs about cause-and-effect relationships between them" (Schwenk 1988: 45). Thus,

cognitive maps are interpretative lenses, or mental representations, that people have of the world and of how it works[7]. In other words, they are symbol-processing systems, allowing individuals to access and perceive the outside world and guiding their actions (Stubbart 1989). Cognitive maps contain variables that are considered to be relevant to the problem and arrows linking such variables, representing causal relationships that the decision maker believes to exist between them (Axelrod 1976). As a result, cognitive maps are used by individuals as descriptive models in order to explain the past, make decisions in the present, and predict the future (Axelrod 1976). They are formed over time through education, experience and interactions with other individuals and reflect the importance people attribute to different variables (Anderson 1983, Schwenk 1988).

Another limit to cognition is due to the fact that individuals have limited information sensing ability, which is a result of the complexity of the world and of the relative simplicity of human senses (de Wit and Meyer 2002). Cognitive maps help individuals also with regard to this type of limitation, since they provide an interpretative filter, through which individuals can select external *stimuli* and understand what they see (Johnson and Scholes 1993).

The third limitation to human cognition is caused by individuals' limited information storage capacity. Thanks to cognitive heuristics, however, they can simplify large quantities of complex information by categorising and organising it in such a way that makes it easier to go back to it at a later stage (de Wit and Meyer 2002).

Thus, even when individuals try to be fully rational, they are generally confronted with issues that are not clearly defined; information may be unavailable, difficult or costly to obtain; alternative solutions may be hard to identify; and decision criteria may be uncertain or not agreed upon. Furthermore, decision makers may be confronted with too many sources of information, possible alternatives and criteria, all of which need to be processed, often with

[7] The concept of mental representations was first formulated by Descartes, who referred to them as "imprints" (Cottingham 1986). These are formed in the human brain as sensory stimuli reach the nervous system, creating mental impressions of external objects.

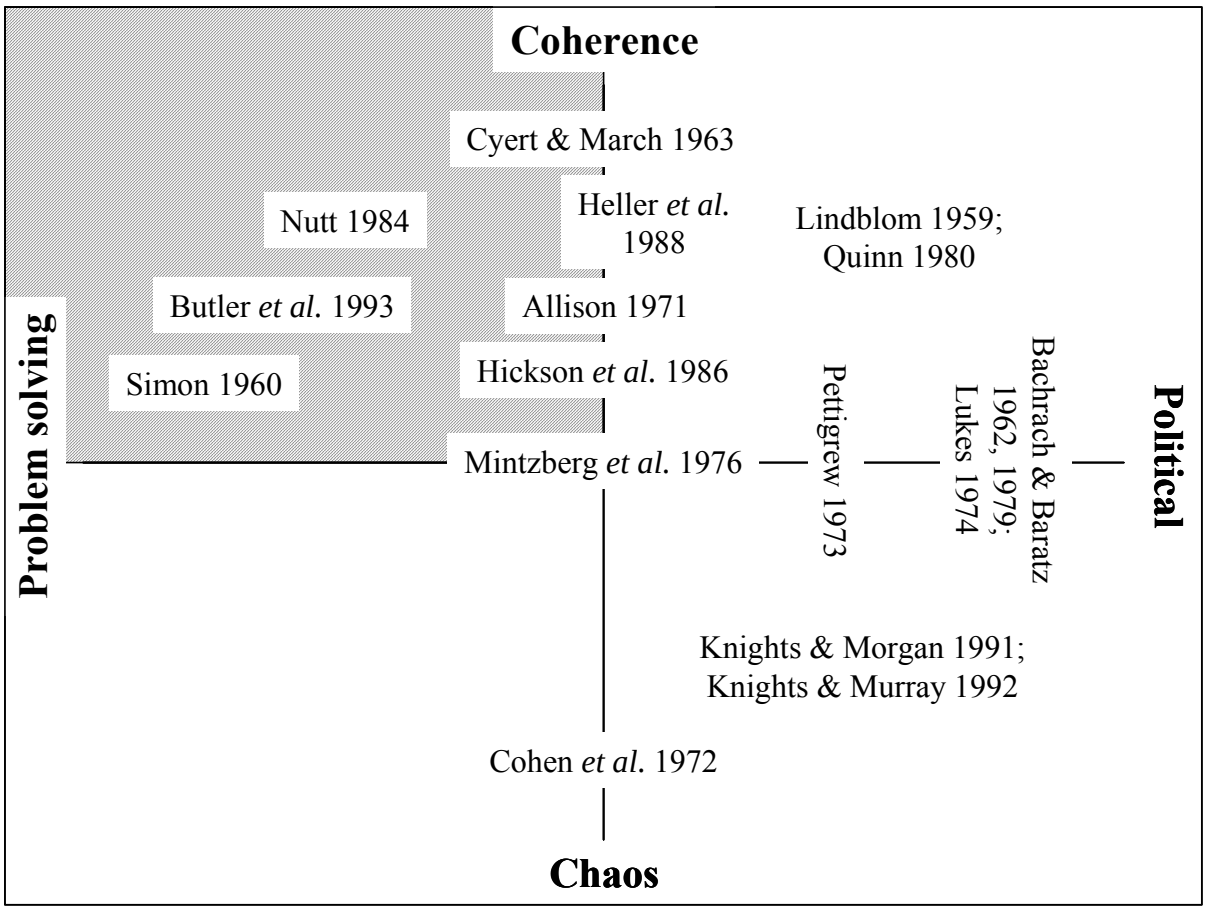
only limited time and energy (Miller *et al.* 1996). In view of this, Simon (1957) introduced the concept of "bounded rationality" whose outcome is likely to be a "satisficing" rather than an "optimising" choice (Cyert and March 1963). This means that individuals are unable to be fully rational, in the sense suggested by neo-classical theorists. They are not irrational, however, since they can follow a reasoned decision-making process nevertheless. The concept of bounded rationality underlies the analysis of cognitive simplification. Because their rationality is limited, decision makers construct simplified mental models when they are dealing with complex problems (Simon 1957, 1976), which do not take into account all possible choices, sources of information and outcomes.

In light of this discussion, the theoretical model that is proposed and tested in this dissertation is based upon the assumption that, when PE investors evaluate whether to invest in a firm or not, they find themselves making decisions under conditions of uncertainty. Therefore, they rely on heuristics to process information and use a limited number of variables in order to reach a decision. Thus, following Miller *et al.* (1996), it is assumed that PE investors are boundedly rational individuals who adopt a coherent, step-by-step, problem-solving approach, in order to search for satisfactory solutions given their objectives i.e., identify promising investment targets.

Miller *et al.*'s (1996) overview of decision-making research is useful to put this type of decision making in context. These authors differentiated researchers according to two dimensions: the process action and the political interest dimension (see Fig. 2.1). The first dimension – process action – goes from "coherence" to "chaos". According to the coherent view, decision making is a sequenced and linear process and reflects attempts by individuals to take a step-by-step approach (Heller *et al.* 1988, Lindblom 1959, Quinn 1980). Cyert and March (1963) had a coherent view, because they considered individuals as pursuing "intended rationality", despite limitations to rationality, and intention can be viewed as a form of

coherence. Allison (1971) proposed three alternative models to interpret the Cuban missile crisis. These were based on the rational model of decision making, although they were also affected by interests and external influences. In this sense, decision making can be seen as being in line with Simon's (1957) satisficing model of decision making. Hickson *et al.* (1986) focused on process and described a spectrum of process characteristics. Since these imply an order in the decision-making process, their work can be considered to be closer to the coherent, rather than the chaotic, view.

Fig. 2.1: A map of decision-making studies



Source: Miller *et al.* 1996

According to the chaotic view, decision making is not linear, sequenced and rational. Instead, it is discontinuous and not always under control (Miller *et al.* 1996). Mintzberg *et al.* (1976) analysed various strategic decisions, finding evidence for cycling and recycling of

information leading to constant adjustment of the decision. Therefore their work can be positioned half-way on the process action dimension. According to Knights and Morgan (1991) and Knights and Murray (1992) decision making is not always under control. At the extreme of the chaotic dimension are Cohen *et al.* (1972), who viewed the decision process as a "garbage can", which is typical of organized anarchies i.e., very loosely structured organizations. PE investment decision making is positioned more towards the "coherence" end of the spectrum, because it follows a step-by-step process (Tyebjee and Bruno 1984).

The second dimension – political interest – goes from "problem solving" to "political". Simon (1960) is positioned towards the problem solving end, since he proposed a negotiated view based on a problem-oriented approach. Although individuals' rationality is constrained, they set objectives and search for satisfactory solutions. Butler *et al.* (1993) argued that, in order to be effective, decisions need to be accurately analysed through computation and judgement and that inspiration alone is not sufficient. Nutt (1984) identified patterns in search processes, again suggesting a problem-solving type of approach. Towards the other end of the political dimension, Pettigrew (1973) considered power as a key factor explaining decision making. Bachrach and Baratz (1962) talked about the importance of power in decision making and viewed non-decisions as controversial issues that are not being discussed. Lukes (1974) considered unobservable behaviour and conflict, which are even harder to detect than overt power. PE investment decision making is positioned closer to the "problem solving" end of the spectrum because investment decisions are based on setting clear objectives, acquiring information and using a set number of criteria to choose investee firms (Shepherd 1999).

Accordingly, this research can be positioned in the top left quadrant of Fig. 2.1 (which has been shaded).

Although PE investors are problem-oriented and (boundedly) rational, this does not make the study of their decision-making process any easier. As suggested by social judgement literature, it is difficult to identify individuals' decision-making models (Keats 1991). This is because decision makers find it challenging to isolate the variables they use, identify the links between the variables, and express the process by which they combine information into a decision heuristic. Furthermore, when they are asked how they have arrived at a decision, individuals are often inaccurate when they describe the heuristics they have used (Keats 1991). Thus, rather than capturing "espoused theories" i.e., those that people say are at the basis of their actions, this dissertation sets out to identify "theories in use", which are those that actually govern behaviour and can be inferred from how individuals behave (Argyris and Schon 1974). This can be done using a positivist approach, employing procedures such as inferential statistics, hypothesis testing, experimental and quasi-experimental design, whose aim is to manipulate theoretical propositions using the rules of formal logic (Lee 1991). In this sense, models of decision processes can be constructed using methods – such as conjoint analysis or policy capturing – which are appropriate for capturing individual decision makers' theories in use (Rajagopalan *et al.* 1993), involving *a posteriori* analysis of the decision process. The choice of methodology and research design are discussed in greater detail in Chapter 3.

In conclusion, starting from the premise that rational analytical approaches dominate strategic decision processes (Hitt and Tyler 1991), this dissertation draws on two bodies of literature. First, it is based on strategic cognition literature (Axelrod 1976, Tversky and Kahneman 1974), which treats strategic decision making as an example of decision making under uncertainty and views individuals as decision makers who employ heuristics in order to deal with a complex and uncertain environment. Second, this dissertation draws on cognitive mapping literature, according to which individuals construct simplified models of reality

(mental models) in order to be able to make decisions (Schwenk 1988, Stubbart 1989). This study focuses on a specific type of decision making – PE investors deciding whether or not to invest in a firm – which, according to the literature, is based on the use of a restricted number of criteria (Newell and Simon 1972, Stahl and Zimmerer 1984). Although most previous studies of the investment process have focused on early-stage investments (Bygrave and Timmons 1992, MacMillan *et al.* 1985, Tyebjee and Bruno 1994), it is accepted that, in general, investment decisions are multi-stage processes (Zutshi *et al.* 1999) and therefore it is reasonable to expect that PE investors (who are later-stage investors) are also rational individuals following a step-by-step approach that is similar to venture capitalists'. Therefore, PE investors are considered to be rational decision makers, albeit boundedly rational, who select companies to invest in by constructing simplified models of reality and using heuristics (Tversky and Kahneman 1974). The aim of this dissertation is to identify and analyse the theories in use that are adopted by this type of investor. The next section reviews existing literature on the topic of investor decision making.

2.3 Previous research on investor decision making

The decision by a PE investor to take an equity stake in a firm can be viewed as a specific type of acquisition decision, involving a whole business unit, or division of a firm: it is a major strategic decision, characterised by a high degree of complexity and ambiguity; the amount of available information often exceeds processing limits and, therefore, decision makers cannot deal with all the variables and data involved (Duhaime and Schwenk 1985). Therefore, decision makers are likely to use heuristics (Tversky and Kahneman 1974), as illustrated in the preceding section.

Previous research on investment decisions has mostly focused on early-stage investments by venture capitalists (e.g., Meyer *et al.* 1993, Riquelme and Rickards 1992,

Tyebjee and Bruno 1984, Zacharakis and Shepherd 1999). This type of investment allows entrepreneurs to develop their concept into a business, start making their products or offering their services and help expand the business in its early stages. This is a well developed area of research, which has shown that, in deciding which business ideas to invest in, venture capitalists are consistent in their use of selection criteria (Muzyka *et al.* 1996) and rely on performance determinants stemming from strategic management literature (Shepherd 1999).

Based on a review of 18 studies on investment decision determinants by venture capitalists – therefore focusing on start-ups – the most important criteria relate to the entrepreneur and the management team in the target firm, the product being offered, the industry, and financial considerations. These are summarised in Table 2.1.

Table 2.1: Venture capitalist investment decision determinants*

Factors	**Entrepreneur/ Management**	**Product**	**Industry**	**Financial**	**Other**
No. of papers	16	11	10	7	3
Examples	Skills Experience Track record Reputation Staying power	Prototype Feasibility Differentiation Protection Timing	Growth potential Competition Environmental threats	Cash-out potential Return	Well written business plan Proposed implementation

* Adapted from Shepherd and Zacharakis's (1999) review of papers

Entrepreneurial and managerial criteria are the most recurrent in the research considered (based on the number of papers in which they have been found to be significant). They refer to the experience of the individual proposing the deal, the entrepreneur's skills and capabilities (Bruno and Tyebjee 1983, 1986, Dixon 1991, Riquelme and Rickards 1992, Tyebjee and Bruno 1981, 1984), the quality of the venture team and its familiarity with the market (Hisrich and Jankowitz 1990, Kolodinsky *et al.* 2000, MacMillan *et al.* 1985, Meyer *et al.* 1993), past performance and track record of both the entrepreneur and the team (Gorman and Sahlman 1986, Hutt and Thomas 1985, MacMillan *et al.* 1985, Sandberg *et al.* 1988), as

well as the ambition of the entrepreneur and their desire for success, creativity, tenacity and enthusiasm (Kahn 1987).

The second most important determinant, based on the number of papers in which it has been found to be relevant, has to do with the product. Criteria relate to the product's feasibility, which is more likely if a prototype has already been developed (Bruno and Tyebjee 1983, 1986), differentiation (Hutt and Thomas 1985, Tyebjee and Bruno 1984), uniqueness, patent protection (Hisrich and Jankowitz 1990, Kahn 1987), and timing to market (Meyer *et al.* 1993).

The third factor is related to industry and competition considerations. It includes industry size, growth and attractiveness (MacMillan *et al.* 1985, Sandberg *et al.* 1988, Tyebjee and Bruno 1984) as well as competition levels (Bruno and Tyebjee 1983, 1986, Hutt and Thomas 1985).

Financial factors are also important in new venture selection: specifically, financial projections (MacMillan *et al.* 1985, MacMillan and SubbaNarasimha 1986), cash-out potential (Tyebjee and Bruno 1984), expected rate of return (Riquelme and Rickards 1992), and time to break even (Muzyka *et al.* 1996).

Finally, other relevant factors have to do with the strategy implementation of the proposed venture (Meyer *et al.* 1993, Sandberg *et al.* 1988) and with the business plan, which needs to be balanced and well written (MacMillan and SubbaNarasimha 1986).

Existing research has greatly contributed to decision making regarding investment in new ventures. However, in many countries start-ups represent a relatively small proportion of total equity investment activity compared to investments in existing businesses: in 2005, early-stage investments accounted for 32% of total amount invested in Europe, whilst buy-outs of existing businesses accounted for the remaining 68%[8] (EVCA website). Furthermore,

[8] The US market differs from the European one: in 2004, 65% of all deals went to early stage companies (NVCA 2005).

family firms formed a significant proportion of investments in existing firms, accounting for the largest share of PE in some countries such as the UK, Italy and France (CMBOR 2005).

Although past research provides useful and valuable indications with regard to the decision-making factors considered by early-stage investors, these can be expected to differ when established businesses are evaluated. Depending on the stage of development of the investee firm, external investors will have to provide differing financial and strategic support. For example, start-ups and very young firms are less developed and riskier, and therefore require more non-cash resources such as strategic support. Later-stage firms tend to be less risky, because they are already established, and generally require larger amounts of cash (which is related to the size of the investee business) and less business and strategic support (Elango *et al.* 1995).

Firms go through various stages of development (Galbraith 1982, Grant 2004, Kazanjian and Drazin 1989, Ruhnka and Young 1987), from creating a business idea, to developing a proprietary technology, making a prototype, producing and market testing a number of models, and beginning volume production. In these early phases, key success factors are product or service innovation and the establishment of a credible (firm and product/service) image through technology and design (Grant 2004). Therefore, potential investors look for entrepreneurs offering a "concept" with potential for earnings growth (Hisrich and Jankowicz 1990), as well as proprietary products and product uniqueness (Elango *et al.* 1995).

As products move along their life cycle, key success factors change (Levitt 1965, Kotler 2000, Rogers 1962) and these are mirrored – from a supply side – by the industry life cycle (Grant 2004). During the growth stage, technology becomes more standardised and, although competition tends to increase, profitability can be high as demand exceeds industry capacity (Grant 2004). Therefore, key success factors include a strong brand, new product

development and an ability to scale up. Scale becomes even more important during the maturity phase, which is characterised by increased product standardisation and price competition. Key success factors in this phase include pursuing cost efficiency and high quality (Grant 2004). In accordance to this, later-stage investors have been found to be interested in firms with market acceptance (Elango *et al.* 1995).

Previous studies comparing investment criteria at different stages have found no significant differences (Carter and Van Auken 1994, Elango *et al.* 1995) or have found that investors evaluate similar "categories" of criteria (those in Table 2.1) with some variation within them (Birley *et al.* 1999). These categories of criteria are analysed in sequence below.

With regard to managerial factors, Elango *et al.* (1995) found that there were no differences with regard to the desired quality of management by stage of investment. This was considered to be a key factor both in early- and in late-stage investments. However, other studies have found some variation between early- and late-stage evaluation. Hisrich and Jankowicz (1990) observed that past track record and flexibility are considered to be crucial in early-stage investments, while in later-stage investments the focus seems to be more on performance on the current job. Fried and Hisrich (1991) concluded that late-stage investors are more interested in managerial capabilities than early-stage investors, but this may simply be because early-stage entrepreneurs often have not yet been able to prove their leadership capabilities and general management experience. Birley *et al.* (1999) found that investors focus more on the team leader when they evaluate early-stage investments, in order to assess their ability to build a team and their leadership capabilities. In later-stage investments, instead, investors focus on the management team (rather than on the team leader) and consider the team's characteristics, proven ability and success in managing conflict.

Criteria relating to the product are more relevant for early-stage evaluation, since entrepreneurs looking for equity need to prove the uniqueness of their product or technology,

as well as their ability to create post-entry barriers (Birley *et al.* 1999). Therefore, investors will focus on market potential (Elango *et al.* 1995). Instead, for later-stage firms, investors are more interested in evaluating market acceptance (Elango *et al.* 1995).

With regard to industry, in general, an industry offering high growth potential is considered to be important, since it can lead to earnings growth (Elango *et al.* 1995, Hisrich and Jankowicz 1990). Previous studies on how evaluation criteria differ by stage of investment show mixed results. While Birley *et al.* (1999) and Carter and Van Auken (1994) observed no significant difference in market growth as a criterion for evaluating early- and late-stage investments, Elango *et al.* (1995) found that high growth rates were more important for investors with more early-stage firms in their portfolio than for investors whose portfolio was composed mostly of later-stage investments.

With regard to financial considerations, previous studies do not indicate considerable differences between stages of investment. Since early-stage ventures still need to establish and prove themselves, it might be expected that early-stage investors look for greater returns in order to compensate for the greater level of risk. However, Birley *et al.* (1999) found that early- and late-stage investors attributed similar importance to criteria such as "ease of cash out" and "expected rate of return". Carter and Van Auken (1994) did not find any significant differences with regard to expected returns. Although Elango *et al.* (1995) found that early-stage investors look for greater return potential than at later stages, differentials were not very great.

In summary, existing literature has identified the importance of a limited number of criteria that are used by venture capitalists in their selection decisions regarding start-up investments. PE investors are expected to consider similar categories of criteria to those taken into account by venture capitalists, with some differences within categories. Management capabilities can be assumed to be important, although the focus is expected to be more on the

team than on the individual entrepreneur (Birley *et al.* 1999). Criteria relating to the product are not expected to be relevant in the evaluation of later-stage investments, since established firms are already beyond the prototype stage and can already prove the extent of market acceptance of their products (Elango *et al.* 1995). Criteria relating to industry growth are expected to be pertinent for evaluation of later-stage investments (Birley *et al.* 1999, Carter and Van Auken 1994), although buy-outs typically occur in mature industries, while start-ups looking for venture capital often operate in higher growth environments, such as high-tech/bio-tech industries (Robbie *et al.* 1999, Wright and Robbie 1998). Thus, although early-stage investments are more often positioned in higher-growth environments, nevertheless industry growth is expected to be an important criterion for late-stage investments, too. Finally, given that the objective of both venture capital and PE firms is to achieve capital gain, financial issues, such as expected rate of return, can be expected to be relevant in the evaluation of late-stage investments (Birley *et al.* 1999, Carter and Van Auken 1994, Elango *et al.* 1995, Wright and Robbie 1998).

The following section (Section 2.4) introduces family firms, highlighting their importance and explaining why this study focuses specifically on them.

2.4 Family firms: definition and relevance for research

Family dynamics are far from being a rare phenomenon in organisations, since family firms are the dominant form of economic enterprise throughout the world (Barca *et al*. 1994, Beckhard and Dyer 1983, Chrisman *et al.* 2003a, La Porta *et al.* 1999, Shanker and Astrachan 1996). For example, in the US, it is estimated that over 90% of firms are family businesses and that they account for about half of the country's gross domestic product (Shanker and Astrachan 1996).

To date there is no widely accepted definition of family business in the literature (Astrachan *et al.* 2002, Corbetta 1995, Handler 1989). Birley (2001) asked owner-managers in 16 countries if they considered their firms to be family businesses and found that there was significant variation even in how entrepreneurs perceive themselves.

However, it is important to clarify the definition used, since this can affect a study's results (Westhead and Cowling 1998). For the purposes of this research, family firms are defined as *private companies in which members of one or more families, related to each other by blood/marriage or linked by solid alliances, hold a controlling interest and are involved in the management of the business, also on a cross-generational basis*. This is a fairly broad definition, according to Corbetta (1995), as it considers family members both as owners and as managers[9]. The definition is in line with that proposed by Sharma *et al.* (1997) and implies that family interests and values shape and influence the goals and strategies being pursued: this means that the two subsystems of family and business co-exist and are closely linked.

Although there is increasing interest in family firms, most scholarly publications have traditionally appeared in dedicated journals and the family variable has often been missing in mainstream management literature (Dyer 2003, Schulze *et al.* 2001). Despite their prevalence, systematic research on family firms only really started in the 1980s, with the publication of a special issue of the journal Organization Dynamics in 1983 and the creation of the Family Business Review (Astrachan 2003). As well as bringing together scholars interested in the field and focusing attention on family business issues, the FBR has also had the on-going merit of highlighting the need for achieving greater theoretical development, agreeing on a definition of family firms, broadening the research methods and reaching greater conceptual and empirical rigour (Bird *et al.* 2002, Handler 1989, Wortman 1994).

[9] The definition is reflected in the family firm profiles that were evaluated by respondents, in which, for example, family members were both owners and managers.

The Family Business Review[10] (FBR) was the earliest outlet dedicated to family firms and still remains the main one. In their review of family business research, Bird *et al.* (2002) found that 85% of the 127 papers published in the period 1997 to 2002 appeared on the FBR, the remaining being in the Journal of Small Business Management (8% of papers), Entrepreneurship Theory and Practice (6%) and Journal of Business Venturing (2%). These findings were confirmed by Dyer (2003) who analysed the Academy of Management Review (AMR) and Academy of Management Journal (AMJ) in 2000-2001 and found that, of the 59 AMR articles considered, none included the family as a key variable and, of the 69 articles in AMJ, only one did.

The reason for this dearth of attention may lie in the rise of management theories at the beginning of the twentieth century, which were based on assumptions of rationality. Family firms, instead, were viewed as being antithetical to good business practices, because of the family variable, which added non-economic elements linked to emotional factors. Therefore they were viewed as a temporary organisational form (i.e., a stage in the growth of businesses), which was destined to disappear due to dimensional growth on the one hand and increased complexity on the other (Corbetta 1995, Dyer 2003). This clearly did not happen, given that family firms are still prevalent today and many of them have indeed become large.

Another reason is a more practical one and is rooted in the greater difficulty in obtaining information on family businesses, compared to larger, often publicly held, companies, and in the belief that non-family firms are more willing to cooperate with management scholars in their research (Litz 1997). This has also proven not to be necessarily true: for example, in the US, there are large databases now available such as the American Family Business Survey (Astrachan 2003) or the Arthur Andersen American Business Survey (Schulze *et al.* 2003).

[10] The FBR was first published in 1988 by the Family Firm Institute, a US-based organisation targeting family business advisors, consultants, educators, and researchers.

Rising interest in family business is indicated by the increasing rigour in dedicated outlets (mainly the FBR), the growing number of papers that are appearing on mainstream management journals and the publication of special issues on family firms[11]. These are all important indications of growing awareness and positive signs for the application of mainstream theories to family businesses (Chrisman *et al.* 2003a). The increased attention to the family variable is an important step forward because, by including it, scholars can avoid reaching incomplete or misleading findings (Dyer 2003) and make mainstream theories more robust and valuable (Chrisman *et al.* 2003a), since they become applicable to the vast majority of organisations.

Previous research on family businesses has mostly paid attention to management practice and strategy, succession, factors distinguishing family businesses from non-family ones, and conflict within family firms (Bird *et al.* 2002). Fewer papers have investigated factors influencing decisions on financing and capital structure by family business owners (Romano *et al*. 2001). Furthermore, both strategic management and financial scholars, addressing issues of capital structure and financing choices in family firms, have tended to focus on the firm's perspective (Barton and Gordon 1987, Harris and Raviv 1991, Myers 1984). From a family firm's perspective, there are various reasons why its owners may want to look for an external equity investor, including: accessing funds for their growth aspirations and/or acquisition plans (in addition to, or instead of, internally generated funds); solving succession problems when there are no (or no suitable and/or interested) family heirs or some family members wish to sell their shares and exit the firm; preserving independent ownership of the firm (rather than selling, for example, to a competitor); and allowing the family to continue to be involved in the firm, since vendors can maintain a stake and younger family

[11] These are the July and September 2003 issues of the Journal of Business Venturing, and the June 2003 and May 2005 issues of Entrepreneurship Theory and Practice.

members can keep on working in the firm (Corbetta 1995, Howorth and Westhead 2002, Wright and Coyne 1985).

From a PE firm's perspective, some researchers have examined post-investment issues, such as investee firm performance and conflict between outside investors and management team. However, the PE phenomenon has largely been ignored (Higashide and Birley 2002, Howorth and Westhead 2002, Howorth *et al.* 2004). Even less has been written on the selection strategies and criteria used by PE investors in choosing which family firms to invest in. In a paper on issues of control, liquidity and capital, Dreux (1992) presented a conceptual framework for family businesses and proposed a list of criteria considered by investors (which included not only PE investors but also pension funds and insurance companies) to assess potential investment in a family business. Criteria included strong management, attractive economics (such as revenues and profits), and a growing market. Upton and Petty (2000) evaluated transition investments i.e., deals aimed at funding the transition of family firms from one generation to the next. They asked equity investors to rank six factors they would consider in order to decide whether to take part in transition funding. The most important criteria were the presence of a qualified successor, potential to grow, and a strategic business plan. However, there do not appear to be any published studies that systematically investigate the criteria that are associated with PE investor decision making with regard to family firms. The present research is an attempt to fill this gap.

In fact, previous research has often focused on reasons why PE investors would *not* want to invest in family firms. First, often these firms are too small, which precludes them from many non-traditional forms of financing, including PE (Poutziouris 2001, Sirmon and Hitt 2003). Second, family business owners are also moved by non-economic reasons, such as job creation for family members, and these are often found to work alongside, or prevail on, economic reasons, such as pursuing personal wealth maximisation (Chrisman *et al.* 2004,

Corbetta and Salvato 2004, Sharma *et al.* 1997). PE investors, in contrast, focus on economic objectives. Third, PE investors may not find it easy to come across potential targets because many families avoid sharing equity with non-family members. There are various reasons for this, including fear of losing control of the firm, not wanting to share with others the results of one's entrepreneurial and managerial skills, wanting to maintain maximum freedom in negotiating the future of the firm, or fear that an outside investor will have a shorter time perspective than the family's (Corbetta 1996, Dreux 1992, Poutziouris 2001, Sirmon and Hitt 2003).

Despite these potential concerns, family firms account for a sizeable proportion of total PE activity in Europe: on average, in the period 1995-2004, they accounted for 23% of all buy-outs in Europe (excluding the UK) and 34% of all buy-outs in the UK, which is, by far, the largest PE market in Europe. Moreover, family firms are the single largest category of buy-outs in some European countries, including Italy, France and the UK[12] (CMBOR 2005).

In conclusion, given their importance both from a theoretical perspective (as a prevalent form of organisation) and from an empirical perspective (as recipients of PE investment), family firms are the focus of this study. It has been said that "it is a great time to be studying family firms" (Zahra and Sharma 2004), thanks to a growing awareness among policy makers of their importance in creating employment and contributing to economic growth. This is reinforced by the fact that many family firms are facing succession around the world (Shanker and Astrachan 1996, Upton and Petty 2000) and that PE may be a possible solution, especially when it is unfeasible to maintain the firm in the family, for lack of a suitable successor. PE firms may also become partners for family firms choosing to grow but that do not have the necessary financial resources to do so. These are firms that have come to realise they need to grow in order to maintain their competitive advantage by becoming more

[12] These data refer to buyouts and buyins, which are the largest categories of PE investments (see Section 4.2 for definitions).

innovative, strengthening their position in existing markets, and penetrating new markets (Corbetta 2005).

In the next section, a model for PE investment is proposed, based on key criteria that are drawn from existing strategic management literature. Since investment decisions are multi-stage processes (Zutshi *et al.* 1999) and PE investors are rational individuals who select companies by constructing simplified models of reality (Simon 1976) and using heuristics (Tversky and Kahneman 1974), it is reasonable to expect that evaluating a family firm (rather than another type of firm) will not make their decision process any more or less rational. The main difference is expected to be in the criteria used in the decision-making model (i.e., additional family-related criteria will be included in the model). This approach is similar to Birley *et al.*'s (1999). In order to compare criteria used by investors at different development stages of the investment (early- vs late-stage), they built on an existing list of criteria, which had been developed by Muzyka *et al.* (1996) for start-up evaluation. Similarly, the decision-making model proposed here includes some of the variables considered in studies on start-up evaluation, with the addition of new factors reflecting the later stage and the family nature of target firms.

2.5 The proposed model for investment decision making

The theoretical model was formulated in two steps, considering, first, the underlying rationale for PE investment and, second, the specific criteria used in evaluating potential targets. These are discussed below.

In terms of underlying rationale, the literature on buy-out investments proposes three different perspectives[13]. Most scholars have adopted an agency theory lens, viewing buy-outs as a governance and control device. According to this view, it is possible to reduce agency costs in investee firms through the introduction of stricter governance systems and more effective incentive systems (Jensen 1993). This perspective considers firms operating in industries with mature products and stable cash flows, in which new governance mechanisms can restrict value-destroying investments that are being pursued (Jensen 1993). The typical firm is taken to be one that can benefit from incentive effects deriving from a more concentrated ownership, disciplined approach to debt and effective monitoring by active investors: for example, a buy-out of a public firm being taken private in order to prevent value destruction from over-investment in mature or declining industries; or of a firm that used to belong to a parent company and, having to follow orders from headquarters, was not allowed to pursue growth-oriented strategies (Jensen 1993, Wright *et al.* 2001). Family firms do not generally fall into this categorisation, since they already typically have a concentrated ownership and do not suffer from costs deriving from the separation of ownership and management (Jensen and Meckling 1976). Nevertheless, this perspective can be useful because, as will be seen below, a different type of agency cost can arise in family firms as a result of altruism among family members (Chrisman *et al.* 2004, Schulze *et al.* 2001). Thus, PE investment can alleviate this problem by introducing cost efficiencies.

According to the second perspective (Robbie *et al.* 1999, Wright *et al.* 2001), buy-outs are a route for strategic managerial innovation because they offer an opportunity for introducing changes in strategy, organisational structure, managerial practices and entrepreneurial activities (Markides 1998, Reid 1996) in mature firms that would otherwise lack a *stimulus* towards strategic change. In this sense, buy-outs can improve the use of firm

[13] These considerations can be extended from buyouts to all types of PE, since they share the same underlying logic and objectives. For example, Wright *et al.* (2001) refer to buyouts but extend their analysis to buy-ins, LBOs, and so on (for definitions of these types of PE, see Section 4.2).

resources, such as management and employees, that were previously restricted or lacked incentives due to prior ownership arrangements (Wright *et al.* 2001). Similarly, buy-outs can provide finance needed to grow through acquisition in order to pursue a buy-and-build strategy[14] (Wright *et al.* 1998). Thus, according to this perspective, buy-outs address the entrepreneurial or upside revenue potential of investee firms, rather than cost saving and efficiency improvements. This may be appropriate for family firms that wish to pursue growth but lack the financial resources required or that have become conservative and unwilling to take risks associated with acting entrepreneurially, in an effort to preserve the wealth they have created (Autio and Mustakallio 2003, Sharma *et al.* 1997, Wright *et al.* 2001).

A third way of viewing equity investors is to consider them as risk managers. In this sense, evaluation criteria used to decide whether to invest in a firm are seen as means for assessing the riskiness of a project (MacMillan *et al.* 1985, Zutshi *et al.* 1999). Risks can relate to increasing competition, failure to implement a strategy, mismanagement, leadership inability, and difficulties with exit (MacMillan *et al.* 1985). This perspective, too, can be helpful in the context of PE investors evaluating family firms: for example, PE investors may want to ensure they can limit the risk of conflict among family members, which could lead to mismanagement and failure to implement the desired strategy.

With regard to the criteria used to evaluate potential targets, the literature shows that PE investors aim to achieve high returns from their portfolio companies, by selecting firms that offer future performance potential[15]. Strategic management theory indicates that a firm's performance depends on the attractiveness of the industry it operates in and on the resources/capabilities it bases its competitive advantage on (Barney 1991, Grant 1991, Porter

[14] A buy-and-build strategy is based on growing a PE company portfolio through add-on acquisitions (EVCA website).

[15] PE operators establish the value of, and returns from, a business in different ways. The two most common methods are to determine an appropriate price/earnings (P/E) ratio, by calculating the value of the target firm compared to the values of similar companies quoted on the stock market; and to determine a value for the target firm that will give the PE firm its required rate of return (internal rate of return or IRR) over the period they anticipate being shareholders (BVCA 2004). IRR is the most common measure of performance used in the industry (Murray 1991).

1980). Therefore, the proposed theoretical model for PE decision making draws on strategic management theory, whilst at the same time taking into account the three underlying perspectives on buy-outs that have been analysed above.

According to industrial organisation economics, industry attractiveness is key for achieving superior profitability. Porter (1980) identified five forces of competitive pressure resulting in an industry's potential for profit. These are rivalry among established competitors, bargaining power of suppliers, bargaining power of buyers, threat of entry, and threat of substitutes. Another way to look at an industry is to consider its life cycle, which is defined by changes in the growth rate over time through four stages: introduction, growth, maturity and decline. Changes in demand growth over the cycle affect industry structure, competition and sources of competitive advantage for firms. For example, in a growing industry, demand is generally greater than supply, resulting in limited firm rivalry and high profitability (Grant 2004). In view of this, the proposed model includes industry growth as the environmental variable.

Various studies have indicated that industry effects do not fully explain firm-level profitability (Rumelt 1991) and that firm-level influences also play an important role, specifically a firm's resources and capabilities. According to the resource-based view (Penrose 1959), firms need to exploit differences by taking advantage of their resources and capabilities, since these are the primary antecedents of a firm's strategy and profitability. In order to create competitive advantage, resources should be valuable and rare. They should also be difficult to imitate and non-substitutable in order for the competitive advantage to be sustainable over time (Barney 1991).

Habbershon and Williams (1999) applied the resource-based view to family firms to assess their competitive advantage. They concluded that this type of firm has a distinctive "bundle of resources", which they termed "familiness", resulting from the interaction between

business and family. Sirmon and Hitt (2003) identified the sources of family-firm capital, which allow family firms to develop competitive advantage. These include knowledge, skills and capabilities of individuals (which they termed human capital), relationships between the family on the one hand and suppliers, customers and other stakeholders on the other (social capital), and governance structure and costs (deriving from the involvement of family owners/managers in the firm and their altruistic behaviours, as will be seen below)[16].

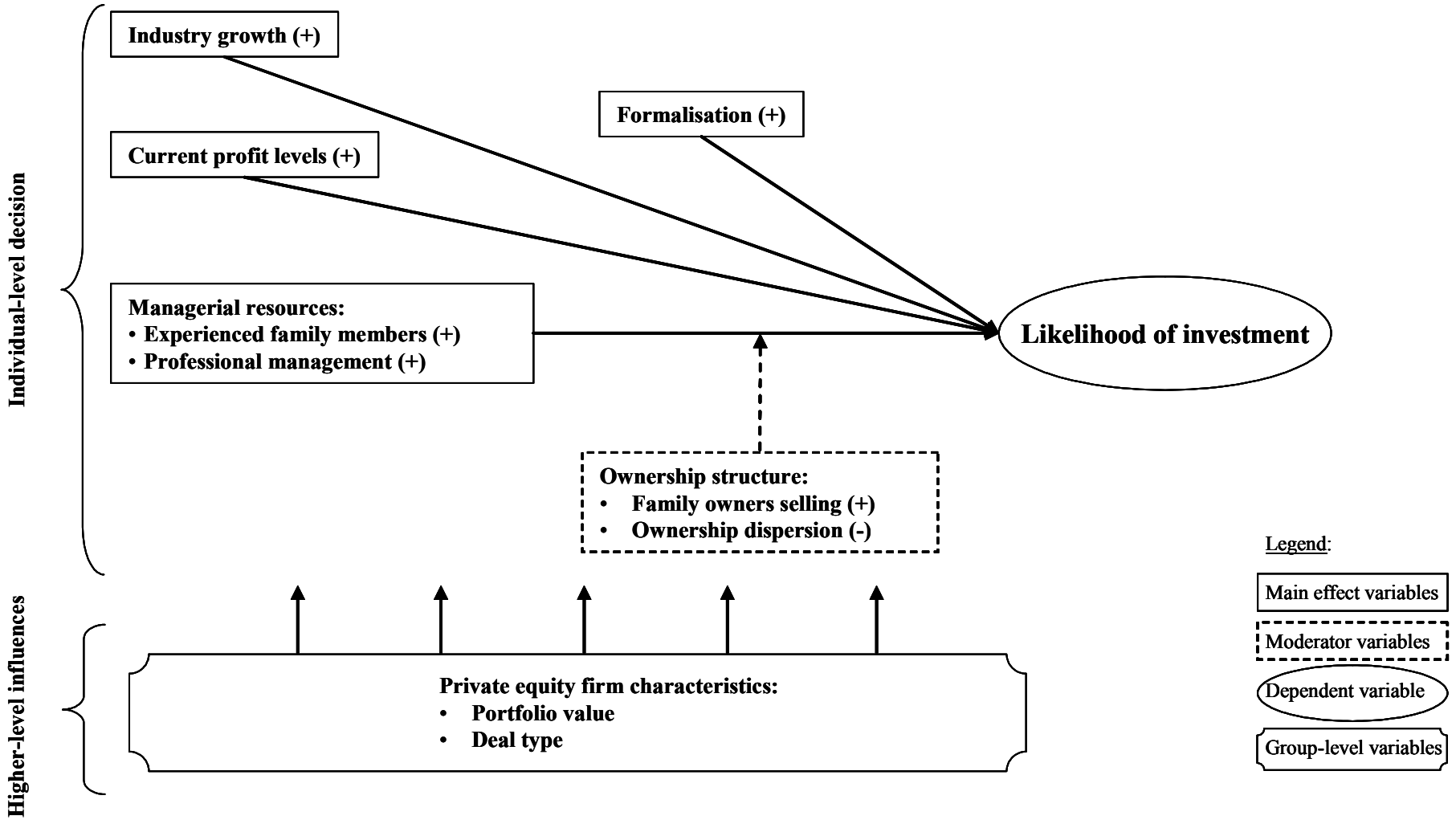
Thus, as well as industry growth, the theoretical model includes six other variables relating to firm resources[17] (see Fig. 2.2). These are analysed in detail below, in light of Sirmon and Hitt's (2003) categorisation of resources and of the previously identified theoretical perspectives on buy-outs. As will explained in greater detail in Chapter 3, in order to investigate decision-making models, it was decided not to ask PE investors to recall the criteria used in their decision making, or to attribute relative importance to a list of predefined criteria. Instead, the research design employed in this study is aimed at identifying investors' theories in use (Argyris and Schon 1974), by evaluating the importance attributed to specified factors, given certain levels of other factors. Therefore, PE investors were presented multi-attribute decision situations (Krantz and Tversky 1971), in which they were asked to appraise their likelihood of investment in hypothetical family firms, which were illustrated through various attribute combinations (i.e., each investment prospect was described through seven attributes or variables[18]). The purpose was to identify the relative contribution of each attribute (and its level, which could take a value of either "high" or "low") to respondents' likelihood of investment (Hair *et al.* 1987). Thus, the following hypotheses should be read

[16] Sirmon and Hitt (2003) also identified two other types of resources: patient financial capital (which is not relevant here since it refers to the tendency of family firms to avoid sharing equity with outsiders), and survivability capital (which is also not applicable since it refers to personal resources, such as labour and money, that family members lend or contribute to the firm in times of need, for example during an economic downturn).

[17] As will be discussed in Section 3.3.1, it was decided to select seven criteria in order to strike a balance between maintaining the simulation manageable and making it realistic.

[18] Although the list of criteria presented to respondents is not exhaustive, these were identified on the basis of a thorough literature review and were pre-tested (see Chapter 3). Furthermore, since experts typically use fewer criteria than would be available, it is more likely that the list used in this study includes irrelevant factors rather than exclude important ones (Stewart 1988, Zacharakis and Shepherd 2001).

Fig. 2.2: Theoretical model for PE investment decision making in family firms



bearing this premise in mind. For example, a respondent who consistently attributes a low likelihood of investment to profiles of family firms with inexperienced family members (regardless of the values taken by all other variables) indicates that their decision rule reflects a universal preference for having experienced family members in the investee firm. Then again, a respondent who indicates high likelihood of investment for firms with experienced family members if there is high ownership dispersion, but low likelihood of investment for firms with experienced family members if there is low ownership dispersion is employing a contingency decision rule (Priem 1992). Thus, by investigating decision rules, it is possible to represent the judgement policies on which the likelihood of investment is based.

Since individual decision makers are organised into organisations (the PE firms they work for) and are exposed to similar *stimuli* within these organisations, the theoretical model also takes into account higher level factors. This has been done in order to include aspects of the environment in which individuals operate in, because they are expected to influence decision making at the individual level (Hofmann 1997). Therefore, the model includes two explanatory variables that are referred to the PE firm the individual decision maker works for. These are the size of the PE firm (measured by the value of the portfolio held) and the type of deal being considered (which can be a majority deal, in which the PE firm takes a controlling stake in the target firm, or a minority deal, in which the PE firm takes a minority stake in the target firm).

The variables and hypotheses are analysed in detail in the following sections.

2.5.1 Industry growth and likelihood of investment

There is considerable literature on the importance of the external environment for firm performance (Ketchen *et al.* 1993, McGahan and Porter 1997) and strategic decisions (Romanelli and Tushman 1986). Although the outside context includes social as well as

economic forces, only the latter are taken into account here, since the industry in which a firm competes is the most important factor (Porter 1980).

The external control perspective is based on two mainstream theories, organisation theory and industrial organisation economics (Hitt and Tyler 1991). Early organisational scholars saw the environment as a source for critical contingencies (Emery and Trist 1965, Lawrence and Lorsch 1969) and viewed organisations as being influenced by environmental turbulence and uncertainty. Keats and Hitt (1988) emphasised that resource scarcity in an industry can lead a firm to expand into new ones, in order to reduce risk.

These views are in line with those of industrial organisation economists, according to whom an industry's structure is a key factor for profitability and, therefore, can affect firm-level strategic decision making (Bain 1956, Barney and Ouchi 1986, Scherer 1980). An industry's structure is shaped by the intensity of competition among rival firms, since strong competition levels can lead to industry-wide losses due to prices being pushed down below cost levels. Thus, structural characteristics can affect firm profitability (Bourgeois 1984, Schendel and Patton 1978). Factors contributing to the intensity of rivalry among competing firms include firm concentration, diversity of competitors, excess capacity, and entry and exit barriers (Bain 1956, Hirshleifer 1988, Porter 1980, Scherer 1980).

Firm rivalry tends to be limited in a growing industry, which is characterised by accelerating market penetration, as technologies become more accessible and prices tend to become lower. Although new competitors are attracted to the industry, growth in demand exceeds growth in supply and firm rivalry tends to be limited. Therefore, industry growth is normally associated with high profitability (Grant 2004).

Research on criteria used by investors in evaluating start-ups indicates that industry growth and attractiveness are key decision-making factors (MacMillan *et al.* 1985, Sandberg *et al.* 1988, Tyebjee and Bruno 1984). Studies on evaluation of later-stage investments have

concluded that an industry offering high growth potential is considered to be important by a PE firm, since it can lead to earnings growth (Elango *et al.* 1995, Hisrich and Jankowicz 1990). A growing industry was also identified by Dreux (1992) as a key criterion for external investors evaluating family firms. With regard to buy-out literature, industry growth can be seen as contributing to the upside revenue potential of investee firms brought about by PE investors (Robbie *et al.* 1999, Wright *et al.* 2001).

Therefore, given the choice between investing in a firm operating in a high-growth versus a low-growth industry, it is hypothesised that:

> ***Hypothesis 1****: Private equity investors' likelihood of investing in a family firm is positively associated with industry growth.*

2.5.2 Firm profitability and likelihood of investment

Although performance is a recurrent theme in management studies, there is wide variation in the literature both in terminology and in definitions used (Venkataraman and Ramanujam 1986). There is also a lack of agreement with regard to the conceptual bases for assessing performance and to the appropriate level of analysis – individual, work unit, or organisation (Ford and Schellenberg 1982). This is partly due to the multidimensional nature of the performance construct, whereby a positive result on one performance dimension may be associated to negative results on another – for example a large R&D investment can lead to sales growth in the long term, but reduce short-term profitability (Chakravarthy 1986, Lumpkin and Dess 1996). However, performance measurement and improvement lie at the heart of strategic management theory (Venkataraman and Ramanujam 1986), since performance is considered to be the time test of any strategy (Schendel and Hofer 1979).

A narrow definition of business performance is based on the use of financial indicators, which are taken to reflect the extent to which a firm's economic goals are met (Venkataraman and Ramanujam 1986). This definition rests on the assumption that financial goals dominate a firm's system of objectives. Financial performance can be measured through various indicators, including sales growth, profitability, earnings per share in the case of a quoted firm, etc. In turn, profitability can be measured by using a number of ratios, such as return on investment, return on sales and return on equity (Venkataraman and Ramanujam 1986). Clearly, this financial approach can be complemented by using other (broader) indicators of operational performance, which can be measured, for instance, through market share, new product introduction, or manufacturing value added (Venkataraman and Ramanujam 1986).

In defining the decision-making model to be tested, it was decided to adopt a financial performance measure. This type of measure has been found to be widely used by venture capitalists, who assess the viability of investments at start-up stage by considering financial projections or expected rates of return (MacMillan *et al.* 1985, MacMillan and SubbaNarasimha 1986, Riquelme and Rickards 1992). Previous studies on financial criteria used to evaluate later-stage investments have not found significant differences compared to evaluation of start-ups (Birley *et al.* 1999, Carter and Van Auken 1994, Elango *et al.* 1995). Dreux (1992) listed "attractive" profit levels as a key criterion for investment in family firms by external investors, since past earnings demonstrate the ability to achieve profits in the future.

Although an investee firm that is already achieving high profitability may limit the potential for upside for a PE firm (Robbie *et al.* 1999, Wright *et al.* 2001), these investors are expected to be more likely to invest in firms that already display positive performance, rather

than pursue badly performing or turnaround situations[19]. Therefore, given the choice between investing in a high-profit versus a low-profit firm, it is hypothesised that:

> ***Hypothesis 2****: Private equity investors' likelihood of investing in a family firm is positively associated with firm profitability.*

2.5.3 Managerial resources and likelihood of investment

According to the normative model of strategic decision making, managers analyse a firm's internal conditions in light of the external environment and, on the basis of this, decide on a strategy (Hitt and Tyler 1991). The strategic choice approach (Child 1972, Montanari 1978) highlights the role that managers play in strategic decision at firm level, with regard to goals, domains, technologies and firm structure. Hambrick and Mason (1984) built on this literature and advocated an upper echelons theory of organisations, according to which strategic choices derive from a combination of objective circumstances and characteristics of top executives. These authors argue that upper echelon characteristics, such as cognitive biases, values, and background features, can affect managerial perception and, in turn, their decisions (Hitt and Tyler 1991). Other scholars have also examined the association between top management characteristics and perceptions, and their strategic choices (Schwenk 1984, 1986). The resource-based view, too, focuses on the role of managerial resources and capabilities. They are considered to be key for formulating and implementing a firm's strategy (Barney 1991), including developing goals, identifying and allocating resources, and formulating action plans in order to pursue long term survival prospects of a firm (Chandler 1962, Schendel and Hofer 1979).

[19] These involve rescuing a firm in financial difficulty from receivership and are generally dealt with by specialised equity firms.

Previous research on investment decisions has indicated that, in the case of start-ups, quality of management (which includes the entrepreneur and his/her venture team) is considered to be a priority in decision making (Hisrich and Jankowicz 1990, Kolodinsky *et al.* 2000, Tyebjee and Bruno 1984). A study comparing criteria used to evaluate early- and late-stage investments did not find significant differences with regard to the desired quality of management (Elango *et al.* 1995). However, Birley *et al.* (1999) found that investors focus more on team leaders when they evaluate early-stage investments and on leaders' ability to create and lead a team. In late-stage investments, instead, investors were found to focus more on the management team and to consider the team's characteristics, proven ability and success in managing conflict. This view is confirmed by Robbie and Wright's (1995) study of management buy-outs and buy-ins[20], in which they found that PE firms place considerable emphasis on managers' entrepreneurial skills. Dreux (1992) also identified strong management as a key criterion for assessing potential investment in a family business.

A PE investor deciding whether to invest in an existing business will evaluate the current stock of human capital resources, as this is the first step for deciding which resources to keep, shed and/or acquire (Makadok 2001, Mosakowski 2002). With regard to managerial resources that are kept (and that decide to stay after the PE deal), PE deals can unlock any potential that was previously restricted, due to prior ownership arrangements (for example, a founder not delegating to next generation family members or a family not delegating to non-family managers), thereby contributing to the upside of the investee firm (Robbie *et al.* 1999, Wright *et al.* 2001).

Following Birley *et al.* (1999), it is assumed that PE investors evaluating later-stage investments will focus on the management team (rather than on an individual). Since

[20] These are types of PE investment, which are described in more detail in Section 4.2.

managerial resources in family firms can include both family managers and professional (non-family) managers, these are addressed separately.

In general, family experiences create strong ties among family members and contribute to building a family's values and norms (Sirmon and Hitt 2003). By working together, family members develop firm-specific tacit knowledge regarding the firm's strategy, resources, and so on (Lee *et al.* 2003, Sirmon and Hitt 2003). They can also develop a close relationship with the firm's employees (Donnelley 1964, Horton 1986). Furthermore, the interaction of the business, family, and individual family members creates a complex system of idiosyncratic resources, capabilities and processes that often give family firms potential advantages (Habbershon and Williams 1999). For example, family members generally have in-depth understanding of their local environment, which allows them to identify emerging entrepreneurial opportunities more easily (Randøy and Goel 2003).

A PE investor may want to access this tacit knowledge and pool of resources and capabilities (Habbershon *et al.* 2003). This may be possible if some family members wish to stay on after the PE deal. However, PE investors need to assess the quality of this type of human capital. This is because family members may be working in the firm simply thanks to nepotism (Dyer 1986), birth order or gender (Dyer 2003), rather than based on merit. Then again, assessing human capital is difficult for an equity investor, since it is an intangible resource and there are no accepted models or methods for carrying out human capital evaluations in the context of PE investment (Smart 1999). Therefore, in the proposed theoretical model, the evaluation of human capital referred to family members is based on whether they have gained work experience outside the family firm. The rationale is explained below.

In general, family managers have been found to be less clear about their abilities, talents and goals than non-family managers (Eckrich and Loughead 1996). Family members

often need to meet high expectations of educational achievement and professionalism if they are to be recognised as able managers by non-family employees (Aronoff 1998, Salvato 2004). A lack of experience can hinder this, since individuals without any knowledge deriving from past decisions tend to be naïve (Fredrickson 1985). Past experience allows individuals to develop and fine-tune their cognitive models and make more successful decisions (Hambrick and Mason 1984). Therefore, work experience can help family members build knowledge and gain the skills and self-confidence necessary to prove that they are competent at making decisions (Sharma 2004). If work experience is gained outside the family firm, this can enrich the family-based experience and tacit-knowledge base, increasing the heterogeneity of perspectives and beliefs and improving strategic decisions (Sirmon and Hitt 2003).

Therefore, given the choice between a firm in which family members have considerable outside work experience and one in which family members have little or no outside work experience[21], it is hypothesised that:

> ***Hypothesis 3****: Private equity investors' likelihood of investing in a family firm is positively associated with the presence of experienced family members.*

Professional managers are another key resource for formulating and implementing a firm's strategy, although they may decide to stay away from family firms if they are not included in firm succession and have limited potential for professional growth (Covin 1994). Although family firms can find it difficult to delegate, if non-family managers are allowed to take part in strategic decision making, they are able to play a critical role and have a positive impact on firm performance (Chua *et al.* 2003, Gallo and Vilaseca 1998). Similarly to family managers, non-family managers also possess idiosyncratic knowledge of the firm (Lee *et al.*

[21] It is assumed that there are some family members who will continue working in the firm after the PE deal has taken place.

2003). If they remain in the firm after the PE deal, this may be desirable for an external investor. Compared to family managers, professional managers offer the advantage of increasing heterogeneity by adding new perspectives that are not based on the family's experiences (Sirmon and Hitt 2003). Management heterogeneity is positive because it offers competing ideas and healthy conflict, improving decision making through a larger array of alternatives and assumptions (Schweiger *et al.* 1986). Another advantage over family members is that non-family managers are not tied by emotional connections and this may make certain sensitive decisions less difficult (Sirmon and Hitt 2003).

Therefore, given the choice between a firm in which there are many professional managers and one in which there are few or no professional managers[22], it is hypothesised that:

> ***Hypothesis 4****: Private equity investors' likelihood of investing in a family firm is positively associated with the presence of professional managers.*

2.5.4 Cost reduction and likelihood of investment

According to agency cost literature, buy-outs can be powerful governance and control tools to reduce value-destroying activities that are being pursued by agents (managers), through the introduction of stricter governance and incentive systems to stop agents from shirking-type behaviours (Arthurs and Busenitz 2003, Bruining *et al.* 2004, Jensen 1993, Wright *et al.* 2001). This traditional perspective, however, does not take into account investee firms that are family owned and run, in which this type of agency cost is minimised or reduced to zero because principal (owner) and agent (manager) coincide (Jensen and

[22] It is assumed that there are some professional managers who will continue working in the firm after the PE deal has taken place.

Meckling 1976). In this situation, there is no divergence of incentives and no need for principals to monitor agents through formal control and incentive systems. This is due to a number of reasons including familiarity between principal and agent, ease of communication, and cooperation among family members.

However, there may be another type of agency cost in family firms, caused by family behaviours that are driven by non-economic, rather than economic, objectives (Chrisman *et al.* 2004, Corbetta and Salvato 2004, Sharma *et al.* 1997), which may alter the economic performance of a firm (Chrisman *et al.* 2003b). Behaviour inside a family is often driven by altruism, which in economic terms is modelled as a utility function in which the welfare of an individual is linked to the welfare of others (Becker 1981, Lunati 1997). In a family relationship, it induces parents to be generous to their children and other relatives, and family members to help each other in times of need (Schulze *et al.* 2003). However, altruism can also result in cost creation, because CEOs can use the firm's resources to provide other family members with jobs for which they are not qualified (Burkart *et al.* 2003); family members can consume perquisites and privileges; parents may have biased perceptions of their children's work abilities and not monitor or discipline them; and those on the receiving end can take advantage by shirking and free riding (Chrisman *et al*. 2004, Gomez-Mejia *et al*. 2001, Morck and Yeung 2003, Schulze *et al.* 2001, 2003).

Although this is a different type of agency cost from the one envisaged by the traditional view (Jensen and Meckling 1976, Jensen 1993), a PE deal can nevertheless be viewed as a means for introducing cost reduction and efficiency enhancements in an investee family firm (Bruining *et al.* 2004, Wright *et al.* 2000). After the deal, PE firms generally implement tighter governance structures and incentives that are more closely aligned to firm performance objectives (Wright *et al.* 1994). For example, PE firms often take seats on the board of directors, allowing them to monitor the investee firm (Gompers and Lerner 2001).

Managers may be awarded equity stakes that increase or decrease according to whether performance targets are met (Wright *et al.* 1994). Furthermore, since PE deals typically involve increased levels of debt, the cost of servicing such debt and paying out fixed dividends imposes a discipline to allocate resources more efficiently and eliminate unprofitable activities (Jensen 1993, Wright *et al.* 1994). This greater focus on pursuing economic objectives is likely to reduce existing agency costs, thereby increasing the PE firm's upside potential (Robbie *et al.* 1999, Wright *et al.* 2001).

In order to be able to pursue such upside potential, it is reasonable to assume that the individuals who were previously consuming perquisites and privileges need to exit the firm. If they remain in the firm, any changes introduced by the PE firm, aimed at breaking path dependencies, could lead to significant levels of conflict. Therefore, it is assumed that a PE firm will prefer to invest in a family firm in which family shareholders wish to sell their shares: the greater the number of family owners selling, the greater the reduction in the number of individuals who were previously consuming perquisites and privileges.

This assumption is also supported by one of the premises of corporate governance theory, which in turn is influenced by the principal-agent model (Jensen 1998). According to this argument, management decisions are affected by the ownership status of the decision maker because agency positions of owners differ according to whether they are outside or inside owners (Schulze *et al.* 2003). Outside owners prefer growth-oriented risk taking, because their sole objective is shareholder value maximisation. Inside owners, instead, have non-financial as well as financial objectives, which include being able to exercise authority and influence strategy. Therefore the risks they are willing to accept depend on the specific outcomes of the activity being undertaken (Schulze *et al.* 2003). In light of this, it is expected that PE firms investing in a family firm will prefer to reduce the number of inside owners, so that they can pursue their own value maximisation objectives.

Therefore, given the choice between investing in a family firm in which many family owners wish to sell their shares and a family firm in which many family owners wish to keep their shares, it is hypothesised that:

> ***Hypothesis 5****: Private equity investors' likelihood of investing in a family firm is positively associated with the number of family members wishing to sell their shares and exit the firm.*

2.5.5 Ownership dispersion and likelihood of investment

Ownership of a family firm generally passes through three broad stages of dispersion (Gersick *et al*. 1997): controlling owner, in which most shares are held by the founder or, in the case of later generations, by a single individual; sibling partnership, in which relatively equal proportions of ownership are held by members of a single generation (typically not the founder's generation); and cousin consortium, in which ownership is further fractionalized as it passes on to include third and later generations.

Family firms are a typical context for conflict, due to an embeddedness of family and business systems (Boles 1996, Miller and Rice 1998). Ownership fragmentation can enhance such tension. As dispersion increases, there is more likely to be misalignment in goals, diminished loyalty and commitment to the firm and conflict among family owners. This, in turn, can create problems in coordinating family members' goals and behaviours and is a potential source of disagreement (Corbetta 1995). Although some forms of task and process conflict[23] can be beneficial because they promote creativity and innovation (Cosier and Harvey 1998), numerous studies have found that conflict is harmful for individual and group

[23] Task conflict is a disagreement over what tasks should be pursued; process conflict is a disagreement over how tasks should be carried out (Jehn 1995, 1997).

performance (Jehn 1995, Shah and Jehn 1993) and is associated with lower levels of group morale and productivity (Jehn 1997). Furthermore, ownership dispersion can cause divergence between the interests of individuals leading the firm (often controlling larger portions of the equity) and the interests of other family owners (Schulze *et al.* 2003). Increased tension levels have also been found to be associated with a decline in business income in family firms, due to reduced business productivity (Olson *et al.* 2003).

These problems are difficult to deal with, especially for an outsider, since sources of conflict in family firms are complex and rooted in history (Haynes and Usdin 1997, Kaye 1991). As a consequence, it is assumed that PE firms evaluating a family firm with fragmented ownership could face two types of problems: first, given the high number of family owners, there could be a greater likelihood of disagreement during negotiations between PE firm and vendor family, which could lead to a breakdown in negotiations; second, there could be conflict between the PE firm and any remaining family owners (as well as among remaining family owners) after the deal has taken place, if ownership dispersion persists. This could limit the PE firm's chances of pursuing upside potential, by damaging future firm performance and productivity (Jehn 1995, 1997, Shah and Jehn 1993). Conflict could lead to difficulties in implementing the chosen strategy, mismanagement, leadership inability, and difficulties with exit (MacMillan *et al.* 1985). Therefore, given the choice between investing in a family firm with high ownership dispersion and a family firm with low ownership dispersion, it is hypothesised that:

> ***Hypothesis 6****: Private equity investors' likelihood of investing in a family firm is negatively associated with ownership dispersion level.*

2.5.6 Formalisation and likelihood of investment

A firm's strategy determines the alignment of its internal structure and process with the external environment (Galbraith and Nathanson 1978, Miles and Snow 1978). Scholars have been divided over how this alignment is best achieved (Frierickson 1984). Some have suggested that organisational strategy should be based on a formal planning process (Andrews 1971, Chandler 1962). This approach is based on a rational model of decision making, implying analytic comprehensiveness and integration of decisions into an overall strategy (Frierickson 1984). Other scholars have argued that, since most decision makers operate in unpredictable contexts, strategy should be an incremental process resulting from a number of strategic decisions that are made over time (Mintzberg 1978, Quinn 1980).

Thus, previous studies have indicated that there is no best way to approach strategic decisions and that the degree of stability of the environment can affect organisational decision making (Duncan 1972). Furthermore, the effects of formalisation are complex (Baum and Wally 2003). Schwenk and Shrader (1993) have observed that formalised planning increases performance of small firms. Other researchers have found the opposite and have argued that formalisation can negatively affect firm performance because it can reduce flexibility, communication and speed of response (Khandwalla 1977). It seems, however, that the first type of strategy – based on a rational model and a formal planning process – is more appropriate for stable environments, which make it is easier to identify decision variables and relationships among those variables (Frierickson 1984).

Since typical investee firms for PE tend to be in fairly mature – and stable – industries (Wright *et al.* 2001), in the proposed decision-making model it is assumed that PE investors will prefer relatively high levels of formalisation in organisational practices, since they are associated with performance enhancement (Baum and Wally 2003). Formalisation is taken to consist of structures and procedures that are explicitly formulated and/or written, such as

firm-level policies, job descriptions, organisational charts, operational plans (Baum and Wally 2003), as well as financial, control and planning systems.

PE firms may prefer to invest in family firms that have formalised systems also for another reason. The use of a formal planning process, and of other formal systems such as information, strategic planning, financial, and human resource management systems, facilitates coordination of efforts of the individuals operating within a firm (Grant 2004). If these formal systems are missing in a family firm, there is likely to be a high degree of information asymmetry between potential investor and vendor family, due to high levels of tacit knowledge that are possessed by family members (Howorth *et al*. 2004). This may intensify the problem of asymmetric information which is generally faced by PE firms, which invest in companies that are not quoted on the stock market and for which little information is available (Wright and Robbie 1998). If, on the contrary, systems and procedures are formalised and explicit, it will be easier for an external investor to access information relating to the target firm. In turn, information asymmetry reduction can help limit the riskiness of the investment project for the PE firm (MacMillan *et al.* 1985, Zutshi *et al.* 1999). This is supported by previous studies concluding that PE investors consider the presence of a formalised business plan in family firms as a key investment criterion (Dreux 1992, Upton and Petty 2000).

Therefore, given the choice between investing in a family firm with a high level of formalisation and a family firm with a low level of formalisation, it is hypothesised that:

> ***Hypothesis 7:*** *Private equity investors' likelihood of investing in a family firm is positively associated with the presence of formalised systems and procedures.*

2.5.7 Moderator effects and likelihood of investment

In the proposed theoretical model, it has been hypothesised (Hypotheses 3 and 4) that a PE investor is more likely to invest in a family firm if there are managerial resources staying on after the deal has taken place. The association between likelihood of investment and managerial resources is hypothesised to be stronger under two conditions. These are analysed separately below.

A family firm in which there are many family members wishing to sell their shares may be desirable for a PE firm, because the investor may be able to generate greater value from the firm by focusing on economic objectives and eliminating the consumption of perquisites and other benefits by family members. At the same time, however, this situation may have negative effects, because it can lead to the loss of individuals with firm-specific knowledge, experience and social networks (Howorth *et al*. 2004, Wiseman and Gomez-Mejia 1998). Since one of PE investors' primary roles is to manage risks of the proposed venture, it is reasonable to assume that they will want to minimise any potential threats (Zutshi *et al.* 1999). The potential problem outlined above may be reduced if there is some continuity with the past i.e., if some family members remain in the firm after the PE deal has taken place. These individuals would continue to possess tacit knowledge of the firm and could guarantee continuity in the firm's image to outside stakeholders as well as a sense of stability for employees, suppliers and customers of the firm (Chrisman *et al.* 1998, Sharma and Rao 2000). If family members are also considered to be competent and professional, thanks to work experience that has been gained outside the family firm (Aronoff 1998, Salvato 2004, Sirmon and Hitt 2003), then it is reasonable to assume that PE firms will perceive a reduction in the riskiness of the investment project. Therefore, if there are many family members wishing to sell their shares, it is expected that the likelihood of investment will be stronger if there are remaining family members with outside work experience.

Following the same reasoning, if there is limited loss of tacit knowledge (because few family owners wish to sell their equity), then the positive effect of experienced family members on likelihood of investment is expected to be reduced.

Professional managers, too, may contribute to reducing the risk deriving from family owners selling their equity in the family firm because they also possess idiosyncratic knowledge of the firm (Lee *et al.* 2003). Furthermore, they may be able to offset the loss of tacit knowledge by offering other potential advantages, such as a heterogeneous outlook and lack of emotional ties to the firm (Sirmon and Hitt 2003). Therefore, if there are many family members wishing to sell their shares, it is expected that the likelihood of investment will be stronger if there are professional managers staying on after the deal. Following the same reasoning, if there is limited loss of tacit knowledge (because few family owners wish to sell their equity), then the positive role of professional managers is expected to be reduced.

In light of this discussion it is hypothesised that:

> ***Hypothesis 8****: The positive association between likelihood of investment and presence of (a) experienced family members and (b) professional managers is moderated by the number of family owners wishing to sell their shares.*

Managerial resources are also expected to play a moderating role with regard to the level of ownership dispersion. It was stated above that higher ownership dispersion is likely to imply goal misalignment and conflict among family members (Corbetta 1995). This could make the target firm less desirable for an external investor. However, if there are competent managerial resources (either experienced family members or professional managers), they are likely to offset potential conflict and disagreement, thereby reducing the riskiness of the investment project (MacMillan *et al.* 1985, Zutshi *et al.* 1999). Experienced family members

can use their expertise and skills to manage other family owners and can also rely on their emotional ties and shared values and norms (Sirmon and Hitt 2003). Professional managers, instead, can benefit from the lack of emotional connections with remaining family members (Sirmon and Hitt 2003), as they can be perceived as being more objective. This can help them support their positions through healthy conflict (Schweiger *et al.* 1986).

Therefore, if there is high ownership dispersion, it is expected that the likelihood of investment will be stronger if there are many experienced family members and professional managers (remaining after the deal). Following the same reasoning, if there is limited ownership dispersion, then the positive role of experienced family members and professional managers is expected to be reduced. In light of this discussion it is hypothesised that:

> ***Hypothesis 9****: The positive association between likelihood of investment and presence of (a) experienced family members and (b) professional managers is moderated by the degree of ownership dispersion.*

2.5.8 Private equity firm-level variables and likelihood of investment

According to strategic decision-process theory, decision-makers' cognitions are motivated and constrained not only by personal experiences and perceptions, but also by their business environment and organisational structures (Baum and Wally 2003, Wally and Baum 1994). Therefore, PE investors evaluating potential investments are likely to be influenced by the PE firm they work for. As a result, it seems appropriate to investigate relationships not only within a particular hierarchical level (the individual decision maker), but also across hierarchical levels (Hofmann 1997), modelling how individual decision-making models vary across organisations by considering variables at a higher level of analysis (the PE firm).

In this study, PE firms have been differentiated based on two variables: the size of the portfolio held and the type of deal they carry out (whether they take a majority or a minority stake in the target firm). The size of the portfolio held by a PE firm is related to a risk management perspective. When PE firms evaluate potential investee firms, they can be viewed as risk managers trying to assess and minimise the riskiness of projects (MacMillan *et al.* 1985, Zutshi *et al.* 1999). The main risk they face is not being able to achieve the required capital gain, which is the key objective for PE investors (Wright and Robbie 1998). One of the possible causes for this is insufficient management and leadership inability (MacMillan *et al.* 1985), which in a target family firm can refer to both family and non-family managers.

According to an alternative perspective (Robbie *et al.* 1999, Wright *et al.* 2001), PE firms evaluate potential target firms in order to assess upside potential, which can be achieved through strategic innovation and changes in organisational structure and managerial practices (Markides 1998, Reid 1996). Following this view, some PE firms may be willing to take greater risks by investing in a low-profit firm, since this can offer greater upside if the investment is successful – the risk being that the investee firm may not provide the required upside if there are difficulties in implementing the desired strategy, which may lead to difficulties in exiting the investment (MacMillan *et al.* 1985).

It is hypothesised that a PE investor will be more willing to take these two types of risk – relating to insufficient (family and non-family) managerial resources and to low profitability – under two conditions. First, it is assumed that a PE investor will be more willing to take risks if the PE firm he/she works for has a larger portfolio. PE firms with larger portfolios can spread their risk across a higher number of deals and, therefore, individuals evaluating a potential deal may be willing to risk more, on a single deal, in order to realise greater upside (MacMillan *et al.* 1985, Zutshi *et al.* 1999). Second, individual-level decision making is expected to differ based on the deal type the firm chooses to pursue i.e.,

whether it takes a majority or minority stake. A PE firm taking a majority stake can expect to have greater control over the strategy of the target firm. By having greater influence in the investee firm's decision making, the PE firm can increase its likelihood of achieving a capital gain (Wright and Robbie 1998). In light of this discussion it is hypothesised that:

> ***Hypothesis 10****: If the decision maker works for a PE firm which (a) has a large portfolio value and (b) takes a majority stake in the target firm, high profit levels in the target family firm become less important.*

> ***Hypothesis 11****: If the decision maker works for a PE firm which (a) has a large portfolio value and (b) takes a majority stake in the target firm, the presence of experienced family members in the target family firm becomes less important.*

> ***Hypothesis 12****: If the decision maker works for a PE firm which (a) has a large portfolio value and (b) takes a majority stake in the target firm, the presence of professional managers in the target family firm becomes less important.*

2.6 Concluding remarks

The aim of this chapter was to introduce models of decision making, focusing on the bounded rationality of PE professionals, which leads them to concentrate on a limited number of factors to decide whether to invest in a business or not. A review of the literature indicated that, whilst there are several contributions analysing investor decision making at start-up stage, relatively little has been written on how investments are selected at later stages. This is surprising, since a significant proportion of equity investment in many countries is directed at existing businesses. The focus of this study is specifically on family firms, since they are a

predominant form of organisation and the recipients of a large proportion of equity investment. The proposed model for the investment decision is based on two levels of analysis. On one level, individual decision making is hypothesised to be associated with certain factors, relating to the target firm's external environment and to its strategic resources. On another level, it is hypothesised that individual decision making is associated with factors at a higher hierarchical level (the PE firm the individual decision maker works for). The next chapter introduces the methodology used for data collection, explaining the reasons for selecting it and the steps followed for implementation.

3 Research design

3.1 Introduction

The aim of this chapter is to address the choice of research method used for data collection and describe the variables employed and their measures. Since data collection has been carried out using a simulation, the rationale, advantages and limitations of this approach are discussed first.

A simulation is a special type of model i.e., a representation of a system, specifying variables and relationships among those variables (Bailey 1994): in other words, a model is a replica of the structure of a system (where the structure includes theory and assumptions). The advantage of using a model is that it can be smaller in size and contain fewer details than the real situation that is being studied. This is in line with the objective of social sciences, which requires that models used include only the features of the system that are interesting from a research perspective, rather than including all the features possessed by the system. A simulation is a model in motion, since it includes not only variables and their relationships and connections, but also the way changes in some of the variables affect changes in other variables.

The main advantages of adopting a simulation in this study are twofold (Raser 1969): first, it allows for visibility, because operating a simulation can increase the observability of the phenomenon being studied, whilst at the same time clarifying the phenomenon by including only the essential components of the system and excluding the less relevant ones. Second, it allows the researcher to have more control over the system, thus allowing for reproducibility and replicability.

Of the possible disadvantages cited by Raser (1969), the most relevant in this instance is related to artificiality: by definition, a simulation is a reproduction of the real thing or

situation and may be inaccurate or incomplete, thus invalidating results. However, this limitation seems to be reduced when experienced respondents are involved (Brehmer and Brehmer 1988), as in this study. As will be seen below (see Fig. 3.2), respondents were asked to evaluate hypothetical profiles of potential target firms, each of which was described through a limited number of pre-selected variables. Although presenting variables that have already been coded could remove some perceptual elements, Shepherd and Zacharakis (1999) suggest that this avoids time-consuming activities involved in presenting extremely detailed information and letting respondents extract information. This was an advantage in this study, since private equity (PE) investors are often reluctant to provide information on their investment activities (Muzyka *et al.* 1996, Shepherd and Zacharakis 1999) and are not willing to spend significant amounts of time with researchers. Furthermore, according to Schepanski *et al*. (1992), experienced respondents are unlikely to consider variables to be relevant only because they have been presented to them during a simulation (respondents in the present study were fairly experienced and had, on average, 15 years' work experience in PE and related industries)[24].

In order to validate the simulation, three criteria have been followed (Raser 1969). First, the simulation presented an environment or situation that seemed realistic to respondents: they were asked to evaluate potential investments, which is a task that is typically part of their job. Second, the structure of the simulation (which includes its theory and assumptions) was isomorphic to that of the reference system i.e., the system being modelled. The objective of PE firms is to achieve high returns from their investments and, in order to do so, they look for certain characteristics in target firms (since they assume that such characteristics are more likely to lead to the desired returns). Similarly, in the simulation, respondents were presented with variables that are normally referred to when they evaluate

[24] See Table 4.9.

potential investments. Third, processes observed in the simulation were isomorphic to those in the reference system. During the screening stage, which as will be seen in Section 4.2 is the focus of this study, PE investors generally evaluate potential investments by reading and assessing written documents, such as a business plan. Similarly, during the simulation they were asked to refer to a written document (paper profiles of potential investee firms). Furthermore, face validity was ensured by pre-testing the simulation (Shepherd *et al.* 2000) with PE investors, academics and consultants to PE houses[25].

The remainder of this chapter is structured as follows: first, the data collection technique is illustrated, highlighting its advantages over other methods (Section 3.2). Second, variables and their measurement levels are described (Section 3.3). Third, there is an account of how the simulation has been conducted (Section 3.4). Finally, there are concluding remarks (Section 3.5).

3.2 Choice of research method

This section includes a step-by-step explanation of the options available for data collection and provides the rationale for choices made.

3.2.1 *Post-hoc* vs real-time methods

Until the beginning of the 1990s, many researchers analysing venture capitalist decision making with regard to early stage investments used *post-hoc* methods of data collection. *Post-hoc* methodologies are based on questionnaires, surveys and interviews and are used to evaluate deals that have already been decided upon. Although these studies are insightful and have advanced the field of venture capitalist decision making (e.g., MacMillan

[25] In order to pre-test the simulation, experts were shown the selected investment criteria and asked, first, whether they thought they were realistic investment criteria, based on their investment work or on their expertise on PE investments, and, second, whether there were any important criteria missing.

et al. 1985, 1987, Tyebjee and Bruno 1984), they also have limitations. This is because retrospective reporting often causes biases and errors, since it relies on self-reporting and subjective assessment. It also suffers from perceptual and cognitive limitations, as well as from recall bias and *post-hoc* rationalisation (Sandberg *et al*. 1988, Shepherd and Zacharakis 1999).

In order to overcome these limitations, since the end of the 1990s researchers have tended to adopt real-time methods in the evaluation of investors' decision-making processes (e.g., Muzyka *et al*. 1996, Shepherd 1999, Zacharakis and Meyer 1998). These techniques allow researchers to investigate decisions as they are being made (in contrast, *post-hoc* methods investigate decisions after they have been made). The main advantage of real-time methods is the fact that they reduce reliance on respondents' perceptual and cognitive skills and the likelihood of their biasing results (Shepherd and Zacharakis 1999). Therefore, this study is based on a real-time method of data collection.

3.2.2 Composition vs decomposition methods

There are two types of real-time methods (see Table 3.1), both of which have been used to investigate investor decision making. In decomposition methods, respondents are presented with combinations of different levels of variables (these combinations of variables are also called "profiles" or "*stimuli*"), which they are asked to rank or rate. Researchers then assess respondents' judgement in response to each combination. Thus, in decomposition models, researchers need to know a respondent's overall preference for a *stimulus* and they can then decompose the preference to determine the value of each attribute (Hair *et al.* 1998).

Composition methods, on the other hand, require respondents to "talk through" a decision situation; researchers then relate the information obtained to some overall preference, in order to compose the overall preference and develop a model (Hair *et al.* 1998).

Table 3.1: Real-time methods*

	Decomposition methods	**Composition methods**
Description	Respondents are presented with combinations of different levels of variables Respondents rank or rate profiles	Respondents "talk through" a decision situation
Focus	On the judgement	On the cognitive processes underlying judgements
Goal	Develop a representation of the judgement policy	Gain insight into decision processes
Critical areas	Judgement attributes (variables) and their levels are known *a priori* (and are chosen on the basis of existing theory or previous empirical work) Useful for theory testing	Researchers can capture the time order of judgement mechanisms Useful for theory building
Advantages	It is possible to obtain a maximum amount of information from a limited number of respondents These methods allow researchers to carry out in-depth quantitative analysis of an individual respondent's judgement policy	Relevant variables do not need to be known a priori (except for a limited number used as *stimuli*) Availability of rich and detailed information
Limitations	Implicit assumption of holistic processing Methods have been criticised for having low external validity due to the use of "paper" scenarios	Data need to be aggregated for analysis and it is not possible to carry out rigorous statistical analyses on a single subject

* Adapted from Priem and Harrison (1994)

Verbal protocols are an example of this second type of technique. They require participants to think aloud as they review business proposals (e.g., Sandberg *et al*. 1988). The main advantage of verbal protocols is that they offer richness of data and provide information about the decision process (Priem and Harrison 1994, Shepherd and Zacharakis 1999). Given that the focus of this study is on the criteria used by PE investors when they select firms, this did not seem to be an appropriate technique. Furthermore, verbal protocol requires interviews to be tape recorded and transcribed; answers are then analysed (through content and sequence analysis), in order to create a flow chart. This is used to construct a formal algorithm that can

be used to predict respondents' judgement. Because of the steps required, it has been noted that verbal protocols can be subjective and are "more of an art than a science" (Riquelme and Rickards 1992).

The purpose of this study is to analyse the determinants associated with decision making by PE investors when they are assessing the likelihood of investing in a prospective deal. Therefore, it is appropriate to adopt a decomposition technique, since this type of method allows to develop a representation of the respondents' judgement policy and to decompose it. By using such a method, it is possible to obtain large amounts of information from a limited number of responses and this is important in the case of PE investors, given that they are often reluctant to provide information on their investment activities (Shepherd and Zacharakis 1999). This is particularly true in Europe (possibly with the exception of the UK), where PE providers are not as accustomed as their US counterparts to sharing information (Muzyka *et al.* 1996). Furthermore, decomposition methods allow analysis to be carried out both at individual and at aggregate level, whilst composition methods allow only for aggregate-level analysis.

From a review of the literature (see Fig. 3.1), it emerges that the main decomposition methods that have been used to model decision making with regard to the assessment of potential investments are policy capturing (e.g., Zacharakis and Meyer 1998, Zacharakis and Shepherd 2001) and conjoint analysis (e.g., Choi and Shepherd 2004, Shepherd 1999, Shepherd and Zacharakis 2002, Shepherd *et al.* 2003). While policy capturing is based on the social perception or 'lens' model, developed by Brunswick, conjoint analysis is based on Anderson's information integration theory (Priem and Harrison 1994). However, the two methods are quite similar both in conceptual orientation and in experimental format (Louviere 1988). The main difference is that policy capturing is more suitable when there is a large number of judgements from each respondent (Priem and Harrison 1994). In this study it was

decided to use conjoint analysis, since it seemed appropriate to limit the number of judgements presented to each respondent, given that they are generally not very willing to lend their time (Muzyka et al. 1996, Shepherd and Zacharakis 1999). Since the Italian private equity market is quite small, this seemed an appropriate way to maximise the number of simulations carried out.

Fig. 3.1: Evolution of methods used in studies of investor decision making

1980s	**early 1990s**	**late 1990s-onwards**
Post-hoc methods	- -	*Real time methods*
Questionnaires	Business plan (content analysis)	Conjoint analysis
Face-to-face interviews	Semi-structured interviews	Policy capturing
Telephone interviews	Structured interviews	Verbal protocols
e.g. Tyebjee & Bruno (1984) MacMillan *et al*. (1985, 1987)	e.g. Hall & Hofer (1993) Meyer *et al.* (1993)	e.g. Shepherd (1999); Zacharakis & Meyer (1998); Zacharakis & Shepherd (2001); Choi & Shepherd (2004)

Conjoint analysis is a multivariate technique aimed at understanding how respondents develop preferences for products, services, ideas or, as in this study, investment proposals. It is based on the premise that a respondent's judgement is based on a combination of separate amounts of value attached to each attribute (Hair *et al.* 1998). It involves the design of profiles i.e., combinations of attributes or factors, to which the researcher assigns certain values or levels. Respondents are asked to make a series of judgements and to rank or rate profiles (see Fig. 3.2 for an example). This methodology was originally developed by Luce and Tukey (1964) and has been used in numerous studies of judgement and decision making, focusing on consumer purchase decisions, managers' strategic decisions and expert judgements (Shepherd *et al.* 2000). Since the early 1990s it has been adopted in order to

analyse decision making of venture capitalists (e.g., Muzyka *et al*. 1996, Riquelme and Rickards 1992, Shepherd and Zacharakis 1999).

Conjoint analysis is actually a family of techniques and, given the purpose of this study, the choice has fallen on metric conjoint analysis. This method allows to test at individual level whether an additive (i.e., main effects only) or multilinear (i.e., main effects and interactions) model is being used by the respondent. In this study a multilinear model is being used, with main effects and selected two-way interactions, in order to test whether respondents prefer a high or low level of one variable depending on the level of another variable (Priem and Harrison 1994).

The other two traditional conjoint methods are axiomatic conjoint analysis and non-metric conjoint analysis, which capture main effects only and, therefore, are inappropriate for strategic management applications, which generally imply the presence of contingent judgement policies (Priem and Harrison 1994). Whilst traditional conjoint methods have been at the core of conjoint studies for many years (Hair *et al.* 1998), other methods have been recently developed. These include adaptive conjoint analysis (which is appropriate for large numbers of factors – up to 30) and choice-based conjoint analysis (which allows to measure interaction effects but must be measured at aggregate level). These did not seem appropriate either, since the model includes a limited number of variables (seven) and the aim of the study is to carry out analysis at individual as well as aggregate level.

In summary, the chosen research tool – metric conjoint analysis – has number of key advantages. Specifically:

- since it is a decomposition method, it makes it possible to analyse decision-making policies of respondents;
- conjoint analysis is a less labour-intensive process and more objective method than verbal protocol analysis;

- compared to policy capturing, metric conjoint analysis requires fewer judgements from respondents;
- metric conjoint analysis allows to carry out analysis at individual level, as well as at group level, whilst in most other multivariate methods analysis is just performed using all respondents simultaneously (aggregate level);
- metric conjoint analysis makes it possible to evaluate interaction-based judgements and, therefore, contingent decision making (whereas other types of conjoint analysis do not allow for this).

This research method also has some limitations, which have been addressed. First, since variables and their levels need to be selected *a priori*, they were pre-tested through preliminary interviews with PE investors, consultants and academics. Second, paper profiles can be regarded as being artificial. However, evaluating an investment proposal is part of PE investors' day-to-day work and is often done on the basis of an information memorandum, which is a paper document.

3.3 Stimulus design

In order to carry out a conjoint study, the researcher first needs to create *stimuli* (or profiles). Every *stimulus* contains a number of variables or factors, each at set levels (Hair *et al.* 1998).

3.3.1 Selection and definition of factors and levels

In conjoint analysis, the researcher specifies both the independent variables (factors) and their values (levels). The respondent only provides information on the dependent variable (in this study, likelihood of investment). Designing the simulation and choosing variables and their levels, therefore, is crucial because any variable or level that has not been anticipated in

the research design is not included in the study. For this reason, the researcher needs to reach a balance between including all the variables that might be relevant whilst, at the same time, limiting their number to make the simulation manageable (Hair *et al.* 1998). However, previous studies show that expert respondents generally use fewer factors than are available (Stewart 1988, Zacharakis and Shepherd 2001). Therefore, it is more likely that the proposed model includes irrelevant factors rather than excluding important ones.

Conjoint analysis is appropriate for theory testing, since variables have to be known *a priori*. It allows researchers to investigate relationships between decision criteria and decision outcome, which are hypothesised on the basis of prior theory (Shepherd and Zacharakis 1999). Variables used in this study have been identified on the basis of a thorough review of the literature (strategic management theory, family firm research, and literature on investor decision making) and of available evidence (including reports by EVCA, BVCA, AIFI and CMBOR[26]). In addition, the variables have been pre-tested with PE investors, consultants to such investors and academics, in order to confirm face validity for the dependent variable, attributes and levels (Shepherd and Zacharakis 2002).

Based on the hypotheses indicated in Chapter 2, seven explanatory variables have been included in this study. Most people, including experts, typically use three to seven cues (Miller 1956, Zacharakis and Meyer 1998). Previous studies suggest using a minimum of five and a maximum of eight attributes, with many studies using three to five (Shepherd and Zacharakis 1999). Thus, it was decided to include seven factors in order to maintain a balance between choosing an appropriate number of decision-making criteria and limiting them in order to make the simulation manageable.

Each attribute in the design has two levels (high and low). Levels need to represent a realistic variation and range, reflecting typical decision-making situations PE investors find

[26] The first three are the venture capital and private equity associations respectively at European, British and Italian level. CMBOR is the research centre on private equity at Nottingham University, UK.

themselves in. This is important in order to ensure that the right balance is achieved between making the simulated situation believable to respondents and maintaining the attribute levels distinct enough to be considered realistic (Riquelme and Rickards 1992, Shepherd and Zacharakis 2002). Following what has been suggested in the literature, the same number of levels (i.e., two) has been used across all factors (Hair *et al.* 1998).

The following table presents attributes, levels and definitions. It was included in the material that was presented to all respondents before carrying out the simulation.

Table 3.2: Independent variables, levels and definitions used

Variable	Level	Definition
Professional managers	High	In the firm there are many professional managers
	Low	In the firm there are few (or no) professional managers
Experienced family members	High	In the firm there are family members with considerable work experience outside the family firm
	Low	In the firm there are few (or no) family members with considerable work experience outside the family firm
Family members wishing to exit	High	In the firm there are many family owners who wish to sell their shares and exit the firm
	Low	In the firm there are few (or no) family owners who wish to sell their shares and exit the firm
Ownership dispersion	High	Ownership of the firm is divided among many people
	Low	Ownership of the firm is concentrated in the hands of few people
Formalisation	High	In the firm there is a high degree of system formalisation (e.g., information, strategic, financial, and human resources systems)
	Low	In the firm there is a low degree of system formalisation (e.g., information, strategic, financial, and human resources systems) or there are no such systems
Firm profitability	High	Firm profitability is high (compared to industry average)
	Low	Firm profitability is low (compared to industry average)
Industry growth	High	The firm operates in a high-growth industry
	Low	The firm operates in a low-growth industry

It was decided to go for a high/low level specification, rather than quantifying the factors, because often there are large differences across industries. For example, with regard

to the variable "industry growth", a 10% per annum growth rate could be considered high for a mature industry, but low or medium for a developing industry. Although a high/low specification may be deemed as being inaccurate, due to perceptual differences of respondents, nonetheless it represents a variation that typically occurs in the decision environment of PE investors, thereby ensuring believability (Shepherd 1999).

3.3.2 Specification of the basic model form

Another decision that needs to be made whilst designing the *stimuli* is what kind of composition rule to use. This means that the researcher needs to make a hypothesis with regard to the rule or model that underlies the way respondents combine part-worths of the factors in order to obtain an overall preference. Part-worths are estimates of the preference or utility that is associated with each level of each factor used to describe the investment proposal (Hair *et al.* 1998).

The most basic, and commonly used, composition rule is the additive (or main-effects) model, in which respondents add up values for each attribute (the part-worths) to get the total value of each profile. The alternative is to add interaction effects, implying that certain combinations of levels can add up to more or less than just their sum (Hair *et al.* 1998). In this study it has been decided to adopt an interactive model (with selected two-way interactions, as illustrated in the hypotheses in Chapter 2), since it is deemed to be more realistic and a more accurate representation of how respondents actually evaluate investment proposals.

3.4 Data collection

After specifying the factors and their levels, as well as the basic model form, the next step involves deciding how to collect data and how to measure the dependent variable.

3.4.1 Choice of presentation model

It was decided to use a "full-profile presentation" method. This is used predominantly, because it is more realistic than other methods and allows the researcher to reduce the number of profiles through fractional factorial designs (Hair *et al.* 1998), as will be seen in the next section. By using this approach, each investment proposal is described separately, generally on a "profile card", which includes all the attributes of interest, with different combinations and levels (see, as an example, Fig. 3.2).

Fig. 3.2: Profile example

On the basis of the following characteristics, how would you rate the likelihood of your investing in this investment proposal?

Experienced family management	LOW
Firm profitability	LOW
Ownership fragmentation	LOW
Family members wishing to exit	HIGH
Professional managers	LOW
Industry growth	HIGH
Formalisation	HIGH

Please tick one of the following boxes:

I would NOT invest in this firm 1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ I would invest in this firm

This approach offers the advantages of providing realistic descriptions of what is being evaluated and of allowing all factors to be included in each profile. The two main limitations are given by the information overload that can occur when too many factors are included, which generally induces respondents to focus on a fewer number of factors than those presented, and by the order in which factors are presented, which can affect responses (Hair *et*

al. 1998). In order to avoid these drawbacks, in this study the number of factors was limited to seven. Furthermore, the order of the profiles and of the factors in each profile was varied to avoid order effects: respondents were divided into four groups and each received a different version of the profiles, which varied both by order of profile and by order of factors in each profile.

Alternative methods for data collection in conjoint analysis are the trade-off method and the pairwise comparison method, both of which were not appropriate in this study. In the first, respondents are asked to consider attributes two at a time and to rank the various combinations of each pair from most preferred to least preferred. This method is rarely used because it lacks realism and requires a large number of judgements (Hair *et al.* 1998, Riquelme and Rickards 1992). The pairwise comparison method combines the two previous methods and involves comparing profiles two at a time and is generally used in adaptive conjoint analysis (Hair *et al.* 1998).

3.4.2 Creation of *stimuli*

The total number of possible combinations of the variables described above is 2^7=128 (seven variables, each at two levels). Clearly, this is too high a number of cases to present to respondents and the number of profiles needed to be reduced through fractional factorial design. This method involves choosing a fraction of the treatment combinations in order to make the questionnaire more manageable (Green and Srinivasan 1978, Shepherd and Zacharakis 1999, 2002). A high number of combinations would increase complexity and time required for the simulation; furthermore, cues would probably be correlated to each other (Zacharakis and Meyer 1998). Instead, through fractional factorial design, it is possible to obtain an optimal design, in which *stimuli* are orthogonal, i.e., levels and attributes are not correlated, and balanced, i.e., each level for each factor appears the same number of times (Hair *et al.* 1998).

Following Shepherd (1999), the number of profiles was reduced to 16. This was done through a fractional factorial design allowing all main effects and four two-way interactions to be tested and was based on the method indicated by Hahn and Shapiro (1966)[27].

The 16 profiles were replicated in order to be able to estimate individual subject error and to assess external reliability through a test-retest measure (Shepherd 1999, Shepherd *et al.* 2000). Thus, each respondent was asked to evaluate 32 profiles in total[28]. Before the 16 replicated profiles, respondents were presented with a practice profile which was used to explain the simulation and allow respondents to familiarise themselves with the task (Shepherd *et al.* 2000). This practice profile was not included in the statistical analysis.

3.4.3 Selection of preference measure

On the basis of the research question, the dependent variable is the PE investor's assessment of how likely he/she is to select a family firm as a potential investment. This is an ordinal variable, measured on a seven-point Likert scale (e.g., Riquelme and Rickards 1992), ranging from "I would definitely not fund the proposal" (corresponding to a value of 1) to "I would definitely fund the proposal" (corresponding to a value of 7).

Rating has been chosen to measure the dependent variable as it is more commonly used than others (Shepherd and Zacharakis 1999). The alternative would be to ask respondents to rank the profiles, however this is more appropriate when there are fewer than 20 profiles (there were 32 in this study). Instead, asking respondents to rate profiles on a metric scale is easier to administer and allows conjoint estimation to be carried out through multivariate regression. Furthermore, it was a realistic task for respondents to perform, since it is part of their day-to-day work (Hair *et al.* 1998).

[27] Hahn and Shapiro's (1966) method has been used by Choi and Shepherd (2004), Shepherd (1999), Shepherd *et al.* (2000, 2003), and Shepherd and Zacharakis (2002).
[28] According to Louviere (1988), subjects are rarely asked to evaluate more than 32 profiles in field situations.

3.4.4 Form of survey administration

In order to carry out the simulation, paper profiles were used (see Fig. 3.2). These were administered via two methods: the main one was through face-to-face interviews. For practical reasons, email was used with a limited number of respondents (12 respondents out of 41, equivalent to 29.3% of respondents). These were individuals who were not based in Milan[29] or were travelling extensively and unable to set up a face-to-face meeting.

Face-to-face interviews had the advantage of allowing the researcher to give an in-depth explanation of the task at hand. Respondents took between 20 and 40 minutes to complete the survey. Respondents who received the questionnaire by email were first contacted by letter and telephone: this allowed the researcher to explain the purpose and the format of the study and to clarify any questions. The email was sent with three attachments: an instruction sheet, an explanation of the variables used and their levels (see Table 3.2) and the profiles to be compiled (see Fig. 3.2). Participants were informed that the simulation corresponded to the investment proposal screening stage. Respondents were instructed to use their own definitions of the levels used in the profiles (high/low), to treat each case as a separate situation and not to refer back to profiles that had already been compiled.

Previous research has found that interviewing methods used (by telephone and by post/email) are not significantly different and produce relatively equal predictive accuracy (Hair *et al.* 1998, Shepherd *et al.* 2000, Shepherd and Zacharakis 2002, Shepherd *et al.* 2003, Zacharakis and Meyer 1998). Analysis of variance was carried out on the regression coefficients of responses collected through face-to-face interviews and email and there were no significant differences due to form of survey administration ($p < 0.05$). Thus, data collected through both methods have been aggregated and treated as one.

All respondents were also asked to fill in a post-survey questionnaire (see Table 3.3).

[29] This is where the researcher is based and is the main financial centre in Italy.

Table 3.3: Post-survey questionnaire

Information on your company		
Type of PE firm	Independent/private (1) Bank-affiliated (2) Corporation-affiliated (3)	
Age of firm	Year of founding	
Size of PE firm portfolio	Euro under investment control (in million)	
Number of associates	Full-time equivalents actively involved in funding decisions	
Industry requirements NB: please tick all relevant	Food (1) Consumer goods (2) Industry goods (3) Building (4) Distribution (5) ICT (6) Media and communication (7) Financial services (8) Transport (9) Other (please specify) _____	
Geographic focus NB: please tick all relevant	Regional (1) National (2) International (3)	
Ave. size of investments	Turnover of invested companies (in thousands of Euro)	
Stage of investment (in %; total adds up to 100%) NB: Please consider existing investment portfolio	Seed	
	Start-up	
	Expansion	
	Buy-out/buy-in	
Source of MBO/MBI investment (in %; total adds up to 100%) NB: Please consider existing investment portfolio	Family firm	
	Foreign parent	
	Local parent	
	Privatisation	
	Public buy-in	
	Public-to-private	
	Receivership	
	Secondary buy-out	
	Other (please indicate) _____	
Personal information		
Gender	Male (M); Female (F)	
Year of birth		
Education level	High school diploma or equivalent (1) Degree (Bachelor's or equivalent) (2) Degree (Master's or MBA) (3)	
Tenure with firm	Number of years with current firm	
Other PE experience	In years	
Other relevant experience	Number of years working (excluding years as PE) Please indicate type of experience: _____	

3.5 Concluding remarks

On the basis of the research question i.e., identifying the importance of decision criteria and establishing a model of investment judgement, the following steps were followed (based on Hair *et al.* 1998):

- choice of research method: metric conjoint analysis;
- *stimulus* design (1): selection and definition of factors (seven) and levels (two for each factor);
- *stimulus* design (2): specification of the basic model form (interactive composition rule);
- data collection (1): choice of presentation model (full profile);
- data collection (2): creation of *stimuli* (subset of *stimuli* through fractional factorial design);
- data collection (3): selection of preference measure (metric: ratings);
- data collection (4): form of survey administration (personal interviews and telephone/email responses).

The aim of the following chapter is to analyse the Italian and European PE markets and to describe the sample used in this study.

4 Sample selection

4.1 Introduction

Conjoint analysis has the advantage of requiring relatively small sample sizes. In fact, since conjoint analysis allows researchers to investigate an individual's decision making, it is possible to test for the significance of decision-making criteria through a sample that includes only one individual (Shepherd and Zacharakis 1999). Clearly, greater sample sizes are needed in order to be able to reach meaningful results on a more generalisable scale. Based on previous studies on investor decision making, the rule of thumb is that sample sizes of around 50 respondents are sufficient (Shepherd and Zacharakis 1999). This limited requirement for sample size is particularly appropriate in this instance, in which respondents are private equity (PE) investors who are generally reluctant to participate in surveys (Shepherd and Zacharakis 1999).

This study is based upon findings from 41 respondents based in Italy, as will be seen in greater detail in Chapter 4. Other researchers have been able to achieve larger sample sizes in the US, varying between 53 (Zacharakis and Meyer 1998) and 73 (Muzyka *et al*. 1996). However, the US market is much larger than the Italian one, in terms both of value of investments made and of number of operators present. In 2004, the value of investments in PE and venture capital (i.e., all stages of investment, from start-up to buy-outs of mature businesses) in Italy was less than 9% than equivalent investments in the US. Also, the Italian PE and venture capital association has 83 members[30], while the US association has 453 (source: AIFI and NVCA websites).

Furthermore, institutional investors in Europe are generally even less willing to participate in surveys than their US counterparts (Muzyka *et al.* 1996). Despite this, a high

[30] These include investors at all stages (early- as well as later-stage).

response rate was achieved in this study (equivalent to 81.4% of the population[31]), as will be seen below.

Given the much smaller size of the Italian market and the high response rate, it can be concluded, first, that this study has sufficient statistical power, since it is based upon a sample size that is close the rule of thumb of 50 (Shepherd and Zacharakis 1999); and, second, that findings are generalisable, at least to the Italian PE market[32], since they are based upon a high percentage of the entire population, ensuring external validity of findings (Cook and Campbell 1979).

This chapter is structured as follows. First, PE is introduced, providing a definition of key terms and a description of the various stages of evaluation of potential deals. Then, data on PE deals in family firms are presented, indicating that this type of business is one of the main recipients of PE (Section 4.2). This is followed by an analysis of the sample used in the study (Section 4.3) and of respondent characteristics (Section 4.4). The chapter ends with concluding remarks (Section 4.5).

4.2 Family firms as investment targets for private equity

PE is medium to long-term capital that is provided in return for an equity stake in potentially high growth unquoted companies. The terms "private equity" and "venture capital" are used with varying meanings. Sometimes private equity is used referring only to investments in already established businesses (buy-outs and buy-ins), whilst venture capital refers just to early stage firms (seed, start-up and expansion capital). However, venture capital is also used, especially in Europe, to cover all stages of investment (BVCA website).

[31] A total of 35 PE firms participated in the study (in five of them two respondents carried out the simulation, giving a total number of 41 simulations). The response rate has been calculated on the basis of the number of PE firms: 35 out of 43 (40 out of the 83 members of the Italian venture capital and private equity association were excluded – for further details, see Section 4.3).

[32] Issues of external validity and generalisability of results outside of the Italian PE market are discussed in Chapter 6.

In this dissertation, the terms are used following the first meaning indicated above. Thus, venture capital refers to equity investments made in the early stages of a business's life to develop new products, technologies and/or markets. It includes: seed capital, which allows a business concept to be developed; start-up capital, which helps develop a company's products and fund its initial marketing (this is generally the case for companies that are in the process of being set up or have been trading for a short time, but have not yet sold their product commercially); and expansion capital (also referred to as development capital), which provides for the growth and expansion of a company, which may or may not break even or trade profitably, through increased production capacity, product development, marketing or additional working capital (BVCA and EVCA websites).

PE, instead, refers to established businesses and is generally used to make acquisitions, strengthen the balance sheet, or resolve ownership and management issues. It typically occurs in four situations: a large company undergoing restructuring and selling activities that are no longer considered core; a state-owned company being privatised; a company, or part of a company, going into receivership; and a family-owned business undergoing succession (Mason and Harrison 1999). Given the overlap between PE and family businesses, due to a large number of them having to deal with succession issues (Mason and Harrison 1999, Upton and Petty 1998), this last type of capital is the focus of this dissertation.

There are two main types of PE deals, management buy-outs (MBO) and management buy-ins (MBI)[33]. In these transactions, an established business or business unit (or parts thereof) is acquired from the current shareholders (the vendor). An MBO is the acquisition of a business by its managers, who ask a PE firm to buy shares of the company. An MBI is a deal, involving a PE firm, in which an external management team (chosen by the PE house)

[33] Variants of the MBO/MBI process (Mason and Harrison 1999, Zahra 1995) involve acquisitions in which there are both incumbent and incoming management (buy-in/management buy-out or BIMBOs) and buyouts that are heavily financed by debt (leveraged buy-outs or LBOs).

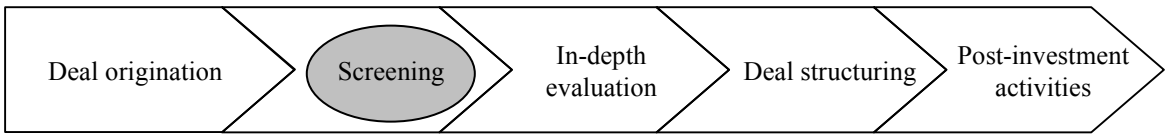
acquires an equity stake. External managers are generally brought in because the current management team has insufficient skills (EVCA 2001).

Although PE deals can take a variety of forms, they share some fundamental characteristics (Wright *et al.* 1994). First, they involve the full or partial transfer of the investee firm's assets to a new company which is created for the purpose of running them ("newco"). Second, the new company generally relies heavily on debt, although this is more common in larger buy-outs. Third, often ownership of the new company is relatively concentrated in the hands of the managers and of the PE firm (or firms), which hold substantial voting blocks.

Professionally managed PE firms tend to be private partnerships or closely-held businesses funded by private and public pension funds, insurance companies, banks and other financial institutions, foundations, and corporations (Mason and Harrison 1999). The ultimate objective for PE houses is to realise the growth potential of investee companies by achieving a high return on the investment in the form of a capital gain through an exit (Mason and Harrison 1999). Exit can be achieved through a full or partial trade sale (selling to another company), a secondary buy-out (selling to another PE firm), an initial public offering (floating on a stock market), or receivership (Wright and Robbie 1998).

PE (and venture capital) investment activity is made up of five sequential steps (Tyebjee and Bruno 1984), which are illustrated in Fig. 4.1.

Fig. 4.1: Five steps of private equity investment activity



The first step is deal origination, when the deal is first considered as an investment prospect (Tyebjee and Bruno 1984). Typically, investment prospects are referred by a

network of intermediaries, such as bankers and lawyers (Mason and Harrison 1999). This stage is closely linked to the PE firm's policies with regard to investment stage and deal size (Wright and Robbie 1998).

If the deal passes this stage, it goes through screening (step two), which is based on assessing whether the investment proposal is "viable at first sight" and evaluating it *vis-à-vis* the key investment criteria of the fund (Manigart *et al.* 1997), such as characteristics of the target firm, size of the investment, sector, etc. Most proposals are rejected at this stage (Mason and Harrison 1999). In this phase there can be potential adverse selection problems because, as the firm being considered is normally not quoted on the stock market, there can be information asymmetry (Wright and Robbie 1998). However, this depends on the stage of the investment. The problem may be greater in early-stage investment, especially if the start-up is in a specialised sector such as high-tech or bio-tech, since this requires specialist skills on the part of the equity investor (Wright and Robbie 1998). If the equity investor is evaluating an established business, the information asymmetry is reduced as it is possible to observe the past performance of the business. Furthermore target firms generally operate in more mature markets requiring less specialised and technical knowledge of the product. The present study considers investment in family firms, in which the vendor is generally closely involved in the management of the firm and, therefore, has deep knowledge of the business. This should reduce information asymmetry. Of course this does not exclude other potential problems, for example the fact that it is difficult to judge whether previous performance will continue in the future, once the vendor's equity stake has been diluted by the introduction of PE (Wright and Robbie 1998). Also, the vendor may have an incentive not to reveal full information, in an effort to obtain the most favourable terms in the transaction (Wright and Robbie 1998).

Following this stage, investment prospects are further narrowed down through in-depth evaluation (step three) via a due diligence process focusing on financial, legal and

strategic considerations. The PE firm collects (directly or via consultants) additional information from the company and other sources, such as bankers, customers, suppliers, and industry experts (Mason and Harrison 1999). At this time, the PE investor compares perceived risks and expected returns and decides whether to make the deal or not (Tyebjee and Bruno 1984).

Deals that pass the in-depth evaluation stage then go through two further steps. First, the deal is structured, through a negotiation over price and covenants[34]. The potential investee firm is valued by applying one or more valuation techniques to the financial and accounting information and by carrying out sensitivity analysis to the financial projections (Wright and Robbie 1996). This information is typically contained in a formal business plan that is submitted to the PE firm (Wright and Robbie 1996). On the basis of the valuation, the deal is structured in a way that allows the PE firm to encourage the management team to perform and to reveal accurate information (Sahlman 1990). Details of the financial structure of the investment are finalised and legal documents are drawn (Mason and Harrison 1999).

Finally, post-investment activities require the PE firm to transform its role from investor to partner. The PE firm supports the investee firm in various areas including finance, strategic planning and recruitment of additional managers (Mason and Harrison 1999). Also, the investor typically has representation on the board of directors which, together with receiving accounts on a regular basis, allows it to monitor its investment (Robbie *et al.* 1992).

Based on the research question (what are the decision-making criteria used by PE investors in their selection of investee firms and how important are these criteria relative to one another), in this study it was decided to focus on the screening stage. Investigating which criteria investors use when they appraise the likelihood of investing in a potential deal and

[34] Covenants are agreements to perform or to refrain from certain activities during a certain time period (EVCA website). Affirmative covenants define acts which a company must perform (e.g., paying taxes and insurance, maintaining corporate existence, etc). Negative covenants define acts which the company must not perform (e.g., prohibition of mergers, sale or purchase of assets, issuing of securities).

whether some criteria are more important than others (as well as if there are any interactions among criteria) can add to our understanding of PE decision making. It can also contribute to identifying the factors that make a potential investee firm attractive to an outside investor. Furthermore, screening is a critical phase during which most proposals are rejected (Mason and Harrison 1999) and decisions at this stage reflect the key investment criteria of the funds involved (Manigart *et al.* 1997).

In the remaining part of this section, data is presented illustrating PE investments in various European countries and drawing attention on family firms as they account for a large proportion of investment.

Table 4.1. shows that, each year between 1995 and 2004, there have been on average over 1,100 PE deals in Europe (CMBOR 2005). Around 29% of MBO/MBI deals had family firms as targets and these were the single largest source of deals in Italy, UK, France and Spain (in other countries the largest source was divestments from local parent companies). On average, deal value of MBOs and MBIs in family firms was about half the deal value for all PE deals, reflecting the fact that the former are often carried out in small and medium sized firms.

Table 4.1: Private equity investments in family firms[35], 1995-2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	CAGR	Total	Average
Europe													
Volume (no. of deals)													
All	971	1,072	1,220	1,220	1,157	1,109	1,157	1,178	1,273	1,273	3.1%	11,630	1,163
Family	320	335	409	447	362	283	270	272	292	353	1.1%	3,343	334
as %	33%	31%	34%	37%	31%	26%	23%	23%	23%	28%	--	29%	29%
Value (€m)													
All	15,256	22,712	36,009	44,152	59,486	74,437	65,379	67,268	65,421	80,239	20.3%	530,359	53,036
Family	4,144	5,037	9,137	11,226	9,365	4,140	6,827	8,050	7,141	11,453	12.0%	76,520	7,652
as %	27%	22%	25%	25%	16%	6%	10%	12%	11%	14%	--	14%	14%
Average deal value (€m)													
All	15.7	21.2	29.5	36.2	51.4	67.1	56.5	57.1	51.4	63.0	16.7%	45.6	--
Family	13.0	15.0	22.3	25.1	25.9	14.6	25.3	29.6	24.5	32.4	10.7%	22.9	--
Italy													
Volume (no. of deals)													
All	12	23	25	33	42	29	17	38	43	43	15.2%	305	31
Family	4	7	6	19	16	9	7	11	12	12	13.0%	103	10
as %	33%	30%	24%	58%	38%	31%	41%	29%	28%	28%	--	34%	34%
Value (€m)													
All	271	1,114	3,116	694	2,713	2,550	737	3,427	7,770	2,472	27.8%	24,864	2,486
Family	65	371	156	554	1,330	467	116	277	653	316	19.2%	4,305	431
as %	24%	33%	5%	80%	49%	18%	16%	8%	8%	13%	--	17%	17%
Average deal value (€m)													
All	22.6	48.4	124.6	21.0	64.6	87.9	43.4	90.2	180.7	57.5	10.9%	81.5	--
Family	16.3	53.0	26.0	29.2	83.1	51.9	16.6	25.2	54.4	26.3	5.5%	41.8	--

Source: CMBOR 2005

[35] Includes MBOs and MBIs.

Overall, the UK is the largest market for PE, accounting for over half of all transactions that took place in 1995-2004 (see Table 4.2). Italy had 305 deals, making it the seventh market by number of deals in Europe. Family firms are an important source of PE deals in Europe. One in three deals in Italy and the UK involved family firms, which were the single largest source for PE transactions in those countries. In Europe as a whole, family firms accounted for around 29% of all deals (the remaining 71% was made up of divestments from local firms, divestments from foreign firms, and secondary buy-outs).

Table 4.2: Private equity deals by number, 1995-2004

	Number of all PE deals	% of total European market	Number of family-firm deals	Family firm deals as % of all deals
Italy	305	2.6%	103	33.8%
UK	6,557	56.4%	2,195	33.5%
France	1,318	11.3%	418	31.7%
Spain	310	2.7%	88	28.4%
Switzerland	467	4.0%	113	24.2%
Belgium	181	1.6%	39	21.5%
Ireland	119	1.0%	20	16.8%
Sweden	266	2.3%	43	16.2%
Germany	851	7.3%	137	16.1%
Netherlands	654	5.6%	103	15.7%
Norway	86	0.7%	13	15.1%
Finland	236	2.0%	35	14.8%
Denmark	143	1.2%	20	14.0%
Austria	89	0.8%	12	13.5%
Portugal	48	0.4%	4	8.3%
Total excl. UK	**5,073**	--	**1,148**	**22.6%**
Total incl. UK	**11,630**	**100.0%**	**3,343**	**28.7%**

Source: CMBOR 2005

In summary, family firms account for a large proportion of all PE deals. Although the Italian market is only seventh by number of deals in Europe, it is in line with other European markets with regard to incidence of family firms deals.

4.3 The sample used in the study

The unit of analysis in this study is the individual PE investor (i.e., the person making the investment decision). In order to identify potential participants, the 2005 Italian PE

Association's membership list was used (AIFI 2005). Out of the 83 AIFI members, 43 PE firms were identified as possible candidates to take part in the research. The following table shows the reasons why the remaining 40 firms were excluded (these are explained in detail below).

Table 4.3: Reasons for exclusion

Reason for exclusion from study	No. of firms
No buy-outs/buy-ins	14
Retail bank	7
Other objectives	6
Duplicated	5
Advisor	4
Small investments	2
Out of business	2
Total	**40**

In detail, the firms were excluded for the following reasons:

- 14 firms did not invest in buy-outs/buy-ins: of these, nine invested only in early stage and start-ups, and five invested in expansion capital;
- seven firms belonged to retail banks and did not operate as separate entities: therefore their main activities were long-term lending and providing asset management and advisory services;
- six firms focused on objectives other than maximising financial returns: these firms generally have a mixed public-private ownership and are driven by a different investment logic (e.g., they invest in economically under-developed areas or their mission is to preserve existing jobs);
- five firms were duplicated i.e., were registered with the Italian PE association (AIFI) twice, under similar names: usually the investment focus varied slightly but the individuals making the investment decisions were the same. These firms were only included in the sample once;
- four firms were mere advisors and did not have their own portfolio;

- two firms made very small investments (on average, less than €1m);
- two firms were no longer in business.

Out of the 43 PE firms that were contacted, 35 accepted to participate in the study (response rate of 81.4%). In five of these firms, the simulation was carried out by two individuals: therefore the final number of responses was 41. The response rate is high, considering that PE investors are generally reluctant to participate in studies (Shepherd and Zacharakis 1999), particularly in European countries (Muzyka *et al.* 1996). The simulations were carried out between July and December 2005.

Table 4.4: Response rate

Interviews	**Number**	**%**
Firms interviewed	35	81.4%
Refusals/no response	8	18.6%
Total no. of firms	**43**	**100.0%**
Individuals interviewed	**41**	

The person indicated in AIFI's contact list – generally the most senior executive – was sent a letter explaining the purpose of the project. In most cases (25 out of the 35 PE firms that took part in the study), the same individual accepted to participate in the study. In 10 PE firms, a different person participated in the study: however, with the exception of four individuals (who were analysts or senior analysts), the remaining were all senior and included a CEO, a partner, two directors, and three senior managers. In five PE firms, there were two respondents: the second respondent included three senior managers and two analysts.

Firms that took part in the study were mostly independent operators (28 firms or 80.0%), evenly divided between local and international firms (see Table 4.5).

Table 4.5: Private equity operators interviewed, by type

		Geographical coverage		**Total**
		Local	**International**	
Ownership	**Independent**	14	14	**28**
	Captive*	6	1	**7**
Total		**20**	**15**	**35**

* Belonging to a bank

Most firms were generalists (26 firms or 74.3%) i.e., they did not specialise in any specific industry. They had an average age of 13.0 years (ranging between 1 and 60 years, S.D. = 11.8) and the average value of their portfolio was €3,338m (ranging between €45m and €25,000m, S.D. = 6,084.3). The large variation in portfolio value is due to the presence both of local (Italian) PE firms and of multinational PE firms with worldwide presence[36].

Table 4.6: Portfolio size of participating PE firms

Portfolio size (mln €)	Number of PE firms
<100	3
100-199	8
200-499	7
500-999	3
1,000-4,999	4
5,000-9,999	3
≥10,000	5
n.a.	2
Total	**35**

Two thirds of the firms took both majority and minority stakes in target firms (27 firms or 77.1%), while the remaining (8 firms or 22.9%) only took minority stakes, generally because they belonged to banks and had restrictions imposed by Italian law.

Only eight firms refused to be interviewed or did not respond, despite being contacted repeatedly – within reasonable limits – both by email and by telephone. There was no bias in non-responses, since these operators represented a similar mix to those that participated in the study (half were international and the other half local; around 75% were independent).

Table 4.7: Private equity operators refusing, by type

		Geographical coverage		Total
		Local	**International**	
Ownership	**Independent**	3	3	6
	Captive*	1	1	2
Total		**4**	**4**	**8**

* Belonging to a bank

[36] Portfolio size is one of the higher-level variables included in the decision-making model.

4.4 Characteristics of respondents

The 41 respondents were mostly male (38 respondents or 92.7%) and had either a degree[37] (21 respondents or 51.2%) or a Master's/MBA (20 respondents or 48.8%). The final sample included mainly senior individuals (35 respondents or 85.3%). Only six respondents (14.6%) were analysts (senior or junior).

Table 4.8: Position of respondents

Position	No. of respondents	%
President, Partner, CEO	19	46.3
Director, Senior Manager	16	39.0
Senior Analyst, Analyst	6	14.6
Total	**41**	**100.0**

Respondents averaged almost 15 years' work experience (see Table 4.9), including both PE and other relevant industries (such as investment banking and management consulting).

Table 4.9: Years of experience, by type of work

Experience	Average no. of years
With current firm	5.4
In private equity	6.6
In other relevant industries	4.8
All experience	**14.9**

Including all relevant work experience, almost a third of respondents had between 11 and 15 years' experience (see Table 4.10). Although the group of respondents is not homogenous in terms of experience, and junior people may have differing decision-making policies because they have not yet developed routines and experience, however responses revealed a high consistency of judgement (as will be discussed in Section 5.3).

[37] This is the Italian "laurea", a degree following a four- or five-year university course.

Table 4.10: Respondents, by years of work experience (all relevant experience)

Number of years	Number of respondents	%
≤ 5	5	12.2%
6-10	6	14.6%
11-15	13	31.7%
16-20	8	19.5%
21-25	4	9.8%
>25	5	12.2%
Total	**41**	**100.0%**

4.5 Concluding remarks

This chapter started with a definition of PE, as equity capital invested in established firms, and a description of the various stages of evaluation of potential deals by investors, highlighting the fact that the study concentrates on the screening stage. It then focused on the size of the Italian PE market, relative to other European markets, and on the importance of family firms as a target for PE. Although the Italian market is only seventh by number of PE deals that took place in the ten-year period between 1995 and 2004, it is in line with other European countries in terms of importance of family firms as a target for PE investment.

Finally, the sample was analysed, drawing attention to the high response rate (81.4%) that was achieved among PE firms based in Italy and investing in established firms. Participating PE firms were mostly independent and generalists, with a large variation in portfolio under management (due to the fact that PE operators in Italy, as in other countries, include both local and international players).

Out of the 35 firms that accepted to take part in the study, in five the simulation was carried out by two people. This gave a total number of respondents of 41, who were mostly senior, with an average work experience of 15 years, male, and with a degree or higher level of education. Since this number is close to the rule of thumb of 50 that is suggested for conjoint studies (Shepherd and Zacharakis 1999), it was concluded that this study has sufficient statistical power. Furthermore, external validity of findings was ensured by the fact

that findings are based upon a large a large percentage of the entire population (Cook and Campbell 1979).

5 Analysis and discussion

5.1 Introduction

Conjoint analysis differs from most other multivariate methods because it allows researchers to carry out analysis at various levels. First, analysis can be carried out at individual level, in order to provide insight into preference models for each respondent. The most common method of interpretation is to investigate individual part-worths for each factor i.e., estimate the overall preference or utility associated with each level of every factor used to define the investment proposal. Part-worths provide an indication of how important each factor is for individual respondents. Since participants in this study were asked to provide a metric measure of preference, based on the use of metric conjoint analysis, multiple regression was used in order to decompose decisions into an underlying structure and diagnose the decision models at individual level (Louviere 1988, Shepherd 1999, Shepherd and Zacharakis 1999).

Second, analysis can be carried out at aggregate level, in order to conduct comparisons across respondents. This type of analysis offers the advantage of having greater statistical efficiency by using more observations in the estimation (Hair *et al.* 1998). Since individuals are organised into groups, organisations, and so on, individual decision making is not only a function of individual choice, but is also subject to a hierarchy of influences that affect decision processes (Sutcliffe and McNamara 2001). Thus, aggregate analysis was carried out at two hierarchical levels (Bryk and Raudenbush 1992), first considering factors just at individual decision maker-level (i.e. the person making the investment decision) and then adding higher-level variables (referring to the PE firms respondents worked for). Analysis was carried out using hierarchical linear modelling (HLM 6.0). This approach has been adopted by scholars in various areas, investigating not only investor decision making (Choi

and Shepherd 2004), but also group behaviour (Barsade 2002), individual performance over time (Deadrick *et al.* 1997), and organisational performance (Chaganti and Damanpour 1991, Hofmann *et al.* 2000).

The remainder of this chapter is organised as follows. First, descriptive statistics are provided (Section 5.2). Second, results are reported at individual level i.e., for each individual PE respondent (Section 5.3). Third, the rationale behind the choice of method for data analysis – hierarchical linear modelling – is explained. The decision-making model is then specified and results are presented (Section 5.4). This is followed by a discussion of findings (Section 5.5) and, finally, by concluding remarks (Section 5.6).

5.2 Descriptive statistics

Each of the 41 respondents evaluated 32 profiles, giving a total number of judgements equal to 1,312. On average, profiles received a rating of 3.76 (S.D. = 1.748).

Table 5.1: Descriptive statistics

Descriptives	
n	1,312
Mean	3.76
Std deviation	1.748
Min	1
Max	7

"Extreme" evaluations (i.e., 1 or 7) were less frequent than intermediate ones, as indicated in Table 5.2.

Table 5.2: Frequency of evaluation

Rating	**Frequency**	**%**
1	144	11.0
2	220	16.8
3	248	18.9
4	232	17.7
5	213	16.2
6	170	13.0
7	85	6.5
	1,312	**100.0**

Table 5.3 shows all the profiles that were evaluated by respondents (ordered by average rating – Column 11). The first column contains a letter, indicating the profile "name" (this was used for analysis purposes only). Columns 2-8 contain each of the seven factors describing family firms that were being evaluated; these are respectively presence of family members wishing to sell their shares and exit the firm, degree of ownership dispersion, presence of professional management, presence of family members with outside work experience, firm profitability, industry growth, and degree of formalisation of systems within the target firm (each variable can take on a value of either "low" or "high").

Table 5.3: Rating of all profiles

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Profile name	**Family exit**	**Ownership dispersion**	**Professional management**	**Exper. family members**	**Firm profitability**	**Industry growth**	**Formal.**	**Min. rating**	**Max. rating**	**Average rating**	**Std. Dev.**	**Average rating first evaluation**	**Average rating second evaluation**
P	high	high	high	high	high	high	high	5	7	6.54	0.670	6.56	6.51
C	low	low	high	low	high	high	high	2	7	5.73	1.144	5.66	5.80
B	low	low	Low	high	high	high	low	2	7	4.83	0.991	4.80	4.85
M	high	high	Low	low	high	high	low	1	7	4.82	1.325	4.63	5.00
L	high	low	high	high	high	low	low	2	6	4.65	1.159	4.66	4.63
G	low	high	high	low	high	low	low	2	7	4.27	1.248	4.15	4.39
K	high	low	high	low	low	high	low	1	6	3.90	1.366	3.85	3.95
F	low	high	Low	high	high	low	high	1	6	3.83	1.098	4.05	3.61
H	low	high	high	high	low	high	low	1	6	3.68	1.226	3.80	3.56
I	high	low	Low	low	high	low	high	1	6	3.61	1.340	3.41	3.80
J	high	low	Low	high	low	high	high	1	7	3.57	1.379	3.73	3.41
E	low	high	Low	low	low	high	high	1	6	2.63	1.232	2.63	2.63
O	high	high	high	low	low	low	high	1	5	2.45	0.983	2.41	2.49
D	low	low	high	high	low	low	high	1	4	2.30	0.898	2.24	2.37
N	high	high	Low	high	low	low	low	1	5	2.04	0.962	1.98	2.10
A	low	low	Low	low	low	low	low	1	3	1.34	0.571	1.37	1.32

Columns 9 and 10 respectively show the minimum and maximum rating received by each profile (the range was between 1 and 7, with 1 being the lowest and 7 the highest). Column 11 shows the average rating received by each profile. As can be seen, profile "P" (in which every variable takes on a value of "high") received the highest rating, while profile "A" (in which every variable takes on a value of "low") received the lowest rating. Column 12 indicates the standard deviation. Each respondent evaluated each profile twice, in order to test for consistency: thus, columns 13 and 14 respectively show the average rating received by each profile in the first and in the second evaluation.

5.3 Individual-level analysis

The first step was to analyse the data for each individual decision maker. Although disaggregated analysis does not take into account the fact that individual responses are influenced by group characteristics (the PE firm respondents work for), individual-level results are reported in this section, in order to identify individual decision-making models and to test for external reliability. Findings are presented considering the 32 decisions that were provided by each of the 41 respondents. For each subject, a multiple regression equation was computed, in which likelihood of investment was regressed on each of the factors as well as on selected two-way interactions (Priem 1992).

Individual models of PE operators' assessment of likelihood of investment explained a significant proportion of the variance in their decision making in 95% of cases ($p < 0.05$) with a mean adjusted R^2 of 0.76.

Variables that were significant most often for each respondent ($p < 0.05$) were, in order: firm profitability (significant for 40 out of the 41 respondents, or 97.6%), industry growth (significant for 40 out of the 41 respondents, or 97.6%), and presence of professional managers (significant for 23 out of the 41 respondents, or 56.1%).

Analysis of contingent effects showed that the interaction that was significant most often was the one between the variables "experienced family members" and "ownership dispersion". This interaction was significant for six out of the 41 respondents (or 14.6% of all respondents). Complete results are displayed in Table 5.4.

Table 5.4: Significance of variables at individual level (regressed on likelihood of investment)

Explanatory variable (in decreasing order of relevance)	**No. of respondents for which variable is significant***		**% of respondents for which variable is significant***	
	$p < 0.05$	$p < 0.001$	$p < 0.05$	$p < 0.001$
1. Firm profitability	40	36	97.6%	87.8%
2. Industry growth	40	27	97.6%	65.9%
3. Professional management	23	15	56.1%	36.6%
4. Family selling	10	7	24.4%	17.1%
5. Experienced family members	10	2	24.4%	4.9%
6. Formalisation	5	1	12.2%	2.4%
7. Ownership dispersion	2	1	4.9%	2.4%
Interactions				
I. Experienced family members × Ownership dispersion	6	-	14.6%	0.0%
II. Experienced family members × Family selling	3	-	7.3%	0.0%
III. Professional management × Ownership dispersion	2	1	4.9%	2.4%
IV. Professional management × Family selling	2	-	4.9%	0.0%

* Based on 41 respondents

Since respondents may not have been familiar with experimental designs, the external reliability of responses given by each individual was tested, in order to verify whether scales were stable. Profiles were administered twice, in order to investigate whether respondents were consistent in their decision-making strategy[38]. Consistency was measured by studying the degree to which respondents' evaluations differed across the two sets of data. Replies

[38] Respondents were not told beforehand that profiles were replicated, although some realised as they proceeded through the simulation. Respondents were asked to rate each profile in the order it was presented to them and not to refer to profiles they had already rated.

were divided into two sets of data (the 16 original and 16 replicated profiles) and external reliability was assessed through test-retest reliability (Hardy and Bryman 2004). This was significant for 95.1% of respondents, or 39 out of 41 ($p < 0.01$). Average test-retest correlation was 0.81 (with R^2 ranging from 0.48 to 1), which is high compared to Shepherd's (1999) value of 0.69 and close to Choi and Shepherd's (2004) value of 0.82. This indicates a high level of consistency in judgement and is typical of experienced decision makers (Shepherd *et al.* 2000).

5.4 Relationships across hierarchical levels

The focus of the present study is to investigate the likelihood of investment in prospective deals. The level of analysis is the individual decision maker i.e., the person making the investment decision. However, individuals are nested in organizations, which may affect individual behaviour. Therefore, it was decided to investigate hierarchical relationships (Hofmann 1997) in order to analyse whether certain variables at one hierarchical level (the PE firm) influenced variables at another hierarchical level (the individual).

In order to carry out analysis across levels, hierarchical linear modelling (HLM 6.0) was used (Bryk and Raudenbush 1992). These models acknowledge that individuals within a particular group (the term "group" is used here to refer to the higher hierarchical level i.e., the PE firm they work for) may be interdependent. In so doing, it is possible to overcome the problems generated by simply aggregating individual-level data to carry out analysis, which can cause potentially meaningful individual-level variance in the outcome measure to be ignored. This is because decision models of two individuals working for the same PE firm may be somehow associated, for example, with the size of the portfolio being managed (since a large portfolio allows the PE firm to spread risk across more deals and can affect investors' risk propensity). If individual responses are all aggregated together, then these effects are lost.

Furthermore, the assumption of independence of observations, which underlies traditional statistical approaches, would also be violated if individual data were simply aggregated (Bryk and Raudenbush 1992, Hofmann 1997).

The advantage of hierarchical linear models is that they "allow one to simultaneously investigate relationships *within* a particular hierarchical level, as well as relationships *between* or across hierarchical levels" (Hofmann 1997: 726). Each of the levels is formally represented by its own submodel; in turn, these submodels represent relationships among variables at each level of analysis and specify how variables at one level influence relationships at other levels (Bryk and Raudenbush 1992). In contrast to OLS approaches (which assume homoscedasticity), HLM recognises the partial interdependence of individuals within the same group.

5.4.1 The decision-making model

Given that two levels were considered in this study, the individual decision makers and the PE firm they work for, HLM generated two submodels (level 1 and level 2), which are analysed in detail below.

The level-1 (i.e., individual-level) submodel is presented in the equation below, where L is the outcome measure (the respondent's likelihood of investment, based on their rating), β_0 is the intercept, β_i are the regression coefficients representing respondents' interval-scaled utilities for each attribute (including selected two-way interactions), variables in brackets are the values of the predictors, and R is the residual error term:

$$L = \beta_0 + \beta_1 (GROWTH) + \beta_2 (PROFIT) + \beta_3 (EXPFAM) + \beta_4 (PROFMGT) + \beta_5 (EXIT) + \beta_6 (DISP) + \beta_7 (FORMAL) + \beta_8 (EXPFAM\_EXIT) + \beta_9 (EXPFAM\_DISP) + \beta_{10} (PROFMGT\_EXIT) + \beta_{11} (PROFMGT\_DISP) + R$$

The explanatory variables (all dummy variables, corresponding to values of HIGH and LOW[39]) are as follows:

1. GROWTH = industry growth;
2. PROFIT = firm profitability;
3. EXPFAM = experienced family members;
4. PROFMGT = professional managers;
5. EXIT = family members wishing to exit, by selling their shares;
6. DISP = ownership dispersion;
7. FORMAL = degree of formalisation;
8. EXPFAM_EXIT = interaction between "experienced family members" and "family members wishing to exit";
9. EXPFAM_DISP = interaction between "experienced family members" and "ownership dispersion";
10. PROFMGT_EXIT = interaction between "professional managers" and "family members wishing to exit";
11. PROFMGT_DISP = interaction between "professional managers" and "ownership dispersion".

The level-2 (i.e., PE firm-level) submodel uses the intercepts and slopes from the level-1 analysis as dependent variables. In the submodel shown below, β_i are the level-1 regression coefficients (i = 0-11), $\gamma_{i,0}$ are the second stage intercept terms, $\gamma_{i,1}$ and $\gamma_{i,2}$ are the slopes relating the two group-level variables to the intercept and slope terms from the level-1

[39] These were coded as 0.5 (corresponding to HIGH) or -0.5 (corresponding to LOW), in order to test for interactions.

equation, variables in brackets are the two group-level variables, and U_i are the level-2 residual terms.

$$\beta_i = \gamma_{i,0} + \gamma_{i,1} (PORTFOLIO) + \gamma_{i,2} (DEALTYPE) + U_i$$

The explanatory variables are as follows:

1. PORTFOLIO = value of PE firm's portfolio (measured in million Euro);
2. DEALTYPE = type of deal (dummy variable corresponding to whether the PE firm takes a majority stake or a minority stake in the investee firm[40]).

The following sections report findings for the two submodels, starting with the level-1 (individual-level) submodel.

5.4.2 Aggregate-level analysis: level-1 submodel

Hierarchical regression analysis was used to investigate the amount of variance explained first by the main effects model and then by the full model, which also included selected two-way interactions. Results of this analysis are displayed in Table 5.5, which indicates that both models explain a large amount of variance in PE investors' decisions (Kreft and De Leeuw 1998). The improvement in fit between the model with main effects only and the model with interactions is very small. This should not be surprising since adding interaction terms does not generally lead to large increases in variance, because variance is simply being repartitioned. Instead, given that the aim here is to untangle the effects of causes of the dependent variable, independent variable coefficients are much more informative than

[40] This was coded as 0 (corresponding to "majority stake") or 1 (corresponding to "minority stake").

the R^2 (Hardy and Bryman 2004), therefore the analysis will be based on the standardised beta coefficients.

Table 5.5: Private equity investors' decision model (level-1)[a]

Intercept and level-1 variables (in decreasing order of relevance)	Main-effects model		Full model	
	Standardised coefficient	S.E.	Standardised coefficient	S.E.
Intercept	3.770	0.074**	3.770	0.074**
Firm profitability	2.030	0.118**	2.030	0.118**
Industry growth	1.418	0.104**	1.418	0.104**
Professional management	0.845	0.093**	0.845	0.093**
Experienced family members	0.351	0.053**	0.351	0.053**
Family exit	0.345	0.098*	0.345	0.098*
Formalisation	0.136	0.070	0.136	0.070
Ownership dispersion	0.034	0.048	0.034	0.048
Experienced family × Family exit			0.337	0.077**
Experienced family × Ownership dispersion			0.253	0.091*
Professional managers × Ownership dispersion			0.125	0.078
Professional managers × Family exit			0.042	0.116
Model[b]				
R^2	0.626		0.629	

n = 1312[41]
[a] These statistics have been calculated using hierarchical regression analysis
[b] Calculated following the formulae indicated by Hofmann (1997)
* $p < 0.01$
** $p < 0.001$

As can be seen in Table 5.5[42], five out of seven main-effect coefficients are significant and positive, indicating that the likelihood of PE investors investing in a family firm is positively associated with higher profits, a growing industry, and the presence of professional managers. Other positive associations are with the presence of experienced family members and the number of family members wishing to sell their shares and exit the firm (although standardised coefficients are lower). These findings provide support respectively for Hypotheses 2, 1, 4, 3, and 5. The association between likelihood of investment and level of

[41] Each of the 41 respondents evaluated 32 profiles (plus a practice profile, which was excluded from the analysis).
[42] Table 5.5 shows results for the model in which all the dummy variables were coded -0.5, corresponding to LOW, and 0.5, corresponding to HIGH. The model was also run with the dummy variables coded respectively as 0 and 1. Results were not substantively different, since the same variables were significant and the nature of the relationship (i.e., positive or negative) was the same.

ownership dispersion is not significant, therefore Hypothesis 6 is not supported[43]. The association between likelihood of investment and degree of formalisation is positive but not significant, therefore Hypothesis 7 is not supported.

Results for the full model indicate that two interactions out of four are statistically significant: those between the presence of experienced family members and family members wanting to sell their shares and exit, and between the presence of experienced family members and ownership dispersion. Therefore, the positive association between likelihood of investment and presence of experienced family members is magnified when more family members wish to exit the firm and when ownership is more fragmented (and, conversely, the effect of the presence of experienced family members is reduced when fewer family members wish to exit the firm and when ownership is more concentrated). This provides support for Hypotheses 8a and 9a. The other two interactions indicate a positive but statistically not significant association, therefore Hypotheses 8b and 9b are not supported.

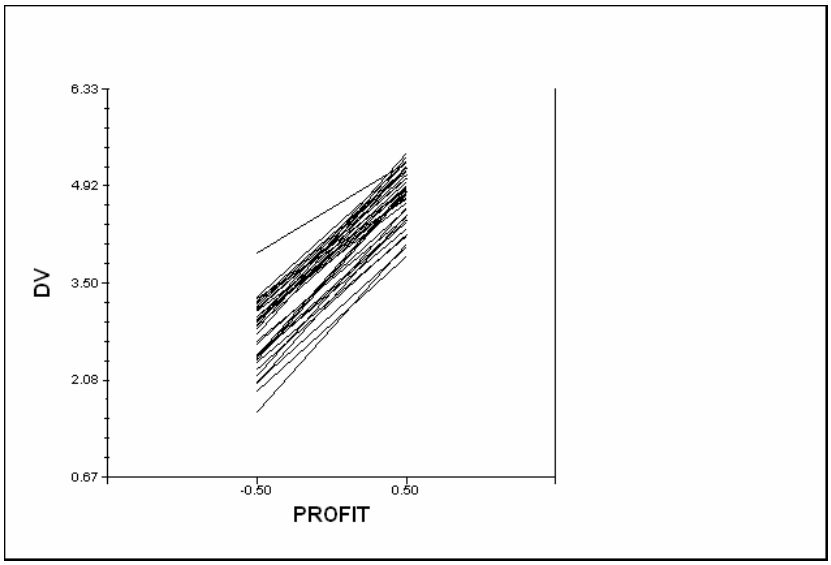
The associations between variables are illustrated in the following charts, in which the X axis represents each of the explanatory variables and the Y axis represents the dependent variable (DV), "likelihood of investment". Explanatory variables take a value of -0.50, equal to LOW, and 0.50, equal to HIGH. Graphs are presented in decreasing order of relevance of the explanatory variables, starting from the most important (firm profitability). Every graph contains 41 lines, representing each of the 41 respondents' decision models (as can be seen, some are higher than others, indicating that, for each level of the explanatory variable, some individuals indicated a higher likelihood of investment than other respondents).

Fig. 5.1 illustrates the relationship between levels of firm profitability, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. As can be

[43] The relationship is positive (a negative relationship was hypothesised).

seen, there is a positive association: when the target family firm has low profitability, the likelihood of investment is lower than for higher levels of firm profitability ($p < 0.001$).

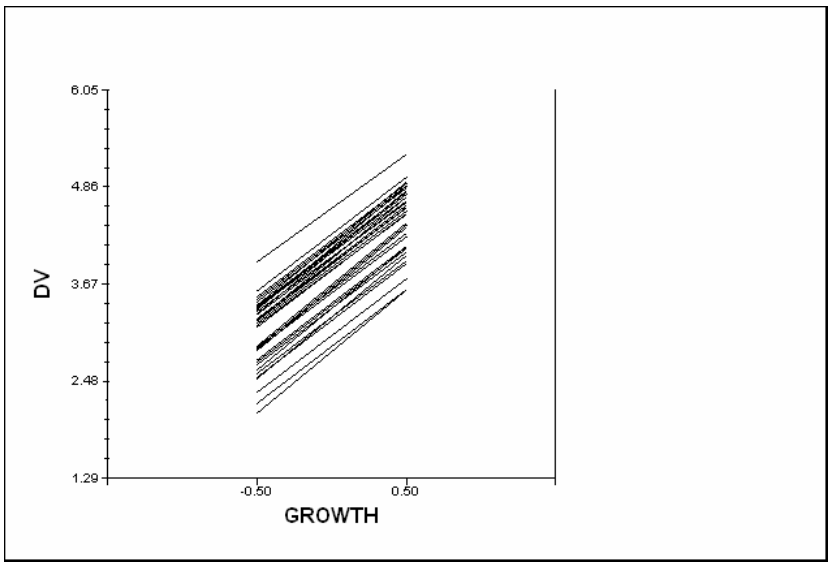
Fig. 5.1: Association between "profitability" and "likelihood of investment"*



* DV = Likelihood of investment; PROFIT = Firm profitability (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.2 illustrates the relationship between the level of industry growth, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. There is a positive association ($p < 0.001$).

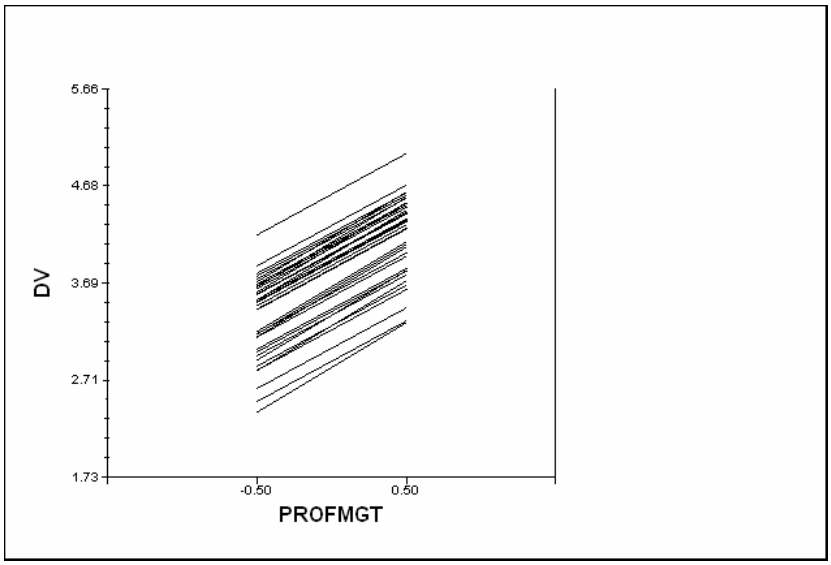
Fig. 5.2: Association between "industry growth" and "likelihood of investment"*



* DV = Likelihood of investment; GROWTH = Industry growth (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.3 illustrates the relationship between the presence of professional management, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. The association is positive ($p < 0.001$).

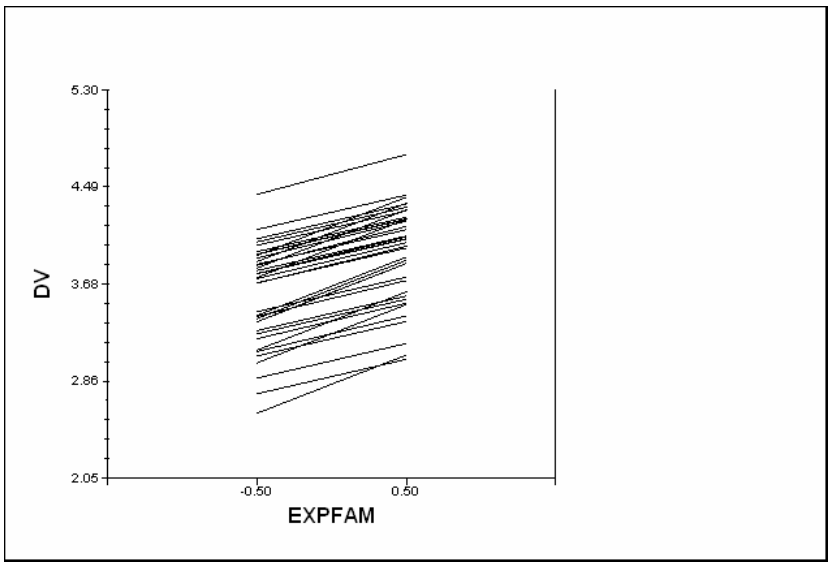
Fig. 5.3: Association between "professional management" and "likelihood of investment"*



* DV = Likelihood of investment; PROFMGT = Professional management (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.4 illustrates the association between the presence of "experienced family members", which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and "likelihood of investment". There is a positive association ($p < 0.001$).

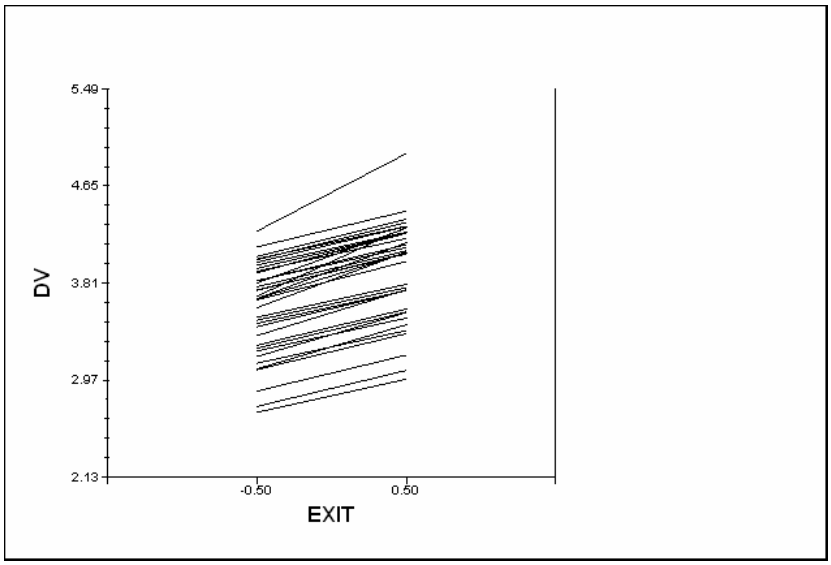
Fig. 5.4: Association between "experienced family members" and "likelihood of investment"*



* DV = Likelihood of investment; EXPFAM = Experienced family members (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.5 illustrates the relationship between the presence of family members wishing to sell their shares and exit the firm, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. The association is positive ($p < 0.01$).

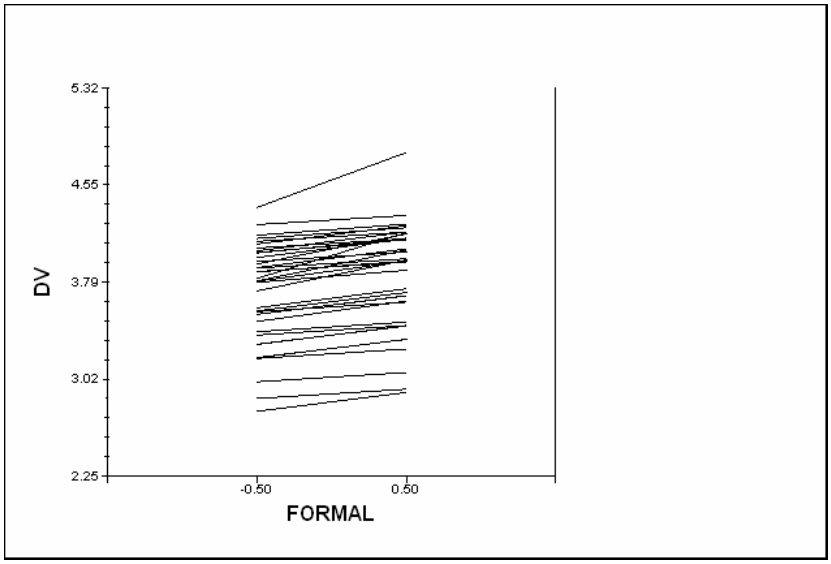
Fig. 5.5: Association between "family exiting" and "likelihood of investment"*



* DV = Likelihood of investment; EXIT = Family exiting (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.6 illustrates the relationship between the level of formalisation, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. The association is positive but not significant.

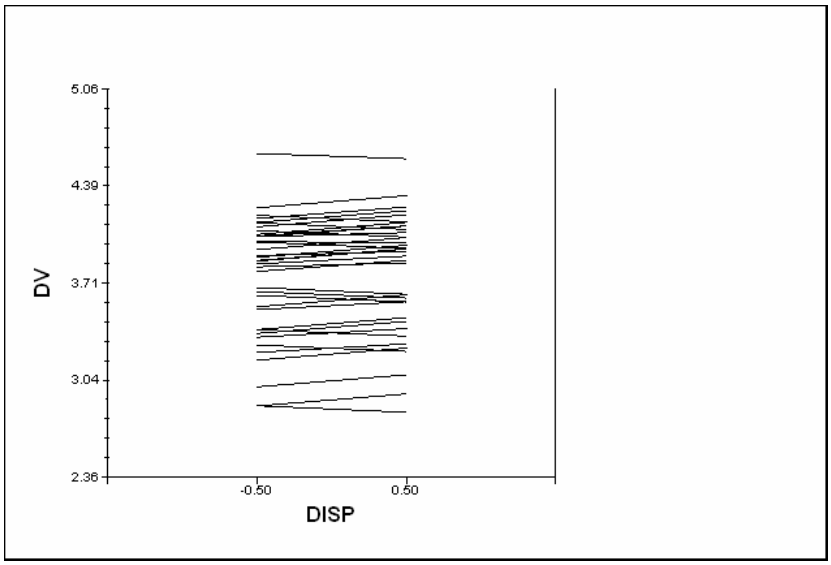
Fig. 5.6: Association between "formalisation" and "likelihood of investment"*



* DV = Likelihood of investment; FORMAL = Formalisation (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.7 illustrates the relationship between the levels of ownership dispersion, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. The association is positive but not significant.

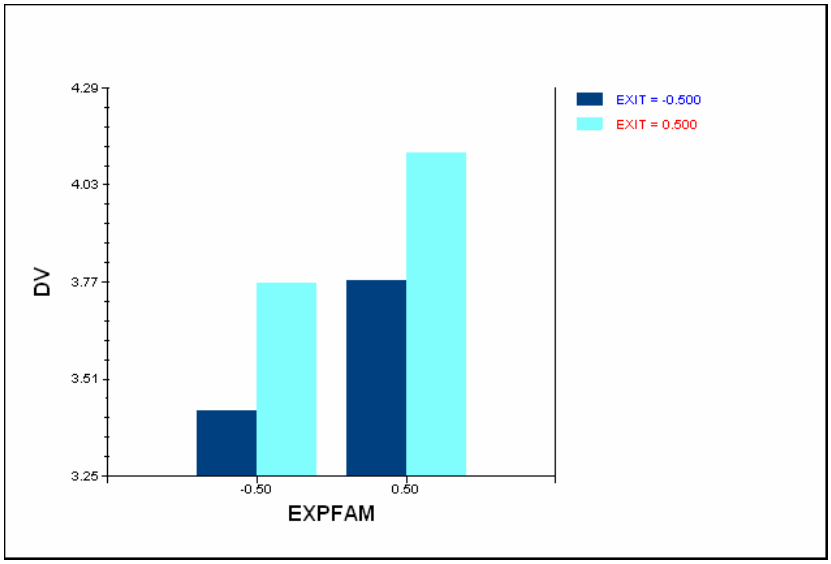
Fig. 5.7: Association between "ownership dispersion" and "likelihood of investment"*



* DV = Likelihood of investment; DISP = Ownership dispersion (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.8 illustrates the contingent effect of the level of family members wishing to sell their shares and exit the firm (which can be LOW, equal to -0.50, or HIGH, equal to 0.50) on the relationship between the presence of experienced family members, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. The association is positive and significant ($p < 0.001$), indicating that the positive association between presence of experienced family members and likelihood of investment is stronger when there are more family members wishing to exit the firm (and, conversely, weaker when there are fewer family members wishing to sell their shares).

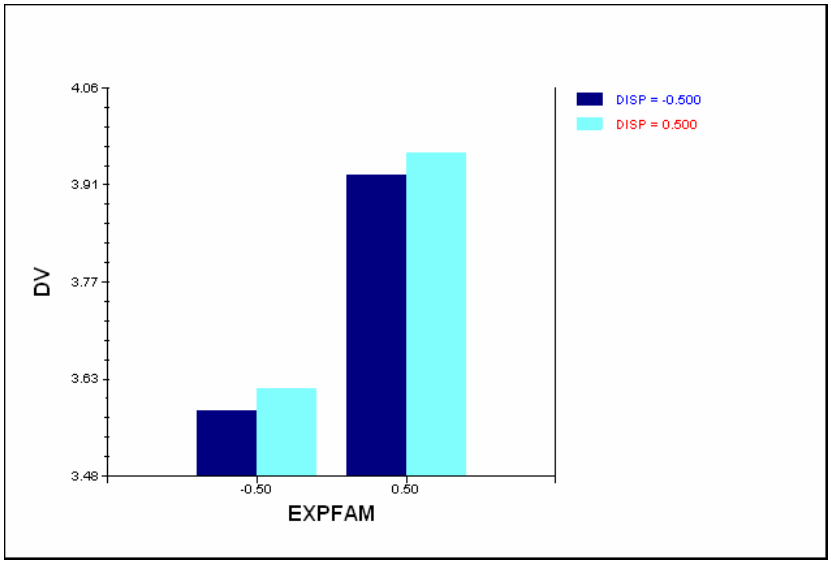
Fig. 5.8: Contingent effect of "family exiting" on the association between "experienced family members" and "likelihood of investment"*



* DV = Likelihood of investment; EXPFAM = Experienced family members (-0.50 = LOW; 0.50 = HIGH); EXIT = Family members exiting (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.9 illustrates the contingent effect of the level of ownership dispersion (which can be LOW, equal to -0.50, or HIGH, equal to 0.50) on the relationship between the presence of experienced family members, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and the likelihood of investment. The association is positive and significant ($p < 0.01$), indicating that the positive association between presence of experienced family members and likelihood of investment is stronger when there are higher levels of ownership dispersion (and, conversely, weaker when ownership is more concentrated).

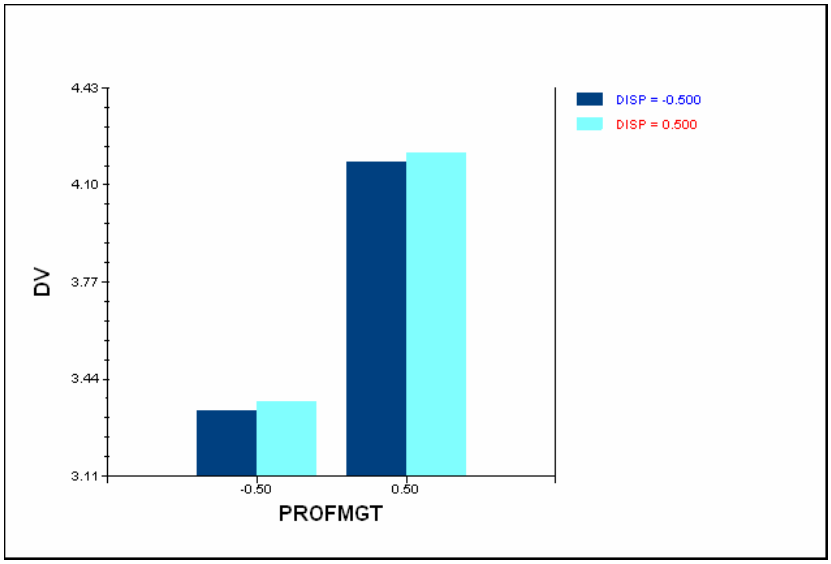
Fig. 5.9: Contingent effect of "ownership dispersion" on the association between "experienced family members" and "likelihood of investment"*



* DV = Likelihood of investment; EXPFAM = Experienced family members (-0.50 = LOW; 0.50 = HIGH); DISP = Ownership dispersion (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.10 illustrates the contingent effect of the level of ownership dispersion (which can be LOW, equal to -0.50, or HIGH, equal to 0.50) on the relationship between presence of professional management, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and likelihood of investment. The association is positive but not significant.

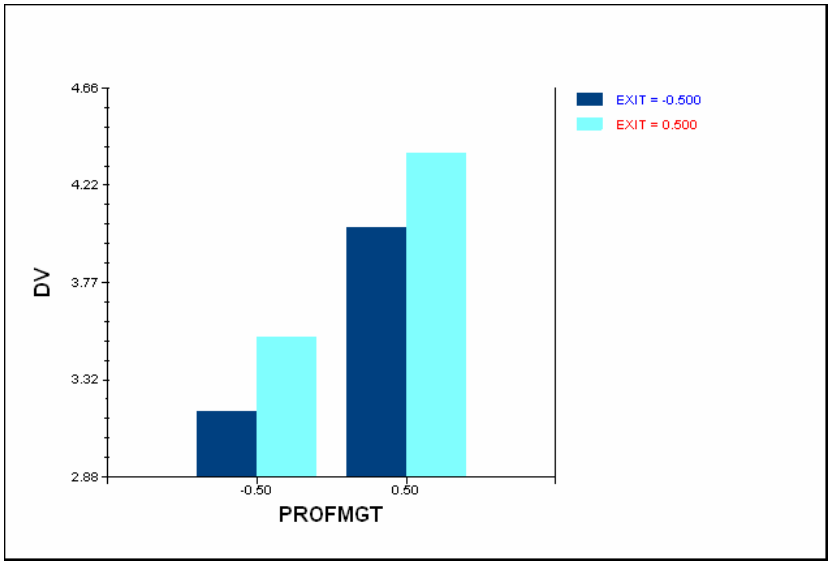
Fig. 5.10: Contingent effect of "ownership dispersion" on the association between "professional management" and "likelihood of investment"*



* DV = Likelihood of investment; PROFMGT = Professional management (-0.50 = LOW; 0.50 = HIGH); DISP = Ownership dispersion (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.11 illustrates the contingent effect of the level of family members wishing to exit (which can be LOW, equal to -0.50, or HIGH, equal to 0.50) on the relationship between presence of professional management, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and likelihood of investment. The association is positive but not significant.

Fig. 5.11: Contingent effect of "family exiting" on the association between "professional management" and "likelihood of investment"*



* DV = Likelihood of investment; PROFMGT = Professional management (-0.50 = LOW; 0.50 = HIGH); EXIT = Family exiting (-0.50 = LOW; 0.50 = HIGH)

5.4.3 Aggregate-level analysis: level-2 submodel

The level-2 submodel addresses the question of whether group-level variables are associated with the variation showed by the level-1 submodel. It does so by using the intercepts and slopes from the level-1 analysis as dependent variables (Hofmann 1997). In Chapter 2, hypotheses (H10-12) were put forward that the size of the portfolio held by the PE firm on the one hand and the type of deal – involving a majority or minority stake – on the other are associated with profit level and managerial resources of the target firm that were desirable for the investor.

Table 5.6 shows results of the level-2 model for all level-1 variables. Variables for which hypotheses were formulated in Chapter 2 are highlighted.

Table 5.6: Private equity investors' decision model (level-2)[a]

Intercept and level-1 variables	Level-2 variables	Standardised coefficient	S.E.
Intercept	PORTFOLIO	0.000021	0.000014
	DEALTYPE	-0.073386	0.174834
Industry growth	PORTFOLIO	-0.000003	0.000011
	DEALTYPE	0.117957	0.136860
Firm profitability	PORTFOLIO	-0.000026	0.000011*
	DEALTYPE	0.487666	0.136860**
Experienced family members	PORTFOLIO	0.000002	0.000011
	DEALTYPE	0.198865	0.136860
Professional management	PORTFOLIO	0.000000	0.000011
	DEALTYPE	0.091249	0.136860
Family exiting	PORTFOLIO	0.000014	0.000011
	DEALTYPE	-0.027126	0.136860
Ownership dispersion	PORTFOLIO	-0.000005	0.000011
	DEALTYPE	-0.129211	0.136860
Formalisation	PORTFOLIO	0.000015	0.000011
	DEALTYPE	0.073328	0.136860
Experienced family × Family exiting	PORTFOLIO	-0.000018	0.000022
	DEALTYPE	0.092606	0.273719
Experienced family × Ownership dispersion	PORTFOLIO	-0.000010	0.000022
	DEALTYPE	0.272667	0.273719
Professional managers × Family exiting	PORTFOLIO	0.000029	0.000022
	DEALTYPE	-0.228957	0.273719
Professional managers × Ownership dispersion	PORTFOLIO	0.000008	0.000022
	DEALTYPE	0.172361	0.273719

n = 1312[44]

[a] These statistics have been calculated using hierarchical regression analysis

* $p < 0.05$

** $p < 0.01$

Results indicate that the two coefficients relating to the variable "firm profitability" are significant. The coefficient for "portfolio" is negative ($p < 0.05$), indicating that PE investors are more likely to invest in a family firm with low profits when they have a larger portfolio (and, conversely, are more likely to invest in a family firm with high profits if their portfolio is limited). The coefficient for "deal type"[45] is positive ($p < 0.01$), indicating that PE investors are more likely to invest in a family firm with low profits if they take a majority stake (and, conversely, are more likely to invest in a family firm with high profits if they take a minority stake). These findings provide support for Hypotheses 10a and 10b.

[44] Each of the 41 respondents evaluated 32 profiles.

[45] This is a dummy variable, coded 0 for majority deals and 1 for minority deals.

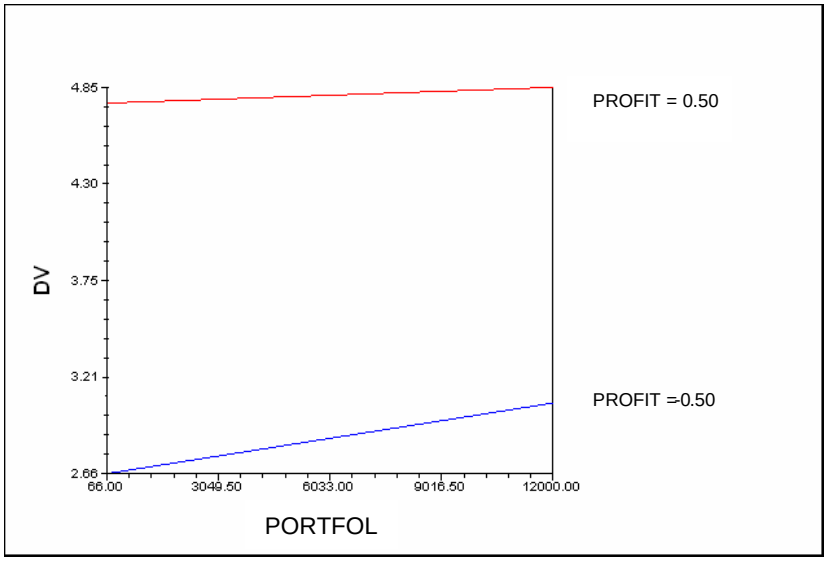
Results indicate that the coefficients relating to the variables "experienced family members" and "professional management" are not significant. Therefore Hypotheses 11a, 11b, 12a and 12b are not supported.

Although hypotheses were formulated only with reference to three variables relating to the target firm, findings are presented for all variables considered in the decision-making model. Table 5.6 shows that the size of the PE firm's portfolio and whether it takes a majority or minority stake in the target firm are not significantly associated with any of the other level-1 variables.

The following charts illustrate the findings that investors from different PE firms (based on the value of their portfolios and on whether they take a majority or minority stake in the target firm) show systematic differences in the strength of the relationship between firm profitability and likelihood of investment.

The association shown in Fig. 5.12 is negative and significant ($p < 0.05$), indicating that the association between profit levels of the target firm (which can be LOW, equal to -0.50, or HIGH, equal to 0.50) and likelihood of investment is stronger when the PE firm has a smaller portfolio value. Individuals working for PE firms with smaller portfolios are significantly less likely to invest in low-profit target firms than individuals working for PE firms with larger portfolio.

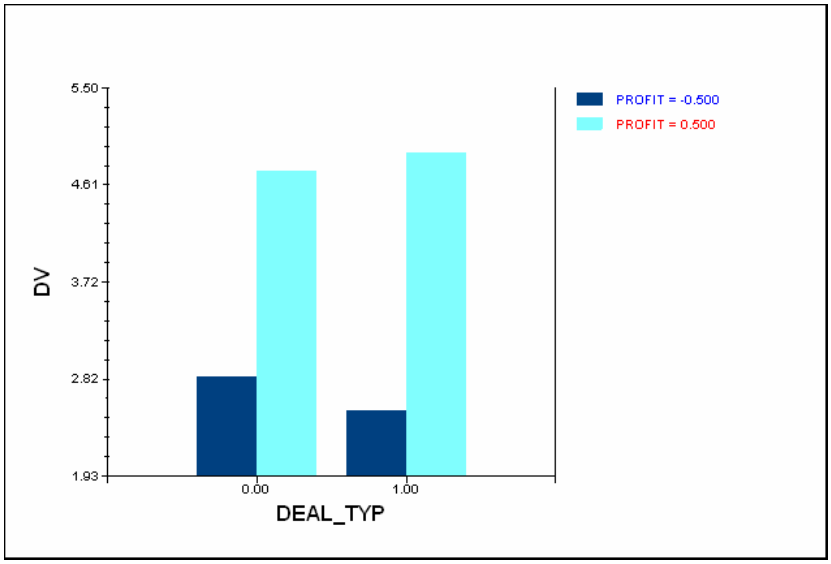
Fig. 5.12: Relationship between "profitability" and "likelihood of investment" based on "value of portfolio"*



* DV = Likelihood of investment; PORTFOL = Size of PE firm portfolio (000 Euro); PROFIT = Target firm profitability (-0.50 = LOW; 0.50 = HIGH)

Fig. 5.13 illustrates the difference in the relationship between the level of target firm profitability, which can be LOW (equal to -0.50) or HIGH (equal to 0.50), and likelihood of investment, based on deal type carried out by the PE firm (deal type can be "majority stake", equal to the value 0, or "minority stake, equal to the value 1). The association is positive and significant ($p < 0.01$), indicating that the association between profit levels of the target firm and likelihood of investment is stronger when the decision maker works for a PE firm taking a minority stake in the target firm. When a PE firm takes a minority stake, individual decision makers are less likely to invest in a low-profit firm and more likely to invest in a high-profit firm than if the PE firm took a majority stake.

Fig. 5.13: Relationship between "profit" and "likelihood of investment" based on "type of deal"*



* DV = Likelihood of investment; DEAL_TYP = Deal type (0 = majority stake; 1 = minority stake); PROFIT = Target firm profitability (-0.50 = LOW; 0.50 = HIGH)

5.5 Discussion

This dissertation has employed theoretical perspectives drawn from strategic management theory to provide a framework aimed at understanding the criteria and models used in decision-making processes, relating to PE investments in family firms. These are discussed below and include decision-making theory, industrial economics and resource-based view, as well as prevailing perspectives on buy-outs.

First, decision-making theory is fundamental to strategic management, since strategic outcomes stem from managerial decisions and actions (Dean and Sharfman 1996). Numerous scholars have addressed decision making, with contributions ranging from the overarching concept of rationality (Simon 1978), to the use of cognitive heuristics and maps (Axelrod 1976, Tversky and Kahneman 1974), to procedural rationality and decision-making effectiveness (Dean and Sharfman 1996). The focus of this dissertation has been on analysing procedural rationality i.e., the decision process. Within the context of organisational decisions, Dean and Sharfman (1996: 373) defined procedural rationality as "the extent to

which the decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making the choice". This study has a different context and procedural rationality here can be defined as *the extent to which the decision process involves the use of information relating to the prospective investment*.

Criteria selected for the decision-making model were drawn from existing literature: factors included both industry attractiveness (because, according to industrial economics (Porter 1980), it is at the basis of superior profitability) and firm resources (because, according to resource-based view (Barney 1991), they are key for establishing and sustaining competitive advantage).

The fourth body of literature refers to theoretical perspectives on buy-outs. Underlying the decision models used by PE professionals is the way they view their investments. In other words, their evaluation of target firms is influenced by whether they perceive their investment, first, as a governance and control device aimed at reducing agency costs in investee firms through the introduction of stricter governance systems and more effective incentives (Jensen 1993); second, as a route for strategic managerial innovation introducing changes in strategy, organisational structure, managerial practices and other entrepreneurial activities (Markides 1998, Reid 1996), aimed at improving the use of firm resources and addressing the upside revenue potential of investee firms; or, third, as means to making capital gains (Wright and Robbie 1998), with a view to minimising the riskiness of the project (MacMillan *et al.* 1985, Zutshi *et al.* 1999), which depends on increasing competition, failure to implement a strategy, mismanagement, leadership inability, or difficulties with exit (MacMillan *et al.* 1985). Thus, the proposed theoretical model was also analysed in light of investors' prevailing objectives.

The remainder of this section is divided into three parts. The first addresses the PE investors' decision-making models (Section 5.5.1). The second part deals with decision-

making criteria used in selecting investee family firms (Section 5.5.2). The third part focuses on what these findings mean for family firms receiving PE investments (Section 5.5.3).

5.5.1 The decision-making model

The proposed model for PE investors' decision making is based upon the assumption that these individuals decide whether to invest in a firm under conditions of uncertainty. Therefore, they rely on cognitive heuristics to simplify the problem and process potentially vast amounts of information (Janis 1989), focusing on a few key variables in order to reach a decision (Tversky and Kahneman 1974). It is also assumed that PE investors are boundedly rational individuals who adopt a coherent, step-by-step, problem-solving approach (Miller *et al.* 1996), similarly to other types of investors who follow multi-stage investment processes (Tyebjee and Bruno 1984, Zutshi *et al.* 1999).

The theoretical model focused on a specific stage of PE decision making, namely screening (see Section 4.2). This is a crucial phase during which most proposals are rejected (Mason and Harrison 1999). Furthermore, decisions at this stage reflect key investment criteria of the funds involved (Manigart *et al.* 1997). Therefore, investigating which criteria are used, whether some criteria are more important than others, and whether there are any interactions among criteria can add to our understanding of PE decision making. It can also contribute to identifying the factors that make a family firm attractive to an outside investor. This is an important issue, given that family firms are key for creating employment and contributing to economic growth (Zahra and Sharma 2004) and that they may need the help of an external investor in order to develop and build their entrepreneurial attitude in order to identify and exploit opportunities (Shane and Venkataraman 2000, Sirmon and Hitt 2003). This is even more relevant for family firms that are facing succession issues (Shanker and Astrachan 1996, Upton and Petty 2000) and growth challenges (Corbetta 2005).

By using an experimental design, which allows the researcher to control information used by participants in their decisions, it was possible to highlight investment policy differences among respondents (Bailey 1994, Stahl and Zimmerer 1984). Results of the study indicate consistency between the proposed theoretical model and investor decision making, with the model explaining a large amount of variance in the assessment of likelihood of investment. External reliability was investigated through average test-retest correlation, which showed a high level of consistency in judgement, thereby addressing the potential concern of artificiality (Raser 1969) associated with an experimental design. Furthermore, findings confirm that experts typically use fewer criteria than are available (Stewart 1988, Zacharakis and Shepherd 2001) and that they do not consider cues to be relevant only because they have been presented to them (Schepanski *et al*. 1992).

Contrary to previous studies, indicating that few decision makers interactively process information (Slovic and Lichtenstein 1971, Stahl and Zimmerer 1984), analysis of decision models used by respondents reveals that, while main effects explain a large amount of variance in response data, two of the selected two-way interactions are also statistically significant. This is in line with Louviere (1988), according to whom two-way interactions account for the next largest amount of variance after main effects (whilst higher-order interactions can be assumed to be negligible). Although selected two-way interactions did not explain a large amount of additional variance, nevertheless the two significant interactions can add to our understanding of individual PE investors' decisions and of the criteria used to arrive at those decisions. These are discussed below (Section 5.5.2).

With regard to buy-out objectives, findings show that PE investor decision-making is aimed mainly at reducing risks associated with the project under evaluation. Therefore, the other two objectives indicated by buy-out theory – maximising cost efficiency opportunities and creating upside potential (Jensen 1993, MacMillan *et al.* 1985, Zutshi *et al.* 1999) – are

relatively less important. This is discussed in more detail in the next Section (5.5.2), in which decision-making criteria are analysed.

Finally, it appears that PE investment decision policies tend to be individual-specific i.e., not associated with higher-level variables (relating to the PE firm individuals work for), such as portfolio dimension or size of the equity stake being taken in the target firm. These higher-level factors were found to be significant only with reference to profitability levels of the target firm, showing that PE professionals are willing to invest in a lower profit target firm if their PE firm has a large portfolio or if it takes a majority stake. This provides further support to the evidence that PE investors are mainly concerned with minimising the riskiness of projects being evaluated, even if this means accepting lower upside potential or reduced potential for cost efficiency improvements.

5.5.2 Decision-making criteria

As stated above, analysis of PE investors' decision-making models shows that respondents use a limited number of criteria in their decision to invest in prospective deals: although profiles contained seven criteria, only five were used in a significant manner. In descending order of importance, respondents were more likely to invest in firms with higher profitability, operating in higher growth industries, and with greater presence of professional management. The presence of experienced family members and of family owners wishing to sell their shares were also statistically significant. Additionally, the study shows that the effect of one of the criteria is qualified by two contingent relationships. Specifically there was a statistically significant interaction between experienced family members on the one hand and, respectively, family owners wishing to sell their shares and degree of ownership dispersion on the other. These findings are analysed below.

Findings both at individual level (section 5.3) and at aggregate level (section 5.4.2) indicate that the most important criteria associated with likelihood of investment are target

firm profitability, industry growth and presence of professional managers. This finding is not surprising, in light of industrial organisation and resource-based view. Although some empirical evidence has suggested that industry factors play a relatively small role in firm-level performance (Rumelt 1991) and other studies have obtained mixed results (McGahan and Porter 1997), firm-level strategy needs to take into account the external environment (Grant 1991). Therefore, the finding that PE investors are more likely to invest in firms operating in growing markets is in line with industrial organisation economics and much of the strategic management literature, which views strategy as a series of choices bringing an organisation's internal resources together with external opportunities in the environment (Hofer and Schendel 1978). Respondents were also found to value the profit level of the prospective target firm. A firm's ability to generate profits in excess of its cost of capital depends not only on the external environment, but also on whether it has established a competitive advantage over its competitors (Grant 1991, Porter 1980). A firm generating superior profits signals to external investors that it has resources and capabilities that have led it to create a competitive advantage (i.e., that its past and current stock of resources and capabilities has allowed it to achieve profitable results). Therefore, this finding is also in line with existing theory. With regard to human capital resources, individual-level knowledge, skills and capabilities play an important role in the resource-based view (Barney 1991). The finding that the presence of professional managers is important to PE investors provides support for a number of previous studies, showing that professional managers play a critical role in strategic decision making and have a positive impact on firm performance, both in general and specifically in family firms (Chua *et al.* 2003, Gallo and Vilaseca 1998), thanks not only to their skills but also to their idiosyncratic knowledge of the firm (Lee *et al.* 2003).

The observation that the most important criteria for investment selection are target firm profitability, industry growth and presence of professional managers is more remarkable

in light of PE investment literature. According to prevalent literature, PE deals have two main objectives. First, they can be viewed as governance and control tools that are put in place to reduce agency costs (Jensen 1993). Although agency costs in family firms are different from those envisaged by traditional theory and deriving from the separation of ownership and management (Jensen and Meckling 1976), nevertheless family firms present a peculiar type of agency cost resulting from altruistic behaviours by family members[46] (Chrisman *et al.* 2004, Schulze *et al.* 2001). However, the three most important criteria that emerge in this study do not relate to a reduction of agency costs through stricter governance and greater focus on efficiency. Of the two criteria included in the theoretical model relating to agency cost reduction, presence of family members wishing to sell their shares was statistically significant but was the least important factor, while ownership dispersion was not significant. This suggests that opportunities for cost reduction are not the main priority for PE investors evaluating target family firms.

Selection criteria do not relate to the second prevalent perspective on buy-outs either, according to which buy-outs are routes for strategic managerial innovation (Robbie *et al.* 1999, Wright *et al.* 2001), aimed at achieving upside revenue potential in investee firms. On the contrary, PE investors indicated that they would rather invest in family firms that already display positive performance in terms of profits, operate in a growing industry and have professional managers. These are firms that can only offer limited upside potential (and that would also have a higher price reflecting the value of a firm that is already profitable, operates in an attractive industry and has professional managers).

Instead, PE investors' decision-making models indicate that they are concerned mainly with reducing risks relating to potential investments (MacMillan *et al.* 1985, Zutshi *et al.* 1999), even if this means limiting opportunities for extracting cost efficiencies or creating

[46] These costs were discussed in Section 2.5.4.

upside potential. The finding that PE investors are risk-averse individuals is also supported by the PE firm-level results (see Section 5.4.3), which indicate that investors are more willing to invest in a low-profit target firm if they have a large portfolio[47] and if they take a majority stake. In the first instance, the PE firm is more able to spread its risk across a larger number of investments and, in the second, it is more likely to be able to drive the future strategy of the investee firm, thanks to its controlling equity stake. Both cases imply a reduction in the risk being taken. Under these circumstances, individual investors indicated they would be willing to invest in a family firm with lower profits (which offers greater upside but also presents higher risk).

It is also important to note that the three main criteria used in evaluating family firms – target firm profitability, industry growth and presence of professional management – are not family-specific. This appears to contradict much of the family business literature, which has affirmed that family firms have performance advantages over non-family firms, thanks to their familiness i.e., a bundle of resources deriving from the interaction between family and business (Astrachan *et al.* 2002, Habbershon and Williams 1999, Klein *et al.* 2005). These resources include, among others, management practices and business values (Aronoff *et al.* 1996), long-term perspective (Dreux 1992), motivation, loyalty and trust stemming from family ties (Tagiuri and Davis 1996), trustworthy reputation (Chrisman *et al.* 1998) and strong sense of mission (Sharma 2005). Familiness is viewed as leading to distinctive capabilities, which in turn can generate competitive advantage and superior performance (Grant 1991). However, this study shows that familiness is not considered to be the main priority in target firm selection by external actors.

[47] Portfolio construction typically reflects PE firms' key objectives, including high long-term returns and portfolio diversification, which can reduce risk. Given that generally there is a minimum investment size for private equity funds, establishing a diversified portfolio requires a sizeable level of capital commitment (EVCA website).

There is also evidence that PE investors are somewhat biased in their evaluation of family firms, making them view more favourably investment prospects they can relate to, based on their previous experience and knowledge[48]. In other words, it appears that PE investors tend to rely more on criteria that do not "contain" family-related elements or aspects, because these are factors they are more comfortable and accustomed to deal with (Franke *et al.* 2003). This is supported by various theoretical explanations. According to learning theories, similarity causes positive reactions and is more rewarding than dissimilarity (Byrne 1971). Therefore, PE investors react more positively to criteria they perceive as being akin to their experience (such as target firm profitability and industry growth). Based on self-categorisation, individual judgements are centred around social categories (which are built on age, gender, education, etc.) and are more likely to prefer individuals who are similar to them (Jackson *et al.* 1991, Turner 1987). Therefore, PE investors rely on presence of professional managers to positively rate target family firms. Social identity theory (Tajfel 1982) can also contribute to the explanation, since individuals are drawn towards individuals they perceive to be similar to. This helps explain why PE investors prefer a family firm in which there is professional management.

Although relatively less important, family variables play a role in the judgement process. Two of the significant variables – albeit relatively less important than other factors – referred to the presence of experienced family members and to family owners wishing to exit the firm. First, PE investors were found to be more likely to invest in family firms in which there are family members who have had work experience outside the family firm. This finding can be interpreted in two ways. It can be seen as an indication that PE investors value family members for their human capital i.e., their knowledge and managerial skills. This

[48] This type of bias can be likened to the "illusion of control" bias, which leads individuals to overestimate their control over outcomes (Schwenk 1988). In this sense, PE professionals selecting investee firms rely on criteria they feel they can control and/or they are closer to, rather than basing their assessment on family-related variables.

would be consistent with previous studies, which have indicated that family managers need to be competent at making decisions and have to meet high expectations of educational achievement and professionalism (Aronoff 1998, Salvato 2004, Sharma 2004). Work experience outside the family firm can help them gain confidence in their own skills and gain respect from non-family employees (Aronoff 1998, Salvato 2004). Human capital is, indeed, considered to be a family firm's most important resource, since it is intangible and therefore socially complex and difficult to imitate (Barney 1991, Hitt *et al.* 2001). However, there can also be a second interpretation. This relates to the fact that experienced family members can represent continuity with the past, allowing PE investors to take advantage of their tacit knowledge of the firm (Howorth *et al*. 2004). By staying in the firm, these family members can help maintain the firm's image and reputation in the eyes of customers, suppliers and employees (Chrisman *et al.* 1998, Lyman 1991, Sharma and Rao 2000). This implies that PE investors value the social capital of the family firm, involving relationships between family members (remaining in the firm after the deal) and individuals and/or organisations both inside and outside the firm (Sirmon and Hitt 2003). Thus, rather than valuing family members' work-related skills (i.e., their human capital), this second interpretation suggests that PE investors value family members' social capital. This includes (Sirmon and Hitt 2003) a shared language with employees of the firm (cognitive dimension of social capital), network ties with suppliers, customers and the local community (structural dimension) and trust with these stakeholders (relational dimension).

Both interpretations are plausible, although the second one is further supported by the finding that there is a statistically significant interaction between the presence of experienced family members and two other factors considered, specifically the incidence of family members wishing to sell their shares and the degree of ownership dispersion. First, investors showed greater preference for firms with a high presence of experienced family managers if

many family members wish to sell their shares. A plausible explanation for this is that, since there are high levels of tacit knowledge in family firms (Howorth *et al*. 2004), PE investors want to balance the loss of tacit knowledge deriving from family owners leaving the firm by maintaining some other family members in the firm. Also, losing and changing resources creates uncertainty (Sirmon and Hitt 2003) and, if some family members stay on, continuity can be ensured. A second statistically significant moderator effect was found in connection with the relationship between presence of experienced family members and level of ownership dispersion. Investors showed greater preference for firms with a high presence of experienced family members if there was a high level of ownership dispersion. This can be explained considering that high fragmentation of ownership among many family members often leads to lower loyalty and commitment to the firm and higher conflict (Corbetta 1995). The presence of experienced family members could be positive for an external investor, because such remaining family members would be able to manage other family members (and any conflict that may arise), by leveraging relationships that are based on loyalty and trust (Tagiuri and Davis 1996).

Thus, findings relating to statistically significant interactions among variables suggest that family members remaining in the family firm are valued more for their social capital than for their managerial skills. This is further supported by the fact that neither of the hypotheses on the interaction between the presence of professional management on the one hand and incidence of family members wishing to sell their shares and ownership fragmentation on the other, as moderating variables, was supported. The variable professional management was selected because it was considered to be a key human capital resource, similarly to experienced family members. However, findings indicate that PE respondents did not consider professional managers to be as effective as family members in dealing with potential problems arising from other family members selling their shares or from high ownership

dispersion. This suggests that, despite being a key main-effect investment criterion, professional managers are not considered to be able to handle sensitive issues that are closely related to the family (such as conflict and disagreement), which are better dealt with by other members of the same family (who share common values and norms as well as a common history).

The second family-related variable that was statistically significant relates to the presence of family members wishing to exit the firm, which was found to be positively associated with likelihood of investment. This finding supports previous studies, which concluded that there are certain behaviours within family firms that create agency costs, such as shirking, giving jobs on the basis of family ties rather than merit, and free-riding (Chrisman *et al*. 2004, Gomez-Mejia *et al*. 2001, Morck and Yeung 2003, Schulze *et al*. 2001). If family owners wish to exit the firm by selling their shares, this can allow PE investors to reduce agency costs, focus more on economic objectives, and increase the value of the firm. It also gives external investors more control over the strategy of the investee firm (because of reduced family presence) and limits potential for conflict, which can be greater when there are many owners (Corbetta 1995). This implies that PE investors show a preference for shedding non-valuable resources within the ownership structure of the firm they are evaluating (Sirmon and Hitt 2003), with the aim of reducing costs, breaking path dependencies and enhancing the firm's value.

Although this finding is consistent with the traditional view of buy-outs as governance and incentive tools aimed at reducing agency costs (Jensen 1993), however it indicates, first, that a different type of agency cost can be cut down (deriving from altruistic behaviours rather than a separation between ownership and management). Second, the finding suggests that this agency cost concern is relatively less important compared to other issues (since it is the least

relevant of the significant criteria) and that PE investors are more interested in limiting the project's riskiness (MacMillan *et al.* 1985, Zutshi *et al.* 1999).

In summary, findings suggest that family members are recognised as playing a relevant role in the PE investment decision, mainly because they can reduce the perceived riskiness of the project. Thus, the association between likelihood of investment and presence of experienced family members is enhanced when there are potential problems, arising either from ownership dispersion or from loss of tacit knowledge due to family owners selling out. But, conversely, when the perceived risk associated with ownership dispersion and family members selling their shares is lower, then the association between likelihood of investment and presence of experienced family members is reduced. This finding, viewed together with the greater importance that is attributed to the presence of professional managers, indicates that family members are considered to be more valuable in order to limit potential family-related problems than as a resource *per se*.

Interactions also indicate that the presence of experienced family members becomes less important if family members do not wish to sell their shares or if ownership is concentrated. This, again, provides support for viewing PE investors as risk-averse individuals, since it indicates that they are willing to maintain some family involvement either as owners or as managers but not in both roles. Thus, even with continued family involvement, PE investors want to ensure that they have a key role in future strategic decision making. This does not vary depending on whether the PE firm takes a majority or minority stake in the investee firm[49], suggesting that, regardless of whether it has a controlling stake or not, a PE firm wants to limit the role of the vendor family.

[49] This was tested through the level-2 hierarchical model (see Section 5.3.3).

No support was found for the hypothesised association between likelihood of investment and level of ownership dispersion on the one hand and presence of formalised systems and procedures on the other. These are discussed in turn below.

As well as not being significant, the coefficient for ownership dispersion was positive rather than negative as hypothesised. The fact that the coefficient is not significant suggests that PE investors generally expect to play a key role in driving the strategy of the firm without having to worry about reduced loyalty by family members, which is often found in family firms with fragmented ownership (Corbetta 1995). The fact that the coefficient is positive rather than negative supports the view that PE investors are mainly concerned with reducing the riskiness of the project being evaluated. PE investors may rate more highly a family firm in which ownership is fragmented among many individuals, because this can reduce family members' power (as they will not behave as a 'single voice', especially if there is conflict among them). This can ensure that the PE firm's influence over the future strategy of the investee firm is greater than that of remaining family owners. If remaining family owners only have small shares in the investee firm (due to higher ownership dispersion), then it is likely that they will be less interested in being involved in the running of the investee firm and will lack the appropriate information to do so. This will make them less likely to interfere in the running of the firm (Chaganti and Damanpour 1991), leaving greater influence to PE firms.

The other variable that was not found to be statistically significant is the presence of formalised systems and procedures for planning, control, etc. The reason why PE investors do not consider the level of formalisation to be important for their decision may be linked to the fact that they do not expect to find a high level of it in family firms. Family firms tend to rely on informal systems and tacit knowledge and to be high-trust organisations, governed by informal agreements that are based on kinship rather than on contractual obligations (Daily

and Dollinger 1992, Howorth *et al*. 2004). Trust, which links individuals through confidence and loyalty (Jones and George 1998), can reduce uncertainty in interactions and act as a mechanism governing economic transactions and organisations (Mayer *et al.* 1995, Steier 2003). Thus, embedded social relationships, linking family members, can replace more formalised governance systems (Fiet 1995). Indeed, previous research has indicated that family CEOs tend to rely on informal monitoring and controlling mechanisms (Daily and Dollinger 1992, Geeraerts 1984)[50]. This finding, again, provides support for concluding that PE investors are mainly concerned with reducing the riskiness of the deal they are evaluating, rather than focusing on potential upside (Robbie *et al.* 1999, Wright *et al.* 2001) or introducing cost efficiencies (Jensen 1993). Given that family firms are often not formalised, PE firms view their function as being not only as a source of finance but also as providers of strategic direction in firm-level decision making (Wright and Robbie 1998). As part of this, they can provide a more formalised and structured organisation to the investee firm and, in turn, this can contribute to creating revenue upside. Previous studies have indeed indicated an association between formalisation and firm performance: Upton *et al.* (2001) observed that most fast growing family firms prepare written formal plans; and Gomez-Mejia *et al.* (2001) found that family firms employing internal monitoring performed significantly better that family firms without such systems. Indeed, although it was not significant, the relationship between formalisation and likelihood of investment was positive, indicating a preference for more formalised systems, which can also reduce information asymmetries, due to tacit knowledge possessed by family members, and therefore potential risks related to the deal (Howorth *et al*. 2004).

[50] Although governance systems based on personal ties may be beneficial, since they allow family firms to operate more freely, change strategic direction more quickly and reallocate resources more easily (Carney 2005), they can also lead to biased judgements, based on emotions, and managerial entrenchment, based on a desire for self-preservation (Gomez-Mejia *et al.* 2001).

In conclusion, this study suggests that PE investors prefer to invest in managerial and already well-performing family firms. In their evaluation, PE professionals focus on criteria that are quantifiable or that they can more easily relate to, such as target firm profitability, industry growth and presence of professional managers. Some family-related criteria also play a role in the evaluation of a target family firm, although their role is more to limit potential problems and conflict than to act as resources generating upside potential. In general, findings suggest that PE investors are more concerned with limiting the riskiness of the project under evaluation, even if this means reducing the potential for upside creation or cost reduction.

5.5.3 Family firms along the definitional continuum

The main focus of this study has been on the decision models of outside actors evaluating family firms. As well as taking into account the target firm's existing resource stock (Barney 1991, Makadok 2001, Mosakowski 2002, Sirmon and Hitt 2003), PE investors have future performance expectations. Therefore they assess the resource inventory of the investee firm with a view to keeping some resources (those that are expected to lead to positive performance in the future), shedding non-valuable resources (those that reduce the firm's value and can allow the PE firm to extract cost efficiencies), and adding new resources (those that can be integrated into the bundle of existing resources that are valuable, rare, difficult to imitate, and non-substitutable). Thus, the evaluation by PE investors of family firms also takes on a dynamic perspective, based on changes in the investee firm, following the deal. While this study does not consider what happens after the deal has taken place, nevertheless it is possible to make some considerations.

Although researchers often refer to family firms, as opposed to non-family firms, there is not a homogenous group of firms forming a "family firm" category. Instead, some scholars have suggested that there is a definitional continuum, ranging from consolidated family ownership on one side to a more hands-off involvement at board level on the other (Corbetta

1995, Habbershon and Williams 1999). The involvement of a PE firm in the equity of a family firm moves the family firm along the definitional continuum, bringing it closer to non-family firms. An external investor does so by implementing resource changes and affecting the firm's culture, management style, control system, and so on (Habbershon and Williams 1999). The outcome of this is to move the investee firm away from "in-house" or closed family firms, in which one or few family members have full ownership and are actively involved in the management of the firm (often without any involvement by external people), and towards "open" family firms, in which part of the equity is owned by individuals who are not part of the original founding family and in which external individuals are involved at board level (Corbetta 1995). Clearly, the size of the equity stake taken by the PE firm (minority or majority) has an impact on how far the investee firm moves along the familiness continuum.

As well as moving the firm along the continuum, a PE investor can contribute to the target's competitive advantage. Previous studies have considered familiness as a source of competitive advantage for family firms (Habbershon and Williams 1999, Sirmon and Hitt 2003). In order to remain competitive, family firms need to build on their bundle of resources, by evaluating, shedding, acquiring and leveraging them (Sirmon and Hitt 2003). This can be difficult: for example, there can be limits to human capital if family members are hired on the basis of nepotism (Dyer 1986), birth order or gender (Dyer 2003), rather merit; even when there is some form of selection, if there is a policy to hire only from the family, this will limit the resource pool. If such a policy does not exist, qualified professional managers may stay away nevertheless, because they perceive that they are excluded from firm succession or have limited potential for professional growth (Covin 1994).

Sirmon and Hitt (2003) confirm this view and suggest that, similarly to smaller and younger entrepreneurial firms, family firms often do not possess all the resources and

capabilities they need in order to compete effectively. They suggest developing alliances as a route for accessing required resources and capabilities, since this solution can allow partners to share tacit knowledge (Lane and Lubatkin 1998), enhance technological capabilities (Rothaermel 2001), and so on.

This dissertation suggests an alternative way for family firms to access needed resources and capabilities, by allowing a PE investor to take an equity stake. The involvement of a PE firm can contribute to the investee firm's competitive advantage, by leveraging and building on its existing bundle of resources (Sirmon and Hitt 2003). For example, modifying a family firm's resource inventory can be beneficial if greater heterogeneity is introduced, by adding human resources that are not dominated by family experiences and history. This can make strategic decisions more effective (Finkelstein and Hambrick 1990).

Changing resources can also create uncertainty and shedding resources is generally a difficult decision, especially for family firms (Sirmon and Hitt 2003), due to emotional ties and path dependency. Such changes may be easier to implement if a non-family investor, such as a PE firm, is involved. External actors do not have emotional ties to the family and can be more objective in their decisions, without being driven by altruism or generosity (Becker 1981, Lunati 1997, Schulze *et al.* 2003); they may be perceived by family members as being more objective and this can reduce potential conflict that is typical of family relationships (Boles 1996, Miller and Rice 1998); and they can obtain the required resources from the market, thanks to their own social capital of networks and ties with professional managers and external board members. Moreover, an external equity investor can manage the uncertainty that is associated with integrating new resources, which is a skill that family managers often lack (Sirmon and Hitt 2003). Therefore, a PE investor can help family firms gain and/or maintain competitive advantage by complementing their resources and capabilities.

It is also true that moving along the definitional continuum can bring disadvantages as well as advantages, since the investee firm may lose some of the sources of competitive advantage that are characteristic of family firms. For example, basing their work on stewardship rather than agency theory, Corbetta and Salvato (2004) suggest that if managers are driven by a commitment to the firm owners, they will be as diligent and committed as owners would be in managing the business. A change in ownership could lower the commitment of remaining managers (both family and non-family) to the new non-family owner (the PE firm). New managers brought in by the PE firm may create agency costs that were not previously present, when owners and managers coincided or belonged to the same family (Jensen and Meckling 1976). Although PE firms try to limit this risk by monitoring the investee firm closely, for example by taking seats on the board of directors (Gompers and Lerner 2001) or introducing managerial incentives that are closely aligned to firm performance (Wright *et al.* 1994), such agency costs may emerge nevertheless. Findings from this study suggest that PE investors are aware of these potential problems and there is evidence that they value the presence of experienced family members, because they are perceived as being able to limit potential conflict and problems arising after the deal has taken place.

In conclusion, PE involvement in a family firm moves the investee firm along the definitional continuum, towards "open" firms. This can contribute to the firm's bundle of resources, complementing its existing stock with new resources that may have previously been difficult to access, and helping the investee firm build and maintain its competitive advantage. By evaluating the target firm prior to making the investment, PE investors can identify resources, such as experienced family members, that can contribute to limiting or managing potential problems (e.g., conflict) arising after the PE deal has taken place.

5.6 Concluding remarks

This aim of this chapter was to present and discuss findings. This was done, first with reference to decision-making models used by PE investors. The main conclusions were that PE professionals rely on a limited number of criteria, are consistent in their use of such criteria, and process information interactively. Second, decision-making criteria were analysed. The main conclusions were that PE investors prefer well-performing and managerial family firms but also value a continued role by family members as they are perceived to limit potential risk and conflict. Third, PE investment in family firms was put in the context of developing or maintaining competitive advantage. Similarly to strategic alliances, as suggested by Sirmon and Hitt (2003), PE investment can allow investee firms to access resources and capabilities that may have not been previously accessible.

6 Conclusions

6.1 Main findings and contributions

This dissertation set out to analyse decision-making criteria and processes used by external equity investors in their evaluation of family firms. The following are the main findings of the study.

First, PE experts use fewer criteria than are available. Even though respondents were presented with seven decision factors, only five were significant, indicating that not all were used. Second, they are consistent in their use of decision criteria. Third, despite being rational (following a problem-solving and step-by-step approach), PE professionals appear to be biased in their evaluation and rely more on criteria they are familiar with (such as industry growth and profitability). Fourth, PE professionals prefer to invest in managerial family firms that are already performing well and that operate in growing industries. Fifth, PE investors are risk-averse individuals who are more concerned with limiting the riskiness of prospective investments, even if this means limiting the possibility of cutting costs or generating upside. Sixth, PE professionals are more willing to invest in firms that are perceived to be riskier but that offer greater future potential (i.e., firms with lower profitability) under two circumstances: if they work for a PE firm with a large portfolio (allowing it to spread risk across a larger number of deals) or if the PE firm takes a majority stake in the investee firm (giving it greater control). This provides further support for the risk averse nature of PE professionals. Seventh, PE investors seem to value family resources – such as experienced family members – more for their social value (i.e., mediating conflict among remaining family members and preserving the firm's tacit knowledge) than as resources that are valuable *per se* (e.g., for their managerial skills). Eighth, the involvement of a PE house moves a

family firm along the definitional continuum, allowing the family firm to enrich its resource stock in a way that would have been difficult or impossible beforehand.

This dissertation makes a number of contributions, from a theoretical, methodological and practical perspective. From a theoretical viewpoint, it contributes to strategic choice theory, which is central to strategic management (Priem and Harrison 1994), by shedding light on the way decision-making criteria are used and their relative importance for investment selection.

This dissertation also contributes to family firm research, by building on recent contributions based on two leading theoretical perspectives, resource-based view and agency theory (Chrisman *et al.* 2005). The resource-based view suggests that valuable, rare, imperfectly imitable and non-substitutable resources can lead to sustainable competitive advantage (Barney 1991). This study adds a new perspective by considering an additional stakeholder (the external investor) in the family firm and investigates the importance it attributes to human resources (in the form of family members) and to other firm resources and traits. From an agency theory perspective, this study addresses issues of agency costs and asymmetric information in family firms, showing that external investors, on the one hand, have potential for extracting cost efficiencies (although this is not their main priority) and, on the other, do not consider information asymmetry problems as deal breakers (since a highly formalised firm was not found to be a statistically significant decision-making factor).

Findings also contribute to literature on buy-outs, indicating that PE investors are led more by a risk management perspective than by a desire to extract cost efficiencies or maximise future revenue potential in investee family firms. This study also adds to existing research on PE, which has, to date, largely ignored the family firm phenomenon despite its importance in many economies.

From a methodological perspective, the research design has been based on using a simulation, which is a powerful tool to explain, under controlled conditions, the nature of cognitive processes underlying strategic decision making (Hodgkinson *et al.* 1999). Furthermore, data analysis has been carried out with hierarchical linear models (HLM), linking decision-making processes at the individual level to the group level. Multilevel studies have only gained attention since the mid-1990s (Hofmann 1997) and are a relatively new area of study, especially with regard to investor behaviour. The current study has proposed an extension of HLM analyses to a new context i.e., that of investment decisions in mature, family firms.

From a practical point of view, a better understanding of the criteria used by PE firms can lead to greater insight into the reasons for their success and to an improvement of their success rate in choosing deals. Furthermore, knowledge of the criteria used by PE professionals can help founders and/or entrepreneurial families to obtain PE funding, by adopting or highlighting characteristics that PE firms require and improving or minimising weaknesses.

6.2 Limitations

This study has a number of limitations, the main ones relating to choice of criteria and sample size. Although conjoint models have good internal predictive ability in terms of explanatory power with regard to decision processes followed by investors (Riquelme and Rickards 1992), the main limitation is that decision-making criteria need to be chosen *a priori*. During the design of the study, efforts were made to minimise this limitation by selecting criteria on the basis of a thorough review of the literature on venture capitalists' selection of start-ups, firm-level key success factors and family firm research. They were also pre-tested (Shepherd *et al.* 2000) with PE investors, academics and consultants to PE houses.

With regard to sample size, 41 respondents took part in the study[51]. Although this is lower than the rule of thumb of 50 that is suggested for conjoint studies (Shepherd and Zacharakis 1999), this study has sufficient statistical power because, first, the number is quite close to the rule of thumb and, second, findings are based upon a large percentage of the entire population (Cook and Campbell 1979).

There may also be some concerns with regard to generalisability of results outside of the Italian PE market. Although it is less mature compared to other European and non-European markets, throughout the 1990s most international private equity funds started operating in Italy through local offices. Moreover, many of the individuals working in Italy have been educated or have had work experience outside of Italy. These considerations suggest that PE professionals should not be significantly different from those operating in other countries in terms of characteristics and cognitive behaviour. However, previous studies have highlighted the heterogeneity of markets in different countries (Manigart 1994, Manigart *et al.* 2000, Sapienza *et al.* 1996, Wright *et al.* 1992). These depend on the institutional, legal, fiscal and social environment and on the dominant corporate governance system (Bygrave and Timmons 1992, Hofstede 1994), as well as on the lack of a robust market for initial public offerings, which mainly characterises economies that are dominated by bank financing. Italy is among these countries, together with other European countries, including Germany (Black and Gilson 1998, Gompers and Lerner 2001, Jeng and Wells 2000). There may also be differences in the firms that are being evaluated as targets (e.g., if Italian family firms differ from those in other countries, this could affect their evaluation). Although family firms in Italy account for a similar proportion of total number of firms and of PE capital received compared to other countries, further investigation may be needed to exclude other significant

[51] As discussed, this reflects the fact that the Italian PE sector is smaller than others in Europe and North America. This may result in a further limitation, due to the fact that – being smaller – the Italian PE sector is also less differentiated, for example between funds focusing on buy-and build strategies and turnarounds (the latter are likely to be more relaxed in their risk management attitude, as their strategy is to invest in challenging firms).

differences. In conclusion, some caution should be exercised in generalising findings from this study to other countries. Cross-national research could make an important contribution in this sense, confirming that findings are generalisable or highlighting differences where these emerge.

6.3 Avenues for further research

In terms of future research, the first – and possibly most obvious – avenue is to carry out a comparative study on the evaluation of non-family firms by PE investors in order to highlight similarities and differences. For example, PE investors may be more cautious with family firms than with non-family firms (because of the presence of the family variable) and they may focus less on minimising project riskiness and more on extracting cost efficiencies or creating revenue upside if they are evaluating a non-family firm.

It may also be interesting to investigate the role of intuition or overconfidence in PE decision making, as has been done with venture capitalists. In the first instance, further research would focus on how much the evaluation relies on quantified information vs subjective factors such as "gut feeling" or intuition (Hisrich and Jankowicz 1990). In the second, it could be possible to study whether PE investors overestimate the likely occurrence of certain events (e.g., an investee firm growing significantly), due to overconfidence and biases leading decision makers to process information incorrectly and reach inaccurate judgements (Zacharakis and Shepherd 2001).

Another avenue for research is to compare criteria used to select target firms with actions pursued after the deal has taken place. For example, this dissertation has showed that PE investors value some family involvement, since it can ensure continuity in the reputation and commitment of the firm in the eyes of customers, suppliers and employees (Chrisman *et al.* 1998, Sharma and Rao 2000). However, this may be just a temporary situation, with the

family exiting the firm completely in the medium to long term. Furthermore, from an agency-cost perspective, external investors generally put in place control and monitoring systems in acquired firms, in order to focus more on economic objectives. Although these control systems can improve economic efficiency, they can also reduce the motivation of remaining family managers (Corbetta and Salvato 2004). This suggests that external investors may see continued family involvement only as a temporary measure, with a view to eliminating the family variable altogether.

It may also be fruitful to investigate issues of asymmetric information. If family members continue to be involved in the firm, they may be able to control the new owners' access to information, thereby appropriating economic rents (Chrisman *et al.* 2005). Therefore it would be interesting to investigate further differences in bargaining power and stakeholders' economic rent appropriation when the family and an external investor coexist. This can contribute to family firm literature, by combining resource-based view and agency theory, which is an area that is still being developed (Chrisman *et al.* 2005).

Finally, this study has built on individual-level hypotheses by adding variables from a higher level of analysis. More levels of analysis (e.g., homogenous groups of individuals or countries) and variables (e.g., individuals' education and prior work experience or maturity of the private equity market) could be added in future research, in order to gain more profound theoretical insights (whilst keeping a balance by avoiding too many relationships at various levels of analysis, as this would add too much complexity).

Glossary of key terms

Family firm: a private company in which members of one or more families, related to each other by blood/marriage or linked by solid alliances, hold a controlling interest and are involved in the management of the business, also on a cross-generational basis.

Management buy-in (MBI): a deal, involving a PE investor, in which an external management team (chosen by the PE investor) acquires an equity stake. External managers are generally brought in.

Management buy-out (MBO): the acquisition of a business by its managers, who ask a PE investor to buy shares of the company.

Private equity (PE): the investment by professional firms of medium- to long-term finance, which is provided in return for an equity stake in potentially high-growth unquoted and already established companies.

Private equity firm: the organisation the private equity investor/professional works for.

Private equity investor/professional: the individual decision maker (i.e., the person selecting investments).

Venture capital: the investment by professional firms of medium to long term finance, which is provided in return for an equity stake in potentially high-growth start-ups.

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