

Analysis of the effect of the change in board composition of the companies listed in London Stock Exchange FTSE 100 Index on the effectiveness of the boards' risk management decision as measured by market-based beta between 2007 and 2010

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Research Proposal

“Analysis of the effect of board composition in FTSE 100 on the companies’ performance in risk management during the ongoing financial crisis”

Introduction

The Board of directors is the highest body of corporate governance and over the years has been subject to much research. Research on boards has concentrated at identifying attributes of the board which would make it as efficient as possible. One of the main attributes of the board of directors is its composition implying the proportion of non-executive directors over executive ones. The results of research examining the link between board composition and firm’s performance have so far been rather equivocal and therefore further research is needed.

The ongoing financial crisis as well as preceding high-profile corporate scandals draw significant attention to boards of directors and provoked a great number of debates over their role, structure, attributes, the way they treat their responsibilities and regulation on boards among other aspects. In this light the issue of board effectiveness as an institution and its role in a company’s performance becomes even more.

Background

Over the time different approaches of studying boards have developed. The traditional approach has been based on the agency theory with researchers trying to find a direct link between board attributes and firm’s performance. Agency theory is derived from the agency problem which exists when ownership and control in a company are separated and when independent governing body is needed in order to ensure that the management of the organization works in the best interest of shareholders (Zahra and Pearce 1989, Hermalin and Weisbach 2003, Shleifer and Vishny 2003). Agency theorists argue that boards with higher number of non-executive directors are more effective in serving their role in the company, which they define as control and monitoring (for a

literature review see Hermalin and Weisbach 2003, Daily and Dalton 2003). So far the results of studies based on this approach have been rather equivocal, failing to establish a strong relationship.

As a result, a different view on the board of directors has been proposed. Since the search for direct relationship had not led to consistent results several scholars came to a conclusion that there must be some link between board attributes and firm's performance. Forbes and Milliken (1999) argued that boards should be looked at as decision-making groups, and that processes which occur within any group and obviously affect its performance should be therefore studied as they probably are the missing link in the board attributes/firm's performance relationship.

Recent literature reviews indicate that studying boards from a traditional theoretical perspective has not led to a strong evidence of the fact that relationship between board composition and firm performance exists (Lynall, Golden and Hillman 2003; Daily and Dalton 2003, Macus 2008, Hermalin and Weisbach 2003, Johnson et al. 1996). However, there is evidence that boards with different composition make different decisions (Dahya and McConnell 2003). Due to the fact that decisions regarding risk management are one of the key decisions the board is responsible for and also the lack of study on the particular matter, research trying to explore the relationship between the board composition and risk management is needed.

Research Question

The question for this proposed research is whether or not board composition, as measured by the number of executive directors over non-executive directors, affects the performance in risk management among FTSE 100 listed companies in the London Stock Exchange during the ongoing global financial crisis, and the hypothesis is that Companies with higher proportion of non-executive directors over executive directors will see a lower increase or a higher decrease in beta values.

Methodology

FTSE 100 comprises the population for this study. The companies will be divided into three groups for the purposes of the study: (1) companies without changes in board composition over the last 12

month, (2) companies with such changes, (3) companies with such changes where the proportion of outside directors over inside ones decreasing as a result in board. Such division would allow studying all companies of the FTSE 100 and draw stronger conclusions about the studied relationship.

Market-based beta has been chosen as a proxy for measuring companies' performance in risk management for the purposes of this study. There are several reasons for choosing beta as a proxy. Firstly, it is a market-based measure of financial performance. Secondly, it is widely accepted as a measure for assessing a company's success in managing systematic risk.

The proposed research is going to utilize secondary data sources: published beta values for FTSE 100 available at the London Stock Exchange web site for the year 2008 and Yahoo! Finance for the current figure as well the board reports for the companies available at Hemscoff official website for the purpose of identifying board composition and changes in the board composition for the last 12 month. The research is going to be of quantitative character and study correlation between board composition and beta values. SPSS will be used for working with numerical data.

Main limitations of the proposed research are the allowed time frame and impossibility to access boards of directors which both make it infeasible to undertake primary research which in other case could have been complementary in studying boards more thoroughly.

Timescale

February 2010:

- Consultation with the supervisor
- Collection of data from previously identified secondary data sources.
- Division of the population into three sub-groups.

March 2010:

- Development of the SPSS model for the statistical analysis of the data
- Implementation of the analysis according to the research design.

- Consultation with the supervisor.
- Drafting the “Results” section of the dissertation addressing the research question.

April 2010:

- Consultation with the supervisor
- Writing the “Conclusions and Recommendations” section of the dissertation and completion of the draft.
- Consultations with the supervisor.
- Reviewing the draft and writing the final.

7th May 2010:

- Submission of the dissertation.

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Abstract

In this research the author examines the relationship between the change in board composition of the companies included in the FTSE 100 index of London Stock Exchange and its impact on the effectiveness of the boards' decisions regarding risk management reflected by the change in market-based beta.

The results of this study have identified no significant correlation between change in board composition for the companies in the index overall, but has found the presence of a significant negative relationship between the variables in the companies, whose boards' composition has changed in a way that the proportion of non-executive directors decreased between. The author discusses the implications of these findings in the context of existing research of the relationship between board composition and board decisions.

The study analysed the relationship between 2007 and 2010, assuming that the recent financial crisis has increased investors' attention to the way the companies are governed and subsequently in an increased activity of non-executive directors.

1. Introduction

Today the issue of corporate governance is more important than ever. Recent global financial crisis and preceding corporate scandals such as Enron, WorldCom and Adelphia (CNN Money 2002), to name a few, have drawn significant attention to public companies, and the way they are governed in particular, as some of the industry analysts call unchallenged executive decisions as one of the major reasons of the global financial collapse (Brockett 2009). Boards of directors, as companies' highest governing bodies with primary aim of monitoring companies' management, have attracted special attention.

1.1. Statement of the problem

Over years boards of directors have provoked considerable amount of research trying to identify which set of board characteristics would have the most positive impact on board performance. The relationship between board composition and firm performance has been of special interest for researchers but the results of studying this relationship so far have been rather equivocal. The current attention devoted to the subject of boards has established a new string of debates over their role, structure, attributes, the way boards treat their responsibilities and regulation on boards among other issues. In other words, the issue of board effectiveness as an institution and its role in a company's performance becomes even more relevant to various stakeholders of the companies these boards govern (Boasack & Blinka, 2010).

Poor corporate risk management practices have been identified as one of the key reasons of the recent financial crisis (Preimesberger, 2008). Although, the management of risk is the task of a company's management, it is board of directors that holds responsibility for the oversight of risk management strategy development and implementation in the company it governs (Lipton et al, 2008). It is also the responsibility of the board to effectively take decisions which objectively serve the interests of the company and its shareholders (Financial Reporting Council, 2008), which includes making sure that the risk management strategy is designed and implemented accordingly, as recommended by the Combined Code of Corporate Governance 2008 which serves as a guidance for boards of the companies listed on London Stock Exchange.

Linking the obvious flaws in companies' risk management in the past and boards' fulfillment of their duties, it has been observed that in numerous organizations boards have traditionally been passive in performing their functions which many argue could had led to excessive managerial control and subsequently to a string of corporate scandals and global financial crisis (Reynolds, 2008). The realization of the need for major changes in the board regulation led to the Sarbanes-Oxley Act of 2002 which among other issues included board-composition rules.

The problem this study aims to address is, therefore, the relationship of board composition and corporate risk management performance. It was only logical to assume that an increased level of monitoring of boards by various stakeholders has caused boards to perform their functions, including risk management oversight, with more responsibility, which could potentially have a positive effect on companies' performance.

1.2. Purpose

The goal of the proposed study is therefore to contribute to the existent body of knowledge of the board of directors and further explore the presence of the relationship between board composition and firm performance, especially in the light of the current developments. In particular, the study concentrates on examining whether the proportion of outside directors in the board has an influence on companies' performance in risk management.

1.3. Significance of the study

The findings of this research contribute to the empirical theory on boards that can assist practitioners in their decisions. The relationship, if established, would be another step towards understanding the way boards of directors affect firms' performance as well as contributing to developing stronger and more consistent evidence on the fact that board composition and firm performance are indeed correlated. It can also serve as a point for further, deeper investigation on the way board composition and performance in risk management are correlated and therefore encourage more research on the subject.

In case the relationship is not established, the research will be yet another piece of evidence in support of the hypothesis of non-existent straightforward relationship between the board composition and firm performance. This, in turn, will encourage some researchers to try other ways to prove that the relationship exists and add confidence to those who are in favor of alternative methods of exploring this issue.

1.4. Research question

The research question this study aims to explore is whether the changes in board composition, as measured by the number of executive directors over non-executive directors, in between 2007 and 2010 affected the performance in risk management as measured by market-based beta among the companies listed in London Stock Exchange FTSE 100.

2. Background

2.1. Literature Review

a. Introduction to corporate governance and boards of directors

Corporate governance has always been an important part of finance research. This can be explained by the importance of the role that corporate governance plays and the number of stakeholders it has direct or indirect impact on. For years, scholars have tried to identify the most effective organisation of corporate governance. supported by the fact that nowadays most countries in the world have their own corporate governance codes and are placing more emphasis on improving corporate governance (Centre for Corporate Governance Research, 2008). More and more companies adopt codes of best practice and implement various steps at improving corporate governance systems to increase investor confidence and decrease a chance of fraud in the future (Centre for Corporate Governance Research, 2007).

The study of corporate governance is complicated by the fact that the structure, role and impact of boards have been studied from a variety of theoretical perspectives, which in turn have resulted in a number of sometimes competing theories concerning corporate governance (Kiel & Nicholson, 2003). The literature review presented below gives greater insight in these theories and approaches and leads to the justification of hypothesis.

Shleifer and Vishny (1997) identify corporate governance mechanisms as “economic and legal institutions that can be altered through the political process – sometimes for the better” and present a point of view that there is no need to worry about governance reform since “in the long run, product market competition would force firms to minimize costs, and as part of this cost minimization to adopt rules, including corporate governance mechanisms, enabling them to raise external capital at the lowest cost”.

One of the main mechanisms of corporate governance system is a board of directors. Hermalin and Weisbach (2003) in their survey of economic literature on boards of directors define the board as

“an economic institution that, in theory, helps to solve agency problems inherent in managing an organization” (p. 7). As an important mechanism of corporate governance system and in accordance with the definition by Shleifer and Vishny described earlier, a board of directors is one of the legal requirements for the majority of incorporations to exist and have seen many changes and reforms in attempting to improve their work and effectiveness.

The effectiveness of the board of directors as a corporate governance tool is a subject to much debate. On the one hand the ownership and control are separated which creates an agency problem that leads to potential self-motivated behavior of companies’ managers and, as a result, harms shareholders. On the other hand, however, laws of many countries require firms to have them. Addressing this issue, Hermalin and Weisbach (2003) point out that although boards as a solution may not be perfect, they had existed long before their presence was required by law, and their size is also generally larger than it is required by law. They also assure the point of view of Shleifer and Vishny that were the boards simply a product of regulation and representing only a cost for a company, they would be most likely eliminated in the market conditions over the time of their existence. They conclude by defining boards as “a market solution to an organizational design problem, an endogenously determined institution that helps to ameliorate the agency problems that plague any large organization” (Hermalin and Wesibach 2003, p. 9).

Given the high importance of the role that boards play in corporate governance today there is no surprise that they are paid enormous attention in the corporate governance research.

These contradictions and lack of clarity and theoretical support on the rela effectiveness of boards as a core mechanism of corporate governance led numerous scholars to concentrate their efforts on studying the various board characteristics and their relationship with firm’s performance.

Over time the research on boards has taken different approaches such as theoretic approach based on different theories which describe different roles the board plays in the company, group processes approach based on studying boards as work groups which activity and performance are highly influenced by the processes within the group, and the approach of integrating the two previous approaches together. Each of the approaches is described below in more detail.

b. Introduction to corporate governance and boards of directors

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c. Theoretic approach to examining boards

For the years researchers from different disciplines such as finance, economics, law, strategic management and sociology have studied corporate governance in attempt to explain various roles of boards and determine characteristics of the most efficient board (Kiel & Nicholson 2003). As a result different theoretical perspectives of studying corporate governance have emerged. Three most dominant theories are agency theory, stewardship theory and resource dependence theory with agency theory being the dominant one (Hermalin and Weisbach 2000). Through these theories scholars tried to explain different roles of boards and how board attributes such as composition or size influence the way boards serve their roles and therefore having a direct impact on firm's performance (Johnson et al. 1996, Lynall et al. 2003, Daily et al. 2003). Agency theory, stewardship theory and resource dependence theory and their implication to board research are described below.

Most of the existent research on the boards of directors is based on agency theory which is only concerned with the monitoring role of directors. Many scholars have identified other significant roles that boards of directors serve such as resource, service, and strategy roles. This limitation of the agency theory makes researchers consider other theoretical foundations. An important aspect of broadening the focus beyond directors' monitoring role is considering theoretical foundations other than agency theory (Dalton et al 2003; Dalton et al 1998; Lane et al 1998).

i) Agency theory

Agency theory has been the dominant theory in corporate governance research (Hermalin and Weisbach 2000). The theory is rather straightforward and explains agency problem which occurs when ownership and control are separated which nowadays occurs in the absolute majority of public companies. According to the perspective of agency theorists the main purpose of the board of directors is to solve the agency problem. In order to analyze boards, it is therefore important to first examine the agency problem and the way it affects the system of corporate governance in today business as well as look at the results of past governance research based on agency theory.

Agency problem has been an important issue for economists for a very long time. Adam Smith (1776) addressed agency problem and boards of directors in his work: “The directors of [joint stock] companies, however, being the managers rather of the people’s money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance [as owners] Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company (p. 700).”

As it is clear from the Smith’s definition agency theory, separation of ownership and control in modern corporations is the ultimate reason behind the agency problem. It is argued that such characteristic of a modern firm is likely to lead to managers exploiting their power and control of the firms entrusted to them by the shareholders in order to achieve personal gain, even at the cost of the interests of the people whose interests they – managers – are there to represent. The reason it is possible is because managers have all the knowledge and expertise relevant to the companies’ operations while owners are largely unaware of their companies’ business routines or do not hold the knowledge necessary to be involved actively in their firms business.

There has been a lot of effort over the years aimed at reduction of the agency problem in order to ensure that management works in an interest of shareholders. Various regulations have been imposed on the boards of directors as well as different measures on how to encourage management to serve their duties and not taking advantage of their control power. One of such measures is the inclusion of the outside directors in the governing board with primary task (from the agency perspective) to monitor the work of inside directors (Hermalin and Weisbach, 2003).

The most widely accepted solution for the agency problem is the creation of a governing body which would monitor firms’ managers on behalf of the owners. This governing body is known as board of directors. This view is accepted by numerous researchers. In their overview of corporate governance Shleifer and Vishny (2003) point out that the agency problem in the organizations “necessitates monitoring mechanisms designed to protect shareholders as owners of the firm” and that one of the board of directors’ main purposes is to “serve this monitoring function”. Hermalin and Weisbach (2003) also recognize the board of directors as “an economic institution that, in

theory, helps to solve the agency problems inherent in managing an organization". Dalton et al., (not sure) in the study identify the board of directors as "a mechanism to protect shareholders from managerial self-interest".

However, the effectiveness of the board of directors as a solution of the agency problem is still an open question. In their review Hermalin and Weisbach (2003) mention that "formal economic theory on boards to date has been quite limited" and that "The characteristics of agency problems that could lead to boards being the equilibrium solution have not yet been specified".

The main purpose of boards of directors is frequently identified as maximizing shareholder value (find references). Some scholars, however, argue that rather than concentrating their work exclusively on maximizing shareholders' wealth, boards of directors are in fact a balancing force between various interests of multiple stakeholders of public firms (Dalton et al., Blair and Stout).

With the reference to the work of Bosch (1999) as well as reports by Committee on the Financial Aspects of Corporate Governance (1992) and OECD (1999), Kiel & Nicholson (2003) conclude that agency theory dictates that the majority of directors on the board have to be non-executive and, ideally, independent. Boards with the domination of outside directors are also recommended by the Combined Code of Corporate Governance (Financial Reporting Council 2008). According to Surname non-executive or "non-management directors are believed to provide superior performance benefits to the firm as a result of their independence from firm management". This view is supported by several empirical studies on boards identified in the work of Surname. The authors also indicate that only isolated studies provide empirical evidence in support of higher effectiveness of outsider-dominated boards (Kiel & Nicholson 2003). Past research has indicated that outside directors were positively associated with profitability among a sample of U.K. firms, that firms with outside dominated boards enjoyed higher return on equity and positive relationship between the higher number of outside directors in the board and firm performance in general (find out about the use of references here).

The majority of the studies, however, have not found a strong relationship. A meta-analysis based on 159 samples of board composition and its relationship with firm performance (Dalton, Daily

Ellstrand and Johnson 1998) has not established any significant relationship. The results of Rhoades, Rechner and Sundaramurthy (2000) based on a similar analysis based on 37 samples have shown a very small relationship between the proportion of outside directors and firm performance. In their study of Australian firms Kiel and Nicholson (2003) have found that the proportion of outside directors has a significant correlation with the market-based measure of performance, but no significant correlation with the accounting-based measure. All in all however, there is a lack of consistent evidence in support of significant relationship between board composition and firm performance (Dalton, Daily, Johnson and Ellstrand 1999, Dalton *et al* 1998, Johnson, Daily and Ellstrand 1996, Kiel and Nicholson 2003).

ii) Stewardship theory

An alternative theory to the agency theory is stewardship theory. It is based on the idea that the domination of insider directors in the board demography makes the board more effective. The theory argues that the firms' managers are reliable stewards of the firms entrusted to the by shareholders and do not make a selfish use of the companies' resources (reference).

Researchers have identified several benefits of inside directors. Firstly, there is obvious advantage that inside directors have over outside directors — extensive and deep firm specific information that would allow them to perform a better control over the firm's top managers. Secondly, several empirical studies have reported a positive relationship between inside directors and corporate R&D spending, the nature and degree of diversification, and CEO compensation. Thirdly, inside directors have been associated with higher firm performance in general. For example, a positive and significant relationship between the proportion of inside directors and returns to investors has been established.

iii) Resource dependence theory

Resource dependence theory argues that firm depends on external environment and its players. In this perspective boards are viewed as a means to manage this dependency and help a firm extract a maximum gain from its external environment (Macus 2008). Lynall et al. (2003) listed four

different types of resources which a board can provide. They are: advice and counsel, legitimacy, channels for communicating information between the firm and external organizations, and assistance in obtaining resources or commitments from important elements outside the firm. It is also argued that board members will be chosen based on the resources that they can bring to the company. Daily and Dalton (2003) noted that outside directors can significantly reduce a firm's cost and enhance organizational functioning and performance. Helping a company to gain useful links with organization within its external environment, favorable relationships with financial institutions or legal advice, depending on the outside director and their primary job, can serve as examples.

b) Alternative perspective on studying boards

As it has been stated above board of directors has been an important part of the corporate governance research and finding the relationship between the board attributes and firm performance has always been of prime interest for researchers. Surprisingly, after many years of scientific work the relationship has not been established. Many scholars in their review of the existent research on boards discussed the reasons for such weak results and proposed their view on the direction the future research on boards should take (Forbes and Milliken 1999, Macus 2008, Dalton et al. 2003, Hillman and Dalziel 2003, Lynall et al. 2003).

In recent years, it has been argued that unitheoretic approach to studying boards (research based on a single theory such as agency theory, e.g.) does not capture all the roles of the boards and therefore has serious limitations. In their studies attempted to integrate several theories into multitheoretic approach to studying boards. This approach is also reviewed in the following section.

Several researchers argue that the reason why the results of research on boards have been rather equivocal is the fact that scholars concentrate their study of boards based on a single theory only, e.g. agency theory, and suggest that multitheoretic approach to studying the relationship between board tasks and firm performance would be more fruitful (Lynall, Golden and Hillman 2003; Daily and Dalton 2003, Macus 2008, Hermalin and Weisbach 2003).

Daily and Dalton (2003) come to a conclusion that different theoretical perspectives on studying boards should be viewed as complementary and not as substitutes to the dominant agency theory. They argue that multi-theoretic approach would likely lead to a deeper understanding of what makes boards more effective in serving their multiple tasks. This view is enforced by Lynall, Golden and Hillman (2003) who agree that it is not worth arguing which theory is more useful in understanding what makes different kinds of board composition more or less effective and suggest that different theories can explain or predict the board composition in different stages of the organizational life cycle.

Another emerging perspective on studying boards is looking at them as a small group of people or a team working together in order to achieve certain goals and studying processes that occur within this group and influence its effectiveness (Forbes & Milliken, 1999). In their work researchers present a comprehensive analysis of the boards of directors from this perspective. Defining the reasoning behind the need for boards they establish a high importance of the fact that the essential quality of boards is the fact that they are in groups of individuals working together. According to the researchers “the very existence of the board as an institution is rooted in the wise belief that the effective oversight of an organization exceeds the capabilities of any individual and that collective knowledge and deliberation are better suited to this task.” (Forbes & Milliken, 1999)

Discussing further they refer to the board’s tasks of control and service and establish that those “to be performed effectively, require that board members cooperate to exchange information, evaluate the merits of competing alternatives, and reach well-reasoned decisions”.

The issue of whether it is worth studying board processes caused a debate among the researchers. Some argue that studying the processes within boards to understand how they impact board effectiveness and its impact on firm performance is not necessary for one simple reason that since the relationship between board attributes and firm performance can be established based on the existent governance theories and input/output approach there is no need of studying processes as a link between board attributes and firm performance (Pfeffer 1983).

However, the results of the input/output research practiced by scholars trying to find the relationship based on agency theory, for example, have been equivocal and are yet to establish a significant link between board attributes and organizational performance (Hermalin and Weisbach, Dalton et al. 1998, Zahra and Pearce 1989). Another argument in support of the need to study board processes in studying boards is that in the majority of the research based on the input/output approach the possible impact of processes has not actually been studied (Forbes and Milliken 1999). Furthermore, there is evidence in the research of group dynamics that understanding processes within groups play an important role in understanding of group dynamics and that a even a single group characteristic can have multiple effects on group performance (Forbes and Milliken 1999).

Developing their model of board processes the authors identified criteria which they argued to be determinants of board effectiveness with the first one being board task performance which measures boards ability to perform its control and service tasks effectively and the second one being board's ability of working together at a continuous basis or in other words cohesiveness of the board. They concluded that "the effectiveness of boards is likely to depend heavily on social-psychological processes, particularly those pertaining to group participation and interaction, the exchange of information, and critical discussion" (Forbes and Milliken 2003, p. 492). Huse and Zattoni (2008) note that developing the research of boards from a behavioural perspective, the need of which was established by Forbes and Milliken (1999) is a challenge.

An emerging perspective on the research of boards is studying boards as decision-making groups and analyzing how group behavior within boards affects their performance (Forbes and Milliken 1999, Huse and Zattoni 2008, Finkelstein and Mooney 2003, Letendre 2004, Huse 2007). Huse and Zattoni (2008) that the treatment of a board as "black box" and simply compare its demographic variables with various indicators of firm performance, assuming that particular demographic variables such as board composition or structure cause particular board behavior, does not seem promising. Forbes and Milliken (1999) establish the need for deeper exploration of intervening

processes such as interactions, trust, leadership, working style, task performance, trust, etc. within boards that might have significant impact on their behavior.

In his work on board capability Macus (2008) argues that isolation of different perspectives on board research has been the main problem preventing researchers from finally understanding what makes board effective. On the one hand, there is multitheoretic research on boards which focuses on the study of one board task derived from a single theory as it is in a case of the board's control and monitoring role derived from the agency theory. On the other hand there is research on board processes which are believed to be the missing link preventing the input-output research from succeeding (Forbes and Milliken 1999). Macus (2008) argues that in order to truly understand how boards work and explain the relationship between the board and firm performance researchers should pay attention to interaction within boards, something he believes is a crucial link between board's roles and processes.

Taking into consideration all of the above described perspectives on studying boards, it can be concluded that the search for the ideal characteristics of boards of directors should concentrate on "opening" the "black box" that is a board of directors and analyse them from the perspective of group processes and behaviour.

2.2. Justification of Hypothesis

As it is clear from the above review of the literature on boards the empirical evidence on the relationship between the board composition and firm performance is quite equivocal. However, there is a lot of evidence that boards with different composition make different decisions (Dahya & McConnell, 2005, Uzun, Szewczyk & Varma, 2004, Rosenstein & Wyatt, 1990). Due to the fact that decisions regarding risk management are one of the key decisions the board is responsible for and also the lack of study on the particular matter, research trying to explore the relationship between the board composition and risk management is needed.

Furthermore, it has noted that the possible reasons behind the research on boards from the agency perspective failing to produce strong evidence for the existent relationship between board

composition and firm performance are their passiveness or little involvement in their duties. Taking their argument into account, it seems to be especially attractive to study boards now since the ongoing financial crisis as well as preceding high-profile corporate scandals, boards attracted much attention and debate over their effectiveness and the way they perform their responsibilities.

Besides, new regulations have increased accountability of board members, including non-executive directors. Since boards became much more monitored by both investors, mass media and public eye, it is logical to assume that members of the board began treating their responsibilities much more seriously which logically leads to an assumption that if the link between board composition and firm performance exists, it will be stronger in times when boards of directors fulfill their duties with higher degree of responsibility and devotion. Additionally, past research in numerous cases succeeded in establishing links between board composition and market-based performance measures (Kiel and Nicholson 2003).

According an agency theory perspective and the existing evidence that board composition in many cases has a significant effect on board decisions the hypotheses for this study will be:

Hypothesis (1): The change in board composition, in either direction has an impact on the effectiveness of board's decisions regarding risk management, reflected by the change in the market-based beta.

Hypothesis (2): An increase in the proportion of non-executive directors in the companies' boards would result in the decrease in the company's Beta.

Hypothesis (3): A decrease in the proportion of non-executive directors in the companies' boards would result in an increase in the companies' beta.

3. Methodology

The companies which were listed in the FTSE 100 index of London Stock Exchange (London Stock Exchange, 2010) in both 2007 and 2010 comprise the population for this study. This is needed in order to be able to assess the change in board composition and beta in the studied companies.

The study will compare the companies in the index in terms of change in board composition and beta ratio for 2007 and 2010. For the purposes of the study the whole population will be divided into three groups. One group would consist of companies which did not have changes in the board composition over the last 12 month. The second group would include all the companies where the changes in board composition led to the increased proportion of outside directors over inside ones. The third group of companies would be comprised of the companies which had changes in board composition with the result of decreased proportion of outside directors over inside directors. It should be noted that board composition changes are determined based on the proportion of executive directors over non-executive directors and not on the change of the actual number of directors in the board. Thus a company with 3 executive and 6 nonexecutive directors in 2007 and 5 executive director and 10 non-executive directors in 2010 will be considered as the one with no change in board composition.

Such clustering of companies would allow studying all companies of the FTSE 100 and draw stronger conclusions about the relationship between board composition and firm performance. In case of the relationship between board composition in the companies from the first group and their performance in risk management is established it is likely that the examinations of the companies from the second and the third groups are going to lead to even stronger evidence of the relationship.

There are two types of performance measures that researchers use to assess firm's performance. They are accounting-based and market-based performance measures. In their research scholars may use either one of them or a combination of both (Daily et al). Daily identifies five main disadvantages of the accounting-based measures of financial performance. Firstly, they can be

manipulated. Secondly, they may undervalue assets. Thirdly, they might create distortions due to the nature of depreciation policies elected, inventory valuation, and treatment of certain revenue and expenditure items. Fourthly, they might differ in methods adopted for consolidation of accounts. And fifthly, they lack standardization in the handling of international accounting conventions. She also notes that “financial accounting measures do not normally account for shareholder risk” which means that the application of accounting performance measures would not be useful for this particular study. Market-based returns on the other hand do reflect risk-adjusted performance and since market-based beta coefficient is a widely accepted market-based measure for assessing company’s systematic risk and conclusions on companies’ performance in risk management can be drawn from it. For these reasons beta has been chosen as a proxy for measuring the companies’ performance in risk management for the purposes of this study.

The proposed research is aimed at identifying the presence of the link between board composition and firm’s performance in risk management.

The proposed research is going to utilize secondary data sources: published beta values for the companies listed in FTSE 100 Index of LSE for the years 2007 and 2010 are published at ADVFN ([ADVFN](#), 2010). Beta ratio is available from multiple sources such as Yahoo! Finance or Reuters.com but when comparing values for two different years it is important to make sure the ratios are calculated consistently. The fact that current beta ratios for the companies varies in all above mentioned sources suggests that different publications calculate beta based on market returns for different time periods. Since when and how long these periods were is not disclosed it is important to collect data for two years from a single source. Due to the fact that historic beta values were only available at ADVFN, current beta values were also taken from there. Information about board composition of the companies is available at Hemscott Company Guru (Hemscott, 2010) for the year 2010 and in the companies’ annual reports for the year 2007.

The research is going to be of quantitative character and study correlation between board composition and beta values. SPSS will be used for working with numerical data.

Main limitations of the proposed research are the allowed time frame of one academic semester as well as limited resources at hand. Undertaking primary research examining the board processes with a special attention to risk management decisions could be a great supplement but for the following reasons it is not feasible in practice. Firstly, gaining access to actual board's activities is nearly impossible, especially in the times of crisis. Even if it is, the degree of credibility and fullness of the information disclosed would be impossible to assess. Secondly, even if the access to one or several boards would be gained, gaining access to the boards of all companies from the sample is beyond realistic. Thirdly, primary research of so many boards would take far more time than is given for the research.

One of the limitations is the availability of the information. For this reason FTSE 100 Index was chosen as a population of the study since such information as beta ratio, both current and historical, is rather hard to obtain for other companies.

Another limitation is the extent to which the results of this study can potentially explain the relationship between board composition and risk. It is true that risk management decision is one of the core decisions that boards of directors are responsible for, but it does not allow speculation that board, and its composition in particular, is the only factor affecting company's systematic risk.

Moreover, the exact time when beta values for 2007 were taken and the time of the publication of the companies' annual reports with information about board composition at that time may be different, especially given the fact that the companies release annual reports at different times. This fact allows some level of uncertainty regarding the consistency of board composition & beta values prior to the crises.

4. Results

4.1. Statistical description of the sample

Table 2.1 (Appendix 2) provides statistics for the studied 79 companies for 2007. The average size of the board among the companies was 11.6709 with the smallest board being comprised of 6 directors and the largest one of 19. Executive directors were a minority in the boards with minimum number of executive directors being 1 while the minimum number of non-executive directors was 4. On average, non-executive directors dominated the boards with the mean proportion of non-executive directors in the boards being 66.6871%. The smallest proportion of non-executive directors was 45.50% meaning that one or some of the boards were insider dominated. Beta ratios ranged from a low 0.28 to 5.36 averaging at 1.0726.

Table 2.2 (Appendix 2) provides similar descriptive statistics for the studied 79 companies but for the year 2010. The average size of the board among the companies was 11.1772, a slight decrease from 2007. The smallest board included 6 directors and the largest one 21. The number of executive directors in the boards ranged from 1 to 8 with an average number being 3.4177. The number of non-executive directors ranged from 3 to 15 with averaging at 7.7595. On average, non-executive directors dominated the boards with the mean proportion of non-executive directors in the boards being 69.1023%, nearly 3% increase from 2007. The smallest proportion of non-executive directors was 50.00% meaning that none of the boards were insider dominated. Beta ratios ranged from a low 0.12 to 8.87 averaging at 1.1787.

Table 2.3 (Appendix 2) represents descriptive statistics of the change in beta, board size and proportion of non-executive directors in the studied 79 companies between 2007 and 2010. The differences in beta ranged from the biggest decrease of -0.74 to dramatic increase of 8.01. On average, beta ratio has increased by 0.1062. The changes in board size varied from the biggest board size reduction of 5 directors to the biggest increase, also of five directors. On average, the board size has increased by 0.4937 directors. The change in proportion of non-executive directors

varied from the decrease of 12.78% to an increase of 30.91%. On average, the proportion of non-executive directors in the boards of the studied companies has increased by 2.4153%.

4.2. Result of the Bivariate correlation analysis

In order to analyse the relationship between the companies' board composition, as measured by the proportion of non-executive directors, and beta ratios, bivariate correlation analysis through Pearson Coefficient was used. Correlation coefficient illustrates the magnitude and direction of relationships (Cooper & Schindler, 2008) and therefore suits for the purposes of the purposes of this study.

Table 3.1 (Appendix 3) represents the result of the bivariate correlation analysis of the change in the board composition and the change in beta for all 79 companies in the sample. Significance level of the correlation is 0.663. Such significance means that there is no significant relationship between the two variables if applied to all companies in the sample. Pearson correlation is negative but very insignificant being -0.090.

Table 3.2 (Appendix 3) represents the result of the bivariate correlation analysis of the change in the board composition and the change in beta for the companies in which the proportion of outside directors in the board has increased. Significance level of the correlation is 0.812. Such significance means that there is no significant relationship between the two variables when applied to companies with increased proportion of outside directors in the companies' boards. Pearson correlation is positive but very insignificant being 0.044.

Table 3.3 (Appendix 3) represents the result of the bivariate correlation analysis of the change in the board composition and the change in beta for the companies in which the proportion of outside directors in the board has decreased. Significance level of the correlation is 0.159. Such significance means that there is a significant relationship between the two variables when applied to companies with decreased proportion of outside directors in the companies' boards. Pearson correlation is negative equalling -0.290, indicating the presence of significant relationship between the variables.

Table 3.4 (Appendix 3) represents the result of the bivariate correlation analysis of the change in the board composition and the change in beta for the companies in which the proportion of outside directors has changed, in either direction. Significance level of the correlation is 0.505. Such significance means that there is no significant relationship between the two variables. Pearson correlation is negative equalling -0.090, indicating the presence of significant relationship between the variables.

For the companies, in which the proportion of outside directors in the board has not changed, bivariate correlation analysis is not applicable. However, since one of the variables (the proportion of outside directors in the board) has not changed it was interesting to investigate whether the other variable (Beta) has changed or stayed the same. Table 4.1 (Appendix 4) shows the average change of Beta ratio for the companies in this cluster. As can be seen from the table, the average change of Beta for 22 companies was 45.68%. Such result is caused by the presence of an unusual case as the Beta of one company (Thomas Cook) has increased by around 930%. Excluding this anomaly, the average change in Beta for the companies is an increase by 3.5%.

Table 4.1 also shows average change in Beta for the companies in which the proportion of outside directors in the companies' boards has changed in either direction. On average Beta decreased by 1.06% for the companies in Cluster 1 and an increase by 2,73% for the companies in Cluster 2. Comparing these results with the average change of Beta for the companies with an unchanged proportion of outside directors in the companies' boards, it can be concluded that the companies with an unchanged proportion of outside directors in the boards have experienced the highest average change in beta among all three clusters.

5. Discussion

5.1. General discussion of the results

The results of the research results lead to a conclusion that the change in board composition and change Beta ratio are not correlated in the scope of the overall sample. Therefore, hypothesis (1) that the change in board composition, in either direction has an impact on the effectiveness of board's decisions regarding risk management, reflected by the change in the market-based beta, cannot not confirmed. Hypothesis (2) which predicted that, in accordance with agency theory, an increase in the proportion of non-executive directors in the companies' boards would result in the decrease in the company's Beta is also rejected by the results of this study. Hypothesis (3), however, which predicted that, also in accordance with agency theory, a decrease in the proportion of non-executive directors in the companies' boards would result in an increase in the companies' beta, is confirmed since a negative relationship of small significance between the two variables has been identified. The results also show that the relationship between the change in board composition in either direction and the change in Beta does not exist.

The results in general show weak support to the agency theory perspective that higher representation of non-executive directors on a company's board leads to better board decisions. Rather, they might serve as indicators of investors' negative reaction on the decrease in the proportion of outsiders in the companies' boards. The impact of an increased proportion of outside directors on investors' perception of the companies' risk has not been identified. Contradictory results of this study can also be attributed to the limitations of the research, particularly in regards to the small size of the studied sample which can result in either very weak or very strong relationships (Cooper & Schindler, 2008).

Dahya and McConnell (2005) noted that the recommendation of greater representation of outside directors in corporate boards, which was included in many corporate governance guidelines published since 1993, underlies a presumption that 'boards with significant outside directors will make different and, perhaps, better decisions than boards dominated by insiders'. The results of

this study, however, suggest little support to the existence of the relationship between outsider-proportion of the boards and effectiveness of their decisions regarding risk. Only among companies with reduced outsider composition between 2007 and 2010 the small negative relationship with beta was identified.

Although failing to identify a significant relationship between board composition and its effectiveness in taking decisions regarding risk, the results of this study do not lead to a conclusion that board composition and board decisions are not correlated. The fact that one performance measure study is successful does not mean that it makes board efficient in everything (Sundaramurthy, 2000). Logically, the opposite is true as well – if one performance measure study is unsuccessful it does not mean that the board is inefficient in performing all of its tasks or that all of its decisions have negative effect on all performance indicators. In other words, the absence of a strong relationship between the change in board composition and change in beta should not lead to a conclusion that there is no relationship between board composition and various board performance proxies.

Previous studies have identified significant relationships between various demographic characteristics of boards and their decisions. Other studies have found the link between outsider representation and the level of fraud (Uzun, Szewczyk & Varma, 2004), with higher proportion of non-executive directors leading to lower risk of fraud, and the higher CEO turnover (Weisbach, 1988). The addition of a non-executive director to the board was found to have a positive impact on firm value (Rosenstein & Wyatt, 1990). Brickley, Coles and Terry (1994) identified a positive relationship between the announcement of poison pills and average stock market reaction for the companies with outsider-dominated boards and negative for the companies with board dominated by inside directors. Dahya and McConnell (2005) found that in the UK the board which complied with the proposed standards of increasing the number of non-executive directors in their boards, were more likely to appoint outside chief executive officers.

One of the reasons that affect the decrease in fraud rates among companies with higher outsider representation on their boards is that non-executive directors are motivated to responsibly

perform their control duties due to the fear of reputation loss and the risk of lawsuits (Fama & Jensen, 1983). Beasley (1996) also found a negative relationship between the higher outsider-proportion on the corporate frauds and likelihood of financial statement fraud which he argued was a result of the boards' better execution of its control and monitoring responsibilities.

Some scholars argued that for various firms, depending on the context, boards with different composition, outsider- or insider-dominated, may be more appropriate. Firms operating in highly uncertain environments, for example, may benefit from a board which has comprehensive inside information available through an insider-dominated board (Rhoades, Rechner & Sundaramurthy, 2000). Besides, Rediker and Seth (1995) found that in some cases, when a company is owned by one or several large stockholders, various monitoring mechanisms may well be substituted and owners may find higher proportion of outsiders unnecessary for monitoring purposes. This can be confirmed by the findings of Agrawal & Mandelker (1990) that indicated significant role played by institutional investors in monitoring corporate activity and reinforced by Shleifer & Vishny (1986) who argued that large investors are highly motivated to monitor managerial activity.

Another study has found that companies that have greater institutional ownership and stronger outside control of the board enjoy lower bond yields and higher ratings on their new bond issues. However, concentrated institutional ownership has an adverse effect on yields and ratings. These results are robust to a specification that controls for institutional ownership being influenced by bond yields. (Bonds and Yields).

The research of Coles, Daniel & Naveen (2005) also provides support that some firms may benefit from having boards with larger proportion of insiders. The scholars argue that 'certain kinds of firms might benefit from higher insider representation on the board. Inside directors possess more firm-specific knowledge. Thus we conjecture that firms, for which the firm-specific knowledge of insiders is relatively important, such as R&D-intensive firms, may derive greater value from having higher fraction of insiders on the board'. Thus, it was found that boards of bigger size and higher insider-proportion on the corporate boards are likely to increase a company's spending on R&D which was proved to have a significant impact on firm performance (Capon et al, 1990).

Board effectiveness in performing its monitoring function, however, is not influenced only by the number of outsiders in the corporate board. Several studies identified the relationship between board size and board's effectiveness in performing its monitoring role. Coles, Daniel & Naveen (2005), for example concluded that smaller boards are more effective at monitoring due to higher degree of cohesiveness, higher productivity while the effectiveness of large groups in performing their monitoring function is often hindered by such problems as social loafing and higher coordination costs.

Outside directors serve both to monitor top management and to advise the CEO on business strategy (Coles, Daniel & Naveen, 2005).

Boone et al. (2005) also found that, in accordance with the view that specific nature of the firm's competitive environment and managerial team – drive corporate board size and composition.

On the other hand, the companies that operate in an environment characterised by high level of organisational slack may find themselves in need of increased monitoring which outsider-dominated board presumably provide. Moreover, 'under these circumstances, outsider-dominated boards may more effectively mitigate the agency conflicts associated with the potential misallocation of excess resources' (Rhoades, Rechner & Sundaramurthy, 2000).

The boards with the equally balanced inside and outside representation may fail to achieve the benefits of either outsider- or insider-dominated board structures. This balanced approach hinders the governance process by limiting the availability and access to rich inside information or by limiting the will of the board to monitor and discipline managerial action. Moreover, it is possible that the conflict between two equal, and potentially opposing, forces results in a lack of coherent vision and/or action (Rhoades, Rechner & Sundaramurthy, 2000).

Carpenter & Westphal argued that in order to assess directors' ability to contribute to the strategic decision making process it is important to consider external determinants of directors' knowledge and perspective. The scholars found that 'the simple number of director appointments to other boards does not influence board involvement, appointments that have the potential to provide

directors with relevant strategic knowledge and perspective do enhance the board's ability to contribute to the strategic decision making process'. Their findings also show the potential power of models that link the broader, social-structural context in which boards are embedded, as well as the environmental conditions that surround them, with micro-behavioral processes that occur inside the "black box" of corporate boards.

Rhoades, Rechner and Sundaramurthy (2000) establish three other issues that must be addressed when examining the managerial effects of board composition. They are 'monitoring as a behavior, the quality of boards and their directors, and other mechanisms for achieving owner-interested actions' (Rhoades, Rechner & Sundaramurthy, 2000). According to Tosi and Gomez-Mejia (1994), insider/outsider ratios are no more than just proxies for the behavioral phenomena of monitoring. In the study they argue that the presence of insiders or outsiders on a board itself does not result into monitoring of managerial activity and even if it does, the monitoring is not necessarily done in the interest of shareholders. Rhoades, Rechner and Sundaramurthy (2000) addressed this issue and related it to board quality arguing that all outside directors are different based on their 'industry/occupation background, executive/managerial experience, time availability, and other potential skills or experience' (Rhoades, Rechner & Sundaramurthy, 2000). Based on these differences some non-executive directors are arguably more suited for better fulfilling of their roles.

An increased proportion of inside directors on a company's board may result in an increase in beta, which makes a company riskier in investors' eyes but it does not mean that it cannot have a positive impact on other decisions that a board is responsible for.

Although scholars are aware of the fact that small sample size studies can lead to certain errors in the conclusions (this is not always eliminated even by employing significance testing), the realities of sampling leaves no other choice but to rely on less than perfect samples.

One of the major problems in the study of the effect that outside directors have on the boards' decisions is the difficulty of identifying the true level of independence of non-executive directors. With the reference to Kosnick (1987), Uzun, Szewczyk & Varma (2004) note that some of the

outside directors may be related to the companies' management through business or even family ties, which makes such directors less likely to perform their monitoring duties. As a result of such variance in outside directors' independence, they were classified as independent or gray. It is argued that higher representation of 'independent' outside directors in the corporate board is positively related to board effectiveness in its monitoring function (Uzun, Szewczyk & Varma, 2004) In the scope of this research, it was impossible to identify the level of true independence of non-executive directors, which results in significant limitation, which might have hindered the true level of impact independent boards have on beta.

5.2. Limitations

The outcomes of the research, however, are likely to have been affected by several limitations. Firstly, the size of the studied sample (79 companies) is rather small, which may potentially increase probability of the relationships being particularly good or particularly bad. Therefore it is harder to find significant relationships from the data, as statistical tests normally require a larger sample size to justify that the effect did not just happened by chance alone. The reason such small sample was studied was the availability of the data regarding beta ratio. Among LSE listed companies, historical beta ratios were only available for the FTSE 100 index. Although, the number of the companies in the list is 100, in order to compare the effect the change in board composition has on market based beta, only those companies that were present at the Index during both 2007 and 2010 were included in the study. In total, 79 companies made the index at both years.

Secondly, the results of the study are based only on the quantitative research, while the combination of quantitative and qualitative research would be arguably more beneficial. Quantitative research does not recognize specific features of different boards such as actual independence of non-executive directors, board processes and group dynamics within the boards which all are argued to have an influence on board's decisions.

Thirdly, the research does not recognise board features other than the proportion of outside directors and therefore assumes that boards with equal proportion of outside directors supposedly

take similar decisions. This may not be the case since board decisions depend on other characteristics of board composition such as CEO or chairman independence. In addition the research does not examine the nature of outside directors' directorship and involvement in other firms which importance is argued by Mizruchi, 1996 who argued that boards have the greatest power to fulfill these responsibilities when their members hold multiple directorships.

Fourthly, the fact that the sample includes companies selected based solely on the level of market capitalisation (FTSE 100 index of LSE) may have hindered the identification of the relationship between board composition and beta. The reason for this is the fact that the companies represent different industrial sectors, such as banking, mining, automobiles, etc., all of which are characterised by different environmental factors influencing the firm. It has been argued that firms operating in different environments may benefit from different board composition.

Fifthly, while the data for board composition and beta values for 2010 were taken at the same time and from one source, the data for 2007 had to be taken from different sources: beta ratio was taken from ADVFN (<http://www.advfn.com>) while the data regarding board composition was derived from the companies' annual reports for 2007. Even though the data were taken within the same year, there is a strong possibility that that board composition was different from the one stated at an annual report at the time when beta were actually taken. The reasons for this are the absence of the exact date for which the published beta was true and the fact that different companies publish annual reports at different times during the year.

Another limitation is the possible presence of unusual cases that might have distorted the tested relationships between the variables. Such cases may have particularly strong impact on the study of a relatively small sample.

6. Conclusion

In conclusion, the results of the current research do not fully confirm or disconfirm the general hypothesis that the change in board composition affects board decision in regards of risk management, as measure by market-based beta. The fact that a relationship of small significance between the change in board composition and the change in beta was only identified in the case of companies, in which the proportion of outside directors the boards had decreased, cannot serve as a strong evidence of the existence of the relationship between the two variables, especially given the small size of the general sample and even smaller number of companies with the decreased proportion of outside-directors on their boards. However, the relationship cannot be disapproved either.

In order to further explore the relationship between the change in board composition and board decision, future research could study the relationship on a bigger sample of companies. Besides, given the limitations of quantitative research performed in isolation (Cooper & Schindler, 2008), which ignores group dynamics that can influence board's effectiveness (Forbes & Milliken, 1999), future research on boards should incorporate qualitative methods in order to better understand the relationship between various board characteristics, board decisions and as a result firm performance.

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Appendices

1. Appendix 1 Sample

1.1. Table 1.1: List of companies in the sample

The list of the companies included in the sample comprises 79 companies which were included in FTSE 100 Index of London Stock Exchange in both 2007 and 2010. The list of the companies is presented in an alphabetical order in the table below.

N	Name of the company	N	Name of the company	N	Name of the company
1	3I GROUP	28	GLAXOSMITHKLINE	55	RIO TINTO
2	ADMIRAL GROUP	29	HAMMERSON	56	ROLLS-ROYCE
3	AMEC	30	HOME RETAIL	57	ROYAL BANK SCOT
4	ANGLO AMERICAN	31	HSBC HLDGS.UK	58	SABMILLER
5	ANTOFAGASTA	32	ICAP	59	SAGE GRP.
6	ASTRAZENECA	33	IMP.TOBACCO GRP	60	SAINSBURY(J)
7	AVIVA	34	INTERCON. HOTEL	61	SCHRODERS
8	BAE SYSTEMS	35	INTL POWER	62	SCOT.&STH.ENERGY
9	BARCLAYS	36	KAZAKHMYS	63	SEVERN TRENT
10	BG GROUP	37	KINGFISHER	64	SHIRE
11	BHP BILLITON	38	LAND SECS.	65	SMITH&NEPHEW
12	BP	39	LEGAL&GEN.	66	SMITHS GROUP
13	BRITISH AIRWAYS	40	LIBERTY INTL.	67	STAND.CHART.
14	BRITISH AMER.TOB.	41	LLOYDS GRP.	68	STD LIFE
15	BR.LAND	42	LON.STK.EXCH	69	TESCO
16	BSKYB	43	LONMIN	70	THOMAS COOK
17	BT GROUP	44	MAN GROUP	71	TUI TRAVEL
18	CABLE&WW	45	MARKS & SP.	72	TULLOW OIL
19	CAIRN ENERGY	46	NATIONAL GRID	73	UNILEVER
20	CAPITA	47	NEXT	74	UTD. UTILITIES
21	GROUP	48	OLD MUTUAL	75	VEDANTA
22	CARNIVAL	49	PEARSON	76	VODAFONE GRP.
23	CENTRICA	50	PRUDENTIAL	77	WHITBREAD
24	COMPASS GROUP	51	RDS 'A'	78	WOLSELEY
25	DIAGEO	52	RECKITT BEN. GP	79	XSTRATA
26	EXPERIAN	53	REED ELSEVIER		
27	G4S	54	REXAM		

1.2. Table 1.2: Beta and Board Composition of the companies in 2007

The table below lists the companies in the sample and provides the companies' beta ratio and board composition for 2007. Board composition in this case implies the proportion of non-executive directors in the companies' boards and was calculated by dividing the number of non-executive

directors by the total number of directors in the board and multiplied by 100 to achieve the percentage figure.

1	3I GROUP	1,03	3	7	70,00%
2	ADMIRAL GROUP	0,85	3	7	70,00%
3	AMEC	1,09	3	6	66,67%
4	ANGLO AMERICAN	1,77	4	12	75,00%
5	ANTOFAGASTA	1,41	1	8	88,89%
6	ASTRAZENECA	0,35	2	9	81,82%
7	AVIVA	1,53	5	9	64,29%
8	BAE SYSTEMS	0,70	4	7	63,64%
9	BARCLAYS	2,18	6	11	64,71%
10	BG GROUP	0,49	2	9	81,82%
11	BHP BILLITON	1,29	4	6	60,00%
12	BP	0,70	7	11	61,11%
13	BRITISH AIRWAYS	1,56	2	9	81,82%
14	BRITISH AMER.TOB.	0,59	3	9	75,00%
15	BR.LAND	1,00	5	8	61,54%
16	BSKYB	0,95	2	12	85,71%
17	BT GROUP	1,10	6	9	60,00%
18	CABLE&WW	0,50	4	6	60,00%
19	CAIRN ENERGY	1,17	6	6	50,00%
20	CAPITA	0,28	4	4	50,00%
21	GROUP	1,08	3	11	78,57%
22	CARNIVAL	0,58	5	5	50,00%
23	CENTRICA	0,84	3	7	70,00%
24	COMPASS GROUP	0,61	2	9	81,82%
25	DIAGEO	0,62	3	7	70,00%
26	EXPERIAN	0,63	3	7	70,00%
27	G4S	0,45	3	11	78,57%
28	GLAXOSMITHKLINE	1,02	5	6	54,55%
29	HAMMERSON	0,90	2	4	66,67%
30	HOME RETAIL	1,14	3	16	84,21%
31	HSBC HLDGS.UK	0,87	4	5	55,56%
32	ICAP	0,49	5	8	61,54%
33	IMP.TOBACCO GRP	1,55	4	9	69,23%
34	INTERCON. HOTEL	1,24	5	5	50,00%
35	INTL POWER	2,49	2	7	77,78%
36	KAZAKHMYS	0,85	3	7	70,00%
37	KINGFISHER	1,20	5	6	54,55%
38	LAND SECS.	1,66	4	7	63,64%
39	LEGAL&GEN.	0,87	5	10	66,67%
40	LIBERTY INTL.	1,72	6	9	60,00%
41	LLOYDS GRP.	0,91	2	7	77,78%
42	LON.STK.EXCH	1,93	2	8	80,00%
43	LONMIN	0,92	3	5	62,50%
44	MAN GROUP	0,75	3	6	66,67%
45	MARKS & SP.	0,53	6	5	45,45%
46	NATIONAL GRID	0,59	5	8	61,54%
47	NEXT	0,85	4	5	55,56%
48	OLD MUTUAL	1,85	3	8	72,73%
49	PEARSON	0,64	5	7	58,33%

50	PRUDENTIAL	1,51	7	9	56,25%
51	RDS 'A'	0,89	5	9	64,29%
52	RECKITT BEN. GP	0,42	2	9	81,82%
53	REED ELSEVIER	0,56	5	8	61,54%
54	REXAM	0,55	4	6	60,00%
55	RIO TINTO	1,41	3	12	80,00%
56	ROLLS-ROYCE	1,22	6	8	57,14%
57	ROYAL BANK SCOT	2,49	5	12	70,59%
58	SABMILLER	1,12	2	13	86,67%
59	SAGE GRP.	0,77	5	6	54,55%
60	SAINSBURY(J)	0,62	2	6	75,00%
61	SCHRODERS	1,26	4	8	66,67%
62	SCOT.&STH.ENERGY	0,43	4	6	60,00%
63	SEVERN TRENT	0,43	3	5	62,50%
64	SHIRE	0,90	2	8	80,00%
65	SMITH&NEPHEW	0,53	2	6	75,00%
66	SMITHS GROUP	1,06	3	6	66,67%
67	STAND.CHART.	1,57	5	11	68,75%
68	STD LIFE	0,63	4	7	63,64%
69	TESCO	0,81	7	8	53,33%
70	THOMAS COOK	0,86	4	8	66,67%
71	TUI TRAVEL	0,74	6	6	50,00%
72	TULLOW OIL	0,94	7	6	46,15%
73	UNILEVER	0,60	3	11	78,57%
74	UTD. UTILITIES	0,45	4	8	66,67%
75	VEDANTA	2,31	3	4	57,14%
76	VODAFONE GRP.	0,86	4	11	73,33%
77	WHITBREAD	1,17	3	6	66,67%
78	WOLSELEY	5,36	4	6	60,00%
79	XSTRATA	1,94	3	8	72,73%

1.3. Table 1.3: Beta and Board Composition of the companies in 2010

The information provided in the table below is similar to the information provided in Table 1.2. The only difference is the year for which information is given.

1	3I GROUP	1,09	2	7	77,78%
2	ADMIRAL GROUP	0,95	3	7	70,00%
3	AMEC	1,03	3	5	62,50%
4	ANGLO AMERICAN	1,79	2	9	81,82%
5	ANTOFAGASTA	1,39	1	7	87,50%
6	ASTRAZENECA	0,4	2	10	83,33%
7	AVIVA	1,44	4	9	69,23%
8	BAE SYSTEMS	0,83	3	10	76,92%
9	BARCLAYS	2,03	3	10	76,92%
10	BG GROUP	0,59	3	9	75,00%
11	BHP BILLITON	1,31	1	10	90,91%
12	BP	0,76	5	9	64,29%
13	BRITISH AIRWAYS	1,49	2	8	80,00%
14	BRITISH AMER.TOB.	0,57	3	8	72,73%
15	BR.LAND	1,1	5	8	61,54%

16	BSKYB	0,85	2	12	85,71%
17	BT GROUP	1,08	4	6	60,00%
18	CABLE&WW	0,62	2	3	60,00%
19	CAIRN ENERGY	1,18	6	6	50,00%
20	CAPITA	0,28	4	4	50,00%
21	GROUP	1,1	3	11	78,57%
22	CARNIVAL	0,63	5	5	50,00%
23	CENTRICA	0,8	3	7	70,00%
24	COMPASS GROUP	0,58	2	9	81,82%
25	DIAGEO	0,6	3	6	66,67%
26	EXPERIAN	0,73	3	6	66,67%
27	G4S	0,44	3	10	76,92%
28	GLAXOSMITHKLINE	1,09	3	6	66,67%
29	HAMMERSON	0,9	2	4	66,67%
30	HOME RETAIL	1,09	6	15	71,43%
31	HSBC HLDGS.UK	0,99	4	4	50,00%
32	ICAP	0,5	4	9	69,23%
33	IMP.TOBACCO GRP	1,55	2	7	77,78%
34	INTERCON. HOTEL	1,28	6	6	50,00%
35	INTL POWER	2,41	3	7	70,00%
36	KAZAKHMYS	0,81	2	7	77,78%
37	KINGFISHER	1,25	4	7	63,64%
38	LAND SECS.	1,62	4	8	66,67%
39	LEGAL&GEN.	0,98	4	8	66,67%
40	LIBERTY INTL.	1,71	5	9	64,29%
41	LLOYDS GRP.	1,04	2	9	81,82%
42	LON.STK.EXCH	1,95	2	7	77,78%
43	LONMIN	1,13	2	7	77,78%
44	MAN GROUP	0,82	5	6	54,55%
45	MARKS & SP.	0,48	4	7	63,64%
46	NATIONAL GRID	0,55	5	8	61,54%
47	NEXT	0,84	4	5	55,56%
48	OLD MUTUAL	1,82	2	9	81,82%
49	PEARSON	0,68	5	6	54,55%
50	PRUDENTIAL	1,52	6	8	57,14%
51	RDS 'A'	0,9	3	10	76,92%
52	RECKITT BEN. GP	0,42	2	8	80,00%
53	REED ELSEVIER	0,58	3	7	70,00%
54	REXAM	0,68	2	6	75,00%
55	RIO TINTO	1,43	3	13	81,25%
56	ROLLS-ROYCE	1,31	5	9	64,29%
57	ROYAL BANK SCOT	2,4	2	10	83,33%
58	SABMILLER	1,16	3	13	81,25%
59	SAGE GRP.	0,84	5	6	54,55%
60	SAINSBURY(J)	0,65	3	7	70,00%
61	SCHRODERS	1,38	5	8	61,54%
62	SCOT.&STH.ENERGY	0,48	4	6	60,00%
63	SEVERN TRENT	0,48	5	6	54,55%
64	SHIRE	0,96	2	7	77,78%
65	SMITH&NEPHEW	0,53	2	9	81,82%
66	SMITHS GROUP	1,11	3	5	62,50%
67	STAND.CHART.	1,53	6	10	62,50%
68	STD LIFE	0,67	2	8	80,00%
69	TESCO	0,77	8	9	52,94%
70	THOMAS COOK	8,87	3	6	66,67%

71	TUI TRAVEL	0,74	5	12	70,59%
72	TULLOW OIL	1	5	6	54,55%
73	UNILEVER	0,12	2	12	85,71%
74	UTD. UTILITIES	0,48	3	6	66,67%
75	VEDANTA	2,39	3	3	50,00%
76	VODAFONE GRP.	0,79	4	10	71,43%
77	WHITBREAD	1,22	3	6	66,67%
78	WOLSELEY	4,62	3	7	70,00%
79	XSTRATA	1,94	3	8	72,73%

1.4. Table 1.4: Changes in Beta and Board Composition

Information about the changes between Beta and Board Composition for 79 companies in the sample is presented in the table below.

1	3I GROUP	5,64%	7,78%
2	ADMIRAL GROUP	12,36%	0,00%
3	AMEC	-5,33%	-4,17%
4	ANGLO AMERICAN	0,90%	6,82%
5	ANTOFAGASTA	-1,62%	-1,39%
6	ASTRAZENECA	15,24%	1,52%
7	AVIVA	-6,01%	4,95%
8	BAE SYSTEMS	19,22%	13,29%
9	BARCLAYS	-7,07%	12,22%
10	BG GROUP	20,24%	-6,82%
11	BHP BILLITON	1,23%	30,91%
12	BP	8,28%	3,17%
13	BRITISH AIRWAYS	-4,69%	-1,82%
14	BRITISH AMER.TOB.	-4,04%	-2,27%
15	BR.LAND	9,46%	0,00%
16	BSKYB	-10,78%	0,00%
17	BT GROUP	-1,98%	0,00%
18	CABLE&WW	23,85%	0,00%
19	CAIRN ENERGY	0,50%	0,00%
20	CAPITA	0,36%	0,00%
21	GROUP	2,14%	0,00%
22	CARNIVAL	9,32%	0,00%
23	CENTRICA	-4,88%	0,00%
24	COMPASS GROUP	-4,67%	0,00%
25	DIAGEO	-3,98%	-3,33%
26	EXPERIAN	15,60%	-3,33%
27	G4S	-1,17%	-1,65%
28	GLAXOSMITHKLINE	6,80%	12,12%
29	HAMMERSON	0,54%	0,00%
30	HOME RETAIL	-4,22%	-12,78%
31	HSBC HLDGS.UK	14,19%	-5,56%
32	ICAP	1,07%	7,69%
33	IMP.TOBACCO GRP	0,32%	8,55%
34	INTERCON. HOTEL	3,58%	0,00%
35	INTL POWER	-3,26%	-7,78%

36	KAZAKHMYS	-4,41%	7,78%
37	KINGFISHER	4,54%	9,09%
38	LAND SECS.	-2,54%	3,03%
39	LEGAL&GEN.	12,14%	0,00%
40	LIBERTY INTL.	-0,75%	4,29%
41	LLOYDS GRP.	13,89%	4,04%
42	LON.STK.EXCH	1,18%	-2,22%
43	LONMIN	22,87%	15,28%
44	MAN GROUP	8,65%	-12,12%
45	MARKS & SP.	-8,62%	18,18%
46	NATIONAL GRID	-6,10%	0,00%
47	NEXT	-1,51%	0,00%
48	OLD MUTUAL	-1,86%	9,09%
49	PEARSON	6,94%	-3,79%
50	PRUDENTIAL	0,87%	0,89%
51	RDS 'A'	1,20%	12,64%
52	RECKITT BEN. GP	-0,19%	-1,82%
53	REED ELSEVIER	4,28%	8,46%
54	REXAM	22,59%	15,00%
55	RIO TINTO	1,78%	1,25%
56	ROLLS-ROYCE	7,44%	7,14%
57	ROYAL BANK SCOT	-3,73%	12,75%
58	SABMILLER	3,94%	-5,42%
59	SAGE GRP.	8,46%	0,00%
60	SAINSBURY(J)	4,50%	-5,00%
61	SCHRODERS	9,26%	-5,13%
62	SCOT.&STH.ENERGY	11,19%	0,00%
63	SEVERN TRENT	12,46%	-7,95%
64	SHIRE	6,15%	-2,22%
65	SMITH&NEPHEW	0,44%	6,82%
66	SMITHS GROUP	4,98%	-4,17%
67	STAND.CHART.	-2,61%	-6,25%
68	STD LIFE	5,56%	16,36%
69	TESCO	-4,62%	-0,39%
70	THOMAS COOK	930,08%	0,00%
71	TUI TRAVEL	0,26%	20,59%
72	TULLOW OIL	6,30%	8,39%
73	UNILEVER	-79,96%	7,14%
74	UTD. UTILITIES	6,64%	0,00%
75	VEDANTA	3,61%	-7,14%
76	VODAFONE GRP.	-7,74%	-1,90%
77	WHITBREAD	4,44%	0,00%
78	WOLSELEY	-13,76%	10,00%
79	XSTRATA	-0,16%	0,00%

1.5. Table 1.5: Cluster 1 - Companies with an increased proportion of outside directors on the board; beta and board composition change

The table below lists 32 companies, in which the proportion of outside directors in the boards of directors has increased, and provides the figures representing the degree of the change in the

proportion of outside directors in the companies' boards as well as the percentage of change of Beta in these companies.

1	3I GRP.	5,64%	7,78%
2	ANGLO AMERICAN	0,90%	6,82%
3	ASTRAZENECA	15,24%	1,52%
4	AVIVA	-6,01%	4,95%
5	BAE SYS.	19,22%	13,29%
6	BARCLAYS	-7,07%	12,22%
7	BHP BILLITON	1,23%	30,91%
8	BP	8,28%	3,17%
9	HAMMERSON	6,80%	12,12%
10	IMP.TOBACCO GRP	1,07%	7,69%
11	INTERCON. HOTEL	0,32%	8,55%
12	KINGFISHER	-4,41%	7,78%
13	LAND SECS.	4,54%	9,09%
14	LEGAL&GEN.	-2,54%	3,03%
15	LLOYDS GRP.	-0,75%	4,29%
16	LON.STK.EXCH	13,89%	4,04%
17	MAN GROUP	22,87%	15,28%
18	MORRISON (WM)	-8,62%	18,18%
19	OLD MUTUAL	-1,86%	9,09%
20	PRUDENTIAL	0,87%	0,89%
21	RDS 'A'	1,20%	12,64%
22	REED ELSEVIER	4,28%	8,46%
23	REXAM	22,59%	15,00%
24	RIO TINTO	1,78%	1,25%
25	ROLLS-ROYCE	7,44%	7,14%
26	ROYAL BANK SCOT	-3,73%	12,75%
27	SMITH&NEPHEW	0,44%	6,82%
28	STD LIFE	5,56%	16,36%
29	TUI TRAVEL	0,26%	20,59%
30	TULLOW OIL	6,30%	8,39%
31	UNILEVER	-79,96%	7,14%
32	WOLSELEY	-13,76%	10,00%

1.6. Table 1.6: Cluster 2 - Companies with a decreased proportion of outside directors on the board; beta and board composition change

The table below lists 25 companies, in which the proportion of outside directors in the boards of directors decreased, and provides the figures representing the degree of the change in the proportion of outside directors in the companies' boards as well as the percentage of change of Beta in these companies.

1	AMEC	-5,33%	-4,17%
2	ANTOFAGASTA	-1,62%	-1,39%
3	BG GRP.	20,24%	-6,82%
4	BR.AIRWAYS	-4,69%	-1,82%
5	BR.AMER.TOB.	-4,04%	-2,27%
6	EXPERIAN	-3,98%	-3,33%
7	G4S	15,60%	-3,33%
8	GLAXOSMITHKLINE	-1,17%	-1,65%
9	HSBC HLDGS.UK	-4,22%	-12,78%
10	ICAP	14,19%	-5,56%
11	KAZAKHMYS	-3,26%	-7,78%
12	LONMIN	1,18%	-2,22%
13	MARKS & SP.	8,65%	-12,12%
14	PEARSON	6,94%	-3,79%
15	RECKITT BEN. GP	-0,19%	-1,82%
16	SABMILLER	3,94%	-5,42%
17	SAINSBURY(J)	4,50%	-5,00%
18	SCHRODERS	9,26%	-5,13%
19	SEVERN TRENT	12,46%	-7,95%
20	SHIRE	6,15%	-2,22%
21	SMITHS GROUP	4,98%	-4,17%
22	STAND.CHART.	-2,61%	-6,25%
23	TESCO	-4,62%	-0,39%
24	VEDANTA	3,61%	-7,14%
25	VODAFONE GRP.	-7,74%	-1,90%

1.7. Table 1.7: Cluster 3 - Companies with an unchanged proportion of outside directors on the board; beta and board composition change

The table below lists 22 companies, in which the proportion of outside directors in the boards of directors stayed the same, and provides the figures representing the degree of the change in the proportion of outside directors in the companies' boards (0% for all companies) and the percentage of change of Beta in these companies.

1	ADMIRAL GRP	12,36%	0,00%
2	BR.LAND	9,46%	0,00%
3	BSKYB	-10,78%	0,00%
4	BT GROUP	-1,98%	0,00%
5	CABLE&WW	23,85%	0,00%
6	CAIRN ENERGY	0,50%	0,00%
7	CAPITA GROUP	0,36%	0,00%
8	CARNIVAL	2,14%	0,00%
9	CENTRICA	9,32%	0,00%
10	COMPASS GROUP	-4,88%	0,00%
11	DIAGEO	-4,67%	0,00%

12	HOME RETAIL	0,54%	0,00%
13	INTL POWER	3,58%	0,00%
14	LIBERTY INTL.	12,14%	0,00%
15	NATIONAL GRID	-6,10%	0,00%
16	NEXT	-1,51%	0,00%
17	SAGE GRP.	8,46%	0,00%
18	SCOT.&STH.ENERGY	11,19%	0,00%
19	THOMAS COOK	930,08%	0,00%
20	UTD. UTILITIES	6,64%	0,00%
21	WHITBREAD	4,44%	0,00%
22	XSTRATA	-0,16%	0,00%

1.8. Table 1.8: Companies from Cluster 1 and Cluster 2; beta and board composition change

The table below lists 57 companies, in which the proportion of outside directors in the boards of directors changed in general, and provides the figures representing the degree of the change in the proportion of outside directors in the companies' boards as well as the percentage of change of Beta in these companies.

1	3I GRP.	5,64%	7,78%
2	ANGLO AMERICAN	0,90%	6,82%
3	ASTRAZENECA	15,24%	1,52%
4	AVIVA	-6,01%	4,95%
5	BAE SYS.	19,22%	13,29%
6	BARCLAYS	-7,07%	12,22%
7	BHP BILLITON	1,23%	30,91%
8	BP	8,28%	3,17%
9	HAMMERSON	6,80%	12,12%
10	IMP.TOBACCO GRP	1,07%	7,69%
11	INTERCON. HOTEL	0,32%	8,55%
12	KINGFISHER	-4,41%	7,78%
13	LAND SECS.	4,54%	9,09%
14	LEGAL&GEN.	-2,54%	3,03%
15	LLOYDS GRP.	-0,75%	4,29%
16	LON.STK.EXCH	13,89%	4,04%
17	MAN GROUP	22,87%	15,28%
18	MORRISON (WM)	-8,62%	18,18%
19	OLD MUTUAL	-1,86%	9,09%
20	PRUDENTIAL	0,87%	0,89%
21	RDS 'A'	1,20%	12,64%
22	REED ELSEVIER	4,28%	8,46%
23	REXAM	22,59%	15,00%
24	RIO TINTO	1,78%	1,25%
25	ROLLS-ROYCE	7,44%	7,14%
26	ROYAL BANK SCOT	-3,73%	12,75%
27	SMITH&NEPHEW	0,44%	6,82%
28	STD LIFE	5,56%	16,36%
29	TUI TRAVEL	0,26%	20,59%
30	TULLOW OIL	6,30%	8,39%
31	UNILEVER	-79,96%	7,14%
32	WOLSELEY	-13,76%	10,00%

33	AMEC	-5,33%	-4,17%
34	ANTOFAGASTA	-1,62%	-1,39%
35	BG GRP.	20,24%	-6,82%
36	BR.AIRWAYS	-4,69%	-1,82%
37	BR.AMER.TOB.	-4,04%	-2,27%
38	EXPERIAN	-3,98%	-3,33%
39	G4S	15,60%	-3,33%
40	GLAXOSMITHKLINE	-1,17%	-1,65%
41	HSBC HLDGS.UK	-4,22%	-12,78%
42	ICAP	14,19%	-5,56%
43	KAZAKHMYS	-3,26%	-7,78%
44	LONMIN	1,18%	-2,22%
45	MARKS & SP.	8,65%	-12,12%
46	PEARSON	6,94%	-3,79%
47	RECKITT BEN. GP	-0,19%	-1,82%
48	SABMILLER	3,94%	-5,42%
49	SAINSBURY(J)	4,50%	-5,00%
50	SCHRODERS	9,26%	-5,13%
51	SEVERN TRENT	12,46%	-7,95%
52	SHIRE	6,15%	-2,22%
53	SMITHS GROUP	4,98%	-4,17%
54	STAND.CHART.	-2,61%	-6,25%
55	TESCO	-4,62%	-0,39%
56	VEDANTA	3,61%	-7,14%
57	VODAFONE GRP.	-7,74%	-1,90%

2. Appendix 2 – Descriptive Statistics

2.1. Table 2.1: Descriptive statistics for the sample for 2007

Beta	79	.28	5.36	1.0726	.70428
Board size	79	6.00	19.00	11.6709	2.69720
Executive directors	79	1.00	7.00	3.8608	1.44767
Non-executive directors	79	4.00	16.00	7.8101	2.32090
Proportion of non-executive directors	79	45.45	88.89	66.6871	10.38710
Valid N	79				

2.2. Table 2.2: Descriptive statistics for the sample for 2010

Beta	79	.12	8.87	1.1787	1.08541
Board size	79	5.00	21.00	11.1772	2.68786
Executive directors	79	1.00	8.00	3.4177	1.38312
Non-executive directors	79	3.00	15.00	7.7595	2.29947
Proportion of non-executive directors	79	50.00	90.91	69.1023	10.56093
Valid N	79				

2.3. Table 2.3: Descriptive statistics for the change between 2007 and 2010

Change in Beta	79	-.74	8.01	.1062	.90847
Change in board size	79	-5.00	5.00	.4937	1.90056
Change in the proportion of	79	-12.78	30.91	2.4153	7.58916
Valid N	79				

3. Appendix 3 – Correlations

3.1. Table 3.1: Correlation between the change in board composition and beta for all 79 companies

Change in Board Composition	Pearson Correlation	1.000	-.050
	Sig. (2-tailed)		.663
	N	79.000	79
Change in Beta	Pearson Correlation	-.050	1.000
	Sig. (2-tailed)	.663	
	N	79	79.000

3.2. Table3.2: Correlation between the change in board composition and beta for Cluster 1 companies

Change in Board Composition	Pearson Correlation	1.000	.044
	Sig. (2-tailed)		.812
	N	32.000	32
Change in Beta	Pearson Correlation	.044	1.000
	Sig. (2-tailed)	.812	
	N	32	32.000

3.3. Table 3.2: Correlation between the change in board composition and beta for Cluster 2 companies

Change in Board Composition	Pearson Correlation	1.000	-.290
	Sig. (2-tailed)		.159
	N	25.000	25
Change in Beta	Pearson Correlation	-.290	1.000
	Sig. (2-tailed)	.159	
	N	25	25.000

3.4. Table 3.4: Correlation between the change in board composition and beta for Cluster 1 and Cluster 2 companies together

Change in Board Composition	Pearson Correlation	1.000	-.090
	Sig. (2-tailed)		.505
	N	57.000	57
Change in Beta	Pearson Correlation	-.090	1.000
	Sig. (2-tailed)	.505	
	N	57	57.000