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The Impact of the Board of Directors,
Block Holders, and Institutional Investors
on Corporate Risk-Taking

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In memory of my mother

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ABSTRACT

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The thesis investigates the impact of the board of directors, block holders, and institutional investors on corporate or firm risk-taking. Corporate risk-taking is measured by three risk-taking variables: proxies for income stream risk, industry or strategic risk, and a risk measure based on stock returns. The empirical evidence presented in the thesis indicates that the board of directors relates differently to different risk-taking measures. The results indicate that the choice of risk-taking variables in studies involving the board of directors could influence the outcome of the study. Hence, reference should be made to the specific risk-taking variables used given that different risk measures may measure different aspects of risk-taking. Furthermore, in studying the relationship between corporate risk-taking and block holders and institutional investors, the thesis highlights the importance of decomposing the variables into different types of block and institutional owners to better understand their association. The evidence suggests that certain types of block and institutional owners can have a positive effect on risk-taking. The exact nature of the effect of the involvement of block and institutional owners depend on their characteristics, among other things. Therefore, it is important to be careful of general prescriptions concerning the level of involvement of block holders and institutional investors in corporate risk-taking. Most studies related to the issues investigated in this thesis have used US data. Given that many factors about firms, ranging from the nature of the board's role to the risk of bankruptcy, vary by country (Gilson and Roe 1993, Roe 1994) and by firm size (Eisenberg, 1995), it is important to use data from other environments to generalise results of the relationships. Finnish data is, therefore, used in this study. This does not imply a replication of previous studies. The thesis builds on previous studies using data from a different environment, Finland. Also important, understanding the issues in the Finnish context contributes to the need for good corporate governance to be based on principles rather than prescription.

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Key words: Board of directors, blockholders, institutional investors, risk-taking.

1. INTRODUCTION

1.1 Background

Corporate governance issues, arising from the agency problems engendered by the separation of ownership and control and the inability to write complete contracts for all future eventualities have been recognised for decades (see e.g. Hart 1995, Shleifer and Vishny 1997, and Berle and Means 1932). Berle and Means (1932), among others, note that the separation of ownership and control in publicly owned firms induces potential conflicts between the interests of professional managers and stockholders. This divergence of managers' and stockholders objective may lead to acute conflict of interest in decisions regarding the strategic orientation of the firm. Stockholders are interested in maximising the long-term profitability of a firm and the value of their investments. Managers' objectives, on the other hand, may include assuring personal wealth, job security, and prestige. This divergence of objectives has led to calls by researchers (see John and Senbet 1998 and Short, Keasey, Wright and Hull 1999, among others) for appropriate frameworks to be established in firms to check the self-serving behaviour by managers. Support for the call to establish appropriate corporate governance framework is found in agency theory given that the separation of ownership and control gives rise to agency problems.

Keasey and Wright (1993) provide a framework of corporate governance. They stress the need to view corporate governance as having two broad dimensions. The first is the monitoring of management performance and ensuring accountability of management to shareholders. This emphasises the stewardship and accountability dimensions of corporate governance. The second is the need for governance processes to encompass mechanisms for motivating managerial behaviour towards increasing the wealth of the business. That is, to enhance economic enterprise or risk-taking. Keasey and Wright's (1993) corporate governance framework suggest that effective governance involves a set of activities involving insider and outsider board membership, institutional investors, and block owners, among others. Given that governance structures and processes need to encompass mechanisms for increasing the wealth of businesses, an important issue to consider then is the extent to which these governance mechanisms affect enterprise or risk-taking activities of the firm.

Risk is generally thought of in classic decision theory, as reflected in the works of Pratt (1964) and Arrow (1965), as the variation in the distribution of possible outcomes, their likelihoods, and their subjective values. Risk is calculated in two ways. First, by nonlinearities in the revealed utility for money and, second, by the variance of the probability distribution of possible gains and losses associated with a particular alternative. In the second case, a risky alternative is one for which the variance is large and risk is one of the attributes which, along with the expected value of the alternative, are used in assessing alternative gambles. An acceptable empirical definition of risk within this basic structure is difficult to obtain because simple measures of mean and variance lead to empirical observations that can be interpreted as being off the mean-variance frontier. Consequently, researchers have made efforts to develop modified conceptions of risk-taking (see for instance March and Shapira 1987 for more).

Miller and Bromiley (1990) identify and analyse nine of the modified conceptions of firm risk-taking that has been used in the finance literature. These nine measures capture different dimensions of risk and can be grouped into three categories. These are risk measures based on income stream, strategy or industry, and stock returns (see Chapter 5 for more). This thesis examines the relationship between these three categories of firm risk-taking and three key dimensions of the governance (board of directors, bloch holders, and institutional investors) according Keasey and Wright's (1993) framework. Corporate or firm risk-taking can enhance shareholders' value by creating a work environment that supports individual and corporate growth, giving employees an opportunity to use their creative skills, quickening a company's response to the market, and creating an organisational culture that fosters cross-functional collaboration. Zahra (1991) argues that these transformations in turn encourage efforts that generate new revenue streams.

Despite the potential contributions of risk-taking activities to value creation, it may not always have wide support. Jacobs (1991), for instance, suggests that careerism and short-term based reward systems may discourage executives' pursuits of corporate risk-taking. Corporate risk-taking is generally a high risk-high return strategy that is attractive to stockholders given that they expect a positive effect on performance. Furthermore, stockholders can reduce their inherent risk by diversifying their investment portfolios. In contrast, executives

cannot always diversify their risk (e.g. employment risk) because some risk-taking activities have a high probability of failure, a factor that can even depress a firm's short-term performance. This may discourage management pursuit of firm risk-taking according to Jacobs (1991). To counter, the shareholders use the board of directors to monitor executives to ensure value creation. This makes the board of directors an essential part of the corporate structure. Fama and Jensen (1983a) develop a theory that depicts the role of the board of governors in an organisation. The board of directors, at the top of internal control system, has the final responsibility for the functioning of the firm. They supervise the deeds of management, provide advice, and veto poor decisions (see Chapter 2 for details). Mizruchi (1983) and Hambrick and Mason (1984) also provide some insight indicating the importance of the board of directors in the functioning of the firm. Fama and Jensen (1983a), Baysinger and Butler (1985), and Brickley, Coles, and Terry (1994), among others, suggest that the success of the board of directors in pursuit of value creation would likely depend on many factors. Among them is the composition of the board of directors, the type of information available to the board members, as well as the association of the individual members of the board to the firm.

Generally, there is the expectation that board of directors composed primary of outsider directors should be generally superior to boards of insider directors in contributing to managerial effectiveness and organisational performance. Support for this expectation is found in agency theory. Agency theory focuses on the likely consequences of differences between the interests of owners and professional managers (see for instance Jensen and Meckling 1976, Fama 1980, Fama and Jensen 1983a, and Himelstein 1994). The central tenet of the theory is that managers, who are not owners but serve as agents for owners, will sometimes work to further their own interest at the expense of owners' interests. Agency theory, thus, assigns the task of checking this selfish behaviour by managers to the board of directors, and in particular independent outside members of the board. Empirical studies relating the board of directors to firm performance has generated a number of findings. For instance, Hermalin and Weisbach (1988) find that CEO succession process and firm performance affect the composition of the board of directors. Baysinger, Kosnik, and Turk (1991) find that high insider representation on a board positively affected research and development spending. On the fraction of outsider representation on the board of directors, Hermalin and

Weisbach (1991) find no relation between the fraction of outside directors and firm performance. Baysinger and Butler (1985), however, produce some evidence suggesting that firms perform better if board of directors include more outside directors. Rosenstein and Wyatt (1990) suggest positive investor reactions to appointment of outside directors. Other studies find that boards of directors dominated by outsiders are more likely to act in shareholders' interest (See e.g. Weisbach 1988 for CEO turnover, Byrd and Hickman 1992 for tender offer bids, and Brickley et al. 1994 for poison pill adoptions and control auctions).

The influence of directors' ownership of equity in the governance of firms is also important, particularly given the emphasis placed on the award of shares as part of directors' remuneration. Agency theory suggests that shareholdings by directors help align the interests of shareholders and managers (see e.g. Jensen and Meckling 1976). Empirical investigations involving the effect of directors' ownership on risk-taking provide a number of results. Wright, Ferris, Sarin and Awasthi (1996) posit that for firms with growth opportunities, the relationship between insider ownership and risk-taking initially increases and then decreases as insider ownership increases. Gibbs (1993) finds that insiders with large equity stakes have incentives to diversify the activities of the firm in an attempt to diversify their own portfolios. Hill and Snell (1988) provide evidence suggesting that insider ownership is negatively correlated with diversifying expansion while Zahra (1996) finds a positive relationship between corporate entrepreneurship and insider ownership. The studies indicated do not, however, consider how aggregate ownership by the board of directors affects firm risk-taking.

The number of directors on a board, or simply board size, has also been shown to affect firm activities. Jensen (1993) theorises that boards of directors that are too large may not be able to operate effectively because the co-ordination and process problems outweigh the advantages of having a large number of people to draw on. Empirical research on the importance of board size is thin. Holthausen and Larcker (1993a) present results indicating a positive association between board size and the value of CEO compensation. Holthausen and Larcker (1993b), on the other hand, fail to find consistent evidence of an association between board size and company performance. On the contrary, Yermack (1996) finds a negative relationship between firm performance and board size for a sample of large US

companies. Eisenberg, Sundgren and Wells (1998) also find a negative relationship between board size and performance for a sample of small and medium-sized Finnish firms with smaller board sizes. Conyon and Peck (1998) examined the association between firm performance and board size across a number of European countries and found the effect of board size and corporate performance to be generally negative.

The above-mentioned literature on board size has largely overlooked the effect of the board size on firm risk-taking activities. Lipton and Lorsch (1992) state that *the norms of behaviour in most boardrooms are dysfunctional* because directors rarely criticise the policies of top managers or hold candid discussions about corporate performance. In their belief that these problems increase with the number of directors, Lipton and Lorsch (1992) recommend limiting the membership of board of directors. The proposal amounts to a supposition that even if board of directors' capacities for monitoring increases with board size, the benefits are outweighed by such costs as biases against risk-taking, among other things.

Keasey and Wright's (1993) corporate governance framework also indicate that pressure from two other important actors in a firm's governance system, block holders (block holders, block owners and large shareholders are used interchageably in this thesis), distinct from other small shareholders (See Chapter 5 for details), and institutional investors may also have an effect on firms' activities. In a theoretical model that relates block ownership to firm risk-taking, Shleifer and Vishny (1986) demonstrates how a potential take-over threat that large block owners can exert works as an effective device for monitoring management. The model predicts that, all things being equal, the presence of a large-block equity holder will have a positive effect on the market value of the firm (see Chapter 3 for details). Furthermore, block ownership can be classified as active (see Woodruff and Glover 1994) and passive (see McConnell and Servaes 1990). The opportunity, thus, arises to decompose block ownership into two classifications and study their effect on firm risk-taking. Previous studies have treated block holders as a homogeneous group (see for instance McConnell & Servaes 1990, Bethel and Liebeskind 1993, and Wright et al. 1996, among others).

Institutional owners are also influential players in the corporate governance system and have an effect on firm risk-taking activities. Two theoretical perspectives espoused in the literature on the relationship between institutional investors and corporate risk-taking, the myopic institutional theory and the efficient market institutional theory, generate different predictions. The myopic institutional theory advanced by Hill, Hitt, and Hoskisson (1988) and Graves (1988) suggest a negative relationship between institutional investors and firm risk-taking. The efficient market institutional theory advocated by Jarrell and Lehn (1985) and Jensen (1988), on the other hand, predicts that a positive relationship between institutional ownership and risk-taking (see Chapter 4 for details).

The efficient market institutional theory draws on traditional finance theory that does not make any distinction among different types of ownership. However, it has been argued in the finance literature that shareholders are distinguishable. The origins of this challenge are traced to Berle and Means (1932). Jensen and Meckling (1976) further show formally how the allocation of equity among different shareholders affects firm value. Thus, it is important to examine differences among institutional investors to better understand their behaviour. Along this line of reasoning, Black (1992), for example, suggests that it is likely that there are differences in the motives and behaviour of different institutions arising from differences in their goals and objectives. Therefore, by focusing on differences between or among institutions, this thesis raises the potential of differentiating between the competing hypotheses (myopic and efficient market institutional theories) regarding the effect of institutional ownership on firm risk-taking. This is important because empirical studies suggest that the exact nature of the effect of institutional involvement may depend on the characteristics of the institutions, among other things (see for instance Jarell and Lehn 1985, Hansen and Hill 1991, Zahra 1996, Kochhar and David 1996, and Bushee 1998).

1.2   Purpose of study

The purpose of this thesis is to investigate the impact of the board of directors, block owners, and institutional investors on corporate or firm risk-taking. Following the corporate governance framework outlined by Keasy and Wright (1993) mentioned above, this thesis

focuses on these three key external aspects of corporate governance. The literature suggests that these three dimensions of the governance process, among others, independently affect risk-taking activities of the firm (see e.g. Short et al. 1999). Following the classifications of firm risk-taking by Miller and Bromiley (1990), this thesis examines the impact of the board of directors, block owners, and institutional investors on three risk-taking measures: proxies for income stream risk, industry or strategic risk, and risk based on stock returns. As indicated above, governance structures and processes need to encompass mechanisms for increasing the wealth of businesses. This makes corporate risk-taking an essential aspect of firm performance. Hence, studying the behaviour of the board of directors, block owners, and institutional investors towards corporate risk-taking enhances our understanding of the governance process and business prosperity.

The following Hypotheses are developed and tested in the thesis. Detailed descriptions of how the variables specified in the Hypotheses are measured are presented in Chapter 5:

Hypothesis 1: The contemporaneous relationship between outsider-dominated board of directors and risk-taking will be negative.

Hypothesis 2: The presence of growth opportunities moderates the relationship between outside dominated boards of directors and firm risk-taking in such a way that a positive association between outsider-dominated boards of directors and risk-taking should be observed.

Hypothesis 3: The relationship between the board of directors and risk-taking will be negative when the aggregate level of equity ownership by the board of directors is insignificant.

Hypothesis 4: The contemporaneous relationship between board size and corporate risk-taking will be negative.

Hypothesis 5: The contemporaneous relationship between the level of equity ownership by active block holders and corporate risk-taking will be positive.

Hypothesis 6: The contemporaneous relationship between pressure-sensitive institutional investors and corporate risk-taking will be positive.

Hypothesis 7: The contemporaneous relationship between pressure-resistant institutional investors and corporate risk-taking will be negative.

The background for investigating the first Hypothesis lies in agency theory. Agency theory casts the board of directors at the apex of the decision control system in organisations. The issue of control is very important to agency theory where the traditional interest is in contracting. When the board of directors directly observes the behaviour of management, a behaviour-based contract between the principal (represented by the board of directors here) and the agent (management) would be optimal. This is the case of complete information. On the other hand, when there is incomplete information and the agent is aware of his/her actions but the principal is not, agency theory suggests that a behaviour-based contract would not be optimal. Hence, the principal may choose to reward the agent based on outcomes, which are surrogate measures for behaviour. These include emphasising financial controls. Thus we have two strategies of control: behaviour-based and outcome-based control strategies

Outside directors have limited contact with day-to-day decision process of the firm. Their evaluation of top management decision-making process is limited to boardroom interaction, at which point strategic plans need only ratification by the board of directors. As a result, outside board members lack the type subjective information (gained from observing the behaviour of management) needed for evaluating and rewarding managers on the quality of their decision processes. Consequently, outsider-dominated boards may employ outcome-based strategies, e.g. financial controls, in management-board relations. The literature suggests that emphasis on financial controls increases the intensity of managerial efforts in terms of maximising short-run profits and direct efforts away from high risk-return strategies shareholders prefer. As a result, this thesis finds it interesting to know if this theoretical conception stands up to empirical verification. The focus of the analysis is on the relationship between independent outside board members and firm management and how their

(independent outside board members) choice of control strategy affects firm risk-taking activities.

The second Hypothesis stems from the first one. From the perspective of top management, financial controls correlate managerial rewards directly with short-term variations in the market value of the firm. Operationally, financial controls could be achieved through disciplinary practices that are sensitive to factors such as market share results or growth (see e.g. Baysinger and Hoskisson 1990). Given that growth opportunities present a possibility to increase the wealth of shareholders, this thesis, therefore, investigates how outsider-dominated boards of directors promote risk-taking in order to capitalise on growth opportunities.

The third Hypothesis has its roots in the work of Jensen (1993). Jensen suggests that insufficient equity holding by the board of directors, in general, causes many problems among them are the lack of incentives to take actions that create efficiency and value for the company. He proposes that encouraging board members to hold substantial equity interests would provide better incentives to take actions that create efficiency and value for the company. Implicitly, Jensen (1993) suggests that board of directors with high equity holding have the incentive to enhance firm value, via risk-taking for example, and vice versa. That is, although risk-taking can enhance shareholder value, the board of governors owning insignificant equity stakes in firms do not necessarily provide proper incentives to take actions that create efficiency and value for the company. It is, therefore, examined if this propositions holds up to empirical verification.

The background for the fourth Hypothesis is the supposition by Lipton and Lorsch (1992) that although the board of directors' capacities for monitoring increases with board size, the benefits are outweighed by such costs as biases against risk-taking, among other things. Board size has been found to affect firm profitability or performance in small and mid-size firms (see Eisenberg et al. 1998) as well as in large firms (see Yermack 1996). The evidence presented in this thesis extends the results of previous studies by documenting the relationship between board size and firm risk-taking.

The theoretical work of Shleifer and Vishny (1986) that relates block ownership to firm risk-taking provides the background for Hypothesis 5. The model implicitly suggests that active block owners, as opposed to inactive or passive block owners, have a positive impact on firm value creation.

The basis of the Hypotheses 6 and 7 is rooted in the works of Jensen and Meckling (1976), Brickley, Lease, and Clifford (1988), Black (1992), Zahra (1996), Kochhar and David (1996), and Bushee (1998), among others. These theoretical and empirical studies suggest that the exact nature of the effect of institutional involvement may depend on the character-istics of the institutions, among other things. That is to say, it is beneficial to decompose institutional ownership to better understand their behaviour.

In relation to the Hypotheses indicated above, a body of research in the US has presented some empirical evidence connected to the issues of interest here. There is the potential that a "box ticking approach" could be adopted by Finnish companies and other interested par-ties based on empirical findings in the US. This behaviour may prove to be disastrous given that many factors about firms, ranging from the nature of the board's role to the risk of bankruptcy, vary by country (see e.g. Gilson and Roe 1993, Roe 1994) and by firm size (see e.g. Eisenberg, 1995). Hence, the findings in the US may not extend to firms operating in a different legal environment. Most importantly, understanding the issues in the Finnish context contributes to the need for good corporate governance to be based on principles rather than prescription. Therefore, there is the need for a Finnish focused research on these relationships. The need for this study using Finnish data is also based on the paucity of Fin-nish evidence relating to the variables in question.

1.3   Contribution of the study

This thesis contributes to contemporary studies investigating the relationship between cor-porate governance structures and processes and corporate risk-taking in seven (7) main ways. First, it tests a proposition offered by Baysinger and Hoskisson (1990). They propose a positive relationship between outsider-dominated boards and financial controls. Given

that the emphasis on financial controls by boards of directors increases the intensity of managerial efforts in terms of maximising short-run profits and direct efforts away from the high risk-return strategies shareholders prefer, a negative relationship between outsider-dominated boards of directors and corporate risk-taking should be observed. Empirical evidence on this proposed relationship is absent from the published literature.

Second, the empirical evidence presented in this thesis also extends current knowledge by investigating the effect of the presence of growth opportunities on the relationship between outsider-dominated boards and corporate risk-taking. The thesis further extends knowledge in this area of study by investigating the relationship between aggregate equity ownership by the board of directors and firm risk-taking. Specifically, the thesis provides evidence as to whether insignificant levels of equity ownership by boards of directors affect firm risk-taking.

The third contribution of this thesis pertains to the investigation relating to the relationship between board size and firm risk-taking. Earlier studies involving board size have centred on its effect on CEO compensation (see e.g., Holthausen and Larcker 1993a), and firms performance (see for instance Holthausen and Larcker 1993b, Yermack 1996, Eisenberg et al. 1998, and Conyon and Peck 1998). As indicated above, the literature has largely overlooked the effect of the board size on firm risk-taking activities. The empirical finding of this thesis extends the results of these studies by documenting the relationship between board size and firm risk-taking activities.

Fourth, the influence of block ownership on corporate risk-taking remains largely unexamined. Whiles studies by Wright et al. (1996) attempt to fill the void, there are some lingering questions that need to be examined. In investigating the impact of block ownership on corporate risk-taking, they treated block ownership as a monolithic group without regard to some evident differences noted in the literature. McConnell and Servaes (1990), for example, contend that many block holders are passive investors providing little by way of monitoring. As a contribution to this area of study, this thesis separate block ownership into two distinct groups, active and passive block owners, and provide empirical evidence on the relationship between each group block ownership and corporate risk-taking.

Fifth, in studying institutional ownership and corporate risk-taking, Wright et al. (1996) treated institutional investors as a homogenous group. Following the findings of Brickley et al. (1988), Kochhar and David (1996), and Bushee (1998), this thesis recognises that different institutional owners often pursue different goals and therefore may view corporate risk-taking differently. Consequently, the thesis tests for the relationship between two types of institutional investors, those with both investment and business relationships with the firm (termed pressure-sensitive institutional investors) and institutional investors with only investment relationship with the firm (termed pressure-resistant institutional investors) and firm risk-taking.

The sixth contribution of this thesis is that three firm risk-taking measures that are not subjective are used to investigate the relationships specified in the hypotheses above. Zahra (1996) used a subjective measure based on a survey directed at CEOs or most senior executives where executives were asked to rank their firms' entrepreneurial activities. It could be possible that answers given by the respondents reflect a desire or wish which could be different from reality. Furthermore, March and Shapira (1987) suggest that from the managerial perspective, there is a persistent tension between risk-taking as a measure on the distribution of possible outcomes from choice and risk-taking as a danger or hazard. Hence, a measured risk-taking variable based on outcome in firm data would be the preferable option.

The final contribution of this thesis relates to the restriction in the data set used in related studies. In studying the effect of stock concentration, management stockholdings and the board of directors on firm performance, Hill and Snell (1988) only looked at research-intensive firms. Hansen and Hill's (1991) study on institutional investors only involved four technology-driven industries. Similarly Zahra (1996), studying governance, ownership and corporate entrepreneurship, was only interested in the largest industrial corporation. The choice of a relatively few organisations in any study tends to limit the generalizability of the study. That is, there may be factors unique to the organisations studied that would have little in common with other organisations. Therefore, no such restriction will be applied in this study. Firms of all sizes and in different industries are considered.

1.4 Outline of the study

The remainder of the thesis is structured as follows: Chapter 2 examines the governance function of the board of directors. The role and position of the board of governors in an organisation is presented. The Chapter focuses on the agency theory view developed by Fama and Jensen (1983a). The Chapter also presents an overview of the board of directors and company management in Finland. Furthermore, the governance roles of inside and outside directors are discussed. Hypotheses relating outsider-dominated boards, equity ownership by the board of directors, and board size to firm risk-taking are also developed for empirical testing.

Chapter 3 studies block ownership. Among other things, block ownership is defined. A model that relates block ownership to firm risk-taking, based on Shleifer and Vishny (1986), is also presented. There is also a discussion of some studies related to block ownership. A hypothesis relating active block owners to firm risk-taking is consequently developed for empirical testing.

In Chapter 4, a third group of actors in corporate governance, institutional ownership, of interest to this thesis is discussed. Among other things, institutional ownership is defined and some aspects of institutional ownership are discussed. Two conflicting theoretical perspectives predicting different outcomes to the nature of the relationship between institutional investors and corporate risk-taking are also presented. Hypotheses testing the competing theoretical perspectives are developed for empirical verification.

The measures for risk, growth opportunities, equity ownership by the board and the categorisation of governance variables, among others, are presented in Chapter 5. Generally, this Chapter discusses the assembling of a database for the empirical work. Summary statistics of the variables of interest to this thesis are also presented in this Chapter.

In Chapter 6, the empirical methodology and the results of the impact of outsider-dominated board of directors, insignificant equity ownership by board of directors, and board size on firm risk-taking are presented, thereby, testing Hypotheses 1, 2, 3, and 4. Hy-

potheses 1, 3 and 4 are supported when the firm risk-taking measure is the proxy for income stream risk. When firm risk-taking is measured by industry or strategic risk, only Hypothesis 2 is supported. All four hypotheses proposed for empirical testing are not supported for the firm risk-taking measure based on stock returns risk.

Chapter 7 presents the methodology and empirical results of the impact of active block holders on firm risk-taking, thereby, testing Hypothesis 5. The results offer support for Hypothesis 5 for firm risk-taking measures represented by the proxy for income stream risk and industry or strategic risk. Hypothesis 5 is not supported when the firm risk-taking measure is based on stock return risk.

In Chapter 8, the thesis presents the methodology and empirical results of examining two distinct groups of institutional owners, pressure-sensitive institutional owners and pressure-resistant institutional owners, on firm risk-taking, thereby, testing Hypotheses 6 and 7. The results indicate a uniform support for Hypothesis 6 in all three firm risk-taking measures. Hypothesis 7 is only supported when firm risk-taking measure is based on stock return risk.

Chapter 9 concludes the study. The main results of the study are summarised in this Chapter.

2. THE BOARD OF DIRECTORS

This Chapter examines the governance function of a particular institutional arrangement, the board of directors and develops Hypotheses to be tested in the empirical section. For this purpose, Section 2.1 depicts the role of the board of governors in an organisation. The discussion focuses on the agency theory view developed by Fama and Jensen (1983a). Section 2.2 presents an overview of the laws regulating the board of directors in the Finland. Section 2.3 discusses the governance role of inside and outside members of the board of directors and the Hypotheses to be tested are proposed in section 2.4. Section 2.5 concludes the Chapter.

2.1 The board of directors as a relational governance structure

2.1.1 Residual claims and the decision process

An organisation is seen here as a nexus of contracts, written and unwritten, among owners of factors of production and customers. These contracts detail the rights of each agent in the organisation, performance criteria on which the agents are evaluated, and the expected pay-off functions they face. The structure of the contract combines with the production technologies and external legal constraints at hand to determine the cost function for delivering an output with a particular form of organisation. Organisational forms that survive are those that deliver the output demanded by customers at the lowest price, while covering costs. The central contracts in any organisation stipulate the nature of residual claims and the allocation of the steps of the decision process among different agents.

The contract structures of most organisational forms limit the risks borne by most agents by specifying incentive payoffs. These payoffs may be fixed promised payoffs, tied to specific performance measures or both. The residual risk, defined as the risk of the difference between stochastic inflows of resources and promised payments to agents, is borne by those who contract for the rights to net cash flows. These agents are called the residual claimants or residual risk bearers. Furthermore, the contracts of most agents contain the

implicit or explicit provision that, in exchange for the specified payoff, the agent agrees that the resources provided are used to satisfy the interests of residual claimants.

Residual claims of different organisational forms contain different restrictions. The least restricted residual claims in use are the common stocks of open corporations (*closed* corporations, on the other hand, are generally smaller and have residual claims that are largely restricted to internal agents). Residual claimants in open organisation are not required to have any other role in the organisation and their residual claims are alienable without restriction. Given these provisions, residual claims allow unrestricted risk sharing among stockholders.

The manner in which different forms of organisations allocate the steps of the decision process across agents is important for the survival of organisations. Fama and Jensen (1983a) suggest that, in broad terms, the decision process has four steps:

(i)   Initiation stage - that is, the generation of proposals for resource utilization and structuring contracts

(ii)   Ratification stage - that is, choice of the decision initiatives to be implemented

(iii)   Implementation stage - that is, the execution of ratified decisions; and

(iv)   Monitoring stage - that is, the measurement of the performance of decision agents and implementation of rewards.

These four steps could be re-classified into two groups because the initiation and implementation of decisions are typically allocated to the same agents. Similarly, the ratification and monitoring of decisions are usually allocated to the same agents. The former is classified under the term *decision management* whiles the latter is classified under the term *decision control*.

2.1.2   Fundamental relationship between risk bearing and decision process in open
         corporations

Fama and Jensen (1983a) argue that the separation of decision and risk-bearing functions in
an organisation survives because of two reasons. Firstly, it offers the benefits of specializa-
tion, and, secondly, it offers an effective approach to controlling the agency problems
caused by the separation of decision and risk bearing functions. Agency problems arise be-
cause contracts are not costlessly written and enforced. Agency costs include costs of moni-
toring and bonding a set of contracts among agents with conflicting interest.

Controlling agency problems in the decision process is important when the decision man-
agers who initiate and implement important decisions are not the major residual claimants
and therefore do not bear a significant share of the wealth effects of their decisions. An ef-
fective control procedure is, thus, needed to ensure that decision managers are less likely to
take actions that deviate from the interests of residual claimants. Almost by definition, an
effective system for decision control implies that the control of decisions is to some extent
separate from the management of decisions. Individual agents can be included in the man-
agement of some decisions and control of others. However, the separation indicates that an
individual agent does not exercise exclusive management and control rights over the same
decisions.

Most organisations characterised by separation of decision management from residual risk
bearing are complex. That is, specific knowledge (knowledge which is costly to transfer
across agents) relevant to different decisions is diffused among agents at all levels of the
organisation. Given the diffusion of specific knowledge among agents, diffusion of deci-
sion management can reduce costs by delegating the initiation and implementation of deci-
sions to the agents with valuable relevant knowledge. Agency problems of diffuse decision
management can then be alleviated by the separation of the management (initiation and im-
plementation) and control (ratification and monitoring) of decisions. The efficiency of such
decision systems is reinforced by incentive structures that reward agents both for initiating
and implementing decisions and for ratifying and monitoring the decision of other agents.

Valuable specific knowledge relevant to decision control is also diffused among many internal agents. This generally denotes that efficient decision control, like efficient decision management, involves delegation and diffusion of decision control as well as separation of decision management and control at different levels of the organisation. It is expected that such delegation, diffusion, and separation of decision management and control should be observed below the top level of complex organisation.

Residual claims are diffused among many agents in complex organisations. The usually large number of residual claimants makes it costly for all of them to be involved in decision control. Hence, it is efficient for them to delegate decision control. When residual claimants have no role in decision control, a separation of the management and control of important decisions at all levels of the organisation should be observed.

A general characteristic of diffuse decision management and control systems of complex organisations is a formal decision hierarchy with higher level agents ratifying and monitoring the decision initiatives of lower level agents and evaluating their performance. Hierarchical partitioning of the decision process of this kind makes it more difficult for decision agents at all levels of the organisation to take actions that benefit themselves at the expense of residual claimants. Decision hierarchies are reinforced by organisational rules of the game (e.g. accounting and budgeting systems) that monitor and constrain the decision behaviour of agents and specify the performance criteria that determine rewards.

At the apex of the decision control systems of organisations, both large and small, in which decision agents do not bear a significant share of the wealth effects of the decisions they make is some form of board of directors. The residual claimants delegate the internal control in the organisation to the board of directors. Residual claimants generally retain approval rights (by vote) on matters such as board membership, auditor choice, mergers, and new stock issues. Other management and control functions are delegated to the board of directors. The board then delegates most decision management functions and many decision control functions to internal agents but it retains ultimate control over internal agents. These include the power to hire, fire, and compensate the top-level decision man-

agers and to ratify and monitor important decisions. Exercise of these top-level decision control rights by the board of directors helps to ensure separation of decision management and control even at the top of the organisation.

2.2 The board of directors and company management in Finland

Section 2.1 discusses Fama and Jensen's (1983a) representation of the role of the board of directors in open corporations in theory. In this section, the theoretical representation of the board of directors is placed in a legal setting. That is, this Section provides an overview of the functions and legal basis of the board of directors as depicted by the laws of Finland (see the Companies Act of Finland 1999). This is done for readers to have some knowledge of the data environment given that Finnish data is used in this study.

In Finland, the law relates the share capital of a firm to the minimum number of members of its board. Finnish law stipulates that the board of directors of a limited company need have only one (1) member, plus a deputy member, if the share capital is less than eighty thousand (80 000) euros. For firms with larger share capital, the board must consist of at least three (3) members. Members of the board of directors are elected at a general meeting by the shareholders. There may be some divergence from this practice, however. According to Finnish law, the articles of association of limited companies may stipulate that less than half of the board members shall be appointed in another order. The term of the members of the board of directors should be stipulated in firms' articles of association. The law requires that the board of directors term end no later than in the fourth financial period after the election, either at the end of the general meeting of the shareholders performing the election or at the end of the financial period.

A member of the board may resign from his or her duties before the end of the individual's term. If a member resigns, he or she is obliged to inform the board of directors and the party that elected him or her of the premature resignation. If a member of the board of directors upon resignation has reason to assume that the company no longer has other members of the board of directors, he or she is liable to convene the general meeting of the

shareholders to elect a new board of directors. The body or the party that has elected the members of the board of directors also has the power to dismiss them.

A company with a share capital of at least 80 000 euros should have a managing director. Generally, the board of directors appoints the managing director of such company. The articles of association may, however, stipulate otherwise. For example, it could be stipulated that the supervisory board appoints the managing director of the company. The law further stipulates that at least half of the members of the board of directors and the managing director be permanently residing in the European Economic Area unless exception is granted to the company by the Finnish trade and industry ministry. Board members and the managing director need to serve notice on assumption of duty of all shares they hold in the company on whose board they serve or shares held in companies belonging to the same group for entry in a special list. Changes in holdings should also be reported within a month. Persons who are legally incompetent or declared bankrupt cannot act as members of the board of directors and should not be appointed managing director by the board.

Finnish law places the responsibility for the management and the proper arrangement of the operations of the company on the board of directors. This includes the proper supervision of the book keeping and financial matters of the company. The managing director, however, manages the day-to-day operations in accordance with the instruction and orders given by the board of directors. It is the duty of the managing director to see to it that the book keeping of the company complies with the law and that the financial matters are being handled in a reliable manner. Actions that, considering the scope and nature of the operations of the company, are extensive may be undertaken by the managing director only when authorized to do so by the board of directors. The managing director, may nevertheless, undertake those actions if the action(s) cannot be postponed until a decision of the board of directors can be obtained without causing damage to the operations of the company. The board of directors should, nevertheless, be informed of the action(s) as soon as possible.

If a company becomes a parent company, the board of directors of the company should, without delay, notify the board of directors of the subsidiary organisation thereof. The board of directors of the subsidiary organisation or a corresponding body would be liable to

submit to the board of directors of the parent company all the information necessary to evaluate the status of the group and to calculate the result of its operations.

If the board of directors has more than one member, then the board should have a chairman. The chairman is elected by the board members unless otherwise stipulated in the articles of association or unless otherwise decided upon the election of the board of directors. In limited liability companies with share capital of at least eighty thousand (80 000) euros, the managing director may be chairman of the board only if the company has a supervisory board. Some limited liability companies in Finland have supervisory boards. Where present, the supervisory board supervises the management of the company by the board of directors and the managing director. The supervisory board also gives to the shareholders its report on the annual accounts and the audit report. The managing director of the company and members of the board are forbidden by law to be members of the supervisory board.

It is the duty of the chairman of the board of directors to convene the board of directors when necessary. The chairman may also convene the board if so requested by a member of the board of directors or the managing director. If the managing director is not a member of the board, he or she reserves the right to be present and be heard at the meetings of the board of directors unless otherwise decided by the board of directors in a specific case.

The law allows the board of directors to have a quorum when more than half of the members are present. However, this stipulation may be null and void if a larger number is stipulated in the articles of association. Decisions are made after all members of the board of directors have been reserved the opportunity to take part in the handling of the matter in question. A decision of the board shall be carried by a majority of those present. In case of a tie, the chairman shall have the casting vote. There may, however, be an instance where the articles of association require a qualified majority.

Members of the board of directors are forbidden to take part in contract negotiations between themselves and the company. Members are also forbidden to participate in negotiations between the company and a third party if they may thereby receive a material benefit that may be in contradiction with the interests of the company. Board member may gener-

ally not undertake any measure(s) that is likely to cause unjust enrichment to shareholders or third parties at the cost of the company or another shareholder.

2.3   Governance role of inside and outside directors

Financial economists disagree on the importance of boards of directors and whether outside directors, as well as inside directors, are valuable. Demsetz (1983) and Hart (1983), among others, suggest that boards are superfluous because markets provide powerful incentives to align the interests of managers and shareholders. On the other hand, Fama (1980) and Fama and Jensen (1983a), among others, consider the board as an important element of corporate governance. Other researchers have also noted that board of directors play a potentially significant role in the governance relationship between managers and residual risk bearers (shareholders) in open organisations. Monks and Minow (1995:178), for example, writes:

...Board of directors are a crucial part of the corporate structure. They are the link between the people who provide capital (the shareholders) and the people who use that capital to create value (the managers). This means that the board are the overlap between the small, powerful group that runs the company and a huge, diffuse, and relatively powerless group that simply wishes to see the company run well...

Corporate reformers and legal scholars stress the collective nature of the board when they propose that the board must be composed mostly of independent directors in order to be an effective governing body. Economists also stress the collective nature of the board and comment that an optimally constituted board should have a mixture (although unspecified) of insiders and outsiders (see e.g., Fama and Jensen 1983a). From both legal and economic perspectives, the emphasis is on corporate governance by a board that is viewed as a governing body in which the identity of its constituent members and their relative proportions are potentially important. As a component of a firm's governance structure, the board should, therefore, have a mix of insiders and outsiders. A key issue, then, involving the composition of the board of directors is the balance of internal and external directors. Fama (1980:293) writes:

...A board dominated by security holders does not seem optimal or endowed with good survival properties. Diffuse ownership of securities is beneficial in terms of an optimal allocation of risk bearing, but its consequence is that the firm's security holders are generally too diversified across the securities of many firms to take much interest in a particular firm...

Traditionally, the board of directors is classified into two broad categories: insider (corporate employee) and outsider (non-employee) directors. Some researchers (see e.g., Short et al. 1999) use non-executive and executive in lieu of inside and outside directors. This classification, on the general level, is simplistic and does not consider the potential conflicts of interest when directors are not full-time employees but have affiliations with the firm. Baysinger and Butler (1985), among other researchers, posit a three-way director classification. These are inside directors, independent outside directors, and affiliated outside directors.

The nature or composition of the board of directors affects the activities of the firm. Most corporate boards include a mix of the firms' top managers as well as directors from outside the firm. Extremes in board composition could adversely affect corporate performance. By way of illustration, a board stacked with loyal (to the management) insider directors may result in a rise in agency cost. Further, the firm would lose the valuable information and advise that could be gained from outsider directors. Similarly, including only outsider directors on the board could be costly to the firm. It could be seen that appropriate and inappropriate boards are possible. It should, however, be noted that the board of directors' ability to perform multiple tasks of dealing with the corporate agency problem and providing expertise depends to a great extent on the affiliations of the individual directors comprising the board and the proportional representation of those individuals (see Baysinger and Butler 1985 for details).

2.3.1   Inside directors

Inside directors are corporate officers or retirees and members of their family. Some re-
searchers have questioned the efficacy of including inside directors on the board since the
practice clearly seem inconsistent with the need to separate decision management from de-
cision control. A closer look at the issue, however, indicates that inside directors perform
an important role both in maintaining the separation of ownership and control in open cor-
porations and in preserving the efficiencies ascribed to this arrangement.

Hill and Snell (1988), among others in organisational research, have evaluated the perform-
ance implications of board composition and structure. An essential conclusion from this
literature is that corporate governance mechanisms bring the interest of shareholders and
managers into congruence. Williamson (1985) argue that the board should be viewed, sec-
ondarily, as a way of preserving the contractual relation between the firm and its managers.
Inside managers are crucial to this secondary role.

Effective governance structures or control strategies bestow upon boards with high powers
of interference. These control strategies or governance structures enable directors to dis-
criminate legitimate and illegitimate causes of financial misfortune. Thus, the methods used
by boards of directors to evaluate and reward are effective only to the extent that through
those methods managers are responsible only for performance outcomes that result from
persistently incompetent decisions. That is to say, through effective internal controls, those
involved in decision management are protected either from unfavourable personal conse-
quences of results over which they have no control or from short-term losses that are the
results of investments in future cash flows. Such controls avert the situation whereby a
manager is penalised or rewarded for results outside the manager's control (see e.g. Eisen-
hardt 1985).

To accomplish goals set for an organisation, top management struggle against a variety of
external and internal forces. Top management in complex organisations, thus, have limited
roles as people who influence events rather than controllers of certain outcomes (see Bour-
geois 1987 for details). Hence, Eisenhardt (1985), among others, suggest that there is the

possibility of good outcomes occurring despite poor efforts and adverse outcomes occurring despite good efforts. Managers behave in ways that reduce their exposure to risk without an effective system to control decisions. Implementing an effective method of internal control in complex organisations, unfortunately, is difficult given that information about the relation between managerial behaviour and financial performance is often hidden in what Oviatt (1988:218) calls the *complex causality that determines any organisational outcome.*

By virtue of the fact that inside managers participate in the decision process, they gain access to information that is relevant to evaluating managerial competence and strategic desirability of initiatives regardless of their short-run or long run performance outcomes. Outside directors may prefer to have an open and subjective relationship with top management but they do not have the amount and quality of information upon which such relationships must be based. The inclusion of inside directors on the board appears to represent an attempt to overcome problems of information processing and, thus, improve the effectiveness of decision control.

Fama and Jensen (1983a) suggest that for the board of directors to be an effective device for decision control, it must limit the decision discretion of individual top managers. They see the board of directors as the top-level court of appeals of the internal agent market, and as such it must be able to use information from the internal mutual monitoring system. The interaction of agents to produce outputs enable the agents acquire low-cost information about colleagues, information not directly available to higher level agents. Mutual monitoring systems tap this information for use in the control process. These systems derive their strength from the interests of agents to use the internal agent markets of organisations to enhance the value of human capital. To accomplish this and to achieve effective separation of top-level decision management and control, it is expected that the board of directors of open organisations include some inside managers. Thus, it can be seen that inside directors are important for effective governance because they facilitate the communication of relevant information to outside directors during board meetings. Outside directors need the type of information inside managers have as they may be expected to use such information when they draw inferences about the relation between observable performance and the quality of the decision-making process leading to it.

Baysinger and Hoskisson (1990) suggest that when there are better chances that managers will be evaluated on the basis of the quality of their decision, rather than periodic cash flow changes, inside directors preserve the separation of ownership and control. Williamson (1984:1220) observes:

... to the extent that management participation (on the board) permits reviews on the merits to be done more responsibly (it) serves to safeguard an employment relation that would otherwise be exposed to excessive risk...

To protect the information flows to the board, it is expected that inside directors can be effectively fired only with the consent of the board of directors and, thus, are protected from reprisals from other top managers. Inside directors also provide valuable information to outsiders regarding the criteria necessary for evaluating the performance of senior managers. Fama and Jensen (1983a:314) write:

...The board uses information from each of the top managers about his decision initiatives and the decision initiatives and performance of other managers. The board also seeks information from lower level managers about the decision initiatives and performance of top managers. This information is used to set rewards of the top managers, to rank them, and choose among their initiatives...

The inclusion of insiders on the board of directors has also been depicted by some researchers as a strategic manoeuvre whereby the chief executive provides implicit status rewards to favoured subordinates (see for instance Baysinger and Butler 1985). Thus, the inside directors ties to the chief executive could compromise their effectiveness as decision controllers in cases in which managerial opportunism is the cause of financial loses. Agency theorist, however, argue that since the inside directors' economic well-being are tied directly to financial success of the firm, their loyalty to top management is likely to be predicated on the competence of the chief executive (see e.g. Fama 1980, Fama and Jensen 1983b). Moreover, Fama (1980) suggests inside directors further provide an experienced pool of senior level managers ready to step in if the incumbent chief executive officer proves unsatisfactory.

2.3.2 Independent outside directors

Fama and Jensen (1983a) suggest that when the internal decision control works well, outside board of directors candidates, or potential members of the board of directors, would be nominated by internal managers. Internal managers use their knowledge of their organisation to nominate outsiders with relevant complementary knowledge. For example, outsiders with know-how in capital markets, corporate law, or relevant technology who provide an important support function to the top managers in dealing with specialised decision problems.

Generally, outside board of directors members act as arbiters in disagreements among internal managers. They carry out tasks that involve serious agency problems between internal mangers and residual claimants, for example, setting executive compensation or searching for replacement for top managers. An implication of effective separation of top-level decision management and control is that outside managers have incentives to carry out their duties and do not collude with managers to expropriate residual claimants. Outside directors have incentives to develop reputations as decision experts in decision control. A significant number of outside directors of open corporations are either managers of other corporations or important decision agents in other complex organisations (see Table 2b). The value of their human capital depends primarily on their performance as internal decision managers in other organisations. They use their directorship to signal to internal and external markets for decision agents that

(i)   they are decision experts,

(ii)   they understand the importance of diffuse and separate decision control, and

(iii)   they can work with such decision control systems.

These signals are credible when direct payment to outside directors is small. However, there is substantial devaluation in human capital when internal decision control breaks down and the costly last resort process of an outside takeover is activated (see Fama and Jensen 1983a).

2.3.3   Affiliated outside directors

Affiliated outside directors, although not full time employees of the firm on whose board they serve, are associated with the firm in some way. They include investment bankers, commercial bankers that have made loans to the firm, lawyers providing service to the firms, consultants, officers and directors of the firm's suppliers and customers, and inter-locking directors. In contrast, the independent outside directors have no affiliation with the firm other than their directorship, and include private investors, business executives, academics, and decision makers from the public sector.

Affiliated and independent outside directors may provide both expertise and objectivity in assessing managers' decisions. Keasey and Wright (1993) describe the role played by these outside directors as "strategic advisors" and "corporate watchdog". The presence of outside directors also serves to prevent collusion (among top managers on the board of directors) and thereby increases the effectiveness of the internal managerial labour market (see Fama 1980). Daily and Dalton (1992) and Judge and Zeithaml (1992) suggest that aligning the interest of management and shareholder can be achieved by increasing the representation of outside directors.

In addition, a wide range of necessary and important review functions have been attributed to outside directors. These include involvement in strategy and policy (see e.g. Nash 1988), provision of aid and counsel to managers (see e.g. Danco and Janovic 1981), and service as the CEO's sounding board or sparring partner (see e.g. Mathile 1988). Studies by Baysinger and Butler (1985) and Schellenger, Wood and Tasakori (1989), among others, have shown that higher percentages of outside directors have been found to be associated with increased financial performance.

The foregoing suggest that a high ratio of outside directors on a board could increase the base of expertise from which a firm's CEO can draw, increase objectivity in board delibera-tions, strengthen the system of corporate checks and balances, and increase directors' inde-pendence. Nevertheless, the role played by CEOs in choosing directors invites scepticism

about the ability of outside directors to make independent judgements on firm performance (see for instance Mace 1986 and Waldo 1985).

2.4 Hypotheses development

Agency theory, as seen above, views the board as a potentially effective element of corporate governance and, hence internal control. Economic theories are largely silent on matters concerning board composition. The laissez-faire attitude has permitted substantial compositional diversity among boards. Even among the relatively small group of very large corporations, boards may differ considerably with respect to such potentially salient attributes as ratio of inside directors to outsider directors, the organisational affiliations of outsider directors, and the independence of directors individually and as a group.

Evaluating the implications of board composition on corporate risk-taking require empirical analysis. The next section provides a foundation for that analysis by developing Hypotheses relating to the relationship between the board of directors' constituents and corporate risk-taking.

2.4.1 Outsider-dominated boards of directors and corporate risk-taking

Agency theory, from Section 2.1, assigns to the board of directors control over internal agents. The issue of control is of considerable importance in agency theory, where the traditional interest lies in contracting. Agency theory considers the optimal contract form for that ubiquitous control relationship in which the principal delegates work to the agent (the principal-agent relationship is mediated by the board of directors). Eisenhardt (1985) formalise the agency problem that determines the optimal contract for the agent's service. The theory can be stated in two cases. First, when the behaviour of the agent is observed, a behaviour-based contract is optimal because the agent's behaviour is the purchased commodity. This is the simple case of complete information. The two parties, principal and the agent, know what the agent has done. The second case is that of incomplete information.

The agent is aware of his/her behaviours but the principal is not aware of the agent's behaviour. A dilemma arises because the principal cannot determine if the agent has behaved appropriately. If the principal rewards the agent based upon agreed job behaviours, but without confirmation of those behaviours by the principal, the agent may shirk. Thus, the agent cannot be relied on to perform as agreed.

In this case of incomplete information, the principal has two options. The principal can purchase information about the agent's behaviours and reward those behaviours. This requires employing surveillance mechanisms such as cost accounting measures, budgeting systems, or additional layers of management. On the other hand, the principal can reward the agent based on outcomes (e.g., profitability). Such outcomes are surrogate measures for behaviours.

Two key features of organisations are explicitly recognised in agency models. The first is the divergence of preferences among organisational members. In this view, the role of control is to provide measures and rewards so that individual agents pursuing their own self-interest will also pursue the collective interest. The second key feature of organisations modelled in agency theory is the outcome of uncertainty of organisations. Organisations are assumed to have uncertain futures. The future may bring prosperity, bankruptcy, or a myriad of intermediate outcomes. The risk of uncertain future is partially borne by owners. However, agents also bear risk and they bear increasing risk as control becomes more outcome based. In this view, control system measures and rewards, not only motivate behaviour, but also alter risk-sharing patterns.

The agency theory presented above suggests two underlying strategies of control. These are behaviour-based and outcome-based strategies of control. Both of these strategies rely on performance evaluation. Performance-based control strategies emphasise monitoring, evaluating, and rewarding an agent's performance and thus focus on the information aspect of control.

Managerial performance can be evaluated on inferences concerning the quality of their decisions or on the measurable outcomes of decision-making process. Senior level corporate

managers make decisions under uncertainty that are not programmable as other employee tasks. Hence, terms like behaviour control and outcome control, although useful in describing controls applied to non-managerial employees, cannot be used here. Following Baysinger and Hoskisson (1990), the terms strategic controls and financial controls, respectively, are used to convey these concepts in the context of controlling corporate managers.

Gupta (1987) describe what is referred to here as strategic control in terms of openness in the relationship between corporate-level managers and division managers and the willingness of management to rely on subjective information when evaluating division managers' performances. That is, under a system of strategic controls, division managers are evaluated on the basis of how strategically desirable their decisions were before implementation and on the basis of performance of the firm after the decisions were implemented. On the other hand, in a system employing financial controls, managers are evaluated solely on the basis of their success in meeting performance criteria. Given the detailed nature of strategic controls, putting them into practice requires the controller to have more information than is required for implementing financial controls (Baysinger and Hoskisson 1990).

The composition of the board of directors determines the decision control strategies employed. Baysinger and Hoskisson (1990) suggest that outside and inside directors usually have different types of information. Hence, they are likely to differ in the decision control strategies they employ. As seen above, inside directors, in their position as participants in the decision process, have access to information relevant to assessing managerial competence and strategic desirability of initiatives, regardless of their long or short run performance outcomes. Given that insiders and the CEO frequently interact in ways that are relevant to assessing the quality of the decision-making process, relations between the two parties are more likely to be open and subjective. Hence, in terms of information processing, it could be expected that the inside party of any board would evaluate and reward top management on the basis of strategic controls.

Outside directors may want to have an open and subjective relationship with top management but they do not have the amount and quality of information upon which such relationships must be based. The outside board members usually have few of these informational

advantages and this reduces the likelihood of using strategic controls. Outside directors, by definition, have limited contact with the day-to-day decision process of the firm. Their evaluation of the quality of top management's decision-making process is limited to board interaction, at which point the strategic plans may be at their final stage, needing only ratification by the board. As a result, outside directors lack the type of subjective information needed for evaluating and rewarding managers on the quality of their decision processes. Jensen (1993) also points to the severe information problems that limit the effectiveness of outside board members. For example, the top management of firms headed by the CEO almost always determines the information given to the board. This limitation on information severely hinders the ability of even highly talented board members to contribute effectively to the monitoring and evaluation of the CEO and the company's strategy.

Patton and Baker (1987) note that outside directors also serve as directors on several boards. Drawing parallels from the strategy-implementation literature, outsider-dominated boards confront the same types of information-processing problems encountered by corporate-level managers of unrelated diversified firms. An outsider director who spends little time on any one firm's business is not very different from a corporate manager who must evaluate the performance of a large number of divisions (see e.g. Baysinger and Hoskisson 1989, Hoskisson and Hitt 1988, Dundas and Richardson 1982 for further details).

It must be noted that outside directors may be able to reach detached conclusion about quality of decisions of top management through years of experience. However, Mintzberg, Raisinghani and Theoret (1976) suggest that the very nature of strategic decisions makes them unique and unstructured. Consequently, for outsiders to fully appreciate the quality of decisions, they may need supplemental experience with that firm's process. This knowledge is what is not available to the truly independent outside director. On the other hand, outside directors who are former executives of the firm will be well informed. However, such directors are not truly independent and advocates for outside directors in the composition of the board of directors have independent outsiders in mind. Hence, former company employees do not fit into the category of outsiders on the board of directors.

Consequently, whereas relations between inside directors and top management may be open and subjective, relations between outside directors and top management may be more objective and formulaic. In other words, it is expected that the predominance of outside directors on boards will be associated with financial controls in board-management relations. Along these lines, Hoskisson, Hitt, Johnson, and Grossman (1995) argue that outside directors may favour expansion via external means, such as acquisitions to enter new markets as these are better suited to evaluation using financial criteria.

Given the type of information available to outside directors and their likely emphasis on financial controls, outsider-dominated boards may skew the direction of managerial effort away from optimally risky strategies that many shareholders prefer and the long-term orientation that is required for competitive advantage. From the perspective of top management, financial controls correlate managerial rewards directly with short-term variations in the market value of the firm (see e.g. Demski 1987, Gupta 1987). Functionally, this is achieved either by disciplinary practices that are highly sensitive to short-term cash flow, net profit, growth, or market share results or by compensation schemes that tie much of the pecuniary rewards to quarterly earnings (see Baysinger and Hoskisson 1990 for further details). Along the same line of reasoning, Fischel and Bradley (1986) discuss behavioural implications of alterations in corporate law, which increases management's liability for short-term performance declines. They write (p.266):

...risky projects can have poor outcomes. If managers are penalised whenever decisions that were optimal ex ante turn out poorly ex post they will tend to avoid risky projects...

Increasing managers' liability for financial performance in the short run may increase their diligence in maximising short-term profits. It may, however, lessen their incentive to take risks. Along the same lines, a greater outsider representation on the board of directors may have the same effect because the insiders' influence on the decision-control process is reduced. The following Hypothesis is, therefore, proposed:

Hypothesis 1: The contemporaneous relationship between outsider-dominated board of directors and risk-taking will be negative.

2.4.2   Growth opportunities and corporate risk-taking

It was argued above that outsider-dominated boards of directors emphasis on financial controls may skew the direction of managerial effort away from optimally risky strategies and the long-term orientation that is required for competitive advantage. It was also argued that from the perspective of top management, financial controls correlate managerial rewards directly with short-term variations in the market value of the firm. Operationally, this could be achieved through disciplinary practices. However, such practices are sensitive to factors such growth. Barney (1991), Lado, Boyd, and Wright (1992), and Wright, Ferris, Hiller, and Kroll (1995), among others, suggest reasons for presence of growth opportunities in firms. Among the reasons are possibilities in firms' external environment, such as location in attractive industries, valuable internal resources, such as talented human resources, valuable culture, or proprietary technology.

As the legal representatives of corporate stockholders, board of directors' independent outside directors are expected to help promote strategic orientations that benefit stockholders' wealth. In other words, outsider-dominated boards of directors are expected to take advantage of growth opportunities to increase shareholder wealth. Failure to take advantage of such growth opportunities will be intuitively puzzling and inconsistent with the guardian role that both corporate law and agency theory ascribe to outside board members (see e.g., Jensen and Meckling 1976). Hence, an outsider-dominated board, acting in the interest of shareholders, would capitalise on growth opportunities of the firm and embrace growth-oriented risk-taking. This implies a positive relationship between outsider-dominated boards of directors and risk-taking for firms with growth opportunities. Therefore, the following Hypothesis is proposed for empirical verification:

Hypothesis 2: The presence of growth opportunities moderates the relationship between outside dominated boards of directors and firm risk taking in such a way that a positive association between outsider-dominated boards of directors and risk-taking should be observed.

2.4.3 Equity holdings by the board of directors and corporate risk-taking

Jensen (1993) suggests that the factors that motivate board of directors are, in general, inadequate. Two focal points of Jensen proposition could be discerned. The first is the threat of legal liabilities, like class action suits initiated by shareholders (lawsuits which are often activated by unexpected declines in stock price), often faced by board members could make them act to cover their interest. These legal liabilities are more often consistent with minimising downside risk rather than maximising value. Furthermore, members of the board are motivated by the threats of adverse publicity from the media or political and regulatory authorities. Jensen (1993) also suggests that insufficient equity holding by the board of directors in general causes many problems. Among them are the lack of incentives to take actions that create efficiency and value for the company. Jensen (1993) further proposes that encouraging board members to hold substantial equity interests would provide better incentives to take actions that create efficiency and value for the company. Implicitly, Jensen's (1993) propositions suggest that board of directors with high equity holding have the incentive to enhance firm value, via risk taking for example, and vice versa. That is, although risk-taking can enhance shareholder value, owning insignificant equity stakes in firms does not necessarily provide proper incentives to take actions that create efficiency and value for the company. The following Hypothesis is, therefore, suggested for empirical verification:

Hypothesis 3: The relationship between the board of directors and risk-taking will be negative when the aggregate level of equity ownership by the board of directors is insignificant.

2.4.4 Board size and corporate risk-taking

As noted above, the board of directors, at the apex of the internal control system, has the responsibility for the functioning of the firm. There is the recognition that active monitoring of top management can improve decision-making and thus corporate performance. John and Senbet (1998) argue that the effectiveness of board monitoring is determined, among other things, by its size. That is, the total number of the members of the board of directors,

or simply board size, has an effect on how well the board of directors function to safeguard the interests of shareholders in boardroom deliberations.

Lipton and Lorsch (1992) and Jensen (1993) contend that board size affects corporate governance independent of other board attributes. Their arguments focus on the productivity losses that arise when work groups grow large, an insight borrowed from organisational behaviour research such as Hackman (1990). Jensen (1993) states that:

... as groups increase in size they become less effective because the coordination and process problems overwhelm the advantage from having people to draw on...

Lipton and Lorsch (1992) also state that . . . *the norms of behaviour in most boardrooms are dysfunctional,* because directors rarely criticise the policies of top managers or hold candid discussions about corporate performance. Jensen (1993) further suggests that larger boards lead to less candid discussion of managerial performance and greater control by the CEO. This situation arises because, according to Jensen (1993), there is *great emphasis on politeness and courtesy at the expense of truth and frankness in boardrooms.* This implies that firms with large boards can reduce the board's ability to resist CEO control. Yermack (1996) suggests that:

... CEO performance incentives provided by the board through compensation and the threat of dismissal operate less strongly as board size increases...

Indeed empirical results presented by Yermack (1996), Eisenberg et al. (1998), and Conyon and Peck (1998) suggest that board size affects firm profitability or performance in both large and small firms, respectively.

To reduce the problems of communication and co-ordination and the decreased ability of the board to control the CEO and top management, Lipton and Lorsch (1992) recommend limiting the membership of boards of directors. The proposal amounts to a supposition that even if boards' capacities for monitoring increase with board size, the benefits are out-

weighed by such costs as biases against risk-taking and slower decision making, among other things. The following Hypothesis is, therefore, proposed for empirical verification:

Hypothesis 4: The contemporaneous relationship between board size and corporate risk-taking will be negative.

2.5   Concluding remarks

This chapter examines the governance function of the board of directors and proposes hypotheses to be tested. The position and functions of the board of directors is discussed within the context of agency theory. The theory defines an organisation as a nexus of contracts (written and unwritten) and focuses on the contracts that allocate steps in an organisation's decision process, define residual claims, and set up a device for controlling agency problems in the decision process.

An organisation's decision process is made up of decision management (initiation and implementation) and decision control (ratification and monitoring). Most organisations characterised by the separation of residual risk bearing from decision management are complex in the sense that specific information valuable for decisions is diffused among many agents throughout the organisation. Benefits from better decisions can be achieved by delegating decision functions to agents at all levels of the organisation who have specific knowledge, rather than allocating all decision management and control to residual claimants. Control of agency problems of diffuse decision systems is then achieved by separating the ratification and monitoring of decisions (decision control) from initiation and implementation (decision management). A common central block of the diffuse decision control system is a formal decision hierarchy in which the decision initiatives of lower level agents are passed on to higher agents, first for ratification and then for monitoring. At the apex of the decision control systems of organisations is a board of directors that ratifies and monitors important decisions and chooses, dismisses, and reward important decision agents. Such multiple-member boards make collusion between top-level decision management and control agents

more difficult, and they are the mechanism that allows separation of the management and control of the organisation's most important decisions.

The theoretical representation of the role of the board of directors in open corporations, as discussed in the agency theory, is placed in a legal setting in Section 2.2. This is done for readers to have some knowledge of the data environment given that Finnish data is used in this study. Hence, the section focuses on the law regulating the board of directors as specified in the Finnish Companies Act and provide an overview of the functions and legal basis of the board of directors as depicted by the laws of Finland.

Section 2.3 examines the governance role of inside and outside directors. A basic principle of corporate governance is that the shareholders elect the board of directors who in turn appoint top management. A common practice, however, is for the board to be elected by shareholders from the slate approved by top management. The nature or composition of the board of directors affects the activities of the firm. Most corporate boards include a mix of the firms' top managers as well as directors from outside the firm. The ratio of inside to outside directors on the board is argued to be of critical importance.

Traditionally, the board of directors is classified into two broad categories: the insider (corporate employee) or outsider (non-employee). This classification, on the general level, is simplistic and does not consider the potential conflicts of interest when directors are not full-time employees but have affiliations with the firm. Hence a three-way director classification is presented. These are inside directors, independent outside directors, and affiliated outside directors.

Inside directors are corporate officers or retirees and members of their family. Some researchers have questioned the efficacy of including inside directors on the board since the practice clearly seem inconsistent with the need to separate decision management from decision control. A closer look at the issue, however, indicates that inside directors perform an important role both in maintaining the separation of ownership and control in open corporations and in preserving the efficiencies ascribed to this arrangement.

Generally, outside board members act as arbiter in disagreements among internal managers. They carry out tasks that involve serious agency problems between internal mangers and residual claimants, for example, setting executive compensation or searching for replacement for top managers. Affiliated outside directors, although not full time employees of a given firm, are associated with the firm in some way. The independent outside directors have no affiliation with the firm other than their directorship.

Agency theory assigns to the board of directors control over internal agents. The issue of control is of importance to the theory, where the traditional interest is in contracting. Agency theory considers the optimal contract form for that ubiquitous control relationship in which the principal delegates work to the agent. The agency problem is to determine the optimal contract for the agent's service. When there is complete information on the agent's behaviour, a behaviour-based contract is optimal because the agent's behaviours are the purchased commodity. Alternatively, when there is incomplete information where the agent is aware of his/her behaviours but the principal is not, a dilemma arises because the principal cannot determine if the agent has behaved appropriately. In this case of incomplete information, the principal has two options: purchase information about the agent's behaviours and reward those behaviours or reward the agent based on outcomes. Two underlying strategies of control are suggested here. These are behaviour based and outcome based strategies of control. Both of these strategies rely on performance evaluation. Performance based control strategies emphasise monitoring, evaluating, and rewarding an agent's performance and thus focus on the information aspect of control.

Section 2.4 presents Hypotheses to be tested in the empirical part. The composition of the board of directors determines the decision control strategies employed. Outside and inside directors usually have different types of information. For this reason, they are likely to differ in the decision control strategies they employ. Outside directors may want to have an open and subjective relationship with top management but they do not have the amount and quality of information upon which such relationships must be based. Consequently, relations between outside directors and top management may be more objective and formulaic. In other words, it is expected that the predominance of outside directors on boards will be associated with financial controls in board-management relations.

Given the type of information available to outside directors and their likely emphasis on financial controls, outsider-dominated boards may skew the direction of managerial effort away from optimally risky strategies. From the perspective of top management, financial controls correlate managerial rewards directly with short-term variations in the market value of the firm. Functionally, this is achieved either by disciplinary practices that are highly sensitive to short-term cash flow, net profit, growth, or market share results or by compensation schemes that tie much of the pecuniary rewards to quarterly earnings. If managers are punished whenever decisions that were optimal ex ante turn out poorly ex post, they would tend to avoid risky projects. Hence a negative relationship between outsider-dominated boards and firm risk taking is hypothesised for empirical testing.

Although emphasis on financial controls may skew the direction of managerial effort away from optimally risky strategies, the disciplinary practices adopted by outsider-dominated board of directors are sensitive to factors such as growth. Some firms may have growth opportunities because of possibilities in its external environment, such as location in attractive industries, or valuable internal resources, such as talented human resources, a valuable culture, or proprietary technology. As the legal representatives of corporate stockholders, a board's independent outside directors can be expected to help promote strategic orientations that benefit stockholders' wealth. Hence, an outsider-dominated board, acting in the interest of shareholders, would capitalise on growth opportunities of the firm and embrace growth-oriented risk-taking. It is therefore hypothesised that growth opportunities moderate the relationship between outsider-dominated boards and firm risk-taking.

Jensen (1993) suggests that board of directors are not motivated to create efficiency and value for the company. Insufficient equity holding by the board of directors is identified as a factor in this lack of motivation. Consequently, the board would rather act to minimise downsize risk rather than maximise value. Encouraging board members to hold substantial equity interests would provide better incentives to take actions that create efficiency and value for the company. Implicitly, this suggests that board of directors with high equity holding have the incentive to enhance firm value, via risk taking for example, and vice versa. That is, although risk-taking can enhance shareholder value, owning insignificant

equity stakes in firms does not necessarily provide proper incentives to take actions that create efficiency and value for the company. Hence, it is proposed that the relationship between the board of directors and risk-taking will be negative when the board holds low equity stakes but positive when the board possesses high equity stakes.

The effectiveness of board monitoring is determined, among other things, by its size. Some researchers contend that board size affects corporate governance independent of other board attributes. This argument focuses on the productivity losses that arise when work groups grow large, an insight borrowed from organisational behaviour research. Other researchers further contend that larger boards lead to less candid discussion of managerial performance and greater control by the CEO. To reduce the problems of communication and coordination and the decreased ability of the board to control the CEO and top management, Lipton and Lorsch (1992) recommend limiting the membership of boards of directors. The proposal amounts to a supposition that even if boards' capacities for monitoring increase with board size, the benefits are outweighed by such costs as biases against risk-taking and slower decision making, among other things. Therefore, it is hypothesised that there is a negative relationship between board size and firm risk-taking.

3. BLOCK OWNERSHIP

This Chapter examines the governance function of block holders and develops a hypothesis to be tested in the empirical section. For this purpose, Section 3.1 defines the block holder as used in the thesis and discusses some studies related to block holders. Section 3.2 presents a theoretical model that demonstrates the relationship between block ownership and firm risk-taking. Hypothesis to be tested is proposed in Section 3.3. Section 3.4 concludes the chapter.

3.1 Defining block ownership

Corporate ownership is often concentrated in block of securities owned and managed by recognisable parties. Mintzberg (1983) suggests two prime dimensions of ownership. 'Involvement' and its opposite, 'detachment' differentiates between owners who influence the decisions or actions of the firm and those who do not. 'Concentration' and its opposite, 'dispersion' differentiates corporations whose stocks are widely held. Cross-classification of the two dimensions produces four types of ownership: dispersed-detached, dispersed-involved, concentrated-detached, and concentrated-involved. According to this cross-classification, the more involved the owners and the more concentrated their ownership, the greater the power in influencing the corporation.

A block holder (block holder, block owner, and large shareholder are used interchangeably) can either be an individual, family, or an organisation. Whatever the case, an important feature of a block owner is that the owners own enough shares to influence corporate policy, for example through the voting process. Economists have identified several possible organisational roles for large-block shareholders. Some of these roles are likely to be value decreasing while others are likely to have the opposite effect. Stulz (1988), for example, illustrates how owning large blocks makes it easier for managers to keep their jobs, even if that means resisting a value-increasing tender offer. Shleifer and Vishny (1997) note that block holders represent their own interests, which do not necessarily coincide with the interests of other investors in the firm (or with the interests of employees and managers). In the process

of using their control rights to maximize their welfare, block holders can redistribute wealth in both efficient and inefficient ways from others. On this point, Fama and Jensen (1983b), for instance, investigate various ways in which a block holder could expropriate or consume corporate wealth. A large block shareholder could, for example, give him or herself an excessive salary, negotiate 'sweetheart' deals with other companies he or she controls, or invest in negative-net-present value projects.

Jensen and Meckling (1976) posit that the ability of a block holder to expropriate wealth from others is especially great if their control rights are significantly in excess of their cash flow. This occurs if, for example, they own equity with superior voting rights. The problem of expropriation by block holders also becomes potentially more significant when other investors are of a different type, for example if the other investors have a different pattern of cash flow claims in the company. If the block holder is an equity holder, he may have the incentive to force the firm to take on too much risk, since he shares in the upside while the other investors, who might be creditors, bear all the costs of failure.

Agency theory suggests that owners of large blocks of shares have both the incentive and the power to ensure that managers operate the firm efficiently, regardless of managers' share ownership. Block owners have so much wealth at stake in an individual firm that the benefits of monitoring and disciplining managers outweigh the costs (see Demsetz 1983 for more on this). Shleifer and Vishny (1997) suggest that block holding or concentration in share holdings is also a direct way to align cash flow and control rights. They argue that a substantial minority shareholder has the incentive to collect information and monitor the management, thereby avoiding the traditional free rider problem. Additionally, given that each share confers one vote, block owners would have more power than small shareholders. That is, block holders have enough voting control to put pressure on the management in some cases, or perhaps even oust the management through a proxy fight (see for instance Pound 1992 and Shleifer and Vishny 1986). In more extreme cases, large block holders have outright control of the firms and their management with fifty-one (51) percent or more percent ownership. Block holders, thus, address the agency problem in that they both have a general interest in profit maximization and enough control over the assets of the firm to have their interests respected.

Shleifer and Vishny (1997) also note that the power of block holders depends on the degree of legal protection of their votes because they govern by exercising their voting rights. Majority ownership only works if the voting mechanism works, and the majority can dictate the decisions of the company. This may require fairly little enforcement by courts, since fifty-one (51) percent ownership is relatively easy to prove, and a vote count is not required once the majority shareholder expresses their preference. With large minority shareholders, matters are more complicated. This is so because they need to make alliances with other investors to exercise control. The power of management and small (as opposed to large) minority shareholders to interfere in these alliances is greatly enhanced. For example, when there are two large minority shareholders each owning forty-nine (49) percent of the firm's equity, an opportunity arises for the small minority investors (and management, in some cases) to change organisational decisions. This is because to create the alliances, the needs of small minority shareholders have to been considered. This consideration enhances their power to change some organisational choices, for instance. In such cases of alliance creation, the burden on courts to protect other large shareholder rights is much greater. The effectiveness of large shareholders, then, is closely tied to their ability to defend their rights.

Tosi and Gomez-Mejia (1989) and McConnell and Servaes (1990) also suggest that the presence of a block holder may also restrain selfishly driven strategies by firm management. That is, the presence of a major shareholder may hold back detrimental corporate strategies. Thus, in firms with a major shareholder, acquisitions for instance, may be primarily motivated by their potential financial benefits for stockholders (see Kroll, Wright, Toombs, and Leavell 1997 for more on this point). James and Soref (1981) and Kroll et al. (1997) further note that since block holders can use their power to force corporate change, managers may be reluctant to adopt unprofitable strategies for fear of losing their employment.

It should be stated here that there are large shareholders whose equity holdings are not diversified, and, hence, bear excessive risks (see for instance Demsetz and Lehn 1985). Nevertheless, the fact that ownership in firms is so concentrated almost everywhere in the world suggests that lack of diversification is not as great a private cost for block holders to bear as relinquishing control (see Shleifer and Vishny 1997).

The preceding analyses suggest that block holders tend to promote shareholder driven corporate strategies. Given that block holders can bring significant pressure that enhances firm performance, an analysis of their influence may provide additional insight on the nature of firm risk-taking. The next section begins this analysis by presenting a theoretical model exploring the link between block ownership and firm risk-taking.

3.2 Block ownership and corporate risk-taking

Grossman and Hart (1980) argue that an outsider without shares in a diffusely held firm would never take over in order to improve the firm. This is because if their improvement plans are understood by atomistic incumbent shareholders, they will demand the value of the improvement in return for their shares or else they stay on. If the outsider can only benefit from shares they already own (which are few if any) but have to shoulder all the monitoring and takeover costs, the deal may not be worth the outsider's while. Small shareholders, for the same reason, do not have large enough stakes in the firm to absorb the costs of monitoring management. Grossman and Hart (1980) allow the outsider to exclude incumbent shareholders from the gains the takeover could produce. They call this exclusionary device "dilution". It has the effect of lowering the acquisition price, possibly enough to ensure the efficient level of search for improvements by outsiders. If the search for improvements is a public good, a question arises as to how its provision can be ensured. Shleifer and Vishny (1986) theorize that improvements could be made by parties who already own a large share of the firm's equity.

Ownership of a large share of a firm does not automatically confer active control because it does not provide the role or status for directly taking corporate decisions. Dyer (1985) and Chaganti and Damanpour (1991), however, suggest that it does put block holders in a strategic position and provide them with an opportunity to modulate internal strategic choices. Given that some block holders may be passive investors (see McConnell and Servaes 1990), this opportunity to modulate internal strategic choices may be especially relevant for active block holders who seek to force value maximisation (see Woodruff and Grover 1994). Shleifer and Vishny's (1986) theory, which implies that large active equity block

holders can theoretically force value maximization, is adopted here given that the value maximization is achieved through the promotion of firm risk-taking.

Shleifer and Vishny's (1986) theory assumes that the firm's shares are initially held by a single risk-neutral large shareholder. This shareholder is unaffiliated with management and holds a fraction $\alpha < .5$ of the firm. There are also a number of risk-neutral atomistic shareholders holding altogether a proportion $(1 - \alpha)$. For the purpose of the analyses, α is taken as fixed. Even though management does its best to maximise the present value of profits, it faces possible replacements by insurgents led by the large shareholder, who can offer a more profitable operating strategy.

The theory further assumes that the large shareholder (L) has exclusive access to a technology for finding valuable improvements of the incumbent's operating strategy through monitoring and independent research. This technology gives the shareholder (L) a probability I of drawing an improvement of positive value Z from an atomless cumulative distribution function $F(Z)$ for a cost $c(I)$. The variable Z is interpreted as the increase in discounted profits resulting from replacement of inefficient management. I can be thought of as research intensity and $F(Z)$ has a bounded support $(0, Z_{max}]$. The cost function $c(I)$ is assumed to satisfy

(1) $c'(I) > 0$ and $c''(I) > 0$.

The expected value of profits under existing management equals q.

In the event that L invests $c(I)$ and uncovers an improvement of the value Z, the investor may attempt to gain control by making a cash tender offer for a proportion $.5 - \alpha$ of the firm's shares. However, making a tender offer could involve substantial legal and administrative costs in addition to any premium paid. It is, therefore, proposed that L must also incur a cost c_T if he decides to bid. This investor will move to make a bid if $.5 - \alpha$ of the shares can be purchased from the small shareholders for any bid $q + \pi$, with π satisfying

(2) $.5Z - (.5 - \alpha)\pi - c_T \geq 0$

It should be noted here that π would not equal the difference between L's bid and the share price prevailing before the takeover. This is so because the pre-takeover share price will exceed q because of the prospect of a value-increasing takeover. Further, for a sufficiently large α, L need not bid less than the true value of the post-takeover firm in order to make a profit since L gains on the shares that she/he already owned.

It is assumed that if fewer than $.5 - \alpha$ shares are tendered, the improvement is not made and L returns all shares tendered to their owners. A rational atomistic shareholder views the success of the takeover attempt as independent of his/her own tender decision. Hence, a rational atomistic shareholder will tender if and only if π exceeds his expectation of Z, the rise in the firm's profits after the takeover. Small shareholders form their expectations about Z using two pieces of information:

(i) L has drawn an improvement from $F(Z)$, and

(ii) L can cover takeover costs, pay $(.5 - \alpha)\pi$ above q, and still make a nonnegative profit.

The shareholders' best forecast of Z is then given by

(3) $E[Z | .5Z - (.5 - \alpha)\pi - c_T \geq 0]$

where the conditional expectation is taken with respect to $F(Z)$.

Tendering is the best strategy if and only if

(4) $\pi - E[Z | Z \geq (1 - 2\alpha)\pi + 2c_T] \geq 0.$

If small shareholders are indifferent between tendering and not tendering their shares, it is assumed that they choose to tender. As L wants to obtain $(.5 - \alpha)$ shares for minimum cost, L will bid $q + \pi^*(\alpha)$, where $\pi^*(\alpha)$ is the minimum π that satisfies the equation (4) above.

Although the focus here is on the equilibrium in which L bids $q + \pi^*(\alpha)$, there are in general many other pure strategy sequential equilibrium. In these equilibria, L bids more than $q + \pi^*(\alpha)$, but little enough to make a profit. Nevertheless, the case for the minimum bid equilibrium is compelling. In order to support any other sequential equilibrium, there is the need to posit an out-of-equilibrium belief on the part of small shareholders that those bidding $q + \pi^*(\alpha)$ had, on average, an improvement of value greater than the forecast based on the expectations of small shareholders, specified in (i) and (ii) above. There is no basis for such belief since it is common knowledge that all L types would like to take over at the lowest possible price. It is also known that if all those who could profit by taking over at $q + \pi^*(\alpha)$ actually chose to deviate, then it would be rational to tender since $\pi^*(\alpha)$ satisfies (4). Under these circumstances, it seems reasonable for small shareholders to believe that any L type able to profit by taking over at $q + \pi^*(\alpha)$ would take the opportunity to pay a lower price, that L type recognising that the bid $q + \pi^*(\alpha)$ is acceptable when all fellow L types are expected to do the same. This gives rise to beliefs based on the expectations of small shareholders, specified in (i) and (ii) above when $\pi = \pi^*(\alpha)$ and to acceptance of the bid.

This type of argument is the basis for a refinement of the sequential equilibrium concept due to Grossman and Perry (1984). In the model presented here, Grossman and Perry's (1984) requirement that out-of-equilibrium beliefs be "credible" can be interpreted as follows. Assume that there is a group of potential bidders with improvement values drawn from a unique set $K \subset (0, Z_{max}]$ who wish to deviate from a proposed equilibrium strategy, such as no bid or a bid $q + \pi' > q + \pi^*(\alpha)$, and to bid $q + \pi^*(\alpha)$ instead provided that small shareholders believe that L deviates if and only if $Z \in K$. Further assume that potential

bidders with improvement values drawn from the complement of K do not wish to deviate when small shareholders believe that L deviates if and only if $Z \in K$. Then, on seeing the bid $q + \pi^*(\alpha)$, small shareholders must predict the value of the improvement using $E(Z|Z \in K)$, where expectation is taken with respect to $F(Z)$. When there is more than one set K, any of the beliefs generated in this way can be credible. If there is no such set K, any forecast of the form $E(Z|Z \in J)$ for some $J \subset (0, Z_{max}]$ is credible.

The theorem that follows is that when tender offers must be made for exactly $(.5 - \alpha)$ shares and $\pi^*(\alpha) < Z_{max}$, there is a unique pure strategy sequential equilibrium beliefs that are credible in the sense of Grossman and Perry (1984). In that equilibrium, L bids $q + \pi^*(\alpha)$ if $.5Z - (.5 - \alpha)\pi^*(\alpha) - c_T \geq 0$ and does not bid otherwise (see appendix 1 for proof of this theorem).

The characterisation in (4) leads to the following results:

LEMMA 1. $\pi^*(\alpha)$ is a decreasing function of α (see appendix 1 for proof of Lemma 1).

An interpretation of lemma 1 is that, the more share L owns, the easier it is to convince small shareholders that a low bid indicates a small post-takeover rise in price rather than an attempt to profit at their expense. From another viewpoint, L is convincing because as α increases, it will be in L's own interest to proceed with some lower valued improvements at any given bid $q + \pi$. As α approaches $.5$, $\pi^*(\alpha)$ is just $E(Z|.5Z \geq c_T)$. At the other extreme, when $\alpha \approx 0$, L cannot take over for any π below Z_{max}. This is the case essentially considered by Grossman and Hart (1980). With $\alpha \approx 0$ the raider can make a profit if $.5(Z - \pi) - c_T \geq 0$. However, this implies $Z > \pi$ so that no one will tender. Without differential valuations of the firm's profits, the presence of a large shareholder is a necessary condition for the occurrence of value-increasing takeovers.

An immediate consequence of lemma 1 is that, given research intensity I, the probability of a takeover increases with α. $Z^c(\alpha)$ is defined as the cut-off value of Z that makes L just indifferent between taking over and not. The lower is $Z^c(\alpha)$, the more probable is a takeover for a given level of research intensity. As α increases L can get $.5Z$ by purchasing fewer shares and making a lower bid. Thus the following lemma.

LEMMA 2. $Z^c(\alpha)$ is strictly decreasing in α (see appendix 1 for proof of Lemma 2).

Having characterised the takeover process, L's optimal choice of monitoring and research intensity is considered here. Let $B(I,\alpha)$ be L's expected benefit from research intensity I :

$$(5) \qquad B(I,\alpha) = I \cdot E\{\max[.5Z - (.5 - \alpha)\pi^*(\alpha) - c_T, 0]\}$$

Since $\pi^*(\alpha)$ is just the expected value of an improvement conditional on the takeover's being profitable, the following holds

$$(6) \qquad E\{\max[.5Z - (.5 - \alpha)\pi^*(\alpha) - c_T, 0]\} = \{\alpha E[Z|Z \geq Z^c(\alpha)] - c_T\} \cdot pr\{Z \geq Z^c[\alpha]\}$$

For all improvements with $Z \geq Z^c(\alpha)$, L proceeds with a takeover and, on average, receives α of the value of the improvement less the takeover costs. Since small shareholders allow L to gain only on his own shares, the expected marginal benefit from an extra unit of research intensity I is an increasing function of α. An immediate consequence is lemma 3.

LEMMA 3. L's optimal choice of research intensity, $I^*(\alpha)$, is an increasing function of α (see appendix 1 for proof of Lemma 3).

L is willing to pay for a higher probability of finding an improvement and is more likely to take over after finding an improvement of any given value Z, as α increases. Therefore the probability of a value-increasing takeover rises unambiguously with α.

To explore the implications of this result, the market value of the firm is written as

(7) $\quad V(\alpha, q) = q + I^{*}(\alpha)\{1 - F[Z^{c}(\alpha)]\} \cdot E[Z|Z \geq Z^{c}(\alpha)].$

The value of the firm is equal to the sum of the expected value of profits under existing management, q, and the expected value of any future improvements in firm operating strategy. When L makes a bid, he pays a premium

(8) $\quad (1 - I^{*}(\alpha) \cdot \{1 - F[Z^{c}(\alpha)]\}) \cdot E[Z|Z \geq Z^{c}(\alpha)],$

over the prevailing market value $V(\alpha, q)$. A direct consequence of lemmas 1-3 is that this premium falls as α rises. On the other hand, we have lemma 4.

LEMMA 4. $\{1 - F[Z^{c}(\alpha)]\} \cdot E[Z|Z \geq Z^{c}(\alpha)]$ is an increasing function of α (see appendix 1 for proof of Lemma 4).

Conditional on L's having drawn an improvement, the expected increase in the firm's profits rises with α while the larger range of improvements acted on as α rises leads to a takeover premium, the increased probability of an improvement's being implemented more than compensates for this. Small shareholders receive a net gain equal to the expected value of the low-value improvements that would not have been made at a lower α.

An essential proposition has been proved above. That is, an increase in the proportion of shares held by a large shareholder (active block holder in this case) results in a decrease in the takeover premium but importantly, an increase in the market value of the firm. This increase in firm value is accomplished through investments in research and development, a measure of risk-taking, by the block holder. When the block holder finds an improvement he attempts to takeover the firm and implement his plan with the view of further enhancing firm value.

The presence of an active block holder is a necessary condition for value-increasing takeovers to occur at all. Moreover, a block holder is more valuable the larger he is. Any transaction resulting in an increase in the proportion of the firm's shares owned by L should therefore be reflected in a higher market price of the shares.

3.3 Hypothesis development

In the preceding Section, it was shown that large equity block owners could, theoretically, force value maximization through the promotion of firm risk-taking. In the analysis, a large shareholder has exclusive access to a technology for finding valuable improvements in the firm's operating strategy through monitoring and research. The large shareholder attempts to implement a change in management if the anticipation of higher profits justifies the change.

Other studies have also suggested that the behaviour of large stockholders may have an effect on shareholder wealth through their influence on corporate risk-taking. Pound (1988), in his efficient-monitoring hypothesis, proposed that large shareholders tend to support managerial decisions that enhance corporate value but were found to oppose strategies harmful to owners' interests. Jensen and Meckling (1976) and Kroll et al. (1997) contend that, theoretically, stockholder concentration should improve firm performance. The findings of Mikkelson and Ruback (1991) support the assertion that large shareholders positively affect stockholder interests.

Bethel and Liebeskind (1993) propose that block holders may restrain managerial predisposition to invest in risk reducing corporate strategies that, thereby, reduce potential shareholder gains. Their empirical results demonstrate that a buy-in by block holders into diffusely-held firms was a significant determinant of downsizing, reductions in total diversification (a risk-reducing strategy), and increases in cash payouts among their sampled firms. Similarly, Hill and Snell (1988) find that shareholder concentration has a constraining influence on diversification. Their results suggest that when stockholders are weak, managerial preferences for diversification dominate. An implication of this is that shareholder con-

centration may limit the adoption of risk-reducing strategies, e.g. diversification strategies, by managers.

Wright et al. (1996), Holderness and Sheehan (1988), and McConnell and Servaes (1990) find no statistically significant relationship between block holders and corporate risk-taking. These studies, however, do not distinguish between different categories of block owners. McConnell and Servaes (1990) contend many block owners are passive investors, providing little by way of monitoring. If passive block owners dominate, their monitoring role may be small. This thesis contends that a disaggregation of block owners, into active and passive block owners, might reveal a more important role for active block investors. Active block owners (passive block owners) could be considered as the equivalent of the concentrated-involved (concentrated-detached) cross-classifications resulting from Mintzberg's (1983) prime dimensions of ownership mentioned above. Given that block holders own substantial equity, it is in their interest to actively encourage valuable corporate strategies. Interpreting this in view of the issue of importance to this thesis, it is anticipated that active large equity block owners would encourage greater firm risk-taking. Hence the following Hypothesis is offered for empirical verification:

Hypothesis 5: The contemporaneous relationship between the level of equity ownership by active block holders and corporate risk taking will be positive.

3.4   Concluding remarks

This Chapter examines the governance role of block holders. Corporate ownership is often concentrated in block of securities owned and managed by recognizable parties. Mintzberg (1983) suggests two prime dimensions of ownership. One differentiates between owners who influence the decisions or actions of the firm and those who do not. The other differentiates between corporations whose stocks are widely held and those that are closely held. A cross-classification produces four types of ownership that suggest that the more involved the owners and the more concentrated their ownership, the greater the power in influencing the corporation.

A block owner can either be an individual, family, or an organisation. Whichever the case, an important feature of a block owner is that the owners own enough shares to influence corporate policy, for example through the voting process. Block holders represent their own interests, which need not coincide with the interests of other investors in the firm. In the process of using their control rights to maximize their welfare, block holders can redistribute wealth in both efficient and inefficient ways from others. The published literature suggests that block holders who are managers would resist a value-increasing tender offer to hold on to their jobs. Other evidence further points to that fact that a block holder could, for example, give him or herself an excessive salary, negotiate 'sweetheart' deals with other companies he or she controls, or invest in negative-net-present value projects.

The ability of block holders to expropriate wealth from others is especially great if their control rights are significantly in excess of their cash flow. This occurs if, for example, they own equity with superior voting rights. The problem of expropriation by block holders also becomes potentially more significant when other investors are of a different type, for example if the other investors have a different pattern of cash flow claims in the company. If the block holder is an equity holder, he may have the incentive to force the firm to take on too much risk, since he shares in the upside while the other investors, who might be creditors, bear all the costs of failure.

Agency theory suggests that owners of large blocks of shares have both the incentive and the power to ensure that managers operate the firm efficiently, regardless of managers' share ownership. This is because they have so much wealth at stake in an individual firm that the benefits of monitoring and disciplining managers outweigh the costs. It is suggested in the literature that block holding or concentration in share holdings is also a direct way to align cash flow and control rights. They argue that a substantial minority shareholder has the incentive to collect information and monitor the management, thereby avoiding the free rider problem. Furthermore, block holders have enough voting control to put pressure on the management in some cases, or perhaps even oust the management through a proxy fight. In more extreme cases, large block holders have outright control of the firms and their management with fifty-one percent (51%) or more percent ownership. Block holders thus

address the agency problem in that they both have a general interest in profit maximization, and enough control over the assets of the firm to have their interests respected.

The power of block holders is said to depend on the degree of legal protection of their votes because they govern by exercising their voting rights. Majority ownership only works if the voting mechanism works, and the majority can dictate the decisions of the company. This may require fairly little enforcement by courts, since 51 percent ownership is relatively easy to prove, and a vote count is not required once the majority shareholder expresses their preference. The situation is more complicated with large minority shareholder. This is so because they need to make alliances with other investors to exercise control. The power of management and little (as opposed to large) minority shareholders to interfere in these alliances is greatly enhanced. In such cases of alliance creation, the burden on courts to protect other large shareholder rights is much greater. The effectiveness of large shareholders, then, is closely tied to their ability to defend their rights.

The literature also suggests that the presence of a block holder may also restrain selfishly driven strategies by firm management. Also, given that block holders can use their power to force corporate change, managers may be reluctant to adopt unprofitable strategies for fear of losing their employment. In discussing block holders, it is noted that there are large shareholders who are not diversified, and hence bear excessive risks. Nevertheless, the fact that ownership in firms is so concentrated almost everywhere in the world suggests that lack of diversification is not as great a private cost for block holders to bear as relinquishing control.

Shleifer and Vishny (1986) propose that large equity block owners can theoretically force value maximization. Shleifer and Vishny's theory, which implies that large active equity block holders can theoretically force value maximization, is adopted here given that the value maximization is achieved through the promotion of firm risk-taking.

The firm discussed in the model is owned by a large shareholder and a fringe of small ones. Both the large and small shareholders do not participate in management. The management acts to maximize profits but does so imperfectly. Accordingly, a monitor (a block

holder) may have an opportunity to improve the firm's operating strategy but needs to replace the incumbent management to produce the maximum profits. All shareholders benefit since they enjoy gains on their own shares. The large shareholder's return on his own shares suffices to cover his monitoring and takeover costs. While costly monitoring cannot be beneficial for small atomistic shareholders, holders of large blocs can gain because they are able to capture a large fraction of the wealth gains that result from a takeover. Hence, Shleifer and Vishny (1986) forecast that, ceteris paribus, the presence of a large-block equity holder would have a positive effect on the market value of the firm.

An essential proposition is proved in Shleifer and Vishny (1986) theory. That is, the presence of an active block holder as a necessary condition for value-increasing takeovers to occur at all. An increase in the proportion of shares held by a large shareholder (active block holder in this case) results in a decrease in the takeover premium but an increase in the market value of the firm. This increase in firm value is accomplished through investments in research and development, a measure of risk taking, by the block holder. When the block holder finds an improvement he attempts to takeover the firm and implement his plan with the view of further enhancing firm value.

Previous studies suggest that block owners may restrain managerial predisposition to invest in risk reducing corporate strategies that, thereby, reduce potential shareholder gains. However, researchers examining the association between block ownership and firm risk-taking find no statistically significant relationship. These studies, however, do not distinguish between different categories of block owners. Therefore, the results obtained may be biased. This thesis contends that a finer classification scheme of block owners, into active and passive block owners, within the context of Shleifer and Vishny (1986) theory might reveal a more important role for active block investors. Active block holders (passive block holders) are equivalent to the concentrated-involved (concentrated-detached) cross-classifications resulting from Mintzberg's (1983) prime dimensions of ownership. A Hypothesis relating active block owners to firm risk-taking is then proposed for empirical verification.

4. INSTITUTIONAL OWNERSHIP

This Chapter investigates the governance role of a third group of actors in corporate governance, institutional ownership, of interest to this thesis and develop Hypotheses to be tested in the empirical section. For this purpose, Section 4.1 discusses some aspects of institutional ownership as pointed out in the published literature including organisations that could be classified as institutional owners. Section 4.2 presents two conflicting theoretical perspectives predicting different outcomes to the nature of the relationship between institutional investors and corporate risk taking. Hypotheses for empirical testing are proposed in Section 4.3 and Section 4.4 concludes.

4.1   Defining institutional ownership

Ownership offers a mechanism for institutionalizing power in a firm (see Pfeffer and Salancik 1978) and alters the firm's responsiveness to external contingencies (see Salancik and Pfeffer 1980). Hence the type of ownership of an organisation ought to affect both its strategy and its performance.

The term *institutional investor or ownership* includes a variety of organisations such as insurance companies, banks, and pension and mutual funds, among others. Dyer (1985), among others, posit that when institutions own of a sizeable share of stocks in a firm, it does not automatically confer active control because it does not necessarily provide the role or status for directly making corporate decisions. It does put the outside institutions in a *strategic position*, and provide them with the opportunity to modulate internal strategic choices, however.

Institutional owners can influence the corporation by pressure campaigns targeted to specific issues and direct attempts to control the internal decision process, perhaps via membership on the firm's board of directors. Institutional owners also have the ability to apply their power in the marketplace by buying or selling securities. However, heavy institutional selling can cause drastic declines in a firm's market value (see e.g. Mintzberg 1983).

Some institutions manage shares on behalf of third-party investors. That is, they buy, sell, and sometimes vote on behalf of their clients, but do not own the shares directly. Others own the shares they manage. Institutional investors consequently create the opportunity for active shareholders to influence corporate policy. Bethel and Liebeskind (1993) suggest that the huge investment of institutions gives them an enormous incentive to become informed, involved owners. Accordingly, in businesses where institutions own shares, the ownership structure creates a simple but overwhelming economic incentive for informed behaviour.

Some researchers have argued that institutions do not efficiently monitor managerial behaviour and policy. Lowenstein (1991), for instance, contends that institutions manage such diversified portfolios of shares that they cannot effectively monitor any single firm. Moreover, a significant number of institutions hold only a small percentage of each firm's shares, so that they cannot exercise the same voting power as block holders. Gaved (1997) also contend that fund managers have little time or resources to devote to active monitoring beyond that of under-performing stocks in which they have a large holding. Hence, despite concentrated institutional equity ownership, managers remain largely unmonitored (see for instance Sykes 1994). Consistent with this argument, Chaganti and Damanpour (1991) find little evidence that institutional ownership is correlated with firm performance.

Pound (1992), on the other hand, posits that institutional investors have both the power and the incentives to ensure that managers operate and manage the firm efficiently. Institutional investors also have the power to change firm policy in much the same manner as block holders. Pound (1992) argues institutions have strong incentives to ensure that managers operate firms efficiently because the high concentration of shares makes it difficult for institutions to buy and sell shares, except to other institutions. To earn satisfactory returns, institutions must create value by changing managerial policy. This is evidently so since they cannot earn satisfactory returns by buying and selling shares.

Reasoning along a similar pattern of thought, Baysinger and Butler (1985) also posit that the large volume of shares held by institutional investors makes a quick exit from the firm, by selling, impractical as it would depress the price and precipitate a substantial financial

loss. They further indicate the preference of institutional investors to work inside firms to change policies of firms in their portfolios rather than restructure those portfolios through the *Wall Street Rule*. That is, they use their strategic position in the firm to modulate internal strategic choices rather than sell their equity stake, an action that could cause drastic declines in a firm's market value. Consistent with the argument of Pound (1992) and Baysinger and Butler (1985), Jarrell and Lehn (1985) and Hansen and Hill (1991) find that institutional ownership is associated with increases in research and development expenditures by managers, suggesting that institutional investors support efficient long-term managerial policies.

Pound (1988) considers the incentives confronted by institutional ownership. Three hypotheses are proposed on the relation between large and institutional shareholders and corporate value:

(i)   Efficient monitoring hypothesis,

(ii)   Conflict-of-interest hypothesis, and

(iii)   Strategic-alignment hypothesis.

The efficient-monitoring hypothesis proposes that large and institutional investors have greater expertise and can monitor management at lower cost than can small atomistic shareholders. Consequently, the hypothesis predicts a positive relationship between large shareholding and corporate value. The efficient-monitoring hypothesis also suggests that large and institutional shareholders oppose strategies detrimental to owners' interest. The conflict-of-interest hypothesis suggests that in view of other profitable business relationships with the firm, institutional investors and other large block owners are coerced into voting their shares with management. For instance, an insurance company may hold a significant portion of a firm's stock and concurrently act as its primary insurer. Voting against management may significantly affect the firm's business relationship with the incumbent management (and perhaps others as well), whereas voting with the management results in no obvious penalty. The strategic-alignment hypothesis suggests large institutional owners, on one hand, and managers find it mutually advantageous to co-operate. Generally, this co-operation reduces the beneficial effects on the firm value that could result from monitoring

by large shareholders. Consequently, the conflict-of-interest hypothesis and the strategic-alignment hypothesis both predict a negative relation between institutional and the value of the firm.

4.2   Theory of institutional investors and corporate risk-taking

The existing literature indicates two conflicting theoretical perspectives predicting different outcomes as to the nature of the relationship between institutional investors and firm risk-taking. These two perspectives are the *myopic institutional theory* and the *efficient market theory*.

4.2.1   Myopic institutional theory

Myopic investment behaviour refers to the under-investment in long-term, intangible projects, such as research and development and employee training, for the purposes of meeting short-term goals (see for instance Bushee 1998). The myopic institutions theory advanced by Loescher (1984), Drucker (1986), Hill, Hitt, and Hoskisson (1988) and Graves (1988), among others, argue that institutional fund managers are under considerable pressures to perform from their superiors. Graves and Waddock (1990) argue that fund managers tend to be evaluated quarterly and are under pressure to report higher earnings during that time frame. Thus institutional fund managers may not be able to afford longer horizons in their investment decisions (see e.g. Drucker 1986, Mitroff 1987, Porter 1992). Furthermore, these institutional fund managers may lack access to proprietary firm-specific information, and may therefore find it difficult to assess the long-term value of a firm (see Porter 1992). Hence, they may focus on performance measures, like current earnings, that are easily quantifiable. Thus, they act like arbitragers to 'churn' or frequently turn over their portfolio of stocks in order to capitalise on all possible short-term gains (see Shleifer and Vishny 1990). Decisions made by these managers, thus, reflect a response to the organisational pressures as well as the manager's own desires for job security and advancement. This translates into risk aversion and a short-run focus. Specifically, if a stock in an institution's

portfolio shows poor signs of performance, the safe thing for a fund manager to do, it is argued, is sell out and purchase a more favourable stock. The alternative is to run the risk of further worsening with the institution becoming 'locked in' to a declining stock (see e.g. Hill, Hitt and Hoskisson 1988). This phenomenon is often noted in the popular press as shuttling in and out of stocks in response to short-term corporate earning reports. Lakonishok, Schleifer, Thaler, and Vishny (1991) note that offloading of poorly performing stocks is particularly high during the end of a quarter.

Short-term shuttling on the part of institutions implies that the degree of volatility in a firm's share price will be a function of the level of institutional holdings. When institutions hold a significant proportion of a firm's stock, the tendency to sell in response to a short-term decline in earnings can lead to a dramatic drop in the firm's share price (a firm whose market value is less than its asset value). A consequence of this is the creation of a takeover bargain (see for instance Jarrell, Brickley and Netter 1988 and Shleifer and Vishny 1990). Hence, share price volatility is theorised to increase the probability that a firm suffering from a short-term decline in earnings will find itself the target of a hostile takeover bid. To reduce this likelihood, advocates of the myopic institutional theory suggest that firms cut back on their long-run investments, such as expenditures on innovative activities or research and development investments, in order to inflate their short-term earnings (see for example Hayes and Abernathy 1980, among others). The theory thus predicts a negative relationship between the level of institutional holdings and firm innovation or risk-taking activities. Graves (1988) presents evidence that suggests a negative relationship between institutional ownership and R&D spending, thus supporting the myopic institutions theory.

4.2.2   Efficient market institutional theory

Finance theorists schooled in traditional efficient market theory, like Jarrell and Lehn (1985) and Jensen (1988), among others, view short-term shuttling based on accounting elements as irrational behaviour that is practised neither by institutions nor individual shareholders. Efficient market theory put forward that shareholders are rational in the sense implied by Bayesian decision theory. That is, shareholders are argued to base their valua-

tion of a firm's shares on an intendedly rational assessment of all publicly available information about a firm's potential future cash flows. That being the case, rational shareholders will approve of investments that boost the future cash flows of the firm. Investments in firm innovation or enterprise activities such as research and development fall into this category. Institutional investors and other large shareholders tend to evaluate their alternatives more carefully and hence make better investment decisions (see e.g. Aoki 1984). Black (1992) further notes that given the wealth of institutional investors, they obtain scale economies in the evaluation of their investments and thus possess better knowledge about the market than individual investors. That is to say, institutional investors have the incentive to carry out a thorough assessment of possible long-term benefits, rather than gain from short-term fluctuations in price. Hence, if a firm could increase future cash flow through firm innovative or enterprise activities, institutional investors would encourage such behaviour.

The efficient market predicts that intendedly rational shareholders will not sell the stock of a fundamentally sound firm engaged in some measure of risk-taking that has the promise of increased future cash flows just because that firm has reported one bad quarter. If this is the case, firm managers understand that there is no danger of institutional investors dumping the stock on the basis of transient changes in stock prices and, hence, are not afraid to make investments in innovative activities. According to this theory, the association between institutional holding and firm risk-taking would be positive.

The efficient market institutional theory posits that institutions take a long-term view and encourage firm risk-taking with a view of increased future cash flow whereas the myopic institutional theory posits a reduction in firm innovative activities to inflate their short-term earnings. Traditionally, finance theory has not distinguished among the owners of share. The efficient market hypothesis, drawing from traditional finance theory, does not make any distinction among different types of institutional ownership. It has, however, been argued in the literature that shareholders are distinguishable. The origins of this challenge are traced to Berle and Means (1932). Jensen and Meckling (1976) show formally how the allocation of equity among different shareholders affects firm value. Furthermore, empirical evidence by Zahra (1996) suggests that when institutional investors are disaggregated into long-term and short-term investors, there is a positive relationship between firm innovation

and institutional investors, hence, lending some supporting the efficient market hypothesis. No such positive relationship is found for short-term institutional investors.

4.3 Hypotheses development

Hill and Snell (1988) provide empirical evidence that posits a negative relationship between stock concentration and corporate diversification. Their results suggest that when stockholders are weak, managerial preferences for corporate diversification dominate. An implication of their finding is that institutional investors discourage strategies that reduce firm risk-taking, such as diversification strategies. Furthermore, Hansen and Hill (1991) studying four technology-driven industries argue that institutional ownership may be positively associated with R&D expenditures. Wright et al. (1996) also find a significant and positive relationship between institutional ownership and corporate risk-taking for firms with growth opportunities.

In their study, Hill and Snell (1988) hypothesized about stock concentration but made no attempt to differentiate between or among the different economic players whose stock holdings are concentrated. Similarly, Hansen and Hill (1991) and Wright et al. (1996) lumped institutional investors into a monolithic group in their study. Bushee (1998) put forward that different types of institutions have different effects on the risk-taking activities of firms. Kochhar and David (1996) find that more active institutional investors are more able to influence managers to increase new product development than less active institutions. Zahra (1996), separating institutional investors into long-term and short-term institutional stock ownership, find that long-term institutional shareholdings have a positive effect on firm innovation. This suggests that different categories of institutional investors may pursue different goals and emphasize different objectives.

All institutions have an investment relationship with the firm in which they hold equity. However, some institutions may also have a business relationship with these firms. That is, some of the economic activity of the institutions may evolve from their relationships with the firm. Heard and Sherman (1987) argue that the dual activities of investment and busi-

ness relationships can create a conflict of interest for these institutions. Pound (1988), as seen above, also contend that the impact of institutions on corporate performance may not always be positive. That is, the business relationship between institutional owners and the firm affects the nature of the relationship between the two. This suggests that a classification of institutional ownership based on institutional investors' business relationship with the firm would be valuable.

Contrary to the efficient-monitoring hypothesis proposed, Pound (1988) found that institutional investors, in some circumstances, may negatively affect corporate performance. Financially lucrative relationships with the firm could force some institutional owners to vote with management on issues that are harmful to shareholders in general. For these institutions, the power gained from their ownership stake (see e.g. Finkelstein 1992 and Zald 1969) may be tampered somewhat by their dependence on the firm for business activity (see e.g. Levine and White 1961 and Cook 1977). Thus, when institutional owners are in a profitable business relationship with firms in which they have equity stakes, they may seek their parochial interest but not that of shareholders in general. They may seek to maintain an amiable business relationship and may be hesitant to influence managerial actions. An attempt to take an activist stance with respect to the firm may result in the withdrawal of the business. As these types of institutions are susceptible to managerial influence, Brickley et al. (1988) and Kochhar and David (1996) refer to them as pressure-sensitive institutions. Pressure-sensitive institutions include insurance companies and banks.

Many of these pressure-sensitive institutions with large stakes in firms get "lock into" their investments. According to Baysinger and Butler (1985), this type of institutional investors prefer to work inside firms to change policies of the firms because the volume of share held by them makes a quick exit from the firm impractical. As they possess the required ability and resources, they can influence managers to increase firm value through risk-taking. Institutional investors influence the corporation by pressure campaigns targeted to specific issues and direct attempts to control the internal decision process. Nevertheless according to Pound's (1988) conflict-of-interest hypothesis, pressure-sensitive institutional owners are coerced into voting their shares with management in view of the business relationship they have with the firm.

Jensen and Meckling (1976), Jensen and Murphy (1990), and Kroll et al. (1997), among others, note that with appropriate incentive structure, however, management may find it beneficial to enhance firm risk-taking. Indeed, in order to more closely align the interests of shareholders and management, and thus reduce the potential for agency conflict, management have often been provided with equity interests in the firms they manage. This is typically accomplished through discounted stock purchase programs or granting of stock options. The presumption underlying these programs is that there is a positive relationship between insider equity ownership and corporate risk-taking. Given these incentive programs, it is assumed here that the interests of management are closely aligned to that of pressure-sensitive institutional shareholders. Hence, a positive relationship could be observed between pressure-sensitive institutions and firm risk-taking.

Pressure-resistant institutional investors, in contrast, have no business relationship with the firms in which they own equity stake. They only have an investment relationship with the firm and a conflict of interest is unlikely. This suggests that these institutions are more likely or able to exercise their voice over firm actions in ways that pressure-sensitive institutions would not. Managers in these institutions, as noted above, are under considerable pressures to perform from their superiors. They tend to be evaluated quarterly and are under pressure to report higher earnings during that time frame. This group of institutional investors, it is argued, may also lack access to proprietary firm-specific information, and may therefore find it difficult to assess the long-term value of a firm (Porter 1992). Therefore, they focus on performance measures, like current earnings, that are easily quantifiable. Decisions made by these managers, thus, reflect a response to the organisational pressures as well as the manager's own desires for job security and advancement. Loescher (1984), Drucker (1986), Hill, Hitt, and Hoskisson (1988), and Mitroff (1987), among others, suggest that this translates into risk aversion and a short-run focus. These institutions shuttle in and out of stocks in response to short-term corporate earnings reports. Included in pressure-resistant institutions are mutual funds and pension funds. Graves (1988) presents evidence that suggests a negative relationship between institutional ownership and R&D spending. Consequently, the following Hypotheses are proposed for empirical examination:

Hypothesis 6: The contemporaneous relationship between pressure-sensitive institutional investors and corporate risk-taking will be positive.

Hypothesis 7: The contemporaneous relationship between pressure-resistant institutional investors and corporate risk-taking will be negative.

The hypotheses developed above examine the competing hypotheses on the role of institutional investors and firm risk-taking espoused in Section 4.2. By focusing on differences among institutions in their ability to influence firm risk-taking activities, this study raises the potential of differentiating between the competing hypotheses.

4.4   Concluding remarks

This chapter discusses the governance function of institutional ownership. The term institutional investor or ownership includes a variety of organisations such as insurance companies, banks, and pension and mutual funds, among others. It could, thus, be said that institutional ownership is often concentrated in block of securities owned and managed by recognisable parties and other large holders of a variety of affiliations.

Some institutional investors manage shares on behalf of third-party investors. Other institutions own the shares they manage. The huge investments of institutions gives them an enormous incentive to become informed, involved owners. Accordingly, in businesses where institutions own shares, the ownership structure creates a simple but overwhelming economic incentive for informed behaviour.

Some researchers have argued that institutions do not efficiently monitor managerial behaviour and policy. One argument advanced on this point is that institutions manage such diversified portfolios of shares that they cannot effectively monitor any single firm. Furthermore, a significant number of institutions hold only a small percentage of each firm's shares, so that they cannot exercise the same voting power as block holders. Other researchers posit that institutional investors have both the power and the incentives to ensure

that managers operate the firm efficiently. Institutional investors also have the power to change firm policy in much the same manner as block holders. These researchers argue that institutional investors have strong incentives to ensure that managers operate firms efficiently because the high concentration of shares makes it difficult for institutions to buy and sell shares, except to other institutions. To earn satisfactory returns, institutions must create value by changing managerial policy.

Pound (1988) considers the incentives confronted by institutional ownership and proposed three hypotheses of the relation between large and institutional shareholders and corporate value: efficient monitoring hypothesis, conflict-of-interest hypothesis, and strategic-alignment hypothesis. The hypothesis predicts a positive relationship between large shareholding and corporate value whiles the conflict-of-interest hypothesis and the strategic-alignment hypothesis both predict a negative relation between institutional and the value of the firm.

Two conflicting theoretical perspectives predicting different outcomes to the nature of the relationship between institutional investors and corporate risk taking are presented in this Chapter: the myopic institutional theory and the efficient market theory. The myopic theory predicts a negative relationship between the level of institutional holdings and risk-taking and the efficient market theory suggests a positive relationship between institutional holdings and risk-taking would be observed.

The empirical evidence presented in the literature suggests that a decomposition of institutional investors would be useful in gaining an insight into whether or not institutional investors promote risk talking. Consequently, categorizing institutions in terms of the association with firms in which they have equity stakes, two Hypotheses are proposed for empirical examination.

The Hypotheses developed in this chapter examine the competing hypotheses on the role of institutional investors. By focusing on differences among institutions in their ability to influence firm risk-taking activities, this study raises the potential of differentiating among the competing hypotheses.

5.   SAMPLE CONSTRUCTION AND SUMMARY STATISTICS

Evaluating the impact of the board of directors, block owners, and institutional investors on firm risk-taking require empirical analyses. The empirical analyses call for definitions and categorisations of the governance variables of interest to this thesis and measures of risk-taking and growth opportunities. Chapters two, three, and four have provided the foundation for the empirical analyses by examining the theory and related literature and proposing Hypotheses to be tested. This Chapter discusses the assembling of a database for the empirical work. For this purpose, Section 5.1 discusses measurement for risk-taking and growth opportunities. Definitions for the board of directors' variables are presented in Section 5.2. Section 5.3 discusses block and institutional ownership and Section 5.4 concludes the chapter.

Data is collected over a nine-year period, from 1990 to 1998, with focus on two sample periods, 1994 and 1998, for the empirical analyses. Generally, firms are selected from publicly traded companies in Finland satisfying two basic data requirements. First, for a firm to be included in the dataset, it is required that ownership data be available for each sample year. Data regarding board members, institutional investors and block owners are obtained from the respective firms' annual reports. A further requirement is that firms included in the dataset should have five consecutive fiscal years of stock market and financial statement data, including the focus year, for each sample. One measure of risk employed here is the standard deviation of return on equity (ROE) over a five-year period. This requirement for firms to have five consecutive fiscal years of stock market and financial statement data implies that figures for the firms' return on equity (ROE) are available in periodic publication by firms for the period of interest to this thesis. This is so because, by law, listed firms are required to publish periodic information. The final sample consists of forty-eight (48) firms for 1994 sample and sixty-eight (68) firms for the 1998 sample (see Appendix 2 for a list of the firms included in the dataset). The firms included in the sample are selected from the list of publicly traded firms provided by the Helsinki Stock Exchange.

5.1   Measuring corporate risk-taking and firm growth opportunities

In classic decision theory, risk is commonly thought of as reflecting variation in the distribution of possible outcomes, their likelihoods, and their subjective values. Risk is measured either by nonlinearities in the revealed utility for money or by the variance of the probability distribution of possible gains and losses associated with a particular alternative (see Pratt 1964 and Arrow 1965 for details). In the latter formulation, a risky alternative is one for which the variance is large and risk is one of the attributes which, along with the expected value of the alternative, are used in evaluating alternative gambles. Finding an acceptable empirical definition of risk within this rudimentary framework has proven difficult. Simple measures of mean and variance lead to empirical observations that can be interpreted as being off the mean-variance frontier. This has led to efforts to develop modified conceptions of risk (see e.g. March and Shapira 1987).

Among others, ten different measures of risk have been used in the literature. Miller and Bromiley (1990) identify and analyse nine numeric measures of risk that have been used. These are systematic risk (beta), unsystematic risk, the debt to equity ratio, capital intensity, R&D intensity, the standard deviations of return on assets (ROA), return on equity (ROE), analysts' earnings forecasts, and the coefficient of variation of stock analysts' earnings forecasts. These nine measures capture different dimensions of risk and can be grouped into three categories. The categories are risk measures based on stock returns, financial ratios, and income stream uncertainty.

Miller and Bromiley (1990) conduct factor analysis on these nine measures to determine their measurement properties. They show that systematic and unsystematic risk measure risk based on stock returns. Three risk-taking measures, namely, debt-to-equity ratio, capital intensity and R&D intensity, measure industry or strategic risk. The standard deviation of return on assets (ROA), the standard deviation of return on equity (ROE), and the measures based on variation in analysts forecast of earnings per share, analysts' earnings forecasts and the coefficient of variation of stock analysts' earnings forecasts, represent proxies for income stream risk.

Zahra (1996) defines corporate entrepreneurship, a risk-taking measure, as consisting of innovation aimed at business creation, venturing, and strategic renewal. Innovation refers to a company's commitment to creating and introducing products, production processes, and organisational systems. Venturing means that the firm will enter new businesses by expanding operations in existing or new markets. As a component of corporate entrepreneurship, strategic renewal refers to revitalising the company's operations by changing the scope of its business, its competitive approach, or both. Strategic renewal also includes building or acquiring new capabilities and then creatively leveraging them to add value for shareholders. This variable is measured in the study using a survey data. Innovation, venturing, and strategic renewal were addressed in fourteen (14) items and executives rated their firms' entrepreneurial activities using a five-point scale, ranging from strong disagreement to strong agreement. Thus, it is distinct from the numeric measurement, from firm data, analysed by Miller and Bromiley (1990) and mentioned above. Zahra (1996) suggests that his measure, corporate entrepreneurship, allow for more comprehensive risk variable than the risk-taking proxies commonly used in the literature. Zahra (1996) further suggests that, by this measure, multiple manifestations of managerial risk taking behaviour can be looked at, and their simultaneous relationship with corporate governance and ownership variables documented.

Based on Miller and Bromiley (1990) analyses, this thesis uses three (3) measures of risk to examine the hypothesised relationships in chapters two to four. The risk measures adopted here are the proxy for income stream risk (the standard deviation of return on equity (ROE)), the proxy for industry or strategic risk (capital intensity), and risk based on stock returns (beta). Thus, measures from all three categories posited by Miller and Bromiley (1990) are represented. The thesis posits that the measured risk-taking variable is superior to Zahra (1996) subjective measure based on a survey directed at CEOs or most senior executives. This is because there is the possibility that answers given by the respondents reflect a desire or wish which could be different from reality. Besides, March and Shapira (1987) suggest that from the managerial perspective, there is a persistent tension between risk-taking as a measure on the distribution of possible outcomes from choice and risk-taking as a danger or hazard. Hence, a measured risk-taking variable based on outcome in firm data is a preferable option.

Following the methodology employed by Bowman (1980 and 1982) and Miller and Bromiley (1990), the standard deviation of return on equity over a five-year period for each sample, including the focus years, is used in calculating the proxy for income stream risk (see Hurdle 1974, Solomon and Pringle 1977, Armour and Teece 1978, Shepherd 1979 and Fiegenbaum and Thomas 1985, 1986, and 1988 for more on this. Other studies that have used variance in returns to measure risk include Bettis 1981, Bettis and Hall 1982 and Woo 1987). Capital intensity is calculated as the ratio of total assets to sales. This variable is calculated as the mean value over a five-year period. Capital intensity increases risk in two ways (see for instance Brealey and Myers 1984, Shapiro and Titman 1986). If capital inputs are less variable than labour inputs in the short run, a company choosing to produce a given output with large amounts of capital and low amounts of labour increases its fixed costs and lowers its variable cost. The firm consequently will experience larger variations in profits if demand fluctuates (see Lev 1974 for a detailed derivation of this point). In addition, a firm using large amounts of capital runs a high risk of capital obsolescence-the possibility that technological change will make its capital investment worth little or nothing.

Beta, the risk measure for stock returns data, is estimated from the conventional market model regression equation (see Sharpe 1964) over a three-year period using weekly returns. In the capital asset pricing model (CAPM), systematic risk reflects the sensitivity of return on a firm's stock to general market movement. White (1980) is used to test for heteroscedasticity. When the error terms are not homoscedastic, the GARCH (1,1) model is fitted when estimating the market model.

Firm risk-taking can enhance shareholders' value by creating a work environment that supports individual and corporate growth, giving employees an opportunity to use their creative skills, quickening a company's response to the market, and creating an organisational culture that fosters cross-functional collaboration. These changes in turn promote efforts that create new revenue streams (see e.g. Zahra, 1991). The nature of risk-taking is very important given that it has significant implications for a firm's asset structure. A proclivity toward risk-taking will result in a high-variance asset composition and an aversion toward risk will result in a corresponding lower-variance asset structure (see for instance Wright et al. 1996).

Some firms may have growth opportunities because of possibilities in its external environment, such as location in attractive industries, or valuable internal resources, such as talented human resources, a valuable culture, or proprietary technology (see e.g. Barney 1991, Lado, Boyd, and Wright 1992, and Wright, Ferris, Hiller, and Kroll 1995).

Table 1. Summary statistics: Risk-taking, firm size, and growth opportunity.

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
1994 Sample					
ROE (STDV)	14.37	9.61	18.47	1.10	98.22
Capital intensity	1.99	1.16	2.84	0.52	14.96
Beta	0.81	0.84	0.30	0.17	1.50
Firm size[a]	1070	423	1422	26	5840
Growth Opportunity[b]	-0.14	-0.002	0.14	-0.28	0.22
1998 Sample					
ROE (STDV)	8.03	4.07	17.15	0.903	43.18
Capital intensity	1.81	0.95	3.37	0.002	19.17
Beta	0.68	0.69	0.33	0.04	1.37
Firm size[a]	1326	345	2840	21	15414
Growth Opportunity[b]	0.09	0.032	0.28	-0.16	1.42

The 1994 and 1998 samples included 48 firms and 68 firms, respectively.
[a] Total assets, millions of Euros
[b] Change in total assets (log differences)

The presence of growth opportunities is measured by the growth of total assets defined by the percentage change in total assets. Titman and Wessels (1980) suggest that this is a relevant indicator of growth opportunities for firms. Data for the respective firms' total assets are taken from the database of the Research Institute of the Finnish Economy. Table 1 presents a summary statistics for corporate risk-taking variables used in the thesis, firm size and change in total assets, the proxy for growth opportunities, for firms in the sample.

Table 1 suggests that, on average, risk was higher in the 1994 sample compared to the 1998 sample. The average size of firms in the samples was, however, bigger in the 1998 sample. Furthermore, firms, on average, had better growth opportunities in the 1998 sample.

5.2 Defining board of directors' variables

Measures of the three (3) variables associated with the board of directors (outside-dominated board of directors, board size, and equity ownership by the board) that are needed for the empirical work are to be constructed or accessed as follows:

Following previous research, for example Gilson (1990) and Zahra (1996), this thesis considers outside directors as those who are not former employees (officers) of a firm or its subsidiaries (divisions), or do not possess contractual relationship with it. The only formal association between the outside directors and the firm are their duties as directors.

The outsider-dominated boards are those boards that have higher numbers of independent outside directors than inside and affiliated board members. In other words, it is measured by dividing the number of independent outside directors by the total number of directors on a board. The samples for years 1994 and 1998 are both dominated by outsider-dominated boards. There are forty-three (43) outsider-controlled boards in the 1994 sample, representing 89.6% of the firms in consideration, and fifty-eight (58) outsider-controlled boards in the 1998 sample, representing 85% of the firms under consideration. Data on the board of directors are accessed from the respective firm publication (annual reports) and firm information received from companies upon request. Table 2a and 2b present summary statistics for the board of directors.

From Table 2a, it could be seen that there were, in total, two hundred and fifteen (215) outside directors in the 1994 sample and three hundred and fifty eight (358) outside directors in 1998. It could also be seen that, on average, the number of outside directors is slightly higher in the 1998 sample. The board size is the total number of persons on the board of directors. This number is accessed from company publications for the respective years. Ta-

ble 2a also presents a summary statistics of the variable board size. This can be found under all directors in the fourth and ninth row for the 1994 and 1998 sample years, respectively. The average number of directors was about the same for both sample periods. There were, in total, three hundred and ten (310) directors in 1994 and four hundred and fifty-three (453) directors in 1998. Table 2b provides a further breakdown of the directors into three broad categories: age, profession, and sex. The Table is based on the total number of directors in each sample. The background information on each member is accessed from the respective firms' annual reports. There were, in total, three hundred and ten (310) directors in 1994 and four hundred and fifty-three (453) directors in 1998.

Table 2a.   Summary statistics: Board of directors.

Variable	Mean	Median	STDEV	Mode	Min	Max	No. of directors	No. of firms
1994 Sample								
Outside directors	4.50	4	2.78	2	0	10	215	48
Inside directors	2.00	1	2.05	1	0	8	95	48
All directors	6.45	6	1.76	5	4	10	310	48
1998 Sample								
Outside directors	5.30	5	2.20	6	0	10	358	68
Inside directors	1.40	1	1.58	1	0	8	95	68
All directors	6.60	7	1.37	7	5	10	453	68

The level of equity ownership by members of the board of directors is also taken from the respective companies' annual reports. Director equity ownership is defined as the sum of director ownership divided by a firm's common shares. Table 3 provides some summary statistics pertaining to the level of equity ownership the board of directors. The mean level

Table 2b. Summary statistics: Some details on members the board of directors.

	1994	1998
Variable		
Age		
20-30	0	1
31-40	14	25
41-50	72	93
51-60	100	206
61-70	47	63
71-80	0	2
Not indicated[a]	77	63
Profession		
Farmer	6	7
Government Employment	7	14
Lawyer	9	7
Management	88	105
President, Vice President, CEO or deputy CEO	148	243
Professor, Researcher, or Consultant	7	20
Not indicated[a]	45	57
Sex		
Male	302	420
Female	8	33

[a] In many instances, the date of birth and current employers of directors were not stated. Also, in the case of directors' employment, the biography of directors included their current employers and whether or not they are on the board of other firms but not their position in the firm. There was, nevertheless, enough information to enable the distinction between insider and outside directors.

of equity ownership by the board of directors, for the entire period for both samples under consideration, is used to separate the level of significant ownership. Boards of directors

owning less that 5% of equity in the firm are said to own insignificant equity stakes in the firm. About 81% (76.5%) of the board of directors in 1994 (1998) for the firms under consideration are judged to own insignificant stakes in the firms.

Table 3.   Summary statistics: Level of equity ownership by the board of directors (percentages).

Variable	No. of firms	Mean	Median	Standard deviation	Min	Max
Equity ownership (1994)	48	3.1	0.1	9.3	0	56
Equity ownership (1998)	68	7.4	0.37	14.3	0	61.2

5.3   Block and institutional ownership

Following Bethel and Liebeskind (1993) and Kroll et al. (1997), block owners in this thesis refer to equity block holders who own five (5) per cent or more of a firm's total shares. From this grouping, the thesis further extracts the block ownership referred to as either active or passive block holders. Following Woodruff and Glover (1994), active block owners include institutions whose functions include the management of investments. Passive block owners, on the other hand, include those whose are descendants of a firm's founder, shares held by the State, co-operatives and foundations (McConnell and Servaes 1990, Shleifer and Vishny 1986). Data pertaining to block ownership is taken from the respective companies' publications. In classifying passive and active block holders, block holders with majority stakes are excluded in the data. The theoretical representation of Shleifer and Vishny (1986) adopted in this thesis is relevant for large minority shareholders. Hence, large majority block ownership, ownership in excess of 51% of a firm's stock, are deleted from the dataset when performing the empirical tests. Table 4 presents some summary statistics on block ownership.

Institutional ownership includes a variety of organisations such as banks, non-bank trusts, insurance companies, pension funds, mutual funds, foundations, and brokerage houses. McConnell and Servaes (1990) point out the institutional ownership used in the published literature contains some ambiguity (this refers to researchers who use information from the Value Line dataset). Sometimes they refer to shares owned by investment companies. Other times they refer to shares held by institutional investors.

Table 4. Summary statistics: Level of block ownership (percentages).

Variable	Mean	Median	STDEV	Min.	Max.	Mode	No. of observations
1994 Sample							
All Block Owners	14.98	9.04	16.17	5	91.20	5	126
Active	9.98	8.31	6.85	5	49.01	5	51
Passive	15.01	11.80	11.02	5	43.20	5	37
1998 Sample							
All Block Owners	15.44	9.55	15.01	5	91.15	5	178
Active	10.55	6.68	8.97	5	49.61	5	66
Passive	16.31	12.6	11.19	5	48.76	5	53

All institutions have an investment relationship with a firm in which they hold equity. However, some institutions may also have a business relationship with these firms. Following Brickley et al. (1988) and Kochhar and David (1996), this thesis classifies institutional investors into two groups. The first group include firms that only have an investment relationship with the firm. This group of institutional investors is referred to as pressure-resistant institutional investors. They include public pension funds, mutual funds, endowments and foundations. The second group of firms, classified under pressure-sensitive institutional investors, are likely to have both an investment and business relationship with the firm in which they own an equity stake. This category includes insurance companies, banks, and non-bank trusts. Data on institutional ownership is also gathered from the re-

spective firms' publications. Table 5 presents some summary statistics on institutional ownership.

Table 5. Summary statistics: Level of institutional ownership (percentages).

Variable	Mean	Median	STDEV	Mode	Min.	Max.	No. of observations
1994 Sample							
Institutional shareholdings (All)	3.05	1.41	4.59	0.8	0.1	49.00	338
Pressure-resistant	2.56	1.10	3.65	0.8	0.2	23.30	170
Pressure-sensitive	3.53	1.75	5.35	0.9	0.1	49.00	168
1998 Sample							
Institutional shareholdings (All)	2.43	1.40	3.36	0.2	0.2	41.60	523
Pressure-resistant	2.03	1.00	3.78	0.2	0.2	41.60	223
Pressure-sensitive	2.73	1.79	2.98	0.8	0.6	19.86	300

5.4 Concluding remarks

This chapter explains the assembling of the database for the empirical examination to be conducted. The variables of interest considered in this chapter are the three measures for firm risk-taking (standard deviation of return on equity, capital intensity, and beta), growth opportunities, firm size, outsider-dominated boards, board size, equity ownership by the board of directors, block ownership and institutional investors. Some sample statistics for the data to be used in the empirical analyses are also provided. All the data used in this thesis relating to the board of directors, block and institutional ownership are taken from the respective firms' annual reports and information received from firms upon request. Apart from the construction of outside and inside dominated boards of directors which was done by the author from the information given in the respective firm publication, all others fig-

ures were taken as given in the said firms' publications. All other variables are taken from the database of the Research Institute of the Finnish Economy.

6.   IMPACT OF BOARD OF DIRECTORS AND CORPORATE RISK-TAKING: METHODOLOGY AND EMPIRICAL RESULTS

The previous chapter discussed the sample construction and presented some summary statistics on the variables of interest to this thesis. Among other things, an outsider-dominated board of directors was defined. It was revealed that outsider-dominated boards of directors were dominant in both 1994 and 1998 samples. Based on the theory and Hypotheses presented in Chapter 2, this Chapter tests for the relationship between the various elements associated with the board of directors and firm risk-taking as hypothesised.

In this Chapter, the methodology employed and the empirical results on the impact of the board of directors on risk-taking are presented. To that end, the methodology employed in the study is presented in Section 6.1. In Section 6.2, the empirical results are presented and discussed. Section 6.3 concludes the chapter.

6.1   Methodology

The methodology employed here to examine the impact of the board of directors on firm risk-taking is a cross-sectional regression analysis in which three (3) measures of firm risk-taking are regressed against various board of directors measures as presented in the Hypotheses. The methodology used here follows that of Wright et al. (1996). The following Hypotheses are investigated in this chapter:

Hypothesis 1: The contemporaneous relationship between outsider-dominated board of directors and risk-taking will be negative.

Hypothesis 2: The presence of growth opportunities moderates the relationship between outside dominated boards of directors and firm risk taking in such a way that a positive association between outsider-dominated boards of directors and risk-taking should be observed.

Hypothesis 3: The relationship between the board of directors and risk-taking will be negative when the aggregate level of equity ownership by the board of directors is insignificant.

Hypothesis 4: The contemporaneous relationship between board size and corporate risk taking is negative.

For the first two Hypotheses (1 and 2), the three measures of firm risk-taking, standard deviation of return on equity, capital intensity and beta, are regressed against outsider-dominated board of directors. In Hypothesis 1, all firms are included. In Hypothesis 2, only firms in the dataset with growth opportunities are included in the regression. The control variables introduced in the analysis pertain to firm size and industry effects. The firm size effect is captured by total assets, a proxy used in the financial economics literature.

The industrial classification used by HEX was initially adopted here. This source categorises firms into fourteen (14) industrial classifications. However, due to the small sample size and the number of firms in each industry in the sample, there is the need to combine the industries to limit the number of industries to fit the data. The combination process yielded three (3) industrial classifications. The firms in the telecommunications and electronics, forest, food, and chemicals industries were combined into one. Firms in the metal and engineering, energy, transport, construction, and investment industries were combined into another and firms in industries labelled other service, multi-business, trade, other industries, media were combined into the third. Based on the new industrial classification, the effect of industry differences is examined by including regression dummies to control for unique industry effects.

A fundamental reasoning behind Hypothesis 1 is the proposition by Baysinger and Hoskisson (1990) that the predominance of independent outside directors on boards will be associated with financial controls in board-management relations. It was argued in Chapter 2 that the underlying strategies of financial controls include outcome-based strategies that emphasise measures like profitability measures. Outsider-dominated boards of directors are likely to emphasis these outcome-based strategies in their relationship with top manage-

ment. It is, therefore, empirically examined if outsider-dominated boards are positively related to outcome-based strategies. Two profitability measures, return on assets (ROA) and return on investments (ROI), are used in this exercise. That is, we examine the relationship between outsider-dominated boards and financial controls using the two measures as proxies for financial control emphasis by an outsider-dominated board of directors. The two profitability measures used here, ROA and ROI, are calculated as averages over a five-year period. Observations from the two sample periods, 1994 and 1998, are pooled. The following model is then estimated:

$$(9) \qquad OBS_{i,t}^k = \alpha_0 + \alpha_1 OU_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$$

where

$OBS_{i,t}^k$ = proxy for emphasis on outcome-based strategies for firm i at time t where

$k = 1$ for ROA, and $k = 2$ for ROI

$OU_{i,t}$ = outsider-dominated board of directors dummy for firm i at time t

$FS_{i,t}$ = firm size (logarithm of total assets) for firm i at time t

$d_{i,t}^1$ = firm i classified in industry 1 at time t

$d_{i,t}^2$ = firm i classified in industry 2 at time t

$\varepsilon_{i,t}$ = error term for firm i at time t

The model in equation (9) is estimated using ordinary least squares regressions. White (1980) test is used to test for heteroscedasticity. When the null hypothesis of homoscedasticity is rejected, White (1980) heteroscedasticity-consistent asymptotic covariance matrix is used. These estimates are used to compute heteroscedasticity-consistent t-statistics. These heteroscedasticity-consistent t-statistics are then used in computing the probability values of the respective coefficients. Firm size and industry effects are the control variables used in the regression.

The following model is estimated to test Hypotheses 1 and 2:

(10) $Risk_{i,t}^z = \alpha_0 + \alpha_1 OU_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$

where

$Risk_{i,t}^z$ =   risk measure for firm i at time t where $z=1$ for standard deviation of return

on equity, $z=2$ for capital intensity, and $z=3$ for beta

$OU_{i,t}$ =   outsider-dominated board of directors dummy for firm i at time t

$FS_{i,t}$ =   firm size (logarithm of total assets) for firm i at time t

$d_{i,t}^1$ =   firm i classified in industry 1 at time t

$d_{i,t}^2$ =   firm i classified in industry 2 at time t

$\varepsilon_{i,t}$ =   error term for firm i at time t

To examine Hypothesis 3, risk-taking is regressed against board ownership ($BOWN$). The control variables used are the same as the ones used for hypotheses 1 and 2 and have been explained above. The following model is estimated to test Hypothesis 3:

(11) $Risk_{i,t}^z = \alpha_0 + \alpha_1 BOWN_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$

where

$Risk_{i,t}^z$ =   risk measure for firm i at time t where $z=1$ for standard deviation of return

on equity, $z=2$ for capital intensity, and $z=3$ for beta

$BOWN_{i,t}$ =   level of equity ownership by the board of directors for firm i at time t

$FS_{i,t}$ =   firm size (logarithm of total assets) for firm i at time t

$d_{i,t}^1$ =   firm i classified in industry 1 at time t

$d_{i,t}^2$ =   firm i classified in industry 2 at time t

$\varepsilon_{i,t}$ =   error term for firm i at time t

To investigate Hypothesis 4, risk-taking is regressed against board size (logarithms of board size). The control variables used are the same as the ones used for hypotheses 1 to 3 and explained above. The following model is estimated to test hypothesis 4:

$$(12) \quad Risk_{i,t}^z = \alpha_0 + \alpha_1 BS_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$$

where

$Risk_{i,t}^z$	=	risk measure for firm i at time t where $z = 1$ for standard deviation of return on equity, $z = 2$ for capital intensity, and $z = 3$ for beta
$BS_{i,t}$	=	logarithm of board size
$FS_{i,t}$	=	firm size (logarithm of total assets) for firm i at time t
$d_{i,t}^1$	=	firm i classified in industry 1 at time t
$d_{i,t}^2$	=	firm i classified in industry 2 at time t
$\varepsilon_{i,t}$	=	error term for firm i at time t

In estimating the regression models of equations (10) to (12), observations from both sample periods, 1994 and 1998, are pooled. The models in equations (10), (11), and (12) are estimated using ordinary least squares regressions. As in equation (9), White (1980) test is used to test for heteroscedasticity. When the null hypothesis of homoscedasticity is rejected, White (1980) heteroscedasticity-consistent asymptotic covariance matrix is used.

6.2 Empirical results and discussion

Table 6 reports the results of the estimation models examining the relationship between outsider-dominated boards of directors and proxies for financial control emphasis. The results reported in Table 6 suggest a positive relationship between the two variables. The coefficients for outsider-dominated board of directors are significantly positive for both return on assets (ROA) and return on investments (ROI). These empirical findings support Baysinger and Hoskisson's (1990) proposition that outsider-dominated boards would likely

Table 6. Results of pooled cross-sectional regression analysis: The relationship between outsider-dominated boards of directors and financial controls.

Profitability Measures/ Parameter estimates	Return on Assets	Return on investments
Intercept	17.29	11.55
	(<0.0001)*	(0.001)*
Outsider-dominated boards	2.63	2.43
	(0.03)***	(0.03)***
Firm Size	-1.45	-0.43
	(0.0005)*	(0.41)
Industry 1	3.05	0.86
	(0.04)***	(0.57)
Industry 2	0.68	1.43
	(0.62)	(0.3)
Adjusted R^2	0.163	0.02
F value	5.47	5.81
Pr>F	0.0006*	0.01**
White (1980) χ^2-test	11.98	a
Pr>ChiSq	(0.29)	

Pooled regression analyses, model: $OBS_{i,t}^k = \alpha_0 + \alpha_1 OU_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $OBS_{i,t}^k$ is proxy for emphasis on outcome-based strategies for firm for firm i at time t where $k = 1$ for ROA, and $k = 2$ for ROI. $OU_{i,t}$ is outsider-dominated board of directors dummy for firm i at time t. $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, and $\varepsilon_{i,t}$ is error term for firm i at time t.[a] The null hypothesis of homoscedasticity was rejected in the regression analysis. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All the variance inflation factors were less than 1.6 suggesting that there is no problem with multicollinearity in the analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%.

emphasise financial controls in board-management relationship because of the type of information that they are likely to have. In a related study, Baysinger and Butler (1985) also find evidence that firms perform better if boards include more outsiders.

Tables 7, 8, and 9 contain the results of the pooled cross-sectional regression models esti-
mating the effects of outsider-dominated board of directors, the presence of growth oppor-
tunities, and equity ownership by the board of directors on firm risk-taking respectively,
and, thereby, testing Hypotheses 1, 2 and 3.

The results of the estimation models examining the effect of outsider-dominated boards on
firm risk-taking produce contradicting findings (see Table 7). When firm risk-taking is
measured by capital intensity and beta, the results suggest that outsider-dominated boards
do not exert any significant influence on firm risk-taking activities. The coefficients for
outsider-dominated boards, although negative, are statistically insignificant. The insignifi-
cant coefficient does not lend support to the prediction indicated by Hypothesis 1 but is,
nevertheless, consistent with the discussion suggesting a negative influence of outsider-
dominated boards on firm risk-taking. When the relevant risk-taking measure is a proxy for
returns variability, the standard deviation of return on equity, outsider-dominated boards
are found to exert a statistically significant and negative effect on firm risk-taking.

Hypothesis 1 is, therefore, not supported across the different measures for firm risk-taking.
This Hypothesis is supported when the risk-taking measure is the standard deviation of re-
turn on equity and not supported when the risk-taking measures are capital intensity and
beta. These results imply that the choice of risk variable has an effect on the outcome of
studies investigating the influence of outsider-dominated boards on firm risk-taking activi-
ties. The results further suggest that the board of directors may relate differently to different
risk-taking measures. In a related study, Zahra (1996) finds a statistically significant and
negative relationship between outsider-dominated boards of directors and corporate entre-
preneurship.

Table 7. Results of pooled cross-sectional regression analyses: Effect of outsider-dominated boards of directors on firm risk-taking (all firms).

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	25.67	4.46	-0.088
	(<0.0001)*	(0.005)**	(0.06)****
Outsider-dominated boards	-7.28	-0.35	-0.02
	(0.001)*	(0.28)	(0.7)
Firm size	-1.46	-0.53	0.103
	(0.024)***	(0.005)**	(<0.0001)*
Industry 1	2.21	0.84	0.053
	(0.33)	(0.25)	(0.44)
Industry 2	-2.20	-2.51	-0.029
	(0.29)	(0.0002)*	(0.65)
Adjusted R^2	0.099	0.14	0.26
F-Value	4.13	5.85	8.99
Pr>F	0.0037**	0.0003*	<0.0001*
White (1980) χ^2-test	11.67	7.91	15.14
Pr>ChiSq	(0.31)	(0.63)	(0.13)

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 OU_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $OU_{i,t}$ is outsider-dominated board of directors dummy for firm i at time t, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. An interactive analysis of the standard deviation of return on equity (STDEV of ROE) and outsider-dominated board of directors suggested the presence of large values of the risk-taking measure in the data. These observations were deleted from the dataset before the model was estimated. All the variance inflation factors were less than 1.6. This suggests there is no problem with multicollinearity in the analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; ****significance at 10%.

Table 8. Results of regression analyses: Effect of outsider-dominated boards of directors on firm risk-taking (firms with growth opportunities).

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	32.46	8.44	-0.14
	(0.0002)*	(0.0007)*	(0.45)
Outsider-dominated boards	-10.11	0.23	-0.054
	(0.0024)**	(0.04)***	(0.55)
Firm size	-2.14	-0.65	0.12
	(0.033)***	(0.025)***	(0.0002)*
Industry 1	4.18	-2.17	-0.014
	(0.22)	(0.033)***	(0.67)
Industry 2	-0.94	-3.035	-0.03
	(0.77)	(0.003)**	(0.75)
Adjusted R^2	0.16	0.13	0.23
F-Value	4.29	3.54	4.98
Pr>F	0.0039**	0.001*	0.002**
White (1980) χ^2 -test	9.4	6.42	11.24
Pr>ChiSq	(0.49)	(0.78)	(0.34)

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 OU_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $OU_{i,t}$ is outsider-dominated board of directors dummy for firm i at time t, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. All the variance inflation factors were less than 1.6. This suggests there is no problem with multicollinearity in the analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%, *** significance at 5%.

The results of testing for Hypothesis 2 also produce dissimilar outcomes (see Table 8). When beta is used as the risk-taking measure, the results show that the coefficient for outsider-dominated board of directors is statistically insignificant. Risk-taking measures based on the standard deviation of return on equity and capital intensity produce statistically sig-

nificant coefficients, albeit, with different signs. The coefficient for outsider-dominated boards is significantly positive when capital intensity is the risk-taking measure. In contrast, the coefficient for outsider-dominated boards is negative when the standard deviation of return is the risk-taking measure. The negative coefficients and similarities in test statistics between the results for testing for hypotheses 1 and 2 cast doubt on suggestion that growth opportunities moderate the relationship between outsider-dominated boards and risk-taking when the standard deviation of return on equity is the adopted measure for firm risk-taking. Given the negative relationship (although statistically insignificant) between capital intensity and outsider-dominated boards for all firms, the significantly positive relationship between capital intensity and outsider-dominated boards could be attributed to the moderating impact growth has on the relationship between the two variables. This means that when growth opportunities are present the board of directors react positively to taking on strategic or industry risk. This is contrary to the generally negative attitude towards taking on strategic or industry risk (Hypothesis 1). Hypothesis 2 is, therefore, not supported for risk-taking measures based on beta and the standard deviation of return on equity but supported for the risk measure based on capital intensity.

Results from the pooled cross-sectional regression models estimating equation 11 do not provide uniform support for Hypothesis 3 (see Table 9). The empirical results lend support to the Hypothesis when the relevant risk-taking measure is the standard deviation of return on equity. That is, boards of directors owning low equity stakes in the firms relate negatively to firm risk-taking. Hypothesis 3 is not empirically supported when risk is measured by capital intensity and beta.

The lack of uniformity in supporting or not supporting Hypotheses 1 to 3 could be due to the different risk-taking measures used. Miller and Bromiley (1990) suggest that different risk measures capture different dimensions of risk and these different dimensions of risk have different effects on firm performance. The results here indicate that the board of directors relate differently to different risk-taking measures. The choice of risk-taking variable, therefore, seems to be an important factor in the outcome in studies examining the relationship between the board of directors and firm risk-taking.

Tables 7 to 9 also report results for the control variables. The impact of firm size is significantly negative when risk-taking is measured by the standard deviation of return on equity and capital intensity. It is significantly positive when the relevant risk measure is beta. The

Table 9. Results of pooled cross-sectional regression analysis: Effect of equity ownership by board of directors on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	30.02	10.12	-0.212
	(<0.0001)*	(<0.0001)*	(0.29)
Level of board equity ownership	-8.0006	-0.21	0.05
	(0.0021)**	(0.76)	(0.50)
Firm size	-1.82	-0.83	0.11
	(0.02)**	(0.0002)*	<0.0001*
Industry 1	1.36	-1.79	0.036
	(0.6)	(0.02)***	(0.64)
Industry 2	-2.56	-3.2	0.007
	(0.33)	(<0.0001)*	(0.78)
Adjusted R^2	0.102	0.22	0.24
F-Value	4.65	7.82	7.73
Pr>F	0.0084**	<0.0001*	<0.0001*
White (1980) χ^2-test	9.93	9.97	12.73
Pr>ChiSq	(0.45)	(0.44)	(0.24)

Pooled regression analyses, model: $Risk_{i,j}^z = \alpha_0 + \alpha_1 BOWN_{i,j} + \alpha_2 FS_{i,j} + \alpha_3 d_{i,j}^1 + \alpha_4 d_{i,j}^2 + \varepsilon_{i,j}$, where $Risk_{i,j}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $BOWN_{i,j}$ is level of equity ownership by the board of directors for firm i at time t, $FS_{i,j}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,j}^1$ is firm i classified in industry 1 at time t, $d_{i,j}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,j}$ error term for firm i at time t. All the variance inflation factors were less than 1.3. This suggests there is no problem with multicollinearity in the analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; ***significance at 5%.

sign of the coefficients and statistical significance of the industry dummy variables are not consistent.

Table 10 reports the results of the estimating models investigating the relationship between board size and firm risk-taking. It could be seen that the effect, as hypothesised, between the two variables do not hold across different risk-taking measures. The coefficients for board size are negative when the risk-taking measures are the standard deviation of return on equity and beta. This is consistent with the discussion in Chapter 2 suggesting a negative influence of larger board size on risk-taking. The positive coefficient for board size when capital intensity is used as the risk measure runs contrary to the supposition that even if boards' capacities for monitoring increase with board size, the benefits are outweighed by such costs as biases against risk-taking, among other things.

Board size is found to exert a statistically significant influence on the firm risk-taking when risk-taking is measured by the standard deviation of return on equity and capital intensity. The relationship, however, is different for the two risk measures as noted above. On one hand, the sign of the coefficient for board size is significantly negative when risk-taking is measured by the standard deviation of return on equity. On the other hand, the coefficient is significantly positive when risk is measured by capital intensity. The coefficient for beta, although negative, is statistically insignificant.

Following the arguments by Lipton and Lorch (1992), among others, offered in Chapter 2, Hypothesis 4 is not supported for risk-taking measures based on beta and capital intensity and supported for the income stream risk-taking measure represented by the standard deviation of return on equity. Results for control variables are also reported in table 10. Similar to that in Tables 7 to 9, the sign of the coefficients for firm size and industry dummies and their statistical significance are not consistent. The choice of risk measure is found here to be an important factor in the outcome of studies relating board size to firm risk-taking. Combined with the results obtained above, the board of directors can be said to relate differently to different risk-taking measures.

Table 10. Results of pooled cross-sectional regression analysis: The effect of board size on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	27.82	0.07	0.03
	(0.0007)*	(0.84)	(0.7)
Board size	-8.64	0.51	-0.11
	(0.06)****	(0.01)**	(0.42)
Firm size	-0.74	0.01	0.11
	(0.29)	(0.75)	(<0.0001)*
Industry 1	4.76	0.21	0.06
	(0.07)****	(0.06)****	(0.5)
Industry 2	3.34	0.24	0.008
	(0.17)	(0.03)***	(0.9)
Adjusted R^2	0.04	0.12	0.23
F-Value	2.17	4.84	8.01
(Pr>F)	(0.07)****	0.001*	(<0.0001)*
White (1980) χ^2-test	9.01	[a]	14.43
Pr>ChiSq	(0.62)		(0.21)

Pooled regression analyses, model: $Risk^z_{i,t} = \alpha_0 + \alpha_1 BS_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d^1_{i,t} + \alpha_4 d^2_{i,t} + \varepsilon_{i,t}$, where $Risk^z_{i,t}$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $BS_{i,t}$ is the size of the board of directors for firm i at time t, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d^1_{i,t}$ is firm i classified in industry 1 at time t, $d^2_{i,t}$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. [a] The null hypothesis of homoscedasticity was rejected in the regression analysis. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All the variance inflation factors were less than 1.7 suggesting no problem with multicollinearity in the analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; ****significance at 10%.

In related studies, Yermack (1996), Conyon et al. (1998), and Eisenberg et al. (1998) all find a negative relationship between board size and firm performance. The results presented here extend the board size effect to cover a set of firm risk-taking activities.

6.3   Concluding remarks

This Chapter empirically examines the impact of the board of directors on firm risk-taking. Based on the theory and hypotheses presented in Chapter 2, this Chapter tests for a relationship between outsider-dominated boards of directors on risk-taking, and the moderating impact of growth opportunities on the relationship between outsider-dominated boards of directors on risk-taking in firms. Jensen (1993) proposes that encouraging board members to hold substantial equity interests would provide better incentives to take actions that create efficiency and value for the company. Implicitly, Jensen's (1993) propositions suggest that board of directors with high equity holding have the incentive to enhance firm value, via risk taking for example. That is, although risk-taking can enhance shareholder value, owning insignificant equity stakes in firms does not necessarily provide proper incentives to take actions that create efficiency and value for the company. The effect of insignificant equity ownership by the board of directors is, therefore, also examined. Furthermore, the impact of board size on risk-taking is also examined in this chapter.

For the purpose of the examinations indicated above, data was gathered over a nine-year period with focus on the years 1994 and 1998. The empirical methodology used is a pooled cross-sectional regression analysis in which three measures of firm risk-taking are regressed against the various measures associated with the board of directors. The three risk-taking measures (the standard deviation of return on equity, capital intensity, and beta) are based on proxies for income stream risk, industry or strategic risk, and stock returns risk. That is, using separate regressions for each risk variable, the three measures of firm risk-taking are regressed against outsider-dominated board of directors for all firms considered in this thesis, outsider-dominated board of directors for firms with growth opportunities, firms whose board own less that 5% of equity stakes in the firm, and board size. Firm size and industry dummies were introduced into the estimation models as control variables.

Measuring firm risk-taking by the proxy for income stream risk, Hypotheses 1, 3 and 4 are supported. That is, outsider-dominated boards are found to exert a statistically significant influence on firm risk-taking. The negative coefficients and similarities in test statistics between the results for testing for Hypotheses 1 and 2 cast doubt on suggestion that growth

opportunities moderate the relationship between outsider-dominated boards and risk-taking when the standard deviation of return on equity is the measure for firm risk-taking. Also, insignificant equity ownership by the board of directors is found to negatively affect risk-taking for income stream risk. Similarly, board size is found to exert a negative and significant effect on firm risk-taking measured by the standard deviation of return on equity.

For the firm risk-taking measured by the proxy for industry or strategic risk, capital intensity, only Hypothesis 2 is supported. Given the negative relationship (although statistically insignificant) between capital intensity and outsider-dominated boards for all firms, the significantly positive relationship between capital intensity and outsider-dominated boards could be due to the moderating impact growth has on the relationship between the two variables. The empirical results for firm risk-taking measured by capital intensity do not support Hypotheses 1, 3, and 4. In Hypothesis 4, the coefficient for board size is significant. The sign of the coefficient is, however, positive which is inconsistent with the discussion leading to the hypothesis suggesting a negative influence of larger board size on firm risk-taking. When firm risk-taking is measured by beta, stock returns risk, all four Hypotheses proposed for empirical verification are not supported. However, the signs of the coefficients in Hypotheses 1 and 4, although insignificant, are nevertheless consistent with the discussion leading to the proposed hypotheses.

These investigations contribute to the existing literature in six (6) ways. First, it tests a proposition offered by Baysinger and Hoskisson (1990). They propose a positive relationship between outsider-dominated boards and financial controls. Given that the emphasis on financial controls by boards of directors increases the intensity of managerial efforts in terms of maximising short-run profits and direct efforts away from the high risk-return strategies shareholders prefer, a negative relationship between outside dominated boards and corporate risk taking should be observed. Empirical evidence on this proposed relationship is absent from the published literature.

The empirical evidence presented in this Chapter also extends current knowledge by investigating the effect of the presence of growth opportunities on the relationship between outsider-dominated boards and corporate risk-taking. It further extends knowledge in this area

of study by investigating whether the level of equity ownership by boards of directors affects firm risk-taking.

Additionally, the study contributes to the existing literature by using risk measures that are not subjective to investigate the above-mentioned relationships. Zahra (1996) used a subjective measure based on a survey directed at CEOs or most senior executives where executives were asked to rank their firms' entrepreneurial activities. It could possible that answers given by the respondents reflect a desire or wish which could be different from reality. Furthermore, March and Shapira (1987) suggest that from the managerial perspective, there is a persistent tension between risk as a measure on the distribution of possible outcomes from choice and risk as a danger or hazard. Hence, a measured risk-taking variable based on outcome in firm data is a preferable option.

A further contribution relates to the restriction in the dataset used in the related study by Zahra (1996). Zahra (1996), studying governance, ownership and corporate entrepreneurship, was only interested in the largest industrial corporation. The choice of relatively few organisations in any study tend to limit the generalizability of the study. That is, there may be factors unique to the organisations studied that would have little in common with other organisations. No such restriction was applied in this study. Firms of all sizes were considered.

Empirical research on the importance of board size is thin. Yermack (1996), Conyon and Peck (1998), and Eisenberg et al. (1998) find that board size affects firm performance. The empirical finding of this thesis extends the results of these studies by documenting the relationship between board size and firm risk-taking.

The empirical analyses suggest that the choice of risk-taking variable is an important factor in the acceptance or rejection of the proposed hypotheses. That is, the board of directors is found to relate differently to the different risk measures. As suggested by Miller and Bromiley (1990), different risk measures capture different dimensions of risk and these different dimensions of risk have different effects on firm performance. Further research could explore the theoretical underpinning for the divergence in the relationship between the

board of directors and the various risk-taking measures. Furthermore, researchers interested in optimal board size for different firms could look into diminishing effects of increasing board sizes on firm risk-taking. This would require a large data set.

7. IMPACT OF BLOCK OWNERSHIP AND CORPORATE RISK-TAKING: METHODOLOGY AND EMPIRICAL RESULTS

Block ownership, as used in this thesis has been explained above in Chapter 5. Summary statistics pertaining to block ownership is also provided in the said Chapter. Based on the theory and hypothesis proposed in Chapter 3, the main motivation here is to test for a relationship between active block ownership and risk-taking by firms.

In this Chapter, the methodology employed and the empirical results on the impact of the block ownership on risk-taking are presented. To that end, the methodology employed in the study is presented in Section 7.1. In Section 7.2, the empirical results are presented and discussed. Section 7.3 concludes.

7.1 Methodology

The methodology employed here to examine the impact of block ownership on risk-taking is a cross-sectional regression analysis in which firm risk-taking is regressed against block ownership. The following Hypothesis is examined in this chapter:

Hypothesis 5: The contemporaneous relationship between the level of equity ownership by active block holders and firm risk taking will be positive.

The control variables introduced in the analysis pertain to firm size and industry effects. Firm size effect is captured by total assets. Three industry dummies are also introduced to absorb the industry effects in the relationship. The industry dummies introduced here are the same as the ones used in the previous Chapter and the classifications have been explained above.

The following model is estimated to test Hypothesis 5:

(13) $Risk_{i,t}^z = \alpha_0 + \alpha_1 BH_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$

where

$Risk_{i,t}^z$ =   risk measure for firm i at time t where $z = 1$ for standard deviation of return

on equity, $z = 2$ for capital intensity, and $z = 3$ for beta

$BH_{i,t}$ =   level of block ownership

$FS_{i,t}$ =   firm size (logarithm of total assets) for firm i at time t

$d_{i,t}^1$ =   firm i classified in industry 1 at time t

$d_{i,t}^2$ =   firm i classified in industry 2 at time t

$\varepsilon_{i,t}$ =   error term for firm i at time t

In estimating the regression model of equation (13), observations from both sample periods, 1994 and 1998, are pooled. The model is estimated using ordinary least squares regressions. When the null hypothesis of homoscedasticity is rejected, White (1980) heteroscedasticity-consistent asymptotic covariance matrix is used. These estimates are used to compute heteroscedasticity-consistent t-statistics that are needed to calculate the probability values of the coefficients.

7.2   Empirical results and discussion

The emphasis in this Chapter is on a particular classification of block holders, active block holders. Nevertheless, to mirror the finding of previous studies, for example Wright etc. al (1996), results from estimating equation (13) for all block holders in the firms considered in the thesis, passive block holders, and block holders for firms with growth opportunities are initially presented. The results of this exercise could be seen from Tables 11 to 13.

Table 11. Results of pooled cross-sectional regression analyses: Effect of block ownership on firm risk-taking (all block holders).

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	20.66	7.61	-2.59
	(<0.0001)*	(<0.0001)*	(<0.0001)*
Level of Block ownership	0.1	0.009	-0.002
	(0.21)	(0.50)	(0.35)
Firm size	-1.84	-0.98	0.49
	(0.008)**	(<0.0001)*	(0.05)***
Industry 1	6.26	0.98	-0.66
	(0.04)***	(0.0002)*	(0.13)
Industry 2	0.84	3.77	-0.64
	(0.7)	(<0.0001)*	(0.06)****
Adjusted R^2	0.052	0.22	0.097
F-Value	5.21	23.51	35.43
Pr>F	0.0005*	<0.0001*	<0.0001*

Pooled regression analyses, model: $Risk_{i,j}^z = \alpha_0 + \alpha_1 BH_{i,j} + \alpha_2 FS_{i,j} + \alpha_3 d_{i,j}^1 + \alpha_4 d_{i,j}^2 + \varepsilon_{i,j}$, where $Risk_{i,j}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $BH_{i,j}$ is the level of block ownership in firm i at time t, $FS_{i,j}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,j}^1$ is firm i classified in industry 1 at time t, $d_{i,j}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,j}$ error term for firm i at time t. The null hypothesis of homoscedasticity was rejected in the regression analyses. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All variance inflation factors were less than 1.7 suggesting that there is no problem with multicollinearity in the empirical analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985).
Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; ****significance at 10%.

Table 11 reports the results of the estimation model investigating the aggregate effect of block holder on firm risk-taking. Considering all block holders in the firms under consideration, the coefficient for block ownership is found to be statistically insignificant for all three measures of risk-taking. This indicates that, on average, block owners exert no measurable influence on firm risk-taking. The lack of statistical significance for this variable is

consistent with the findings of Holderness and Sheehan (1988) and McConnell and Servaes (1990). McConnell and Servaes (1990), for instance, contend that many block holders are passive investors, providing little by way of monitoring. If passive block holders dominate then their monitoring role may be small and that could skew the results of the regression. From Table 11, it could also be seen that the sign of the coefficient for block ownership is negative when beta is the risk-taking measure in the investigation. The standard deviation of return on equity and capital intensity relates positively to block ownership.

The findings reported in Table 12, investigating the relationship between block ownership and firm risk-taking for firms with growth opportunities, mirror the findings of Wright et al. (1996). They find that the relationship between firm risk-taking and block holders is positive but statistically insignificant. The measure of risk-taking used in their study is a proxy based on income variability. This study reflects that finding. Specifically, this relates to the finding in this study that although statistically insignificant, block ownership relates positively to the standard deviation of return on equity. The evidence presented in Table 12 also indicates that capital intensity and beta relates positively and negatively, respectively, to block ownership. None of the relationships are, however, statistically significant.

This study also reports findings relating to the relationship between passive block holders, as classified in Chapter 5, and firm risk-taking. As indicated above, McConnell and Servaes (1990) assert that many block holders are passive investors, providing little by way of monitoring. Shleifer and Vishny (1986) theoretical analysis implies that active, as opposed to passive, block holder could force value maximisation through firm risk-taking.

Table 12. Results of pooled cross-sectional regression analyses: Effect of block ownership on firm risk-taking (firms with growth opportunities).

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	32.26	8.84	-3.77
	(<0.0001)*	(<0.0001)*	(0.007)**
Level of Block ownership	0.06	0.005	-0.006
	(0.48)	(0.74)	(0.28)
Firm size	-3.78	-1.16	0.67
	(<0.0001)*	(<0.0001)*	(0.04)***
Industry 1	12.17	0.44	-0.49
	(0.0002)*	(0.16)	(0.19)
Industry 2	2.76	4.5	-0.75
	(0.05)***	(<0.0001)*	(0.08)****
Adjusted R^2	0.22	0.25	0.38
F-Value	13.66	15.62	33.88
Pr>F	<0.0001*	<0.0001*	<0.0001*

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 BH_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta. $BH_{i,t}$ is the level of block ownership in firm i at time t (firms with growth opportunities), $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. The null hypothesis of homoscedasticity was rejected in the regression analyses. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All the variance inflation factors were less than 1.6 suggesting no problems with multicollinearity (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; **** significance at 10%.

Table 13. Results of pooled cross-sectional regression analysis: The effect of passive block ownership on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	20.82	2.02	-3.34
	(0.004)**	(0.005)**	(<0.0001)*
Level of passive block	0.09	0.001	-0.002
Ownership	(0.19)	(0.86)	(0.83)
Firm size	-2.2	-0.19	0.61
	(0.04)***	(0.05)***	(<0.0001)*
Industry 1	8.47	0.51	-1.17
	(0.04)***	(0.20)	(0.016)
Industry 2	3.9	1.07	-0.85
	(0.36)	(0.01)*	(0.08)****
Adjusted R^2	0.05	0.04	0.28
F-Value	2.25	1.97	34.96
Pr>F	0.06	0.09****	<0.0001*
White (1980) χ^2-test	11.51	0.9	17.93
Pr>ChiSq	(0.40)	(0.91)	(0.39)

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 BH_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta. $BH_{i,t}$ is the level of passive block ownership in firm i at time t, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. All the variance inflation factors were less than 2.4 suggesting no problems with multicollinearity in the empirical analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; ****significance at 10%.

Hypothesis 5 proposes a positive and significant relationship between active block holders and firm risk-taking. Tables 13 and 14 present results of the estimation models investigating passive and active block holders and firm risk-taking, respectively. The results presented in table 13 indicated a statistically insignificant relationship between passive block

Table 14. Results of pooled cross-sectional regression analysis: The effect of active block ownership on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	29.74	4.3	-3.87
	(0.0007)**	(0.03)****	(0.02)***
Level of active block	0.30	0.12	-0.01
Ownership	(0.05)***	(0.001)**	(0.34)
Firm size	-3.02	-0.68	0.72
	(0.007)**	(0.008)***	(0.008)**
Industry 1	10.48	1.72	-1.020
	(0.02)****	(0.09)****	(0.05)***
Industry 2	-1.73	2.83	-1.09
	(0.63)	(0.0009)**	(0.01)**
Adjusted R^2	0.11	0.17	0.38
F-Value	4.83	7.22	30.69
Pr>F	0.0012**	<0.0001*	<0.0001*
White (1980) χ^2-test	23.67	16.99	[a]
Pr>ChiSq	(0.142)	(0.11)	

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 BH_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $BH_{i,t}$ is the level of active block ownership in firm i at time, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. [a] The null hypothesis of homoscedasticity was rejected in the regression analysis. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All the variance inflation factors were less than 1.5 suggesting no problems with multicollinearity (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; **** significance at 10%.

holders and firm risk-taking. Similar to the relationships described above, the standard deviation of return on equity and capital intensity relates positively to passive block ownership. Beta, on the other hand, relates negatively to passive block ownership.

Table 14 contains the results of the regression models estimating the contemporaneous effects of active block holders and firm risk-taking. The results indicate that active block ownership exert a positive and significant effect on firm risk-taking when risk-taking is measured by the standard deviation of return on equity and capital intensity. It could be seen from Table 14 that the coefficients for active block ownership are positive and significant for these two risk-taking measures. When risk-taking is measured by beta, the results show a statistically insignificant and negative effect of active block ownership on firm risk-taking. Hypothesis 5 is therefore supported when the risk-taking measures used are the standard deviation of return on equity and capital intensity and not supported when beta is used as the risk-taking measure. These results provide some support for Shleifer and Vishny's (1986) theoretical representation of the value of block holders.

Table 14 also report results for the control variables. Firm size effects are significant for all three measures of risk but the sign of the coefficients are not consistent. The sign and significance of industry effects are found to be inconsistent.

7.3 Concluding remarks

This Chapter empirically examines the relationship between block ownership and risk-taking by firms. Based on the theory and hypothesis presented in Chapter 3, this chapter essentially tests for a relationship between active block owners and firm risk-taking. For the purpose of this examination, data was gathered over a nine-year period with focus on the years 1994 and 1998. The empirical methodology used is a cross-sectional regression analysis in which three measures of risk-taking, the standard deviation of return on equity, capital intensity and beta, are regressed against the active block ownership. Control variables pertaining to size and industry effects are included in the regression.

Aggregating block ownership into a single category and considering all firms, the coefficient for block ownership is found to be statistically insignificant for all three measures of firm risk-taking. This is consistent with the findings of Holderness and Sheehan (1988) and McConnell and Servaes (1990). McConnell and Servaes (1990) contend that many blockholders are passive investors, providing little by way of monitoring. If passive block holders dominate then their monitoring role may be small and that could skew the results of the regression. The relationship between block ownership and firm risk-taking was also found to be statistically insignificant for firms with growth opportunities. This mirrors the findings of Wright et al. (1996). The sign of the coefficient for block ownership is not consistent across the different risk measures.

The central issue being considered in this Chapter is that active block holders are more likely to actively monitor management and are more inclined toward firm risk-taking than non-active (passive) block holders. Consequently, block ownership is disaggregated and the specific effect of active block holders on firm risk-taking examined. Hypothesis 5 is supported when risk-taking is measured by the standard deviation of return on equity and capital intensity and not supported when risk-taking is measured by beta.

The investigations conducted in this chapter contribute to the existing literature in one main respect. Empirical examination of the influence of block ownership on corporate risk-taking remains largely unexplored. Whiles studies by Wright et al. (1996) attempt to fill the void, they treat block ownership as a monolithic group. As a contribution to this area of study, this thesis separate block ownership into two distinct groups, active and passive block owners, and provide empirical evidence on the relationship each group block ownership on corporate risk taking.

Future studies could explore the theoretical reasons behind the empirical differences in how block holders relate to firm risk-taking.

8. IMPACT OF INSTITUTIONAL OWNERSHIP ON CORPORATE RISK-TAKING: METHODOLOGY AND EMPIRICAL RESULTS

This thesis discussed the governance function of institutional owners in Chapter 4. Among other things, the term institutional ownership was discussed and two theoretical perspectives on the relationship between institutional ownership and firm risk-taking were presented. Furthermore, two Hypotheses were developed for empirical testing. Based on the theory and Hypotheses proposed in Chapter 4, the relationship between two types of institutional owners and firm risk-taking is empirically examined in this Chapter. The two categories of institutional ownership relevant to the empirical tests of this thesis and summary statistics have been discussed above in Chapter 5.

In this Chapter, the empirical methodology employed and the empirical results on the impact of the institutional ownership on risk-taking are presented. To that end, the methodology employed in the study is presented in Section 8.1. In Section 8.2, the empirical results are presented and discussed. Section 8.3 concludes.

8.1 Methodology

The empirical methodology employed here to examine the impact of institutional ownership on risk-taking is a cross-sectional regression analysis in which firm risk-taking is regressed against two categories of institutional owners. The following Hypotheses are examined in this Chapter:

Hypothesis 6: The contemporaneous relationship between pressure-sensitive institutional investors and corporate risk-taking will be positive.

Hypothesis 7: The contemporaneous relationship between pressure-resistant institutional investors and corporate risk-taking will be negative.

The methodology employed controls for firm size and industry effects. Firm size effect is captured by total assets. Three industry dummies are also introduced to absorb the industry effects in the relationship. The industry dummies introduced here are the same as the ones used above in Chapters 6 and 7 and the classifications have been explained above.

The following model is then estimated to test Hypotheses 6 & 7:

$$(14) \quad Risk_{i,t}^z = \alpha_0 + \alpha_1 INOWN_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$$

where

$Risk_{i,t}^z$ = risk measure for firm i at time t where $z = 1$ for standard deviation of return on equity, $z = 2$ for capital intensity, and $z = 3$ for beta

$INOWN_{i,t}$ = level of institutional ownership

$FS_{i,t}$ = firm size (logarithm of total assets) for firm i at time t

$d_{i,t}^1$ = firm i classified in industry 1 at time t

$d_{i,t}^2$ = firm i classified in industry 2 at time t

$\varepsilon_{i,t}$ = error term for firm i at time t

In estimating equation (14), observations from both sample periods, 1994 and 1998, are pooled. The model in equation (14) is estimated using ordinary least squares regressions. When the null hypothesis of homoscedasticity is rejected, White (1980) heteroscedasticity-consistent asymptotic covariance matrix is used. These estimates are used to compute heteroscedasticity-consistent t-statistics. These heteroscedasticity-consistent t-statistics are then used in computing the probability values of the respective coefficients.

8.2 Empirical results and discussion

Table 15 contains the results of the regression models estimating the contemporaneous effects of institutional ownership on firm risk-taking for all institutional owners in the firms

Table 15. Results of pooled cross-sectional regression analysis: Effect of institutional investors on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	16.67	3.53	-0.11
	(0.0005)*	(0.001)*	(0.03)***
Level on institutional ownership	0.53	0.03	0.001
	(0.07)****	(0.28)	(0.67)
Firm size	-1.46	-0.35	0.104
	(0.014)***	(0.01)**	(<0.0001)*
Industry 1	3.1	0.69	0.042
	(0.015)***	(0.0004)*	(0.09)****
Industry 2	4.48	2.16	0.026
	(0.008)**	(<0.0001)*	(0.33)
Adjusted R^2	0.05	0.14	0.25
F-Value	12.83	35.09	56.56
Pr>F	<0.0001*	<0.0001*	<0.0001*

Pooled regression analyses, model: $Risk_{i,j}^z = \alpha_0 + \alpha_1 INOWN_{i,j} + \alpha_2 FS_{i,j} + \alpha_3 d_{i,j}^1 + \alpha_4 d_{i,j}^2 + \varepsilon_{i,j}$, where $Risk_{i,j}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta, $INOWN_{i,j}$ is the level of institutional ownership for firm i at time t, $FS_{i,j}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,j}^1$ is firm i classified in industry 1 at time t, $d_{i,j}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,j}$ error term for firm i at time t. The null hypothesis of homoscedasticity was rejected in the regression analyses. Hence, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. Variance inflation was less than 1.5 suggesting no problem with multicollinearity (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; **** significance at 10%.

considered in this thesis. The results indicate a positive relationship between the level of ownership by institutions and firm risk-taking. However, only the risk-taking measure based on the proxy for income stream risk produce a positive and significant coefficient for the said relationship.

Table 16 contains the results of the regression models investigating the relationship between pressure-sensitive institutional investors, as defined in Chapter 5, and firm risk-taking. The results indicate a positive and significant influence of pressure-sensitive institutional investors on firm risk-taking. The coefficient of pressure-sensitive institutional ownership in all three measures of risk-taking is positive and statistically significant. That is to say, pressure-sensitive institutional investors exert positive and measurable influence on firm risk-taking. Hypothesis 6 is, therefore, supported for all three measures of firm risk-taking.

By definition, these pressure-sensitive institutions are "locked into" their investments. Hence, they favour working inside firms to change policies of the firms because the volume of shares held by them makes a quick exit from the firm impractical (Baysinger and Butler 1985). This may suggest that the ability of this group of institutional investors to influence managers with appropriate incentives to increase firm value through risk-taking dominate management power to coerce them to adopt risk-reducing strategies. The evidence presented for this group of institutional investors favours Pound's (1988) efficient monitoring hypothesis and not his conflict-of-interest hypothesis. The results presented here are also consistent with earlier studies that indicate a positive relationship between institutional investors and corporate risk-taking (see for example Barclay and Holderness 1990, Hansen and Hill 1991, Wright et al 1996, Zahra 1996). The results presented in Table 16 also lend support to the efficient market institutional theory.

Ilmanen and Keloharju (1999) investigating portfolio diversification in Finland suggest that insurance companies and banks, among others, hold well-diversified portfolios. Finance theory suggest that shareholders who hold diversified portfolio of stocks prefer high average returns on each security in the portfolio, even at the cost of higher variance, because their overall risk is reduced (Copeland and Weston 1992). The results presented, therefore, supports finance theory.

Table 16. Results of pooled cross-sectional regression analysis: Effect of pressure-sensitive institutional investors on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	12.34	1.44	-0.13
	(0.001)**	(0.005)**	(0.18)
Level of pressure-sensitive	0.82	0.045	0.005
Institutional ownership	(<0.0001)*	(0.06)****	(0.06)****
Firm size	-0.96	-0.088	0.11
	(0.03)***	0.15	(<0.0001)*
Industry 1	1.31	0.42	-0.02
	(0.47)	(0.08)****	(0.001)**
Industry 2	4.54	1.4	-0.22
	(0.01)**	(<0.0001)*	(0.02)***
Adjusted R^2	0.06	0.07	0.23
F-Value	9.16	10.14	28.9
Pr>F	<0.0001*	<0.0001*	<0.0001*
White (1980) χ^2 -test	16.08	[a]	[a]
Pr>ChiSq	(0.14)		

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 INOWN_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta. $INOWN_{i,t}$ is the level of pressure-sensitive institutional ownership for firm i at time t, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. [a] The null hypothesis of homoscedasticity was rejected in this case. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All the variance inflation factors were less than 1.7. This suggests there is no problem with multicollinearity in the empirical analyses (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; significance at 10%.

In Hypothesis 7, a negative relationship between pressure-resistant institutional investors and firm risk-taking is proposed. The results from estimating equation (14) for this category

Table 17. Results of pooled cross-sectional regression analysis: Effect of pressure-resistant institutional investors on firm risk-taking.

Risk-taking measures/ Parameter estimates	STDEV of ROE	Capital Intensity	Beta
Intercept	16.9	3.76	-0.10
	(<0.0001)*	(0.04)***	(0.18)
Level of pressure-resistant	0.17	0.04	-0.008
Institutional ownership	(0.37)	(0.38)	(0.06)****
Firm size	-1.41	-0.36	0.099
	(0.0008)*	(0.13)	(<0.0001)*
Industry 1	4.6	0.63	0.11
	(0.009)**	(0.05)***	(0.001)**
Industry 2	3.86	2.76	0.08
	(0.03)***	(<0.0001)*	(0.02)***
Adjusted R^2	0.035	0.16	0.29
F-Value	4.54	19.95	34.74
Pr>F	0.0013**	<0.0001*	<0.0001*
White (1980) χ^2-test	13.14	[a]	[a]
Pr>ChiSq	(0.28)		

Pooled regression analyses, model: $Risk_{i,t}^z = \alpha_0 + \alpha_1 INOWN_{i,t} + \alpha_2 FS_{i,t} + \alpha_3 d_{i,t}^1 + \alpha_4 d_{i,t}^2 + \varepsilon_{i,t}$, where $Risk_{i,t}^z$ is risk measure for firm i at time t where $z=1$ for standard deviation of return on equity, $z=2$ for capital intensity, and $z=3$ for beta. $INOWN_{i,t}$ is the level of pressure-resistant institutional ownership for firm i at time t, $FS_{i,t}$ is firm size (logarithm of total assets) for firm i at time t, $d_{i,t}^1$ is firm i classified in industry 1 at time t, $d_{i,t}^2$ is firm i classified in industry 2 at time t, $\varepsilon_{i,t}$ error term for firm i at time t. [a] The null hypothesis of homoscedasticity was rejected in the regression analysis. Therefore, White (1980) heteroscedasticity-consistent asymptotic covariance matrix was used. All the variance inflation factors were less than 1.7. This suggests there is no problem with multicollinearity (see Judge, Griffiths, Hill, Lutkepohl and Lee 1985). Probability values are in parentheses: * significance at 0.1%; ** significance at 1%; *** significance at 5%; significance at 10%.

of institutional investors produce inconclusive results. The results reported in Table 17 indicate a positive and statistically insignificant relationship between firm risk-taking and

pressure-resistant institutional investors when risk-taking is measured by the proxies for income stream risk and strategic or industry risk. The results for these two measures of risk-taking are consistent with the findings of Jarrel and Lehn (1985), Hansen and Hill (1991) and Kochhar and David (1996) that discredit the myopic investor theory. That is, institutional investors, on average, do not invest for the short term.

On the other hand, the results from investigating the relationship between stock returns risk, beta, and pressure-sensitive institutional investors show a negative and significant relationship. This result lends some support to the myopic institutional theory. Hypothesis 7 is, therefore, not supported when risk-taking is measured by the proxies for income steam risk, the standard deviation of return on equity, and industry or strategic risk, capital intensity and supported if risk-taking is measured by stock returns risk, beta.

Table 16 and 17 also report results for the control variables. In Table 16, the impact of firm size and industry effects is shown to be inconsistent. That is, their statistical significance and sign of the coefficients vary. In Table 17, industry effects are all positive and significant. The sign and significance of firm size are inconsistent.

8.3   Concluding remarks

This chapter investigates the impact of institutional investors on firm or corporate risk-taking. Based on the theory and Hypotheses proposed in Chapter 4, this Chapter test for the relationship between two types of institutional owners and corporate risk-taking. The types of institutional investors under investigation here are the pressure-sensitive and pressure resistant institutional investors. For the purpose of these investigations, data was gathered over a nine-year period with a focus on the years 1994 and 1998. The methodology employed here to examine the impact of institutional ownership on risk-taking is a cross-sectional regression analysis in which firm risk-taking is regressed against two categories of institutional owners. Size and industry effects are controlled for in the regression.

The empirical investigation finds a positive and statistically significant relationship between pressure-sensitive institutional ownership and firm risk-taking. This may suggest that the ability of this group of institutional investors to influence managers with appropriate incentives to increase firm value through risk-taking dominate management power to coerce them to adopt risk-reducing strategies. The evidence presented for this group of institutional investors favours Pound's (1988) efficient monitoring hypothesis and rejects his conflict-of-interest hypothesis. The results presented here are also consistent with earlier studies that indicate a positive relationship between institutional investors and corporate risk taking. Support for the efficient market institutional theory is also found.

The empirical evidence relating to the relationship between pressure-resistant institutional ownership and risk-taking was inconclusive. When firm risk-taking are measured by proxies for income stream risk and industry or strategic risk, a statistically insignificant positive relationship is found. This implies that the theoretical basis of the myopic investor viewpoint needs to be re-examined. The evidence presented in this chapter together with the findings of Jarrel and Lehn (1985) and Hansen and Hill (1991) discredits the myopic investor perspective. On the other hand, a negative and statistically significant relationship is found between pressure-resistant institutional investors and beta. This result offers support to the myopic institutional theory. Taking all the results together, it could be posited that, generally, institutional owners exert a positive influence firm risk-taking. There could be instances, however, when some institutional owners display an aversion to firm risk-taking.

The influence of institutional investors on risk-taking has been largely unexamined. Whiles Wright et al. (1996) seminal work attempt to fill the void, they treat institutional investors as a homogeneous entity. The findings of Brickley et al. (1988), Kochhar and David (1996) and Bushee (1998) suggest that disaggregating institutional investors in studies involving this class of investors have merits. Hence, as a contribution to this area of study, this thesis investigates the effect of two types of institutional investors on firm risk-taking.

9.   CONCLUSION

Corporate governance relates to the structures and processes associated with production, decision-making, and control, among others, within an organisation. Problems pertaining to corporate governance have been recognised for decades (Berle and Means 1932). The separation of ownership and control in publicly owned firms induces potential conflicts between the interests of professional managers and stockholders (Berle and Means 1932). Stockholders are interested in maximizing the long-term profitability of a firm and the value of their investment. Managers' objectives, on the other hand, may include assuring personal wealth, job security, and prestige (Baysinger et al. 1991).

The divergence of managers' and stockholders objective may lead to acute conflict of interest in decisions regarding the strategic orientation of the firm. There is the need, therefore, for appropriate frameworks to be established in firms to check the self-serving behaviour by managers. The term corporate governance has come to embrace those devices, mechanisms and structures that act as a check on managerial self-serving behaviour (John and Senbet 1998). The purpose of checking the self-serving behaviour is to promote efficient operation of the firm. Corporate governance structures are, in this sense, the set of institutional arrangements that tend to align the interests of management and residual risk bearing shareholders.

Keasey and Wright (1993) outline a corporate governance framework and stress the need to view corporate governance as having two broad dimensions: the monitoring of management performance and ensuring accountability of management to shareholders, and the need for governance processes to encompass mechanisms for motivating managerial behaviour towards increasing the wealth of the business (to enhance economic enterprise or risktaking). This corporate governance framework suggest that effective governance involves a complex set of activities involving insider and outsider board membership, institutional investors, and block owners, among others. Given that governance structures and processes needs to encompass mechanisms for increasing the wealth of businesses, a particular issue that needs to be considered then is the extent to which certain governance mechanisms and ownership structures affect risk-taking activities of the firm. According to Keasey and

Wright's (1993) corporate governance framework, the board of directors, block owners, and institutional investors represent key dimensions of the governance process. This thesis, therefore, investigates the impact of these key dimensions of the governance process on firm risk-taking. Following Miller and Bromiley (1990), three proxies of firm risk-taking are adopted in this thesis. These are risk-taking measures for income stream risk (the standard deviation of return on equity), strategic or industry risk (capital intensity), and stock returns risk (beta).

Chapters (2), three (3), and four (4) discuss board of directors, block owners, and institutional ownership, respectively. In studying the relationship between the board of directors and risk-taking, a theoretical basis of the board of directors, based on Fama and Jensen (1983a), is presented. Thereafter, the thesis discusses the board of directors and company management in Finland. This is done to place the theoretical representation of the board of directors in a legal setting. Furthermore, the governance roles of different components of the board of directors are discussed. Hypotheses relating outsider-dominated boards of directors, equity ownership by the board of directors, and board size to firm risk-taking are then developed for empirical verification.

In discussing the impact on block ownership on risk-taking, it is noted that a block holder can be an individual, family, or an organisation. An important feature of a block ownership is that the owners own enough shares to influence corporate policy through the voting process. The thesis then discusses some possible organisational roles for large-block shareholders identified by economists. A theoretical derivation by Shleifer and Vishny (1986) is then presented to show the impact of large equity ownership on risk-taking. This model implicitly suggests that active equity block owners can theoretically force value maximization. The model forecasts that, ceteris paribus, the presence of a large-block equity holder would have a positive effect on the market value of the firm. Following this, the thesis synthesizes other relevant literature and a Hypothesis relating to the association of active block ownership and risk-taking is developed for empirical testing.

In investigating the impact of institutional ownership on firm risk-taking, the discussion notes that institutional ownership includes a variety of organisations. The influence of insti-

tutional ownership on managerial behaviour and policy is also discussed. Two theoretical perspectives on the relationship between institutional ownership and firm risk-taking predicting different outcomes are then presented. Following this, two Hypotheses that examine the competing hypotheses on the role of institutional investors and risk-taking are developed for empirical verification. The Hypotheses focus on differences among institutions. By focusing on differences among institutions in their ability to influence firm risk-taking activities, this thesis raises the potential of differentiating among the competing hypotheses.

Chapter 5 discusses data collection and defines the variables used in the empirical section. Data is collected over a nine-year period, from 1990 to 1998, with focus on two sample periods, 1994 and 1998, for the empirical analyses. Firms are selected from publicly traded companies in Finland satisfying two basic data requirements. First, it is required that ownership data be available for each sample year. Secondly, firms included in the dataset should have five consecutive fiscal years of stock market and financial statement data, including the focus year, for each sample.

The empirical methodology used in the thesis is a cross-sectional regression analysis in which the three measures of firm risk-taking adopted in this thesis are regressed against various measures of board of directors, block owners and institutional investors. The estimation models include controls for size and industry effects.

Chapter 6, 7, and 8 test the Hypotheses proposed in Chapters 2, 3, and 4, respectively. In all, seven Hypotheses are offered for empirical verification. Hypothesis 1, which investigates the impact of outsider-dominated boards of directors and risk-taking, is not uniformly supported across the three firm risk-taking measures. The hypothesis is supported when risk-taking is measured by income stream risk and not supported for strategic risk and stock returns risk. That is, there is some evidence that outsider-dominated board of directors have a negative and significant impact on firm-risk taking but only for some aspect of firm risk-taking.

The results of testing for Hypothesis 2 also produce dissimilar outcomes. The Hypothesis is supported when the firm risk-taking measure is capital intensity but not supported for risk-

taking measures based on income stream risk and stock returns risk. The board of directors are found to react significantly positive to risk-taking in the presence of growth opportunities when risk-taking is measured by industry or strategic risk. Similarly, the empirical results do not support a uniform acceptance of Hypothesis 3. Board of directors who own low equity stakes in the firm are found to negatively related to firm risk-taking when risk-taking is measured by income stream risk. The Hypothesis is not supported for the other two risk-taking measures, industry risk and stock returns risk.

Board size is found to exert a statistically significant influence on firm risk-taking when risk-taking is measured the income stream risk and strategic and industry risk. However, the coefficient for board size is significantly negative in the case of the former and significantly positive in the case of the latter. Hence, the Hypothesis is not supported when risk-taking is measured by capital intensity and beta, and supported when risk-taking is measured by the standard deviation of return on equity.

The findings relating to Hypotheses 1 to 4 have an important implication. That is, the risk-taking measures adopted in this thesis measure different aspects of risk and the board of governors relate differently to the different risk-taking measures. Furthermore, the relationship between the board of directors and risk-taking could be mediated by other factors such as growth.

On the whole, the evidence presented indicates that outsider-dominated boards of directors may have adverse implications for corporate risk-taking. Also larger boards generally appear to have a negative effect on risk-taking. There is the need, therefore, for shareholders to reconsider their approach in improving firm performance with respect to risk-taking. Specifically, shareholders need to explore ways to enhance the motivation of members of the board and foster their commitment to risk-taking. Rather than simply increasing the representation on a board of directors in general, and of independent outsider directors in particular, to aid and check management, shareholders should delve into other ways to promote directors' attention to risk-taking.

The results of the impact of block ownership on risk-taking shed interesting light on the benefits of disaggregating block ownership. McConnell and Servaes (1990) contend that many block holders are passive investors, providing little by way of monitoring. If passive block holders dominate then their monitoring role may be small and that could skew the results of the regression. Indeed, results for the whole data set suggest that block ownership, on average, exert no measurable influence on corporate risk-taking. Similarly, a statistically insignificant relationship between passive block holders and firm risk-taking was found. Hypothesis 5 posits a positive relationship between the level of equity ownership by active block holders and firm risk-taking. This Hypothesis is supported for risk-taking measures based on income stream risk and industry or strategic risk. It is, however, not supported when risk-taking is measured by stock returns risk.

Hypothesis 6 suggests a positive relationship between pressure-sensitive institutional investors and corporate risk-taking. The Hypothesis is supported for all three measures of firm risk-taking adopted in this thesis. That is to say, pressure-sensitive institutional investors exert positive and measurable influence on firm risk-taking. Given Pound's (1988) conflict-of-interest hypothesis, the results suggest that the ability of this group of institutional investors to influence managers with appropriate incentives to increase firm value through risk-taking dominates management power to coerce them to adopt risk-reducing strategies. The evidence presented for this group of institutional investors favours Pound's (1988) efficient monitoring hypothesis and rejects his conflict-of-interest hypothesis.

In Hypothesis 7, a negative relationship between pressure-resistant institutional investors and firm risk-taking is proposed. Unlike Hypothesis 6, the empirical results produce inconclusive results. A positive and statistically insignificant relationship between firm risk-taking and pressure-resistant institutional investors was found when risk is measured by the proxies for income stream risk and strategic or industry risk, thereby, not supporting the hypothesis. The results for these two measures for risk-taking are consistent with the findings of Jarrel and Lehn (1985), Hansen and Hill (1991) and Kochhar and David (1996). The hypothesis is, however, supported when risk-taking is measured by stock returns risk, thereby, giving some credence to the findings of Graves (1988).

The literature suggests two competing Hypotheses on the relationship between institutional ownership and firm risk-taking. The efficient market institutional theory posits a positive relationship between the level institutional ownership and firm risk-taking. The myopic institutional theory predicts the opposite effect. Hypotheses 6 and 7 test these competing hypotheses. The combined results indicate that, on average, institutional owners do not invest for the short term. However, there could be instances when some institutional owners act to meet short-term goals. Generally, the empirical results suggest that the basis of the myopic investor viewpoint needs to be re-examined.

The research contributes to the body of empirical literature that examines whether boards of directors, block and institutional ownership are factors in corporate risk-taking. Mayer (1997:152) remarked that *corporate governance has become a subject on which opinion has drowned fact.* To play a part in reversing Mayer's (1997) remarks, this thesis makes contributions which add to the existing stock of knowledge on how some elements of the governance may influence the economic performance of companies. The contributions of this thesis to the existing literature enhance our understanding of the governance process and business prosperity, an important aspect of corporate performance.

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Appendix 1

Shleifer and Vishny (1986) offer proof to the theorem and lemma 1 to 4 mentioned in Chapter 3. These are presented below:

Proof of theorem

Consider any pure strategy sequential equilibrium in which all L types with $Z \geq Z'(\pi')$ bid $q + \pi'$ and those with $Z < Z'(\pi')$ do not bid. (This includes the case in which no L bids, i.e., $Z' > Z_{MAX}$.) First, note that all pure strategy equilibria must be of this form since there can be only one equilibrium bid given that bidders will always be better off making the minimum acceptable bid. Second, notice that we must have $\pi' > \pi^*(\alpha)$ because it is rational for small shareholders to accept a bid only if equation (4) is satisfied. Finally, note that for any $\pi' > \pi^*(\alpha)$ or $Z' > Z_{MAX}$ there is a unique set K of deviators- consisting of those potential bidders who can make a nonnegative profit by taking over with a bid of $q + \pi^*(\alpha)$- who would be better off bidding $q + \pi^*(\alpha)$ if that bid were accepted. Moreover, if small shareholders believe that the set of deviators is K, then they will accept the bid, by definition of $\pi^*(\alpha)$. But then a bid of $q + \pi'$ or $Z' > Z_{MAX}$ is inconsistent with equilibrium if we insist on credible out-of-equilibrium beliefs in the sense of Grossman and Perry (1984).

To see that the $q + \pi^*(\alpha)$ equilibrium can be supported by credible out-of- equilibrium beliefs, consider the following beliefs. For any bid $q + \pi \neq q + \pi^*(\alpha)$, let small shareholders believe that Z is a random draw from the distribution $F(Z)$ restricted to the set of L types who would be better off making that bid if it is accepted than they would be playing according to their equilibrium strategy, that is, bidding $q + \pi^*(\alpha)$ or not bidding. If there are no L types who are better off deviating, then small shareholders just believe that Z is a random draw from the entire distribution $F(Z)$. These beliefs are credible since deviation would be rational only if the beliefs lead to acceptance of the bid. Hence beliefs

have been assigned consistent with the only candidate for the set K. Also, the $\pi^*(\alpha)$ equilibrium is supported by these beliefs. Any bid $q + \pi < q + \pi^*(\alpha)$ will be rejected since, if it is accepted, all those making a non- negative profit bidding $q + \pi$ will deviate, but no π less than $\pi^*(\alpha)$ satisfies (4). Further, no L would ever bid $q + \pi > q + \pi^*(\alpha)$ as long as $q + \pi^*(\alpha)$ is accepted.

Proof of Lemma 1

$\alpha_2 > \alpha_1$ implies $(1 - 2\alpha_2)\pi + 2_{cT} < (1 - 2\alpha_1)\pi + 2_{cT}$ for any $\pi > 0$. Thus any π satisfying (4) for $\alpha = \alpha_1$ will satisfy (4) for $\alpha = \alpha_2$. Since $\pi^*(\alpha)$ is the minimum π satisfying (4), we must have $\pi^*(\alpha_2) \le \pi^*(\alpha_1)$.

Proof of Lemma 2

$.5Z^c(\alpha) - (.5 - \alpha)\pi^*(\alpha) - c_T = 0$ implies $Z^c(\alpha) = (1 - 2\alpha)\pi^*(\alpha) + 2c_T$. Since $\pi^*(\alpha)$ decreases in α and $\alpha < .5$, $(1 - 2\alpha)\pi^*(\alpha)$ is strictly decreasing in α.

Proof of Lemma 3

$I^*(\alpha) = \arg\max_{I \in [0,1]} B(I,\alpha) - c(I)$. Since $\partial^2 B(I,\alpha)/\partial I^2 = 0$ and $c''(I) > 0$, I^* increases with $\partial B/\partial I = E\max[.5Z - (.5 - \alpha)\pi^*(\alpha) - c_T, 0]$. But $(.5 - \alpha)\pi^*(\alpha)$ decreases with α so that $.5Z - (.5 - \alpha)\pi^*(\alpha) - c_T$ increases with α for each realization of Z. Thus $\partial B/\partial I$ increases with α and so does I^*.

Proof of Lemma 4

Suppose $\alpha_2 > \alpha_1$. Then $Z^c(\alpha_2) < Z^r(\alpha_1)$. Write

$$E[Z/Z \geq Z^r(\alpha_2)] = E[Z/Z \geq Z^c(\alpha_1)] \cdot pr\{Z \geq Z^r(\alpha_1) | Z \geq Z^c(\alpha_2)\}$$

$$+ E\{Z | Z \in [Z^c(\alpha_2), Z^c(\alpha_1)]\}$$

$$\cdot pr\{Z \in [Z^c(\alpha_2), Z^c(\alpha_1)] | Z \geq Z^c(\alpha_2)\}$$

Then

$$\{1 - F[Z^r(\alpha_2)]\}E[Z | Z \geq Z^r(\alpha_2)] = E[Z | Z \geq Z^c(\alpha_1)]\{1 - F[Z^c(\alpha_1)]\}$$

$$+ E\{Z | Z \in [Z^c(\alpha_2), Z^c(\alpha_1)]\}$$

$$\cdot pr\{Z | Z \in [Z^c(\alpha_2), Z^c(\alpha_1)]\}$$

Since the second term in the last expression is nonnegative, it is proven.

Appendix 2

In Appendix 2, a list of firms included in the dataset is presented. This list is extracted from the list of listed firms provided by the Helsinki Stock Exchange. The names of firms appear as given from the said source. That is, for the given sample year, the names of firms appear as of that year. Change of name by firms at a later date is not noted.

Table A1. Names of firms in each sample year.

1994		
AAMULEHTI-YHTYMÄ OY	J. TALLBERG OY	RAUTE OY
AMER-YHTYMÄ OYJ	KESKO OYJ	STARCKJOHANN OYJ
ASKO OY	KONE OYJ	STROMSDAL OYJ
ATRIA OYJ	KEMIRA OYJ	STOCKMANN OY
CASTRUM OY	KYMMENE OY	TAMFELT OYJ
COMPONENTA OYJ	LASSILA and TKANOJA OYJ	TIETOENATOR OYJ
CULTOR OYJ	OY LEO-LONGLIFE	TAMRO OY
ENSO-GUTZEIT OY	LÄNNEN TEHTAAT OY	VAISALA OY
ESPOON SÄHKÖ OYJ	LÄNSIVOIMA OY	VALMET OYJ
FINNAIR OYJ	METSÄ-SERLA OYJ	WÄRTSILÄ
FISKARS OY	NEPTUN MARITIME	W. SÖDERSTRÖM OSA-KEYHTIÖ
FINNLINES OY	NOKIA OYJ	YIT OY
OY FORD AB	OUTOKUMPU OYJ	
OY HACKMAN AB	PARTEK OY	
OY HARTWALL AB	POLAR-YHTYMÄ OY	
HUHTAMÄKI OY	RAISIO-YHTYMÄ OY	
INSTRUMENTARIUM OYJ	REPOLA OY	

INTERAVANTI OYJ	RAUTARUUKKI OY	
1998		
ALMA MEDIA OYJ	KONE OYJ	ROCLA OY
AMER-YHTYMÄ	KESKI-SUOMEN PUHE-LIN OYJ	RAUTAKIRJA OYJ
ASKO OY	KEMIRA OYJ	RAUTARUUKKI OY
ATRIA OYJ	KYRO OYJ	RAUTE OY
CASTRUM OY	LASSILA and TKANOJA OYJ	NEPTUN MARITIME
COMPONENTA OYJ	LEMMINKÄINEN OY	STORA ENSO OYJ
CITYCON OYJ	OY LEO LONGLIFE	STROMSDAL OYJ
CULTOR OYJ	LÄNNEN TEHTAAT OY	STOCKMANN OYJ
ELCOTEQ NETWORK OYJ	LÄNSIVOIMA OY	SUUNTO OYJ
ESPOON SÄHKÖ OYJ	METSÄ-SERLA OYJ	TAMFELT OYJ
FINNAIR OYJ	METSÄ TISSUE OYJ	TIETOENATOR OYJ
FISKARS OY	NOKIA OYJ	TAMPEREEN PUHELIN OYJ
FINNLINES OY	NOKIA RENKAAT OYJ	TAMRO OYJ
OY FORD AB	NORDIC ALUMINIUM OY	TULIKIVI OY
OY HACKMAN AB	NOVO GROUP OY	UPM-KYMMENE OYJ
OY HARTWALL AB	OLVI OYJ	VAISALA OY
HELSINGIN PUHELIN OYJ	ORION-YHTYMÄ OY	VALMET OYJ
HUHTAMÄKI OY	OUTOKUMPU OYJ	VIKING LINE AB
INSTRUMENTARIUM OYJ	PARTEK OYJ	WÄRTSILÄ OY
INTERAVANTI OYJ	PK CABLES OY	YIT OY
JAAKKO PÖYRY GROUP	POLAR-YHTYMÄ	

J. TALLBERG OY	PONSSE OYJ	
KCI KONECRANES IN-TERNATIONAL	RAISIO-YHTYMÄ OYJ	
KESKO OYJ	RAKENTAJAIN KONE-VUOKRAAMO	