The Impact of Board composition on Accounting Profitability of the Firm
- A Study of Large Caps in Sweden

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Executive Summary

Title: The Impact of Board Composition on Accounting Profitability of the Firm-A Study of Large Caps in Sweden.

Background: The issue about corporate governance became more prominent in recent years as a result of corporate scandals and misconduct of executives. Firms, board members, and executives have been subject to criminal and civil actions over hidden debt, inflated earnings, insider trading, tax evasion, misuse of funds, and breaches of fiduciary duties. Firms such as Enron, WorldCom, and Tyco became well-known because of huge failures in governance. In addition to the scandals, nowadays, we can see that the financial crises have brought attention for today’s debate of corporate governance issue as well.

Board is the major component of corporate governance like chief executive office (CEO), shareholders, stakeholders or community in general. This board is authorized to decide on the operations, management, and strategy of the company on behalf of the shareholders. Since the board members suppose to represent their interests.

Problem: What is the relationship between main board composition factors and firm’s accounting profitability?

Purpose: This thesis strives to analyze the level of correlation between selected board composition factors and accounting profitability of the Swedish Large Companies; by using appropriate statistical tools of correlation we aim to identify the association of selected variables.

Method: This research is conducted with sample of 63 large caps from the OMX Nordic Exchange-Stockholm and includes data from 2005 to 2009. We adopt the perspective of a shareholder and the philosophical stance of a positivist. The study uses quantitative method since our sample size is large enough to use the method.

Conclusion: The findings highlight that there is no significant relationship between some of the board composition factors namely- number of board directors, percentage of independent directors and experience of board member and the accounting profitability measure (Av. ROE) of Swedish large firms.

Where as, in case of the proportion of female directors, we do find a significant correlation between the accounting profitability measure (Av. ROE) and percentage of female directors of Swedish large firms. The correlation results show a positive relationship between the variables.

Keywords: Corporate Governance; Board of Directors, Accounting Profitability Measurements and CEO
Table of Contents

1. INTRODUCTION ......................................................................................................................... 1
    1.1 Problem Background ............................................................................................................. 1
    1.2 Problem Statement ................................................................................................................ 2
    1.3 Purpose of the Study ............................................................................................................. 2
    1.4 Limitations and Demarcations ............................................................................................... 3
    1.5 Definition and Abbreviations ................................................................................................. 3
    1.6 Outline of the Study .............................................................................................................. 3

2. RESEARCH METHODOLOGY ................................................................................................. 5
    2.1 Choice of the Subject Criteria ............................................................................................... 5
    2.2 Preconceptions ..................................................................................................................... 5
    2.3 Perspective ........................................................................................................................... 6
    2.4 Research Philosophy ............................................................................................................ 6
    2.5 Research Approach ............................................................................................................. 6
    2.6 Research Strategy ................................................................................................................ 7
    2.7 Choice of Secondary Resources ......................................................................................... 8
    2.8 Criticism of Secondary Resources ..................................................................................... 8

3. THEORETICAL FRAMEWORK ............................................................................................... 10
    3.1 Corporate Governance ......................................................................................................... 10
        3.1.1 Definition and Concept of Corporate Governance ....................................................... 10
        3.1.2 Theories ....................................................................................................................... 10
    3.2 Board of Directors ............................................................................................................. 13
        3.2.1 Overview of Board of Directors .................................................................................. 10
        3.2.2 Role of the Board ....................................................................................................... 14
        3.2.3 Board Composition .................................................................................................... 10
3.3 Swedish Corporate Governance .................................................................................................................................................. 19
  3.3.1 The Swedish Corporate Governance Model ......................................................................................................................... 19
  3.3.2 The Board of Directors ............................................................................................................................................................... 20
  3.3.3 Board Composition ..................................................................................................................................................................... 21
3.4 Accounting Profitability Measurements .................................................................................................................................................. 21
  3.4.1 Overview ......................................................................................................................................................................................... 21
  3.4.2 Measures ........................................................................................................................................................................................ 22

4. PRACTICAL METHOD ........................................................................................................................................................................... 24
  4.1 Selection Method .................................................................................................................................................................................. 24
  4.1 Data Collection .................................................................................................................................................................................... 24
  4.3 Access ............................................................................................................................................................................................................. 25
  4.4 Data Processing .................................................................................................................................................................................. 26
  4.5 Data Analyzing ................................................................................................................................................................................... 26
  4.6 Hypotheses .................................................................................................................................................................................................... 27
    4.6.1 Board Size ..................................................................................................................................................................................... 27
    4.6.2 Proportion of Independent Directors .......................................................................................................................................... 28
    4.6.3 Competency of Board Members ............................................................................................................................................... 28
    4.6.4 Percentage of Female Directors .............................................................................................................................................. 28

5. EMPIRICAL STUDY AND ANALYSIS .................................................................................................................................................... 30
  5.1 Descriptive Statistics of Our Sample .................................................................................................................................................. 30
  5.2 Analysis and Result ............................................................................................................................................................................. 35
    5.2.1 Correlation .................................................................................................................................................................................... 35
    5.2.2 Testing Hypothesis ...................................................................................................................................................................... 36
    5.2.3 Regression Analysis ................................................................................................................................................................... 36

6. CONCLUSION .............................................................................................................................................................................................. 46

7. QUALITY CRITERIA .......................................................................................................................................................................................... 48
7.1 Validity ........................................................................................................................................ 48
7.2 Reliability ................................................................................................................................... 48
7.3 Generalization ............................................................................................................................. 49
8. RECOMMENDATIONS FOR FURTHER STUDIES ........................................................................ 50
References: ....................................................................................................................................... 51

List of Figures
Figure 1: Competency Model for the Board.................................................................................. 18
Figure 2: Histogram of Number of Directors ............................................................................... 31
Figure 3: Histogram of percentage of Independent Directors ....................................................... 32
Figure 4: Histogram of Age Board of Directors .......................................................................... 33
Figure 5: Histogram of percentage Female Directors ..................................................................... 34

List of Tables
Table 1: Descriptive Statistic of Board Size .................................................................................. 31
Table 2: Descriptive Statistic of percentage of Independent Directors ........................................ 33
Table 3: Descriptive Statistic of Age of Board of Directors .......................................................... 34
Table 4: Descriptive Statistic of percentage of Female Directors ................................................. 35
Table 5: Descriptive Statistic of ROE of the firm .......................................................................... 35
Table 6: Correlation result of Board Size and ROE ...................................................................... 36
Table 7: Correlation result of % of Independent Directors and ROE ........................................... 38
Table 8: Correlation result of Age of Board Member and ROE ...................................................... 39
Table 9: Correlation result of percentage of Female Directors and ROE ...................................... 41
Table 10: Summary of Findings for Correlation .......................................................................... 42
Table 11: Regression Result for Model One ................................................................................... 43
Table 12: The Regression Result for %age of Female Directors and Av.ROE ............................... 43
Table 13: Regression Result for Model Two .................................................................................. 44
Table 14: The Regression Result of all Independent Variables and Av.ROE ................................. 45
1. INTRODUCTION

This chapter presents the introductory part. It starts by introducing the corporate governance area and describes the overview of the study.

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1.1 Problem Background

Corporate governance is governing of corporations which focus primarily on the interactions among corporate managers, directors, and shareholders to minimize the potential agency problem of aligning interests of management with those of shareholders. And can broadly be defined as a mechanism which focuses on the combination of applicable laws, regulations, and listing rules that facilitate to direct and monitor corporations’ affairs in attracting capital and performing effectively and efficiently to increase shareholders’ value (Rezaee and Riley, 2009, p.122).

Corporate governance concerns and challenges are rising in modern society because of the increasing size and complexity of firms driving the need for increased separation between ownership and control, and millions of investors have been harmed in recent years by unusual and criminal behavior in large companies mostly in North America and Europe (Picard, 2005, p.v). The issue about corporate governance became more prominent in recent years as a result of corporate scandals and misconduct of executives. Firms, board members, and executives have been subject to criminal and civil actions over hidden debt, inflated earnings, insider trading, tax evasion, misuse of funds, and breaches of fiduciary duties. Firms such as Enron, WorldCom, and Tyco became well-known because of huge failures in governance (Garg, 2007, p.40). In addition to the scandals, nowadays, we can see that the financial crises have brought attention for today’s debate of corporate governance issue as well.

Board is the major component of corporate governance like chief executive officer (CEO), shareholders, stakeholders or community in general. This board is authorized to decide on the operations, management, and strategy of the company on behalf of the shareholders. Since, they represent their interests. In other words, it has influence on the future viability and continuity of
the company. In addition, it is the guardian of shareholder welfare, as well as charged with the responsibility of ensuring that top managers are behaving in a way that will optimize firm performance for shareholders (Liu and Fong, 2008, p.2).

National and international regulators argue that the corporate scandals are the results of poor board management and its corporate practices which lead to declining firm’s performance. The existence of good corporate governance practices helps to prevent corporate scandals, fraud, and potential civil and criminal liability of the organization. It is also used to make good business. The image of good corporate governance enhances the reputation of the organization and makes it more attractive to customers, investors, suppliers (Lipman, and Lipman, 2006, p.3). Aguilera and Cazurra (2009, p.377) mentioned some universal principles of codes of good governance for effective corporate governance that are common to most countries. They are: a balance of executive and non-executive directors, such as independent non-executive directors; a clear division of responsibilities between the chairman and the chief executive officer; the need for timely and quality information provided to the board; formal and transparent procedures for the appointment of new directors; balanced and understandable financial reporting; and maintenance of a sound system of internal control.

The definition of a good or poor board depends on the nature of the industry they engage. For example, a board of a manufacturing firm probably should include someone who has worked in the same or similar industry for many years and has achieved some success in it. A board that consists of members that have different backgrounds may also be a good board. But generally a good board is a board that has members with relevant experience and expertise (Kim and Nofsinger, 2007, P.46).

And as we mentioned above board is the eye of the corporation which overlooks the activities of the CEO (Kim and Nofsinger, 2007, p.41). Therefore our objectives in this paper are to contribute to the international corporate governance research agenda by describing the corporate governance environment for Swedish’s Large Caps and to examine the board composition and firm performance in accounting perspective, and the relationship between them, in Swedish context.

1.2 Problem Statement

What is the relationship between main board composition factors and firm’s accounting profitability?

1.3 Purpose of the Study

This thesis strives to analyze the level of correlation between selected board composition factors and accounting profitability of the firm; by using appropriate statistical tools of correlation we aim to identify the association of selected variables.

In our case we use four variables to access the board compositions which are: number of board directors, independency, experience of board of directors and the proportion of female.
Our findings might be relevant to stockholders and stakeholders in general and to the academics because corporate scandals and financial crises are the result of failing corporate governance practices. Our study may also add knowledge for companies’ implementation of good corporate governance practices. Hence, relevant board composition has an impact on firm’s performance; this will minimize the cost of capital or in other words increasing shareholders’ return.

1.4 Limitations and Demarcations

This study focuses on listed companies in Sweden with sample size of 63 large caps from the OMX Nordic Exchange- Stockholm.

Performance measurement is a diverse subject by nature. It can be categorized in to both financial and non-financial measures. Financial measures are quantitative measures such as growth in sales, cash flow and stock return. In contrast, non-financial measures include market share, product quality, customer satisfaction and growth opportunity (Blocher, Stout, Cokins and Chen, 2008, p.14). To measure the performance of the companies we focus on accounting profitability measurement. We use the annual reports of the firms from period 2005 to 2009. The scope of the study is based on the availability of data and time frame we have.

1.5 Definition and Abbreviations

CEO: Chief Executive Officer.

BOD: Board of Directors

OECD: Organization for Economic Co-operation and Development

Large Caps: A term in which the investment community uses to refer to companies with a market capitalization value of more than $10 billion. It is an abbreviation of the term large market capitalization. Market capitalization is calculated by multiplying the number of a company's shares outstanding by its stock price per share (Chorafas, 2005, p.204).

AV.ROE: Average Return on equity

ROI: Return on Investment

1.6 Outline of the Study

Chapter one presents the introductory part. It starts by introducing the title of the study. Then the research problem presents followed by purpose of the study; limitations and demarcations; and definitions and abbreviations of some terms.

Chapter two converses the methodology in which the research is based up on. It shows reflections and arguments according the research problem and addresses the purpose of the study accordingly.
In chapter three, it is described the concept of corporate governance by presenting two theories, board and its composition, the Swedish Corporate Governance Model and some accounting profitability measurements.

Chapter four gives a presentation of methods we use to collect our empirical data.

Chapter five deals with the empirical results and analysis of our findings. The data is presented in graphs and corresponding tables.

In chapter six the researchers conclude the study.

Chapter seven discusses the criteria of truth by raising the issues such as validity, reliability and generalizability.

At last some suggestions for further studies are presented in chapter eight.
2. RESEARCH METHODOLOGY

*This chapter converses the methodology in which the research is based up on. It shows reflections and arguments according to the research problem and addresses the purpose of the study accordingly.*

2.1 Choice of the Subject Criteria

The main criterion for choosing the topic is our interest on the area of corporate governance. Both writers have a strong interest for this field of study. We have studied accounting on bachelors as well as masters level. The idea of studying this particular problem came when the researchers studied courses at the master level. We have studied corporate governance course and other courses which dealt with cases related to recent scandals and financial crisis.

As we have mentioned in the introductory part, corporate scandals and financial crises are hot issues. And it resulted in a major loss of public confidence in business, damage in the economy and it is unethical or immoral act (Lebinger, 2006, p.351). Different researchers argued that they are the results of poor corporate governance practices and mainly due to the actions of boards of directors. Studies have been published on this issue and by now there is no commonly admitted understanding, so our purpose is to add some knowledge to this subject.

2.2 Preconceptions

Preconception is “an idea or opinion formed before enough information is available to formulate correctly (Proctor, 1995 p.1111)”. Our preconception for the study generates from the concept, as we already have a general knowledge from different sources such as from previous studies, work experience while we were working in our home country and from the course we took in our master’s level.
Chapter Two – Research Methodology

We will make sure that we will not be biased by our general preconception when we conduct the study, and our previous knowledge will help us in selecting appropriate research methodology and theoretical framework.

2.3 Perspective

According to Monroe (2002, p.410), when making a study, the choice of perspective tells a reader from which side the researcher approaches and studies a problem. We would like to explain our perspective to the reader as it might have a great impact on the outcome of the performed research. Our perspective to conduct this study is going to be for use of shareholders who have the power to elect the optimum board members at the annual general meeting. Therefore, the shareholders should take a good care in selecting the board since they have interest on the growth of the company’s profitability.

2.4 Research Philosophy

In general research philosophy depends on the way people think about the development of knowledge. We can visualize and study the reality in two different ways: Positivism and interpretivism (Bryman and Bell, 2007, p.15-25). If the research philosophy reflects a principle of positivism it probably adopts the philosophical stand of natural scientist, that is the way of seeing reality objectively since the researcher interprets the data collected in an apparently value free manner, i.e. there is no room for personal interpretation (Saunders, Lewis, and Thornhill, 2000, p.84). Additionally we can find another important component of the positivist approach to research. As such the research is undertaken, as far as possible, in objective way. The researcher would claim to be external to the process of data collection in the sense that there is little that can be done to alter the substance of the data collected. The assumption is that the researcher must be independent. He or she neither affects nor is affected by the subject of the research (Saunders, Lewis, and Thornhill, 2007, p.103).

In contrast to positivism, interpretivism argues that the view of the writer, who has been in the study of the social world, has the power to amend according to his/ her opinion and he/she is influenced by different intellectual traditions (Bryman and Bell, 2007, p.17).

We observe our study objectively and we measure it with the idea of positivist philosophy. We are independent to the process of data collection in the sense that there is no room for us to alter the substance of the data collected. We do not affect the result of the research since we disclose our result as it is without our personal interpretation or interest. We believe our findings to be repeatable with the same result if done by others as we use statistical method to process our large data, then make test and conclude on hard fact without interpretation.

2.5 Research Approach

Inductive and deductive reasoning are two methods of logic used to arrive at a conclusion based on information assumed to be true. Both are used in research to establish hypotheses (Bryman and Bell, 2007, p.11-14).
Deductive reasoning arrives at a specific conclusion based on generalizations through logical argument. The argument should have a number of statements standing in relation to one another. The researcher must begin with true premises to arrive at true conclusions. The conclusion can never exceed the content of the premises since deductive conclusions are necessarily elaborations on previously existing knowledge and is likely to be hypothesis-testing (Ary, Jacobs, Sorensen and Razavieh, 2009, p.4).

When compared to deductive reasoning, inductive reasoning works in the exact opposite direction. It follows a bottom-up approach. Inductive reasoning begins with specific observation and concludes with broader generalizations and theories. The researcher begins with specific data, notes any patterns in those data, formulates one or more tentative hypothesis, and finally develops general conclusions and theories (Mertler, 2006, p.6). According to Saunders, Lewis and Thornhill (2007, p.119) in inductive approach, a small sample of the subject might be more appropriate than a large number as with deductive.

We carry out our study deductively. First we will look at different literature and related theories and set hypotheses. We will support that by collection of relevant data and then we analyze or test whether our variables are associated or not.

As we have already mentioned the study is going to be conducted by using hypothesis testing to relate our research variables; hence hypothesis deals with an explanation of something previously unknown. It needs some form of investigative process and the research to be acceptable by the others; it must be able to apply the same procedure to get similar outcomes (Gravetter and Wallnau, 2008, p.231).

In order to know the relationship between the accounting profitability and the board composition drivers, we see our preliminary hypotheses as follows:

\[ H_0: \text{there is no significant relationship between the board composition driver and the accounting profitability of the firm.} \]

\[ H_1: \text{there is a significant relationship between the board composition driver and the accounting profitability of the firm.} \]

The null hypothesis will be rejected if the board composition driver shows a statistically significant impact on accounting profitability of the firm.

### 2.6 Research Strategy

There are two types of research methods namely: quantitative and qualitative methods. According to some researchers, quantitative research falls under the category of empirical studies and statistical studies according to others and it includes hypothesis testing, experimental studies, and pretest-post test designs, where control of variables, reliable measures and generalizable from the sample to the population are required. On the other hand, qualitative research design is common in social science stream which elaborates description of the meaning of phenomena for
the people or culture understudy. And it is often designed only for one subject and one case, which is the focus of investigation over an extended period of time (Newman and Benz, 1998, p.9-10). Our study is going to use quantitative method, which is designed to identify or investigate significant numerical data. That means our sample size is large enough to use quantitative method in order to explain or measure the association of board composition and firm’s performance.

2.7 Choice of Secondary Resources

Data collection can be categorized as secondary or primary. Secondary data is data collected by someone other than the user but are still relevant to the research question (Shank, 2004, p.116). Connor, Galvin, and Evans (2004, p.86) stated primary data collection is a difficult task. It typically managed as a discrete project and usually outsourced to specialist market research companies, most of which have invested large sums of money in automating the data collection process.

Analyzing secondary data have some benefits over the primary analysis as such, it saves time that would otherwise be spent collecting data and, particularly in the case of quantitative data, provides larger and higher-quality databases than would be unfeasible for any individual researchers to collect on their own (Curwin and Slater, 2008, p.79; Armstrong, Harker, Kotler, and Brennan, 2009, p.120).

The theoretical and empirical framework in this research are performed by collecting different theories from different books, scientific journals and articles, annual reports, data steam, website information and any other relevant scientific source.

2.8 Criticism of Secondary Resources

Secondary data can be criticized to some kinds of problems or drawbacks. Researches can rarely obtain all the needed information from secondary sources (Armstrong et al., 2009, p.121).

Wegner (2008, p.27) and Wrenn, Stevens, and Loudon (2007, p.73) also described some potential limitations and disadvantages of secondary data:

-A poor fit. The relevant data needed for the research question at hand may be different from the secondary data collected for some other research objective. And in most cases, the secondary data will not adequately fit the problem needed to be solved. In other cases, the secondary data may not be collected from the correct or most representative sample frame as a result it will not be in the right intervals, units of measurement, or categories for proper cross-comparison.

-Accuracy. The first thing that should be taken into consideration is that, the question of whether the secondary data came from a primary or secondary source. Secondary data should not be collected from secondary sources of a secondary data. Second, the quality of the methodology, data gathering and the reputation for credibility should be considered.
-Age. The timeliness of information is a major problem with secondary data. In many dynamic markets, up to date information is an absolute necessity, though old information doesn’t necessarily mean a bad one.

-Quality. Knowing the quality of information is not always easy. The collecting agency’s reputation and capacity is important to assessing the quality of the information provided. It may be necessary to know how the data were collected, what the sampling plan was, what data collection method was used, what field procedures were utilized, what training was provided, what degree of non-response was experienced, and what other sources of error are possible in order to verify the overall quality of secondary data.

Despite all such shortcomings, an analyst should always consider relevant secondary database sources (Wegner, 2008, p.27). The data we take from the data stream and the websites of the firms adequately fit the problem needed to be solved in our study. The data in our research is accurate enough to conduct the research because the data are collected from a primary source and not from secondary source of a secondary data and we follow the appropriate methodology to carry out the research. When considering the timeliness of information, most of our references are new. Regarding the quality of information, we consider it of high quality since our data is collected from different relevant books, scientific journals and articles, audited annual reports, website information and any other relevant scientific source. As such, our sources of secondary information are relevant enough.
3. THEORETICAL FRAMEWORK

Our theoretical part’s primary objective is to create an understanding of how corporate governance operates currently and the corporate governance regulation of Swedish companies. We present different types of theories which are related with board of directors. Finally, we will implicate if there is an association between board composition and firms accounting profitability and we explain concepts related with accounting profitability of the firm and its measurement. The theories we select are from corporate governance which are dealing with the principal-agent problem and steward ship theories. For the choice of theories, we oriented ourselves in previous studies done on this topic.

3.1 Corporate Governance

3.1.1 Definition and Concept of Corporate Governance

“Corporate governance is a set of relationships between a company’s management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined (Hand, Isaaks, and Sanderson, 2004, p.229).”

Corporate governance deals with the relationships between owner and management, distribution of power and responsibility in corporations (Picard, 2005, p.2). The study of corporate governance is complicated since the structure, role and impact of boards have been studied from a variety of theoretical standpoints, which resulted in a number of competing theories concerning best corporate governance practice. Therefore it is vital for researchers to notify current corporate governance practice (Kiel and Nicholson, 2003, P.190).

According to various theories, the aim of corporate governance has been to put a link between various characteristics of the board and corporate performance. As such the corporate governance structure like ownership structure, board composition, board size, debt, and CEO duality have a great influence on performance (Ehikioya, 2009, p.233).
The concept of corporate governance has made boards of organizations popular and critical. Shareholders in a publicly held corporation cannot represent themselves therefore they have to select others to perform that function for them. They have to elect a specified number of qualified and respected people to represent their interests as members of a corporation’s board of directors. As a result, together with management boards pursue objectives that are in the interests of the organization and its stakeholders, facilitate effective monitoring and encourage an organization to use its resources more efficiently (Kiel and Nicholson, 2003, P.190).

Currently there is an emphasis on corporate governance stems mainly from the occasional failure of corporate governance mechanism to adequately monitor and control top level managers’ decisions. The situation results in modifying in governance mechanisms in corporations throughout the world, especially with respect to efforts intended to improve the performance of boards of directors (Hitt, Ireland, and Hoskisson, 2009, p.277).

3.1.2 Theories

We are going to present two theories which explain and are related to our topic such as agency and stewardship theories. Regarding to corporations and issues of corporate control, agency theory views corporate governance mechanisms, especially the board of directors, as an essential monitoring device which minimize any problem that may be brought about by the principal agent relationship (Mallin, 2007, p.12). Stewardship theory argued that trustworthy and cooperative relationships between principals and board of directors are positively correlated with firm’s performance (Leong, 2005, p.355). Either agency theory or stewardship theory are validated as one best way to corporate governance considering that all managers are either stewards or agent. Both theories raise two contrasting approaches to the composition of corporate boards (Donaldson and Davis, 1991, p.49&62).

Agency Theory

These days, more attention is given on directors and executives pursuing their own interests, by investing in expanding their own asset in contrast to increasing the return to their shareholders. Since agency problem has influenced on the structure and composition of boards, it continues to be important in governance terms, on the requirements for disclosure, and on the balance of power between shareholders and directors (Cadbury, 2002, p.4). Agency theory explains the conflict of interests between the shareholders-principal and managers-agent and the separation of ownership and control. This has been one of the most controversial issues in the financial literature (Ehikioya, 2009,p.231).

“An entrepreneur, or a manager, raises funds from investors either to put them to productive use or to cash out his holdings in the firm. The financiers need the manager's specialized human capital to generate returns on their funds. The manager needs the financiers' funds, since he either does not have enough capital of his own to invest or else wants to cash out his holdings. But how can financiers be sure that, once they sink their funds, they get anything but a worthless piece of paper back from the manager (Shleifer and Vishny, 1997, p.740-741).”
Bonazzi and Islam (2007, p.7-8) argued that a well-developed market for corporate controls is assumed to be nonexistent in agency theory, and leads to market failures, asymmetric information and incomplete contracts. As a result a gap exists between the information the manager and the shareholders have. The principal prevented from perfectly monitoring the agent where there is asymmetric information, and the incomplete contract makes it impossible to determine what will occur in all possible contingency (Black, Hashimzade, and Myles, 2009, p.7). It is being advocated that there are numerous governance mechanisms which include monitoring by financial institutions, prudent market competition, executive compensation, debt, markets for corporate control, and concentrated holdings, developing an effective board of directors. For an optimal corporate governance mechanism, developing an effective board of directors stays an important and feasible alternative among all these mechanisms (Bonazzi and Islam, 2007, p.7-8).

Most literature on the theory of the firm and corporate governance suggest that the agency problem that arises with absentee ownership can be reduced by a firm’s board of directors (BOD) which is an important institution for mitigating the conflict. The agency problem in this context is that the interests of management may differ from the interests of the shareholders for whom the BOD work (Murphy and McIntyre, 2007, p.209). In addition, there are several mechanisms which can reduce these agency problems. Among the many are, managerial shareholding that is an obvious one, concentrated shareholdings by institutions or by block holders that can increase managerial monitoring and so improve firm performance, as can outsider representation on corporate boards (Agrawal and Knoeber, 1996, p.377-378). According to Donaldson and Davis (1991, p.49) agency theory argues that shareholder interests require protection by separation of board chair and CEO roles (Donaldson and Davis, 1991, p.49). Where CEO duality is retained, shareholder interests could be protected by providing suitable incentive scheme-the long-term compensation which aligns the interests of the CEO and the shareholders. “Any superiority in shareholder returns observed among dual CEO chairs over independent chairs would be explained away by agency theory as being due to the spurious effects of financial incentives (Donaldson and Davis, 1991, p.51-52).”

**Stewardship Theory**

In contrast with Agency theory, Stewardship theory argued that any observed superiority in shareholder returns from CEO duality was not a spurious effect of greater financial incentives among CEO-chairs than among independent chairs. Regarding with the role of the CEO, they are assisted by the structures to attain superior performance by their corporations to the extent that the CEO exercises complete authority over the corporation and that their role will be unambiguous and unchallenged. As the power and authority are concentrated in one person which means CEO is also chair of the board, there will not be a room for doubt as to who has authority or responsibility over a particular matter. Likewise, corporate leadership will be expected to be clearer and more consistent both for subordinate managers and for other members of the corporate board. The organization has benefits of choosing unity of direction and of strong command and control. According to the proponents of the stewardship theory, they focus not on motivation of the CEO, but rather facilitative, empowering structure. As compared separation of
CEO and chair role, CEO duality will assure effectiveness and produce superior return for shareholder (Donaldson and Davis, 1991, p.51-52).

It is argued that stewardship theory claims, good stewards of the resources entrusted to managers since they are essentially trustworthy individuals. Additionally, superior corporate performance is linked to a majority of inside directors since they are working to maximize shareholders’ long term profit. This is due to the fact that inside directors understand the business they govern better than outside directors and as a result they can make more effective and efficient decision making. Similarly, CEO duality is considered as a positive leading force towards better corporate performance, because there is quite clear company leadership. Underlying this rationale is the assertion that since managers are naturally trustworthy there will be no major agency costs. Proponents of stewardship theory argue that, for fear of putting at risk their reputation, senior executives will not get benefit at the shareholders’ expense (Kiel, 2003, p.5). While the opponents argued that, the relationship between the directors and shareholder is like it was between agent and principal. Besides an agent will act with self interest and can not be expected to behave in a manner assumed in the stewardship theory (Wei, 2003, p.14).

3.2 Board of Directors

3.2.1 Overview of Board of Directors

“The board of directors is a group of elected individuals whose primary responsibility is to act in the owners’ best interests by formally monitoring and controlling the corporation’s top-level executives (Hitt et al., 2009, p.285)”.

In many countries in Europe, two tier board structures are a legal requirement for large companies. The two-tier system has benefits over the one-tier system since it allows a clearer separation between the supervisory body and the executive being supervised though the one-tier system allows closer relationships and better flow of information between directors and executives (Clarke, 2007,p.174).

BOD that deals with complex issues under potentially ambiguous task and role situations can be viewed as organizational teams. The contribution of both the characteristics and functionality of a board is likely to be influenced by a number of environmental and firm specific variables and they play an important role in BOD effectiveness (Murphy and McIntyre, 2007, p.211). There are three important elements in corporate board structure namely the CEOs, who are the inside directors and are in most cases top managers of the firm, and outside directors, and all have the know how of what a good and a bad project is (Kyereboah-Coleman and Biekpe, 2007, p.69). Generally it can be said that directors of the company may be classified in two types: executive-the ones who are delegated some executive powers and are supposed to run the company. They elect to board because they are a source of information about the firm’s day to day operations. And the non executive boards are boards that have some contractual relationship with the firm and they provide independent counsel to the firm. They may also hold top level managerial position in other companies (Kostyuk, Braendle, and Apreda, 2007, p.141; Hitt et al., 2009, p.285).
3.2.2 Role of the Board

Corporate governance in general and the role and functions of boards of directors in particular have emerged as critical topics for organizations and the society as a whole in which they exist (Burke, 2003, p.346). The board of directors of a company has the responsibility of acting in the interest of that company in which they are assigned. And are supposed to protect shareholders’ interests, have a fiduciary duty to perform activities in order to ensure the firm’s profitability and share value. The board is considered as the most important internal monitor because it is one part of the firm’s organizational structure at the top of the corporate hierarchy (Kim and Nofsinger, 2007, p.41-42).

In General, the responsibility of the board is to offer vision and direction for any corporate entity, to hire, evaluate, and perhaps even to fire top management, to vote on major operating proposals and on major financial decisions, to offer expert advise to management and to make sure whether the shareholders received accurate reports of both firms activity and financial conditions IBID.

3.2.3 Board Composition

Board of director literature tells us, board composition can impact organizational performance. In this paper, four conceptual board composition drivers are developed to explain the factors’ impacting on firm’s performance. Namely board size, board independence, board member gender and board competency.

Board Size

Determinants of corporate boards’ sizes become significant especially when corporate boards have been the focus of attention for some time now. And is considered as tip to the head of the governance structure of any corporate entity (Kyereboah-Coleman and Biekpe, 2007, p.69).

Much evidence supporting both points of view-small and large sided board was collected during review of our literature.
It is ambiguous to define what small or large board is. According to Carter and Lorsch (2004, p.89-90), the average number of board is around thirteen in Europe. These averages conceal huge variations among companies and across countries, since one size does not fit all.

Kim and Nofsinger (2007, p.47), have made research and argued that large corporate boards may be less efficient due to the difficulties in solving agency problem among members of the board. Large board creates less value than small boards. When boards become too big, director free riding increase within the board and the board becomes more symbolic and less a part of the management process. That means for a board with few directors, each board member may feel to add more effort, as they each become conscious that there are only a few others monitoring the firm. On the other hand each member of larger boards may simply assume that the many other members are monitoring. Additionally with regard to large boards, it is difficult to reach common understanding and thus is hard to get anything meaningfully done. Therefore, smaller board can be seen as more flexible and more active.
But it should not be eliminated that having a large board size is a benefit to corporate performance as a result of enhancing the ability of the firm to establish external links with the environment, securing more rare resources and bringing more exceptional qualified counsel (Dalton and Daily, 1999, p.674.). Evidence from Belkhir (2009, p.203) also shows idea which is in favor of large board. The study was investigated to analyze the relationship between board size and performance in a sample of 174 companies in US. Their finding was in favor of a positive relationship between board size and performance. The higher the number of directors sitting on the board the more performance is.

From an agency perspective, it can be argued that a larger board is more likely to be watchful for agency problems because a greater number of qualified people will add their expertise in reviewing management actions (Kiel and Nicholson, 2003, p.193-194).

Mallin, (2004, p.132) recommended that the board size to consist of no more than six directors. But, boards can be larger than this though it would not be the general case.

In addition, Pfeffer (1972, p.223) argued the requirement for a large board certainly increases as the size of the organization increases. This occurs due to the following reasons; first, large organizations are typically more diversified, and consequently have a need to deal with relatively more sectors of the environment. Second, large organizations have a greater impact on society and the economy because of their size, and therefore there is again a greater need to have more members who can relate and legitimate the organization to its external environment.

**Board Independence**

There is a general consensus that when a board has a higher fraction of non-insider referred as outside or independent director (Kim and Nofsinger, 2007, p.46). Mallin (2006, p.235) defined independent directors as directors who apart from receiving a director’s remuneration do not have any other material pecuniary relationship or transactions with the company, its promoters, its management or its subsidiaries, in which the judgment of the board may affect their independence of judgment. Where as inside director is individual on the board of directors who is an employee of the company (Siegel and Shim, 2006, p.505).

Independence is not only a function of the proportion of inside to outside directors, rather it includes whether the board has dual leadership role and the degree of director share ownership. Like boards with heavy share ownership, boards with dual leadership are considered less independent (Murphy and McIntyre, 2007, p.213).

Starting the 90s the concept of board independency became popular and globally many countries started to follow the guide line that stipulates the minimum level for the representation of outside director on boards of publicly traded companies. As a result, in most countries, these minimum standards represented a dramatic increase in outside director representation. The movement towards more outside directors is believed that, boards with more outside directors will lead to better board decisions and better corporate performance. This belief rests in large on faith rather than evidence (Dahya and McConnell 2005, p.1).
OECD broadly stated that, there should be an adequate number of independent non executive directors and it is also defined what an independent board mean. For example, “they should not be engaged in business relationships with the company or its subsidiaries, or with the executive directors or shareholders or group of shareholders who control the company in such a way as would influence their own judgment. They should not be immediate family members of the executive directors of the company. In terms of owning shares, they may win shares but not such a quantity that would enable them to have control over the company or to exercise significant influence.” Independent directors’ presence is recognized as representing the interest of all shareholders including the minority (Mallin, 2007, p.133). “From a stewardship theory perspective, it is the ratio of inside to outside directors that is of relevance, since inside directors can bring superior information to the board on decisions (Kiel and Nicholson, 2003, p.193-194)”.

According to Bhagat and Black (1998, p.1) and Hirschey, John and Makhija (2009, p.225), board of directors of American public companies and EU with majority of independent directors behaves differently, in many ways, than boards without such a majority. Some of these differences appear to increase firm value while others may decrease firm value. There is no convincing evidence that shows the presence of majority of independent directors correlates with greater firm profitability or faster growth in large public companies. Particularly, no empirical evidence for current proposals supports for firms to have majority independent boards with only one or two inside directors. In contrast, some evidence also shows that firms with majority-independent boards are less profitable than other firms. Therefore, it can be recommended for firms to have a moderate number of inside directors.

**Board Member Gender**

In many countries, the question concerning getting more women on boards and in top executive jobs become a highly debated issue. For example, in Norway’s case, the political initiatives are regulating the proportion of women among board members. The results to Danish firms also showed to some extent supporting the view that a more gender diversity in top management positions would improve the financial performance (Smith, Smith and Verner, 2006, p.588).

It is argued that women directors on corporate boards offer many contributions. Corporations can gain competitive advantage by being receptive to women’s contribution at the top (Huse and Solb, 2006, p.113). For example having women on boards impacts the reputation of a company, provides strategic input on women’s product/market issues and company direction, improves the constructiveness of board processes and deliberations, and contributes to the firms’ female employees (Burke, 2003, p.347).

There are reasons which are supported by a demographic case in favor of women corporate directors. First current male directors are aging and many are soon to be retiring. Second, as board membership requirements and greater understanding of the working of any particular firm increase, male board members will hold fewer directorship. In addition, fewer qualified males will be available when demands for knowledge and skill are raised. Apparently there was not a
critical requirement for some board members in the past which opened up more opportunities for women (Burke, 2003, p.347).

Firms which are engaged in customer oriented business, have more women directors who are being seen as employers of choice. Having more women on board is seeing as sign of good governance and an indicator of good management, more importantly the reputation of an organization may be heightened (Vinnicombe, Singh, Burke, Bilimoria, and Huse, 2008, p.3).

Firms with a higher ratio of women directors may have different impacts on the performance of particular board operational and strategic control task. Board operational control tasks can be defined as the board’s responsibility to supervise managerial decisions regarding investments, cash flow, dividends, and financial statements. And this decision which is concerning with the firm financial and accounting situation is requiring strong quantitative background knowledge and skills. Where as strategic control task, on the other hand, refers to monitoring managerial decisions with regard to the firm’s strategy as well as organizational practices and policies such as safety, health, and environment, and hence assumes more analytical and visionary skills. In addition operational control tasks are more routine and ex post, where as strategic control tasks are ex ante, more complex and creative, and it requires a broader range of perspectives. This ability and women’s attention to and consideration of the needs of others leads to women’s active involvement in issues regarding strategic nature that concern the firm and its stakeholders. Since, women are particularly sensitive to exercise influence on decisions related to certain organizational practices: such as corporate social responsibility and environmental politics, they may contribute substantial help to the board control tasks for issues of strategic nature. Therefore it is expected that boards with a higher ratio of women directors may be more effective in performing strategic control tasks (Nielsen and Huse, 2010 p.138).

**Board Competency**

Reviewing a number of the literatures shows definitions that, when synthesized and simplified, describe competency as a complex set of behaviors built on the components of knowledge, skills, and attitudes and the ability to apply them effectively (Carraccio, Englander, Wolfsthal, Martin, and Ferentz, 2004, p.252).

According to Ollendick and Prinz (1993, p.111) age uses as a proxy for competence. People of certain age are presumptively competent and their competence may be challenged for cause. It is believed that knowledge, skills and experience gained through age.

A profile of the types of skills and experience needed on the board is created as a first step for nominating a committee. This list depends on the business in which the company engages and the strategy it expects to employ. Furthermore, it includes necessary functional expertise such as accounting, finance, marketing, operations management, industry expertise, and demographic diversity, along with general business experience applicable to the activities of the firm (Colley, Doyle, Logan, and Stettinius, 2003, p.64).
According to Financial Planners Standards Council (FPSC), Competency description for the Board is divided into: 1) Personal/Interpersonal Competencies—those competencies that are expected to be intrinsic or fundamental to the candidate for Board service. It is used in the screening and selection process. 2) Governance Competencies—here board members are together responsible for governance and it is a specific skill set that is required of all Board members. And 3) Specific Competencies—This is expressed as technical skills and strategic competencies. Technical skills assist the organization with specific and ongoing aspects of organizational policy or governance business and individuals with these competencies assist the board in the oversight role. Whereas strategic competencies help the board to move forward in its strategic direction. Individuals with these competencies bring in connections with key target audiences knowledge of strategically relevant trends and issues, and expertise to assist positioning and operational planning (Certified Financial Planners’ website).

**Figure 1: Competency Model for the Board** (IBID).

Figure 1 demonstrates the hierarchy of competency model.
Chapter Three – Theoretical Framework

The difference in performance by the individual, the team and the organization is characterized by the level of competence. When competence is expressed in behavior, it contributes to successful performance and is measured favorably against accepted standards (IBID).

The purpose of the competencies is to recruit, develop and retain board members who will:
• reflect Financial Planners Standards Council’s commitment to excellence;
• demonstrate professionalism in governance;
• meet and exceed the needs and expectations of the public and all other stakeholders; and
• enhance its future performance (IBID).

3.3 Swedish Corporate Governance

The Swedish corporate governance framework is distinguished from that of many other countries by several features, mainly in terms of its long tradition of self-regulation, structure of corporate governance, and concentrated ownership dispersion. Swedish stock exchange listed companies’ corporate governance is regulated by a combination of written rules and generally accepted practices. The framework includes the Swedish Companies Act and the Swedish Annual Accounts Act. And it is supported by the Swedish Code of Corporate Governance and the rules of the regulated markets on which shares are admitted to be traded on the stock market, as well as statements by the Swedish Securities Council on what constitutes good practice in the Swedish securities market (The Swedish Corporate Governance Board’s website).

The Companies Act stipulates companies to have three decision-making bodies in a hierarchical relationship to one another: the shareholders’ meeting, the board of directors and the chief executive officer. There must also be an over seeing body, the statutory auditor, appointed by the annual shareholders’ meeting (IBID).

Swedish companies have corporate governance structure which is regulated by a combination of statutory rules, self-regulation and unwritten practice and traditions. The Swedish Companies Act contains fundamental rules regarding company organization— it stipulates which corporate bodies a company is required to have, the tasks of each of these bodies and the responsibilities of the people within each body. The Swedish code allows companies to deviate from Code rules if this leads to better corporate governance, i.e. comply or explain, not only insist companies to go certain way (IBID).

3.3.1 The Swedish Corporate Governance Model

The Swedish corporate governance model is based on a hierarchical governance structure in which each governance body has far-reaching powers to issue directives to subordinate bodies and to some extent even take over their decision-making authority. With few exceptions, where the board has exclusive decision power or veto right, the shareholders’ meeting is sovereign to decide on any company matter, including where appropriate to issue express instructions to the
board. In practice, however, such powers are rarely used in listed companies, where they would most likely trigger the immediate resignation of the board directors (IBID).

3.3.2 The Board of Directors

The Swedish Corporate Governance Board established in 2005. The Board duty includes monitoring and analysis of how the code is applied in practice and ensures whether the introduction of any modifications or changes deemed necessary and appropriate. Three years after the introduction of the code, the board reviewed the code’s application in order to cover all companies listed on regulated stock markets in Sweden. On 1 July 2008 the revised code became effective and applied to all Swedish companies listed on the OMX Nordic Exchange Stockholm and on NGM Equity, a total of around 300 companies (IBID).

The aim of the board is to provide norms for corporate governance of Swedish listed companies, though the board does not have a supervisory role with regard individual companies' application of the code. It is the responsibility of the respective stock exchanges on which the companies' shares are listed hence the actors on the capital markets have to determine to what extent a company's application or non-application of the rules is satisfactory in an investor perspective (IBID).

The board has to follow any specific directives passed by the shareholders’ meeting, taking in to account these does comply with the Swedish Companies Act or the company’s articles of association. With regard to the task, the board may delegate to individual members or non-members of the board, and may not ensure satisfactory control of the company’s financial position by disclaiming liability for the company’s organization and management or its obligation. The board has an obligation to act responsibly when it comes to delegating; consequently, monitoring that such delegation can be maintained (IBID).

The board must consist of a minimum of three members, one of whom is to be appointed as chair man. The chair has special responsibility for leading the work of the board and making sure whether it fulfils all its legal obligations. It should be specified that the board’s ways of working in written Rules of Procedure (IBID).

Boards of Swedish listed companies are composed entirely or predominantly of non-executive directors. It is stated in the code also that a majority of the members of the board are to be independent of the company and its management. Major shareholders of Swedish companies can appoint a majority of members with whom they have close ties, as such; no fewer than two members must be independent of the company’s major shareholder. This agrees with the positive view of active and responsible ownership expressed in the preparatory documents to the Swedish Companies Act (IBID).
3.3.3 Board Composition

According to the Swedish Corporate Governance Code, the board is supposed to have a composition appropriate to the company’s operations, phase of development and other relevant circumstances. The board members must fulfill the following criteria; first they must have diversity and breadth of qualifications, experience and background. Second, there should be equal gender distribution among board members and no more than one member of the board is expected to hold a position in executive management of the company or a subsidiary (IBID).

3.4 Accounting Profitability Measurements

3.4.1 Overview

Profitability as a financial goal of every firm is used to expand the firm, and or to provide a cushion for future slow periods. Profitability helps a firm to ensure, its solvency, for owners to invest in the future. A firm can go out of business, if it incurs loses and become insolvent (Rogers, 1996, pp 1899). Profit is generally created only when a company operates effectively. Management’s operating effectiveness is proven if the company can prosper, obtain funding, and reward the suppliers of its funds (Friedlob and Plewa, 1996, p.6-8). Inter firm comparisons of profitability are comparisons of accounting profit among firms, and indicate the extent that different accounting methods are employed by firms or industries. Such comparisons are of questionable legitimacy and accuracy, since the accounting profitability of an industry is most unlikely that identical accounting policies can apply equally throughout all firms. In measuring accounting profit and making inter firm comparisons, it is important to view carefully the aggregated figures for an industry’s profitability and necessary to be reasonably sure of the accounting conversation or policy and bases adopted (Franklin and Woodhead, 1980, p.273). Financial performance, measures of profitability and market value, and others, are considered as indicators of how well the firm satisfies its owners and shareholders. The ultimate goal for most firms is to increase their financial performance, particularly for public firms in shareholder value (Blocher et al., 2008, p.13&41). And the aim of performance measurement systems is to provide operational control and to provide external financial reporting (Kuwaiti, 2004, p.55).

Having the problem associated with operationalizing value maximization, it is surprising that companies tend to continue with familiar approaches to performance measurement that rely upon accepted accounting principles. While opponents of traditional financial measures deny the use of accounting based measures of performance, in practice the differences between cash flow, economic profit, and accounting profit indicators of performance evaluation are narrowed. (Grant, 2005, p.51).

Generally financial statement of a firm contains the information needed to make decisions regarding a business. Many business’ owners use their financial statements as requirements for creditors, bankers, or tax preparers only, but they are much more than that as such financial statement can give key information needed on the financial condition and the operation of a business (Pinson, 2008, p 113).
Since the authors in this research wish to present some of accounting profitability measurements which are of relevant to the study. The three following indicators of accounting profitability of a firm are used. Return on Equity, Profit Margin and Return on Capital Employed.

3.4.2 Measures

ROE

Return on equity (ROE) is a percentage determined by dividing profit to equity i.e. pretax profits from the profit and loses statement and equity or net worth from statement of financial position. The result represents the return you have made on the dollars that you invested in your business. Over several years, if your return on equity is lower than a certain minimum industry requirement over several years, you may consider selling your business and investigating the proceeds in bonds. As a consequence your return would be similar, your risk and the work much less (Tyson and Schell, 2008, p.240).

ROE ratio tells us how much profit a business earned in comparison to the book value of its shareholder’s equity. It is useful especially for privately owned business, which is hard to determine the market value of owners’ equity. Public corporations also use ROE just like book value per share, it generally plays a secondary role and is not the dominant factor driving market prices (Tracy, 2008, p.286).

Return on equity is the most appropriate profitability and potential growth indicators and it is the return obtained by the owners of the firm in exchange for providing equity. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. For the most part, when return on equity of the company is higher as compared to its industry, the better the company is doing (Holz, 2003, p 35-36).

Profit Margin

Profit margin is the most commonly and popular system used to measure corporate operations and judging a company’s performance. It is computed by dividing the amount of net profit by gross sales. The profit margin is not fully understood by people invested in the market, though; it is often used for comparative purpose between companies and historical analysis. As a consequence, profit margin is expected unrealistically by market analysts and investors. Additionally, the acceptable level of profit varies among industries. For example, one industry may experience lower or higher average profit margin than another and this makes it impractical to arrive at a specific accounting standard for measuring profitability. Comparisons should be restricted to those among corporations in the same business line (Thomsett, 2009, p.210).

Return on Investment

ROI is a traditional performance management tool. DuPont Power Company developed it in the early 1900s to help manage the vertically integrated enterprise. It is used to evaluate the performance of the company or its department by comparing its accounting measure of income to its accounting measure of investment. The formula to measure ROI is:
ROI = Income/ Investment.

Since long time ROI has been a valuable measurement tool and was the emerging tool to place a value on the payoff from capital investments. Currently, the application of the concept is being expanding to all types of investments (Phillips and Phillips, 2009, p.13).

ROI method is simple, helps to understand how you can influence company results by influencing the input of ROI, makes possible to compare performance of different companies or divisions since it controls for size differences across business units, changes in company’s key ratios in time can be easily monitoring, can be easily used for evaluation of management performance (Ignatiuk, 2008, p.6-7).

ROI is quantitative measure of investment and results and so it provides a company’s management with a simple tool for examining performance i.e., it is a tool used to evaluate how well or poorly management performs. ROI helps management to reduce the factors of intuition and judgment to an interpretable mathematical calculation and compare alternative uses of invested capital. In addition, Creditors, potential investors and owners can compare the ROI of different companies and to industry benchmarks or norms and it provides information about a company’s financial health. ROI is the most commonly used management indicator of company profit and performance and minimizes dissimilar activities of different sizes, and allows them to be compared (Friedlob and Plewa, 1996, p.6-8).
4. PRACTICAL METHOD

Here we present the methods in which how the empirical findings were collected and analyzed. The first part introduces our selection of sample and the criteria in which we have selected, and then we present the statistical tools in which we are going to compute and analyze our data in the next chapter.

4.1 Selection Method

The objective of this study is to carry out investigation of the Swedish Large Listed Companies’ corporate governance practices and its impact on performance of a firm. Regarding the topic many researches have done in US, UK and Australia and as researchers from Sweden, we found it of high interest to find out what it looks like in Swedish case. When conducting a research, considering the selection of samples is a vital one and so data is collected on the 92 large companies trading in the OMX Nordic Exchange Stockholm and include in the list OMX Stockholm as of 2009 (Babbie, 2008, p.231). The actual number of companies in our database is 63 covering the period from 2005 to 2009. For ROE we took average of five years firms’ annual report, where as for the board component’s information we took 2009’s data. The reason for taking five years data for ROE is to minimize the drawbacks of accounting profitability measurements, since accounting profitability measures are exposed to management’s manipulations. For example, management can have an incentive to increase current period profit by postponing the expense to subsequent period in order to get a bonus. So taking average long period data for ROE minimizes the short comings (Dechow, 1993, p.5-6). Regarding with board composition factors, when we see each company’s board of director profile, most of them have been employed for more than five years. So the last year’s data for board is similar with taking five year’s average. We believe that taking one year’s board data doesn’t affect the comparability of average of five years of ROE. Besides, the companies don’t post corporate governance report for the past years.

One of the most commonly used sampling method in research is probably convenience sampling. Researchers make use of participants those individuals who are easy to be reached (Gravetter and Forzano, 2009, p.141).
The selection method used in this study is convenient sampling method. The factors in selecting the companies depend on the availability of data; hence we can find the data in English for the large listed companies. Additionally, subjects are included in the study because they happened to be in the right place at the right time. Desired sample size is reached by feeding the available subjects. It is a non probability sampling method and is one of the most often used methods among the non probability methods in quantitative studies (Burns, and Grove, 2005 p.350).

Convenience sampling can be criticized to be a weak form of sampling for the reason that the researcher makes no attempt to know the population or to use a random process in selection. The researcher has very little control over the representativeness of the sample and, therefore, the possibility that the obtained sample to be biased is great. But in our study, we use a strategy to help correct most of the serious problems associated with convenience sampling. We try to ensure that our samples are reasonably representative and not strongly biased. As such we select a sample that consists entirely of the large listed companies form the OMX Nordic Exchange Stockholm and include in the list OMX Stockholm (Gravetter and Forzano, 2009, p.141).

4.2 Data Collection

Many general database services put an incredible wealth of information at websites for marketing decision makers. Almost every industry association, government agency, business publication and news medium offers free information to those tenacious enough to find their websites. There are so many websites offering data that finding the right ones can become an almost overwhelming task (Armstrong et al., 2009, p.120). As such the Umeå University Library Data Stream database has been used to extract the financial data- ROE and as the information for the board compositions, they are collected from each company’s corporate governance report from the audited annual report via their websites.

For the reason stated above, this study entirely uses secondary data. And it is classified as documentary secondary data. Documentary secondary data is data which includes written correspondence including emails, minutes of meetings, reports transcripts of speeches and administrative and public records, books, journals, important raw data sources in their own right, piled data as well as organization’s databases and websites (Saunders, Lewis and Thornhill, 2009, p.614).

4.3 Access

Nowadays much of the data needed comes from individuals. People are enthusiastic to provide information because it results in financial or other benefit to them. Data access is particularly fundamental to the production of policy relevant social science research which comprises detailed information about individual units and particular longitudinal micro data, and repeated observations on the same units (National Academic Press, 2005, p.36-38).

The National Academy of Sciences and Engineering and Institute of Medicine (2009, p.59) stated also that the advance of knowledge is based on the open flow of information. It is argued that only when a researcher shares data with other researchers can the accuracy of the data, analyses, and conclusions be verified. Researchers with different perspectives apply their own
perspectives to the same body of information; as a result the bias inherent in individual perspectives reduces. We believe the access in this study to be high since we access and extract the data from the Data Stream database and the annual reports. We didn’t face any hindrance to access the data since they are open to public use. Unrestricted access to the data we used to derive conclusions also builds our confidence in the process and outcomes of research. We are therefore delighted with degree of access we encountered.

4.4 Data Processing

Research data processing is the preparation of data for analysis and the actual analysis of them. Preparation of data includes such things like editing and structuring data and coding them for analysis. It should be clearly labeled to ensure that data sets are not misinterpreted or misplaced (Peter and Donnelly, 2004, p.34).

In order for us to be able to get meet our purpose for our research, we use descriptive statistics when processing the data, as descriptive statistics present quantitative description in a manageable form by using graphs, charts, and tables and the calculation of various statistical measures to organize and summarize information. And it helped us to reduce our information to a manageable size and put it into focus (Babbie, 2009 p.467; Stephen, 2006, p.1).

According to Curwin and Slater (2008 p.100), graphical representation is essentially used for two purposes: to show changes over time or to explore the relationship between variables.

Usually the quantity of data that an organization needs to manage can be immense; therefore, there can literally be thousand of figures relating business activities. Data needs to be summarized and presented so that people can understand what is happening. It doesn’t mean that we do not need to use computers to organize and present such data, but, in the final analysis it is essential that what is happening within the organization or to its environment is communicated successfully to those who have to make decisions. Therefore we use diagrammatic representation to transform the raw data into an attractive diagram and offer a quick way of summarizing these large amounts of data and thus getting the general message across. (Curwin and Slater, 2008 p.107).

4.5 Data Analyzing

This study studies quantitative data. Bryman and Bell (2003, p.355-362) described three different kinds of analysis that depend on the relationship between variables (1) Univariate analysis (2) Bivariate analysis and (3) Multivariate analysis. This study refers to bivariate analysis that analysis of two variables at a time in order to discover whether or not the two variables are related. This kind of analysis uses correlation to identify the relationship between the selected variables using SPSS as a statistical tool. We will analyze our hypothesis based on four variables to assess the board compositions which are: number of board directors, independency, experience (competency) of board directors and the proportion of female. Then we will measure the performance of the company with an accounting perspective by taking return on equity as a measure of the accounting performance of the firm i.e. AV.ROE since ROE is the best way to measure shareholders return.
4.6 Hypotheses

In order to identify the association between some of the board composition drivers and the accounting profitability of the firm we use hypothesis testing which is one of the most commonly used statistical procedures. It can be performed with a wide range of statistics (t-tests, correlations). In hypothesis testing, researchers use sample data to draw logical conclusions on the results of a research study and to make inferences on a population of interest. In general there is no formal hypothesis, and perhaps the purpose of the study is to explore some area more thoroughly in order to develop some specific hypothesis or prediction that can be tested in future research. A single study may have one or many hypotheses. We can start hypothesis testing by making a tentative assumption about a population parameter. This tentative assumption is called the null hypothesis and is denoted by Ho. We then define another hypothesis, called the alternative hypothesis, which is the opposite of what is stated in the null hypothesis. We denote the alternative hypothesis by H1. The hypothesis testing procedure uses data from a sample to assess the two competing null and alternative hypotheses (Anderson, Sweeney and Williams, 2009, p. 285).

Significant level test:

In order to establish a rejection rule for null hypothesis, we considered factors which show the strength or significance of the relationship. And it determines whether the probability that the observed correlation occurred is by chance or not. We apply a significant level of 5%; which is most common in statistical analysis. And we reject our null hypothesis if their significant level become below the 5% limits other wise we will accept it (Bryman and Bell, 2003, p.370).

Correlations:

The most commonly used correlation statistic is the Pearson correlation coefficient. It measures both the strength and direction of the linear relationship between two variables. (Bryman and Bell, 2003, pp362). The Pearson correlation coefficient is a numerical index or number between -1 and +1 that measures both the strength and direction of the linear relationship between two variables. The magnitude of the number shows or represents the strength of the relationship between the variables. A correlation coefficient of zero represents no linear relationship which means the scatter plot does not resemble a straight line at all, while a correlation coefficient of -1 or +1 means that the relationship is perfectly linear i.e. all of the dots fall exactly on a straight line. The sign (+/-) of the correlation coefficient indicates the direction of the correlation. A positive (+) correlation coefficient means that as values on one variable increase, values on the other variable tend to increase; a negative (-) correlation coefficient means that as values on one variable increase, values on the other tend to decrease, that is, they tend to go in opposite directions (Salkind, 2010, p114-115).

4.6.1 Board Size

Board size can be measured as the total number of both executives and non executives directors including employees representatives.
Ho: there is no significant relationship between board size and accounting profitability of the firm (AV.ROE)

H1: there is significant relationship between board size and accounting profitability of the firm (AV.ROE)

This is denoted statistically as follow

Ho: \( r = 0 \)

H1: \( r >, < 0 \)

Where \( r \): is level of correlation between the two variables.

The null hypothesis is Ho: \( r = 0 \), we will accept our hypothesis with 95% confidence level.

The Alternative hypothesis H1: \( r > 0 \) or H1: \( r < 0 \)

### 4.6.2 Proportion of Independent Directors

We defined the percentage of independent directors as proportion of executive (out side directors) over total number of directors (executive and non executive directors).

Ho: there is no significant relationship between % of independent directors and accounting profitability of the firm (AV.ROE).

H1: there is significant relationship between % of independent directors and accounting profitability of the firm (AV.ROE).

This is denoted statistically as follow

Ho: \( r = 0 \)

H1: \( r >, < 0 \)

Where \( r \): is level of correlation between the two variables.

The null hypothesis is Ho: \( r = 0 \), we will accept our hypothesis with 95% confidence level.

The Alternative hypothesis H1: \( r > 0 \) or H1: \( r < 0 \)

### 4.6.3 Competency of Board Members

We use age as a measure of competency of the board of directors.
Ho: there is no significant relationship between % of independent directors and accounting profitability of the firm (AV.ROE)

H1: there is significant relationship between % of independent directors and accounting profitability of the firm (AV.ROE)

This is denoted statistically as follow

Ho:  \( r = 0 \)

H1:  \( r >, < 0 \)

Where \( r \): is level of correlation between the two variables.

The null hypothesis is Ho: \( r = 0 \), we will accept our hypothesis with 95 % confidence level

The Alternative hypothesis H1: \( r > 0 \) or H1: \( r < 0 \)

4.6.4 Percentage of Female Directors

We defined the percentage of female directors as proportion of number of female directors over total number of directors.

Ho: there is no significant relationship between proportion of female director and accounting profitability of the firm.

H1: there is significant relationship between proportion of female director and accounting profitability of the firm.

This is denoted statistically as follow

Ho:  \( r = 0 \)

H1:  \( r >, < 0 \)

Where \( r \): is level of correlation between the two variables.

The null hypothesis is Ho: \( r = 0 \), we will accept our hypothesis with 95 % confidence level

The Alternative hypothesis H1: \( r > 0 \) or H1: \( r < 0 \)
5. EMPIRICAL STUDY AND ANALYSIS

This chapter presents and describes our empirical findings based on descriptive statistics of our sample in which we have collected the data. Then we analyze the findings and show the result by defining and testing our hypothesis by using correlation as a statistics tool.

<table>
<thead>
<tr>
<th>Empirical Study and Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive Statistics of Our Sample</td>
</tr>
</tbody>
</table>

5.1 Descriptive Statistics of Our Sample

We report descriptive statistics for the sample of large companies listed in OMX Stockholm Sweden. As we discussed in previous chapter the data selected was originally a total of 92 firms with 5 years observations. From those firms a number of observations were excluded; 22 companies which have identical annual report were excluded due to the fact that, they are directed by one management and are one company with different naming like A and B because they have different shares with different voting power. For other 7 observations we could not find annual report and other relevant information because they shut down their business before 2009. Thus, 63 firms with 5 years observations were left to perform the research.
The following histograms show the distribution of our four variables namely: board size, proportion of independent directors, proportion of female directors, and average age of board members.

![Histogram of number of Directors for a sample of 63 firms](image)

**Figure 2: Histogram of number of Directors for a sample of 63 firms**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td>63</td>
<td>5</td>
<td>16</td>
<td>10.75</td>
<td>2.811</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1: The Descriptive Statistic’s of Board Size**

From the above histogram and table we can see that, the average number of board size in Swedish large companies range from 10 to 11 and standard deviation of 2.811 .The values ranging with minimum 5 to maximum of 16.

And in addition to know how large the standard deviation in relation to the mean, the researchers use coefficient of variation which is calculated: (Standard deviation/Mean) (Anderson, Sweeney and Thomas, 2009, p.95).
For the 63 sample size we found a sample mean of 10.75 and a standard deviation of 2.811. Coefficient of variation $= 2.811/10.75 = 0.2615$. In other words the coefficient of variation tells us that the sample standard deviation is 26.15% of the value of the sample mean.

Figure 3 and table 2 shows the percentage of independent directors, as we discuss in practical method, we measure board independency with percentage of outside directors over the total number of directors. The average percentage of board independency is 65.66 and its standard deviation is 17.55. The values ranging with minimum 29 to maximum of 100.

To know how large the standard deviation in relation to the mean, we calculated coefficient of variation. For the 63 sample size as we mentioned above we found a sample mean of 65.66 and a standard deviation of 17.551. Coefficient of variation $= 17.551/65.66 = 0.2673$. In other words the coefficient of variation tells us that the sample standard deviation is 26.73% of the value of the sample mean.

![Histogram](image)

**Figure 3: Histogram of % of Independent Directors for a sample of 63 firms**
Table 2: The Descriptive Statistics for % of Independent Directors

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of independent</td>
<td>63</td>
<td>29</td>
<td>100</td>
<td>65.66</td>
<td>17.551</td>
</tr>
<tr>
<td>directors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4 and table 3, present information regarding to the competency of board of directors with mean value of approximately 55. We use age as measure of the competency (experience) hence it includes all the knowledge the directors could get through their experience. The values ranging from 48 to 63. And the standard deviation is 3.345.

To know how large the standard deviation in relation to the mean, we calculated coefficient of variation. For the 63 sample size as we mentioned above we found a sample mean of 55.19 and a standard deviation of 3.345. Coefficient of variation = 3.345 / 55.19 = 0.0606. It tells us that the sample standard deviation is 6.06% of the value of the sample mean.

Figure 4: Histogram of the Average Age of Board of Directors for a sample of 63 firms
Chapter Five – Empirical Study and analysis

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Board of directors</td>
<td>63</td>
<td>48</td>
<td>63</td>
<td>55.19</td>
<td>3.345</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: The Descriptive Statistics of Age of Board Directors

Finally we present both figure 5 and table 4 which show the statistical description of our last variable: % of female directors. On average the percentage of females who work as board of directors in Swedish large companies is 21 i.e. from total directors 21% are female. The value ranges with minimum of 0 and maximum of 67 and value which deviates from the mean is 12.87.

To know how large the standard deviation in relation to the mean, we calculated coefficient of variation. For the 63 sample size as we mentioned above we found a sample mean of 21.07 and a standard deviation of 12.866. Coefficient of variation = $\frac{12.866}{21.07} = 0.6106$. In other words the coefficient of variation tells us that the sample standard deviation is 61.06% of the value of the sample mean.

![Figure 5: Histogram of % of Female Directors for a sample of 63 firms](image-url)
Chapter Five – Empirical Study and analysis

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of female Directors</td>
<td>63</td>
<td>0</td>
<td>67</td>
<td>21.07</td>
<td>12.866</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: The Descriptive Statistics of our sample

The following table describes the average return on equity of Swedish large firms. For the 63 sample size we found a sample mean of 19.84 and a standard deviation of 21.93. Coefficient of variation = 21.92697 / 19.8393 = 1.0956. In other words the coefficient of variation tells us that the sample standard deviation is 110.56% of the value of the sample mean.

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Return on Equity</td>
<td>63</td>
<td>-8.31</td>
<td>148.16</td>
<td>19.8393</td>
<td>21.92697</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5: The Descriptive Statistics of our 63 case

5.2 Analysis and Result

In this part, we present points related with correlation to analyze our variables and to test our hypotheses.

5.2.1 Correlation

We analyze our hypothesis based on our four variables: Board size, percentage of independent directors, ages of board members, and percentage of female directors, we used SPSS to analyze them. The Pearson product moment coefficient of correlation or simply, the coefficient of correlation (r) is a measure of the strength of the linear relationship between two variables x and y (Bryman and Cramer, 2005, p.216). Then we correlate these variables with the company’s accounting profitability measure - average return on equity i.e. AV.ROE.
### 5.2.2 Testing Hypothesis Regarding with Board Size

Ho: is there is no significant relationship between board size and accounting profitability of the firm (AV.ROE)

H1: is there is significant relationship between board size and accounting profitability of the firm (AV.ROE)

This is denoted statically as follow

\[
\begin{align*}
H_0: & \quad r = 0 \\
H_1: & \quad r >, < 0
\end{align*}
\]

Where \( r \): is level of correlation between the two variables.

The null hypothesis is \( H_0: r = 0 \), we will accept our hypothesis’s with 95 % confidence level

The Alternative hypothesis \( H_1: r > 0 \) or \( h_1 < 0 \)

The correlation of board size with Return on equity

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Average Return on equity</th>
<th>Board size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Return on</strong></td>
<td>1</td>
<td>0.134</td>
</tr>
<tr>
<td><strong>equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td></td>
<td>0.294</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td><strong>Board size</strong></td>
<td>0.134</td>
<td>1</td>
</tr>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sig. (2-tailed)</strong></td>
<td>0.294</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>

Table 6: The Correlation result of Board Size and Return on Equity
At 95% level of confidence, the null hypothesis cannot be rejected because the error limit is 29.4%. That means the correlation for our sixty three cases is 0.134 which indicates that, there is a weak relationship between our variables: board size and AV.ROE. Then, when we test the significance of the relationship to accept the error limit we obtained amount which is far from minimum limit of 5% so we can not reject our null hypothesis.

This correlation result is inconsistency with the prior studies. (Kim and Nofsinger, 2007, p.47) have made research and argued that large corporate boards may be less efficient due to the difficulties in solving agency problem among members of the board. This means if the board size increase the performance of the firm will be affected negatively. When we see from an agency perspective, it can be argued that a larger board is more likely to be watchful for agency problems because a greater number of qualified people will add their expertise in reviewing management actions and can have impact on performance of the firm (Kiel and Nicholson, 2003 p.193-194). But our result does not support both arguments instead it shows that board size is not significantly correlated with accounting profitability measure (ROE).

**Regarding with percentage of Independent Directors (Out side Director)**

H0: there is no significant relationship between % of independent directors and accounting profitability of the firm (AV.ROE)

H1: there is significant relationship between % of independent directors and accounting profitability of the firm (AV.ROE)

This is denoted statically as follow

\[ H_0: r = 0 \]
\[ H_1: r >, < 0 \]

Where r: is level of correlation between the two variables.

The null hypothesis is H0: r =0, we will accept our hypothesis’s with 95% confidence level

The Alternative hypothesis H1: r>0 or h1<0
The correlation of percentage of Independent Directors with Return on equity

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Average Return on equity</th>
<th>% of independent directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Return on equity Pearson Correlation</td>
<td>1</td>
<td>-0.087</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.497</td>
<td>63</td>
</tr>
<tr>
<td>N</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>% of independent directors Pearson Correlation</td>
<td>-0.087</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.497</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>63</td>
<td></td>
</tr>
</tbody>
</table>

**Table 7: The Correlation result of % of Out side Directors and Return on Equity**

The null hypothesis cannot be rejected because its error limit is 49.7%. That means the correlation for our sixty three cases is -0.087 which indicates that there is almost no relationship between percentage of out side directors and AV.ROE because the r value is approximately zero. Then, when we test the significance of the relationship or the error limit to accept or reject our hypothesis and the value is far higher than the minimum limit of 5% .So we can not reject our null hypothesis.

Board independence, correlates slightly negatively with accounting profitability measure of the firm (AV. ROE) but the association is not significant enough in order to reject the null hypothesis.

The agency theory said that there must be independent group in organization in order to improve return on share holder equity (Donaldson and Davis, 1991, p. 51-52). But our analysis result shows that the percentage of outside directors of the firm is not significantly associated with accounting profitability measure (ROE). In addition, the result is in contrary with the one we mentioned in theoretical part, regarding with independency of directors which is stated in stewardship theory, superior corporate performance is linked to a majority of inside directors since they are working to maximize shareholders’ long term profit (Kiel, 2003 p. 5).
Regarding with Competency of Directors

H₀: is there is no significant relationship between average ages of board members and accounting profitability of the firm (Av.ROE).

H₁: is there is significant relationship between average ages of board members and accounting profitability of the firm (Av.ROE).

This is denoted statically as follow

\[ H₀: r = 0 \]
\[ H₁: r >, < 0 \]

Where \( r \): is level of correlation between the two variables.

The null hypothesis is \( H₀: r = 0 \), we will accept our hypothesis’s with 95 % confidence level.

The Alternative hypothesis \( H₁: r >0 \) or \( h₁<0 \)

The correlation of percentage of ages of Board of Directors with Return on equity

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Average Return on equity</th>
<th>Age of Board of directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Return on</td>
<td>1</td>
<td>-0.087</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>63</td>
<td>0.496</td>
</tr>
<tr>
<td>N</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>Age of Board of</td>
<td>-0.087</td>
<td>1</td>
</tr>
<tr>
<td>directors Pearson</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.496</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>

Table 8: The Correlation result of Ages of Board Members and Return on Equity

Result from table 8 shows that we can not reject \( H₀ \) at 95% level of confidence. Since the correlation of the variables is not statistically significant. I.e. Ages of directors are not significant
in affecting firms’ profitability in terms of ROE. There is a correlation of -0.087 and with significant level of 0.496 and we accept our null hypothesis.

According to the financial planer’s model if the competency of directors increases, it will have impact on the performance of the firm. However our correlation result does not show significant relationship between the competency of the board of directors and the accounting profitability measure of the firm (ROE) (Certified Financial Planners’ website).

Regarding with Female Directors

Ho: is there is no significant relationship between proportion of female director and accounting profitability of the firm.

H1: is there is significant relationship between proportion of female director and accounting profitability of the firm.

\[ \text{Ho: } r = 0 \]
\[ \text{H1: } r >, < 0 \]

Where \( r \): is level of correlation between the two variables.

The null hypothesis is \( \text{Ho: } r =0 \), we will accept our hypothesis’s with 95 % confidence level

The Alternative hypothesis \( \text{H1: } r>0 \) or \( h1<0 \)
The correlation of percentage of female directors with Return on equity

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Average Return on equity</th>
<th>% of female Directors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Return on equity</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.019</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>63</td>
</tr>
<tr>
<td>% of female Directors</td>
<td>Pearson Correlation</td>
<td>0.295</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.019</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>63</td>
</tr>
</tbody>
</table>

Table 9: The Correlation Result for percentage of Female Directors and Return on Equity

From Table 9, we can see that:

At 5% significance level, the null hypothesis will be rejected because it is .019. That means the correlation for our sixty three cases is 0.295. This indicates there is a significant relationship between our variables: % of Female directors and AV.ROE. When we test the significance of the relationship for accepting the error we get the value which is below the minimum limit of 5% so we can reject our null hypothesis.

The result shows the percentage of female directors is significantly associated with accounting profitability measure (ROE) of the firm. This correlation statistics is consistent with the prior studies made on Danish firms which showed to some extent supporting the view that a more gender diversity in top management positions would improve the financial performance (Smith et al., 2006, p.588).
Summary of Findings

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. of Cases</th>
<th>r</th>
<th>Significant Level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Size</td>
<td>63</td>
<td>0.134</td>
<td>0.294</td>
<td>Accept Ho</td>
</tr>
<tr>
<td>%age of Independent Directors</td>
<td>63</td>
<td>-0.087</td>
<td>0.497</td>
<td>Accept Ho</td>
</tr>
<tr>
<td>Average Age of Board Members</td>
<td>63</td>
<td>-0.087</td>
<td>0.496</td>
<td>Accept Ho</td>
</tr>
<tr>
<td>%age of Female Director</td>
<td>63</td>
<td>0.295</td>
<td>0.019</td>
<td>Reject Ho</td>
</tr>
</tbody>
</table>

Table 10: Summary of Findings of Correlation

Table 10 shows the summary of correlation results of all variables. Regarding board size, %age of independent directors and average age of board members, even if the level of correlation (r) is different from zero its significant level test shows a value far above 5% so we are obliged to accept the null hypothesis. Where as for the %age of female directors the significant level of the observed correlation i.e. 29.5% is below the 5% limit so we reject the null hypothesis (accept the alternative hypothesis).

5.2.3 Regression Analysis

Based on the correlation result it is found that proportion of female directors has significant relation with accounting profitability of the firm but it could be that large companies have more females and that this may drive the results. The relationship may vary depending on the appearance of other variables at the same time. So we run regression in order to find the correlation among independent variables and one dependent variable.

Model one:

This model shows the regression formula of Av ROE and % of female by taking board size as control variable

\[
\text{AV.ROE}=B_0 + B_1 \times \%\text{of Fem} + B_2 \times \text{BS}
\]

Where:

Bo= the constant

%of Fem=%age of female directors

BS= Board size
**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>3028,103</td>
<td>2</td>
<td>1514,052</td>
<td>3,419</td>
<td>.039a</td>
</tr>
<tr>
<td>Residual</td>
<td>26571,167</td>
<td>60</td>
<td>442,853</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29599,270</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Bord size, % age AV.FEM

b. Dependent Variable: AV.ROE

**Table 11. The Regression Result for Model One**

**Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Sig.(P-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1,505</td>
<td>10,940</td>
<td>.138</td>
</tr>
<tr>
<td>% age AV.FEM</td>
<td>.489</td>
<td>.210</td>
<td>.288</td>
</tr>
<tr>
<td>Bord size</td>
<td>.793</td>
<td>.962</td>
<td>.102</td>
</tr>
</tbody>
</table>

a. Dependent Variable: AV.ROE

Where P-value is the significant level of the relationship (5%)

**Table 12. The Regression Result for percentage of Female Directors and Av.ROE**

The above tables give explanation of the regression analysis between the accounting profit and the average number of females in a board. The dependent variable is average accounting profit (AV ROE) with average female on the board (% age Fem) as the independent variable. The board size is used as a control factor or variable and it has no significant relation; this is because it has a p-value of 0.413 greater than the significance level. It can then be considered as zero in statistics. The regression model above has a p-value of 0.039 below the 0.05 significant levels. This indicates that the general model above is statistically significant.

The results give a constant value of 1.505, the coefficient of % age of female as 0.489 with a p-value of 0.023. This makes it statistically significant as compared to the board size with coefficient of 0.793 and a p-value of 0.413 making it statistically insignificant.

Therefore, it is clear that regardless of the board size, the accounting profits of selected companies depend on the proportion of female directors.
This was further confirmed when the other variables namely the board independency and age of board members were added to the analysis. It is described in the following model, model 2 and table13 and table14. The results indicate that they all have a p-value more than the significance level of 0.05 with the exception of the proportion of female directors which has 0.032. Thus, the regression model becomes statistically insignificant or is not meaningful because its p-value is > 5% i.e.0.169. The absolute value of accounting profitability cannot be explained from independent variables in this model.

**Model Two:**

This model shows the regression formula of Av ROE and % of female by taking board size, % age of independent directors and age of board members as control variables.

\[
\text{AV.ROE} = B_0 + B_1 \times \% \text{of Fem} + B_2 \times \% \text{of Indep} + B_3 \times \% \text{BS} + B_4 \times \text{Av.Age of BM}
\]

Where:

- Bo= the constant
- %of Fem= %age of female directors
- BS= Board size
- % of Indep= %age of independent directors
- Av.Age of BD= Average age of board members

### ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3058,049</td>
<td>4</td>
<td>764,512</td>
<td>1,671</td>
<td>.169a</td>
</tr>
<tr>
<td>Residual</td>
<td>26541,221</td>
<td>58</td>
<td>457,607</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29599,270</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), % of IND, AV.AGE, Bord size, % age AV.FEM

b. Dependent Variable: AV.ROE

Table 13 Regression Result for Model Two
# Coefficients\(^a\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>11,566</td>
<td>49,452</td>
<td>.234</td>
</tr>
<tr>
<td></td>
<td>% age AV.FEM</td>
<td>.481</td>
<td>.220</td>
<td>2,191</td>
</tr>
<tr>
<td></td>
<td>Bord size</td>
<td>.809</td>
<td>.997</td>
<td>.104</td>
</tr>
<tr>
<td></td>
<td>AV.AGE</td>
<td>-.201</td>
<td>.832</td>
<td>-.241</td>
</tr>
<tr>
<td></td>
<td>% of IND</td>
<td>.016</td>
<td>.160</td>
<td>.012</td>
</tr>
</tbody>
</table>

a. Dependent Variable: AV.ROE

**Table 14. The Regression Result of all independent variables and Av.ROE**
6. CONCLUSION

In this chapter conclusions are drawn from the analysis. The research question and purpose of the study that was presented in the introduction of this thesis will be answered.

The purpose of this study is to analyze the level of correlation between selected board composition factors and accounting profitability of the firm. To meet this purpose we draw our conclusion and answer our research question.

What is the relationship between main board composition factors and firm’s accounting profitability?

When answering our research question we took selected board composition factors namely: number of directors, independency of directors, experience of board of directors and the proportion of female directors and their impact on accounting profitability of the Swedish large firms. Our study is based on the final sample size of 63 Swedish Large Caps. We use Pearson’s correlation coefficient (r) to examine the relationship between board composition factors on accounting profitability of the firm (Av. ROE) and the following results were found.

As far as considering the relationship between number of directors and the accounting profitability measure (Av. ROE), we found no significant relationship between them. This means our results show the change in number of directors does not have significant contribution on profitability of Swedish large firms.

Regarding the correlation between percentages of independent directors and accounting profitability measure (Av. ROE), the same result was found like board size. It implies that the firm may record profit regardless of whether they are governed by more insider dominated board of directors or not.

Here we are considering the relationship between board competency and the accounting profitability measurement (Av. ROE). Our result shows the experience and the qualification of board member does not relate with the firm’s accounting profitability record.

Where as, in the case of the proportion of female directors, we obtained a significant correlation between the accounting profitability measure (Av. ROE) and percentage of female directors. Firms which have high proportion of female directors show higher average return on equity (Av.ROE).

In general we conclude that some of the board composition drivers such as board size, independency of board member and competency of director do not have significant impact on profitability of Swedish large firms. However proportion of female directors has a positive impact on profitability of Swedish large firms. Therefore, is better for the shareholders to give special attention when recruiting the board member regarding the proportion of female directors since the shareholders benefit from having more females in the board.
Nevertheless in this particular case the result could be influenced by many factors other than the governance of a company. Especially for the period 2008 to 2009 due to financial crises ROE were very much fluctuated. And this may have impact on the results found. And since our study focuses on the accounting measurement of profitability as a measure of performance of the companies, the results could be different if taken non-financial measures or both financial and non-financial measures at the same time together.
7. QUALITY CRITERIA

In this chapter we describe the truth criteria of our quantitative study.

<table>
<thead>
<tr>
<th>Quality Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity</td>
</tr>
<tr>
<td>Reliability</td>
</tr>
<tr>
<td>Generalization</td>
</tr>
</tbody>
</table>

7.1 Validity

Popham (2003, p.43) argued the notion of validity is at the very apex of all measurement concepts. It is not the result that can be valid or invalid but, rather, the inference of measurement is important. In conventional usage, validity refers to the extent of adequacy of an empirical measure and reflects the real meaning of the concept under consideration. Validity means that we are actually measuring what we suppose to measure (Babbie, 2009, p.153).

In order to analyze the relationship between board composition and accounting profitability of a firm, we conducted correlation in our study, since correlation measures relationships between two or more variables. The collected empirical data was analyzed with SPSS which is the most widely used statistical computer software for our quantitative data. As the measurement for the accounting profitability we took the AV.ROE. We set hypotheses and correlate each of our selected variables with the AV ROE. Therefore we are convinced that our measurement approaches are appropriate and really measure what they are supposed to measure.

7.2 Reliability

Reliability is concerned with the question of whether the results of a study are repeatable and it is commonly used in relation to the question of whether or not the measures that are devised for concepts in business and management are consistent. Reliability is particularly at issue in connection with quantitative research in which the researcher is likely to be concerned with question of whether a measure is stable or not (Bryman and Bell, 2007 pp 40-41).

When we conduct the study it is important to clarify the trustworthiness of the resources. All the data we used are collected from each company’s published annual reports and from Data Steam which is available in the Umeå University Main library. The model we used has been tested with certain times by prior researchers, and it is a mature model. To process our quantitative data we use SPSS as a tools, we strongly believe that the computation and processing of data is accurate, controllable and replicable.
7.3 Generalization

Generalizability refers to the truthfulness of conclusion of the population, group, setting, or event in a specified given condition (Engel and Schtt, 2005, p.20). According Bryman and Bell (2007, p.169), in quantitative research the researchers are usually concerned about being able that their findings can be generalized beyond the confines of the particular context in which the research was conducted.

(Schutt, 2006, p.136) divide generalizability into sample generalizability and cross-population generalizability. Where sample generalizability is defined as whether the finding from a sample of the population can be generalized to the population from which the sample was selected. While cross-population refers to whether the finding from a study of one population can be generalized to another or different population.

We believe this study is of high quality referring to the issue of generalizability. Regarding to the sample size, it represents the population since we took all large caps which is listed in OMX – Stockholm though we exclude some of them due to the reason we mentioned in the practical as well as the empirical sections of the study. Additionally because we use quantitative methods with statistical tools to conduct our research we believe our findings can be generalized to other study of different population.
8. RECOMMENDATIONS FOR FURTHER STUDIES

In this part limitations and suggestions for further studies will be presented.

Since this study focuses only on the Swedish Large Caps during a rather short period of time, we could suggest that further study should be done regarding small and middle caps. Therefore the study could be more adequate and representative to all Swedish companies.

To measure the performance of the companies our study focused on accounting profitability measures-financial measures. We recommend extending the study using other performance measures-non financial measures. It could be interesting as it could be done using both financial and non financial performance measures as well.
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