CSR – Opportunity or Cost?

A methodological approach

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Abstract

Over 40 years of research has explored the relationship between Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP) without any consensus. An array of different research methods has been utilized in the pursuit of a final solution to answer the questions using different theories explaining the varying results. In this study an improved source of data on CSR has been used to report the results of a rigorous review, this thesis has utilized a combined methodological approach to shed light on why previous studies arrive at mixed results. CSR is measured with a CSR index distributed from Thomson Reuters Datastream and CFP is measured using Return On Equity (ROE) to signify the accounting-based side of financial performance, and Tobin’s Q to measure the market-based side. This paper reports the empirical evidence of the relationship between CSR and CFP. We have found a significant and positive relationship between CSR and Tobin’s Q, however there was no change between ROE and CSR. This notion is largely ignored in previous studies, which has mostly treated financial measures interchangeably. Therefore, we contribute methodologically with results on the use of financial measures and empirically with a positive robust result.

Keywords: corporate social responsibility; corporate financial performance; social performance; financial performance; ROE; Tobin’s Q; CSR; stakeholder theory
Table of Contents

1. INTRODUCTION .................................................................................................................. 4
2. LITERATURE REVIEW ......................................................................................................... 7
   2.1 Stakeholder Theory ..................................................................................................... 7
   2.2 Sustainable Investment ............................................................................................. 8
   2.3 Negative Relationship ............................................................................................... 8
   2.4 Positive Relationship ................................................................................................. 9
   2.5 Neutral/No Relationship ........................................................................................... 10
   2.6 Previous Research .................................................................................................... 10
   2.7 Hypotheses Development ......................................................................................... 13
3. METHODOLOGY .................................................................................................................. 14
   3.1 Data .......................................................................................................................... 14
   3.2 Variable Description ................................................................................................ 15
      3.2.1 CSR Measure .................................................................................................. 15
      3.2.2 Financial measures ......................................................................................... 16
      3.2.3 Control variables ............................................................................................ 16
      3.2.4 Excluded Variables ......................................................................................... 18
   3.3 Limitation .................................................................................................................. 18
   3.4 Descriptive Statistics ............................................................................................... 19
   3.5 Statistical Tools ......................................................................................................... 19
4. RESULTS .............................................................................................................................. 20
   4.1 Four-Step Regression Models .................................................................................. 20
   4.2 Summary of Hypothesis ............................................................................................ 23
5. DISCUSSION AND CONCLUSIONS ............................................................................... 25
6. REFERENCES ....................................................................................................................... 27
APPENDICES ........................................................................................................................ 29
1. Introduction
A central issue in the Corporate Social Responsibility (CSR) context is whether it is financially rewarding to take CSR considerations. Many researchers have tried to answer this question, however there is a controversy in the overall results.

The origin of the debate surrounding the relationship between CSR and CFP has lead to mixed results. One of the main criticisms concerning a positive CSR-CFP relationship can be traced back to Friedman, who believed that the sole aim of businesses was to make a profit (Friedman, 1970). A number of authors, influenced by Friedman’s neoclassical ideas, found a negative relationship between CSR and CFP (Aupperle et al., 1985; Jarrell and Peltzman, 1985; López et al., 2007). This assertion is in direct conflict with stakeholder theory, which recognizes different parties affected by a firm’s action, parties which might not benefit from maximization of shareholder wealth. As a consequence of the increased expectation on the firms to act socially responsibly combined with the primary goal to maximize profit, has lead to the corporations being challenged with how to reconcile both the demands from the shareholders as well as the financial goals. This conflict of interest between shareholders and stakeholders is at the heart of the debate surrounding investment in CSR. (Akpinar., 2008; Aupperle., 1997; López et al., 2007; McWilliams and Siegel., 2000., López et al., 2007; Waddock and Graves., 1997). The relationship between CSR and financial performance, and whether investing in CSR will benefit the firm as a whole has been the topic of several research papers. This is an all more pressing question since some researchers have claimed that investing in CSR can be regarded as the difference between death and survival of the firm (López et al., 2007).

A problem is that prior studies arrive at conflicting conclusions regarding the link between CSR and corporate financial performance. Some studies found a strong positive relationship (Lev et al., 2008; Mallin et al., 2014; Waddock and Graves, 1997) while others found a negative (Jarrell & Peltzman, 1985; López et al., 2008). Furthermore McWilliams and Siegel (2000) have found a neutral relationship while other researchers found that the relationship sustainable competitive advantages (Waddock and Graves, 1997). It is often argued that firms that adopt sustainability strategies grant competitive advantage over firms that do not adopt them. Currently successful businesses are more or less defined by their implementation of concepts including, management quality, brand reputation, customer loyalty, corporate ethics and environmental management. These concepts constitute common CSR practices (López et al., 2007).

In this study we have defined CSR as the degree which corporations take responsibility for their stakeholders. This has in turn been operationalized as each individual organizations value of environmental, social and governance factors, which is in line with many other studies (Akpinar., 2008; Aupperle., 1997; López et al., 2007; McWilliams and Siegel., 2000., López et al., 2007; Waddock and Graves., 1997). The relationship between CSR and financial performance, and whether investing in CSR will benefit the firm as a whole has been the topic of several research papers. This is an all more pressing question since some researchers have claimed that investing in CSR can be regarded as the difference between death and survival of the firm (López et al., 2007).
is random with mixed results (Choi et al., 2010; Orlitzky et al., 2003). The controversy of the different studies has made it difficult to draw conclusions from earlier studies.

The investigation of the relationship between CSR and CFP that shows mixed results in the literature may be explained by how CSR and corporate financial performance are operationally defined (Carroll, 1991; Orlitzky et al., 2003). A major factor is in what context the study was performed, where, when and what measures have proven to play a crucial role as to the outcome. (López et al., 2007). For instance, Orlitzky et al. (2003) found that the usages of market-based financial performance elements were less related with CSR than accounting-based ones. Additional positive impact on the level of a firm’s CSR activities is the size and age of the corporation (ibid). Mallin et al. (2014) claims that larger size of the corporation lead to higher levels of social characteristics and the older the firms are the more investments in CSR. Akpınar et al. (2008) argue that using CSR strategically where stakeholder groups are prioritized will lead to good quality of management.

There are researchers that argue the inefficiency corporations face whilst trying to satisfy the conflicting objectives of different interested parties. The incurred costs from socially responsible actions may put the firms at an economic disadvantage (Choi et al. 2010). Fombrun and Shanley (1990) claim that it is not possible to determine the relation between CSR and corporate financial performance, since there are so many intervening variables that are hard to control. On the other hand, previous studies (Bagnoli and Watts, 2003; Akpınar et al., 2008; Orlitzky, 2003) have shown that companies with superior social performance tend to do better financially by attracting socially responsible investors. Investors have begun recognizing CSR as a factor that has the possibility to create long-term value (Sjöstöm, 2014). According to The Global Sustainable Investment Review (2012) 21.8% of the global capital is invests in accordance with environmental, social or corporate governance criteria’s. Furthermore, 64.5% of all the green investments are derived from the European market.

Other reasons of the inconsistent results in early studies depend on the utilization of different CSR metrics, market research and other methodological factors. For instance, Akpınar et al. (2008) and Choi et al. (2010) used another database to measure the CSR index, which they divided into two different metrics, stakeholder-weighted CSR and equal-weighted CSR index. The first index refers to prioritizing specific stakeholder groups and takes into account their varying importance in different industries. However, the equal-weighted CSR index does not have any prioritization of any stakeholder group and shows an insignificant relationship with CSR, while stakeholder-weighted index has resulted in a positive and significant relationship with CSR (Akpınar et al., 2008; Choi et al., 2010). Previous studies have operationalized variables differently, which can be one of the reasons behind the inconclusive results about the association between CSR and CFP.

Some studies have utilized questionable CSR measures that may not reflect a firm’s true CSR involvement, such as “sharable contributions” (Lev et al., 2008) and
“Carrolls CSR constructs” (Aupperl et al., 1985) are examples of inconsistent result of the link between CSR and CFP. Other studies have individually collected data of firms to assess the respective firm’s CSR performance, leading to difficulties in replicating these kinds of studies.

Another explanation of the contradictory result in previous studies could probably be that researches have used different financial performance measurements to determine the correlation between CSR and CFP. Also, different studies have divided financial performance into two major financial aspects; accounting-based and market-based measurements. The usage of market indicators could reflect a firm’s behavior, but with accounting ratios these are considered less noisy and indicate what is actually happening in the company. In any case, market-based measures are less prone to manipulations from the management and can be seen as a reflection of a firm’s true value (López et al., 2007).

Concerning the CFP metrics, there are two typical financial performances that are used to reflect CFP. Return on equity (ROE) has been a commonly used financial measure in previous studies (Choi et al., 2010; Mallin et al., 2014; Orlitzky et al., 2003; Waddock and Graves, 1997). ROE helps investors to determine if a corporation is cost effective and profitable from their activities, which results in them gaining a competitive advantage. Therefore, the association between a firm’s profit and the investor’s return makes ROE a useful variable to investigate. According to Akpinar et al. (2008) and Choi et al. (2010) Tobin’s Q is an accurate measure to reflect a firm’s performance on the stock market. Tobin’s Q is the ratio between a company’s physical assets, market value and replacement value (Akpinar et al., 2008; Choi et al., 2010).

The problem that has occurred with previous studies is that only one of these financial measures has been used and the other has been ignored. Therefore, a relevant question to ask is what happens when both of these indicators are measured on the same dataset, and with a robust CSR-measure. At least this could deduce if these measures would lead to the same results, and if they are in any way correlated to each other. If inconsistent results are found when using ROE and Tobin’s Q, respectively, on the same dataset, we may also conclude that the seemingly contradicting results concerning the CSR-CFP relationship can, at least partly, be explained by methodological inconsistencies.

We empirically contribute with this paper by challenging the usage of the financial measures that have been utilized for financial performance in relation to CSR. Previous studies have used different financial measurement to explain how the relationship between CSR and CFP looks like, however up to date there has not been any theories suggesting how the mechanisms behind financial performance indicators relates with each other. The present study will be based on the Nordic market in order to obtain a sample that is homogenous as to tradition, during the period 2002-2014 and will seek to provide to the debate by shedding some light on the relationship between CSR and financial performance by having a relative long research period, a robust CSR measure and a market characterized by sustainability. Thereby, the aim of this paper is to answer the following question:
What is the relationship between corporate social responsibility and corporate financial performance, and does the relationship remain constant if the measure of corporate financial performance changes?

To achieve this study’s aim we use statistical tools such as regression analysis and correlation analysis. Since the results in previous studies are different, with conflicting theories attempting to explain all possible outcomes, in this study we will attempt to address the conflicting differences by providing a more methodologically rigorous review than previous studies by thoroughly examining earlier research methods and addressing each individual study’s shortfall. Furthermore, this study aims to have an irreproachable sample considering size, location, database and use of variables.

2. Literature review

2.1 Stakeholder Theory

A theoretical explanation why there should be a positive link between CSR and CFP stems from stakeholder theory. A stakeholder is defined as “any group or individual who is affected by or can affect the achievement of an organization’s objectives” (Freeman and McVea, 2005). The core idea of stakeholder theory is that it looks at the relationship between firms and others in its internal and external environment. Furthermore, Freeman et al. (2010) argue that stakeholder theory in practice will contribute with meaningful insights of sustainability and ethical value creation. Freeman et al. (2005) explains that corporations whom manage their stakeholder relationships effectively will survive longer and perform better than firms that do not. Akpınar et al. (2008) claim that the positive link between CSR and CFP is frequently supported by stakeholder theory but fails to provide insight to which stakeholders the link between CSR and CFP involves (Akpınar et al., 2008; Choi et al., 2009; Mallin et al., 2014). However, even though previous researches have resulted in discrepancy about the link between CSR and corporate financial performance, Akpınar et al. (2008) have shown a way to resolve the inconsistent results in their study by introducing stakeholder-weighted CSR index also named stakeholder misalignment. Furthermore, the “stakeholder misalignment” refers to the new formatted and adjusted CSR index that include the stakeholder conflicts and their varying importance of CSR sub-dimensions in different industries (Akpınar et al., 2008; Choi et al., 2010). According to Akpınar et al (2008) the new innovative CSR index takes into account that which sub-dimensions of social attributes appear to have a central role for its stakeholders and furthermore evaluate the firm’s actions. Both Orlitzky et al. (2003) and Akpınar et al. (2008) argue that the stakeholder misalignment is the reason of mixed results in the relationship between CSR and CFP.

The positive association between CSR and financial performance could be assumed by stakeholder theory. Waddock and Graves, (1997) stresses the positive relationship between the social performance and the financial performance includes benefits of a firm’s investment in CSR,
which are greater in comparison with its costs. Other studies by Mallin et al. (2014) and McWilliams and Siegel (2000) emphasize firms’ engagement in social and ethical investments enhance their reputation in ways that will have a positive impact on financial performance. Mallin et al. (2014) claim that involvements in CSR disclosure will bring economic and social benefits to their stakeholders. The firm’s participation in social activities provides legitimacy for their existence (Waddock and Graves, 1997; Mallin et al., 2014). If a firm decides to make use of CSR in a strategic way to signal good management, it should determine the relative importance of each of the stakeholder groups. Based on the studies by Akpinar et al. (2008) whom claims that using CSR strategically whereas stakeholder groups are prioritized will lead to good quality of management. The proponents of the negative relationship between CSR and CFP debate a competitive disadvantage for enterprises that face the social needs of their stakeholders (Mallin et al., 2014).

2.2 Sustainable investment

It is often discussed that organizations whom adopt sustainability practices acquire competitive advantage over organizations that do not adopt them. According to the legitimacy theory it is necessary to have society’s approval for the firm to prosper. Both stockholders and firms generally believe that sustainability strategies have the potential to create long-term value. This has led to the creation of CSR-related indexes in order to satisfy investor’s demands. However, the expenses that firms incur on themselves as a result of their responsible action can place them at an economic disadvantage compared to their less responsible competitors, at least in the short run. (López et al., 2007; Waddock and Graves, 1997; Friedman, 1970). Investors have started to recognize that investing in accordance with CSR-principles has the possibility to create long-term value. As stakeholders believe accredited processes in CSR can lead to positive financial performance, has resulted in professional investors to form portfolio strategies with sustainability principles in mind. Although these ideas have taken root in the U.S, investing with sustainability criteria in mind is rising and has become more widespread in Europe (ibid). Furthermore, Choi et al. (2010) discuss that corporations with focus on CSR will make the firm an attractive investment target since investors value social awareness. Akpinar et al. (2008) claim that good management theory is an explanation of why social investments will lead to improved financial performance. One major argument that Bowman and Haire (1975) discuss is that socially responsible investors may see CSR as indicating management and requisite skills to run a superior enterprise. In addition, Spicer (1978) found that the association between investment value of a firm and CSR is positive. This could explain why that social characterized firms provide statements concerning management competence, which complements the financial information.

2.3 Negative relationship

One of the most recognized criticisms to a positive CSR-CFP relationship was presented by Milton Friedman (1970). In his earlier work Friedman (1970) generated the trade-off hypotheses, which states that a
company that starts engaging in CSR activities will perform worse financially as CSR will only be a cost. A number of authors, influenced by Friedman’s neoclassical ideas, found a negative link between CSR and CFP (López et al., 2007). Finding a negative relationship between CSR and CFP by simply observing how the stock market reacts to a firm’s illegalities can hardly be seen as a fair representation of CSR. According to Akpinar et al. (2008) there are some studies that question the positive impact on the association between CSR and corporate financial performance, since there is no reputable and accurate theory that investigates the correlation between CSR and CFP.

The negative relationship is in direct conflict with stakeholder theory. Stakeholder theory recognizes several different parties affected by the firm, but might not necessarily profit from means of maximizing shareholder wealth. Maximizing profits could potentially harm stakeholders. This conflict of interest between shareholders and stakeholders is at the heart of the debate surrounding investment in CSR. However, even though there may be doubtfulness towards the negative relationship, the more recent study by López et al. (2007) observed a negative link between CSR and CFP. Based on previous conflicting theories this present study will include the negative relationship in the theoretical framework.

2.4 Positive relationship

Regarding the theoretical framework whether a positive relationship exists between CSR and CFP there are two dominant theories, slack resource theory and good management theory. Slack resource theory suggests that previous positive financial performance will yield an abundance of resources, which can be invested in socially responsible processes. Thus the slack resource theory suggests that good CSR performance originates from good financial performance and not the other way around (Orlitzky et al., 2003; Mallin et al., 2014). Waddock and Graves (1997) argue that the link between the CSR-CFP relationship runs from financial performance to CSR. Contrary to resource slack theory, good management theory suggests that when managers implement good management practices and engage in CSR related activities the result will satisfy the firm’s stakeholders and thus improves the corporation’s financial performance. Thus good management theory argues for a relationship opposite to resource slack theory, that a strong CSR performance will improve the financial performance (Orlitzky et al., 2003; Waddock and Graves, 1997). According to Akpinar et al., (2008) if demands from different stakeholders are prioritized it will result good management. Hence, the stakeholder theory can be seen as an aspect of good management theory. In addition, the good and maintained relation with different stakeholders will also make firm’s evolve in social dimensions (Akpinar et al., 2008; Waddock and Graves, 1997). The result of the positive relation between size, age and CSR enhances the reputation of the firm (ibid). Mallin et al. (2014) has highlighted the involvements in better CSR disclosure enhance a firm’s reputation and helps maintain its legitimacy.

Finally some researcher’s theorizes about if a possible simultaneous relationship exists between CSR and CFP, a virtuous circle where CFP and CSR both affect each other in a positive way. This would imply
that the reality is a mixture of both resource slack theory and good management theory (Orlitzky et al., 2003; Waddock and Graves, 1997).

2.5 Neutral/no relationship

Contrary to previous research several studies argue that the relationship between CSR and CFP is too difficult to measure. (Waddock and Graves, 1997; Orlitzky et al., 2003; McWilliams and Siegel, 2001). McWilliams and Siegel (2001) believe that there are not any robust methodological procedures to correctly determine the relationship between the two variables. Waddock and Graves, (1997) expand on the argument by speculating that there are too many interjecting variables between CSR and CFP, making it impossible to ascertain the true impact CSR investment have on CFP.

2.6 Previous research

Several previous studies have measured the CSR impact on the financial performance and the main results from these empirical findings indicate ambiguous associations as they suggest conceptual interpretations for a positive, neutral and negative relationship between CSR and CFP (Akpinar et al., 1985; 2008; Choi et al., 2010; Lev et al., 2008; López et al., 2008; Mallin et al., 2014; McWilliams and Siegel, 2000; Waddock and Graves, 1997). According to some studies the measurement of CSR is difficult to construct because indications of a single social attribute provide limited dimensions of its complexity on how well a firm is engaged in performing social activities (Waddock and Graves, 1997; Orlitzky et al., 2003).

López et al. (2008) analyzed the link between CSR and CFP and found that the relationship between these two variables were negative. The study was based on the Dow Jones sustainability index, and in order to obtain a sample that was homogeneous regarding traditions and period of disclosure the study was solely performed on the European market. According to López et al. (2008) the market-based data can be misleading and can be considered more dependent on external factors from outside the firm’s control, and therefore used accounting-based measure to indicate financial performance. The study confirms that the effect of sustainability principles on performance indicator is negative during the first year they are applied and that it will be necessary to examine a longer time frame to see whether these practices acquire continuity over time (López et al., 2008).

Aupperle et al. (1985) criticized earlier works on the subject of CSR’s impact on CFP for being biased or having limited methodological procedures. Their study attempts to measure social responsibility by using their own forced-choice survey based on Carroll’s (1979) corporate social responsibility construct, their study was unique in using a force-choice survey of operationalizing CSR, leading to difficulties when others want to replicate their study. The authors found a negative relationship between CSR and CFP and concluded that those studies that argued for a positive association were not methodologically sound (Aupperle et al. 1985). Different to other research Aupperle et al. (1985) did not include size as a
statistical control variable in their regression analysis, which has been implied to have a major impact on the link between CSR and CFP (López et al., 2007; Orlitzky et al., 2003).

Waddock and Graves (1997) measured CSR by using the KLD index\(^1\) where the size, risk and industry were operationalized as control variables. Waddock and Graves (1997) argue that size of the firm is a relevant indicator in socially embedded purposes, because small enterprises may not invest in social domains like larger corporations do. In undertaking the study, Waddock and Graves (1997) found a positive relationship between social activities and financial performance, when CSR is used as a dependent and independent variable. Waddock and Graves (1997) postulates a virtuous circle to explain the direction of CSR regardless if the variable is independent or dependent. The direction of this result finds CSR as the dependent variable, *ceteris paribus* (Waddock and Graves, 1997). Since the numbers of intervening variables between CFP and CSR, Waddock and Graves (1997) cautiously suggest a positive relationship.

Additionally, Lev et al. (2008) used corporation’s charitable contribution as a measure of CSR and studied whether corporation’s level of philanthropy had an impact on the firm’s sales. In their study they argue that a well-designed contribution can increase a firms brand among customers in a similar manner as advertisement, and can therefore be a good way to differentiate themselves in competitive businesses (ibid).

Another explanation is given, that managers may decide how much to contribute to charity based on the expectation for future sales growth (ibid). Therefore the investigation controlled for market-to-book ratio as an indicator for a company’s expected growth. A third potentially impacting factor that is controlled for in the study is “industry performance” (ibid). Certain industries are growing faster than others for macro economic reasons, therefore not controlling for industry could lead to omitted variable biased results (ibid). Their research found that charitable contributions have a positive relationship with sales growth, when controlling for major drivers for sale (ibid).

Mallin et al. (2014) found a positive and significant relationship between CSR and CFP. The result supports the slack resource theory as better financial performance encourages firms to engage in social activities. The study suggests that the correlation between these two elements runs from financial performance to CSR. Their research has distinctively operationalized the CSR measurement by individually collecting CSR data (Mallin et al., 2014). This type of methodological research is different to other studies, whereas database has been a commonly used method (Akpinar et al., 2008; Choi et al., 2010; McWilliams and Siegel, 2000; Waddock and Graves, 1997).

In the study by Akpinar et al. (2008) the KLD database index were used to measure corporate social responsibility. The operationalization of CSR measurement in their study distinguished from previous

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\(^1\) Kinder, Lydenberg, Domini (KLD) is a database that evaluates CSR for different public corporations.
studies. Akpinar et al. (2008) proposed a new a stakeholder weighted CSR index, which prioritizes stakeholders and treats them more fairly by taking into account their relative importance to the respective industry. Furthermore, Akpinar et al. (2008) compared these results to an equal-weighted CSR index, which did not take into account the different needs of stakeholders. Their study found that when different stakeholders demands were taken into account the relationship between CSR and CFP were significantly positive, however, when an equal-weighted index was used the results were inconclusive. The study carried out by Choi et al. (2010) indicated similar findings as Akpinar et al. (2008), that CSR is only positively related to CFP when a stakeholder-weighed measure is used. Akpinar et al. (2008) and Choi et al. (2010) divided CFP into accounting-based (ROA and ROE) and market-based measures (Tobin’s Q).

However, the neutral relationship between CSR and financial performance indicate simply no relationship, whether it is positive or negative. McWilliams and Siegel (2000) argue that firm’s involvement in CSR is inconsistent with their efforts of profit maximization. The inconsistency of the negative association between CSR and performance in previous studies is not unexpected, given the nature of the empirical estimation in the measurement of CSR. For example, if research and development is omitted and has a positive impact on the performance of the company, the coefficient on any variable that is strongly positively correlated with research and development will be overestimated (McWilliams and Siegel, 2000). One of the more extensive, and recent, studies regarding the relationship between CSR and CFP was a meta-analysis study by Orlitzky et al. (2003), integrating 30 years of research. The study shows that there is overall a positive association between CSR and CFP between industries and study context. Moreover, the temporal analysis shows that there is a positive relationship even when CSR is lagged, thereby supporting the slack resource argument. The authors also claim that many of the negative findings in individual studies are circumstantial, so that the generalization of a positive link between the two variables applies more broadly than previously indicated. The authors criticize McWilliams and Siegel (2001) for taking inconsistent findings in primary studies at face value, ignoring possible sampling errors, and explaining the inconsistency with a demand and supply theory. Finally the study concludes that CSR has overall a higher correlation with accounting based measurement for CFP, rather than marketing based. (Orlitzky et al., 2003)
Table 1: Summary of previous research included in our literature framework.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Relationship</th>
<th>Context</th>
<th>Control variables</th>
<th>Measure of CSR</th>
<th>Measure of CFP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aupperie et al. (1985)</td>
<td>Negative</td>
<td>American</td>
<td>Risk, Beta, Stock price</td>
<td>Carroll's CSR</td>
<td>ROA</td>
</tr>
<tr>
<td>Waddock and Groves. (1997)</td>
<td>Positive</td>
<td>International</td>
<td>Risk, Size, Number of employees</td>
<td>KLD index</td>
<td>ROA, ROE, Return on Sales</td>
</tr>
<tr>
<td>McWilliams and Siegel. (2000)</td>
<td>Neutral</td>
<td>International</td>
<td>Size, risk, industry, R&amp;D</td>
<td>KLD index</td>
<td>ROA</td>
</tr>
<tr>
<td>Orlitzky et al. (2003)</td>
<td>Mixed results</td>
<td>Meta analysis</td>
<td>Various</td>
<td>Various</td>
<td>Various</td>
</tr>
<tr>
<td>Akpinar et al. (2008)</td>
<td>Positive</td>
<td>American</td>
<td>Size, sales growth, industry, risk, R&amp;D</td>
<td>KLD index</td>
<td>Stock return, Tobin's Q, ROA</td>
</tr>
<tr>
<td>Mallin et al. (2014)</td>
<td>Positive</td>
<td>Islamic</td>
<td>Board size, GDP, Size, Listed/Private</td>
<td>Individually collected</td>
<td>Change in ROA &amp; ROE</td>
</tr>
</tbody>
</table>

2.7 Hypotheses development

In forming our hypotheses it has become apparent that the link between CSR and CFP has been treated differently in previous research. This link has been found to be positive, negative or neutral.

The studies that have found a positive relationship attributed this to either the good management, meaning that good managerial practices lead to good results, or the slack resource theory, meaning that previous positive financial results leads to an abundance of resources which leads to increased CSR activities. Some researchers have combined these two theories, suggesting a virtuous circle between the two variables (Orlitzky et al., 2003). According to the slack resource theory and good management theory we form our first hypothesis, where we have used ROE as measurement for accounting-based financial performance:

**H1: There is a positive relationship between accounting-based financial performance and CSR.**

A commonly used financial performance variable is market-based measure such as Tobin’s Q (Akpinar et al., 2008; Choi et al., 2010). Earlier studies have found a positive and significant relationship between market-based measures and CSR. Researches (Akpinar et al., 2008; Choi et al., 2010) discuss that investors are prone to invest in socially embedded firms because they evaluate social performance and also firms with high level of CSR gives investors a hint concerning the future performance of the corporation. This suggests the notion of a virtuous circle between these two indicators. According to the results obtained by Akpinar et al. (2008) and Choi et al. (2010) our second hypothesis is formed:
H2: There is a positive relationship between market-based financial performance and CSR.

Since previous studies have provided varying results, whilst studying the relationship between CSR and CFP, market-based performance has been included in some research (Akpınar et al., 2008; Choi et al., 2010; Orlitzky et al., 2003;) and excluded in some other studies (Aupperle et al., 1985; Lev et al., 2008; López et al., 2007; Mallin et al., 2014; McWilliams and Siegel, 2000; Waddock and Graves, 1997). This could be a reason for the severe differences in the results obtained from previous studies. This study hypothesizes that the similar nature of the two measures are intervening and can be a reason for the inconsequence of previous studies. This leads to our third hypothesis:

H3: There is an intervening mechanism between Tobin’s Q and Return on equity, leading to one of the measures are more effective than the other.

Furthermore, the no relationship theory is suggested by McWilliams and Siegel, (2000) due to the fact that there are too many variables affecting the relationship of CSR and CFP for researchers to establish credible results. Previous studies that have shown a negative relationship have mainly quoted Milton Friedman (1970) and argued for a trade-off-hypothesis, meaning that CSR will mostly bring higher costs to the firm, thus reducing profits. No relationship-and trade-off theory leads us to our last hypothesis.

H4: There is no relationship between CFP and CSR

3. Methodology

3.1 Data

A reputation index has been utilized in this study (as opposed to content analysis) for measurement in order for the results to be comparable to other similar studies (Semenova and Hassel, 2014). In our paper the data used in the regression analysis is collected using Datastream’s Excel plug-in. The data is from the ASSET4’s database, which, as of 2009, is distributed from Thomson Reuters. There is a minimum of 4 years of the data for most companies to be included in the database. Bryman and Bell (2005) argue that the usage of databases contribute high quality data for research purposes and easier comparability. The Database from ASSET4 supplied us access to information concerning firm’s appropriate to our research.

We have computed three different regressions to answer our hypothesis. The first regression (Regression1) was done in order to answer the question whether the accounting-based measure had an impact on CSR. The second regression (Regression 2) was done similarly to answer if the market-based measure had an impact on CSR. Lastly, both the accounting-based measure and market-based measure was including in a third regression (Regression 3) to see if there is any intervening effects between the variables. Nordic companies without an ASSET4 CSR rating were naturally not included in the study’s dataset, which lead to a sample size containing 127 different companies. In our study 25 of the companies were from Denmark, 22 from Finland, 27 from Norway and 53 from
Sweden. Each data node needed information for all the variables for a particular year to be included, the data ranged from year 2002 to 2014. Since a firm needed all the measured variables for any given year there was a loss of 284 observations, leaving a total of 1240 observation in our final research sample.

This study has been restricted to only study the Nordic market to avoid different national frameworks to dilute the results. Gjølberg, (2009) argues there are several reasons to expect the national framework of different countries to play a major part on the view of CSR. The study aimed to find similarities between 20 different European countries. Gjølberg, (2009) operationalized CSR by using nine different indicators gathered from different data indexes such as Dow Jones Sustainability Index and FTSE4 Good Index.

As indicated in figure 6 the four Nordic countries present in this study; Denmark, Finland, Norway and Sweden all show similar qualities. The Nordic countries all have a strong consensual and corporatist tradition as well as extensive social and environmental policies. These countries are characterized by close cooperation between states and businesses coupled with a longstanding tradition of involving society in the policy making process. Although these traditions rest on social and political institutions long preceding the CSR debate, this cultural inheritance can be used as a competitive advantage for CSR performance (Gjølberg, 2009). Since our sample size is relatively similar in terms of CSR investment and national legislation this sample is deemed optimal for our research. Furthermore, it can be argued that if we were to find a CSR-CFP connection anywhere it would be on a sample characterized by historically strong CSR performance.

3.2 Variable description

3.2.1 CSR Measure

ASSET4 has established a database with the goal to provide extra-financial information on companies with information that is transparent and objective based on public disclosure. The CSR measure used in this study is Thomson Reuters ASSET4 ESG-rating. ASSET4 includes over 4000 global public companies worldwide and is measured using 180 different indicators for each company in order to assure the quality of each assessment. This information is assessed and divided into three pillars environmental, social and corporate governance. ASSET4 has been empirically shown to have common dimensions to other CSR ratings (namely KLD and GES), as well as the different metrics having a high correlation and provide overall a

---

2 The Icelandic market was initially intended to be included, however as there were no companies that had an ASSET4 ESG rating in Iceland it was omitted.

3 CSR has been defined in this study as a company’s consideration for environmental, social and corporate governance factors.
convergent score (Semenova and Hassel, 2014). Based on this the ASSET4 is deemed as a viable measure for CSR and comparable to other similar studies.

3.2.2 Financial measures

In our regression analysis we have followed the literature and used both accounting-based and market-based financial performance measurement (Akpinar et al., Aupperle et al., 1985; 2008; Choi et al., 2010; Lev et al., 2008; López et al., 2008; Mallin et al., 2014; McWilliams and Siegel, 2000; Waddock and Graves, 1997). As accounting-based performance measures we used return on equity (ROE), which is widely used measures of corporate performance and growth (Mallin et al., 2014). According to Thomson Reuters, ROE is defined as:

\[
\text{ROE} = \frac{\text{Net Income} - \text{Bottom Line} - \text{Preferred Dividend Requirements}}{\text{Average of Last Year’s and Current Year’s Common Equity}}
\]

There are several benefits for using return on equity as a measure for financial performance. ROE adequately reflects a firm’s ability to transform shareholders investments into profits. Furthermore, as can be seen in our summary of previous research, ROE as been frequently used in earlier studies that investigated the connection between CSR and CFP. The main concern with using ROE to measure accounting-based financial performance is that it is best to compare corporations in the same industry. However, this study controls for industry, thus reducing this concern towards using ROE in this study. The accounting-based measurements can be a drawback with this approach and cause complexity with the secondary data, since managerial manipulation is possible with usage of accounting measurements by managers who may give a deceptive image of the firm’s financial position. (Choi et al., 2010; Waddock and Graves, 1997)

In this study we have utilized Tobin’s Q as the market-based performance measurement following Akpinar et al. (2008) and Choi et al. (2010). Datastream defines Tobin’s Q as:

\[
\text{Tobin’s Q} = \frac{\text{Market value of common stock} + \text{market value of preferred stock} + \text{current liability} - \text{current asset} + \text{long term debt}}{\text{Book value of total asset}}
\]

The main argument for using Tobin’s Q as a measurement for financial performance is that the market-based financial performance represents investor’s evaluation of a corporation’s ability to produce future financial earnings rather than simply reflecting past performance (Akpinar et al., 2008; Choi et al., 2010). Akpinar et al. (2008) claim that the beneficial usage of Tobin’s Q measurement reflects the market value of the firm over its assets. Furthermore, Akpinar et al. (2008) argue that Tobin’s Q has the advantage over accounting measures of reducing misrepresentations caused by tax laws and accounting conventions. However, no single measure can accurately reflect the total performance of the market. Despite this Tobin’s Q has been used in previous studies and is argued to be a good sign of a company’s market performance.

3.2.3 Control variables

In previous studies size, risk and industry have been suggested to be acknowledged
factors that affect both CSR investments and corporate financial performance (Choi et al., 2010; López et al., 2007; McWilliams and Siegel, 2000; Waddock and Graves, 1997). Each of these elements were operationalized as control variables. Waddock and Graves (1997) discuss that the size is a relevant variable in the equation, because previous researchers have showed that smaller corporations may not encourage socially responsible attributes as larger firms do. Waddock and Graves (1997) reached the conclusion that the importance of a firm’s size matters due to the fact that larger firms are in a mature and grown position. In addition, compared to small firms, big companies are pointed out to act in a more socially acceptable manner and respond more openly to stakeholder’s demands (McWilliams and Siegel, 2000; Waddock and Graves, 1997). Total asset was chosen as a control variable in congruity with previous studies. However, total asset as a measure for size doesn’t necessarily always reflect the true size of a firm, with changes between industries. As industries are used as a control variable this concern is mitigated. Furthermore total asset is commonly used in previous studies similar to this one and should be an accurate measure. In this study the size of a corporation is assessed by the logarithm of the total assets in USD. As noted, the variable of size has been a strong indicator of a firm’s total operational size and a measurement widely used in previous studies (McWilliams and Siegel, 2000; Waddock and Graves, 1997). The logarithm approach has been utilized in order to gain a more convenient number compared to the rest of the dataset. When interpreting a log variable’s impact on a non-logged variable it is interpreted as a 1% increase in size leads to a $\beta_{\text{size}}/100$ increase/decrease in CSR.

Secondly, we have included the risk level as a control variable in our regression (Waddock and Graves, 1997). Cochran and Wood (1984) discuss that firms with a low risk aversion are prone to commit in more CSR characteristics compared to corporations with a high level of risk aversion. The level of risk tolerance will influence manager’s attitude concerning the decisions to make about the future of the firm (Waddock and Graves, 1997). Thirdly, market-to-book-ratio has been included in this study. The idea behind including M/B is to capture managers perceived growth rate of the firm, arguing that if a managers believe their firm will grow the coming year they will be more prone to invest in CSR. (Choi et al., 2010)

Earlier research (Akpinar et al., 2008; López et al., 2007; Waddock and Graves, 1997) has shown that industry is an important control variable for researching the relationship between CSR and corporate financial performance. Elfenbein and Walsh (2007) argue that features such as social responsibility attributes, financial performance and stakeholder scrutiny might distinguish between different industries. We have manually classified these industries followed by the Standard Industrial Classification (SIC) codes. The classification are divided into 10 industries including energy, non-cyclical consumer goods and services, cyclical consumer goods and services, industrials, real estate, healthcare, basic materials, utilities, telecommunication, technology. The industry “energy” has been dropped in order to avoid the perfect multi-collinearity problem. This is in line with Akpinar et al. (2008) whom also classified industries
based on SIC. These codes have mainly been utilized because it is a frequently used classification, which makes it easier to compare to other similar studies. We also double-checked with NASDAQ OMXS classification to make sure that our classification corresponds to companies own perceived industry. A relatively small industry categorization was chosen on purpose in order to make sure that each industry had a significant number of observations.

By extension, the level of risk of a business is measured by the total debt to total asset ratio. In the use of the database program, Thomson Reuters, the ratio signifies how much of a corporation’s assets are financed by debts. In any case, a high ratio will determine a firm’s high level of risk and the opposite for a low ratio company. In our paper, industry was defined in the model by dummy variables. The procedure of using dummy variables to represent industries, has been commonly used in previous studies (López et al., 2007; Waddock and Graves, 1997)

3.2.4 Excluded Variables

Research and development (R&D) has been shown by previous research to have a positive impact on relation between CSR and CFP (McWilliams and Siegel, 2000). However, ASSET4 CSR index has already included R&D as a measure, therefore this study has excluded R&D as a control variable to avoid multicollinearity. Board Size has been hypothesized to have an impact on the relation between CSR and CFP, however Mallin et al (2014) found in their study that board size to be insignificantly related to CSR. Based on this, as well as the fact that board structure is already included in this study’s CSR measure, board size has been excluded as a control variable. McWilliams and Siegel (2000) found a positive association between age and CSR activities, meaning that older firms typically have more CSR investment. However, this study has already included the natural logarithm of total asset to measure size but also as a proxy for the age of a firm. Including both the age as well as size could lead to one or both of variables being over- or underrepresented.

3.3 Limitation

The usage of distinctive methods to measure a firm’s corporate social responsibility includes also advantages and disadvantages. The actual method used in this study is an ESG-rating, which is an indication of individual organizations value of environmental, social and governance factors. The main limitation this method face is that it might be influenced by subjectivity when the rating is compiled. For instance, the ESG-rating is based on controversy indicators that are integrated in their respective pillars.

We have disregarded researching the direction of the link between CSR and CFP. The study attempted to study this by using lagged variables. However, since the study could neither deny nor accept the notion of lagged variable and thus limited itself from researching the direction of the relationship. As we mentioned before, the Nordic markets are characterized by CSR investments. This implies that our results from this paper will be hard to generalize to the whole world where markets differ vastly.
3.4 Descriptive statistics

Table 2 shows a summary of our dataset based on 1240 observations from the Nordic market during the period 2002-2014. The table shows the mean value, the standard deviation and the minimum and maximum value of the variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSET4 CSR Rating</td>
<td>65.04</td>
<td>28.50</td>
<td>3.13</td>
<td>97.79</td>
</tr>
<tr>
<td>Tobins Q</td>
<td>1.72</td>
<td>1.18</td>
<td>0.54</td>
<td>10.75</td>
</tr>
<tr>
<td>Return on equity</td>
<td>15.79</td>
<td>50.50</td>
<td>-502.75</td>
<td>1425.06</td>
</tr>
<tr>
<td>Log(Size)</td>
<td>6.74</td>
<td>0.71</td>
<td>4.03</td>
<td>8.95</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>0.26</td>
<td>0.16</td>
<td>0.00</td>
<td>0.88</td>
</tr>
<tr>
<td>Market to book</td>
<td>2.69</td>
<td>4.74</td>
<td>-88.73</td>
<td>73.26</td>
</tr>
</tbody>
</table>

This means that the model compensates for the missing variables by misestimating the coefficient of other variables (Wooldridge, 2010). Woolridge (2010) claim that in order to minimize this problem an error term should be applied. The standard error of a coefficient is used to measure how precise the estimate is, the smaller the standard error, the more precise the estimate. Dividing the coefficient by the standard error calculates a t-value. If the p-value associated with this t-statistic is less than your alpha level, you conclude that the coefficient is significant. The alpha level used in this study is 5%. CSR has been used as the dependent variable in this study, while CFP is used as an independent variable. The reason for this choice is that it is more interesting to see how each control variable relates with CSR, while it is not of interest to this study how the control variables relates with financial performance. This study has utilized a robust regression analysis. The robust regression accounts for observations that are more influential to the models than others and applies this to the error term of the regression, in other words, it takes into account outliers in the sample. Based on these methodically choices, we have constructed three regression models.
4. Results

4.1 Four-step regression models

This study aims to not only deduce the nature of the CSR-CFP relationship but also attempts to discern the inconsistencies in previous studies. Thereby, we have divided our regression models into four steps, adding more control variables each step to see the relative impact of each variable on the model. The first step only includes the CFP measure, the second includes size, the third risk and market to book and finally industry is included in the fourth step of the regressions.

Table 3: Regression 1 - Relationship between ROE and CSR.

<table>
<thead>
<tr>
<th>CSR as dependent variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>P-Value</td>
<td>Coef.</td>
<td>P-Value</td>
</tr>
<tr>
<td>Intercept</td>
<td>64,700**</td>
<td>0</td>
<td>-42,633**</td>
<td>0</td>
</tr>
<tr>
<td>Return on equity</td>
<td>0,022</td>
<td>0,174</td>
<td>0,029</td>
<td>0,052</td>
</tr>
<tr>
<td>Log (Size)</td>
<td>15,915**</td>
<td>0</td>
<td>16,756**</td>
<td>0</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-23,044**</td>
<td>0</td>
<td>-27,573**</td>
<td>0</td>
</tr>
<tr>
<td>Market to book</td>
<td>-0,029</td>
<td>0,855</td>
<td>0,082</td>
<td>0,617</td>
</tr>
<tr>
<td>Non-cyclical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrials</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real estate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecommunication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0,001</td>
<td>0,158</td>
<td>0,173</td>
<td>0,209</td>
</tr>
<tr>
<td>Standard Error</td>
<td>28,486</td>
<td>26,153</td>
<td>25,918</td>
<td>25,338</td>
</tr>
<tr>
<td>Observations</td>
<td>1240</td>
<td>1240</td>
<td>1240</td>
<td>1240</td>
</tr>
</tbody>
</table>

*p ≤ 0,05 and **p ≤ 0,01.

Seen above is a four-step regression model, where control variables are included with every step to show the relative impact of each variable. The dependent variable is used as CSR and independent variable is used as CFP, measured by ROE. In table 3, Model 1 presents the results when only variables CSR and ROE are measured. Among the relationship of CSR with other four control variables included in the regression formula, we found a statistically significant relationship between CSR and ROE, with p-value (p < 0,05). This implies that, when CSR is measured there is a positive relationship between ROE and CSR, as we can see a positive significant coefficient in model 4. It should be noted that the adjusted R-square increases from having no impact to a coefficient of determination of 20.9 % (0,209). Since, the coefficient of determination increases and the standard error decreases for every step in the model indicating, that the control variables used are more or less of importance.
This section reports the result from the regression 2. The dependent variable is used as CSR and independent variable is used as CFP, measured by Tobin’s Q. In table 4, Model 1 presents the results when only variables CSR and Tobin’s Q are measured. We find a strong statistically significant relationship between CSR and Tobin’s Q, with a low level of p-value (p < 0.01). This implies that, when CSR is measured there is a positive relationship between Tobin’s Q and CSR, as we can see a positive significant coefficient in all models except model 1. It should be noted that the adjusted R-square increases from having no impact to a coefficient of determination of 21.8 % (0.218). Since the coefficient of determination increases and the standard error decreases for every step in the model, it indicates that the control variables used are more or less of importance.
The third regression model was done in order to answer our third hypothesis, if one of the financial measures is the driving factor for the other one. Thus, both ROE and Tobin’s Q are implemented in a regression model. As indicated in model 1, when no control variable is included no link can be seen. However, a pattern can be seen that the more control variable is included the stronger the relationship between CSR and Tobin’s become. In model 4 when all the variables are included, Tobin’s Q impact is statistically significant (p < 0.01). Meanwhile, ROE has a p-value close to 1, meaning the correlation with CSR is far from statistically significant. This leads us to conclude that Tobin’s Q is the driving factor behind CSR and also to accept our third hypothesis related to the intervening effects of the two financial measures. It should be noted that the adjusted R-square increases from having almost no impact to a coefficient of determination of 21.8% (0.218). The first regression is still included in the results to emphasize a fallacy in these types of studies, namely how misleading the results can be if not controlled for the appropriate variables.

**Table 5: Regression 3 - Relationship between Tobin’s Q, ROE and CSR.**

<table>
<thead>
<tr>
<th>CSR as dependent variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>P-Value</td>
<td>Coefficients</td>
<td>P-Value</td>
</tr>
<tr>
<td>Intercept</td>
<td>66,287</td>
<td>0,000</td>
<td>-51,901 **</td>
<td>0,000</td>
</tr>
<tr>
<td>Return on equity</td>
<td>0,028</td>
<td>0,094</td>
<td>0,017</td>
<td>0,275</td>
</tr>
<tr>
<td>Tobin’s Q</td>
<td>-0,979</td>
<td>0,170</td>
<td>1,991 **</td>
<td>0,004</td>
</tr>
<tr>
<td>Log (Size)</td>
<td>16,811 **</td>
<td>0,000</td>
<td>17,299 **</td>
<td>0,000</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-20,111 **</td>
<td>0,000</td>
<td>-23,126</td>
<td>0,000</td>
</tr>
<tr>
<td>Market to book</td>
<td>-0,329</td>
<td>0,095</td>
<td>-0,328</td>
<td>0,089</td>
</tr>
<tr>
<td>Non-cyclical</td>
<td>6,136</td>
<td>0,142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclical</td>
<td>-6,864</td>
<td>0,065</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrials</td>
<td>7,633 *</td>
<td>0,039</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real estate</td>
<td>8,030</td>
<td>0,089</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare</td>
<td>-5,316</td>
<td>0,225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Materials</td>
<td>6,465</td>
<td>0,101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities</td>
<td>1,719</td>
<td>0,827</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecommunication</td>
<td>10,408 *</td>
<td>0,029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>7,665</td>
<td>0,116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R$^2$</td>
<td>0,001</td>
<td>0,163</td>
<td>0,177</td>
<td>0,218</td>
</tr>
<tr>
<td>Standard Error</td>
<td>28,476</td>
<td>26,073</td>
<td>25,857</td>
<td>25,188</td>
</tr>
<tr>
<td>Observations</td>
<td>1240</td>
<td>1240</td>
<td>1240</td>
<td>1240</td>
</tr>
</tbody>
</table>

*p ≤ 0.05 and **p ≤ 0.01.
To further iterate our results in the third regression and offer an explanation a correlation analysis has been done. As can be seen (table 6) the correlation between Return on equity and Tobin’s Q is quite high (26.6%). This supports our idea that one financial measure is the driving force for the other, in this case our belief that that market-based Tobin’s Q drives the accounting-based ROE. Furthermore, the table shows the correlation of the control variables. As argued in previous chapters, size has a high correlation and has without a doubt a strong association with CSR.

<table>
<thead>
<tr>
<th></th>
<th>ASSET4 CSR Rating</th>
<th>Tobins Q</th>
<th>Return on equity</th>
<th>Log(Size)</th>
<th>Financial leverage</th>
<th>Market to book</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSET4 CSR Rating</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tobins Q</td>
<td>-0,027</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on equity</td>
<td>0,039</td>
<td>0,266</td>
<td>1,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log(Size)</td>
<td>0,396</td>
<td>-0,280</td>
<td>-0,030</td>
<td>1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-0,060</td>
<td>-0,227</td>
<td>-0,012</td>
<td>0,168</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Market to book</td>
<td>-0,079</td>
<td>0,509</td>
<td>-0,187</td>
<td>-0,165</td>
<td>-0,031</td>
<td>1,000</td>
</tr>
</tbody>
</table>

**H2: There is a positive relationship between market-based financial performance and CSR.**

The market-based Tobin’s Q showed a significant positive relationship with our CSR measure. This holds true even when controlling for return on equity leading us to conclude that the market-based measure is the determining factor for CSR, and not ROE. These results can be explained by either the slack resource theory or the good management theory.

**H3: There is an intervening mechanism between Tobin’s Q and Return on equity, leading to one of the measures is more effective than the other.**

One of the reasons previous studies has had inconclusive results could be because they have not appropriately differentiated financial measures and accounted for the correlation financial measures have between them. This study has taken note of this and included both measures in one regression to determine if one of the measures is more dominant than the other. We found that the market-based side of financial performance is highly significant (p-value Tobin’s Q < 0.000) whereas the accounting-based is insignificant (p-value ROE> 0.902). It can be argued that when

4.2 Summary of hypothesis

**H1: There is a positive relationship between accounting-based financial performance and CSR.**

The first hypothesis would normally be accepted following regression 1. However, after we accounted for the intervening effects between the financial variables we found that the accounting-based ROE had no significant relationship with CSR. Thereby, the relationship cannot be concluded as positive or negative following the high p-value in regression 3 (p-value_{ROE} = 0.902) and a low beta- coefficient (β_{ROE}=0.002).
two measures have a high correlation between them it can lead to the multicollinearity problem, and one of the predicators can be predicted from the other. This can affect the calculations regarding individual predicators and alter their estimated effect on the dependent variable. A rule of thumb is that the correlation between the suspected variables of multicollinearity is that the variables should have a correlation between them greater than 40%. Tobin’s Q and ROE have a correlation of 26.6%. Another rule of thumb is that the variance inflation factor (VIF) should be greater than 5 for multicollinearity to be considered a problem. Thus the VIF is calculated:

\[
VIF = \frac{1}{1 - \text{Adjusted R}^2} = \frac{1}{1 - 0.218} = 1.279
\]

Since neither the correlation nor the variance inflation factor indicates that multicollinearity should be a problem in our results we conclude that there is an intervening mechanism between ROE and Tobin’s Q and it leads to one of the measures being more effective than the other. Thereby we accept hypothesis

**H4: There is no relationship between CFP and CSR**

Since ROE did not have a significant relationship it strengthens the no relationship theory. However, Tobin’s Q did have a significant relationship and as the hypothesis is worded we can conclude that there indeed is a relationship between CFP and CSR, provided we use Tobin’s Q as a measure. Thereby we dismiss hypothesis 4.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Hypothesis Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis I</strong></td>
<td>Positive Relationship</td>
</tr>
<tr>
<td></td>
<td>Negative Relationship</td>
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<tr>
<td><strong>Hypothesis II</strong></td>
<td>Positive Relationship</td>
</tr>
<tr>
<td></td>
<td>Negative Relationship</td>
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<tr>
<td><strong>Hypothesis III</strong></td>
<td>Intervening effect</td>
</tr>
<tr>
<td></td>
<td>No Intervening effect</td>
</tr>
<tr>
<td><strong>Hypothesis IV</strong></td>
<td>No Relationship</td>
</tr>
</tbody>
</table>

*Table 7: Summary of hypothesis*
5. Discussion and conclusions

In this study we have investigated the relation between corporate social responsibility and corporate financial performance. Our paper was motivated by lack of consensus in previous similar research. We have attempted to rectify this inconsistency by offering an alternative answer related to the use of financial measures. We constructed a four-step regression model in order to see the impact the control variables have on the CSR-CFP relationship. To summarize our findings from the different steps: the control variable “size” is crucial in order to determine the relationship, seeing as the coefficient of determination increased dramatically when size was included (see model 2 in respective regression). Furthermore, when size is introduced into the model the intercept changes drastically to account for the big impact size has on CSR. Risk and market-to-book control variables varied between significance and insignificance, meaning that, we cannot dismiss any study that has not included these particular variables but their inclusion also led to a higher adjusted-R² so we would argue that they had a positive impact on the regression model (see model 3 in respective regression). Lastly we conclude that introducing industry in the regression varied a lot depending on the industry. Still, seeing as the R²-value increased quite considerably, we can at least conclude that our industry classification was robust.

This thesis has attempted to replicate the most common and logical methods used in previous studies. These studies typically have a measure of CSR that they attempt to link to a financial measure with some sort of statistical tool. However, prior research show vast variances when it comes to methodologically choices with respect to: market researched, CSR measure, CFP measure and control variables. Although, when our research method is used we show a robust positive result with the market-based financial measure, at least for the sample used in this paper. These results can be explained by a number of reasons: firstly, the Nordic market is especially prone to CSR-investment and circumstances show that in this particular market the results are positive. Still, López et al (2007) researched the European market and found a negative relationship, leaving doubt that our choice of market is the deciding reason for the positive results. Secondly, our measure of CSR is robust and accurately reflects CSR. Thirdly, using a sample of only public companies is necessary since the market-based financial side is the deciding factor for a positive CSR-CFP relationship. This assumption is strengthened by Mallin et al (2014) found in their study that companies listed on the stock exchange generally had a higher degree of CSR-investment compared to unlisted companies. Lastly, including the control variables used in this paper is necessary to correctly isolate the relationship. This can be determined from our four-step regression model, which at least highlighted the necessity of including size.

The differences of markets and measures have been extensively discussed in previous studies as playing a major role in determining how the CSR-CFP relationship looks like. We contribute to the methodological discussion by arguing for the importance of distinguishing the effects of accounting and market-based measures have. This also means that a distinction
needs to be made between public and private companies. We have given empirical evidence that when Tobin’s Q is included in the regression model the effects of ROE are greatly diminished and we would argue that the reason return on equity showed a significant relation with CSR in regression 1 is because of its correlation with Tobin’s Q. If we had not accounted for the effects between the financial measures it would lead us to accept the notion that ROE has a positive relationship with CSR (see regression 1), instead of not having a significant impact (see regression 3).

Since we highlighted the importance of controlling for size we can conclude that any previous study that has not accounted for the size may lead to questionable results. Out of the previous studies included in this paper only one study had not controlled for the size of firms, namely Aupperle et al. (1985) study. The exclusion of size from the study of Aupperle et al. (1985) may be a reason they found a negative relationship, contradictory to this study’s results. Akpinar et al. (2008) and Choi et al. (2010) argued that when equal-weighted rating was used the CSR-CFP relationship was insignificant. This thesis has utilized an equal-weighted rating, however, we have accounted for different stakeholders by including industries as a control variable. Since our results were mostly significant we would argue that it is possible to include industries to capture the needs of different stakeholders. Orlitzky et al. (2003) argue that CSR is higher correlated with accounting-based measures than with market-based. This is true when the variables are measured in a vacuum (see correlation analysis), however, when important factors are controlled for the results show the opposite, that the market-based measure have a higher correlation with CSR. In this study we argue that the sole reasons accounting-based measures are significant is because of their correlation to the market, thereby we criticize previous studies for simplifying the relationship between financial measures and not taking into account how these measures relates with each other. These findings imply that the previous studies that have not accounted for the stock market (Aupperle et al., 1985; Lev et al., 2008; López et al., 2007; Mallin et al., 2014; McWilliams and Siegel, 2000; Waddock and Graves, 1997) will show inconsistent results since the underlying variable for the positive CSR-CFP relationship stems from the market based financial measure, not the accounting based.

The stakeholder theory provides a theoretical explanation between CFP and CSR. The results of this paper provides support for the idea that firms needs to adhere to all interested parties of the corporation. In any case, our findings do not necessarily support the notion that consumers let their perception of the company alter their spending habits, since we could not find a significant relationship between the accounting-based measure and CSR. Our finding support the idea that investors take the sustainability aspect into account when making investment decisions. As previously stated, green investing has been on the rise in Europe the past decade and the Nordic market is characterized by sustainability principles.

This study has not statistically differentiated between the directions of the relationship, i.e. slack resource theory or good management theory. Although, seeing as we have shown that CSR is related to performing well on the stock exchange some explanations are more probable than
others. The good management theory is more suitable to explain why the stock market would react positively to CSR. It has been suggested that social performance makes a firm attractive since investors value socially and aware management because they believe it gives an indication that the management will also possess the necessary skills to run a superior company. Additionally, social disclosure gives information about the management’s competence which complements the financial information disclosed.

To sum up, our study explains the inconsistencies of extant CSR-CFP research from a methodological perspective. Methodological problems include the exclusion of necessary control variables to isolate the relationship, not considering the correlation between the studied financial measures and varying definition of what constitutes CSR.

This study found a positive relationship between CSR and CFP. However, with the amount of intangible factors a concept such as corporate responsibility leaves, making the relationship illusive and one difficult to measure. Furthermore, CSR and financial performance is affected by circumstances outside of an organization’s control such as conjuncture fluctuations (i.e. 2008 financial crisis) and changing regulatory environment (i.e. GRI guidelines changes). It is possible that these macroeconomic factors play an important role, this study has a relative long time-perspective and should thus minimize any sudden changes, however statistical analysis of these phenomenon’s is a topic of future research. In this paper we highlighted the importance of the stock market when conducting research on the CSR-CFP relationship, however future research is required to deduce if these findings are concrete or merely circumstantial.

Acknowledgments

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**Database**


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**Appendices**

**Appendix A - Thomson Reuters CSR measure**
What ASSET4 CSR measure is based on

To explain how CSR is defined this thesis we adopt idea from the works of Carroll (1991). Originally businesses were created to fulfill the demand of goods and services but as businesses increased and grew larger as did ideas of profit maximization. This led to increased consideration for the firms external stockholders opinions. With this in mind Carroll formulated a four step pyramid with different levels of responsibility. The first step of the pyramid is that the firm must retain its responsibility towards the shareholders economic interests. However, a business must also keep in mind the firms stakeholder and allocate resources sufficiently to keep these satisfied with the corporation’s decisions. The second level of the pyramid is legal responsibility. The corporation is expected to reach their economic objectives within the boundaries of the law in which the firm operates. Further Carroll makes a distinction between legal responsibilities and ethical responsibilities. A firm might follow a set of laws but still not act ethically from a social aspect. The last aspect of the pyramid is that the firm should be making philanthropic benefits to society as a whole, and thus being a “good corporate citizen”. (Carroll, 1991)

Appendix B - Equations for respective regressions
Regression 1

\[ CSR_{i,t} = \beta_0 + \beta_1 (ROE)_{i,t} + \beta_2 (RISK)_{i,t} + \beta_3 \log (SIZE)_{i,t} + B_4 (MARKET TO BOOK)_{i,t} + \beta_5 (INDUSTRY)_{i,t} + \epsilon_{i,t} \]

CSR as the dependent variable

\(CSR_{i,t}\): CSR-score for the \(i\):th firm in year \(t\).

\(\beta_0\): Intercept

\(ROE_{i,t}\): ROE for the \(i\):th firm in year \(t\).

\(RISK_{i,t}\): Total debt to assets ratio for the \(i\):th firm in year \(t\).

\(\log (SIZE)_{i,t}\): Logarithm of total assets for the \(i\):th firm in year \(t\).

\(MARKET TO BOOK_{i,t}\): Market value divided by the book value for the \(i\):th firm in year \(t\).

\(INDUSTRY_{i,t}\): Effect of the examined Industry for the \(i\):th firm in year \(t\).

\(\epsilon_{i,t}\): Error term for the \(i\):th in the examined year

Regression 2

\[ CSR_{i,t} = \beta_0 + \beta_1 (TOBIN'S Q)_{i,t} + \beta_2 (RISK)_{i,t} + \beta_3 \log (SIZE)_{i,t} + B_4 (MARKET TO BOOK)_{i,t} + \beta_5 (INDUSTRY)_{i,t} + \epsilon_{i,t} \]

CSR as the dependent variable

\(CSR_{i,t}\): CSR-score for the \(i\):th firm in year \(t\).

\(\beta_0\): Intercept

\(TOBIN'S Q_{i,t}\): Market capitalization plus total liabilities divided by the book value of the total assets for the \(i\):th firm in year \(t\).

\(RISK_{i,t}\): Total debt to assets ratio for the \(i\):th firm in year \(t\).

\(\log (SIZE)_{i,t}\): Logarithm of total assets for the \(i\):th firm in year \(t\).

\(MARKET TO BOOK_{i,t}\): Market value divided by the book value for the \(i\):th firm in year \(t\).

\(INDUSTRY_{i,t}\): Effect of the examined Industry for the \(i\):th firm in year \(t\).

\(\epsilon_{i,t}\): Error term for the \(i\):th in the examined year

Regression 3

\[ CSR_{i,t} = \beta_0 + \beta_1 (ROE)_{i,t} + \beta_2 (TOBIN'S Q)_{i,t} + \beta_3 (RISK)_{i,t} + \beta_4 \log (SIZE)_{i,t} + B_5 (MARKET TO BOOK)_{i,t} + \beta_6 (INDUSTRY)_{i,t} + \epsilon_{i,t} \]

CSR as the dependent variable

\(CSR_{i,t}\): CSR-score for the \(i\):th firm in year \(t\).

\(\beta_0\): Intercept

\(ROE_{i,t}\): ROE for the \(i\):th firm in year \(t\).

\(TOBIN'S Q_{i,t}\): Market capitalization plus total liabilities divided by the book value of the total assets for the \(i\):th firm in year \(t\).

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\(\epsilon_{i,t}\): Error term for the \(i\):th in the examined year.