Social performance and market performance of stocks
(Evidence from public listed firms in Sweden)

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Abstract
The increasing importance of corporate social responsibility with practitioners is having huge attention in the academic literature. A growing study examines the reasons why firms engage in corporate social responsibility, and how it relates to financial performance of firms. Yet, the link between market performance of a firm’s stock and its social performance is under researched compared to that of the environment and economic perspectives. Therefore, this study adds insights to CSR-financial performance debate by focusing on the concept of social performance. Social performance refers to the firm’s product responsibility, community involvement, health and safety, diversity, training and development, human right, and employment quality. Using Thomson Reuters database social performance scores, we conduct a descripto-explanatory analysis to examine whether the Swedish stock market responds to social performance over the years 2010 to 2014 for a sample of 66 Swedish firms listed at OMX Stockholm.

To accomplish this descripto-explanatory analysis, monthly returns for the stock and the market for each firm were calculated as, ri = Pt / (Pt−1 − 1), from the stock data index and OMX Stockholm30, respectively. Other financial measures such as risk factors for the market, SMB, and HML were computed based on procedures of Fama and French_1993. Moreover, making use of multivariate Fama and French regression model, ri = Rf + βm*Rm - Rf + βS* SMB + βH* HML, risk adjusted return; alpha and market beta for each firm is computed. Finally, to simplify the analysis process and to ensure compatibility with existing literature, both financial and social data is computed as an average for the years 2010 to 2014.

In this study, we encompass existing theories to develop testable hypotheses to scrutinize the data on how market performance of a firm’s stock relates to its social performance. Our analysis revealed an insignificant no effect linear relationship between social performance and market performance of a firm’s stock for listed firms in the analysis. The proposition of a neutral association assumes either non-existent or non-linear relation between corporate social and financial performances. However, Ullmann (1985) argues that the relationship could not be detected, even if a relationship existed, due to the problems associated, for example, with measurement in empirical studies. Our finding suggests investment in social responsibility initiatives bears no significant impact to stock market performance measured in terms of risk adjusted returns or firms cost of capital. Thus, the results appear to support the argument social investment cannot pay off, nor give up shareholders wealth. In addition, we found no significant evidence for the view expressed by CSR sceptics that CSR may make financial markets more volatile by amplifying noise in the stock markets.

Finally yet importantly, the findings of this paper can have implications for managers and security analysts who are considering the implementation of social performance suggesting that abandoning social responsibility may reduce their performance, and for investors who value social responsibility as a key strategy for investment decision.

Keywords:
Social performance, stock market performance, average social score, risk adjusted return, volatility, alpha, OMX Stockholm, Sweden
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Abbreviations

AMH: Adaptive Market Hypothesis
AP fund: Swedish National Fund
CAPM: Capital Asset Pricing Model
CSR: Corporate Social Responsibility
ESG: Environment, Social and Governance
EMH: Efficient market Hypothesis
FAR SRS: Institute for the Accountancy Profession in Sweden
GRI: Global Reporting Initiative
ROA: Return on Asset
SFFA: Sweden Federation of Financial Analysts
SRI: Socially Responsible Investment
Chapter 1: Introduction

In this chapter, we will take a look at the foundations of our research, namely the problem background, research gap, research question, purpose, contribution & target audience, and the limitations of the study. The problem background describes why corporate social performance matters to business. The research gap states the missing elements in the existing research in relation to our topic, and attempts to explain our approach to fill the gap, followed by research question designed to address the research problem. The research purpose explains the objectives our study hopes to reach. In the contribution section we explain both the theoretical and practical benefits of research to our target audience. The chapter concludes by discussing the main important limitations of our study.

1.1 Problem background

The integration of social concerns into the business discourse around sustainability has emerged during the 1990s in response to concerns regarding the impact of business activities on indigenous communities in less developed countries and regions (Crane & Matten, 2007, P. 35). Together with environment and economy, social considerations make up the three main elements of sustainability (Elkington, 1998, P. 37). According to World Commission on Environment (1987, P. 8), sustainability can be defined, as “development that meet the needs of the present without comprising the ability of future generations to meet their own needs”. Similarly, Figge et al. (2002, P. 269) argued that sustainability is the balancing of the company’s short and long-term goals in all three dimensions of performance, i.e. social, environmental and financial. In the current economic climate, the traditional accounting frameworks alone do not characterize the holistic performance of a corporation (Sridhar, 2012, P. 89). Rather, the use of both financial and non-financial consideration better captures the significant corporate behaviors, actions and impacts. As a result, there is a growing trend toward holding corporations responsible for their impact on the social fabric of the systems in which they conduct their business (Hartman et al., 2007, P. 373).

Due to the constraint of ever declining natural resources and pressure by customers, employees, suppliers, government and other stakeholders seeking businesses to make more responsible choices, more companies are incorporating sustainable strategies and adopting more socially responsible practices (Orlitzky, 2013, P. 238). While some companies have replied to these concerns by allocating more resources to socially responsible activities, other firm managers have resisted, arguing that additional investment in CSR is inconsistent with their effort to maximize shareholders value. Now, than ever before, stakeholders are anxious to know about how business operates, and thus investors are choosing to invest in socially responsible firms.

Accordingly, the fundamental idea behind socially perspective of sustainability is that businesses should bear some responsibility for the impact they may have on society and balance the external ‘societal consequences’ of their actions with the more direct internal consequences such as profit (Slack et al., 2010, P. 636). And, such concerns are operationalized through the adoption of a long-term oriented and a more inclusive set of responsibilities focusing on ethical practices, employees, environment, and customers (Ameer & Othman, 2012, P. 61). On the other hand, companies are expected to secure economic benefits from their socially responsible performance. But, the interesting question has been: Is it possible for a firm to come out to be, at the same time, economically viable and socially responsible?
In spite of the greater acceptance of corporate social responsibility (CSR) principles, there is a long-run debate on the impact of CSR activities on corporate economic performance. Scholars (e.g. Arx & Ziegler, 2014; Guenster et al., 2011; Semenova et al., 2010; Pivato et al., 2008; Wanger, 2011) posit that incorporating CSR activities can lead to, for example, more efficient use of resources, innovative products, better profit margins, reputational advantages and new market opportunities, all of which could eventually be perceived positively by the financial market. In contrast, many sceptics believe that CSR requires organizations to raise operating costs and to give up shareholder wealth (e.g. Beltratti, 2005; Heinkel et al., 2001; Telle, 2006; Tirole, 2006). Though, the general understanding arisen particularly after the financial crisis, as noted by Becchetti et al. (2012, P. 1628), is that company reputation and welfare of stakeholders are crucial to shareholders wealth maximization, such opposing results invites additional investigation.

Corporate social performance is one important construct of CSR, and / or sustainability, and has gained usefulness as a forward-looking measure of firm financial performance, both in the literature and practice (Guenster et al., 2011; Hartman et al., 2007; Nielsen & Thomsen, 2007). Guenster et al. (2011, P. 686) noted, financial market participants are interested in socially responsible investing (SRI) as a means of fulfilling their social and financial obligations. He further argued that a socially aware and concerned management will have the required skills to run a superior company in an ordinary sense of financial performance, thus can make its firm attractive investment. Similarly, Godfrey (2005, P. 795) asserts that social responsiveness (e.g. giving philanthropy) increases shareholders value through image building that lead to reduced cost. A socially responsible firm also tends to attract skilled employees, and consumers who buy its products and services, for example.

A contradictory neoclassical micro economic view states that socially responsible firms will be at a competitive disadvantage due to the added expense incurred by such performance (Arx & Ziegler, 2014, P. 978). In fact, this is based on operational costs incurred for social performance; therefore, it will not have long-term consequence on firm performance. However, an argument by Barnett (2007, P. 813) noticing that the effect of socially responsible practices on corporate financial performance may vary from one firm to the other due to stakeholder influence capacity and situational contingences is more sound. The effect can also be different across countries if some aspects play a more important role in specific regions (Arx & Ziegler, 2014, P. 978). For example, as indicated by Arx & Ziegler (2014, P. 979), stakeholder theory argument is of higher relevance to Europe than USA, therefore, can lead to institutional pressure resulting for a more positive corporate response in Europe than USA.

Building on these arguments, we focus on the concept of social performance, a concept that reflects the company’s reputation and the health of its license to operate. Broadly, social performance can be understood as a measure for company’s capacity to generate trust and loyalty with its workforce, customers and society (Semenova et al., 2010, P. 271). Similarly, Berry & Junkus (2013, P. 708) noted the so-called most definitions involve as “integrating personal values and societal concerns with investment decisions”. As CSR becomes increasingly important in businesses, the literature on CSR is also growing. However, studies’ examining the economic consequences of the social aspect of CSR have tended to trail behind that of the environment and economic perspectives (e.g. Becchetti et al., 2011; Scott et al., 2000; Semenova et al., 2010). Likewise, Arx &
Ziegler (2014, P. 979) argued that many former studies neglect the social dimension of CSR by using one-dimensional indicators such as emission of pollutants. Yet, embracing the values of social sustainability is essential to create resilient business models that bear the stress of today’s difficult conditions. Finally, as Brammer et al. (2006, P. 114) argued, we believe that the various aspects of corporate social behavior must be examined separately in order to achieve an accurate picture of their impacts on returns.

As such, it has been well documented that Sweden leads by example in CSR performances. For instance, according to MacGllivray et al. (2007, P. 22), Nordic countries dominate the list, with Sweden taking the first place out of 108 countries in embedding responsible business in the heart of their economies. Similarly, Semenova et al. (2010, P. 273) confirmed that Swedish companies are at the topmost in integrating sustainable practices such as environmental protection, measures to respect human rights, improved work environment, and fighting corruption to their business strategies. Moreover, the Swedish capital market is well known for integrating ESG information as an investment criterion. However, as Cerin & Swanström (2006, cited in Semenova et al., 2010, P. 275) indicated the value of environmental/social performance information for the Swedish financial market is not much known.

From the financial performance perspective, the theory of the firm, like other microeconomic theories, establishes profit maximization as the goal of the firm. However, profit maximization requires a more specific definition, such as if it is accounting or economic and short or long term (Boaventura et al., 2012, P.233). Jensen (2001, PP.10-12) clarifies that, for economists, the objective of the firm should be to seek maximization of long term market value, resulting from the ability to generate cash over time. Maximizations of the firm’s value maximize shareholders wealth. According to Orlitzky et al. (2003, P.407) corporate financial performance has been basically measured in three forms: market, accounting and survey measurement. Orlitzky et al. (2003, PP.407-408) further explain that market reflects the degree of the satisfaction of the shareholders; accounting captures an idea of the internal efficiency of the company; and survey provides a subjective estimation of its firm’s financial performance. Nevertheless, it is worth indicating that, just as there is a relationship between corporate social performance and stakeholder theory, there is an association between corporate financial performance and theory of the firm, given profit maximization is the objective (Boaventura et al., 2012, P.234). Social welfare is maximized when all firms in the economy attempt to maximize their own total firm value (Jensen, 2001, P. 11). Companies, which are financially strong, will have available resources to invest in rural development, environment and other social activities.

Given this, academic research literatures (e.g. Arx & Ziegler, 2014; Doh et al, 2010; Semenova et al., 2010) offer evidence that a socially responsible action is value-relevant. Doh et al. (2010,P.1480) reveal that while firms added to social indexes show better operating performance in terms of profit, deletion results in stock price decline by 1.5% on average. Stock market responded only when firms were not performing socially, but incorporating social responsibility exhibited no market response. Arx and Ziegler (2014, P. 990) who investigate stock performance of US and Europe firms over 2003 to 2006 found that environmental and social activities are positively valued by the financial markets in the regions using the Carhart (1997)-four factor model, but negative impact in USA on the basis of simple CAPM. Therefore, they have suggested that additional analysis is needed whether such result is robust for alternative measurements of CSR, for
example, based on assessments from different rating agencies or different financial performance indicators, and alternative approaches (models), and periods. On the other hand, Brammer et al. (2006, PP. 114-115) who examined the relationship between corporate social performance and financial performance using Carhart (1997) model for UK companies found that firms with lower social performance scores tend to achieve higher returns than firms with higher social performance scores. Such competing explanations need additional investigation. They also have research implications suggesting future study on the relative merit of the results, or event studies to examine the impact on share price in a time series context.

1.2 Research gap
While responsible investment has become mainstream, the tradeoff between social investment and its economic benefit remains arguable. Still, the research results are mixed, and researchers suggest different reasons for the varied results. The use of different social responsibility and financial performance measures (Berry & Junkus, 2013, PP. 708-709), complexity of valuing social performance due to the intangible nature of its benefits (Guenster et al., P. 681), and the use of inappropriate models for data analysis are among the main reasons researchers claim for the mixed results.

Our thesis builds on the article by Semenova et al. (2010), who tried to test the value relevance of environmental and social performance based on Global Ethical standards (GES) ratings for Six 300 companies listed on OMX Stockholm. Applying Ohlson valuation model, they found that companies with higher environmental and social performance ratings tend to achieve higher stock prices, while companies with lower scores trade at lower market values over the period 2005 to 2008 (Semenova et al., 2010, P. 266). Tobin’s q has been used to proxy company value, and ROA as a measure for operating performance or profitability.

Semenova et al. (2010, P. 288) results have interesting research implications suggesting that the value relevance of social performance should be studied empirically for an extended time period, and to benefit from a quality data. To the best of our knowledge, no study has been conducted on the identified gap to date. Therefore, our paper attempts to address this gap, and meantime enriches the CSR literature, in the context of Swedish market, for which empirical study of the value relevance of social performance is an apparent need.

Our work is different from that of Semenova et al. (2010) in that it essentially explores the relationship between social and stock market performances of firms listed at OMX-Stockholm over the years 2010 to 2014. As it is noted above different performance measurements tend to give different results. Unlike Semenova et al. (2010), who use Tobin’s q value and ROA, we employ risk adjusted stock return to measure financial performance, specifically stock market performance. Risk-return paradigm is important because it highlights the managerial perspective towards CSR (Guenster et al., 2011, P. 68). Investment in socially responsible firms is less risky and implies that investors demand less return on their investment. On the other hand, less risk means less discount rate to expected cash flow of socially responsible firms, but high firm value. Therefore, risk adjusted return can be a good measure for benefits from holding stocks of socially responsible firms. Further, the study adopts “Fama-French (1993) three factor model” that considers value risk, size risk, and market risk for explaining the realized returns of publically traded stocks (Womack & Zhang, 2003, P. 8), to address the claim that
inefficient models (e.g. CAPM considers only one risk factor, i.e. market risk) are one possible reasons for the mixed study result. As for the concern about the diversity of CSR performance measurements, we use Social rating score from ASSET4, unlike Semenova et al. (2010), who use GES rating. It will help us to examine if results are the same for alternative measurements. Overall, our attempt will be a plus to sustain consent regarding the diversity of methodological concerns, such as performance measurement and models, which root varied research results.

1.3 Research question
This thesis has the major objective of investigating the economic benefits of social performance for public listed firms in Sweden. Specifically, it intends to examine the effects of social responsibility activities on stock market performance for firms listed at OMX Stockholm. In order to achieve these objectives, the following research question is formulated:

How does the stock market respond to social performance in Sweden?

1.4 Research purpose
The purpose of this quantitative study is to enrich research on CSR and investigate the role of the stock market in shaping perceptions regarding corporate social performance within public listed firms in Sweden using validated and reliable performance measures for the variables under investigation. Despite, a number of academic studies in the area, no clear consensus has yet reached whether investment in socially responsible stocks is favorable to return (e.g. Brammer et al., 2006, P. 97). Thus, we evaluate the interaction between social and stock market performance with an aggregate scores for set of social performance indicators including human rights, employee relations, community involvement and product safety, and risk adjusted return as an indicator for stock market performance.

Subsequently, from theoretical point of view, the study seeks to advance our understanding of the social-stock performance relationship by examining how the Swedish stock market responds to social performance for public listed firms at OMX Stockholm. To accomplish this objective we explore whether resources devoted for social activities such as human rights, employ relations, community involvement, and product safety benefit firm’s stock return from the perspective of Swedish financial market over the years 2010 to 2014.

Stock price represents future financial performance of a firm and thus is a key input for long-term investment decision (Arx & Ziegler, 2014, PP. 978-979). And, socially responsible actions can bring cost benefit and, thus become key marketing strategies that can increase competitiveness and firm performance (Guenster et al., P. 686). Therefore, from practical viewpoint, investigating the link between social and stock market performances helps managers, investors, security analysts, and policymakers to understand the effect of social investment on firm’s stock market performance.

1.5 Contribution and Target audience
The aim of this study is to build on existing literature about the subject matter concerning the value relevance of corporate social performance, which is one dimension of corporate social responsibility, as a forward looking measure of the financial performance of publicly listed Swedish companies. For that purpose, we conduct a quantitative study,
based on a single Nordic country notably Sweden, in order to investigate on the causal relationship that may exist between the social performance and financial performance in terms of risk-adjusted return of listed Swedish companies. From a theoretical standpoint, this study provides useful and valuable information to academics, who plan to make further studies on the relation between social performance and stock performance. By performing time-series analysis with our selected data, we aim to provide empirical evidence about the social drivers of financial performance. In addition, an interesting theoretical contribution this research will bring is to complement previous research on the CSR literature, from a Swedish perspective, about the value relevance of social performance.

Since Swedish companies have developed a good reputation in terms of incorporating sustainability issues in their daily activities, we therefore argue that it would be profitable for us to investigate on how such Swedish stock market respond to social responsibility performance of the listed firms and how such information will help investors in their investment decision making. As a result, this study contributes in providing desirable information to potential investors or the company’s current stockholders on how well, the firms they invested into, are doing in terms of social performance with regards to the firm’s employees, customers or the community. Due to the numerous concerns raised by many stakeholders, investors would like to know whether such social performance indicators are properly integrated in the valuation method used to determine the stock price of a firm. They will also be interested on the financial implication of good or bad social performances of the firms they invested into. More specifically, they will be interested on how the stock market value such socially responsible activities. Such information will help them make decision to invest in stocks that best meets their criteria requirements.

Furthermore, our study would have a profound implication for other stakeholders including stock analysts, managers, and policy makers in their operational decision-making concerning the economic benefits of social activities. For instance, stock analysts can be considered to be one of the main parties that will be interested in such study because they usually recommend stock purchase or sell to potential investors based on an evaluation of different characteristics. In Sweden, such evaluation also considers the social performance of listed companies, which will then be used as a forward-looking measure of firm financial performance.

Furthermore, firm’s managers will also be interested in such study as they are agents of shareholders and are responsible to make sure the firm pursue the goals of the owners. Managers can use this study to better understand whether the financial market respond to social performance. And if yes, how it can be integrated in the valuation of the stock performance. In relation to the policy makers including the Swedish government, this research will bring some insights into the relationship that existed between corporate social performance and stock performance of publicly listed companies over the period 2010 to 2014, for which there is a lack of studies examining the economic consequences of the social performance. Such evidence will help policy makers design new policies with regards to social and environmental performance or to improve the existing policies already in place in terms of sustainability.
1.6 Limitations of the research

Our study has several limitations. First, the constraint of the data due to small number of samples naturally limits the scope of validity and reliability beyond the subjects of our empirical analysis. The limited number of samples (N=66) is caused by a few Swedish companies listed by Thomson Reuters Eikon ASSET4 that reveal consistent CSR activates through the study period. Second, disclosure of corporate social performance (CSP) information is voluntary. The absence of standard rule of the regulator to be used as a frame of reference to measure CSR index raises subjectivity element in social performance scores. Therefore, for example, other social indexes (e.g. Global Engagement service, KLD research) might have different effects on markets than those we tested and measured. Third, the assessment of social effect of companies by itself is not as developed as the assessment of economic and environmental performance. Many of the social issues such as organization systems, operations policies, procedures and management practices are not easily quantifiable. For example, the number of employees that have received training does not allow for the assessment of the quality and impact of these training. Community outreach programs can have both quantitative and qualitative indicators such as amount spent and people reached. Therefore, social performance information needs to be supported by qualitative analysis.
Chapter 2: Methodology

This chapter starts with discussing our interest for the topic and pre-understanding, and perspective of the research. We will provide explanation for our philosophical assumptions, i.e. state how we view the nature of social entities (ontology), and nature of knowledge (epistemology). We also include an explanation for the choice of our research approach, design, strategy and method. Further, we elaborate our literature and data search procedure, and time horizon of the study. The chapter ends with discussing about ethical, legal and social considerations of the study.

2.1 Choice of Topic and Preconceptions

The choice of the topic for this thesis is mainly influenced by authors’ school experience in accounting and finance, and mega trends (e.g. sustainability, urbanization, aging, global market, digital future) affecting business, environment, and society. During our studies at Umeå University School of Business and Economics, we enrolled in many courses that made us realize the economic relevance of social and environmental friendly activities. As finance majoring students authors understand the economic environment, for example, how business should invest and earn expected return at reasonable risk. In the meantime, authors understand the implications embedded in the so-called mega trends, for example, wise use resources, reducing emission, human rights, employee safety, community relations and innovation. Further, authors learned the growing argument whether business should bear risk merely for profit or assume responsibility as well for the damage caused to environment/society while doing business.

Social and environmental concerns are becoming increasingly important recipe for sustainable economic growth by many business corporations. It is relevant for dealing with the pressures of socioeconomic problems facing us, including climate change, financial crises, forced labor, political unrest, economic injustices, and natural disaster. Consequently, authors become interested in the issue of taking responsibility, i.e. ethically, socially and environmentally for the impact business may have on society, and pick social performance, often dealt as one aspect of CSR, as an integral part of this research topic.

Since there are already many existing researches that have been conducted on the environmental aspect of CSR and its impact on the firm performance, we decided to focus on the social performance and see its effect on the stock performance of public listed companies in Sweden. The economic impact of social performance is under researched in Sweden as well, especially from the perspectives of investors. Therefore, authors wanted to expand the current literature by further exploring if social performance is incorporated to stock performance in the Swedish financial market.

As highlighted by Johansson-Lindfors (1993, P. 76), preconceptions about a particular subject stems from two main categories. First, the researcher’s prior educational or theoretical background may affect the research process. Authors obtained undergraduate degree from different countries in Africa, and have used different methodology for their bachelor degree project, could create biases in this research. Second, authors have some prior practical work experience in the finance industry, which may also affect the objectivity of the study (Johansson-Lindfors, 1993, p. 76). The reasoning behind this is
that there must be some differences in way institutions operate or understand the concept of CSR, more specifically social performance. As such, the Swedish context within which we intend to perform our study may have a different criteria’s for the evaluation of a firm social and stock performances.

Nonetheless, any possible subjectivity will not be transformed into the results of this thesis because of the authors’ critical awareness and understanding of how to evaluate different approaches to conduct objective scientific research. Further, statistical tests, feedback from the supervisor and fellow students will backing us to overcome objectivity threats while conducting our research.

2.2 Research Perspective
It is importance to adopt a research perspective that fully reflects the way authors are planning to conduct their research because it helps to minimize the misunderstanding the reader of will have, and thus make their evaluation easier (Thurén, 2011, PP. 88-89). In addition, indicating the right research perspective helps the readers be aware about the parties most likely to be interested in the findings. This paper adopts an investor perspective since investors are the parties that are most likely to be interested in the results of the study. Investors are always keen to know the effect of the resources they devote for social activities with the expectation of financial returns such as better stock performance, low volatility, return equity and return on asset. Therefore, it makes sense to investigate how the Swedish stock market responds to the social performance of publicly listed companies from an investor perspective.

2.3 Research philosophy
As a researcher, it is important to make sure that some philosophical assumptions are taken into account since they have the tendency to affect the practice of research. For example, Creswell (2014, P. 5) argues that in the process of planning a research, there should be a clear connection between the philosophical worldviews, the research design, and the research method applied in order to turn the approach into practice. In other words, the research approach/strategy should be in an obligatory relationship with the two basic philosophical standpoints namely epistemology and ontology (Scott, 2014, P. 30). These two main philosophical positions, if properly chosen, will establish the framework upon which the other building blocks of the research process, such as research strategy or data collection methods, are prearranged and implemented (McNabb, 2013, P. 37).

According to Scotland (2012, P. 9), ontological and epistemological worldviews, which are covered in different paradigms, have different views about the assumptions made regarding the nature of knowledge (epistemology) and the nature of the phenomena to be investigated (ontology). Therefore, we intend to explore these different philosophical stances in order to evaluate which of them are appropriate for the type of research we are planning to conduct. Due to the social relevance of our research and the fact that various stakeholders can benefit from our findings, we need to choose the appropriate research philosophy that can underpin our role as researchers (Lee, 1992, P. 88).

2.3.1 Epistemological considerations
Epistemology is a philosophical approach that involves an examination of the relationship that exists between the researcher and the phenomena to be investigated; therefore, it aims at answering the question what should be accepted as valid knowledge (Collis & Hussey, 2014, P. 47). Author such as McNabb (2002, P. 37) argued, “Epistemology is expressed
in the methods humans use to gain knowledge”. From this statement, it is noteworthy to understand whether the natural sciences principles and procedures, which was the systematic method used by scientists, can be applied to social sciences studies (Collis & Hussey, 2014, P. 43). However, the two main and differing epistemological positions, namely positivism and interpretivism, tend to provide an answer to this question. Whilst the former had its roots from the philosophy know as realism, developed by theorists including Comte and Durkheim, the latter that is grounded on the principles of idealism was developed by Dilthey, Rickert and Weber (Collis & Hussey, 2014, P. 44).

According to Bryman and Bell (2015, P. 27) the concept of positivism is particularly hard to summarize as various researchers have different interpretations of the doctrine. Still, for many scholars including Saunders, Bryman and Bell, the concept of positivism advocates the application of scientific principles and procedures for social sciences studies (2015, P. 28; 2012, P. 134). Furthermore, researchers, who decide to adopt a positivist approach, will normally test the cause and effect relationship among different variables of a phenomenon. And this implies the building of testable hypotheses, containing both dependent and independent variable, from existing literature relevant to the phenomena being investigated (McNabb, 2002, P. 41). Nonetheless, there are several criticisms raised by scholars concerning the applicability of the positivism doctrine. For instance, one of them maintained “It is impossible to separate people from the social contexts in which they exist… because people cannot be understood without examining the perceptions they have of their own activities” (Collis & Hussey, 2014, P. 45). It is also essential to mention that the positivism stance of epistemology is usually associated with a quantitative study.

On the other hand, the second epistemological position, which is known as interpretivism, is the opposite of positivism. Indeed, social scientists, which adopt a more interpretivist view, argued that social reality is not objective, rather subjective in a sense that we cannot apply natural science principles and techniques to the study of social phenomena (Collis & Hussey, 2014, P. 45). Therefore, the interpretivist view of epistemology cannot be used to test a causal relationship between pre-defined dependent and independent variables. Instead, the purpose of such position is to provide a better understanding of the social phenomena by observing the social context within which the phenomena is influenced (McNabb, 2013, P. 44). As a result, this interpretive research method is generally related with a qualitative research.

However, we argue that the interpretivist view of epistemology is not appropriate for our study since we don’t aim to gain a deep understanding on how the Swedish stock market responds to the performance of listed companies in terms of their social activities. Rather, we intend to apply scientific method, for example, regression analysis to examine the link between social and stock market performances. Since the finance discipline takes much of its intellectual foundation from economics, most results or findings resulting from a study in the field, should come from objective evidence obtained by collecting and analyzing measurable and observable data (Collis & Hussey, 2014, P. 46). In this particular study, we intend to investigate on the relationship, either positive or negative or no relation that exists between the social performances of firms in terms of human rights, relationship with their customers, or the level satisfaction of their employees, and the stock performances. To achieve this goal, we plan to collect data from secondary sources, namely the Stockholm stock exchange and the Thomson Reuters Asset4. The measurability of these data, and the fact that we intend to build hypotheses from existing
literature and test the validity of those hypotheses with statistical tools reinforce our choice of the positivism stance of knowledge. Moreover, we can argue that our choice of a positivism position, under epistemology, reflects our vision as researchers of what should be accepted as valid knowledge, that is scientific techniques can be used to study social phenomena.

2.3.2 Ontological considerations
According to Scotland (2012, P. 10) it is essential for a researcher to be sure about the epistemological and ontological positions, in relation to their chosen research approach, before undertaking any kind of research. As mentioned before, ontology refers to the nature of reality and how human experience such reality (McNabb, 2002, P. 37). In other words, we can argue that ontology intends to discover the assumptions made by researchers regarding the way through which they believe the world operates and their commitment to a specific interpretation (Saunders et al., 2012, P. 130). For example, some researchers claimed that the social entities exist independent of human being actions, whereas the opposing party advocated that the social world, including the social entities are indeed constructed through human interaction and decision. We will focus on these two standpoints of ontology, which are respectively objectivism and constructionism.

The objectivist view of an ontological assumption, which states that the social world is built upon pre-determined principles that cannot be changed by individuals, rather they need to comply with such principles. Therefore, objectivism supports the fact that social entities are independent of social actions (Bryman & Bell, 2015, P. 32). Based on this definition, it is essential to understand that objectivist stance of ontology is mostly related to a quantitative research. On the other hand, the constructionism view, usually seen as an approach to qualitative approach, argues that individuals tried to understand the social world within which they live and work (Creswell, 2014, P. 8). This ontological stance adopts a more subjective approach and assumes that social actors played or play a vital role in the construction process of the society within which they live. As a result, causal explanation is preceded by interpretation and understanding in a constructionism worldview (Lee, 1992, P. 89).

Actually, we have the view that an objective observation need to be adopted in order to fulfill the main purpose of this study, which is to understand the social-stock relationship from the Swedish market perspective. Since most of the statistical tool we will use in our study are objectives, in a sense that they are built on pre-determined rules and principles with adequate formulas. And for our study, the main social entity that our research is related to is the Swedish stock market and the body responsible for the implementation of CSR policies. Both of them are seen to have reality that are not constructed by a group of social actors, rather are external to them. And most of those social actors including various investors and financial analyst need to comply with the rules and regulations inherent in the stock market, which are built on objective evidence and not subjective interpretation. The same logic applies to the body responsible for the rating of social performance activities. Therefore, we argue objectivism is the right ontological option that best reflects the way through which we intend to collect and analyze our data. In addition, another factor that motivated our preference for objectivism is the fact that our choice of positivism regarding epistemological consideration, goes in line with a more objectivism stance, since we intend to use natural science techniques to study a social phenomenon, specifically the positive, negative or neutral response of the Swedish stock market to the social performance of listed firms in the analysis. Therefore, we can argue
that the constructionism stance doesn’t fit in our particular study mainly because, as mentioned before, our aim is to test the reliability and generalizability of existing theory in relation to the link between social and stock market performances, which are unaffected by the context within which the research is conducted.

### 2.4 Research approach

When conducting a research, it is important for the researcher to choose a suitable research approach that shows a clear connection between theory and research (Bryman & Bell, 2015, P. 23). In addition, we are aware of the fact that selected research approach needs to be consistent with the philosophical stances adopted, as well as the research method, through which we intend to collect our data. Consequently, we would investigate on the two main research approaches namely induction and deduction, and see which of one is most appropriate to answering our research question. These two ways of linking theory and research were first developed by Aristotle, who refers them as the two methods of reasoning through which people get to different conclusions (McNabb, 2002, P. 9).

Deductive research is a study whereby the researcher develops conceptual and theoretical framework, which will then be tested by collecting relevant empirical data in order to see whether the theory hold true, or whether there is a need to review it (Collis & Hussey, 2014, P. 43). As a result, deductive reasoning is seen as a top down approach in which the researcher moves from a more general viewpoint to a more specific view on the theory (Sachdeva, 2009, P. 24). When a researcher embraces a deductive approach in the course of its research, it usually starts with a general idea about the different theories he/she plan to explore, and then narrow them down to hypotheses with specific variables to be tested. He/she further collect data to test the relationship that exists between the variables contained in the hypotheses to see whether the theory is generalizable or it needs to be modified (Sachdeva, 2009, P. 24). Conversely, the main purpose of an inductive approach is to develop new theories through the observation of empirical reality (Collis & Hussey, 2014, P. 43). As opposed to deductive reasoning, it adopts a bottom up approach whereby the researcher move from specific observation to a broader generalization of theory (Sachdeva, 2009, P. 24).

Both research approaches have their advantages and drawbacks. And as highlighted before, the choice between these two ways of research reasoning is dependent on the philosophical and methodological choices we made or are going to make in upcoming sections. The availability of a large amount of literature on CSR and financial performance, and the fact that we aim to examine the causal relationship that exist between these two variables, warrant us to argue a deductive reasoning is the best approach for the kind of research we would like to conduct. For the purpose of testing the causal relationship between our dependent and independent variables, we will build hypotheses from existing theory, under which the main concepts, social performance and stock performance will be measured by collecting relevant and reliable data from Thomson Reuter’s database. Also, based on our epistemological position of positivism, which claim the application of scientific methods to social studies and the fact that rules inherent in statistical tools dictate the mode of explanation in the study, we choose a deductive research approach, as it is the dominant research approach in natural sciences (Saunders et al., 2012, P. 117).

According to Bryman and Bell (2015, P. 23) the process of a deduction begins with an extensive review of literature in order to build testable hypotheses. Then, the researcher
moves to the collection of either primary or secondary data, in our case secondary data, to see whether the hypotheses is confirmed or rejected. Based on the results, the existing theory can be revised or confirmed.

2.5 Research strategy

After clarifying philosophical standpoint and research approach, researchers need to select a suitable research strategy that underpins the choice made earlier. However, the existence of different research traditions led to the creation of different and numerous research strategies, but in this section we will focus on the ones suggested by Saunders et al. (2012, P. 173). According to these authors, research strategy refers to a plan of action the researchers will adopt to provide an answer to their research question through the appropriate data collection and analysis methods. Consequently, it can be viewed as a methodological link that shows a good level of coherence between the research philosophy, the research question and objectives as well as other pragmatic factors including the degree of prior knowledge from the writers, access to sources of data and the amount of time available (Saunders et al., 2012, P. 173). These research strategy cannot be seen as fundamentally superior or inferior to one another and are six in numbers namely experiments, survey, archival research, case study, ethnography, action research, grounded theory and narrative inquiry (Saunders et al., 2012, P. 173).

Having its roots from natural science, an experiment study is usually conducted to investigate on the likelihood of a change in an independent variable causing directly a subsequent variation in the dependent variable (Saunders et al., 2012, P. 174). As such, an experiment study tends to focus more on predictive hypotheses, rather than open research question (Saunders et al., 2012, P. 176). Consequently, this type of research strategy is applied in explanatory and exploratory in order to provide answer to questions such as ‘why’, ‘how’ and ‘what’ (Saunders et al., 2012, P. 175).

Contrary to experimental research, a survey research is generally used for exploratory and descriptive research as they aim to answer ‘what’, ‘who’, ‘how’ much’, ‘how many’ questions (Saunders et al., 2012, P. 175). It is a strategy that is frequently used in business and management study because it is mainly easy to explain and understand (Saunders et al., 2012, P. 177). Researchers, who need to perform a quantitative research, normally use these two types of research strategies.

Another research strategy that doesn’t use primary source of data, but rather focuses on administrative data or documents as principal source of data is known to be archival research (Saunders et al., 2012, P. 175). This type of research strategy can be used in all three types of research design namely exploratory, explanatory or descriptive because they include research question related to the past or changes over time (Saunders et al., 2012, P. 175). This research strategy can be used with both types of research methods including the mixed method study.

Similar to archival research, case study can be conducted either with a quantitative or a qualitative research (Saunders et al., 2012, P. 173). It is usually relevant for a situation whereby the researchers plan to get a thorough understanding of a particular phenomenon in a specific context (Saunders et al., 2012, P. 173). It is different from the previous research strategies discussed in a sense that the numbers of variables are limited to the context within which the research is being carried out (Saunders et al., 2012, P. 173).
According to Saunders et al. (2012, P. 173) the remaining four research strategies such as ethnography, action research, narrative inquiry are predominantly or exclusively used to carry out a qualitative research. Since, we are planning to conduct a quantitative research based on our philosophical stances and research question and objectives, we can exclude these four research strategies from our scrutiny for the choice of the appropriate research strategy. After a careful review of the other four research strategies, it can be argued that an archival research is the most suitable for the type of research we would like to execute. One good motive for our choice is the fact that we will use secondary data obtained from Thomson Reuters Eikon to test the relationship between the social performance of listed Swedish firms and their stock performances. The use of such administrative materials implies that these data have previously been used for other purposes. Furthermore, the fact that our study intends to investigate on a relationship between the two variables using data from past years over 2010-2014, support our choice of archival research as the best strategy for the type research we want to perform.

2.6 Research design

After identifying and formulating the research question, the researcher needs to develop a framework, which is in line with the stated purpose of the study, in order conduct its research in an efficient and effective manner (Sreejesh et al., 2014, P. 27). Such framework that details the techniques used by scholars for the collection, measurement and analyses of the data need to provide an answer to the research question, defined a research design (Sreejesh et al., 2014, P. 27). Furthermore, Saunders et al. (2012, P. 131) built upon this view and argue that the choice of a particular research design should be justified based on the research philosophy, ontology and epistemology, as well as the research question and purpose. Since there are various research designs discussed by different authors, we will focus on only three of them, one of which will be implemented as our research design. The three research designs considered in this sections are exploratory, descriptive and causal/explanatory design.

An exploratory study, as the name indicates, is usually carried out in order to understand and evaluate the critical issues inherent in a particular problem (Sreejesh et al., 2014, P. 31). More precisely, an exploratory research design is only adopted if the researchers are unsure about the nature of a specific problem and they are motivated by such uncertainty to conduct research in order to clarify their understanding of the problematic issue (Saunders et al., 2012, P. 133). One important thing to keep in mind when conducting an exploratory study is that the researcher needs to be flexible in a sense that he/she is willing to change its/her position as new data and insights start showing (Saunders et al., 2012, P. 134). Sreejesh et al. (2014, P. 31) mentioned three reasons for embarking on exploratory research, which are first to analyze a problematic situation, to evaluate alternatives and to discover new ideas. Since the purpose of our study, is not to discover new idea, rather to test the validity of the relationship between social performance and stock performance in Sweden. Therefore, exploratory study is not a suitable research design for our study.

The second type of research design, called descriptive study, aim to provide a detailed description of a particular event, or define a set of attitudes or actions inherent in a particular phenomenon, which is of great interest to the researchers (McNabb, 2002, P. 106). According to Saunders et al. (2012, P. 134) it is important for the researcher, performing a descriptive study, to have a clear understanding of the phenomena on which she/he intend to collect data. Moreover, they argue that a descriptive research design may
be an extension of an exploratory or explanatory research. A descriptive study can be conducted in two different ways namely cross-sectional or longitudinal (McNabb, 2002, P. 106). While the former relates to a study done across different sector/industry at appoint in time, the latter refers to a study whereby the data are collected over a given period of time. In addition, depending on a chosen research method, a researcher can decide to adopt a descriptive study with either field studies or field survey as the way of collecting data (McNabb, 2002, P. 106).

Explanatory research, also known as causal research, is a type of research design whereby the aim is to identify causal relationship that may exist between two or more variables (Sreejesh et al., 2014, P. 31). As such, it usually requires the planning and performance of experiments in which the researchers need to control for intervening variables while testing the correlation that may exist between the dependent and independent variables (McNabb, 2002, P. 107). For effective implementation of such a research design, it is essential that the researcher has a deep understanding of the subject area through extensive review of existing literature (Sreejesh et al., 2014, P. 31).

As mentioned earlier, for researchers to select the research design that is best suitable for their study, they must turn back to their research question and purpose, and clarify what they really want to achieve with the research. In our case, the main purpose is to investigate on the potential correlation of firm’s social performance to their stock performance in a Swedish context. In other words, we will focus on publicly listed Swedish companies, and evaluate whether engaging in social activities have an impact on their risk adjusted stock return. In addition, as it can be seen from our research question, we intend to identify whether the Swedish financial market values the social performance of publicly listed Swedish companies. Based on these premises, and the fact that we are undertaking a thorough literature review on the topic, we argue that an explanatory/causal research design is the most applicable for our research.

2.7 Time horizon
On the basis of time dimension, a research design can be classified as cross-sectional or longitudinal. While cross-sectional studies make comparisons of more than one case at a single point in time, longitudinal studies make comparisons of a single case over time (Saunders et al., 2012, P. 190). In both cross-sectional and longitudinal studies the researchers gather data regarding the study subject without manipulating the study environment. In our case, for example, we intend to examine how social performance of firms affect their risk adjusted stock returns based on existing data. Therefore, we don’t influence firms to increase or decrease their performance.

The advantage of cross-sectional study is that it can compare different population groups at a single point in time (Collis & Hussey, 2014, P. 63). We can, for example, look at social and stock performances of as many as 66 listed firms for each year from 2010 to 2014. However, cross-sectional study may not provide certain information about cause and effect relationship because such studies offer a snap shot of a single moment in time, they do not consider any information before or after the snapshot (Ghauri & Grønhaug, 2010, P. 67). In a longitudinal study, researchers carried out several observations of the same subject over a period of time (Ghauri & Grønhaug, 2010, P.68). The strength of longitudinal study is that researchers are able to detect developments or changes in the features of the target population both at group and individual level because they create a
sequence of events (Saunders et al., 2012, PP. 190-191). Longitudinal study is more likely to suggest cause and affect relationships than cross-sectional study by virtue of its scope (Collis & Hussey, 2014, P. 64).

Our study investigates the relationship between social and stock performances of public listed Swedish firms over the years 2010 to 2014. The fact that we collect data that give us insight into changes in social and stock performance over a period of 5 years makes the study longitudinal because we compare social and stock performance of different firms over the years 2010 to 2014. Therefore, in terms of time horizon our research takes longitudinal design.

To sum up, the choice of the time frame 2010 to 2014 for our research is most importantly to avoid redundant work since the previous research in which our paper built on was conducted over the years 2005 to 2008. Secondly, researchers need to consider between 5 to 15 years of recent stock price data relevant for their studies as it represents stock price information of today (Chang et al., 2012, P. 693). Third, the significant period of time fitting the model we adopt to use, i.e. Fama-French_1993 three factor model is often 3 or 5 years (Womack and Zhang, 2003, P. 12). Fourth, researchers like Sievänen et al. (2013, P. 138), argue that the global financial crises of 2007/2009 has increased pressure for transparency and accountability on market participants, consequently, more social performance data is available in the post crises periods. Further, social data for 2015 is not yet published as of April/2016. Therefore, to benefit from data availability we base our study on the time frame over 2010 to 2014.

2.8 Research method

After selecting our research approach and philosophy, it is now time to choose the right research method, which is in line with the previous choice. However, the choices for a particular research method will influence the way you intend to collect, analyze and interpret your data/information (Creswell, 2014, P. 16). We will focus on the two main types of research methods, namely quantitative and qualitative proposed by different scholars, and also discuss in brief mixed method study, which includes features from both methods (Bryman & Bell, 2011, P. 643; Collis and Hussey, 2013, P. 6; Creswell, 2014, P. 16; Lee, 1992, P. 88; Saunders et al., 2012, P. 45). According to Sreejesh et al. (2014, P. 17), there are some criteria to consider when one is in the process of choosing a particular research method, namely the purpose of the study, the cost associated to conduct the study, and the availability of data. In addition, it is noteworthy to mention that the selected research method, will not only affect the data collection and analysis, but it also needs to reflect the assumptions made regarding the ontological and epistemological position, as well as the research approach (Lee, 1992, P. 88). Thus, the factors we consider in order to select our research method are research philosophy (ontology and epistemology), research design and our chosen research approach.

Quantitative and qualitative researches adopt different approaches in terms of concepts and measurement (Goertz et al., 2012, P. 206). While quantitative studies focus on numerical data and questionnaire/survey for data collection technique, a qualitative study focuses on non-numerical data (words) and collects data usually through interviews or filed observations (Saunders et al., 2012, P. 145). Nevertheless, a mixed method study, which is a combination of both quantitative and qualitative features, can implement the data collection techniques of the two methods to conducting a particular research. Bryman
and Bell (2015, P. 38) discussed that a quantitative research method is generally associated with a positivism and objectivism view regarding epistemological and ontological orientations, respectively. Accordingly, a quantitative research will follow a deductive approach whereby the researcher will build hypotheses from prior literature and test the conformability of those hypotheses with the data collected. Subsequently, we chose positivism and objectivism as our philosophical standpoint, and the fact that we intend to adopt a deductive reasoning, endorse the choice to conducting a quantitative research.

According to Collis & Hussey (2014, P. 52) it is important for a researcher to make sure the data are precise and measurable, especially if he/she adopts a positivism paradigm. Moreover, the researcher’s choice of a given research method should not only consider his epistemological and ontological position, but should also reflect the choice made regarding the techniques to collect and analyze data. Therefore, our choice for a quantitative method is not only based on our philosophical position and research approach, but also takes into account our research strategy and design, practical method, and research question. We decided to carry out an explanatory/causal research whereby we will test mainly the causal relationship between the dependent variable (stock performance) and independent variable (social performance). Consequently, we will apply statistical techniques to assess such cause and effect relationship. Therefore, it is reasonable to argue that all the assumptions we made earlier concerning different aspects of our methodology converge towards the adoption of a quantitative study.

However, while undertaking a quantitative study, it is important for the researchers to also consider the preoccupations that underpin the epistemological beliefs of what should be taken as acceptable knowledge. These preoccupations of quantitative researchers are measurement, causality, generalization and replication (Bryman & Bell, 2011, P. 163). Firstly, measurement refers to the unit used by the researchers to measure the different variables for the purpose of understanding the relationship that exists between them. Secondly, causality, as the name indicates, tends to provide an explanation to a particular phenomenon by examining the cause and effect relationship between the dependent and independent variables (Bryman & Bell, 2011, P. 163). The third preoccupations for the researchers are generalization, which is important to consider when engaging in a quantitative research. It refers to the extent to which our findings can be generalized beyond the geographical setting or sample within which the research is conducted. Lastly, replication refers to the ability of other researchers to reproduce the same research in a different context. This means that quantitative researchers need to provide a clear explanation of all the steps taken in the collection and analyses of data, as well as the limitations of each statistical tool used.

2.9 Literature and data sources

Literature search is vital for every research. The ‘literature relevant to the topic’, and the ‘literature on research methodology and data collection techniques’ are the two areas to be researched when a research project is started (Hart, 2001, P. 2). Further, Hart (2001, P. 2) argued that critical review of existing research often leads to new insights by synthesizing previously unconnected ideas, provides data collection methods and suggests solutions tried in similar situations.

Suitably, we read reports books, articles and databases related to our topic in order to learn how other researchers have approached their topic, framed their research problem
and collected their data. Moreover, a search of the literature enables us to find the research gap in existing literature, design our research methodology and data collection techniques suitable to our topic (Saunders et al., 2012, P. 74). As a relevant literature review helps to demonstrate good practice in argumentation and analysis (Hart, 2001, P. 7), we have tried to analyze these materials critically for making reasoned judgments that are argued effectively (Saunders et al., 2012, P. 77), and employ them to identify our theoretical framework and hypotheses (Collis & Hussey, 2014, P. 93).

Our literature review roots on reliable, valid and scholarly previous researches (e.g. refereed journals) related to the topic of the study. And, we searched these academic articles through three main ways, namely searching the Google Scholar, Umeå University Library website, and looking for the articles through other researchers’ reference list. When searching for the academic articles through the Google Scholar and the Library website, we mainly guided by the following key words: Social performance, stock performance, corporate financial performance, volatility, and corporate social responsibility.

As noted earlier, data collection method is another area to be researched. Primary data and secondary data are two types of data sources used by a researcher to answer his/her research question(s). Primary data is the way of getting data directly from the subject the researcher is interested in, and analysis of data that has already been gathered by someone else for a different purpose is secondary data (Saunders et al., 2012, P. 304). In the case of primary data, a researcher gathers the data him/herself, making use of surveys, interviews, experiment and direct observation. On the other hand, secondary data can be obtained from various sources including, computerized databases, annual reports, books, journals, and magazines.

The choice of data to be used (i.e. primary data, secondary data or both) depends on many things including, research question, budget, skill and available resources. For example, while primary data collection procedures require extensive time and financial resources, secondary data tends to be readily available and inexpensive to obtain (Bryman & Bell, 2011, P. 319). Consequently, the researcher will have more time to spend on searching literatures, designing the research question, analyzing and interpreting data (Saunders et al., 2012, P. 318).

On the basis of these premises, the authors, of this research, plan to use secondary data for their research. Social performance scores at an aggregate level as well as monthly stock price data will be gathered from computer database for each publicly listed Swedish company over the years 2010 to 2014. Data on both variables were collected from Thomson Reuters Eikon. Thomson Reuters Eikon ASSET4 is a world-class database that provides access for relevant, timely and accurate financial and economic information in many different currencies. As such, the authors argue that the database has a good quality and can be considered reliable as it covers data available for over a 40 years period, and also include all major international financial markets. These benefits inherent in the database tempted author’s preference for Thomson Reuters as a trusted data source. Another argument, which supports the researcher’s choice, is the Saunders et al. (2012, P. 318) explanation that secondary data tends to have large samples, because the data
collection is comprehensive and routine, and collected over a large period which will allows the researchers to detect changes over time.

2.10 Ethical, legal and social considerations

In addition to the decision made earlier regarding the requirements of the methodological part, it is important for the researchers to also explore the ethical, legal and social implications of their research. Due to the practical and theoretical relevance of the social science studies, the professional bodies responsible for research in the field mentioned some ethical and legal principles that need to be taken into account whenever conducting a scientific research (Bryman, 2012, P. 130). According to Israel & Hay (2006, cited in Creswell, 2014, P. 92) researchers need to consider the desired ethical, social and legal concerns in order to protect the participants in their research by building trust and honesty with them, prevent against any misconduct or bad behavior in the process of collecting and analyzing their data and also by stimulating the truthfulness of their findings.

Ethical issues need to be taken into account at different stages of a social research in order to promote the integrity of the research as well as the disciplines involved (Bryman, 2012, P. 130). In the field of research, Business ethics can be defined as “a field of study that addresses the application of moral principles and/or ethical standards to human actions within the exchange process” (Hair et al., 2003, P. 104). In this context, ethics refers to what extent researchers use their moral responsibility to minimize the impact of their research or findings on a group of various stakeholders including employees, customers and the community. Authors such as Bryman, Diener & Crandall, Hair et al., Lewis et al., identified four main types of ethical issues, which are essential for the effective completion of the research, namely deception/coercion, physical or psychological harm to participants, invasion of privacy and finally lack of informed consent (2012, P. 135; 1978, PP. 17-96; 2003, P. 108; 2007, P. 181). Even though the terminology used by each authors referring to the ethical issues may be different from one to another, the meaning tend to converge.

The fact that we intend to use secondary data, obtained from Stockholm stock exchange and Thomson Reuters Asset4, as our main source of data, it minimizes the possibility of any sort of physical or psychological harm that we could bring to the research participants. Since, we are not planning to send out any surveys or conduct any interview with our sample of companies, rather collect secondary data for our samples from authorized independent trading entities or indexes, and also due to the fact that we would not perform an experimental study, it limits the harm we might bring, to our research participants. Another ethical consideration that we will truly consider in the process of our data collection is to make sure that we, as researchers, will not get into the privacy of our research participants. For both our dependent and independent variables, we will use information available in the stock and social indexes, which is made public to all parties interested to the financial or economic situation of the company. The fact that we use such publicly available information acknowledges, therefore, that we are not using private information important for the companies in a way that will affect their privacy.

Regarding the third ethical consideration, lack of informed consent, Diener and Crandall (1978, P. 34) define the term, as “a person’s ability to consent freely to serve in an experiment in which he adequately understands both what is required of him and the cost or risk to him”. This ethical principle is much related to the second ethical considerations notably invasion of privacy in a way that researchers, who decide to take into
consideration the privacy of their research participants, will decidedly make sure that they seek the consent of their research subjects on any issue that is directly or indirectly related to their privacy. As such, the morality of informed consent is grounded upon both legal issues and cultural values (Diener and Crandall, 1978, P. 35). As mentioned before, since we don’t aim to interview or send surveys to research participants, but intend to collect secondary data of companies, namely stock price and social performance scores, which are accessible to everyone, we can argue that we don’t have to seek the consent of the companies on which we collect our data.

The last ethical consideration that refers to deception is also an important factor to be considered by social sciences researchers. This concept denotes the ability of the researcher to adopt or engage in scientific methods or techniques other than what he has suggested or promised to use at the beginning. Diener and Crandall (1978, P. 72) identified two main ways though which deception can happen. Firstly, the researchers may decide to directly lie to their research participants through what is known as deception by commission or they may omit some information, involuntarily, that are relevant for the research participants. Due to the practical relevance of our study to different stakeholders, we will make sure that our findings and results are derived from a proper collection and analysis of data, without any sort of bias against parties benefiting from such studies.

In addition to the above-mentioned ethical and legal considerations, researcher also needs to account for the social implications of their study (Hair et al., 2003, P. 104). In so doing, they have to take some social responsibilities in order to minimize the effect of their research process on a group of stakeholders including employees, customers, government and community at large (Hair et al., 2003, P. 104). While conducting this study, we will keep in mind, throughout the whole research process, the social responsibilities we owe towards the different actors of the society and the parties likely to benefit from it.
Chapter 3: Theoretical Framework

This chapter gives an outline of theories that have been established in relation to our study by accredited scholars and researchers. Specifically, the chapter begins with providing conceptual framework explaining social and stock performances in general, and Sweden in particular. Then, we review previous research on assumptions about CSR and inefficient market, noise generating nature of CSR, and stock market effects of social performance. The chapter ends with presenting the conceptual model for the theoretical framework of the research.

3.1 Social performance

3.1.1 Overview

A number of studies have analyzed the relationship between corporate social and financial performances, but the argument concerning how social performance influences firm’s financial performance is ongoing (e.g. Luo et al., 2015). The recent financial crises, global warming, and the constraint of natural resources are forcing corporations to include a broader strategy beyond the focus on stockholder wealth maximization (Ameer & Othman, 2012, P. 61). While the emerging consent is that welfare of different stakeholders is essential, it remains to be seen whether shareholders wealth maximization and long term survival of the firms is enduring (Becchetti et al., 2011, P. 1628) through the adoption of long term focus and more inclusive set of responsibilities focusing on ethical practices, employees and customers.

In a socially responsible investment, investors try to account for environmental, social, governmental (ESG), and ethical issues in the investment process (Scholtens & Sievänen, 2013, P. 606). According to Berry and Junkus (2013, P. 717), it includes different stakeholders interests, ranging from economic (such as institutional investors, banks, venture capitalists), organizational (such as labor unions), and societal (such as international organizations, non-governmental organizations, academics). In other words, investors consider the overall behavior of companies in the market place and with its stakeholders to judge how socially responsible the business is (Sievänen et al., 2013, P. 139). Presenting high degree of social performance, therefore, may necessitate different type of activities including participating in the community, diversity of management and work force, philanthropy, employee empowerment and reduction of environmental impacted (Sievänen et al., 2013, P. 138), and each of these activities may have a separate identifiable impact on firm performance and reputation.

There are three different schools of thought on corporate social performance (CSP). The first school of thought claims that corporate social responsibility results in enhanced company image, stable stock price, increased sales and positive effect on customer loyalty. The second school thought claims that corporate social performance has a negative effect on profit in that it leads to loss of business focus that could be used in running the business profitably. Third school of thought claims corporate social performance as a good charitable social act with no impact on profitability. Thus, the following section is organized in three parts, with each part addressing research findings from the three schools of taught mentioned above.

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3.1.2 Positive consequences of social performance

According to the view of “universal investors”, valuable assets of a firm are not merely equity shares but also stakes in the community, the economy, and even the entire planet (Luo et al., 2015, P. 124). Putting shareholders first harms investors, corporations, and the public (Stout’s, 2012, PP. 486). For example, shareholders may seek increase in share price over a short period of time, which can be achieved by cutting R&D costs, but this might create problem for the firm, its shareholders, and the economy in the future (Stout’s, 2012, PP. 488). Stout’s (2012, PP. 488) further argued, “Corporations are independent legal entities that own themselves. Shareholders simply own company shares, they do not own the company, and therefore, firms owe no legal obligation to maximize shareholder wealth”. Thus, instead of shareholder primacy, firms should stress obligation towards stakeholders such as employees, consumers and the society at large in order to create firm value and heighten return from investment. Lu et al. (2013, P. 5683) empirical results also show that social responsibility investment by US semiconductor firms has positive effect on their performance, and urged companies should pay attention to the CSR quantitative dimensions including human rights, employee relationship and environment issues in order to enhance their corporate efficiency.

This echoes the principles of stakeholders’ responsibility theory, which states that building stakeholders trust and loyalty will help create more sustainable business (Arx & Ziegler, 2014, P. 978). Management has to satisfy different groups having stake in a firm, otherwise those stakeholders could withdraw the support for the firm (McWilliams et al., 2005, P. 14). Consumers may refuse buying products and services of socially irresponsible firms, for example. Freeman et al. (2007, P. 303) stakeholder capitalism framework, unlike the traditional capitalism narratives that rely on value capture rather than value creation, focuses on the concepts of stakeholders in order to successfully create, trade, and sustain value. According to Freeman et al. (2007, P. 311), business must engage its stakeholders because every business transaction involves customers, suppliers, employees, and society at large. Firm’s best care of their various stakeholders are more likely to appeal shareholders in order to buy their stocks, which eventually improve share returns. Thus, satisfaction of diverse stakeholder groups can lead to positive effect of social performance on financial performance. Human relation theories also argue that employee satisfaction causes stronger corporate performance through improved recruitment, retention, and motivation (Edmans, 2011, P. 638). These arguments from the stakeholder theory also matches with the resource based view of the firm (Barney, 1991, P. 115) which suggests that competitive advantage evolves from internal capabilities which are valuable, rare and difficult to imitate or substitute. Therefore, stakeholder management can be considered as an important organizational resource as it constitutes a source of sustainable competitive advantage (McWilliams et al., 2005, P. 4).

Moreover, from the firm’s perspective, transaction and agency costs can be reduced by social initiatives that affect stakeholder relations (Sievänen et al., 2013, P. 139). Improving health and safety conditions beyond what is legally required could motivate employee productivity. This initiative positively contributes to the stakeholder, i.e. employee directly. Similarly, avoiding child labor can reduce risk of aggressive campaign from NGOs. Here, the effect is indirect for it only signals the firm is acting in a responsible manner. The point is, effect of the initiative may be direct or indirect, still
helps to neutralize agency problems by improving the bond between the firm and the stakeholder (Harjoto and Jo, 2011, P. 60). Wang (2007, P. 622) also confirmed that the integration of social practices with core business processes of the firm lead to cost saving, innovative product, high market share and better profit, and reduction in the work related accidents and injuries. Becchetti and Trovato (2011, P. 231), who analyzed CSR and firm efficiency on firms included in Domini 400 index (a CSR stock market index) using stochastic frontier approach, and found that adoption of CSR practices does not significantly reduce firm efficiency. Allen et al. (2007, P. 30) analyzed optimal capital structure of firms, and found that stakeholder oriented firms that are concerned with employees and suppliers benefit from less cost of debt financing. Ciciretti et al. (2014, P. 366) investigated the relationship between community responsibilities and bank performance in terms of cost of capital and the result revealed that banks with good social performance records experienced lower spread, and were not penalized for being involved in social activities. Therefore, attending a more inclusive set of responsibilities focusing on ethical practices, employees, environment and customers helps to earn better financial performance in terms of sales growth, return on assets, profit before tax and cash flow compared to that do not engage in such practices (Ameer & Othman, 2012, P. 73).

Lu et al. (2013, P. 5693) indicated that firms which implement CSR experience steady improvement in operating performance even during economic downturns, and this suggests that the implementation of CSR reinforces a company's competitive advantage since it helps the enterprise build a positive image with customers, investors, bankers and suppliers. One important possible explanation for Lu et al. (2013, P. 5693) argumentation is that when firms emphasizes labor rights and labor welfare programs, it is better able to attract higher quality job applicants and retain them after they are hired, thereby reducing turnover, and recruitment and training costs, and therefore, greater focus on human rights and employee relations through socially responsible practices can become a competitive advantage, resulting in improved corporate performance. Overall, they posit carrying out social responsibility activities by taking into account various stakeholder groups’ overlays ways for successful operating performance of firms.

Brammer et al. (2006, P. 450) using data on large UK firms, find that different types of social performance aspects have varying reputational impact, and these impacts are dependent upon the industry in which the firm operates. Social responsibility affects firm value; nevertheless, the effect varies depending on the nature of the business and the dimensions of social performance. For example, environmental performance enhances or damages reputation depending on whether the firm’s activities ‘fit’ with environmental concerns in the eyes of stakeholders, however, community involvement shown to have a more positive impact upon corporate reputation, implying that good community performance is expected by stakeholders in almost all industries (Brammer et al., 2006, P. 451). Edmans (2011, P. 638) showed that employee satisfaction is positively correlated with stock performance, that the market may not fully value intangibles, and that certain investment screens linked to employee satisfaction may lead to outperformance. Likewise, looking at social factors through the lens of microfinance, Janda et al. (2014, P. 691) and Oehri and Faush (2008, P. 7) concluded that adding microfinance investment funds to a portfolio could improve returns.
In sum, companies demonstrate their commitment to the environment, social issues including activities towards their employees, and the community; to promote transparency and solicit feedback on their performance; to respond to demands for information from growing number of stakeholder audiences; to demonstrate their efforts to build and maintain relationships with external parties; to better manage and communicate risk; to enhance or protect their reputation; and to grow shareholder and brand value (Eccles et al., 2013, P. 114). Therefore, as Ameer and Othman (2012, P. 64) argue efficient and reliable contracting with suppliers, employees, and creditors lowers contracting and monitoring costs, thereby increasing return on assets suggest that a leading social performance firm proactively manage its corporate social performance profile and obtain lower cost of equity capital, indicating that financial market value social performance. We argue, employees are key organizational assets rather than expendable commodities, which can create substantial view by inventing new products or build client relationship; therefore, employee satisfaction can improve retention and motivation to the benefit of shareholders (Edmans, 2011, PP. 622, 638).

3.1.3 Negative consequences of social performance

Based on various constituting social dimensions including community involvement, employee relations, diversity of work force, product attributes and human right policies, Scholtens and Zhou (2008, P. 213) studied the link between financial and social performances. However, he could not find that social strength positively contributes to financial performance; rather they confirm a ‘weak negative’ association between both stakeholder strengths and concerns, and financial performance. Meaning stakeholder’s interest must be sacrificed to increase shareholder stock return. In addition, they argue that financial risk is related with stakeholder concerns, but not stakeholder strengths, and thereby, risk primarily is affected by socially controversial activities (Scholtens and Zhou, 2008, P. 224). For instance, financial risk increases when firms become involved in disputes concerning community, diversity and environment, and decreases when firms supply ‘good’ products (Scholtens and Zhou, 2008, P. 224). Using corporate social dimensions (i.e. legal, economical, ethical and philanthropic), Wang and Berend (2015, P. 337) found that negative social performances related to secondary stakeholders such as community or financial stakeholders perceive positively among public stakeholders, and environment negatively. Consequently, a firm engaged in different kinds of corporate social performances activities can create a favorable corporate reputation among different stakeholders groups (Wang and Berend, 2015, P. 352). Therefore, it can be argued that social performance dimensions are related to stock market performance of firms.

When additional motives enter the investment decision, there is a potential conflict of interest with social responsibility that may not be fully reflected in market prices (McWilliams and Siegel, 2001 P. 118). For example, managers may over-invest in social responsibility activities to build their personal reputation as good global citizens (Harjoto & Jo, 2011, P. 1). Prior et al. (2008, P. 174) find that part of the investment in CSR is used for managerial entrenchment to gain support from stakeholders after having employed practices that damage shareholders’ interests like earning management. Managers might use social responsibility initiatives to maximize their utility; hence, investors have to count with lower return if firms deviate from the optimal path because
of social activities (Beltratti, 2005, P. 3063). Others claim that CEOs strategically choose CSR activities to reduce the probability of CEO turnover in a future period through indirect support from activists (Cestone & Cespa, 2007, P. 741). Still others assert firms use corporate social activities to signal their product quality (Fisman et al., 2006, P. 17).

Business motivated excess expenses that privately consumed by selfish managers fails to create social or economic value. Using corporate resources for social issues not related to primary stakeholders may not create value, however, building better relationship with primary stakeholders such as employees, suppliers, and communities could lead to increase shareholder wealth by helping firms develop intangible value, valuable assets which can be sources of competitive advantage (Hillman and Keim, 2001, P. 125). In order to influence managers selfish behavior, Hill and Jones (1992, P. 152) propose to integrate a ‘stakeholder-agency theory’ that holds managers accountable not to just stockholders but to stakeholders. As such, stakeholder influence can be institutionalized through employee representation; market pressure and ownership structure (Thomsen, 2004, P. 29), and thereby reduce conflict of interest between managers and various stakeholders.

This argument, of course, is in line with corporate governance theory, which states consideration of goals of other groups such as the general public, as a motivation for corporate social activities, unnecessarily enlarges the latitude of management (Arx and Ziegler, 2014, P. 978). For instance, generally managers like to lead a large company because their pay is connected with firm size. This may require more staff, additional managers, and more board members, which in return claims resources contributing to a reduction in profit at least in the short run. Indeed, changes in organizational configurations, processes, and initiatives such as employee training for product quality and safety all have direct costs (Buchana et al., 2005, P. 196). However, a carefully conceived corporate social responsibility strategy directed at managing community relations may result in cost reduction in the long term (Ameer & Othman, 2013, P. 63). For example, Paten (2008, P. 559) investigates the market reaction to corporate donating to tsunami relief effort, and find evidence of significant positive change in the market value of the donating firm. The results appear to support Godfrey’s (2005, P. 796) assertion that philanthropic giving must be perceived as being a genuine manifestation of the firms underlying social responsiveness in order to increase firm value.

Arguments of negative influence are also shared by neoclassical macroeconomics theory, which states operating costs of social performance leads to reduced profit, decreased firm value, competitive disadvantage and lower shareholder return (Telle, 2006, P. 195). Likewise, shareholder’s view (e.g. Ogden and Watson, 1999, P. 526) argues that interest of various stakeholder varies; if management makes decisions according to every stakeholders opinion, organizational financial performance would be infringed upon. Thus, investment in socially responsible activities increases the cost of business operations and thus leads to competitive disadvantage. Principal agent theory also argues that satisfaction arises if employees are overpaid or underworked, both of which reduce firm value (Edmans, 2011, P. 622). Furthermore, Brammer (2006, P. 114) examines the relationship between social performance and stock returns with a set of disaggregate environment, employment and community data, and found that environmental and
community indicators are negatively correlated with returns while the employment indicator is weakly positively related. In other words, the results revealed that cost of social performance of the firms outweighs return achieved from stock performance.

In the contrary, neoclassical macroeconomics theory emphasizes the role of CSR in reducing the effect of externalized costs (Shleifer & Vishny, 1997, P. 775). In line with this, Heal (2005, P. 408) argues that government cannot fully resolve all problems and the competitive market is not efficient, therefore, CSR can substitute the missing market, and reduce conflict between firms and stakeholders such as government, nongovernment organizations, and employees. Consequently, it can be argued that the reduction of these conflicts increases profit at least in the long run meantime makes socially responsible firms more attractive to investors.

As Rimmer et al. (1996, P. 219) indicated, the critical problem for sustainability is winning time, when it is perceived that costs exceed benefits, best practice may be discontinued as not cost effective, but in the long-run, perceived benefits are greater than perceived costs. In the short-term, firms implementing socially responsible investment show poor performance than those do not because firms which implement CSR are subject to greater accountability and high costs, however, as CSR has gained wide acceptance it has become a competitive advantage that enables companies to continue in this competitive era (Brammer & Millington, 2008, P. 1341). From a long-term perspective, therefore, it can be argued that engaging in socially responsible investment is a competitive advantage for companies.

### 3.1.4 Social performance has neutral consequences

Ullmann’s (1985, P. 541) view states that firms do face a trade of between shareholder and stakeholder interests, as they incur costs from stakeholder investment, and therefore, put them at economic disadvantage. Therefore, to overcome economic disadvantage, as explained by Ullmann’s (1985, PP. 541, 546), investment in social activities should be optimized in a way to accommodate the benefits of both shareholders and stakeholders. Theory of a firm also suggests that management faces a tradeoff and always chooses a level at which the costs of socially responsible investment offset the benefits created by socially responsible conduct (i.e. optimal level of investment) indicating that stakeholder investment is not less costly than shareholder investment (Scholtens and Zhou, 2008, P. 220). In line with these arguments, McWilliams and Siegel (2001, P.125), who developed a supply and demand model of corporate social responsibility also found a neutral relationship with financial performance. Therefore, based on cost benefit analysis it can be argued that revenues as a result of improved stakeholder relations should at least balance resources consumed for responsible investment so that firms will have the incentive for social investment.

The argument of positive and negative effects of corporate social performance also implies that they can be different across different countries or regions. For example, in Europe higher awareness for climate change and stringency of climate policy puts pressure on firms to positively respond to CSR, therefore, environmental performance would lead to a more positive financial performance effect in Europe compared to USA,
on the other hand, the long tradition in ethical and religious motivated social investment in the USA would rather support a more positive effect of CSR on financial performance in USA (Ziegler et al., 2014, P. 979). Besides, as noted earlier, the discussed positive and negative effects also tends to vary for alternative measurements of corporate social performance dimensions, as well as for alternative measurements of corporate financial performance. The lack of explicit rules governing the reporting of non-financial information also contributed to a situation where some reporting methodologies tailored to the specific concerns of a particular industry or stakeholder group (Eccles et al., 2013, P. 116). Overall, as indicated by Sievänen et al. (2013, P. 138), the effects of corporate social performance tend to vary not only across industries, cultures, and firms but also among individuals.

3.1.5 Social performance in Sweden

Sweden is viewed as pioneer with CSR, and Swedish companies have a long history of active CSR work. In 2007, Sweden became the first country to demand sustainability report complying with GRI guidelines, from its state-owned firms, and in 2012 took another important step by asking those companies to set measurable, specific and firm relevant sustainability goals with the focus on diversity, human rights, working conditions, anti-corruption, business ethics, and gender diversity (Swedish institute, 2013, P. 3). In 2013, Swedish companies topped the RobecoSAM country sustainability ranking, which ranks 59 countries based on 17 environmental, social and governance indicators (Swedish institute, 2013, P. 1). Many Swedish companies are exemplary in integrating sustainable practices such as environmental protection, human right, better work environment, and anti-corruption measures in their business strategy. According to Responsible Competitiveness Index (RCI), Sweden is taking first place among 108 countries in embedding responsible business practices at the heart of their economies (MacGillivray et al., 2007, P. 21). By means of three sub categories, namely policy drives, business action, and social enablers, RIC indicates the degree of companies social responsibility in relation to climate, working condition, corruption and social issues. Countries with the highest score are found implementing environmental and social practices in large, medium and small-scale firms through a combination of sustained innovation.

Several recent studies list Swedish companies in the following perspective: Corporate Knights analyses companies environmental, social and governance performance on the basis of carbon dioxide emission, leadership diversity and tax paid. The 2012 Global 100 study include five Swedish firms, namely Atlas Copco (18), Scania (27), Ericsson (30), Electrolux (58) and H&M (73). The Dow Jones Sustainability World index ranks the world’s leading companies based on their performance in business ethics, the environmental and social issues. The 2012-13 index includes six Swedish companies: SKF, SCA, Electrolux, H&M, MTG and Atlas Copco. London Stock Exchange subsidiary FTSE Group produces the FTSE4Good index Series every year, to support investors from around the world who wants to increase the focus on the environment, social and governance aspects of the companies in which they invest. The FTSE4Good index2013 includes Swedish companies such as SEB, Electrolux and Atlas Copco. (Swedish institute, 2013, P. 2)
Institutions and regulations in Sweden progress the engagement of companies, stakeholders, and investors in their social performance. The Swedish federation of financial analysts (FFA) promotes advanced standards for competence of financial sectors in Sweden, and their recommendation about environmental information complimented by social and human right aspects such as working conditions, employee relations and child labor influence the future cash flow, and earnings forecasts of firms (Semenova et al., 2010, P. 273). Nilsson (2008, P. 214) argue analysts recommendation has a potential influence on the actions portfolio managers, and thereby, on stock prices and improvement of socio-environmental reporting practices. Analysts are better able to assess the value relevance of firm corporate social performance information (Ivkovic and Jegadeesh, 2004, P. 434), and, therefore, reduce the information asymmetry associated with corporate social performance, by incorporating firm social information into their stock recommendations for general investors (Luo et al., 2015, P. 133).

Stock exchanges are also well placed to promote sustainability and disclosure. “Stock exchanges although diverse in terms of in their legal status and revenue streams, provide the infrastructure for markets and as such are, in most instances, able to influence the behavior of market participants through rule making, implementation of national legislation, policies and regulations or by the use of other tools and incentives as may be appropriate”(WFE, 2015). For example, exchanges can encourage ESG disclosure, or gather ESG metrics submitted by listed companies, or consider producing a sustainability report themselves. OMX Stockholm has no mandate to enforce environmental and social disclosures on listed Swedish firms; however, it has the right to remove firms violating human rights and other international business norms (Semenova et al., 2010, P. 274). Specifically, OMX considers aspects such as securities transactions, market place, employee relations, company relations and communications in promoting corporate social responsibility.

The Swedish national funds (AP funds) have since 2001 been required by an explicit mandate to integrate environmental, social and governance (ESG) standards to the firms in which they invest (Hamilton and Eriksson, 2011, P. 45). Studies, for example by Gifford (2010, P. 92), claim that long-term financial value and risk management as potential drivers for shareholder engagement. Pension funds increase control of ESG standards among portfolio firms, not only respond to societal demands, but also attempt to mitigate the reputational risk of owning underperforming ESG portfolio firms (Clark and Hebb, 2004, P. 164). If the reputation of portfolio firm is damaged, the shareholder reputation is also negatively affected, resulting in a strong incentive for owners, like pension funds, to improve environmental and social standards at a portfolio level to reduce the risk of damage to their own reputation (Hebb, 2008, P. 59). Hamilton and Eriksson (2011, P. 58) found that reputation risk is a strong motivation for Swedish AP funds for engaging with portfolio firms that invest responsibly.

Since 1999, the accounting legislation required Swedish companies to disclose information in their administrative report as how their operations directly influence the external environment (Hassel et al., 2005, P. 44). Swedish Annual Accountants act requires disclosing non-financial information, including information on environmental
and employee matters, in the audited directors report section of the annual report (Semenova et al., 2010, P. 274). A large number of Swedish companies provide sustainability reporting. In 2008, according to European Sustainability Reporting Association (Larsson & Partner, 2011, P. 1), 90% of Swedish listed and state owned companies have some form of sustainability information in their annual reporting or in separate sustainability reports. As a result of the government new guideline regarding sustainability reporting, this proportion has increased from 80% to 98% in 2008 for state owned firms. The amount of sustainability information also has increased from 13% to 14% for Large Cap, from 4% to 5% for Mid Cap and from 17% to 28% for the state-owned companies (Larsson & Partner, 2011, P. 2). In addition, Tagesson et al. (2009, P. 352) indicated that Swedish state owned companies provide social information on their website, but a significant difference exists in extent and content across industries.

All Swedish companies publishing sustainability report are required to issue GRI reports since 2009. GRI sustainability reporting increases from 13% in 2007 to 34% in 2008 for listed companies in Sweden, and the increase from 20% in 2007 to 81% in 2008 was most noticeable for state owned (52) firms (Larsson & Partner, 2011, P. 2). However, “Swedish companies were poor in marketing their sustainability reports”; out of the 59 Swedish companies identified, only 21 companies applied GRI guidelines in their sustainability report for 2008, a “good bit” outside the top ten lists worldwide. The possible explanation for this, according to the report, is that GRI statistics are based on the reports submitted for information purpose and many of the companies that devote significant resources to producing sustainability reports are not always so proficient in making this visible (Larsson & Partner, 2011, P. 3).

In Sweden audit assurance on sustainability reporting is becoming a common practice, and the number of assured sustainability reports is increasing. For example, inclusion of audit assurance on sustainability reports has increased from 37% to 69% in 2008. As independent assurance is a requirement by government guidelines the increase (40% to 83%) was most noticeable for state owned firms, but 42% to 53% for large Cap listed firms (Larsson & Partner, 2011, P. 5). Mostly large audit firms offer assurances on firm’s sustainability report-only 15% of assurances are requested from consultants. The assurance statements are carried out based on FAR SRS standard RevR 6 for assurance of sustainability reports, and FAR SRS RevU 5 audit for environmental issues in the annual reports (Larsson & Partner, 2011, PP. 5-6). Properly trained auditors with good knowledge about the industry are appointed by the general meeting of shareholders to perform the audit of sustainability reports.

Internationally, Sweden fares well in energy and environmental technology, coming third in the Global cleantech innovation index 2012, after Denmark and Israel (Swedish institute, 2013, P. 1). Stringent environmental legislation, high level of environmental awareness and knowledge are contributing factors for Swedish firms to be environmentally innovative and efficient in their operations. Thus, Sweden is now known for exporting low impact industrial production techniques. Sweden also plays leading role in non-fissile fuels and water quality. For example, SEKAB is major supplier of ethanol in Europe, and water-technology Company Xylem operates in more than 150 countries.
As far as social issue is concerned, the Swedish government demands both state-owned and private firms, to respect human rights in all their operations. It encourages private firms to follow the UN Guidelines on Business and Human Rights. Gender equality is important aspect of CSR for Swedish firms. Swedish firms are well known in promoting gender equality making it possible for parents to combine work and family, encouraging shared participation in childcare, and offering equal opportunities to leadership positions. For example, according to “World Economic Forum’s Gender gaps Report” based on economic, political, education and health criteria the, 2012 report ranks Sweden as fourth in the world (Swedish institute, 201,P. 2). Moreover, corruption, which is one of the greatest threats to growth, is becoming one important aspect of CSR. The legislation against bribery which came in to force in Sweden since 1 July 2012, categorizes the “giving or accepting” of bribes a serious crime. Sweden is among the world’s least corrupted countries, ranked fourth on Transparency international’s Corruption Perceptions Index 2012 (Swedish institute, 2013, P. 2).

Sweden has a long history of unionization. Trade unions have large representatives from different occupations, and employment standards established by law in Sweden (Semenova et al., 2010, P. 275). Stable relationships in the labor market are facilitated by collective agreements, which offer employees protection on work conditions in different industries all over the country. Furthermore, employees have representation on one-tier boards. Companies with more than 25 employees must have two labor representatives appointed to the board, while companies with more than 1,000 employees must have three, and the rights and duties of these board members are the same as all other board members (Allen et al., 2007, P. 6). Employees play prominent role when being regarded as important stakeholders in the firm.

Sustainable business practice should be driven and owned by the private sector, and each company has to decide how it will work with corporate social responsibility for “a decent profit in a decent way”. CSR strengthens trust in which business can flourish. Thus far, striving to lead by example, the Swedish government has a unit within the Ministry of Foreign Affairs focusing on issues related to sustainable trade and business, and also appointed a CSR Ambassador (Swedish institute, 2013, P. 3). Swedes felt that encouraging CSR would position Swedish companies as leaders in markets with high social premium, and in turn benefit from the competitive economy. In line with this, Waard & Roelands (2007, P. 1) report stated that, “investment in sustainability can result in cost cuts,” such as energy saving solutions that lower utility bills or fair working conditions that reduce absenteeism rates. Similarly, KPMG (2011, PP. 37-38) revealed that stakeholder value does not come at the expense of shareholder value, but rather contributes to shareholder value, particularly when the added value is viewed over longer period of time. We also argue that firms doing business sustainably will be more successful than the competition-CSR pays off!

3.2 Stock performance: Overview

3.2.1 Efficient Market Hypothesis

Whenever, an investor buy stocks of a company in the financial market, they usually evaluate the performance of those stocks through the return they gain or will gain as a
result of their investment decisions. And the returns generated by those stocks, through an increase in their price, is dependent on several factors including innovations and productivity gain realized by the investee corporations (Deng et al., 1999, P. 20). Another factor that helps in the assessment of the return from a stock, is the risk inherent in the investment. As discussed by Alexander & Buchholz (1978, P. 480), the higher the risk inherent in a financial security including stock, the higher the expected return the stock will provide to the investors.

In addition, Cochran & Wood (1984, P. 45) differentiated between two main ways of measuring the financial performance of a firm, and they refer one of them as investor's returns, which can also be used to measure the stock performance of the firm. The main assumption that needs to be taken into consideration when measuring the stock performance of a firm with returns is that the measurement of the performance should be made from a shareholder’s perspectives (Cochran & Wood, 1984, P. 45). To build upon the research previously conducted by Vance (1975) which considers a single variable namely the change in price per share, to measure the return to investors; Abbott & Monsen (1979, P. 512) also included the dividend variable in its model for investor return measurement. However, this model for measuring the stock performance of a firm is regarded as inefficient by some authors who argue about the simplicity of such model for not capturing a dimension essential to investors notably the risk factor inherent in the investment (Cochran & Wood, 1984, P. 45).

Moreover, in order to better understand the stock performance of firms, many researchers have investigated on the possibility of predicting the future stock prices of a firm, which will reflect its performance, with the use of historical prices of common stocks (Fama, 1965, P. 34). And two conflicting theories resulted from the investigation, which are namely the chartist theories and the theory of random walk (Fama, 1965, P. 34). Advocates of the former were inspired from the Dow Theory, relating to the movements in stock price, which was first introduced by the founder of the Wall Street Journal, Charles Henry Dow (Brown et al., 1998, P. 1312). According to this theory, investors can rely on historical prices of a stock to predict its future price (Fama, 1965, P. 34). However, the validity of this theory is rejected by Cowles (1993, P. 309). With the support of various statistical tools, Cowles (1993) empirically analyzed the predicting efforts of 45 professional agencies to predict the future performance of the stock market. Their study was divided into two main parts whereby the first part deals with 20 fire insurance companies and 16 financial services, the second part focused on the efforts of 25 financial publications to predict the future price of stocks in the market (Cowles, 1993, P. 309). The predictions were unsuccessful, and the most successful records were little, if any, better than what might be expected to result from pure chance (Cowles ,1993, P. 324).

On the other hand, allies of the latter theory, which refers to the random walk path adopted by stock prices, claim that the price movement of a stock has no memory and therefore follows a random walk that cannot be used to predict what the future price will be (Fama, 1965, P. 34). The random walk theory of stocks is one main pillar of the efficient market hypothesis (EMH), which was first introduced by Paul Samuelson (1965) in addition to several thoughts of modern economics (Lo, 2004, P. 2). The main arguments for the random walk feature of securities depicted by the EMH, is that since a specific stock
incorporates all information relevant for any investment decision; it would be difficult for investors to challenge the market and gain abnormal return because the price of stock tends to follow a random walk (Yen & Lee, 2008, p. 308).

However, there have been few researches that have been conducted by some researchers, who challenged the random walk hypothesis after running a series of statistical test. For example, Semenov (2008, P. 2504) used a Monte Carlo simulation in order to make a test of the random walk hypothesis, with the support of a method based on Pearson auto correlation coefficient. After running their test, they concluded that the market prices of stocks do not follow a random walk, which disapproves the random walk theory (Semenov, 2008, P. 2504). Moreover, with the use of multiple variance ratio test including Whang-Kim subsampling and Kim’s wild bootstrap tests, in addition to some conventional Chow-Denning test, Charles and Darne (2009, P. 117) investigated on the validity of the random walk hypothesis for two class of shares A and B in the Shanghai and Shenzhen stocks markets, using daily stock prices for the time period 1992-2007. As a result, they found out that while the class A shares follow the random walk hypothesis, class B shares do not follow the same path of random walk, and thus are considerably inefficient (Charles and Darne, 2009, P. 117). Conversely, a less recent study supports the random walk hypothesis from the perspective of a deterministic dynamical system (Nakamura & Small, 2007, P. 599). By applying a small-shuffle surrogate method, Nakamura & Small (2007, P. 599) found that financial data including stock prices from markets such as Standards & Poor’s 500 and the Nikkei 225, and also commodity prices (gold and oil) follow a random walk, which was subsequently divided into independently distributed random variables and time varying random variables. In addition to the random walk hypothesis, another standard economic theory known as theory of arbitrage supported the evidence that financial market were efficient (Shleifer, 2000, P. 2). Since arbitrage has considerable implication for the examination of the securities markets, it will bring the prices of securities to their fundamental value and thus keep the markets efficient (Shleifer & Vishny, 1997, P. 35).

From a theoretical perspective, the Efficient Market Hypothesis is built upon three main arguments that are inter-connected (Shleifer, 2000, P. 2). Firstly, EMH assumes investors to be rational in a sense they value and invest in those securities logically. To build on this assumption, Bernstein (1999, P. 129) argued that the higher the number of well-trained investors who show high degree of rationality, the more efficient the market is likely to be. The second assumption refers to the fact that the existence of irrational investors will not affect the price of the stocks since they will cancel each other out (Shleifer, 2000, P. 2). And the third argument highlights the equality in the irrationality of investors (Shleifer, 2000, P. 2). From these three arguments, one can notice the relevance of information availability to the Efficient Market Hypothesis. According to Zietz (1995, P. 311) the Efficient Market Hypothesis makes two important assumptions. The first assumption states that there exist an equilibrium relationship between the various variables identified in the model. The second assumption identified by the same authors is that financial agents or market participants have rational expectations about the price of stock prices (Zietz, 1995, P. 311). The former assumption, which relates to the equilibrium principle, inherent in the stock market, was a concept derived historically
from the physics discipline (Bernstein, 1999, P. 131). The French economist Leon Walras first introduced it when he proved that most variables in the market are determined by the free market forces (Bernstein, 1999, P. 131). Actually there are some situations where prices of stocks will not immediately reveal an equilibrium state (Bernstein, 1999, P. 131). One concrete illustration of such situation, for example, is when in a particular market; some investors lack useful information pertaining to a stock or receive the needed information late compared to the other investors (Bernstein, 1999, P. 131). In such a case, fully-informed investors will take advantage of the opportunity to trade stocks before the equilibrium state is reached, and thus make abnormal return over their competitors (Bernstein, 1999, P. 131).

According to Malkiel & Fama (1970, P. 383), the empirical evidence related to the EMH theory is concerned with how the stock price can be adjusted with the support of three pertinent information subdivisions, thus leading to three different form of the EMH (Shleifer, 2000, P. 2). On the first hand, there is a weak form test whereby the future stock prices incorporate information relating to its historical performance (Malkiel & Fama, 1970, P. 383). This form of information tale truly supports arguments for the random walk theory based on the assumption of risk neutrality (Shleifer, 2000, P. 7). Secondly, the semi-strong form of EMH posits that the price of stock usually includes all relevant information that has been made publicly available, such as declaration regarding stock splits or earnings, in order to facilitate the decision making of the investors and thus avoid them to earn excess return over its competitors (Malkiel & Fama, 1970, P. 383). And lastly, we have the third information tale referring to the strong form of EMH, which argues that insiders, which usually have inside information about the company or its performance, cannot take advantage of such information over its opponents since they are already incorporated in the prices of stock (Shleifer, 2000, P. 7). Moreover, earlier evidence provided by both the weak and semi-strong form of information supported the Efficient Market Hypothesis (Shleifer, 2000, P. 7).

As highlighted by Lo (2004, P. 3), even though there has been an extension of the EMH theories in other direction, including the integration of assets not usually traded in the market such as human capital or heterogeneity among investors, the hypothesis was not violated as the equilibrium price for the stocks still includes all available information. According to Bernstein (1999, P. 130) the main challenge one may face when dealing with the EMH is whether the various procedures of collecting, assessing and investing on the given information really does worth the effort of doing so. However, a group of researchers from the 1990s, known for being opponents of the neo-classical view of economics, challenged the assumptions held by the EMH both theoretically and empirically and argued for the replacement of the EMH by a new approach namely behavioral finance approach (Yen & Lee, 2008, P. 319). Their main argument against the EMH was that it is practically impossible for investors to be fully rational when making their investment decisions (Shleifer, 2000, P. 10). In other words, the opponents of the EMH posit that investors are most of the times irrational in their investment decision-making, which may lead to foreseeable and financially disastrous behavior (Lo, 2004, P. 17). One of the main reason for such irrationality inherent in the investor’s decision making is that investors sometimes can consider trading on noise as if it were information even though trading on noise may not be the best decision to make from an objective
point of view (Black, 1986, P. 531). One practical example that better explains the influence of such irrationality was provided by the default of the Russian government on its debt in 1998, which triggered a disorder in the fixed income and credit markets, and thus shed considerable light on the forces of irrationality exercised by investors as a result of the Russian default (Lo, 2004, P. 18).

3.2.2 Efficient Market Hypothesis and Behavioral Finance

As highlighted by Lo (2004, P. 17) the most lasting criticism or disapproval against the EMH theory came from the preferences and behavior of various financial agents including investors. One of such behavior could be the trading preference of investors. For example, Bernstein (1999, P. 132) argues that due to the large amount of trading in the current stock market, there is a significant indication that the market efficiency theory in its original sense has no implication for the practical world of investing anymore. However, proponents of the conventional EMH took a position whereby they argue that the irrational behavior of market participants is normally negligible and irrelevant because various market forces will usually act to bring the prices of stocks back to their fundamental value (Lo, 2004, P. 18). It is noteworthy that this argument is based on the assumption that markets are strong enough in a sense they can overcome any kind of behavioral biases. However, the disagreement that exist between EMH and behavioral critics is better explain by the deep differences inherent in the cultural and sociological features of economics and psychology, even though both disciplines aim to study and understand the human behavior (Lo, 2004, P. 19). For example, in psychology research, empirical analysis leads to new theories; while it is the opposite in economics research whereby empirical analysis precedes theory (Lo, 2004, P. 19).

Moreover, when conducting a review of the controversy inherent in the EMH, Lo (2004, P. 15) recommends a new perspective, that reunite the two contrasting school of thought, namely Adaptive Market Hypothesis (AMH). This new perspective is grounded on many premises including an evolutionary approach to economic interactions and also recent studies conducted in the field of cognitive neurosciences which is an interaction between psychology and economics (Lo, 2004, P. 15). According to the evolutionary principles, many violations of investor’s rationality, including loss aversion and overconfidence or overreaction, are not consistent with the market efficiency theory, but are rather uniform with an evolutionary model, which human tend to adapt a more changing environment (Zhou & Lee, 2013, P. 1650).

Derived from a more biological perspective, the AMH theory assumes that the behavior of investors is not essentially intrinsic and exogenous, but is rather determined by their reflex of natural selection, which is also dependent on the context within which the selection takes place (Lo, 2004, P. 15). Similarly, Simon (1955, P. 111) claims that individuals barely based their investment decisions on optimization as suggested by the neoclassic economics regarding consumer choice. Since optimization was identified by them as costly and due to the limited computational skills of individuals, they propose an alternative way of making such decision, which they refer to as “satisficing”, whereby individuals tend to make investment decisions that are simply satisfactory and not optimal (Lo, 2004, P. 22). Nevertheless, Simon’s framework was challenged based on the fact
that it has no significant impact on the economic discipline mostly because it is difficult as human being to determine exactly at which point an investor reaches a satisfactory position (Lo, 2004, P. 22). In order to provide the ingredient omitted in Simon’s framework, Lo (2004, P. 22) suggests the adoption of an evolutionary perspective for that purpose. From this point of view, it is worth mentioning that the efficiency of the market and the overall performance of investment companies is mainly determined by the evolutionary forces placed on financial institutions and the various market participants including shareholders (Zhou & Lee, 2013, P. 1650).

In addition, researchers like Grossman & Stightz (1980, P. 405) further highlighted an imperfect informationally efficient market, by demonstrating that due to the excessive cost of information, the price of stocks may not incorporate all available information because if it indeed does, market participants who already spent money to get such information will receive no return for such investment. With the same line of reasoning, Bernstein (1999, P. 132) highlighted the fatal imperfection inherent in the efficient market hypothesis by arguing, “there is no such a thing as an equilibrium price”. Their main argumentation supporting this inconsistency of the EMH was that an equilibrium state cannot be attained by the market except in the case where all parties involved in a transaction with the market agree about the existence of such price and decide on a specific price for that purpose (Bernstein, 1999, P. 132). Since there may exist disagreement among the different parties in addition to the presence of imperfect information, the author argues for a no equilibrium state for the price of stocks (Bernstein, 1999, P. 132). Even though the AMH still needs further research to confirm its applicability, it can be viewed as the missing ingredient in the reconciliation process between the efficient market and the behavioral expectations (Lo, 2004, P. 22).

Based on all these facts, it is essential to mention that the measurement of the stock performance of a firm has evolved from an efficient market perspective, whereby the stock price is assumed to incorporate all necessary information, and thus making it difficult for greedy investors to beat the market and make abnormal return from their stock investment. However, nowadays, the new perspective, which refers to Adaptive Market Hypothesis, is based on an evolutionary framework whereby different group of investors tend to adapt to the path or the situation for which the economy, and especially what the stock market is experiencing (Lo, 2004, P. 24). As a result of its development, AMH has induced some practical implications that are worth examining. One of the implications AMH has on the practical world is the fact that with AMH, there is possibility of arbitrage opportunity from time to time, as opposed to EMH (Lo, 2004, P. 24). This implication is mainly derived from an evolutionary perspective whereby the liquidity of the stock market is determined by the profits opportunities that may arise and disappears; but as a new generation of market participants arise from the old ones, there tend to always be some arbitrage opportunities (Lo, 2004, P. 24).

Another important implication of the AMH is its role in the variation of the risk return relation. As highlighted by Lo (2004, P. 24), whenever there is a shift in some factors including the sizes and preferences of different market participants groups, as well as regulatory setting and tax laws, the relation that exists between risk and return in the financial market may also be affected as a result. And such change in the risk return
relation inherent in the stock market is explained by the AMH. Indeed, the AMH argues that the risk preferences of various investors, at an aggregate level, are not generally constant, but rather determined by the forces of natural selection, as argued before (Lo, 2004, P. 24). Still relating to the risk return relation, Alexander & Buchholz (1978, P. 480) propose the integration of both risk and return variables in the evaluation of any security performance including the stock performance. For that purpose, they recommend a method, which was first introduced by Jensen (1968, PP. 390-394), for the measurement of stock performance from a risk-adjusted perspective. The model, in question, implicates a regression model derived from the Sharpe-Lintner capital asset pricing model, with a variable that aim to measure the stock market performance from a risk adjusted perspective (Alexander & Buchholz, 1978, P. 480).

3.3 The Swedish stock market

Stock markets carry out two basic functions of the financial market, i.e. converting savings to capital and managing risks. While investors who have savings can channel those savings to firms in need of finance or capital, meantime, the firms redistribute a portion of their risks to investors who are willing to bear them. Companies, which require additional capital, for example, for new investment or expansion can issue new shares, issue bonds on the fixed income market or borrow many from creditors. However, funding needs can rarely be fully meet on fixed-income and credit markets because of the risks associated with lending. Consequently, some firms meet their funding needs by issuing new shares that are sold to investors who are willing to take on risk. The mediation of risk related to capital rising can takes place easily and efficiently in market places such as stock exchanges, and thereby companies issue shares, and investors buy and sell shares using stock exchanges.

In this paper, we use the term Swedish shares to refer to shares listed on Swedish marketplace. For example, companies with head offices located abroad can list their shares on Swedish stock marketplace, and thus will be considered as Swedish shares. But, Swedish shares that are listed and traded only on foreign marketplaces are not part of the discussion. Most Swedish companies issue shares to fulfill their capital needs. However, only public limited companies (having at least SEK 500,000 capital) may offer their shares for public trading. Private limited companies (with capital between SEK 50,000 and 500,000) are not entitled to public share trading, and thus receive funding form private venture capital companies. In Sweden, share ownership is extensive. For example, at year end 2014, the total value of shares listed at Swedish stock markets were about SEK 5000 billion, increase of 10% compared with the previous year (see table 1). Out of the total of SEK 5000 billion, foreign investors owned 39.9%, Swedish households 11.1%, non-financial companies 12.4%, financial companies 27.7%, public sector 4.4% and non-profit making organizations 4.4 %. In addition to shares different equity related instruments such as options, forwards, interest rates, currencies and commodities are traded on Swedish marketplace. (Sveriges Risks bank, 2015, PP. 52-54)

Currently, there are two categories of Swedish market, i.e. regulated markets (e.g. traditional stock exchange) and trading platforms known as MTFs (Multilateral Trading Facilities), which support companies wanting to sale shares, and administer the technical
systems and the regulatory framework that make share trading possible. In Sweden, while Nasdaq OMX Stockholm and Nordic Growth Market (NGM Equity) are regulated markets, First North Stockholm, Nordic MTF and Aktietorget are MTFs.

Table 1: Swedish market Places

<table>
<thead>
<tr>
<th></th>
<th>Number of companies</th>
<th>Market value SEK billion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
<td>2013</td>
</tr>
<tr>
<td>NASDAQ OMX Stockholm</td>
<td>269</td>
<td>256</td>
</tr>
<tr>
<td>NGM Equity</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>AKtietorget</td>
<td>129</td>
<td>119</td>
</tr>
<tr>
<td>First North</td>
<td>147</td>
<td>112</td>
</tr>
<tr>
<td>NGM Nordic MTF</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>570</td>
<td>511</td>
</tr>
</tbody>
</table>

Source: Sveriges Risks bank, 2015

As it can be seen from table 1, the Swedish market had a total of 570 public listed companies in 2014; of which 279 listed on regulated market and 291 listed on an MTF. Companies listed on stock exchanges have to comply with Swedish legislation and the specific market place requirements, including company size, provision of information and corporate governance. On the other hand, MTFs are run by stock exchanges or security firms having less regulations, which makes MTFs market appropriate for new or small companies since the lower requirements make trading less expensive. Still, the MTFs are free to apply strict requirements of stock exchanges. Moreover, both regulated markets and MTFs must adopt regulations that govern information related to. Further, in order to make information accessible to all traders at the same time, and thus to build confidence in the market and to protect investors, companies trading on these marketplaces are required to provide the market with information that may affect share price. (Sveriges Risks bank, 2015, P. 55)

Majority of share trading in Sweden takes place in an electronic system belonging to a regulated market (stock exchange) or at a MTF. Share trading outside these systems (e.g. telephone, email, or chats) over the information system, like, Bloomberg should be reported to Nasdaq OMX as normal stock exchange transactions. And, share trading that takes place directly between buyer and seller (over the counter trading, OTC) are not subject to the regulations of any marketplace. (Sveriges Risks bank, 2015, P. 56)

Sweden stock exchange, OMX, founded in 1984, is a value weighted index composed of 30 most traded stocks on the Stockholm stock exchange (SSE) (Hagelin, 200, P. 599). Nasdaq OMX Stockholm is the largest marketplace, which make up 99% of the market value of all listed Swedish shares. All trading on Nasdaq OMX Stockholm take place via its 77 share trading members which consist of Swedish securities companies, credit institutions and foreign securities (43 companies) operating in Sweden (Sveriges Risks bank, 2015, PP .57). Investor wishing to sell or buy shares must pass through any one of these members, many of whom use internet services to place orders which lowers transaction costs (e.g. brokerage fee) than trading through securities companies and banks. Electronic trading facilities enables automated (algorithmic) trading where orders
and settlements are managed by computer (Sveriges Risks bank, 2015, PP .58). The computer looks for many markets and place orders for best transactions in microseconds. For example, Nasdaq OMX Stockholm algorithmic trades accounts 45% of all the exchange transactions in 2011.

Companies listed on Nasdaq OMX Stockholm are part of Nordic list, Nasdaq OMX Nordic, which also include listed companies from Helsinki, Copenhagen and Reykjavik. The requirements to be listed include market value of shares greater or equal to EUR 1 million, three years old accounting documentation, stable profit, and operating resources for at least a year. Based on market value, Nordic list comprises three segments, namely Large Cap (more than EUR 1 billion), Mid Cap (between EUR150 and 1EUR billion) and small Cap (less than EUR 150) companies. Nordic Growth Market (NGM) is another regulated market for share trading in Sweden. It lists and provides share trading on the NGM equity for small and medium sized companies. For example, 10 companies were listed on NGM equity in 2014. (Nasdaq, 2016, P. 12).

Multilateral Trading Facilities (MTFs), namely First North Stockholm, Nordic MTF and Aktietorget are also trading in small and medium company shares. First North runs by Nasdaq OMX, and both use the same trading system (INET Nordic) provided by Nasdaq OMX Stockholm. NGM runs Nordic MTF, and both use electronic trading system (Elastica) provided by NGM. Aktietorget, the third Swedish MTF, trades through INET Nordic, nevertheless, has additional self-regulatory framework to protect investors (Sveriges Risks bank, 2015, P. 60). At year-end 2014, the total number of companies traded on First North, Nordic MTF, and Aktietorget were 147, 15, and 129, respectively.

<table>
<thead>
<tr>
<th></th>
<th>NDX Sverige</th>
<th>Nasdaq OMX</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrants</td>
<td>6.7</td>
<td>1.0</td>
<td>7.7</td>
</tr>
<tr>
<td>Mini futures</td>
<td>7.8</td>
<td>0.1</td>
<td>7.9</td>
</tr>
<tr>
<td>Bull/bear Contracts</td>
<td>38.0</td>
<td>8.3</td>
<td>46.3</td>
</tr>
<tr>
<td>Other Instruments</td>
<td>0.4</td>
<td>3.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Exchange traded products, total</td>
<td>52.9</td>
<td>12.6</td>
<td>65.5</td>
</tr>
<tr>
<td>Exchange traded funds</td>
<td>0.0</td>
<td>115.1</td>
<td>115.1</td>
</tr>
</tbody>
</table>

Source: Source: Sveriges Risks bank, 2015

In Sweden, Nasdaq OMX Stockholm endorses most equity derivative trading. Futures and options are traded with shares equity indices as underlying assets, but equity index futures are traded the utmost (Sveriges Risks bank, 2015, P. 61). Nasdaq OMX Stockholm also offers clearing for derivatives traded on its market place and for some derivatives traded OTC. In addition, Nasdaq OMX endorses derivative trading that takes place in exchange traded funds and products (see table 2). However, Nordic Growth Market (NGM) endorses to large extent trading in exchange traded products in the Swedish part of Nordic Derivative Exchange (NDX Sverige).
3.4 Swedish stocks’ performance

Advocates of market efficiency assert that in an efficient financial market new information is quickly reflected in the security prices, therefore, attempt to predict price patterns (for example by technical analysts) is useless in the long run (Fama, 1970, P. 383). On the contrary, technical traders argue that there exists some form of market efficiency and it is possible to use price patterns to beat the buy and hold strategy (Bassembinder and Chan, 1998, P. 14). Jennergen and Korsvold (1974) studied price patterns of 45 stocks traded on OSLO and Stockholm stock exchanges, and their finding rejected the random walk market hypothesis for majority of the stocks in the sample. Metgralchi et al. (2008, P. 489) investigated if technical trading rules can predict price patterns in the Swedish stock index for the periods 1986-2004, and found that technical analysts have power to forecast price outperforming buy-and-hold strategies. Similarly, technical analysis rules found successful in predicting stock prices movements in Japan, Hong Kong, Malaysia, Taiwan, Thailand and South Korea (Bassembinder and Chan, 1995, P. 257). Therefore, it can be argued that trading analysis is useful to predict stock returns in stock markets including Sweden.

Analysts and journalists’ interpretations are the basis for buy or sell stock recommendations in published Media such as newspapers and magazines. Lidén (2007, P. 280) examined stock price reaction to buy and sell recommendations published on various Swedish media during 1995-2000, and found recommendation from journalists outweighs that of analysts. This is because analyst’s clients get information for fee paid before publication, and leaves no further value for those informed later (Lidén, 2007, P. 256). Further, the fact that buy recommendations show positive effect, and sell recommendations show negative effect on the publication date could be additional explanation for his argument. Yet, there are fewer journalists and analysts in the Swedish market (Lidén, 2007, P. 256), therefore, the lower the competition between those analyzing stocks, the more difficult it gets uncovering mispriced stocks (Jegadeeh and Kim, 2003, P. 24). On the other hand, the fairly efficient market in developed countries makes unlikely to uncover large mispricing, therefore, investors using recommendations in combination with other market signals receive significant profits, and such strategies work in all countries (Jegadeeh and Kim, 2003, p. 23).

Hassel et al. (2005, P. 56) asserted that environmental information has negative effect on future earnings for Swedish listed companies. As such, investors do not value firms with high environmental performance since lower earnings lead to lower market value. On the other hand, Semenova et al (2010, P. 287) found environmental and social performance value relevant for Swedish listed firms in that they complement financial information in explaining variation in stock prices. Their result show high stock price for firms with high socio-environmental performance over 2005-2008. This is in line with the argument that social and financial performances increase firms’ competitive advantages, which in turn improve financial returns. Overall, it can be argued that social and environmental information is reflected in the market value of Swedish listed companies.
3.5 Stock market and Social performance

Many research results regard CSR as an action that benefits firms, markets and society. For instance, Mackey et al. (2007, PP. 819 - 820) noted that CSR might maximize market value of socially responsible firms even though it does not maximize the present value of firm’s future cash flows. Becchetti et al. (2012, P.1635) and Doh et al. (2010,P. 1480) studied the impact of SR-related events such as additions and deletions from the Domini index, and the result reveals that the abnormal stock returns are significantly negative in the case of exit from the social index. Violation of social criteria may force firms to selling stocks at lower prices. Therefore, the reason for an increase in firm value of the company adopting CSR policies can be explained with the stakeholder theory which highlights the intangible benefit derived by firms after getting engaged in socially responsible activities that have the potential to improve their corporate relationship with diverse stakeholders including employees, customers and the community within which the firm evolves (Doh et al., 2010, P. 1465). Yet, Orlitzky (2013, P. 239) considered this as an optimistic conclusion about the economic consequence of CSR, which holds only in an efficient market where publicly available information is immediately incorporated into price. Deviating from the assumptions of market efficiency theory, Orlitzky (2013) advanced a theoretical framework that the CSR activity may, in the long-term, lead to excess market volatility and stock price bubbles.

Further, Orlitzky (2013, P. 238) argues that organizational signals (i.e. research findings stating CSR affects firm value, profit, return on asset, stock return, etc.) about corporate social responsibility may have a harmful impact on equity market because CSR is not systematically correlated with firm economic performance, and the information asymmetry in financial markets, resulting largely from managerial opportunism. Market signals convey information to market participants, but not all market information about corporate social activities is equal in informational value-some of it is noise-information unconnected to a company’s economic prospects (Orlitzky, 2013, P. 240). Investors who trade on noise, so-called noise traders, generally confuse noise with information that contains valid explanatory or predictive power about business fundamentals (Orlitzky, 2013, P. 240). Because of their irrational perspectives (De long et al., 1990, P. 707), noise traders could also be considered as ‘irrational traders’. In sum, due to the aforesaid reasons the theory of capital market considers that market signals about CSR are full of noises, and therefore make it difficult for market participants to interpret information about CSR accurately.

Based on these arguments, therefore, in the following three sections, we shall discuss two principal assumptions outlined by Orlitzky (2013, P. 239) about CSR and market inefficiency, the sources of noise inherent in market signals of CSR, and the effects of CSR on the stock market in order to expand, refine, and contextualize the initial arguments put forward here.

3.5.1 Assumptions about CSR and market inefficiency

3.5.1.1 CSR definitions are highly variable and malleable

Literature on CSR contains numerous definitions. For example, the European Union (2010, cited in Sprinkle & Maines, 2010, P. 445) defines CSR as “a concept where by
companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis”. Davis (1973, P. 312) defines CSR as “the firm’s consideration of, and response to issues beyond the narrow economic, technical, and legal requirements of the firm to accomplish social and environmental benefits along with the traditional economic gains which the firm seeks”. Moreover, the World Business Council for Sustainable Development (WBCSD, 1999) with the support of a matrix of corporate social responsibility indicators defines the concept as “CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”. In addition, there are many terms (e.g., corporate sustainability, sustainability reporting) to be used for the same CSR construct (Sprinkle & Maines, 2010, PP. 446).

As highlighted by Epstein (2008, P. 22), corporate sustainability, which also referred to CSR, focuses on “long-run shareholder value by incorporating principles in areas such as ethics, governance, transparency, business relationships, financial return, community involvement, product value, employment practices and environmental protection”. Therefore, it can be argued that CSR comprises a number of activities, for example, assistance (e.g., financial, human, and other resources) to non-government organizations (NGOs) or suppliers that embark on environmental and social sustainability (Sprinkle & Maines, 2010, PP. 446). CSR can also include adopting policies to address impacts on communities in which the firm is operating. For example, companies such as Shell, British Petroleum, Citi bank and Timberland regularly assess and monitor the impact of organizational decisions on their local communities (Vogel, 2005, P. 1). Furthermore, it can manifest in initiatives aimed at enhancing welfare of employees (Sprinkle & Maines, 2010, P. 446). Thus, not surprisingly, there are ambiguities related to which business practices should be taken as responsible behavior.

According to Van Marrewijk (2003, P. 96) the existence of various definitions of CSR is mainly motivated by the specific interests of the parties involved in the process and thus prevents the growth and implementations of the concept. Another reason for varied definition of CSR was because of the diverse methodological approaches used to derive the definition (Dahlsrud, 2008, P. 2). For example, O’Dwyer (2002, P. 547) adopted a narrative approach reflecting a thorough analysis of how managers of Irish companies perceive the concept of CSR. They conducted semi-structured personal interviews with 29 senior managers, and the interview was done using open-ended questions in order to promote an environment whereby a loosely guided dialogue can take place between the interviewer and the interviewee (O’Dwyer, 2002, P. 529). On the other hand, another methodological approach used by researchers to construct a definition is theoretical reasoning (Dahlsrud, 2008, P. 2). For example, Marrewijk (2003, P. 95) concluded its analysis of CSR definitions with the use of historical and perceptions and philosophical examination.

Moreover, it is noteworthy to mention that CSR definitions changed over time and tend to adapt to current market conditions. For instance, Frederick (2006, P. 380) pointed out that CSR definition needs to take into account the fact a firm can be seen as a complex adaptive and self-organizing system that aims to both maximize profit and at the same
time minimize its operational activities on the society within which it evolves, yet is vulnerable to subsequent changes. In other words, CSR definition may change over time due to new information and concerns facing the firm, which may threaten its economic, social and environmental functioning. Still, there have been many attempts to bring clear and unbiased definition for CSR (Dahlsrud, 2008, P. 2).

While most social performance activities are voluntary, some governments have begun to develop national legislations to encourage and facilitate corporate social responsibility (Orlitzky, 2013, P. 239). For example, the first regulation on sustainability reporting were issued by Finland in 1997 and the list grew to include Australia, Austria, Brazil, Canada, China, Denmark, France, Germany, Greece, India, Indonesia, Italy, Malaysia, Netherlands, Norway, Portugal, South Africa, Sweden, and the U.K (Eccles et al., 2013, P. 115). In addition, the United Kingdom (UK) considers the adoption of various laws regarding the application of the CSR concept (Orlitzky, 2013, P. 239), and some of those regulations include “the OECD Guidelines for Multinational Enterprises73 and the UN Norms on the Responsibilities of Transnational Corporations and Other Business Enterprises with Regard to Human Rights” (Thornton, 2008, P. 413). Therefore, “CSR is not only targeted at a wide range of internal or external stakeholders, including future generations, but also coevolves with the vagaries of the interest groups” (Carroll, 1999, PP. 291-292).

Berger et al. (2007) examine the integration of CSR in business. They argue that the mainstreaming of CSR follows from one of three rationales: the social values-led model, the business case model and the syncretic stewardship model (Carroll & Shabana, 2010, P. 93). In the social value led model, organizations include CSR for non-economic reasons, i.e. social pressure and ethical concerns (Berger et al., 2007, P. 141). In the business case model, mainstreaming CSR meant aggressively pursuing business opportunities with CSR dimensions (Berger et al., 2007, P. 140). In the syncretic stewardship model, the firm is attuned to ‘the external market virtue’ while embracing ‘economic objectives’ (Berger et al., 2007, P. 143). In both the business case model and syncretic stewardship model, organizations adopt CSR initiatives for ‘rational’ reasons, and thus, may be seen as two views of business case for CSR: narrow and broad (Carroll & Shabana, 2010, P. 93). Hence, according to the business case argument the market will reward firms, which engage in CSR activities, in economic and financial terms (Carroll & Shabana, 2010, P. 101). A narrow view of the business case justifies that CSR initiatives are meant to produce direct and clear link to firm financial performance-immediate cost saving (Berger et al., 2007, P. 144). The broad view of the business case justifies CSR enhance firm’s competitive advantage and create win-win relationships with stakeholders, in addition to realizing gains from cost and risk reduction and legitimacy and reputation benefits (Berger et al., 2007, P. 144).

### 3.5.1.2 Financial markets are inefficient

In order to better understand the market inefficiency theory, it is essential to shed light on the opposite of market efficiency, which has been the main focus of finance for around thirty years (Shleifer, 2000, P. 1). In conventional finance, the idea of market efficiency was derived from the fact that the price for stocks and other financial securities fully
reflect all available information in order to ease the investment decision of shareholders (Fama, 1970, P. 387). The concept was first introduced by Maurice Kendall in 1953 when he decided to investigate on the behavior of stock and commodities prices, and concluded that stock prices usually follow a random walk, making difficult to predict the exact future price for stocks and commodities (Brealey et al., 2012, P. 321). In other words, the assumption about the random walk of stock prices involves two separate hypotheses.

On the first hand, sequential stock price changes are independent from one another. On the other hand, there are some probabilistic distributions that the price changes should comply with (Fama, 1965, P. 35). Therefore, if the efficient market hypothesis hold true, it would be impossible for an investor to beat the market by taking advantage of some information that is not reflected in the current stock or commodity prices (Shleifer, 2000, P. 1). According to Brealey et al. (2012, P. 336), there are six lessons proposed by efficient market theory. The first lesson argues that market has no memory, which means that future prices changes cannot be predicted by past prices changes. The second lessons highlight the fact that you can trust market prices. And the remaining four lessons are as follows: read the entrails, there are no financial illusions, the do-it-yourself alternative and finally the lesson have seen one stock, seen them all (Brealey et al., 2012, P. 336). All of these six lessons are based on efficient market theory, and also reflect the fact that stock prices incorporate all available information.

However, over the past years, the theoretical foundations and the empirical evidence inherent in the efficient market, the hypothesis has been challenged (Shleifer, 2000, P. 2); even though the arguments for the theory were powerful to the extent that any unorthodox research was viewed as suspicious (Brealey et al., 2012, P. 328). According to Shiller, (2003, P. 84) the 1980s were the moment when there was some academic debate about the reliability of the efficient markets model, to be more precise the concern was to find out whether there are some excess volatility inherent in the stock price which was not captured by the efficient market model. Since in an efficient market, it is almost impossible for investors to get an expected return greater or less than the risk-adjusted opportunity cost of capital (Brealey et al., 2012, P. 328). Academics started investigating on the possibility to predict future stock or commodities prices based on their historical prices. During the 1990s, empirical studies from a group of diverse researchers challenged the main assumptions of the efficient market theory and suggested a replacement of the Efficient Market Theory with a new and emergent concept known as behavioral finance approach (Yen, 2008, P. 319). Researchers like Shiller (2003, P. 83) refers behavioral finance as “broader social science perspective including psychology and sociology”. In other words, behavioral finance assumes that due to investor’s attitudes towards risk and the way they evaluate probabilities shed some light on the fact that investors are not 100% rational regarding their investment decisions (Brealey et al., 2012, P. 332). This irrationality from investors is better explained by an alternative model that complements the standard model and is founded on two main assumptions (Baker and Wurgler, 2007, P. 129). The first assumption relates to investor sentiments and is defined as “a belief about future cash flows and investments risks that is not justified by the facts at hand” (Baker and Wurgler, 2007, P. 129). And the second assumption, which was introduced by Shleifer and Vishny (1997, P. 50) highlights the fact that it is costly and riskier for a rational investors to compete against a sentimental investor.
From this evidence, it is worth mentioning that recent studies regarding security prices have challenged some of the assumptions previously stated in the efficient market theory (Shleifer, 2000, P. 2). The new concept of behavioral finance posits that investors are not totally rational when making investment decision regarding stocks or other financial securities. But rather, take into account its sentiment in the process of evaluating which stock or security can be considered the most suitable. Due to recent corporate scandals, which had disastrous impact on the current financial world, a new group of investors has emerged and decided to base their investment decision on factors other than their main goal of maximizing their wealth. Therefore, this kind of reasoning highlights the irrationality of investors in making their investment decisions and thus challenges the practicability of the efficient market hypothesis. A decade ago, the main concern was to investigate on the impact of investor’s sentiment on stock price, but now the question is how to measure investor’s sentiment (Baker and Wurgler, 2007, P. 130).

3.5.2 The noise generating characteristics of CSR
3.5.2.1 The ambivalent economic impact of CSR
The market signals of corporate social responsibility are considered to be filled with noise because of two main reasons (Orlitzky, 2013, P. 238). The first one refers to the large and inconclusive literature on the impact of CSR on the economic prospect of the company adopting the concept (Orlitzky, 2013, P. 240). And, the second source of noise inherent in markets signals of CSR relates to information asymmetry, amongst external stakeholders more importantly, investors and greediness business executives, in the financial markets (Orlitzky, 2013, P. 240).

Due to natural factors like global warming or climate change, many companies, around the world, have now started adopting the concept of CSR, which allows them to not only consider their financial performance, but also take into account their ability and responsibility to minimize as much as possible impact of their operational activities on the society and the environment in which their business is operating. Consequently, various researchers developed interest in the area, and investigate on the economic impact of CSR activities on the company’s financial performance. However, most of the prior research done regarding economic consequences of CSR came up with unalike results (Orlitzky, 2013, P. 240). Some researchers suggest that there is a negative relationship between CSR and financial performance (Markus, 1989; Davidson, Chandy, and Cross, 1987; Eckbo, 1983; Hoofer, Pruitt, and Reilly, 1988; Jarell and Peltzman, 1985; Shane and Spicer, 1983; Vance 1975, Wier, 1983). According to Griffin and Mahon (1997, P. 6) most of the findings highlighting a negative relationship between CSR and financial performance, were derived from research focusing on the impact of possible corporate illegalities or products problems on the stock market. On the other hand, most recent studies pointed out the economic importance of CSR, i.e. CSR positively affects financial performance (Arx & Ziegler, 2014; Guenster et al., 2011; Semenova et al., 2010; Pivato et al., 2008; Wanger, 2011). For example, Moir (2001, P. 17) argues that the two main forms of business benefits resulting from a firm CSR performance are enhanced reputation and better employee loyalty and retention. When challenging the neo-classical theory of firm, Jones (1995, P. 432) posits that firms that have a trusting and cooperative
relation with their various stakeholders, will gain a competitive advantage over their competitors since such a relation may contribute in the reduction of opportunistic behavior among market participants. In his theoretical model regarding the demand and supply of socially responsible investment, Mackey et al., (2007, P. 833) propose that some investors may have concern beyond profit maximization in their investment decisions. His argument was that investments in socially responsible activities only produce economic value if the demand for such investment is greater than its supply by firms (Mackey et al., 2007, P. 833). However, a middle position was adopted by another group of researchers who claimed for an inverted U-shaped causal link between social performance and economic performance (Ullman, 1985, P. 552). Their point was that companies engaging in corporate social performance need to have an optimal state of social performance and consistent resource allocation because firms may not perform well economically if too less or too much resources are assigned to social performance (Ullman, 1985, P. 541).

To build on the managerial view of CSR, which states that firms usually enhance their intangible value by engaging in CSR activities, financial theories extended on this viewpoint by arguing that investors benefit from investing in socially responsible firms are dependent on how the financial market responds to such CSR information (Guenster et al., 2011, P. 687). Furthermore, Hamilton et al. (1993, P. 63) suggested three hypotheses on how the financial markets may value CSR information. Under the first suggestion, the argumentation behind is that “market doesn't value corporate social responsibility” mainly because the relationship that exists between CSR and the market based measures of firm performance, such as stock price, are statistically insignificant (Guenster et al., 2011, P. 687). Unlike the first hypothesis, the second one forecasts that the market do indeed value CSR performance of a firm (Guenster et al., 2011, P. 687). The formulation of this scenario was based on the assumption that firms that do well in terms of social or environmental performance may have lower risk related to their stock than compared to those not socially responsible counterpart (Spicer, 1978, P. 109). Since investors will allocate a lower discount rate to their expected cash flow, due to the low risk inherent in their investment, the value of their investment will then be high compared to their opponents having a high discount rate (Guenster et al., 2011, P. 687). The third hypotheses highlight a practical disequilibrium of the paradigm of risk and return in a sense that the market value CSR performance inefficiently (Guenster et al., 2011, P. 687).

The argument supporting this hypothesis is that due to the intangible benefits inherent in CSR activities, investors may find it challenging to effectively assess these benefits and associated costs of such CSR performance (Guenster et al., 2011, P. 687).

Accordingly, there are different reasons explaining the contradicting results, in which some of them are conceptual, operationalization or methodological differences used to define social and financial performance (Cochran and Wood, 1984; Ullman, 1985; Waddock and Mahon, 1991; Wartick and Cochran, 1985). Ullman (1985, P. 552) made a narrative literature review by employing a three-dimensional model in order to explain the conflicting results about the causal link that exists among social disclosure and social and economic performance of U.S corporations. By applying a narrative review to his study, Ullman (1985, P. 552) came to the conclusion that most prior researches that have been conducted in the area show no strong tendency as they have divergent results.
According to him, there are three main reasons that explain these contradictions in the study results, such as lack in theory, inappropriate definition given to key terms and also insufficiencies in the empirical database available (Ullman, 1985, P. 540). According to Orlitzky et al. (2003, P. 410) a research study adopting a narrative review usually aims at providing explanations verbally and conceptually about the prior findings relating to a particular topic. Unlike Ullman (1985), Orlitzky et al. (2003, P. 411) adopted a different strategy, other than the narrative review, called meta-analysis in order to avoid sampling and measurement error that may affect their final results. They conducted a quantitative study with a total sample size of 33,878 observations and concluded that CSP tend to be more positively associated with accounting-based measures than with the market based measures of financial performance (Orlitzky et al., 2003, P. 403). In addition, they argued that among all the corporate social performance (CSP) constructs, the reputation indices of CSP are positively correlated with corporate financial performance than other indicators of CSP (Orlitzky et al., 2003, P. 427).

Barnett and Salomon (2006, P. 1101) found a curvilinear relationship between social performance and financial performance by employing an empirical test on a panel of 61 social responsible mutual funds for the period 1972 to 2000. They suggested that the two opposing perspectives about the relationship might be complementary. Nevertheless, the variation of the financial performance depends on the type of social screens used such as community relations screening, environmental or labor screening (Barnett and Salomon, 2006, P. 1101). On top of that, other researchers including McGuire et al. (1988, P. 854) advocated a reverse relationship between perceptions of firm’s CSR and measures of financial performance. Using two different sets of CSR ratings, they posit that firms that reduce their level of risk, will perform better in terms of social performance than the one with high risk (McGuire et al., 1988, P. 860).

From this analysis, there is an interesting point to mention about the evolution of the economic impact of CSR. As it can be seen from the literature, early research about the causal link between CSR and financial performance advocates a negative relationship. As the time progresses, others researchers argued for a no effect relationship between the two variables. However, recent studies on the topic reveal a positive relationship between CSR and the firm financial performance, which is a result of the increasing concern of various stakeholders about sustainability issue. Yet, CSR economic impact are uncertain implying that CSR signals are likely to create noise that will make hard for the investor to make rational investment decision.

### 3.5.2.2 Information asymmetry

Beside the ambivalent economic impact of CSR, its signals may also create information asymmetry since opportunistic internal stakeholders (managers) may tend to hide information from the firm’s external stakeholder (shareholders) in order to align their interest with investment decisions of the firm (Orlitzky, 2013, P. 242). Information asymmetry refers to “a situation where parties, usually considered being the seller has more information regarding the transaction than the other party, the buyer” (Akerlof, 1970, P. 190). Financial markets are mostly driven by financial and non-financial information including CSR signals (Brunnermeier, 2001, P. 1). Therefore, there tends to
be information asymmetry that exists between business executives and the firm’s investor as the former has more information concerning financial and non-financial activities of the firm (Orlitzky, 2013, P. 242). Nevertheless, a good point to mention here is that investors are becoming interested in information relating to the CSR performance of the firm they invested into or are about to invest to (Cho et al., 2013, P. 71). One of the main reasons why insiders are likely to hide some of these information from investors is that non-financial information including CSR signals can be considered to have an intangible benefit for the firms adopting it (Orlitzky, 2013, P. 242). And due to the low level of CSR information held by outsiders compared to insiders, the financial market tend to send false signal (noise) about the firm’s social and environmental performance (Orlitzky, 2013, P. 242). In addition, if these information asymmetries persist, it would be difficult for the investors to differentiate between high-performing and low-performing firms in terms of corporate social responsibility (Minard, 2015, P. 2).

Another reason why CSR signals are subject to information asymmetry is because of the variability and heterogeneity contained in its definition (Orlitzky, 2013, P. 242). For instance, Matten and Moon (2008, P. 405) argued, “CSR varies in terms of its underlying meanings and the issues to which and modes by which it is addressed”. In other words, they are referring to fact that the practices and implications of CSR differ from one country to another. Some countries request for a mandatory disclosure of CSR activities with strict rules and the violation of these rules may be punished with sanctions (Orlitzky, 2013, P. 242). On the other hand, there are also some other countries that have flexibility in their CSR performance disclosure. Those firms voluntarily decide to disclose their CSR performance, may create some information asymmetry if the company decides to not disclose (Orlitzky, 2013, P. 242). However, the initiative to introduce a rating agency, with the purpose of rating the CSR performance of the firms operating to a specific country, may reduce but not eliminate the level of information asymmetry between the investors and the business executives (Cho et al., 2013, P. 74). Since it is difficult for some stakeholders including investors to evaluate the social and environmental impact, rating agencies may facilitate this process by providing rates to publicly listed firms based on some assessments criteria, which are communicated to the various stakeholders (Chatterji et al., 2009, P. 126). Nonetheless, due to the existence of different ratings agencies and the fact that investors have different reasoning about CSR information, there tend to be different interpretations of how a firm takes into account its CSR performance. And as highlighted by Orlitzky (2013, P. 242) the market indicators of CSR may create noise in the capital markets because information about a firm’s CSR performance may be biased, and thus making difficult for the investors to interpret accurately and rationally.

### 3.5.3 The stock market effects of CSR

#### 3.5.3.1 Noise trading

In his study about the impact of corporate social responsibility on the stock market volatility, Orlitzky (2013, P. 242) argued that investors are apt to rely on those noises at greater rate when making their investment decision. In other words, more noise in the financial market will definitely lead to more noise trading since investors will be interested to such information as it may affect their investment decisions (Black, 1986, P. 531). In his basic model of financial markets, Black (1986, P. 529) highlighted that “noise
is contrasted with information”. As highlighted by Orlitzky (2013, P. 244), investors decisions making process concerning the stocks investment is becoming more troublesome due to the intangible nature of the information inherent in the corporate social responsibility (CSR). It is essential to differentiate between information and noise, as the two concepts differ largely, but has common features Orlitzky (2013, P. 244). For instance, Black (1986, P. 531) argued that in noise trading, investors do trade noise such as CSR signals as if it were relevant information from an objective point of view. One important point to mention here is that noise traders tend to affect the price of securities even if there is no uncertainty inherent in the noise (Shleifer, 2000, P. 43).

In a study adopting a dynamic model of speculative trading, Kyle (1985, P. 1315) differentiates between three types of traders in the financial markets such as single risk neutral insider, random noise traders, and competitive risk neutral market makers. They further concluded that while informed traders including business executives can make profits by taking advantage of their monopolistic power, people engaged in noise trading usually create concealment about their trading to market makers (Kyle, 1985, P. 1315). Unlike Kyle, Wang (2010, P. 304) found that inside traders not only trade in a hostile way on the information they possess, but also takes large and reverse position against speculators trading on noise, which are heterogeneous in nature. They came to this conclusion by extending the previous model of Kyle in which they allowed for two different valuation models concerning the liquidation value of the assets (Wang, 2010, P. 304). As it can be seen, noises including CSR signals are subject to heterogeneity and thus making it difficult for external stakeholders including noise traders to make rational investment decision Orlitzky(2013, P. 244).

However, an increasing number of socially responsible investing (SRI) also known as ethical investing, which play an intermediary role between investors and the capital markets, tend to institutionalize the market signals of CSR in order to facilitate the investment decisions of interested investors (Orlitzky, 2013, P. 244). Because screened SRI portfolios usually include firms that are viewed as leaders in sustainability issues, and thus exclude a particular group of firms that are engaged in activities considered unethical such as military production, tobacco and alcohol’s manufacturer (Kasemir et al., 2001, P. 14). For example, Kinder, Lydenberg, & Domini (KLD) has introduced ten main criteria based on which negative SRI screening is performed including nuclear power, alcohol, gambling and tobacco (Entine, 2003, P. 352). According to Entine (2003, P. 352), SRI can help interested investors to invest in company’s stocks that will both secure their future with reasonable profits and at the same time contribute to a better world. Another good reason that may motivate investors to consider SRI is the fact that companies that engage in activities, with the aim to reduce their social and environmental impact, may create valuable capabilities that are essential in gaining and preserving a competitive advantage (Hillman and Keim, 2001, P. 128). However, firms listed in the SRI index need to adopt rigorous reporting approaches and go through a thorough assessment of their corporate compliance by third parties (Orlitzky, 2013, P. 248). This process will shed valuable light on the disconnection that exists between the public declarations of compliance and the firm’s sincere efforts (Laufer, 2003, P. 257). Since both internal and external stakeholders may also interpret CSR differently, diligent care
must be taken in order to measure the social and environmental performance of a firm (Campbell, 2007, P. 950).

In his study relating to the Psychological Perspective on Economics, Kahneman (2003, P. 165) argued that conventional economic analysis now includes expectations that are not fully rational but rather built on psychological assumptions. Investors are not filtering out noise about CSR market signals because such organizational activities are not related to the core function of the business (Orlitzky, 2013, P. 244). In addition, due to the uncertain economic benefit of CSR and the information asymmetry it may create between insider and outsider traders, it becomes more difficult to differentiate between true and false market signals of CSR (Orlitzky, 2013, P. 244).

3.5.3.2 Noise trading and Stock price volatility

When demonstrating the inefficiency of financial markets, Shleifer (2000, P. 18) posited that the unpredictability inherent in investor sentiment, also referred to as noise, has become a significant source of risk and thus contribute to arbitrage in the financial markets. Moreover, some other authors suggested that certain kind of securities, including SRI index funds, listed in the stock market are not rationally associated with economic realities (Summers, 1986, P. 591). For instance, Shiller et al. (1986, P. 464) shed considerable light on the ambiguity inherent in stock value and argued that due to the lack of accepted theories through which one can understand better the value of stocks, the price of stocks can be considered as one of the most vulnerable price to social dynamics. Summers (2000, P. 591) also made a study whereby he investigated on the statistical power of the test used by researchers to evaluate the efficiency of speculative markets. After a thorough analysis, he concluded that certain kinds of inefficiencies in market valuations including the proper measurement of CSR signals in stock markets are unlikely to be adopted by the conventional model, which is based on the market efficiency theory (Summers, 2000, P. 598). From this standpoint, it is worth mentioning that sampling and measurement errors contribute in producing excess noise and conflicting result in empirical studies, and noise inherent in the financial market also increases the volatility of stock prices, in the same degree (Orlitzky, 2013, P. 244).

Due to the increasing power of CSR and its implication for competitive advantage and relative health of the firm, many companies are engaging in noise trading related to the CSR market signals (Campbell, 2007, P. 692). In the course of doing such trading investment, noise traders need to rely on a particular market valuation models because the price of those assets incorporating some CSR market signals are not rationally associated to economic realities (Summers, 2000, P. 591). As many noise traders are present in the financial markets and also due to the unpredictability in their investment beliefs, there tend to be volatility in the financial market created by those noise traders (De Long et al., 1990, P. 703). According to Shleifer (2000, P. 43) the collective changes of opinion in noise’s traders investment decisions is the main source of volatility inherent in the returns of the financial securities including stocks. To build upon these premises, Foucault et al. (2011, P. 1369) made a recent study with the use of a reform on the French stock market regarding an increase in the cost of engaging in speculative trading by retail investors. And they concluded that there is a positive relationship that exists between
As highlighted by Orlitzky (2013, P. 244), investors usually disagree about the economic implications of a firm’s CSR activities as they may have different views about the consequences of social and environmental activities. On one hand, we have group of investors who believe in a reverse causal relationship between CSR performance and stock performance that is they see financial performance as a variable having the potential to affect social responsibility (McGuire et al., 1988, P. 869). The first group of investors is likely to invest in firms that have announced an initiative to reduce their CSR activities (Orlitzky, 2013, P. 244). Second, there are another group of investors who are ready to sacrifice their primary interest of maximizing their wealth in order to invest in firms doing well in terms of social activities (Mackey et al., 2007, P. 831). This type of investors have a strong interest in socially responsible firms because they believe that firms, especially with a competitive advantage because of funding social and environmental activities are likely to attract more socially conscious investors and thus enhance firm market value (Mackey et al., 2007, P. 831). The understanding of the implications of CSR activities by this type of investor’s is mostly derived from a more stakeholder approach whereby a company is likely to gain competitive advantage over its competitors when it has a good relationship with both its internal and external stakeholders (Jones, 1995, P. 432). As it has been argued above, investors may see high performance of firms in terms of CSR activities differently. For example, some companies that are doing good in promoting socially responsible activities may also be misperceived by some stakeholders as irresponsible (Ghemawat, 2006, P. 43).

Due to the two main sources of noise such as the uncertain economic effect of CSR and the information asymmetry it may create, investors will have different view about the consequences of CSR activities for their business (Orlitzky, 2013, P. 244). Because of the diverse views of investors concerning the practicability and benefits of CSR, SRI in speculative assets is likely to generate returns that are nearly unforecastable, and thus bringing volatility in the market of those speculative assets (Shiller et al., 1986, P. 464).

As mentioned before, firm’s engagement in social and environmental activities may have some unintended consequences including the increase in the stock market volatility, which is mainly in a situation when stock prices are no longer worthrationally with fundamental economic values (Orlitzky, 2013, P. 247). However, as highlighted by the efficient market theory, if the stock market incorporates all available information about the company (Shleifer, 2000, P. 1), there would be no need to question about CSR or any other noise generating activity as they are already part of the information used by financial analyst who assess the various stock’s prices (Orlitzky, 2013, P. 247). Also if the rationality inherent in the valuation process of stock price is confirmed, there would be no excess volatility, nor any mispricing (Flood and Hodrick, 1990, P. 94). In the model introduced by Orlitzky (2013, P. 248) concerning the study of the relationship between CSR, noise and market volatility, it was argued that there are two main ways through which noise in CSR can be reduced. The first approach that needs to be adopted by firms when dealing with the issue is to reinforce the linkage that exists between CSR and the
economic performance of the firm (Orlitzky, 2013, P. 248). And the appropriate method to strengthen the relationship between the two variables was discussed by Siegel (2009, P. 14) as being the assessment of the strategic and economic implication of CSR from a more practical perspective. Alternatively, a firm can also decrease the noise inherent in CSR activities by reducing the level of information asymmetry about CSR (Orlitzky, 2013, P. 243). And this can be achieved at a national level through the introduction of independent body of rating agency (Chatterji and Toffel, 2010, P. 917).

3.6 Theoretical framework model

Figure 1 below depicts the research conceptual model, which summarizes the arguments laid out thus far. As such, corporate social performance has characteristics called “ambivalent economic consequences and asymmetric information” that may lead to noise in the stock market (Orlitzky, 2013, P. 238). Depending up on economic consequences (positive, neutral and negative), “opportunistic managers have the incentive to distort social performance information provided to market participants” (Orlitzky, 2013, P. 238). In the meantime, investors may lack the ability to distinguish distorted (noise) information from genuine information. Consequently, they may cause not only excess stock market volatility, but also unjustifiably high stock price of firms through noise trading, particularly in an inefficient stock market. And, when stock prices are unjustified they lead to excess market valuation or stock price bubbles.

![Figure 1: Research Model](image-url)
Chapter 4: Empirical Study

This chapter comprises empirical literature relevant for operationalization of theory and data analysis. A brief explanation about risk and return, volatility, and beta will be provided. Next, the CAPM, Three Factor Fama-French, and a multivariate Fama-French regression model, which are used to explain risk-return relationship of a stocks/ portfolio, are described. And also, the nature, and process of collecting both social and stock performances data, and the sampling technique will be explained. Further, hypotheses designed to answer the research question will be presented. The chapter ends with presenting statistical tests to be applied for the study.

4.1 Risk and return

Demanding higher expected return in exchange for taking greater risk is the commonly accepted notion by investors. For example, assume an investment that is expected to generate SEK1 million per year in perpetuity. The willingness of how much to pay for this asset depends on the riskiness or uncertainty of the assets future cash flows. Investors would be willing to discount the asset at risk free rate if the cash flow will be settled as promised with complete certainty. However, as the degree of uncertainty increases, the return to bear the risk will be higher, and this in return will result lower price for the asset (due to higher discount rate) that one would be willing to pay.

Further, investors are risk-averse, which means they are willing to sacrify some return, and accept even less than the expected present value of future returns to reduce risk (Womack and Zhang, 2003, P. 2). Overall, investors require a higher return to justify extra risk because of holding riskier asset.

4.1.1 Volatility as a proxy of risk

Volatility is the most common measure of risk, amount indicating that an asset return varies over periods, and commonly known as the standard deviation of returns. An asset whose return fluctuates is assumed to have higher risk because the asset selling price is less predictable. Moreover, future values of more volatile assets span a much wider range statically.

\[
s = \sqrt{\frac{1}{N-1} \sum_{i=1}^{N} (x_i - \bar{x})^2}
\]

Where,
- S is standard devation of returns
- \(\sum\) is summation
- N is number of values
- X is return value, and
- \(\bar{X}\) is mean value of returns.

4.1.2 Beta as a measure of systematic risk

According to modern portfolio theory adding more assets to a portfolio can reduce volatility. In the finance literature, such type of risk, which can be avoided by diversification, is called unsystematic risk. It is only stock specific and cannot affect a
well-diversified portfolio. So it makes sense that investors should not be compensated for nonsystematic volatility because it does not covary with the market as a whole, but is merely the additional random “noise” present in the specific asset’s return (Womack and Zhang, 2003, P. 3). Nonsystematic volatility (random noise) has an expected return (mean) of zero, and adding more securities to the portfolio reduces its standard deviation. If the portfolio has enough assets, portfolio volatility matches market volatility. Therefore, investors should get compensation only for the systematic risk, i.e. risk that cannot be diversified.

As noted above an asset can have both systematic and unsystematic risk. The part of volatility, which is deemed as systematic, is measured by a parameter called beta. In other words, beta measures relative volatility contributed by a specific security to a well-diversified portfolio.

\[ \beta_A = \frac{\text{Cov}(r_A, r_M)}{\sigma^2_M} \]

Where,
- \( r_A \) is the return of the asset
- \( r_M \) is the return of the market
- \( \sigma^2_M \) is the variance of the return of the market, and
- \( \text{Cov}(r_A, r_M) \) is covariance between the return of the market and the asset.

However, in practice beta is calculated using historical returns for the asset and the market, and the market portfolio is represented by indexes such as S&P 500 or OMX Stockholm, in our case. The next sections explain how such a risk is used in a model to describe the relationship between systematic risk and expected return.

### 4.1.3 Capital Asset pricing Model (CAPM)

As noted by Womack and Zhang (2003, P. 4), CAPM has three assumptions relevant to quantifying the relationship between beta of an asset and its corresponding expected return: first, investors care only about expected return and volatility. As such, a rational consumer always maximizes expected return for a given level of expected volatility; Second, all investors have homogeneous beliefs about the risk/reward tradeoffs in the market; Third, only one risk factor (systematic market risk) is common to a market portfolio. As such, the market does not reward investors for bearing diversifiable risk. Hence, expected return can be calculated if an asset’s beta is known.

And thus, for an asset that experiences a higher variation in periodic returns (has beta greater than one), investors expect a return equal to risk free rate plus a reward for bearing risk as measured by asset’s beta.

\[ E(r_A) = r_f + \beta_A (E(r_m) - r_f) \]

Where,
- \( r_f \) is risk free rate, and
- \( (E(r_m) - r_f) \) is expected excess return of market portfolio known as equity premium.
Besides, if an asset has no volatility (beta = 0), returns do not vary with the market, and thereby expected return equals the risk-free rate, \( E(r_A) = r_f \). If an asset is perfectly correlated with the market (beta = 1), its expected return equals that of the market, \( E(r_A) = E(r_m) \).

Beta is a ratio of asset’s expected excess return to the overall market return, i.e. \( \beta_A = \frac{E(r_A) - r_f}{E(r_m) - r_f} \), where excess return is equal to return on an asset less the return on a risk-free rate. Effectively, beta is a numerical way to express the idea that expected returns are more sensitive to market swings for those assets that are highly covariant with the market (Womack and Zhang, 2003, P. 5).

**4.1.4 Fama-French-Three Factor model**

Fama and French (1992) constructed two risk factors, namely SMB (representing size risk) and HML (representing value risk), outside of market risk, for explaining the realized returns of publically traded stocks (Womack and Zhang, 2003, P. 8). SMB (Small Minus Big) measures additional return (“size premium”) obtained by investing in stocks of firms with small market capitalization. HML (High Minus Low) measures “value premium” obtained by investing in firms with high book to market (B/M) value.

In practice, SMB monthly is calculated as the average return for the smallest 30% of stocks less the average return of the largest 30% of stocks in that month.

\[
SMB = \frac{1}{3}(Small\ \text{Low} + Small\ \text{Medium} + Small\ \text{High}) - \frac{1}{3}(Big\ \text{Low} + Big\ \text{Medium} + Big\ \text{High})
\]

Where,

Small Low (S/L) represents the group of portfolio that have a small size and low book-to-market value

Small Medium (S/M) represents the group of portfolio that have a small size and medium book-to-market value

Small High (S/H) represents the group of portfolio that have a small size and high book-to-market value

Big Low (B/L) represents the group of portfolio that have a big size and low book-to-market value

Big Medium (B/M) represents the group of portfolio that have a big size and medium book-to-market value

Big High (B/H) represents the group of portfolio that have a big size and high book-to-market value

While a Positive SMB indicates that small cap stocks outperformed large cap stocks, negative SMB indicates the large caps outperformed.

Likewise, HML is calculated as the average return for the 50% of stocks with the highest B/M ratio less the average return of the 50% of stocks with the lowest B/M ratio each month.
HML = ½(Small High + Big High) – ½ (Small Low + Big Low)

Positive HML indicates value stocks outperformed growth stocks, and a negative HML indicates growth stocks outperformed.

Fama-French model describes the expected return of an asset in relation to three risk factors, namely market risk, size risk, and value risk.

\[ r_A = r_f + \beta_A (E(r_m) - r_f) + s_A \text{SMB} + h_A \text{HML} \]

Where,
\( \beta_A \) measures asset exposure to market risk by taking into account added factors
\( \text{SMB} \) is the return to small stocks minus the return to large stocks
\( s_A \) is the sensitivity of security A to movements in small stocks
\( \text{HML} \) is the return to value stocks minus the return to growth stocks, and
\( h_A \) is the sensitivity of security A to movements in value stocks

Small firms tend to have higher returns because they are riskier. High B/M value firms are undervalued by the market tend to earn higher return.

4.1.5 Multivariate Fama-French regression Model

By using Fama-French model and regression, we can analyze how the return of an asset or portfolio changes with respect to the return of the market. To do so, we need five time series of returns and factors, more specifically monthly returns (3 or 5 years) for stocks, returns on market index, risk free returns for the same period, and factors for SMB and HML for each of the months. Then, we manipulate the Three Factor Model by subtracting the risk free rate from each side of the equation introduces the concept of alpha (i.e. excess return) to get the equation:

\[ r_A - r_f = \alpha_A + \beta_A (E(r_m) - r_f) + s_A \text{SMB} + h_A \text{HML} + \epsilon_t \]

And, by deploying historical data in this multivariate regression we can determine the value of alpha and the statistical likelihood (different from zero) measured by the relevant t-statistics. The intercept term alpha (\( \alpha_A \)) can be interpreted as a measure of stock market performance on a risk adjusted basis, and it measures the return on a security earned above or below a hypothetical portfolio of similar risk formed from a linear combination of the market portfolio and risk free asset (Alexander and Buchholz, 1978, P. 480). While a positive return suggests the stock earned more than the market, a negative return suggests the stock earned less than the market on a risk-adjusted basis. And, beta (\( \beta_A \)) is interpreted as a measure of the risk of stock A, with higher beta value means higher risk stock.

There are many risk factors, for example, market risk, bankruptcy risk, currency risk, and supplier risk facing companies today. As a result, it seems logical that a model including more factors will have more explanatory power. CAPM uses single risk factor (only systematic risk) to describe risk, therefore, there is a growing concern regarding its efficiency on explaining return (Womack and Zhang, 2003, P. 8). Consequently, we will use the Fama-French Three factor model as it expands the capabilities of CAPM by adding two company specific risk factors, i.e. “value” and “size”, in addition to the market risk for explaining realized return of publically traded stocks. Compared to the simpler
CAPM version, the Three Factor Model explains more variations observed in realized returns, displaying $R^2$ values of 0.95 and higher (Womack and Zhang, 2003, P. 13).

4.2 Data and Variables

4.2.1 Secondary data

In this quantitative study, the researchers made use of monthly historical stock prices and social performance score data, as well as price to book ratio, market capitalization, risk free rate, and self-calculated premium data for market, size and value. As noted by Bryman & Bell (2015, P. 319) the use of secondary data in business and management is gaining an increasing interest by researchers. And there are a numerous sources of secondary research data including commercial databases, statistics provided by governmental agencies, archives and web-based publications (Collis & Hussey, 2013, PP. 196-197). A good point identified with secondary data is that it includes both quantitative and qualitative data and it can also be used in both descriptive and causal/explanatory research (Saunders et al., 2007, P. 248).

Moreover, due to time constraint and the excessive cost associated with primary data collection, secondary data can be a suitable alternative for students and other researchers. Further, secondary analysis offers the opportunity for longitudinal study that is to investigate on the potential relationship between variables over a given period of time (Bryman & Bell, 2015, P. 325). In this study, we use a time series data to examine relationship between social performance and risk adjusted stock performance in a Swedish context over a five-year period. Therefore, it is appropriate to collect secondary data from a Thomson Reuters database as it provides historical financial and social data. Thomson Reuters provides good quality information, i.e. financial and non-financial data of companies worldwide.

However, there are numerous limitations in the usage of secondary data such as lack of familiarity with data, complexity of the data, and the fact that the researchers may not have control over the quality of the data (Bryman & Bell, 2015, P. 325). These drawbacks of secondary data analysis require attention from the researcher(s). In an attempt to overcome these challenges, the authors of this paper have made use of their prior knowledge and experience to evaluate both the data itself and its source. We gave particular attention to definitions used, measurement errors, source bias, reliability and the time span of secondary data. In addition, where possible, multiple data sources (e.g. yahoo finance, Nasdaq Stockholm, Bloomberg and Google finance) have been used to crosscheck for the consistency of the financial data in use with another.

4.2.2 Collecting and processing historical stock data

Regarding the collection of financial data, we had access to historical data from Thomson Reuters (DataStream), which contain stock price, market values, and price to book ratio for the period 2010 to 2014. Monthly stock returns for Swedish listed firms included in the empirical analysis were self-calculated from these stock data (indexes). In the primary stage of analysis the times-series regression requires the use of risk free rate. In this respect, we used the monthly return of one month Swedish Treasury bill. As all firms in the analysis are Swedish firms, very relevant proxy of risk free rate for Swedish stocks is...
Swedish TR bill 30 days. In addition, the time series regression requires the inclusion of monthly excess stock returns (return net of risk free rate) for the market, and the computation of returns for firms in the analysis is based on the total return index of OMX stockholm30 (in SEK).

Similarly, we calculated the factors SMB and HML for Swedish firms in the analysis. Firms were ranked each year on their market capitalization and on their book to market ratio. Then, the median of the market capitalizations as well as the 30 and 70% percentiles of the book to market equity were calculated in order to construct six portfolios from the intersection of size and book to market groups. For example, portfolio S/L consists of stocks belonging to both small size and small companies with low book to market, Portfolio S/M consists of stocks belonging to both small size and medium companies with low book to market and so on.

<table>
<thead>
<tr>
<th>Year</th>
<th>S/L</th>
<th>S/M</th>
<th>S/H</th>
<th>B/L</th>
<th>B/M</th>
<th>B/H</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>8</td>
<td>12</td>
<td>13</td>
<td>12</td>
<td>14</td>
<td>7</td>
<td>66</td>
</tr>
<tr>
<td>2011</td>
<td>6</td>
<td>12</td>
<td>15</td>
<td>13</td>
<td>13</td>
<td>7</td>
<td>66</td>
</tr>
<tr>
<td>2012</td>
<td>6</td>
<td>14</td>
<td>13</td>
<td>14</td>
<td>12</td>
<td>7</td>
<td>66</td>
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<tr>
<td>2013</td>
<td>5</td>
<td>14</td>
<td>15</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>66</td>
</tr>
<tr>
<td>2014</td>
<td>6</td>
<td>14</td>
<td>13</td>
<td>14</td>
<td>12</td>
<td>7</td>
<td>66</td>
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<td>13.2</td>
<td>13.6</td>
<td>13.6</td>
<td>12.6</td>
<td>6.8</td>
<td>66</td>
</tr>
</tbody>
</table>

*Table 3: Portfolios containing stocks of sample companies*

Based on the procedures of Fama and French, value weighted returns are calculated for each of the six portfolios constructed at the end of each year. Then, SMB (weighted difference between the returns of small and big firms) and HML (weighted difference between the returns of firms with a high book to market equity and firms with a low book to market equity) were calculated based on time series of weighted returns of these six portfolios over the years 2010 to 2014. Finally, we end up with the following equation for calculating risk adjusted return for each company in the analysis (see Appendix 1).

\[
\text{Risk adjusted return } (r_i) = R_f + \beta_{m_i} \cdot R_m - R_f + \beta_{s_i} \cdot SMB + \beta_{h_i} \cdot HML
\]

### 4.2.3 Collecting and processing social performance data

Concerning social performance data, we used data from Thomson Reuters database that provide transparent, objective and auditable extra financial information based on public report and communication for 4,300 global companies. Thomson Reuter’s data set consists of environmental, social, economic, and governance performance scores for each firm.

The Thomson Reuters, a Swiss based company, provides consistent, unbiased and logical social, environmental and governance information that will assist professional investors to integrate such information in their investment decision (Cheng et al., 2014, P. 6). The Thomson Reuters database provides social ratings scores for assessed companies at both an aggregate and disaggregates level. The rating serves as a measure of corporate social responsibility for portfolio managers, investors, financial analysts, and other users who would like to include social factors in to their investment decisions. Nowadays, many of
the social investors do want that their portfolio to exclude companies violating social principles. Therefore, in this context, corporate social responsibility can be defined as a variable a firm is either socially responsible or it is not, based on the ratings (Williams and Siegel, 2000, P. 606). The range of rating is from 0 to 100, with 100 as the top rate for good performance. For example, a company which implements recycling, pollution prevention programs, provides donation to organizations, and demonstrates concern for the environment in its day to day activities get a high score along the environmental dimension. Similarly, a firm that promotes minorities and women to top management positions and include them as board members can receive a similar score in the diversity dimension, and so on.

Following previous studies (e.g. Luo et al., 2015), we used the social performance score for each firm in our empirical analysis. Social performance refers to the firm’s product responsibility, community involvement, health and safety, diversity, training and development, human right, and employment quality. We only examined those firms (N=75) assessed by Thomson Reuters. However, the corresponding necessary financial data and social performance score for 2010 to 2014 is available for 66 Swedish listed firms, which are finally considered in our empirical analysis. To simplify the analysis, and to ensure compatibility with existing studies, each of the variables is computed as an average for the years 2010 to 2014.

Finally, we have conducted log10 transformation on original average scores of both variables in order to reduce the influence of extreme scores by bringing the outliers closer to the major scores in the distribution (Martin and Bridgmon, 2012, P. 108).

4.2.4 Other variables
In most studies many control variables are present, however, some of these data may be recorded and reported for descriptive purposes, to characterize the makeup of sample, and other control variables may be of no interest, and may not even be recorded (Thompson, 2006, P. 6). As such, variables such as firm size, risk, sales growth and ROA would occur as a control variable in this study. Firm size effect or size premium (measured by market capitalization) and value premium (book to market value) effect have been considered as a risk factors when we calculate risk adjusted return, using Fama and French Model, of each firm in the sample. But, sales growth and ROA are not part of the scope of our theoretical interest, and therefore, are not considered in our analysis as control variables (Thompson, 2006, P. 7).

4.3 Sample
As highlighted by Hair et al. (2003, P. 208) business research process includes what is called a sampling design, which usually help the researchers to determine, based on various factors, which segment of the population should be selected in order for the researchers to collect their data (Bryman & Bell, 2015, P. 187). And a selection of the suitable sampling approach is considered to be one of the key success factor of the extent to which the result from such research can be generalized beyond the sample to the whole population. In this context, population can be defined as “the total of all the elements that share some common set of characteristics” (Hair et al., 2003, P. 208). And the sample
chosen from the overall population need to be representative of that same population in a way that the results from the research can be easily generalized to the population, from which it was previously selected (Bryman & Bell, 2015, P. 187).

However, in order to select a representative sample, Hair et al. (2003, P. 209) suggested five important steps that need to be considered by researchers in the course of such process. According to them, researchers start by defining the target population, followed by choosing a sampling frame, and then select a suitable sampling method (Hair et al., 2003, P. 209). After selecting the right sampling method, researchers needed also to define the sample size, and implement the sampling plan at large (Hair et al., 2003, P. 209). In the sampling process, it is noteworthy that there is a need for the researchers to differentiate between the two main types of sampling methods, namely probability and non-probability sampling. As the name indicates, the former type of sampling method advocates the use of probability calculation in order to come up with a sample that is representative of the population. The latter, non-probability sampling, aims at collecting nonrandom data. The preference for non-probability sampling may be influenced by human judgment, and thus lead to the selection of sample that may not be representative of the population (Bryman & Bell, 2015, P. 188).

In this particular study, the researchers planned to collect data on both the social and stock performance for all publicly listed Swedish companies, which are also included in Thomson Reuters ESG Asset4 over a five-year period from 2010 to 2014. 75 Swedish firms with ESG score were available on the database. However, 9 firms excluded due to missing data. Some of them have their social performance score being published from 2014, while others have theirs available from 2012 and 2013. Others have missing data for stock prices and price to book ratio. As a result, the final sample size of the study is narrowed down to 66 publicly listed Swedish firms, which were selected based on the availability of the needed data. So the choice for convenient sampling is appropriate because the selection of Swedish firms in the sample is based on information that the researchers could gather from the database, Thomson Reuters.

4.4 Hypotheses
A research question makes a declarative statement about the expected relationship between dependent and independent variables. Consequently, to evaluate the effects of corporate social performance on firm’s stock market performance, we developed our research question into three specific predictions, yet to be tested.

As it has been discussed under section 3.5.2.1, Guenster et al. (2011) noted that the benefits from holding stocks of socially responsible companies depend on how financial market value CSR. Hamilton et al. (1993) also note that financial markets may respond to corporate social responsibility in three different ways:

Scenario one, market does not value social responsibility feature of stocks. As discussed under section 3.5.1.1, Berger et al. (2007) argued that in social value led model, organizations include corporate social responsibility for non-economic reasons, for example, for social pressure and ethical concerns. This implies that social investors do
not tie better social or environmental performance to lower risk. Socially responsible investors do not reduce the cost of capital (expected returns) to socially responsible companies by favoring their stocks. If average percentage risk adjusted stock returns and average social performance scores are independent or are not correlated, the null hypothesis will be rejected, and accepted if average percentage risk adjusted stock returns and average social performance scores are dependent. Therefore, the hypothesis to investigate on whether *average percentage risk adjusted stock returns and average social performance scores are correlated or not*, can be stated as:

**Hypothesis1**:  
\( H_0: \text{There is no causal relationship between social performance and stock performance.} \)  
\( H_a: \text{There is a causal relationship between social performance and stock performance.} \)

Or, statistically it can be stated as:  
\( H_0: \text{Cor (µSPS, µRAR) =0} \)  
\( H_a: \text{Cor (µSPS, µRAR) ≠ 0} \)

Scenario two, market does value social responsibility feature of stocks. This implies that socially responsible investors have an effect on stock prices. As suggested by Shane and Spicer (1983, P. 534), firms with a strong social or environmental performance record might be regarded as less risky investment compared to poor performers. Investors require less return on socially responsible firms stocks. Consequently, they increase value of socially responsible firms by assigning a lower discount rate (cost of capital) to expected cash flows of those firms.

Scenario three, market does not price CSR efficiently. Valuing benefits or costs related to CSR intangibles might be difficult for investors. Corporate actions that may reduce risk or increase financial performance at a corporate level may, in aggregate, also destabilize capital markets, relative to the assumption of no noise trading in hypothetical efficient market (Orlitzky, 2013, P. 241). For example, investors might underestimate the likelihood of false information that will be released about firms that are not socially responsible.

The risk parameter \( \beta \), often called the beta coefficient, can be interpreted as a measure of the risk (volatility) of the firm /security (Alexander and Buchholz, 1978, P. 480), with higher values being associated with higher risk securities, and lower risk securities related to lower values. Beta (\( \beta \)) as one of the regression parameters describes the tradeoff between the risk-return and social responsibility. The null hypothesis will be accepted if social performance does not affect risk (volatility), and rejected if social responsibility activities affect stock price volatility. Therefore, consistent with the arguments under scenario one and two, in order to examine if the *beta of a stock correlates with corporate social performance*, the hypothesis can be stated as:

**Hypothesis 2**:  
\( H_0: \text{There is no causal relationship between the beta of a stock and the social performance.} \)
There is a causal relationship between the beta of a stock and the social performance.

Or, statistically it can be stated as:

\[ H_0: \beta_{stock} = 0 \]
\[ H_a: \beta_{stock} \neq 0 \]

Further, as it has been discussed under section 4.1.5, alpha (\(\alpha\)) or differential return measures stock market performance of a security. A positive alpha indicates that a security earned more than the market, and a negative alpha indicates the security earned less than the market (Alexander and Buchholz, 1978, P. 480). The Swedish capital market is well known for integrating ESG information as an investment criterion (Cerin & Swanström, 2006). Therefore, the null hypothesis will be accepted if there is no correlation between alpha and average social score. On the other hand, alternative hypothesis will be accepted if correlation coefficient between alpha and average social score is different from zero. The hypothesis to test whether corporate social performance correlates with firm's alpha, can be stated as:

**Hypothesis 3:**

\[ H_0: \text{There is no causal relationship between differential return (alpha) and the social performance.} \]
\[ H_a: \text{There is a causal relationship between differential return (alpha) and the social performance.} \]

Or, statistically it can be stated as:

\[ H_0: \alpha_{stock} = 0 \]
\[ H_a: \alpha_{stock} \neq 0 \]

### 4.5 Statistical tests

Most statistical procedures requisite parametric analysis for assessing normality of data, because normal distribution of data is an underlying assumption for many statistical procedures including t-test, linear regression analysis, discriminant analysis and analysis of variance (ANOVA) (Razali and Wah, 2011, P. 21). Parametric statistical analysis assumes data with normal distribution, variable(s) measured on a ratio or interval scale, stable variance independent data value (Collis and Hussey, 2014, P. 261). Violating the assumptions of normality may lead to invalid or unreliable interpretation and inference, therefore, it is important to check normality of data before starting any statistical procedure. In order to protect the integrity of inferential statistical test, data need to be accurate, complete, and compliance with the underlying assumptions of the statistics being used (Martin and Bridgmon, 2012, P. 100).

There are three ways to check the normality assumptions: graphical methods (histogram, boxplots-Q plots), numerical methods (Skewness and Kurtosis) and formal normality tests (Shapiro-Wilk test, Kolmogorov-Smirnov test, Lilliefors test and Anderson-Darling tests). Study results show that Shapiro-Wilk test is the most powerful normality test, followed by Anderson-Darling tests and Kolmogorov-Smirnov test, still the power of all four tests is low for small sample size (Razali and Wah, 2011, P. 21). Therefore, in this particular paper, the following numerical and visual outputs (from SPSS software) will be investigated to assess the normality of the data:
4.5.1 Normality Test

4.5.1.1 Shapiro-Wilk Test
In reality, data are not perfectly normally distributed; it is sufficient that data are approximately normally distributed for most statistical tests (Martin and Bridgmon, 2012, P. 114). For Shapiro-Wilk test, P-value lies between zero and one. Small values (i.e. less than 0.05) leads to rejection of normality whereas a value of above 0.05 indicates normality of the data. In other words, the null hypothesis for Shapiro Wilk test of normality is that data are normally distributed, and the null hypothesis is rejected if the P-value is below 0.05. In our case, P-values of Shapiro Wilk test for average risk adjusted stock return (0.061) and average social score data (0.094) are above 0.05. Therefore, we retain the null hypothesis, i.e. assume that our data are approximately normally distributed.

4.5.1.2 Skewness and Kurtosis Test
Much of the data outputs offer information about Skewness and Kurtosis for a sample distribution. A distribution with extreme values in either tail of the distribution is skewed. If most of the values are on the left, but some extreme scores in the right, it is positively skewed. If extreme values are on the left with most value in the right side of the curve, it is negatively skewed. Kurtosis is relative concentration of scores in the center, the upper and lower ends (tails), and the shoulders (between center and tails) of a distribution (Martin and Bridgmon, 2012, P. 110). A symmetrical and normal (bell) shaped curve is referred as mesokurtic. A more narrow and peaked shape is referred as leptokurtic. Platykurtic reflects curve shape having scores that are more widely dispersed and flat.

Skewness and Kurtosis Z-values should be somewhere in the span of -1.96 to +1.96. For a normal distribution, Skewness and Kurtosis measures should be as close to Zero as possible. However, data are often skewed and Kurtotic, and a small departure from zero is, therefore, not a problem, as long as the measures are not to large compared to their standard errors (Doane and Seward, 2011, P. 16). Consequently, we divide the measures for Skewness and Kurtosis (found from SPSS) by their standard errors, and get the Z-values, which should be somewhere between -1.96 to +1.96, or have to look for Skewness values lower than 2times the standard error to assume normality.

Our data are little Skewed and Kurtotic. Yet, all Z-values for average risk adjusted stock return and average social score data are within +/- 1.96 which indicates that the data does not differ significantly from normality. So we can assume approximate normal distribution for both our predictor variables and outcome variable data set in terms of Skewness and Kurtosis, as well.

4.5.1.3 Histograms, Normal Q-Q Plots and Box plots
Histograms show if the shape of the distribution is symmetrical (mesokurtic) or is more peaked or narrow (leptokurtic) or more flat (Platykurtic). Bell shaped curve is a common shape for a symmetric distribution. The right and left sides of the distribution are mirror images in a normal distribution. In skewed distribution, data loads up on one side of the distribution, i.e. skewed left or right. In our data, the Histogram for both social
performance and stock performances variables are flat (Platykurtic), yet shows the approximate shape of a normal curve. And, in the Normal Q-Q plot the dots are along the line for the above-mentioned variables indicating the data are approximately normally distributed. Further, the Box plots should be as symmetrical as possible. In our case, although they are not perfectly symmetric they are good enough to assume approximately a normal distribution in relation to the log-transformed data for both variables.

4.5.2 Comparing mean
Researchers often use mean and median to label average values. The median scores are better to use when there are unusually high or low values in the distribution, and the mean score are useful in other statistical procedures, such as inferential statistics (Graziano and Raulin, 2014, P. 130). In addition, it is important to determine the variability of scores using variance and standard deviation to analyze the variability of scores from the mean. A test of statistical significance for the comparison of means entails relating variances, i.e. explained variances and error variances to form F statistic (Bryman and Bell, 2015, P. 361). SPSS (ANOVA) produces information regarding F statistic and its statistical significance; therefore, we will use this statistic to see if we have found a statistically significant model relationship among variables in the analysis.

4.5.3 Homogeneity of variance
The ratio \(F_{\text{max}}\) and Levene’s test can be used to assess the homogeneity of variance (Martin and Bridgmon, 2012, P. 415). The variance ratio analysis is calculated by dividing the highest group variance to lowest group variance, and homogeneity is acceptable if this ratio is less than 4:1(Martin and Bridgmon, 2012, P. 416). Furthermore, Martin and Bridgmon (2012, P. 155) suggested that if the group or cell sizes (participants per cell) are relatively equal, such as 4 to 1 for largest to smallest participants per cell, then a variance ratio as high as 10 is acceptable, however, if the ratio of largest to smallest participant per cell is 9 to 1, a variance ratio \((F_{\text{max}})\) as low as 3 can be associated with Type I error.

The Leven’s test is a test of homogeneity of variance that is less dependent on the assumption of normality than most tests and thus is particularly useful with analysis of variance (Martin and Bridgmon, 2012, P.417). Calculating, for each case, absolute differences from its cell mean, and conducting a one-way analysis of variance on these differences obtain it. If the p-value is above 0.05, we keep the null hypothesis and assume equality of variance.

4.5.4 Correlation
The bivariate Pearson product-moment correlation coefficient between the predictor variables and the dependent variables, and between the predictor variables provides information on whether the multiple regression analysis is suggesting the existence of viable explanation (Martin and Bridgmon, 2012, P. 412). Bivariate correlation\((r)\) is a correlation coefficient between two variables, and its values like Pearson product-moment lies between -1.0 and +1.0. However, multiple correlation coefficients\((R)\), signifying relationship for more than two variables has only positive values. In this paper,
assuming a parametric data, Pearson’s product moment correlation coefficient is deployed to measure the linear association variables (Collis and Hussey, 2014, P. 275).

A value of -1.0 reveals perfect negative relationship. The value of one variable decreases as the value of other variable increases at the same rate. Zero value reflects no correlation, i.e. no consistent increase or decrease in value between variables. A value of +1.0 shows perfect positive relationship; variables increase or decrease in the same direction at the same rate. There are also other several useful ways to descriptively interpret the strength correlation coefficients, namely law (≤ ± 0.39), moderate between (± 0.40 and ± 0.69), and large (≥ ± 0.70) (Collis and Hussey, 2014, P. 270).

Further, an index of the strength of the relationship (coefficient of determination) or shared variance between two or more variables can be calculated as $r^2 \times 100$ or $R^2 \times 100$, and the index of unexplained variance (alienation coefficient) is obtained by $1- r^2 \times 100$ or $1- R^2 \times 100$ (Martin and Bridgmon, 2012, P. 412). It is also important to review the multicollinearity ($r \geq .70$), a situation where two predictor variables are highly correlated, and complicate meaningful interpretation of an actual relationship (Martin and Bridgmon, 2012, P. 413). The two variables would appear measuring the same thing (redundancy of information); therefore, one of the variables may not need to be in the combined solution.

4.5.5 Regression: Assessing normality, linearity, and homoscedasticity of residuals
Regression allows seeing how one or more independent variables well predict an independent or outcome variable. In other words, regression is a measure of the ability of an independent variable to predict an outcome in a predicted variable provided that a linear relationship exists between them. The part of independent score, which is not explained by the independent, or predictor variable, is represented by residuals. As such, analyzing residuals enables to assess normality, linearity, and homoscedasticity of data.

Yet, to use regression analysis, residuals assumed to have a normal distribution, and a linear relationship with predicted (dependent) variables. Further, variance of residuals related to dependent variables is assumed to be consistent for all dependent scores. The symmetrical (normal) distribution of residuals can be assessed using the Histogram, Q-Q plot, scatter plot and P-P plot. For example, concentration of residuals in the center of the scatter plot, and a rectangle shape surrounding the scatter plot of residuals indicates normality. However, if the band around the residuals is a different shape, for example, U shape, variables or combination of variables may have curvilinear relationship with the dependent variable, and thus multiple regressions may not the right choice for analysis (Martin and Bridgmon, 2012, P. 416). The straight-line relationship of residuals with dependent variables also shows existence of linearity. Residuals approximating equal width at the value of regression standardized predicted value on the abscissa, as well, indicates normality. Moreover, sameness of variance of residuals for all predicted scores indicates the existence of homoscedasticity, a situation where the distance between the dots and the fit line in the Normal P-P plot show reasonable consistency.

In this particular paper, asymmetry of residuals has been assessed using the abovementioned visual methods from SPSS output. Normality and linearity of residuals for predicted data have been approximately evident (appendix 4), therefore, allow us to use linear regression as one of the statistical techniques to analyze our data.
Chapter 5: Findings and Analysis

This chapter presents the analysis of data and research findings. Firstly, we will provide the analysis of data pertaining to descriptive and summary statistics. Then, hypotheses designed to answer our research question will be tested using advanced statistical techniques. We will also provide discussion of results obtained from the study; particularly we will discuss empirical findings of the study, followed by discussion of results for the casual relationship between social and stock performances, beta and social performance, and finishes with discussing the relation between alpha and social performance for firms in the sample.

5.1 Descriptive and summary statistics

As noted by Graziano and Raulin (2014, p. 129), descriptive statistics is used to describe data with just one or two numbers, which makes it easier to compare groups, and also offers a basis for later analysis using inferential statistics. Therefore, in this section we will present the basic features of the data in the study.

Table 4 reports the mean, median scores, the standard deviation, skewness and kurtosis of the average risk adjusted excess returns, average social score, beta, alpha, and the number of firms observed over the periods 2010 to 2014. In order to benefit from availability of social performance data and the corresponding financial data, the number of firms in the sample kept the same over the study period. Consequently, our data set includes average social performance scores and stock performance parameters, namely risk adjusted return, beta, and alpha for 66 firms over 2010 to 2014.

<table>
<thead>
<tr>
<th>Variables</th>
<th>(N=66)</th>
<th>Mean</th>
<th>Median</th>
<th>Standard deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return Rlog10</td>
<td>0,195</td>
<td>0,191</td>
<td>0,107</td>
<td>0,524</td>
<td>0,295</td>
<td>0,274</td>
</tr>
<tr>
<td>Social Rlog10</td>
<td>1,155</td>
<td>1,123</td>
<td>0,482</td>
<td>-0,236</td>
<td>0,295</td>
<td>-0,716</td>
</tr>
<tr>
<td>Beta</td>
<td>1,002</td>
<td>1,004</td>
<td>0,423</td>
<td>0,124</td>
<td>0,295</td>
<td>-0,526</td>
</tr>
<tr>
<td>Alpha Rlog10</td>
<td>0,378</td>
<td>0,375</td>
<td>0,133</td>
<td>-0,235</td>
<td>0,295</td>
<td>1,645</td>
</tr>
</tbody>
</table>

Table 4: Summary statistics for return, social score, beta, and alpha

A Shapiro Wilk’s test (P >0,05) and visual inspection of their histograms, normal Q_Q plots and box plots showed that average risk adjusted excess return (P-value 0,061) were approximately normally distributed with average social score of P-value of 0,094, skewness of -0,236 (SE= 0,295) and Kurtosis of -0,714 (SE= 0,582). Similarly, average social performance scores were distributed with beta of P-value of 0,441, skewness of 0,124 (SE= 0,295) and Kurtosis of -0,526 (SE= 0,582), and with alpha of P-value of 0,064, skewness of -0,235 (SE= 0,295) and Kurtosis of 1,645 (SE= 0,582), suggesting quite symmetrical distribution for firms in the sample.
Furthermore, the statistics revealed that risk adjusted stock returns have shown a non-significant low positive correlation (0.132) with the average social score, a variable for measuring social performance of firms in the sample. The thresholds for both the variance inflation factor (VIF < 10) and tolerance (> 0, 1) for the predictor variable have been meet indicating that no multicollinearity relationship.

Further, residual statistics show that Cook’s distance has a maximum value of 0.118 indicating that no individual variable (outlier) is having a substantial undue influence on the ability of the model to predict the outcome. In the Normal P-P plot of regression standardized residuals most of the dots are failing close to best feet (no major deviation from normality), and the scatter plot shows rectangular distribution with most of the scores clustered in the center (between -3 and +3), both of which suggesting that data met assumptions of normality.

5.2 Hypothesis testing
5.2.1 Test for causality (hypothesis1)
In order to provide an answer to our research question three hypotheses were developed from existing literature reviewed for this paper. The first one, which was formulated to test whether average percentage risk adjusted stock returns and average social performance scores are correlated or not, is the following:

\[
H_0: \text{Cor} (\mu_{SPS}, \mu_{RAR}) = 0 \\
H_a: \text{Cor} (\mu_{SPS}, \mu_{RAR}) \neq 0
\]

A regression analysis was used to test this hypothesis whereby the dependent variable was identified to be the stock performance, which was measured using the average risk adjusted stock return of the sample firms, and the independent variable is the social performance of those firms measured in terms of average social score. In this context, the hypothesis will test whether there is a causal relationship between the social performance of listed Swedish firms in the sample and their stock performance over a five-year period from 2010 to 2014. With this test, the authors want to provide an answer to the research question of whether the stock market respond to the social performance of listed firms, from a Swedish perspective.

<table>
<thead>
<tr>
<th>Return Rlog10</th>
<th>Pearson correlation</th>
<th>Standard error</th>
<th>T-statistic</th>
<th>P-value</th>
<th>Bottom 95%</th>
<th>Upper 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Rlog10</td>
<td>0.1320</td>
<td>0.1066</td>
<td>1.0680</td>
<td>0.1450</td>
<td>-0.0253</td>
<td>0.0845</td>
</tr>
</tbody>
</table>

Table 5: Regression analysis output for average returns and average social scores

The result of the regression, between the two variables, is shown in the table above. The p-value for standard beta coefficient, identified in the table, 0.145 is superior to the significance level used 0.05. This implies that we can accept the null hypothesis, which states that there is no causal relationship between our dependent variable, stock performance, and the social performance of listed Swedish firms in the sample over the
years 2010 to 2014. Another test that underpins our finding, to accept the null hypothesis, is the t-statistic obtained from the regression. The t-value of 1.068 falls within our critical value range (-2, 2), which is obtained from the table of the values of the t-distribution (two-tailed), using the degree of freedom and the significance level, 64 and 0.05 respectively. Based on these two tests, and the fact that the Pearson correlation coefficient of 0, 132 is low positive highlights an insignificant relationship between the two variables. Therefore, we reject our alternative hypothesis and accept the null hypothesis. In other words, the test of this hypothesis validates our assumption, under the null hypothesis, that there is no significant causal relationship between average social performance and average risk adjusted stock return for listed Swedish firms in the analysis. Consequently, the finding appears to supports the aforementioned statement that companies may engage in social activities for non-economic reasons including social pressure and ethical concerns.

5.2.2 Test for volatility (hypothesis 2)

The second hypothesis that was derived from our literature review, and was presented in chapter 4 has its mathematical form as follows:

\[ H_0: \beta_{stock} = 0 \]
\[ H_a: \beta_{stock} \neq 0 \]

To test this hypothesis, we run a regression analysis between the social score variable and the Beta variable, which were calculated using the Fama French _1993 Three Factor Model, for the sample of 66 publicly listed Swedish firms. Beta refers to a measure of risk of the firm, and as such it sheds light on how risky is the stock investment compared to a portfolio index, representing the market. Beta was identified to be dependent variable whereas the firm social score was assumed to be the independent variable. In this manner, the second hypothesis is tested to see whether there is a relationship between stock risk level and social responsibility for listed Swedish firms in the analysis. The purpose of such test is to provide an answer to our research question that states ‘How does the stock market respond to social performance in Sweden’, through examining the volatility (risk)
level of stocks in relation to social performance for firms in the sample over the years 2010 to 2014.

<table>
<thead>
<tr>
<th>Beta</th>
<th>Pearson correlation</th>
<th>Standard error</th>
<th>T-statistics</th>
<th>P-value</th>
<th>Bottom 95%</th>
<th>Upper 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Rlog10</td>
<td>-0.1140</td>
<td>0.4228</td>
<td>-0.918</td>
<td>0.1810</td>
<td>-0.3172</td>
<td>0.1189</td>
</tr>
</tbody>
</table>

Table 6: Regression analysis output for beta and average social scores

After running a regression between the two variables, namely beta and the social score for each of the 66 listed Swedish firms; we got a P-value of 0.1810 for Pearson correlation coefficient of -0.114. Since the P-value 0.1810 is superior to 5 percent alpha; we can accept the null hypothesis, which states social performance does not significantly affect risk level of stocks. Moreover, we derived a critical value of (-2, 2) for our frequency distribution using the degree of freedom and the significance level alpha, in order to determine the rejection region, which is outside the range of the critical value. Since our t-statistic of -0.918 fall within the range of the critical value \(-2 < -0.918 < 2\), we confirm the acceptance of the null hypothesis that social performance does not have significant causal relationship with stock volatility, and reject the alternative hypothesis social responsibility activities relates with stock’s risk significantly. Taking a look at the Pearson correlation coefficient of -0.114 also supports our decision, as it indicates insignificant low negative correlation between average social performance score and beta, a proxy for stock volatility.

![Relationship between average social score and beta of stocks](image)

Figure 3: Relationship between average social score and beta of stocks

5.2.3 Test for alpha or differential return (hypothesis3)

The mathematical form of the third hypothesis was formulated as:

\[ H_0: \text{castock} = 0 \]
\[ H_a: \text{castock} \neq 0 \]
The third hypothesis was formulated to test whether corporate social performance correlates with alpha (differential return), or not for public listed Swedish firms in the sample. In order to test this hypothesis we have included average social score as independent variable and alpha as dependent variable. Alpha, a measure for stock market performance, was calculated for five years sample period 2010 to 2014 using Fama and French 1993 Model. The hypothesis is tested to see the impact of social responsibility activities on firm’s stock performance in the financial market for sample firms in the period mentioned above.

<table>
<thead>
<tr>
<th>Alpha</th>
<th>Pearson correlation</th>
<th>Standard error</th>
<th>T-statistic</th>
<th>P-value</th>
<th>Bottom 95%</th>
<th>Upper 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Rlog10</td>
<td>0.0420</td>
<td>0.1339</td>
<td>0.3365</td>
<td>0.370</td>
<td>– 0.0571</td>
<td>0.0803</td>
</tr>
</tbody>
</table>

*Table 7: Regression analysis output for alpha and average social scores*

The regression analysis conducted between the two variables; alpha and average social score indicates P-value of 0.370 for Pearson correlation 0.042 at 5 percent significant level. Further, the examination of the standardized beta coefficient (β), t (64) = 0.3365, P-value = 0.370 (P>0.05) in the model shows non-significant relationship. Therefore, this means that we can accept the null hypothesis, which states that there is no significant causal relation between average social performance and alpha (differential return) for firms in the empirical analysis. And, reject the alternative hypothesis that states there is a significant relationship between alpha and average social score of socially responsible firms in the analysis. The low positive insignificant correlation implies social performance has no significant impact on alpha of firm’s stock. Therefore, it appears from this analysis that social responsibility activities of a firm has no effect on stock performance in the Swedish financial market.

![social performance and alpha of stocks](image)

*Figure 4: Relationship between average social score and alpha of stocks*

5.3 Discussion of results

5.3.1 Empirical results

Differential returns (alpha) and risk measures (beta) for socially responsible firms in the sample over the years 2010 to 2014 were calculated using procedures of Fama and French...
Multivariate Regression Model. As shown in appendix 2, 95% of the firms earned a positive ($\alpha > 0$) abnormal return or alpha, however, they show no relationship with social responsibility scores. These alpha or intercept values are ranged from -2.293 to 2.750, though, statistically significant only for 47% of the stocks. On the other hand, beta values are ranged from 0.193 to 1.880, but they are statistically significant for 89% of the stocks. While 34 firms exhibit beta values between 1 and 1.88, the remaining 32 firms show values between 0.190 and 0.959. The average (median) adjusted $R^2$ for sample firms was 41.5%, indicating beta can explain only 41.5% of the total variation in the stock returns.

Tables 8 below shows the regression result, which corresponds to average social performance (predictor variable), and dependent variables average risk adjusted return, beta and alpha. The Pearson correlation row in the table’s shows the correlation between the predictor variable and the dependent variables mentioned above. The correlation of average social score to the dependent variables (+0.132, -0.114, and 0.042, respectively) is far below low ± 0.39, and looking at P-value (1-tailed) none of them reflects significant relationship (P< 0.05). So, it is likely that there would not be meaningful causal relationship between predictor and dependent variables.

<table>
<thead>
<tr>
<th>N=66</th>
<th>ReturnR-log10</th>
<th>SocialR-log10</th>
<th>Beta</th>
<th>Alpha_log10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson correlation</td>
<td>SocialR-log10</td>
<td>0.132</td>
<td>1</td>
<td>-0.114</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>0.145</td>
<td>-</td>
<td>0.181</td>
<td>0.370</td>
</tr>
</tbody>
</table>

*Table 8: Bivariate correlation coefficient between the study variables*

As it has been noted in section 4.5.4, there are several ways to statistically interpret correlation coefficients. The strength of correlation coefficient can be interpreted as low ($\leq \pm 0.39$), moderate ($\pm 0.40 \leq r \leq \pm 0.69$), and large ($\geq \pm 0.70$). In our case, the strength of correlation between the variables in the analysis is low (+0.132). Second, $r^2$ (coefficient of determination) tells the about the percentage of shared variance between the variables. Accordingly, $r = 0.132$ explained $(0.132^2) 0.018$ percent of the variance, $r = -0.114$ explained 0.013 percent, and $r = 0.042$ explained 0.002 percent of the variance between the respective correlating variables. Third, $1-r^2$ (coefficient of alienation) measures the percentage of unexplained variance by the variables in the study, which in our case is 0.982, 0.987 and 0.998, respectively.

Table 9 below shows model summary of the regression analysis of average social score (predictor variable) predicting average risk adjusted return, beta, and alpha of stocks in the analysis. Since each model has only two variables (one predictor and one independent), it should produce a similar correlation(R) to the bivariate correlation (r), i.e. $R = r$, only one difference: r value is mines for beta. R is always a positive value; therefore, it is important to refer the bivariate correlation coefficient (r) in order to see the negative/positive relationship existing between pairs of variables.
The R² value = 0.018, for example, shows that 1.8 percent of the variability in average risk adjusted return can be explained by average social performance scores. We know that the two variables have a direct relationship, because the bivariate correlation between them is +0.132. However, we cannot conclude that high score in average social performance translates to a higher average risk adjusted return, or vice versa significantly.

Table 9: Model summary of regression analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Std. Error Estimate</th>
<th>R² change</th>
<th>F-change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F-change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ᵃ</td>
<td>.132</td>
<td>.018</td>
<td>.002</td>
<td>.10687</td>
<td>.018</td>
<td>1.141</td>
<td>1</td>
<td>64</td>
<td>.290</td>
</tr>
<tr>
<td>1ᵇ</td>
<td>.114</td>
<td>.013</td>
<td>-.002</td>
<td>.42341</td>
<td>.013</td>
<td>.843</td>
<td>1</td>
<td>64</td>
<td>.362</td>
</tr>
<tr>
<td>1ᶜ</td>
<td>.042</td>
<td>.002</td>
<td>-.014</td>
<td>.13392</td>
<td>.002</td>
<td>.111</td>
<td>1</td>
<td>64</td>
<td>.740</td>
</tr>
</tbody>
</table>

a. Predictor (socialR_log10), dependent (ReturnR_log10)
b. Predictor (socialR_log10), dependent (Beta)
c. Predictor (socialR_log10), dependent (Alpha_log10)

The adjusted R² corrects the R² to be a better estimate of how well the model is fitting parameters of the population. As such, adjusted R² is a smaller value than R², and is a more conservative value. The standard error of estimate (SEE) represents the standard deviation of residuals or prediction errors. It tells how far off our prediction is, and thus a larger SEE value implies less confident in prediction. For a successful regression model, SEE value should be smaller enough than the standard deviation of the dependent variable. For example, SEE for ReturnR_log10 is lower than the standard deviation by 0.00011. The R-squared change value represents an amount of change to the model’s R² when we added a variable to the previous model. In our case, no variable is added to a previous model, therefore, the R-squared change and R-squared values are the same. F-change values are a statistical F-test that we use to assessing whether R² change in the model is a significant addition at common significant levels are 10%, 5%, 1% or 0.1%. As such, using F-test of the model, a statistically significant model relationship is not evident, since sig F-change values are superior to 0, 05.

The analysis of each variable for contribution in the model using t-statistics also offered a similar result. As such, the relationship of the standardized beta coefficient of average social score (socialR_log10) to each dependent variable ReturnR_log10, beta, and Alpha_log10 in the model shows that it is insignificant: β=0,132,t (64)=1,0680,P=0,1450(P>0,05), β = -0,114,t (64)=0,918,P=0,181(P>0,05), and β = 0,042,t (64)=0,3365,P=0,370(P>0,05), respectively. Here, a point worth mentioning would be, when one predictor variable is used with dependent variable the standardized regression coefficient and correlation coefficient values are the same. Overall, based on the statistical tests we conclude that the social performance seems to have no effect for stock market performance of Swedish listed firms in the empirical analysis.

5.3.2 Social performance and stock performances in Sweden
As we discuss in this paper, the relationship between the market performance of a firm’s stock and its social performance has been a subject of hot debate in the academic world.
As a result, one interesting viewpoint is that socially aware and concerned management makes firms attractive to potential investors. An opposing view is that a socially responsible firm will be at competitive disadvantage because of expenses incurred for social initiatives. Sweden is not an exception, therefore, in order to examine empirically the relation between social performance and stock performance of publicly listed firms in the sample, in terms of average risk adjusted return, we estimate the following regression model:

\[
\text{Average risk adjusted return}_i = \alpha_i + \beta_i \text{average social score}_i + \epsilon_i
\]  

(1)

Initially, using a multivariate Fama and French 1993 regression method, we have calculated time series intercept (alpha) and beta values, and then use those estimates to derive the risk adjusted return for each of the 66 firms in the empirical analysis. Appendix 1 reports average risk adjusted return along with the inputs and formula we have used to compute it. Table 8 reports the correlation coefficient, one output of the regression analysis between average risks adjusted return and average social performance score. Average social performance score has a coefficient of 0.132 with respect to average risk adjusted return, which is not significant at 5% level. Other indicators also show that the relation between average risk adjusted return and average social performance is not statistically significant. For example, table 9 reports an F-statistic of 0.290 at 5% significance level. Our estimate suggests that there exists an insignificant relationship between average social performance and average risk adjusted return. The increase in absolute risk adjusted return from a one-point rise in average social performance score is estimated at 0.132 percent, or one-point drop in average social performance score reduces average risk adjusted return by 0.132 percent, ceteris paribus.

In support of H0 we found a below moderate (≤ ± 0.39) positive insignificant relationship between average risk adjusted return and average social performance for Swedish listed firms in the sample. Similarly, the findings of authors such as Ullman, McWilliams & Siegel (1985; 2001) documented no relationship between social performance and financial performance. According to their argument, to overcome economic disadvantage, firm’s investment in social activities should be optimized in a way to accommodate the benefits of both shareholders and stakeholders. Firms tend to reach an optimal level of investment in terms of CSR activities whereby the initial capital invested in the social activities and the financial benefits resulting from it, cancel each other out. Brammer et al. (2006, P. 114) examined the relationship between social performance and stock returns using a disaggregated social performance indicator for environment, employment and community activities. Their findings documented that UK firms with high social performance scores in any of the measures (such as employment, community, product responsibility, and health and safety) had significantly lower average returns. Scholtens and Zhou (2008, P. 213) investigated the link between social and financial performance on the basis of social dimensions such as community investment, employ relations, diversity of work force, product attributes, and human rights. Their result showed a week negative association between social performance and financial performance. However, Semenova et al. (2010, P. 266), from which this thesis is built on, studied value relevance of social and environmental performance on Swedish Six 300 companies, and their finding revealed that socio-environmentally efficient firms have realized high stock price
in the sample period 2005 to 2008. Arx and Ziegler (2014, P. 990) also confirm a positive link between stock performance and socio-environmental activities for Europe and US firms over the years 2003 to 2006.

It should be recognized that a significant body of work examines the link between social responsibility and stock performance. However, consensus has not been reached on the operationalization of the concepts as well as constructs constituting corporate social responsibility. As a result, differences in the theoretical domain appeared to reflect on practical applications. The use of different methods for data analysis as well as the application of different measurements for social and financial performances appeared to be among the reasons for varied research results. For example, various studies conducted on the subject, have adopted different methodologies on how to measure the firm financial performance. Some scholars use to measure the financial performance of their sample firms through accounting or financial ratios such as Return on Asset (ROA) and sales growth, others use market based measurement such as Tobin’s q and stock price/return, and others still prefer to use both. For example, corporate social performance tends to be more positively associated with accounting based measures than with the market based measures of financial performance (Orlitzky et al., 2013, P. 403). Likewise there are multiple sources of data in use as social performance metrics, for example, Thomson Reuters, Kinder, Lydenberg and Domini (KLD) research and analysts, and Global Engagement Services (GES). As such, the lack of uniform standards for measuring environmental and social performance among firms/regions could be one possible explanation for the different research results. Moreover, the potential effect of CSR on financial performance varies across countries with different culture, institutional environments and stakeholder expectations. For example, as it was argued by Ziegler et al. (2014, P. 979), while environmental performance tends to lead a positive impact on financial performance of firms in Europe than USA, social performance would lead to a similar effect in USA than Europe.

Based on the theory of the firm and stakeholder theory (as we discuss in chapter 3), theoretical arguments are derived from a positive, negative and no effect (neutral) link between social and financial performance. The proposition of a positive effect is usually founded on arguments from stakeholder theory. For example, (Edmans, 2011, P. 638; Freeman et al., 2007, P. 311) argue that firms that promote social performance will get better financial performance than other firms. There are also other arguments for positive association, such as firms with socially irresponsible actions will incur greater cost of capital, resulting in a competitive disadvantage (Allen et al., 2007, P. 30). On the other hand, the proposition of negative consequence relates to researchers of the neoclassical economic school thought. The view of researchers such as (Telle, 2006, P. 195) is that firms that engage in social responsible activities are at a competitive disadvantage because they incur costs that could be avoided or transferred to other agents, for example, customers/the government. According to this reasoning, there are few economic benefits for socially responsible behavior, and many costs associated with this behavior results in a decrease in financial performance of the firm (Ogden & Waston, 1999, P. 526). The proposition of neutral association assumes that the link between social and financial performances is either non-extent or non-linear. The lack of existence of such a relationship is advocated by Ullmann (1985, P. 215), who states that there are so many
factors or variables that influence the relationship between social and financial performances, even if a relationship existed, the relationship could not be detected due to the problems associated with measurements inefficiencies in the empirical studies. Barnett and Solomon (2006, P. 1101) find curvilinear relationship between social and financial performances, in which the greatest returns are associated with the smallest and largest social investments.

In line with our finding, researchers (e.g. Barnett and Solomon, 2006; Mc Williams and Siegel, 2001; Ullmann, 1985) argue for an insignificant no effect (neutral) relationship between social and financial. Authors like Berger et al. (2007, P. 141) also provided good theoretical support for our results. They posit that there are firms, which engage in social activities for non-economic benefits such as ethical concerns. Seen from investors’ perspective, such firms may be considered to have adopted a more stakeholder approach. This seems to work for a country like Sweden, where our sample firms are derived. Likewise, reputation risk is a strong motivation for Swedish AP funds for engaging with portfolio firms that invest responsibly (Hamilton & Eriksson, 2011, P. 58). Sweden is exemplary in promoting CSR in business practices (MacGillivray et al., 2007, P. 22), and Swedish companies have a long history of active CSR work. Institutions and regulations in Sweden facilitate companies, stakeholders and investors so as to engage in social responsibility behaviors. As such, Stockholm stock exchange excludes firms violating human rights and other international business norms. Similarly, Swedish Federation of Financial Analysts (FFA) reduces the information asymmetry associated with CSR by incorporating social and environmental information in their stock recommendations for investors. Audit assured sustainability report is becoming practical. The Swedish government demands both private and state owned firms to follow UN guidelines on business and Human rights. Employment standards established by law offer employee protection on work conditions.

Therefore, we can conclude that mainstreaming of CSR by Swedish firms seem follow social value model (Berger et al., 2007, P. 141) whereby firms engage in social responsibility behavior for non-economic reasons such as social pressure and ethical concerns. Subsequently, unlike the business model (Carroll & Shabana, 2010, P. 93), where CSR initiatives are meant to produce a clear link to firms financial performance, the Swedish stock market did not significantly reward social performance of firms in the analysis in economic and financial terms for the sample periods over 2010 to 2014.

5.3.2.1 Social performance and volatility (beta)
For testing the relationship that may exist between the performance of a Swedish firm in terms of social activities and its volatility, measured through beta, we used a linear regression model, expressed as follows:

\[ Volatility (\text{Beta})_i = \alpha_i + \beta_i \text{average social score}_i + \epsilon_i \] (2)

As it can be seen from the regression formula above, we needed values for two main variables namely average social score and average beta, representing the undiversifiable volatility inherent in the stock, in order to test our second hypothesis. With the support of
the multivariate Fama and French_1993 model used to calculate our risk adjusted stock returns, we derive a time series average values of beta (volatility) for the 66 publicly listed Swedish firms, included in the sample. As it was mentioned earlier in our empirical study section, beta can be seen as a risk proxy that shows how sensitive is the sample stock prices to any variation in the price of the market index. In this particular study, we used the OMX Stockholm30 stock index as the market index.

The values for the average beta (volatility) and its resulting P-Value are provided in Appendix2. Moreover, table 8 provides the Pearson correlation coefficient, as a result of the regression analysis conducted between the average social score and average beta (volatility) for firms in the sample. With a Pearson coefficient of -0.114, we can argue that there exists a negative and weak/insignificant relationship between the two variables at a 5% confidence level. This supports our prior finding, from the P-value test, to accept the null hypothesis that there is no significant causal relationship between the social performance and the volatility (beta) of publicly listed Swedish firms. However, after comparing the beta F-statistic of 0.362 with our significant level of 0.05, we can posit that the relation between the average social score for the 66 firms, representing our sample, and their volatility (beta) is not statistically significant. The Pearson correlation coefficient of -0.114, as a result of the bivariate regression analysis, implies that a one-unit increase in the social score of one of our sample firm, will lead to a -0.114 percent decrease in the beta of the firm, and thus a reduction in its volatility. This decrease in the beta, caused by a one-unit increase in social score, can be considered insignificant since it represents only a small portion (1,002 percent) of beta of the mean values for the sample firms, 0.113 percent.

In line with our null hypothesis, the result from the regression analysis test proves a weak/insignificant negative relationship between the performance in terms of social activities of listed Swedish firms in our sample and their beta, which is a proxy for risk. One good reason for such a low relationship between the two variables is provided by De Long (1990, P. 703) who argues that stock prices become more volatile only if the proportion of traders responding to CSR signals is larger. In this particular study, since there are only 66 listed Swedish firms in our sample that have their social score rated by the rating agency Asset4, we can assume that the number of traders to such CSR market signals are limited to specific firms.

Authors like Godfrey (2005, P. 795) support this finding in a sense that they argue that actions by firms related to CSR activities have the potential to decrease business risk, and such decline is significant only in the long-run. Similarly, Scholtens and Zhou (2008, P. 224) mentions some benefits related to organizational CSR activities including risk reduction. However, as highlighted by Orlitzky (2013, P. 242) firms may also send false market signals regarding their practical CSR related activities. They will do so, mainly because of the mixed or ambivalent economic impact of CSR activities, and the information asymmetry created by opportunistic managers and the lack of investor’s ability to distinguish false information (signals) from genuine information related to economic activities. These false signals are considered as noise, and most of them are not connected to the firm’s economic prospects (Black, 1986, P. 531). And such noise in the market will tend to impact the volatility of the stock prices (Orlitzky, 2013, P. 243). But
this noise aspect of CSR tends to fade away as rating agencies nowadays provide good social and environmental scores, which contribute to the reduction of the existing information asymmetry (Ghatterji & Toffel, 2010, P. 917; Doh et al., 2010, P. 1480), and thus enable financial analyst and investors to incorporate such information in their recommendation and valuation of a firm’s stock, respectively.

The Pearson correlation coefficient highlighted an insignificant low negative (-0.114) relationship between the two variables. In addition, it is not often hard to distinguish between true and false market signals of CSR in an efficient stock market whereby all publicly available information is incorporated in the stock prices. Therefore, assuming also the Swedish stock market is fairly efficient, we can argue that the social performance for listed Swedish firms in the sample does not affect the volatility of their stock prices in the Swedish capital market. And for a significant relationship to exist between the two variables, there needs to be more noise traders in the stock market that will augment the variance of those firm’s stock prices.

5.3.2.2 Social performance and differential return (alpha)
In order to analyze the relationship between market performance of a firm’s stock and its social performance in terms of differential return (alpha) for public listed firms in our sample, we have estimated the following simple linear regression model:

\[ \text{Differential return (alpha)}_i = \alpha_i + \beta_i \text{average social score}_i + \varepsilon_i \quad (3) \]

In the empirical analysis, we used the time series average differential return or alpha from the multivariate Fama and French, 1993 regression output, for each of the 66 firms in the sample. Appendix2 reports the time series average alpha and the corresponding P-value of stocks. In table 8, we report coefficients on average social performance score after conducting regression analysis between alpha value and average social performance score. As such, average social performance score has a coefficient of 0.042 with respect to differential return (alpha) and is insignificant at 5% level. All specifications indicate that the relation between excess return and average social performance is not statistically significant. For example, table 9 reports the F-statistic of 0.740 at 5% level.

Our estimate suggests that there is an insignificant impact of social responsibility on stock market performance for firms in the sample. The increase in absolute excess return from a one point rise in average social performance score is estimated at 0.042 percent, all else equal, which is about 0.11 percent of the sample mean average excess return (alpha) we observe in table 4.

In support of H0 we found a low positive insignificant relationship between alpha of a stock and its stock market performance for Swedish listed firms in the sample. Similarly, Hassel et al. (2005, P. 56) found that investors do not value firms with high environmental information in Sweden since it leads to lower market value. Brammer et al. (2006, P. 97) also found that considerable abnormal returns are available from holding a portfolio of the socially least desirable stocks in UK. Our analysis also, appears to be consistent with the evidence by Doh et al. (2010, P. 1480) that the addition of firms to the Calvert social
index does not stimulate a positive market reaction. In addition, (Mackey et al., 2007, P. 819-820), which assumes the validity of efficient market hypothesis, could be another possible explanation in that publically available information (including CSR) is immediately incorporated into prices in an efficient or developed market. Developed countries including Sweden presumed to have a fairly efficient market (Jegadeeh and Kim, 2003). Further, as described by Fama (1970), stock markets are efficient; therefore, new information relevant to the earnings outlook of a firm is immediately reflected on the current stock price. Thus, any positive or negative impacts associated with corporate social performance of a firm are reflected immediately in its stock price (Alexander and Buchholz, 1978, P. 480). As such, since firms sampled in this study showed excess returns not different from the market (no significant association with their average social performance score), it can be argued that social responsibility initiatives of firm’s do not seem to have significant impact on the market performance of stocks in Sweden.
6. Conclusions
The following section starts with concluding remarks based on the findings derived from the empirical analysis of our secondary data, which was interpreted using existing theories and the stated research question for this study. The chapter also outlines the practical and theoretical contributions, which are discussed in order to reveal how the research purpose and research gap have been fulfilled. Subsequently, recommendations for further research were made based on the limitations inherent in this research and our new ideas. The chapter ends with discussing issues relating to the quality and trustworthiness of the study.

6.1 Concluding remarks and research question
This paper has examined the link between social performance and market performance of stocks, measured using risk adjusted return, for Swedish listed firms in the sample. In order to provide answer to our research question “How does the stock market respond to social performance in Sweden?,” we performed an empirical analysis on the relation between the two variables, namely social performance and stock market performances. Using Thomson Reuters Eikon database containing both social performance and financial (historical stock price) data for the period December 2010 to December 2014, we found evidence suggesting that the Swedish stock market does not value socially responsible activities for firms included in the analysis. The number of listed Swedish firms included in the Thomson Reuters Eikon ASSET4 database with the corresponding financial and social performance data is 66. As a result, we have a limited number of samples, which would be a constraint for our data. However, we make use of applicable statistical techniques to ensure validity and reliability of the results of the study.

Our study points to a non-significant zero-effect linear relation between social performance and market performance of stocks. However, the proposition of a neutral relation assumes that the link between corporate social performance and corporate financial performance is either non-existent or nonlinear. The lack of such a relationship is advocated by Ullmann (1985), who states that there are so many factors or variables that influence the relationship between corporate social and financial performances that, even if a relationship existed, the relationship could not be detected because of problems associated with measurement in empirical studies. Our finding indicates social responsibility activities bear no significant relationship to stock market performance measured in terms of risk adjusted returns or firms cost of capital. Thus, the result gives weight to cost concerned school argument (Hassel et al., 2005) social investment is not rewarding, if not distractive, of shareholder value. Furthermore, there seems to be no significant relationship between stock volatility and social performance. This paper finding rejects the notion expressed by CSR skeptics that CSR may make financial markets more volatile by amplifying noise in the stock markets.

A possible explanation on the link between stock market performance and social responsibility, consistent with the findings of this paper assumes that stock markets are efficient (Fama, 1970). In an efficient stock market, stock price reflects the fundamental economic values, i.e. discounted sum of expected cash flows. Therefore, any effect associated with CSR is incorporated in the current stock price; consequently, stocks will not have returns different from the market.
6.2 Contributions
The main contribution of this study is that it highlights the insignificant relevance of socially responsible activities undertaken by listed firms on the Swedish stock market. The issue that social performance, in terms of diverse activities, either affect or doesn’t affect the market performance of stocks is perceived as important for various stakeholders including investors, managers and security analysts. From a practical perspective, the results of this paper, a no-effect relationship between social and stock performance for listed Swedish firms in the sample, will have implications especially for both managers and security analysts considering the implementation of socially responsible activities suggesting that it will affect their performance. Furthermore, this study will benefit investors who use social responsibility as one criterion or strategy for investment decisions. Furthermore, this study brings to market participants is that neither good nor bad social performance does create noise in the Swedish stock market. Accordingly, this study acknowledges that CSR, more specifically social performance, does not make the Swedish stock markets volatile.

From a theoretical perspective, our result of a neutral relationship between the two variables, underpins the findings of Ullman (1985) who previously argue that due to the measurement problems associated with empirical studies; it is hard to prove a significant relationship between social performance and financial performance. Consistently, our findings add some insights on the existing theories about the discipline by showing that the use of different rating agencies of social scores such as KLD, Asset4 and GES, result in an ambivalent result about the relation between social and market performance of stocks. And the reason for such differences in the result is mainly because of the different criteria used by those rating agencies to rate the social performance activities of firms. The finding of our study also contradicts the Adaptive Market Hypothesis (AMH), and goes in favor of the Efficient Market Hypothesis (EMH) whereby it reveals that the stock prices of publicly listed Swedish firms include all information relating to their social performance. As a result, the returns from such stocks will remain unchanged. Furthermore, the result of our study differs from recent EU/US studies (e.g. Arx and Ziegler, 2014; Luo et al., 2015), which found a positive relationship between corporate social performance and stock performances. The more the number of listed firms included in the sample, the more likely it is to find a potential relationship between the two variables. As a result, we posit that the long running CSR debate is far from over.

6.3 Social implications
The increasing interest of stakeholders in social performance and the growing efforts by governments to promote socially and environmentally friendly activities put pressure on firms to board on social responsibility practices. As a result, as noted by McWilliams (2001), firms goes beyond compliance and engage in “actions that appear to further some societal goods, outside the interests of the firm and that which is required by law”. This means that businesses have started to bear some sort of responsibility for the effects they may cause to society. For example, some investors are adjusting their investment portfolios to include firms that have less negative impact on the environment or the society at large. As such, they have to balance the trade of between social consequences
of their actions with their economic benefits such as returns. In many countries, government regulations and incentives also encourage business firms to consider engaging in more socially and environmentally friendly activities for the benefits of the whole population. For instance in Sweden, publicly listed firms are necessitated to comply with some requirements regarding their existing or potential relationships with various stakeholders including customers, employees, and suppliers. As such, firms are acknowledging their responsibility to the society by promoting the people economic and social-wellbeing. This means, for example, offering job opportunities that allow individuals to contribute their talents free of stress, and/or dealing honestly with employees.

Firms are part of the society integrated into the economic and social fabric of an area in which they are operating. Therefore, they have a responsibility to ensure that their business activity do not knowingly disadvantage people, customers, suppliers or trading partners. On the other hand, authors like Shiller et al.(1984) question the social role of corporations, and argue that the main responsibility of firms is to make profit, because it is for this task that the firm has been established. Acting for any other purpose “constitutes a betrayal of their responsibility to shareholders and thus essentially represents a theft from shareholders pocket”. Nevertheless, this days it is fairly commonly accepted that businesses do indeed have responsibility beyond making profit. This paper focuses on the economic impact of social performance, which denotes community involvement, product safety, health and safety, training and development, human rights, employment quality and diversity. Our finding shows that Swedish stock market does not value social performance of firms in the study. In other words, social responsibility activities have no significant effect on risk adjusted stock returns or firms cost of capital for public listed Swedish firms in the empirical analysis. This might disappoint socially responsible investors who are hoping to “do well while doing good”. Yet, corporations have a responsibility for the general well-being of society beyond short term economic self-interest. Business activities can have social impact, for example, while providing products and services, employing workers or some other corporate activity. Therefore, we posit that firms should assume responsibility for those impacts, whether they are positive, negative, or neutral.

6.4 Suggestions for further research
As one major dimension of the CSR concept, social performance is still seen as a concept that is hard to measure due to its intangible nature, and the fact that there are different approaches of measurement used by different rating agencies. The future research could bring more available and better quality measure of social performance data. Therefore, it would be stimulating to see if the same result would arise when a research on the same Swedish stock market use different measures for both social performance and financial performance. Future researchers interested on the social-stock performance relationship can conduct an empirical study intending to test this relationship with the use of social scores of rating agencies other than Asset4. In addition, as it was mentioned earlier, another limitation of our study is the limited number of the firms included in the sample. As such, future researchers in the discipline may consider collecting data from a large sample size using a different database source which include more social score. For
example, studying EU data using different features of social performance for cross-country or industry comparisons would be an interesting future research avenue. Such studies will indicate whether the existing ambivalent economic implication of socially responsible activities is the result of the sample size and the differences in the criteria used by those rating agencies to measure social performance.

Since this study is adopting a quantitative approach, and the fact that there are social issues that could not be measured easily in quantitative terms, and/or some social indicators have both quantitative and qualitative nature (e.g. community involvement), potential researchers on the discipline can consider conducting a qualitative study or both quantitative and qualitative study to examine the link between social and financial performances of socially responsible companies. Such a study will help to better understand the phenomena, namely social performance information through the support of qualitative analysis.

A last suggestion for further research could be to investigate on whether there is a causal relationship between stock performance and social performance at a disaggregate level. In this particular study, the researchers used the aggregate social score available for social performance as their independent variable. However, future researchers interested in the social dimension of CSR, can conduct a research intending to test the relationship between stock performance and the various disaggregated social performance scores including employee relations, product safety, human rights, and community involvement and so on. Such research, if properly conducted, would indicate which aspect of social performance is more likely to affect the stock performance of listed firms in the Swedish stock market.

6.5 Truth criteria
According to Saunders et al. (2007, P. 192), there has to be objectivity in the data collection and analysis stage, otherwise the conclusion or any course of action likely to be generated from the study will be biased. Therefore, objectivity of the researcher has extreme importance, to publish a good quality research that reflects the various noticeable criteria, which will facilitate the assessment process of the research (Bryman & Bell, 2015, P. 48). These criteria are mostly used in the assessment of business and management research and they are identified to be three in numbers, namely reliability, replicability and validity (Bryman & Bell, 2015, P. 49).

6.5.1 Reliability
The truth criteria relating to reliability is one of the most important criteria for a business study as it aim to provide an answer to the question whether or not the results or findings from a particular study can be quotable by other researchers (Bryman & Bell, 2015, P. 49). To be more specific, the term reliability refers to the extent to which the measures used for the different concepts, which are mainly from business and management, are consistent and stable (Bryman & Bell, 2015, P. 49).

In this particular study, the researchers intend to make use of two main concepts, called social performance and stock performance, which will be measured differently.
Regarding the stock performance concept, which refers to the risk adjusted return a Swedish company may generate; we used a model called the Fama-French_1993 Model which was developed through extensive research conducted by well-known researchers Fama and French (Womack & Zhang, 2003, P.8).

Due to the different nature of risk and the complex relation that exist between risk and the expected return from the investment, the researchers of this study argue that there need to be the application of a reliable model that capture every detail important for the measurement procedure. The model, known as the Fama and French_1993 that the researchers of this paper, used for calculating risk adjusted return built upon the traditional model Capital Asset Pricing Model (CAPM). The model addresses some, if not all, the criticism brought against the CAPM including the use of a single risk factor (Womack & Zhang, 2003, P.8). Therefore, authors of this paper applied the three-factor model for the measurement of the stock performance of Swedish companies, which is considered by most business researchers as having a more explanatory power (Womack & Zhang, 2003, P. 8). The adoption of such a model for measuring one of our concept, namely stock performance, enhances the consistency and reliability of the measure (Bryman & Bell, 2015, P. 49).

On the other hand, our independent variable, namely social performance, which also a business concept, is hard to measure due to its intangible nature. However, there are quite a number of databases available for providing quantified data related to the social performance of various firms, including both large and small capitalization companies. One of the world-leading providers of data related to financial performance, as well as social and environmental performance of firms, is Thomson Reuters Asset4. This database provides rating scores to over 4,300 publicly listed firms, based on their performance in terms of social activities and environmental awareness (Cheng et al., 2014, P. 6). Moreover, the database generally ground its rating on relevant criteria’s such as community involvement, employee relations, product safety, diversity & opportunity, training and development, and human right that truly reflect the performance level of the firm. Therefore, the use of the Thomson Reuters Asset4 database for the collection of our social performance data rises reliability of our study in a sense that the criteria used by Asset4 for measuring the social performance of firms, at disaggregate and aggregate level, is consistent enough. To sum up, the reliability criteria was carefully taken into consideration in our research process in a way that the measures used for measuring the two main concepts, i.e. stock performance and social performance, were consistent enough to make work repeatable by other researchers.

6.5.2 Replicability
Another truth criteria that is quite close to the reliability criteria, and that need to be taken into account when conducting a business or management research, is the replicability feature of the study (Bryman & Bell, 2015, P. 50). The implication of the replicability criteria for a research is that other researchers may be interested in conducting the same research with the same concepts in a setting or environment different from that of the one used by the former researchers. There may be different reasons for such initiative, and one of them is to enhance the generalizability of the findings. Another critical point, worth
mentioning, is the fact that for interested parties to evaluate the reliability of the measure of a particular concept or variable, there must be strong evidence that the procedures for such measurement are replicable by another person (Bryman & Bell, 2015, P. 50).

As highlighted by Bryman & Bell (2015, P. 50), for a particular research to be replicable, the researchers of the study need to consider some issues including the extensive description and explanation of all the steps and procedures used in the data collection and analysis. A research, especially one adopting a quantitative methodology, will tend to apply various statistical tools in the analysis of the data collected. Some of those statistical techniques may be new, or not well understood by potential researchers, interested in replicating the study. Therefore, in this paper, the researchers provide detailed information about every step taken in both the data collection and analysis process. Authors of this thesis made it clear which statistical techniques used for the analysis process, as well as implication for the study, and the limitation inherent in the paper. Since we used the statistical tools both descriptive (mean, standard deviation, etc.) and inferential (e.g. correlation & regression), which were previously used by other researchers that is we replicate the research of others. Likewise, subsequent researchers, interested in the area, will find easier to replicate our study in a different context, methodology or environment. Moreover, the use of transparent and objective database, namely Thomson Reuters, will also facilitate the replicability of the study by interested researchers.

### 6.5.3 Validity

According to Bryman & Bell (2015, P. 50) the validity criteria can be considered to be the most important among the three criteria, mainly because it aims to provide evidence of the integrity level of the results generated from research. As such, it can be sub-divided into four categories that have the same goal that is to evaluate whether the conclusions from a research truly reflect truthfulness. The first category, known as measurement validity, is related to the reliability criteria discussed above, in a sense that it deal with the question whether the measure used for the key concepts accurately reflect the concept that need to be measured (Bryman & Bell, 2015, P. 50). Consequently, it is worth mentioning that any measure of variables that is not stable or fluctuate a lot, may not provide a correct measure of the variable in question (Bryman & Bell, 2015, P. 50).

As mentioned earlier, the authors of this paper make sure that all the measures adopted for the variables were objective enough in terms of their measurement. For example, we used risk adjusted return to measure our dependent variables-stock performance. The risk-return paradigm is generally accepted to be important in measuring stock performance, as it is insufficient to only consider rates of return for evaluating stock performance (Alexander & Buchholz, 1978, P. 480). Subsequently, we made a thorough evaluation of methods used to measure the risk adjusted return of stocks, and selected the Fama-French_1993, which considers size and value risks (unlike CAPM) in addition to market risk, to calculate risk adjusted return for public listed Swedish companies in the sample. Hence, authors of this paper posit that applying an adequate and reliable measure that address different risk factors in measuring stock performance enhance measurement validity, as there are several risk factors in today’s business.
The second form of validity, known as internal validity, deals with the issue of causality between the different variables, and thus aim to provide an answer to the question of whether the findings of the study integrate the fact that there exist a causal relationship between two or more variables (Bryman & Bell, 2015, P. 50). As such, internal validity is usually important for a quantitative research since there will be the application of statistical test to provide evidence of the existence of a causal relationship inherent in the variables contained in the developed hypothesis. In this particular study, we built three different hypotheses that help answering our research question. By testing these hypotheses, the authors intended to explain the link between the market performance of a company’s stock and its social responsibility for publicly listed Swedish companies in the empirical analysis. And, from the findings, it is noteworthy to mentioning that social performance does not cause stock market performance in a significant manner for listed Swedish companies in the sample. As such, the internal validity was observed in this paper, since the proven non-causal relationship between the two variables is genuine and it is not being explained by something else (Bryman & Bell, 2015, P. 50).

The remaining two categories of validity are known to be external validity and ecological validity. The former refers to the extent to which the results from a particular research can be generalized to other context (Bryman & Bell, 2015, P. 50), for example for a population outside the sample or for a different setting of same industry. In this context, the selection of the sample becomes problematic, as it needs to reflect a representation of the whole population (Bryman & Bell, 2015, P. 50). In this paper, as the number of Swedish firms in the sample is limited, the results we get from collecting information on the social and stock performance, constituting our sample, should not be applicable beyond the population. The last category, identified under validity, refers to ecological validity and can be defined as the extent to which the findings from a business or social research are applicable to individual’s everyday natural social environment (Bryman & Bell, 2015, P. 51). In this particular study, we collected secondary data from an existing source on two main variables namely stock performance and the performance of the firm in terms of social activities. The results that are drawn from the process of data collection and analysis, in this research, are deeming to be applicable to the people’s everyday life. The reason for such implication is the fact that the relationship we investigated on will have an impact on the parties (e.g. investors, security analysts, suppliers, consumers, managers and employees) involved in any kind of transaction with a firm, to evaluate the effect of social responsibility in association with stock performance. As highlighted by Bryman & Bell (2015, P. 51), the issue of ecological validity is of great importance to both methods of research namely quantitative and qualitative.
Reference List


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Appendix

Appendix 1: Average risk adjusted return

Note: Rf in this case can be represented either by current long-term government bond return or current short-term government debt instrument (treasury bill) return. We used alternative # 1, because stock is assumed to be a long-term investment.
## Appendix 2: Alpha and Beta values of stocks

<table>
<thead>
<tr>
<th>Name</th>
<th>Alpha</th>
<th>Beta</th>
<th>Price</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS LTD N</td>
<td>-0.014</td>
<td>0.213</td>
<td>0.024</td>
<td>0.0053</td>
</tr>
<tr>
<td>ALLA L 1</td>
<td>1.542</td>
<td>0.007</td>
<td>1.320</td>
<td>0.0040</td>
</tr>
<tr>
<td>AST ALOE' B</td>
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<td>0.004</td>
<td>0.412</td>
<td>0.0020</td>
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<tr>
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<td>0.006</td>
<td>0.195</td>
<td>0.0088</td>
</tr>
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<td>0.049</td>
<td>1.790</td>
</tr>
<tr>
<td>ATLAS COPCO B</td>
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<td>1.085</td>
<td>1.408</td>
</tr>
<tr>
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Appendix 3: Residuals statistics

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a. Dependent Variable: abreturnR_log10

Appendix 4: Residuals charts

![Histogram](chart.png)