STOCKHOLM SCHOOL OF ECONOMICS
Thesis in Accounting and Financial Management

Earnings management and CSR

A study on Swedish listed companies

Dimitri Yakupov | 23069
23069@student.hhs.se

Julia Kilnes Spångfelt | 23212
23212@student.hhs.se

Date: December 2017

Abstract

In this study, we investigate the use of earnings management and its relationship with companies' CSR policies. Three accrual-based models are used to detect earnings management among Swedish listed companies during the period 2005-2015. Our findings show an inverse relationship between earnings management and the strength of CSR policies, suggesting that companies with strong CSR policies are driven by transparency and responsibility concerns, which also translate into their quality of earnings. Our findings are consistent with previous research over time, implying that the recent popularity increase of CSR has not altered the earnings management and CSR relationship.

Course Details

Tutor: Mariya N. Ivanova

3350 – Thesis in Accounting and Financial Management

Keywords

Earnings management, Discretionary accruals, Quality of earnings, CSR

Table of Contents

1. Introduction

Financial reporting plays an integral role in a corporation, for example in capital raisings, compliance with laws and financial regulation, contractual obligations and as base for performance-based compensation. As such, the financial statements need to be reliable, usable and valid. IFRS allows for a certain level of discretion in many instances: likelihood of revenue streams, choice of discount rates when assessing fair value, inventory valuation, estimates on warranty liabilities and many others (IAS Plus, 2017). Discretion can however be misused by management to disguise a corporation's actual financial performance in its reporting – commonly referred to as accrual-based earnings management. Earnings management can be detrimental to a firm, as it may lead to increased media pressure, misunderstanding from customers and suppliers, and increased shareholder activism (Zahra et al, 2005) may lead to the decimation of a company's reputation capital (Fombrun et al, 2000). Even the suspicion of earnings management has proven to have an adverse effect on both debt (DeFond and Jiambalvo, 1994) and equity (Dechow and Sweeney, 1996) capital markets.

With accountability and transparency being at the heart of corporate social responsibility (CSR), earnings management becomes an integral issue. Historically, research on CSR has focused on its relationship with financial performance, with only some attention given to its relationship with earnings management. Our question is whether companies engaging in earnings management compensate by being CSR friendly as means of misdirection, or if they do not engage in CSR at all?

1.1. Purpose

Despite its leadership in CSR and importance to the Scandinavian and European markets, Sweden has been largely neglected in previous studies. Furthermore, from 2017 and onwards, large Swedish companies will be required to report on sustainability issues. The reporting will not be externally audited, but will be required to state initiatives in the areas such as the environment, human rights, and anti-corruption, with the aim to increase transparency and comparability of corporations' CSR engagements. Companies that have more than 250 employees, a balance sheet exceeding 175 million SEK and/or net revenues above 350 million SEK for two consecutive years will be affected by the new law. The law is expected to affect approximately 1,600 companies (Government of Sweden, 2016).

With both public and legislative focus on the issue, the aim of our study is to provide empirical evidence that can be used as guidance in regulatory issues and future policies. For example, any incentives aimed at improving social responsibility may in fact have an unintended effect, where legislators encourage CSR engagements that in fact have an unwanted effect on a company's quality of earnings, leading to multiple negative effects discussed later. The argument for those benefits and the newly imposed regulation may also be strengthened, if earnings management and CSR are found to be negatively correlated.

Hopefully, we will also be able to compare the results of our study ex-post the implementation of the new legislation and its effect on profitability, valuation and prevalence of earnings management among Swedish companies, given the increased mandatory reporting focus on CSR.

1.2. Contribution

By providing recent evidence on the relationship between earnings management and CSR in Sweden, a leader in CSR reporting (RobecoSAM, 2017), our study aims to not only capture the turbulent global market performance since the shift of the millennium, but also address the significant increase in CSR reporting during the same period (KPMG, 2017). With wider acceptance of CSR and ESG reporting, recent data may provide a different outcome than previous studies. Chih et al include some Swedish companies in their international sample, but the study is based on 15-year-old data and does not specify if the hypotheses are accepted/rejected per country. Hence, we believe that our thesis will contribute to literature by using recent data in a new reporting and geographical context (Chih et al, 2008).

1.3. Delimitation

We have chosen to limit our study to listed Swedish companies, using data on constituents of the OMX Large Cap list from 2005 to 2015. The geographical delimitation is set in part by our desired contribution to the literature, and in part to reduce any possible bias as result of varying regulations across countries. We have also chosen to limit our study to accrual-based earnings management and hence, not look at real earnings management.

2. Theory and previous research

In this section, we will present some of the possible underlying reasons for why companies engage in earnings management, as well as theory and previous research in the field of earnings management and CSR.

2.1. Agency theory

According to Eisenhardt, an agency problem occurs when cooperating parties have different goals and visions. Specifically, agency theory is directed at the relationship where one party (the principal) delegates work to another (the agent), who then performs the work. There are two problems that can occur in agency relationships. The first is a conflict in principal and agent goals and desires or difficulty in verification of what the agent is doing. The second is that the principal and agent can have different risk preferences and hence disagree on risk sharing (Eisenhardt, 1989).

When applied to a company setting, the agency problem can take the shape of management acting in its best interest instead of the company's. People, organizations and information are the factors that affect what makes the most efficient principal agent relationship.

Most frequently, agency theory has been applied to compensation, acquisition and diversification strategies, board relationships, ownership and financing structures, vertical integration, and innovation (Eisenhardt, 1989). Overall, the domain of agency theory are relationships that mirror the basic agency structure of a principal and an agent who are engaged in cooperative behavior, but have differing goals and differing attitudes toward risk.

Joseph Heath states that one of the central tasks of business ethics is dependent on finding the nature of violated moral obligations and agency theory is the first place to look. Greater attention should also be paid to agency relations and the potential moral hazard problems they can lead to, in order to avoid scandals in the future (Heath, 2009). Agency theory is commonly used as a tool to analyze relations within a company to determine if the use of agency theory is the reason behind company malpractice.

2.2. Earnings management

"Earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholder about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers."

According to Healy and Wahlen, financial reporting is a way to separate the best-performing firms from poor performers and to provide valuable information to stakeholders. Hence, standards add value if they allow financial statements to provide an accurate portrayal of firm position and performance in a credible way (Healy and Wahlen, 1999). However, overemphasizing credibility can lead to a compromise in relevance and timeliness and relevance without credibility will lead to skepticism by financial reporting users.

For financial reports to provide managers' private information on firm performance, standards allow for judgement in financial reporting. This includes knowledge about the business, selection of accounting method and making estimates. Since auditing is imperfect, this type of management judgement also creates opportunities for earnings management. Earnings management occurs when managers choose reporting methods that do not fully reflect the company's underlying earnings.

Companies may engage in earnings management to affect the outcome of contractual engagements with external stakeholders most commonly in debt covenants, where companies manage their earnings to appear more profitable (Healy and Wahlen, 1999). On the other end of the spectrum, companies can manage their earnings downwards and appear less profitable in the eyes of antitrust authorities, if they are under regulatory pressure regarding price controls and market shares (Watts and Zimmerman, 1978).

On an internal level, managers may manage their earnings to meet budget goals (Merchant, 1990) and to increase their performance-based compensation (Guidry et al, 1999) as well as improving their job security (DeAngelo, 1988).

2.3. CSR

"The social responsibility of business encompasses the economic, legal, ethical and discretionary expectations that society has on organizations."

Based on Carroll's definition above, a company with strong CSR policies will aim to report profits in a lawful, ethical way and act as a good corporate citizen (Carroll, 1991).

CSR has evolved from focusing primarily on businesses' responsibilities to society and performing good deeds during the 1950's; to being an important strategic issue for companies. Companies such as H&M and Ericsson, among many others, publish extensive CSR reports together with the financial statements, covering the company's impact on the environment and its employees, as well as stating long-term sustainability goals (H&M Group, 2017; Ericsson, 2017). The focus of CSR has shifted away from being ethics oriented to being more performance oriented, with the relationship between CSR and corporate financial performance having changed over time from exclusive to having a tight connection. Stakeholder theory has also become more centralized in CSR research. In terms of organizational environments companies have experienced negative impacts which has led to companies being less concerned with individual prosperity in favor of environmental concerns and their own sustainability context. Furthermore, in recent years the CSR literature has emphasized the link between CSR and corporate financial success (Moura-Leite, 2011).

According to the Financial Times (2017) dictionary, environmental, social and governance (ESG) is "a generic term used in capital markets and used by investors to evaluate corporate behavior and to determine the future financial performance of companies". The factors are a combination of non-financial performance indicators that include ethical, sustainable and corporate governance issues. CSR is "a business approach that contributes to sustainable development by delivering economic, social and environmental benefits for all stakeholders". Compared to ESG factors, CSR is a broad concept that addresses many topics but with a common purpose of driving change towards sustainability. Throughout this paper we will use the ESG and CSR concepts interchangeably.

Providing proper external reporting on ESG factors is also critical, as it has been shown to be beneficial to a company, which leads to lower capital constraints (Cheng et al, 2014) and cost of capital (Dhaliwal et al, 2011). Despite issues in comparability and reliability, Amel-Zadeh and Serafiem found that investors, more-so in Europe than in the US, were likely to consider ESG data as material to assessing investment performance – primarily when assessing regulatory, reputational and legal risk, as well as management quality. Investors considered ESG data such as anti-corruption, leadership, climate impact as most material, with European

investors putting a premium on customer and employee data, compared to US investors. This data is then used to engage with the potential investment target, as input for valuation models and as a negative screening criteria (screening based on no ESG-disclosure/worst-performers) (Amel-Zadeh and Serafiem, 2017).

There are various reasons for why companies engage in CSR. Societal belief in a company's moral obligation, stewardship of the environment and community as necessitated by the aim for stability, or as part of its license to operate and reputational benefits, as identified by Porter and Kramer. This is a positive take on CSR – one of the two prevailing views in the field – where the company expands its view beyond value-maximization for the shareholders and adapts a stakeholder view (Porter and Kramer, 2006). Gregory and Whittaker argue that CSR activities are valued positively by the markets (Gregory and Whittaker, 2013).

According to Milton Friedman (1962), "there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game…" As such, costly CSR engagements shift away attention and resources from a firm's core operations, which can be argued to have a negative impact on value.

Williamson (1993), Jensen (2001) and Tirole (2001) also argue that agency problems are aggravated when managers act on behalf of non-shareholder stakeholders, increasing the cost and time of decision making and mutual distrust among the stakeholder groups. Managers under media, regulatory and/or capital market pressure, may engage in CSR to obtain favorable coverage and thus lower the probability of them being replaced for bad performance (McWilliams et al, 2006). Managers may also engage in CSR activities to satisfy internal parties – by improving morale or pursuing their personal moral imperative (Moser and Martin, 2012). Ferrell et al assessed the conflict between the positive (good governance) and negative (agency problem) views on CSR and concluded that positive CSR performance corresponded well with disciplined governance (measured by tighter cash constraints) and outweighed the suggested negative aspects of CSR, resulting in a net positive effect on shareholder wealth (Ferrell et al, 2016).

2.4. Earnings management and CSR

According to Chih et al, scandals and accusations of accounting fraud in companies, based on forms of earnings management, indicate a strong decay in business ethics (Chih et al, 2008). The matter of whether CSR measures mitigate or increase the extent of earnings management had, prior to Chih's study, not been documented or globally tested.

Managers have to a greater extent been using discretionary measures to change outside perception of their company's financial performance via reporting. The accounting scandals associated with this type of behavior have been scrutinized for decaying business moral and decaying corporate social responsibility. Leaders in different fields have been promoting a switch from a sole profit-focus in companies to focusing on decreasing negative effects on employees, society and environment. Financial transparency and accountability are of equal importance to shareholders and employees and as CSR has now come to include them as principles, information advantage abuse by managers over outside parties could come to decrease. Given the new principles of financial transparency and accountability, information regarding the connection between earnings management and CSR is more important than ever.

Previous research presents four different hypotheses that cover four different views on the relationship between earnings management and CSR in companies (Chih et al, 2008). According to Shleifer, earnings management is often considered unethical and therefore ought to be less frequent in companies that are CSR-friendly. Furthermore, CSR promotes transparency which decreases leeway to manage earnings. Gelb and Strawser also find that financial reports are more extensive and informative for CSR-friendly firms, than in companies that are less focused on being socially responsible (Gelb and Strawser, 2001).

In contrast, views have risen that managers may want to use earnings smoothing to lower the volatility of earnings which provides uninformed investors with more relevant information. This implies a positive relationship between CSR and earnings management and that firms that are CSR-friendly may engage in earnings smoothing to ensure predictability in reported earnings (Chih et al, 2008).

Multiple objectives can according to Jensen be the same as having no objective. The absence of a clear criteria for evaluation may lead to managers pursuing their own agenda at the cost

of what is best for the firm. These diversion interests subsequently affect firm accounting earnings which could expose firm individuals to disciplinary consequences (Jensen, 2001). This is turn becomes a reason for insiders to hide real earnings to decrease the chance of outsiders interfering. This can manifest itself as CSR engagement to lower investor scrutiny, while at the same time decreasing the probability of a company's products being boycotted (Prior, 2008). CSR could increase agency problems which incentivize insiders even more to hide real performance from outsiders. Conclusively, firms that are CSR-friendly may engage in earnings management since having multiple objectives may lead to diversion activities (Chih et al, 2008).

Finally, another view is that CSR may be unrelated to earnings management. Different views amongst authors exist regarding the proclaimed relationship that an increase in accounting scandals directly imply a decline in business ethics and that it might instead be a product of vast incentives. Based on this argument, deficient CSR practices might be a direct result of institutional factors and not due to earnings management (Coffee, 2003).

2.5. Development of accrual-based models

The purpose of using accrual-based models to measure earnings management is to isolate the discretionary accruals which is the part of total accruals that comes from managers' management of earnings. A model is first used to determine the size of the non-discretionary accruals which then is subtracted from the estimated level of total accruals.
See Equations 1 and 2 below:

$$\text{Total accruals} = \text{Net income} - \text{Cash flow from operations} \quad (1)$$

$$\text{Discretionary accruals} = \text{Total accruals} - \text{Non-discretionary accruals} \quad (2)$$

One of the first accrual-based models was presented by Healy in 1985 based on the assumption that total accruals are discretionary. This model was improved by DeAngelo in 1988, when she used a non-discretionary component of total accruals which was equal to previous year's total accruals. The assumption is erroneous, as discretionary and non-discretionary accruals were not determined for the preceding year, in effect assuming no historic earnings management. One of the most prominent accrual-based models is the Jones model. In 1991, Jones contributed to earnings management research by including changes in

companies' financial settings as a parameter, such as lagged total assets, changes in revenue and property, plant and equipment for individual firms in the regression model. In 1995, Dechow et al removed difference in receivables from differences in revenue in the model, since the proportions of the relationship between total sales and total credit sales likely reflect earnings management. As this leads to even more reliable results, the Modified Jones model is one of the most used accrual-based models to measure earnings management.

In 1997, Burgstahler and Dichev presented a research study on earnings management where they concluded that firms manage earnings to avoid reporting earnings decreases and losses. According to Burgstahler and Dichev, managers also use cash flow from operations and changes from working capital to boost earnings. If managers changed operational activities or decisions to meet specific earnings targets, that is referred to as real earnings management.

Dechow and Dichev (2002), initially suggested to gauge the earnings quality based on the realization of cash flows in the current and adjacent time periods, with imprecision signaling management of earnings. The original purpose of the Jones model was to separate discretionary from non-discretionary accruals and measure earnings management by assessing the latter as proportion of total accruals. The Jones model assumed that accruals reacted only to current changes in sales (not in adjacent periods), reflecting a part of non-discretionary accruals as discretionary. The Dechow and Dichev model however, has difficulties managing strong variation in sales. By combining elements from both models, McNichols (2002) diminished the individual models' weaknesses and increases the explanatory power significantly (Kighir et al, 2014).

2.6. Previous research

Table 1 – Previous research

Author (Year)	Data	Focus of study	EM measure	Model	Result
Prior and Tribó (2008)	593 firm observations	Relationship between earnings management and CSR	Income smoothing	Kothari (2005)	Positive impact of earnings management practices on CSR. Combination of EM and CSR has a negative impact on financial performance.
Chih et al (2008)	1,653 firm observations	Does CSR mitigate or increase the extent of earnings management?	Earnings smoothing, earnings aggressiveness and earnings losses and decreases avoidance	Bhattacharya (2003), Leuz (2002) & Burgstahler and Dichev (2007)	Greater commitment to CSR mitigates the extent of earnings smoothing, that of earnings losses and decreases avoidance is reduced, but the extent of earnings aggressiveness is increased.
Hong and Andersen (2011)	8,078 firm-year observations	Relationship between earnings management and CSR	Accruals quality	McNichols (2002)	Socially responsible firms have higher quality accruals and less activity-based EM, both of which impact financial reporting quality.
Kim et al (2012)	23,391 firm-year observations	Do firms that exhibit CSR behave in a responsible matter?	Earnings management	Dechow and Dichev (2002) & Kothari (2005)	CSR firms are less likely to engage in aggressive earnings management.
Scholtens (2012)	139 firm observations	Inverse relationships between CSR and earnings management; as well as Investor protection and earnings management	Earnings smoothing and earnings aggressiveness	Dechow (2002) & Bhattacharya (2003)	Asian firms with relatively good CSR are engaged significantly less with earnings management. Investor protection also is negatively associated with earnings management.

3. Method

In this section, we present our hypotheses, methodology employed by previous studies and our selected methodology.

3.1. Hypotheses

If a company has a strong CSR policy and does not engage in earnings management, CSR can be considered as a mindset embodied in all aspects of a company's activities. Thus, it would come as no surprise that a company does not try to disguise its financial performance in its statements. Despite good CSR, a company may engage in earnings management, suggesting that CSR may be used as a diversion. This relationship can exist as CSR-friendly companies prefer to smooth their earnings, or because earnings management and CSR are used simultaneously but independently, to satisfy various internal and external stakeholders.

Various reasons can lie behind the lack of earnings management and low/absent CSR engagement – a company may be too small to consider CSR reporting as an important issue, or the company may be in an industry where CSR is not considered important. Lack of earnings management may point towards unwillingness or inability to engage in such activities for various reasons (e.g. pressure from public opinion/stakeholders), or lack of skill to do so, independently of intentions. A presence of one, but not the other, is also possible and would depend on the company's individual priorities and management incentives.

Our null hypothesis is that there is no relationship between the use of earnings management and companies' CSR policies. This in turn implies that either companies decide on earnings management and CSR issues independently of each other, or that one/both issues are not significant for the firm.

H0: No relationship between earnings management and CSR

The first hypothesis argues that earnings management and CSR have a negative relationship and hence that a company that engages in earnings management is less likely to have high CSR levels.

H1: Negative relationship between earnings management and CSR

The second hypothesis argues that earnings management and CSR have a positive relationship and hence that a company that engages in earnings management is more likely to have high CSR levels.

H2: Positive relationship between earnings management and CSR

3.2. Methodology employed by previous studies

3.2.1. Earnings management

Chih et al use three different measures of earnings management. Earnings smoothing is measured as the difference between total accruals and operating cash flows, as described by Dechow et al (2012) and Leuz et al (2003). Earnings aggressiveness is measured in accordance to Bhattacharya et al (2003), with current accruals divided by a lagged total asset component. Earnings loss and decrease avoidance is measured in accordance with Burgstahler and Dichev (1997), as the difference between actual and expected number of observations of low positive reported profits.

Hong and Andersen (2011) used the method described by Dechow and Dichev (2002), where accrual profits are compared to cash flows, with higher correlation indicating better quality of earnings, which in turn suggest that a company does not engage in earnings management (Chih et al, 2008). Prior and Tribó (2008) measure earnings management based on research by Jones (1991) and Dechow et al (1995), Kim et al (2012) measure discretionary accruals using the Modified Jones model (Dechow, 1995), as discussed in section 2.5. The study also examines the relationship between CSR and real earnings management, which is outside the scope of this thesis.

3.2.2. CSR

Previous research has employed various techniques in establishing a company's commitment to social responsibility. Chih et al (2008) deem companies to be socially responsible if they are constituents of the ethical indexes such as FTSE4Good (assigning CSR values of either 1 or 0), that have met the requirements for environmental, social, stakeholder and human right factors for inclusion. Hong and Andersen (2011) constructed their own measure of CSR commitment, using the Kinder Lydenburg and Domini (KLD) database with information on 3,000 listed companies in the U.S., each individually reviewed on their CSR initiatives, resulting in a list of strengths and concerns. Using data for the years 1995-2005 and weighting

CSR strengths against the concerns, the authors argued that a positive score indicated that a corporation was socially responsible. A score of zero or negative indicated that a company was not socially responsible. The authors used CSR as a dummy variable, akin to Chih et al (2008).

Prior and Tribó (2008) used data from the Sustainable Investment Research International Company (SiRi), that combines the data from multiple independent research institutes (with KLD among them). This results in company profiles exceeding 350 data points, covering topics such as environmental impact, human rights issues, community involvement and activities in controversial areas (e.g. tobacco, alcohol, arms). These data points are aggregated by SiRi analysts in a CSR score between 0 (worst) and 100 (best).

Kim et al use KLD data for the period 1991-2009 to construct a proprietary CSR score, calculated as total strengths less total concerns in KLD's five social categories. The final score is either negative or positive, resulting in a classification of companies as either CSR or non-CSR firms. The study also uses the inclusion in the Domini Social Index 400 (constructed by KLD) as an alternative measure of CSR – both approaches similar to Chih et al (Kim et al, 2012).

3.3. Selected methodology

3.3.1. Earnings management

As the selected CSR measure, discussed in detail in the following section, provides firm-year specific observations, certain limitations are set to the choice of earnings management models that we choose not to categorize in a binary CSR/non-CSR attribute.

First, Chih et al's first measure of earnings smoothing is not applicable, as it provides a firm-specific earnings management measure that is constant over time. The variables with annual observations are averaged over time, as they relate to institutional and investor protection characteristics considered to be constant over time. These characteristics are outside the scope of this thesis, and by taking the average of the annual observations of CSR, we believe that nuance will be lost.

Second, Chih et al's measure of earnings loss and decrease avoidance is also not applicable. The model in question measures earnings management by comparing the actual number of

observations of profits around the zero mark to the expected number of observations (i.e. the right side of the earnings distribution curve). Chih et al compare the difference in the distribution of earnings between two groups – CSR and non-CSR (Chih et al, 2008). As we refrain from making such a binary distinction, this model cannot be used. This also leads to the exclusion of the third model, as we believe that the study selected the three earnings management measures to complement each other. It is our opinion that the narrative strength of the results would be weakened by only including the earnings aggressiveness measure.

As such, we select three commonly used models that measure discretionary accruals, increases comparability and offers three different measures. The selected models are the Modified Jones model, based on Dechow et al (1995) and employed by Kim et al (2012) among others, the McNichols (2002) model used by Hong and Andersen (2011) and the Kothari model (2005), used by both Prior and Tribó (2008) and Kim et al (2012).

3.3.2. CSR

We choose to adapt a varied scale of CSR, akin to Prior and Tribó (2008), rather than a binary choice employed by the other highlighted articles. We believe that it is a more nuanced approach and will yield better results as well as avoiding the problem of a company going from non-CSR friendly to CSR friendly in one year, only by marginally improving their CSR rating and passing the threshold set by FTSE4Good or a proprietary model.

CSR measurement is based on the corporate sustainability percentile rankings provided by RobecoSAM, an investment specialist company with exclusive focus on sustainable investing. The rating is based on an annual voluntary questionnaire sent by RobecoSAM to over 3,400 companies with 80-120 questions, depending on the industry. Most of the questionnaire relates to industry-specific risks and opportunities and is the starting point of the evaluation. It touches upon the economic, environmental and social dimensions, containing between 6-10 criteria each, that in turn contain between 2-10 questions. The criteria are then valued between 0-100 and assigned a weight, decided by the specific industry (e.g. the environmental dimension is of bigger importance for Utilities and Energy sectors, compared to Financials).

RobecoSAM assesses the answers and evaluates them based on whether the company is aware of the sustainability issues in its sector and whether it implements a strategy to deal with them. It assesses the company's implementation, KPI measurement and validation and

transparency of these strategies. To address the self-reporting bias, RobecoSAM compares the answers to official statements and corporate publications as well as media coverage (RobecoSAM, 2016). We use RobecoSAM's ESG rating as an indicator of the strength and extent of a company's CSR policies and engagements.

3.4. Models and variables

3.4.1. Modified Jones model

Specified by Dechow et al (2005), the Modified Jones model is a reiteration of the original model by Jones (1991) and relaxes the assumption that revenue is fully non-discretionary, as companies can in fact choose to recognize revenue more aggressively. The original purpose of the Jones model was to separate discretionary from non-discretionary accruals and measure earnings management by assessing the latter as proportion of total accruals. The adjustment to the original model accounts for the change in receivables when assessing change in revenues and implicitly assumes that all changes in credit sales are related to earnings management. The model is specified below in Table 2.

Table 2 – Modified Jones model

$$\frac{TA_{it}}{A_{it-1}} = \beta_{i1}\frac{1}{A_{it-1}} + \beta_{i2}\frac{(\Delta Revenue_{it} - \Delta AccRec_{it})}{A_{it-1}} + \beta_{i3}\frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it}$$

Where:

$\frac{TA_{it}}{A_{it-1}}$	$= \frac{(\Delta CurrAss_t - \Delta Cash_t) - \Delta CurrLia_t - D\&A_t}{A_{it-1}}$ Total accruals for company *i* during period *t*, scaled by lagged total assets, with the variables referring to Current Assets, Cash & Cash Equivalents, Current Liabilities and Depreciation & Amortization expense, respectively.
$\frac{(\Delta Revenue_{it} - \Delta AccRec_{it})}{A_{it-1}}$	Change in revenue less change in receivables for company *i* during year *t*, scaled by lagged total assets.
$\frac{PPE_{it}}{A_{it-1}}$	Gross property, plant & equipment for company *i* during year *t*, scaled by lagged total assets.
$\beta_{i1}; \beta_{i2}; \beta_{i3}$	Firm-specific parameters calculated by OLS regression.
ε_{it}	Firm-specific residual.

3.4.2. McNichols model

The McNichols model (2002) is a development of the Dechow and Dichev (2002) model that is employed by Hong and Andersen (2011). It combines the Jones and Dechow and Dichev

(2002) models, removing misspecifications (residuals highly correlating with cash flows and changes in sales, respectively) and resulting in higher explanatory power. Accrual quality is measured as the standard deviation of the residual of the difference in changes in working capital and cash flows, change in revenue and PP&E, seen below in Table 3.

Table 3 – McNichols model

$$\frac{\Delta WC_{it}}{A_{it-1}} = \beta_0 + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \beta_4 \frac{\Delta Revenue_{it}}{A_{it-1}} + \beta_5 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it}$$

Where:

$\frac{\Delta WC_{it}}{A_{it-1}}$	$= \Delta AccRec_t + \Delta Inventory_t - \Delta AccPay_t - \Delta TaxPay_t + \Delta OtherAssets_t$ Where variables refer to Accounts receivable, Inventory, Accounts payable, Taxes payable and Other assets net of other liabilities, respectively, scaled by opening balance of total assets for company *i*.
CFO_{it-1} ; CFO_{it} ; CFO_{it+1}	Cash flow from operations in periods *t-1*, *t* and *t+1*.
$\frac{\Delta Revenue_{it}}{A_{it-1}}$	Change in revenue in period *t*, scaled by opening balance of total assets for company *i*.
$\frac{PPE_{it}}{A_{it-1}}$	Level of property, plant and equipment in period *t*, scaled by opening balance of total assets for company *i*.
ε_{it}	Firm-specific working capital residual.

3.4.3. Kothari model

Finally, the Kothari (2005) model is yet another development of the Jones model. Following findings that accruals correlate with performance, the model includes a control variable based on return on assets. This model is especially beneficial when assessing non-random samples and is a good complement to the other two models, despite leading to a higher number of false negative errors in certain conditions. The model is specified below in Table 4.

3.5. Main regression model

The hypotheses are tested using the model specification presented in Table 5 below separately with each of the three earnings management measures, as the result of the Modified Jones model, the McNichols model and the Kothari model. We use the absolute values of earnings management, specified by the *ABS* prefix, to indicate the presence of either income increasing or decreasing earnings management. The regressions are run with sector and year fixed

effects, and with the sample clustered at company level, to avoid heteroscedasticity issues that are more thoroughly discussed in section 6.1.6.

Table 4 – Kothari model

$$\frac{TA_{it}}{A_{it-1}} = \beta_{i1}\frac{1}{A_{it-1}} + \beta_{i2}\frac{\Delta Revenue_{it}}{A_{it-1}} + \beta_{i3}\frac{PPE_{it}}{A_{it-1}} + \beta_{i4}ROA_{it} + \varepsilon_{it}$$

Where:

$\frac{TA_{it}}{A_{it-1}}$	Total accruals for company *i* during period *t*, scaled by lagged total assets.
$\frac{\Delta Revenue_{it}}{A_{it-1}}$	Change in revenue for company *i* during year *t*, scaled by lagged total assets.
$\frac{PPE_{it}}{A_{it-1}}$	Gross property, plant & equipment for company *i* during year *t*, scaled by lagged total assets.
ROA_{it}	Return on assets for company *i* during year *t.*
$\beta_{i1}; \beta_{i2}; \beta_{i3}; \beta_{i4}$	Firm-specific parameters calculated by OLS regression.
ε_{it}	Firm-specific residual.

Table 5 – Main regression model

$$ABS\ ModJ_{it}\ \ or\ \ ABS\ McN_{it}\ \ or\ \ ABS\ Kot_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 Market/Book_{it} + \beta_3 Debt/Equity_{it} + \beta_4 RevenueGrowth_{it} + \beta_5 ROA_{it} + \beta_6 CFO_{it} + \beta_7 Ln(Assets)_{it} + \varepsilon_{it}$$

Where:

$ABS\ ModJ_{it}$ $ABS\ McN_{it}$ $ABS\ Kot_{it}$	Absolute measure of earnings management in period *t*, for company *i*, as specified by the Modified Jones, McNichols and Kothari model residuals.
CSR_{it}	ESG measure in period *t*, for company *i*, as provided by RobecoSAM.
$Market\text{-}to\text{-}Book_{it}$	Market-to-book value of equity in period *t*, for company *i.*
$Debt\text{-}to\text{-}Equity_{it}$	Debt-to-equity ratio in period *t*, for company *i.*
ROA_{it}	Return on assets in period *t*, for company *i.*
CFO_{it}	Cash flow from operations in period *t*, for company *I*, scaled by total assets.
$Ln(Assets)_{it}$	Natural logarithm of total assets in period *t*, for company *i.*
ε_{it}	Residual.

We have selected our control variables based on previous research within the earnings management and CSR fields, as well as the articles mentioned combining these two topics.

Market-to-Book ratio is the market value of equity divided by the book value of equity at the end of year *t*. Previous research has found a positive correlation with earnings management which is consistent with growth stocks being sensitive to changes in stock price. This is connected to the negative market reaction that is often associated with inconsistent earnings (Chih et al, 2008). We therefore expect this variable to indicate higher discretionary accruals.

Debt-to-Equity is the debt divided by the equity at the end of year *t*. Previous research has found a positive correlation with earnings management, consistent with the idea of firms that respond to debt financing terms tend to strategically report discretionary accruals (Chih et al, 2008). We therefore expect this variable to indicate higher discretionary accruals.

Revenue growth is the change in revenue from t_{-1} to *t*. Previous research has found a positive correlation with earnings management which is consistent with Chih's theory on earnings aggressiveness where high revenue growth means high earnings management (Chih et al, 2008). Furthermore, including revenue growth as a control variable reduces measurement errors in earnings management models (McNichols, 2002). We expect this variable to indicate higher discretionary accruals.

ROA is the net income in year *t* divided by the total assets at the beginning of year *t*. Previous research has found a positive correlation with earnings management which is consistent with the fact that discretionary accruals tend to be higher for firms that display unusually high profitability (Kothari et al, 2005). We therefore expect this variable to indicate higher discretionary accruals.

CFO is the cash flow from operations in year *t* scaled by total assets at the beginning of year *t*. Previous research has found a positive correlation with earnings management (Dechow and Dichev, 2002) which is consistent with cash flow from operations being an indicator of the level of earnings. We therefore expect this variable to indicate lower discretionary accruals.

Ln(Assets) is the natural logarithm of the value of total assets at the beginning of year *t*. It is used instead of the other common size indicator, the natural logarithm of a company's market value, to reduce model multicollinearity with the *Market-to-Book* variable. Previous research has found a positive correlation with earnings management (Roychowdhury, 2006). We therefore expect this variable to indicate higher discretionary accruals.

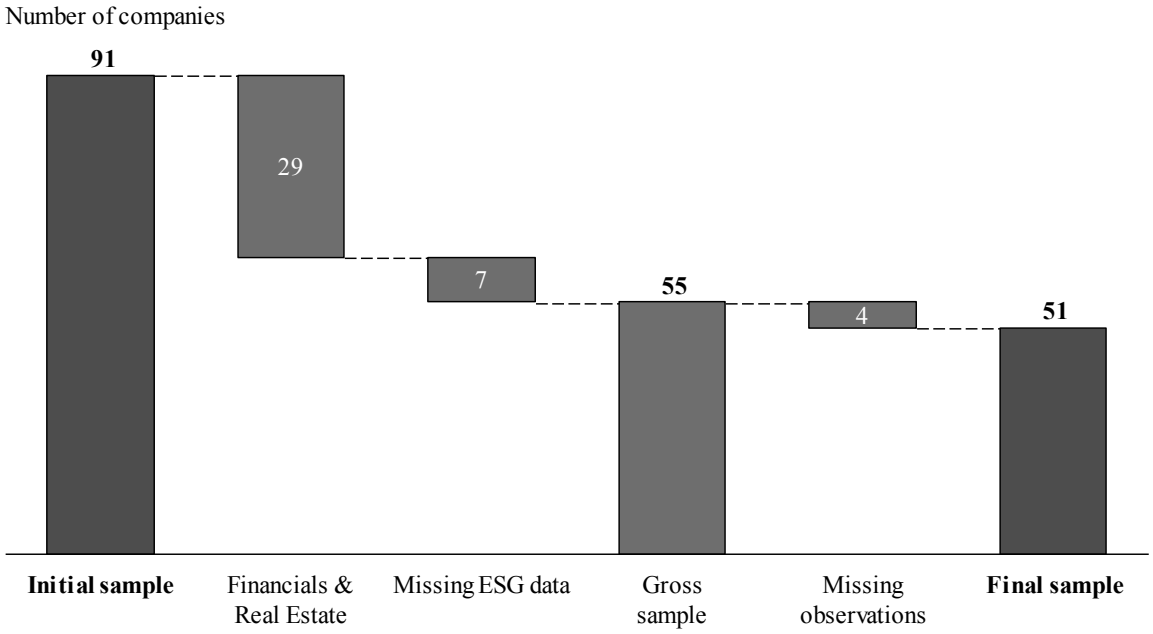
4. Empirical data

In the following section, we will present our data sample, the adjustments we made to the sample, as well as the descriptive statistics and Pearson correlations.

4.1. Sample selection

We have selected a sample of Swedish listed companies containing all constituents of the OMX Large Cap list to test our hypotheses regarding the relationship between earnings management and CSR, by estimating the firm's non-discretionary accruals. The selected period for the research question are the years 2005-2015, to provide a long enough period to reflect year-to-year changes and give us the opportunity to be as current as possible in our conclusions, as CSR is growing more and more important. Data is collected from the Bloomberg Terminal for Swedish listed firms for the period of 2004-2016 (to include data for t_{-1} and t_{+1} periods, necessary for certain components of the earnings management models), which included both financial statements, key figures, highlights and ESG rating. This initial dataset consisted of 91 companies, which was then narrowed down by removing companies not fulfilling the requirements presented in Figure 1.

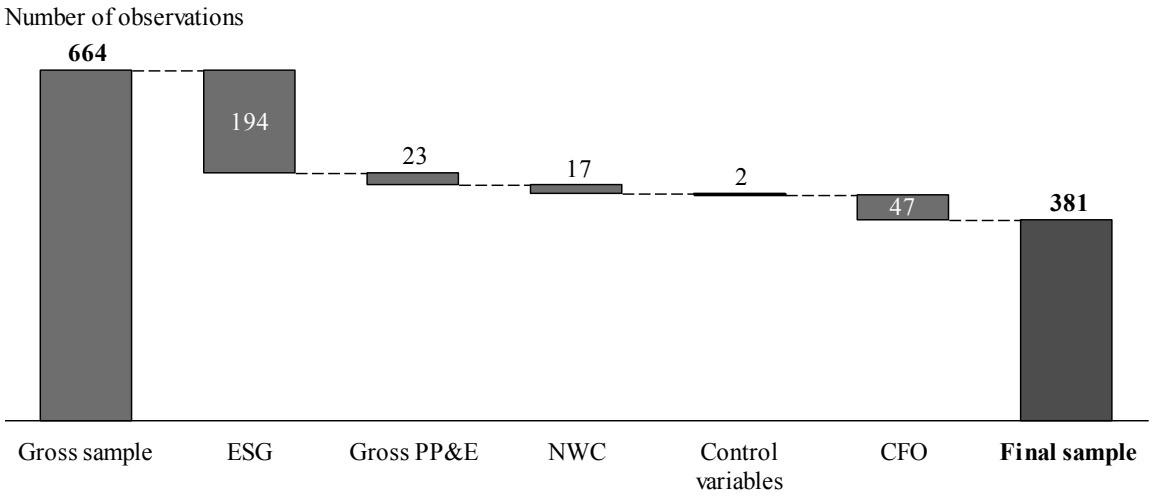
Figure 1 – Sample adjustment, by number of companies



First, we removed all financial and real estate companies, as the operations of these companies are not comparable to other industries – working capital is a source of cash for financial firms, as opposed to a use of cash among e.g. industrial companies. This reduced our sample by 29 companies. Second, companies that lacked ESG factor data were removed. This reduced our sample by 7 companies, resulting in a gross dataset consisting of 55 companies and 664 firm-year observations.

Finally, we removed companies that were missing certain significant data for ESG factors, earnings management and control variables. In total, we excluded 4 companies: 194 firm-year observations for insufficient ESG data, 23 firm-year observations for insufficient gross property, plant and equipment data, 17 firm-year observations for insufficient net working capital data, 2 firm-year observation for control variables and 47 firm-year observations for insufficient cash flow from operations data. This resulted in the final dataset of 51 companies and 381 firm-year observations, as illustrated by Figure 2.

Figure 2 – Removal of missing observations, by number of observations



The sample covers 8 sectors, as defined by Nasdaq OMX – Basic Materials, Consumer Goods, Consumer Services, Healthcare, Industrials, Oil & Gas, Technology and Telecom, presented in Table 6 below.

Table 6 - Overview of sector observations

Sector	*Number of companies*	*Number of observations*
Basic Materials	7	56
Consumer Goods	9	65
Consumer Services	5	40
Healthcare	4	30
Industrials	18	125
Oil & Gas	1	2
Technology	4	35
Telecom	3	28
Total	**51**	**381**

4.2. Descriptive statistics

The descriptive statistics for our chosen variables are presented in Table 7 below. To a large extent the descriptive measures for our chosen variables were in line with the descriptive statistics in other studies and only a few deviated from previous studies. *Market-to-Book* in our study showed a slightly lower standard deviation compared to other studies on the topic (Prior and Tribó, 2008). Our measure of *ESG* had both higher and lower standard deviation compared to Kim et al (2012) and Prior and Tribó (2008), respectively. This is most likely due to varying methods of ESG measurement.

Table 7 - Descriptive statistics for overall sample

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	381	0.0536	0.0634	0.0003	0.6774
ABS McN	381	0.0420	0.0467	0.0005	0.3340
ABS Kot	381	0.0532	0.0666	0.0002	0.7612
ESG	381	39.0670	14.1203	2.8807	73.9669
Market-to-Book	381	0.0022	0.0049	(0.0221)	0.0434
Debt-to-Equity	381	0.6831	2.8582	(20.1950)	32.8016
Revenue growth	381	0.1627	1.3157	(0.4508)	22.9013
ROA	381	0.0810	0.0837	(0.1200)	0.6838
CFO	381	0.1329	0.1407	(0.0767)	2.1440
Ln(Assets)	381	10.1241	1.3048	6.0923	12.8325

Regarding sector descriptive statistics, presented in Tables A1-A8 in the appendix; Basic Materials, Consumer Goods and Industrials have mean *ESG* levels higher than the overall sample. Consumer Goods and Oil & Gas sectors are also the only industries with lower-than-overall mean earnings management values for all three models.

4.3. Pearson correlations

The Pearson correlations between the dependent, explanatory and control variables are presented below in Table 8. As expected, the earnings management variables are positively correlated with each other, with the Modified Jones model and the Kothari model showing a very high correlation due to a similar structure. The *ESG* variable, is negatively correlated with all earnings management and control variables, except for *Ln(Assets)*, suggesting that larger firms also have higher CSR scores. All control variables are positively correlated with the earnings management variables, with exception of *Ln(Assets)* for all three earnings management measures and *Debt-to-Equity*, when using the earnings management measure provided by the McNichols model.

5. Results

In this section, we will present the results from the tests of our main hypotheses.

5.1. Overall results

Our H1 hypothesis states that a negative relationship between earnings management and CSR exists and our H2 hypothesis stated that a positive relationship between earnings management and CSR exists. Since our null hypothesis assumes no significant relationship between earnings management and CSR, both hypotheses were tested simultaneously. We used the absolute value of earnings management as our dependent variable, *ABS ModJ, ABS McN* and *ABS Kot*, presented in Table 9 below. The *ESG* coefficient is negative and significant at the 0.1 level with *ABS ModJ* and *ABS Kot* as the dependent variables in separate regressions, indicating that a company engaging in earnings management is less likely to have high CSR levels. Thus, we can reject the null and H2 hypotheses and confirm the H1 hypothesis of a negative relationship, using *ABS ModJ* and *ABS Kot* as the dependent variables. The adjusted R^2 are 0.48 and 0.52, respectively, suggesting a good fit. *Revenue growth* had a positive coefficient, significant on the 0.01 level in both levels. *ABS Kot* also had a significant *ROA* variable, with a positive coefficient at the 0.1 level. The other control variables, namely *Market-to-Book*, *Debt-to-Equity*, *CFO* and *Ln(Assets)* were insignificant all instances, as was *ROA* in the *ABS ModJ* regression.

The *ESG* variable had a negative coefficient in the regression with *ABS McN* as the dependent variable, but was insignificant and unable to reject the null hypothesis. The model had an adjusted R^2 of 0.34, a negative coefficient for the *Debt-to-Equity* variable significant at the 0.1 level, and a positive coefficient for the *Revenue growth* variable significant at the 0.01 level. The remaining control variables were insignificant.

5.2. Sector-specific results

The regressions were also performed individually for the seven sectors in our sample, namely Basic Materials, Consumer Goods, Consumer Services, Healthcare, Industrials, Technology and Telecom, presented below in Table 10 below. Oil & Gas, was not analyzed, as the sector only had two firm-year observations.

Table 8 - Pearson correlations

	ABS ModJ	*ABS McN*	*ABS Kot*	*ESG*	*Market-to-Book*	*Debt-to-Equity*	*Revenue growth*	*ROA*	*CFO*	*Ln(Assets)*
ABS ModJ	1.0000									
ABS McN	0.3750	1.0000								
ABS Kot	0.9873	0.3705	1.0000							
ESG	(0.1489)	(0.0841)	(0.1418)	1.0000						
Market-to-Book	0.1025	0.0167	0.0960	(0.2357)	1.0000					
Debt-to-Equity	0.0017	(0.0199)	0.0024	(0.0182)	0.6509	1.0000				
Revenue growth	0.6371	0.3064	0.6701	(0.0436)	0.0290	(0.0090)	1.0000			
ROA	0.2742	0.0786	0.2908	(0.0657)	0.2504	(0.0134)	0.2709	1.0000		
CFO	0.3965	0.1067	0.3998	(0.1204)	0.3026	(0.0093)	0.4159	0.7644	1.0000	
Ln(Assets)	(0.1526)	(0.0044)	(0.1404)	0.4080	(0.5563)	0.0131	(0.0338)	(0.1797)	(0.2738)	1.0000

Table 9 - Overall regressions

	Modified Jones				**McNichols**				**Kothari**			
	Coeff.	*Robust Std. Err.*	*t*	*P > |t|*	*Coeff.*	*Robust Std. Err.*	*t*	*P > |t|*	*Coeff.*	*Robust Std. Err.*	*t*	*P > |t|*
ESG	(0.0006)*	0.0003	(1.9900)	0.0520	(0.0002)	0.0003	(0.7100)	0.4840	(0.0005)*	0.0003	(1.8000)	0.0770
Market-to-Book	0.7393	1.0560	0.7000	0.4870	1.0871	0.8639	1.2600	0.2140	1.1049	1.1804	0.9400	0.3540
Debt-to-Equity	(0.0011)	0.0014	(0.8000)	0.4280	(0.0019)*	0.0011	(1.7200)	0.0910	(0.0015)	0.0015	(1.0100)	0.3180
Revenue growth	0.0284***	0.0010	29.4400	0.0000	0.0130***	0.0011	11.8900	0.0000	0.0320***	0.0010	31.7400	0.0000
ROA	0.0985	0.0648	1.5200	0.1350	0.0658	0.0517	1.2700	0.2090	0.1280*	0.0687	1.8600	0.0680
CFO	0.0372	0.0362	1.0300	0.3100	(0.0472)	0.0405	(1.1700)	0.2490	0.0170	0.0396	0.4300	0.6690
Ln(Assets)	(0.0021)	0.0037	(0.5600)	0.5770	0.0028	0.0032	0.8600	0.3930	(0.0019)	0.0040	(0.4700)	0.6390
Constant	0.0681*	0.0387	1.7600	0.0840	0.0255	0.0292	0.8700	0.3860	0.0617	0.0407	1.5100	0.1360
R^2	**0.51**				**0.38**				**0.55**			
Adj. R^2	**0.48**				**0.34**				**0.52**			

****, **, * indicate significance at 0.01, 0.05, 0.10 levels, respectively*

In instances where variables were significant, the *ESG* variable had a negative coefficient and was significant for the Consumer Services, Technology and Telecom sectors, and had a larger negative coefficient than in the overall regression. *Market-to-Book* had a positive coefficient for Basic Materials and Consumer Services, but a negative coefficient for the Telecom sector. Contrary to the overall regression results, *Debt-to-Equity* had a positive coefficient for all industries, but Healthcare (negative and significant) and Consumer Goods (not significant). *ROA* had a positive coefficient for all sectors but Technology and with *ROA* and *CFO* showing positive coefficients for all sectors, as in the overall regressions.

5.3. Ancillary results

Regressions were run on three subgroups of equal size, based on company size, as measured by *Ln(Assets)*, presented in Table A9 in the appendix. The *ESG* variable was negative and significant at the 0.1 and 0.05 levels, with *ABS Kot* being the dependent variable and was 2.5 times as large for the middle third of the sample, as for the lower third. This suggests that larger companies engaging in earnings management are less likely to have high CSR scores, than smaller companies in the sample. The *Revenue growth* variable was also found to be significant and have 1.7 times as large positive coefficient for the lower third of the sample, compared to the upper third – indicating that revenue growth explains a bigger portion of earnings management among smaller companies.

We also compared the sample based upon four quartiles of earnings management levels, using all three earnings management measures individually, with the results presented in Table A10 in the appendix. The *ESG* variable was only significant at the 0.05 level for the first quartile, when using *ABS ModJ*, and had a very low positive coefficient. This suggests that firms with the lowest levels of earnings management are more likely to have higher CSR scores. Using *ABS Kot* as the dependent variable, *Revenue growth* was also found to have an almost 5 times as large positive coefficient for companies in the fourth quartile, compared to the first.

Table 10 - Sector-specific regressions

Sector	**Basic Materials**			**Consumer Goods**			**Consumer Services**			**Healthcare**		
Coefficients	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*
ESG	(0.0001)	(0.0010)	(0.0001)	(0.0016)	0.0003	(0.0015)	(0.0017)*	0.0013	(0.0012)	(0.0023)	(0.0022)	(0.0028)
Market-to-Book	76.6384***	26.2450	79.3321***	7.5935	3.1452	(9.0597)	3.5506***	1.6534	2.0256	36.9082	95.3697	36.1005
Debt-to-Equity	0.0419	0.0827***	0.0401	0.0082	(0.0044)	0.0099	0.0687*	0.0213	0.0631	(0.1311)	(0.1704)*	(0.1567)
Revenue growth	(0.0144)	(0.0014)	(0.0127)	0.0670	0.1471***	0.0822	0.0263***	0.0122***	0.0299***	0.1717	0.1447	0.2106
ROA	0.5216***	(0.1281)	0.5497***	0.1071	(0.0517)	0.1484	(0.0489)	0.0102	(0.1065)	(0.7942)	0.1867	(0.6206)
CFO	(0.0836)	0.3740***	(0.1436)	0.0873	0.0080	0.0508	0.1417*	(0.0427)	0.2323***	0.6592*	(0.3272)	0.5365
Ln(Assets)	0.0509*	(0.0102)	0.0534*	(0.0018)	(0.0035)	(0.0032)	0.0227**	(0.0030)	0.0119	0.1048	0.1562*	0.1235
Constant	(0.5593)*	0.1107	(0.5851)*	0.1053	0.0399	0.1198	(0.1844)	0.0672	(0.1340)*	(1.0165)	(1.5074)*	1.1752
R^2	**0.62**	**0.63**	**0.61**	**0.36**	**0.52**	**0.38**	**0.97**	**0.79**	**0.98**	**0.51**	**0.73**	**0.50**
Adj. R^2	**0.45**	**0.46**	**0.44**	**0.14**	**0.36**	**0.18**	**0.94**	**0.63**	**0.96**	**(0.18)**	**0.35**	**(0.22)**
Observations		**56**			**65**			**40**			**30**	

Sector	**Industrials**			**Technology**			**Telecom**		
Coefficients	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*
ESG	(0.0002)	0.0001	(0.0001)	0.0001	(0.0029)*	(0.0013)	(0.0035)**	(0.0010)	(0.0035)**
Market-to-Book	5.6920	8.1570	(4.5715)	(0.8209)	4.1366	0.8537	(102.5419)*	8.0904	(108.059)***
Debt-to-Equity	0.0314***	(0.0079)	0.0320***	(0.0311)	(0.0593)	(0.0904)	0.2540*	0.0098	0.2717***
Revenue growth	0.0525***	(0.0041)	0.0579***	0.0410	(0.0434)	0.0352	0.1784**	(0.0623)	0.1889*
ROA	0.0868	0.1554	0.1380	(0.0364)	(0.4304)**	(0.0016)	0.1180	0.0154	0.1534
CFO	(0.0411)	(0.0236)	(0.0811)	0.0939	0.6135**	(0.1666)	(0.1172)	0.2818	(0.0906)
Ln(Assets)	(0.0010)	0.0105	(0.0007)	(0.0080)	0.0198	(0.0052)	(0.0596)***	0.0156	(0.0637)***
Constant	0.0614	(0.0635)	0.0543	0.0952	(0.0328)	0.1503	0.7872***	(0.1999)	0.8279***
R^2	**0.73**	**0.49**	**0.74**	**0.52**	**0.78**	**0.48**	**0.84**	**0.59**	**0.87**
Adj. R^2	**0.69**	**0.40**	**0.70**	**0.04**	**0.55**	**(0.04)**	**0.56**	**(0.10)**	**0.66**
Observations		**125**			**35**			**28**	

****, **, * indicate significance at 0.01, 0.05, 0.10 levels, respectively*

6. Analysis and discussion

In this section, we will analyze the results from our regression tests, conduct robustness tests and discuss the validity, reliability and comparability of our study.

6.1. Analysis of empirical tests

In this section, we will analyze the results from our empirical tests for both the research variables and the control variables.

6.1.1. Analysis of overall results

The regression tests for the two hypotheses provided a significant *ESG* variable for the *ABS ModJ* and *ABS Kot* regressions, with a negative variable coefficient. This finding, based on data exclusively based on Swedish companies, is supported by previous studies finding an inverse relationship between earnings management and CSR ranking in other markets, as shown by Hong and Andersen (2011), among others. The regression with *ABS McN* as the dependent variable did not show significance for the explanatory *ESG* variable, likely due to comparatively smaller sample size, compared to previous studies. However, we believe that the significant and consistent results from the *ABS ModJ* and *ABS Kot* regressions provide sufficient evidence to state that there is an inverse relationship between earnings management and the level of CSR among Swedish companies. There are two possible interpretations of this result. First, a company with strong CSR policies is motivated by an ambition towards increased honesty and transparency which is evident in both the quality of their earnings as well as CSR reporting. Second, it may also indicate that companies do engage in earnings management but do not attempt to mask the comparatively lower quality of earnings with superfluous CSR engagement. We can also conclude that earnings management and CSR continue to be inversely related, in the face of increased popularity of CSR, as the relationship is found to be the same as in earlier studies.

6.1.2. Analysis of sector-specific results

Looking further into our results and how they are represented across different sectors, we find all instances of significance of the *ESG* variable to have a negative and considerably larger coefficient, than in the overall results. The coefficient was 3 times as large for Consumer Service companies, compared the overall sample, 5 times as large for Technology companies and 6 times as large for Telecom. Descriptive statistics for the Consumer Service sector,

specified in Tables A1-A8 in the appendix, show that the sector has a lower *ESG* variable mean, compared to the overall sample, lower earnings management, as measured with *ABS ModJ*, but higher measures provided by the *ABS McN* and *ABS Kot* regressions. As such, it seems as CSR is not considered as important of an issue compared to the overall sample. It is worth noting that Consumer Services companies have a strong incentive to implement strong CSR policies and a culture based on integrity, as sales are affected by reputational standing (Page and Fearn, 2006). If the company receives negative news coverage, due to unethical behavior for instance, sales are likely to suffer. As such, it is in the self-interest of the companies to have strong CSR policies. With the mean of the *ESG* variable lower for the Technology and Telecom sectors than the overall, the same logic applies, as well as lower-than-overall mean earnings management for Technology in two of the three models.

6.1.3. Analysis of ancillary results

Our data shows that when grouped by size, as measured by the *Ln(Assets)* variable, the middle third of the sample has a 2.5 times larger negative *ESG* coefficient than the lower third, suggesting that the inverse relationship between earnings management and CSR is more pronounced among larger companies. This may be the result of more resources available for allocation towards CSR initiatives and policies – perhaps considered of greater importance, as result of bigger public exposure, than the one faced by smaller companies.

The lower third of the sample by size, also had a positive *Revenue growth* coefficient that was 1.6 times the size than the one for the upper third. This is not surprising, as previous findings (Kim et al, 2012) show smaller firms being more aggressive in their revenue recognition. It is also a reasonable assumption to make – small firms grow at a faster pace than larger firms, with equal growth requiring a larger absolute increase for the latter group. In addition, smaller firms have a bigger incentive to report solid growth to build a track record, attract the interest of institutional investors and additional capital.

When looking at the data grouped in quartiles based on the level of the absolute levels of earnings management, the first quartile, i.e. the fourth of the sample that had the lowest level of earnings management, had a positive *ESG* variable coefficient, when using *ABS ModJ* as the dependent variable. The coefficient signage is surprising and contradicting to the overall findings. This is perhaps the result of the inevitable small-scale use of earnings management

coupled with high CSR scores. This interpretation is plausible and does not contradict the conclusions drawn from the overall regressions.

Finally, the positive coefficient for *Revenue growth* is 5 times as large for the fourth quartile, compared to the first. This provides an interesting observation: among the companies with highest levels of earnings management, revenue growth explains a bigger part of said earnings management and resonates well with the size/revenue growth relationship noted previously. Tentatively, companies focusing on growth often do so with an "at any cost" mentality, which can be transferred from to the quality of earnings as well.

6.1.4. Analysis of control variables

The control variables that we chose to include in our regression tests showed both expected and unexpected results. In this section, we will present how the control variables performed in our tests and possible explanations and implications.

Market-to-Book ratio has a positive coefficient that is not significant for all three models. This is not in line with our expectations, as we expected the variable to be positive and significant which would have implied that growth stocks are sensitive to changes in stock price (Chih et al, 2008).

Debt-to-Equity has a negative coefficient that is significant at the 0.1 level for the regression with *ABS McN* as the dependent variable. This is not in line with our expectations that firms that respond to debt financing terms tend to strategically report discretionary accruals (Chih et al, 2008).

Revenue growth has a positive coefficient that is significant at the 0.01 level for all three models. This is in line with our expectations that support Chih et al's theory on earnings aggressiveness where high revenue growth means high earnings management (Chih et al, 2008).

ROA has a positive coefficient that is significant at the 0.1 level with *ABS Kot* as the dependent variable. This is in line with our expectations and implies that discretionary accruals tend to be higher for firms that display unusually high profitability (Kothari et al, 2005).

CFO has a positive and not significant coefficient when *ABS ModJ* and *ABS Kot* are the dependent variables, and a negative and not significant coefficient with *ABS McN*. The insignificance is not in line with our expectations, where we believed *CFO* to be a strong indicator of the level of earnings.

Ln(Assets) has a positive and insignificant coefficient for the *ABS McN* and a negative and insignificant coefficient with *ABS ModJ* and *ABS Kot* as the dependent variables. This is not in line with our expectations as we expected the variable to be positive and significant (Roychowdhury, 2006).

6.1.5. Explanatory power and multicollinearity

The overall regressions are deemed to have a high explanatory power, with R^2 of 0.51, 0.38, 0.55 for the regressions with *ABS ModJ, ABS McN* and *ABS Kot*, respectively, indicating a good model fit. While not directly comparable to previous research due to different regression models, earnings management and CSR measures, the magnitude and significance of the *ESG* variable is also comparable to previous research. Highlighted previous research in the earnings management and CSR fields had regression models with R^2 ranging between 0.05 and 0.46 (Chih et al, 2008). Four out of the twenty-two sector-specific regressions resulted in negative adjusted R^2, indicating an overfitted model and/or limited data sample, resulting in the dismissal of results from these specific regressions.

Multicollinearity, the correlation of independent variables in a multiple regression model, is tested for by examining Variance Inflation Factors (VIF). Possible presence of multicollinearity is indicated by a VIF value above 4 or 10 (O'Brien, 2007). As presented in Table A11 in the appendix, all variables but *Market-to-Book* are below the lower threshold of 4, and *Market-to-Book* has a value of 4.45 and 4.46, depending on used dependent variable. This is not unexpected, as all control variables indicate some correlation with the dependent variables, as seen in Table 8.

6.1.6. Heteroscedasticity and robustness tests

Several steps were taken to avoid issues with heteroscedasticity, i.e. where errors have non-constant variance, affecting variable significance levels. The regressions were run with sector and year fixed effects, as these parameters are non-random. In addition, clusters were created at firm level, as standard errors for same-firm observations are likely correlated and breach

the assumption of independent and identically distributed random variables. Clusters were not applied in sector-specific regressions, due to small sample size, however all regressions were unable to reject the null hypothesis of homoscedasticity using the White test (1980).

Table A12 in the appendix show the overall regressions where the continuous variables are winsorized and the 1% outliers on each tail removed. The R^2 decreases in all three models and *Debt-to-Equity* and *ROA* lose significance. *ESG* however maintains its negative coefficient and remains significant at the 0.1 level when using the Modified Jones model, confirming our findings.

6.2. Research method discussion

In this section, we will present possible criticism to our study as well as its validity, reliability and comparability.

6.2.1. Criticism

The main weakness of our study is its small sample size, as result of the study delimitation. Our aim was to contribute to existing literature with a study that investigated the relationship between earnings management and CSR after 2000. As we used Swedish companies, the adoption of IFRS in 2005 involuntarily reduced the number of years in our sample, with the years 2000-2005 excluded from the sample in order to avoid contaminating data with effects related to the transition from Swedish GAAP to IFRS. Henceforth, we are unable to draw complete conclusions regarding earnings management and CSR from the millennium and onwards. As result of limited ESG coverage by RobecoSAM, our sample is restricted to constituents of the OMX Large Cap list. The ESG data used is furthermore likely affected by self-selection bias, where companies with strong CSR policies are more likely to self-report, than companies with weak CSR policies. RobecoSAM has addressed that to an extent in their methodology, but the bias is still likely present in their final product. Finally, the forthcoming requirement of self-reporting on CSR policies that is bound to alter reporting practices and render our study obsolete.

6.2.2. Validity, reliability and comparability

In terms of validity, we want to emphasize the measures we took regarding our selected data sample. First, we chose to only include Swedish listed companies to provide a new geographic and timely comment to the earnings management and CSR discussion. Second, we

chose to collect our data solely from the Bloomberg Terminal, which provided all the required data for our variables. Retrieving all data from the same source also contributed to the reliability of our study. Furthermore, the models we chose to use to evaluate the level of earnings management in our selected sample, also contribute to the reliability of our sample as they are some of the most frequently used models to measure earnings management.

We deem the reliability of our study to be high. Not only have we chosen reliable sources for our data and our models but we have supported our results with robustness tests and accounted for heteroscedasticity issues. These tests have shown that our results are reliable and can be used to draw conclusions regarding the relationship between earnings management and CSR in companies.

Regarding comparability, we chose frequently used models to measure earnings management. This increases comparability with previous studies within the topic of earnings management which means that we can both compare our own results as well as hopefully contribute to existing literature with our study on the Swedish market. Since we have chosen a recent period and as a geographical delimitation that has not been used in previous studies, direct comparison is limited. Finally, the multitude of ways and lack of consensus on how to measure CSR, make studies in this field inherently difficult to compare, which is also true for our study.

7. Suggestions for future research

In this study, we investigated the relationship between earnings management and CSR among Swedish listed firms. We collected the sample from the Bloomberg Terminal and adjusted it in order to address issues arising from insufficient data and incomparable industries. The findings were significant and provided us with insight on the inverse relationship between earnings management and CSR in the Swedish market. There are some limitations to the conclusions drawn from our study, with suggestions for future research provided in this section.

Compared to our delimitation to Swedish companies, a larger sample would introduce new conclusions and potentially more significant results. Expanding the sample by venturing out of the chosen period and geographical region and looking at the Nordics, will also contribute to our findings. The Nordics are quite high in CSR rankings (RobecoSAM, 2017) and may hence be able to increase the explanatory power of a similar study.

Another suggestion for future research is to find a standardized measure for CSR/ESG to increase the comparative aspect with other studies, alternatively employ multiple variables in the same fashion as this study did with earnings management. Previous studies in the field, many of them mentioned previously in this thesis, have differing CSR measures which makes it difficult to compare results, significance and explanatory power.

We also chose to perform our regression tests on different sectors in order to investigate whether the relationship between earnings management and CSR differ across industries. This was a limited part of our thesis but the results that we found indicate that interesting conclusions can be drawn by adding a sector-specific focus. Another suggestion for future research is to deep-dive into selected industries and expand upon our observations in the Technology and Telecom sectors.

Conclusively, the new regulations due at the end of 2017 regarding self-reporting of CSR engagements will likely have a sizeable impact on the use of CSR and companies' attitudes towards CSR overall. This will provide an exciting ex-post research opportunity.

8. Summary and conclusions

How a company chooses to present its financial reporting is an integral communication channel with far-reaching consequences. It is a source of information, a base for company performance measures and subject to regulations. However, today's regulations allow for some discretion in financial reporting. Using this to in any way manipulate earnings is referred to as earnings management. With different incentives for company management to manipulate earnings, we studied management ethics and whether the same behavior is replicated in other instances. A topic that is more relevant than ever is corporate social responsibility. The topic of CSR touches upon the other side of the ethical spectrum, aiming towards transparency, integrity and responsibility. The essence of our thesis question was whether a relationship could be found between the two ethical poles, represented in the use of earnings management and CSR.

This study aimed to investigate whether there is a relationship between earnings management and CSR in Swedish listed firms, using three well-established models for measuring earnings management, as well as looking to ESG reporting as a measure of CSR policy strength. We used 6 control variables commonly found in earnings management studies and conducted our regression tests for the years 2005-2015, using absolute values of earnings management. Two out of three of our chosen models showed a negative relationship between earnings management and CSR, indicating that companies with high earnings management have lower CSR focus and that companies with low earnings management focus more on CSR. We can conclude that in terms of moral intentions, companies that are truthful in their financial reporting are also more keen on implementing strong corporate social responsibility policies. CSR is hence not frequently used to "cover up" or "to better" a firm, that provides unreliable financial information. We find that Swedish companies do not differ in terms of the relationship between earnings management and CSR from other geographies. We also conclude that this relationship has not changed, despite a significant increase in the popularity of CSR. Going forward it will be of interest to observe whether the relationship between earnings management and CSR will change after the regulatory changes requiring CSR reporting for Swedish large companies in 2017. As society moves towards stronger moral responsibilities, earnings management is bound to be affected by increasing regulations and societal consequences and we are looking forward to further studies on this interesting topic.

9. References

9.1. Academic sources

Amel-Zadeh, A. and Serafeim, G., *Why and How Investors Use ESG Information: Evidence from a Global Survey*, 2017, Working paper

Bhattacharya, U., Daouk, H. and Welker, M., *The World Price of Earnings Opacity*, 2003, The Accounting Review, vol. 78, no. 3

Burgstahler, D., Dichev, I., *Earnings Management to Avoid Earnings Decreases and Losses*, 1997, Journal of Accounting and Economics, vol. 24

Carroll, A., *A Three-Dimensional Conceptual Model of Corporate Performance*, 1979, Academy of Management Review, vol. 4, no. 4

Cheng, B., Ioannou, I., Serafeim, G., *Corporate Social Responsibility and Access to Finance*, 2014, Strategic Management Journal, vol. 35, no. 1

Chih, H., Shen, Chung-Hua., Kang, F., *Corporate Social Responsibility, Investor Protection and Earnings Management: Some International Evidence*, 2008, Journal of Business Ethics, vol. 79

Coffee, J., 2003. *What causes Enron? A Capsule Social and Economic History of the 1990s*. Working paper, Columbia University

DeAngelo, L., *Managerial Competition, Information Costs and Corporate Governance: The Use of Accounting Performance Measures in Proxy Contests*, 1988, Journal of Accounting and Economics, vol. 10, no. 1

Dechow, P., Sloan, R., Sweeney, A., *Detecting Earnings Management*, 2002, American Accounting Association, vol. 70, no. 2

Dechow, P., Dichev, I., *The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors*, 2002, The Accounting Review, vol. 77

Dechow, P., *Detecting Earnings Management: A New Approach*, 2012, Journal of Accounting Research, vol. 50, no. 2

DeFond, M., Jiambalvo, J., *Debt Covenant Violation and Manipulation of Accruals*, 1994, Journal of Accounting and Economics, vol. 17, no. 1-2

Dhaliwal, D., *Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting*, 2011, The Accounting Review, vol. 86, no. 1

Eisenhardt, K., *Building Theories from Case Study Research*, 1989, The Academy of Management Review, vol. 14, no. 4

Ferrell, A., Liang, H., Renneboog, L., *Socially Responsible Firms*, 2016, Journal of Financial Economics, vol. 122

Friedman, M., *Capitalism and Freedom*, 1962, University of Chicago Press

Fombrun, C., *Opportunity Platforms and Safety Nets: Corporate Citizenship and Reputational Risk*, 2000, Business and Society Review, vol. 105, no. 1

Gelb, D., Strawser, J., *Corporate Social Responsibility and Financial Disclosures: An Alternative Explanation for Increased Disclosure*, 2001, Journal of Business Ethics, vol. 33, no. 1

Gregory, A., Whittaker, J., *Exploring the Valuation of Corporate Social Responsibility – A Comparison of Research Methods*, 2013, Journal of Business Ethics, vol. 116, no. 1

Guidry, F., Leone, A., Rock, S., *Earnings-based Bonus Plans and Earnings Management by Business-Unit Managers*, 1999, Journal of Accounting and Economics, vol. 26

Healy, P., Wahlen, J., *A Review of the Earnings Management Literature and Its Implications for Standard Setting*, 1999, Accounting Horizons, vol. 13, no. 4

Heath, J., *The Uses and Abuses of Agency Theory*, 2009, Business Ethics Quarterly, vol. 19, no. 4

Hong, Y., Andersen, M., *The Relationship Between Corporate Social Responsibility and Earnings Management: An Exploratory Study*, 2011, Journal of Business Ethics, vol. 104, no. 4

Jense, M., *Value Maximization, Stakeholder Theory and the Corporate Objective Function*, 2001, Journal of Applied Corporate Finance, vol. 14, no. 3

Jones, Jennifer; *Earnings Management During Import Relief Investigations*, 1991; Journal of Accounting Research, vol. 29, no. 2

Kighir, A., Omar, N., Mohamed, N., *Earnings Management Detection Modeling: A Methodological Review*, 2014, World Journal of Social Sciences, vol. 4, no. 1

Kim, Y., Park, M., Wier, B., *Is Earnings Quality Associated with Corporate Social Responsibility?*, 2012, The Accounting Review, vol. 87, no. 3

Kothari, S. P., Leone, A., Wasley, C., *Performance Matched Discretionary Accrual Measures,* 2005, Journal of Accounting and Economics, vol. 39, no. 1

Leuz, Ch., Nanda, D., Wysocki, P., *Earnings Management and Investor Protection: An International Comparison*, 2003, Journal of Financial Economics, vol. 69

McNichols, Maureen, *The Quality of Accrual and Earnings: The Role of Accrual Estimation Errors: Discussion*, 2002, The Accounting Review, vol. 77, Supplement: Quality of Earnings Conference

McWilliams, A., Siegel, D., Wright, P., *Corporate Social Responsibility: Strategic Implications*, 2006, Journal of Management Studies, vol. 43, no. 1

Moura-Leite, R., Padgett, R., *Historical Background of Corporate Social Responsibility*, 2011, Social Responsibility Journal, vol. 7, no. 4

Moser, D., Martin, P., *A Broader Perspective on Corporate Social Responsibility Research in Accounting*, 2012, The Accounting Review, vol. 87, no. 3

O'Brien, R.M., *A Caution Regarding Rules of Thumb for Variance Inflation Factors*, 2007, Quality & Quantity, vol. 41, no. 5

Porter, M., Kramer, M., *Strategy and Society: The Link between Competitive Advantage and Corporate Social Responsibility*, 2006, Harvard Business Review, vol. 84, no. 12

Prior, D., Diego, J., Tribó, J., *Are Socially Responsible Managers Really Ethical? Exploring the Relationship Between Earnings Management and Corporate Social Responsibility*, 2008, Corporate Governance, An International Review, vol. 16, no. 3

Scholtens, B., Kang, F., *Corporate Social Responsibility and Earnings Management: Evidence from Asian Economies*, 2012, Corporate Social Responsibility and Environmental Management, vol. 20

Watts, R., Zimmerman, J., *Towards a Positive Theory of the Determination of Accounting Standards*, 1978, The Accounting Review, vol. 53, no. 1

White, H., *A Heteroskedasticity-consistent Covariance Matrix Estimator and a Direct test for Heteroskedasticity*, Econometrica, vol. 48, no. 4

Zahra, S., *Entrepreneurial Risk Taking in Family Firms*, 2005, Family Business Review, vol. 18, no. 1

9.2. Websites and digital assets

Ericsson, *Ericsson Sustainability and Corporate Responsibility Report 2016*, 2017, accessed on November 12, 2017
https://www.ericsson.com/assets/local/about-ericsson/sustainability-and-corporate-responsibility/documents/2016-corporate-responsibility-and-sustainability-report.pdf

Financial Times, *Lexicon*, 2017, accessed on November 12, 2017
http://lexicon.ft.com/Term?term=ESG

Government of Sweden, *Increased Transparency in How Large Companies Work With Sustainability and Diversity*, 2016, accessed on July 11, 2017
http://www.regeringen.se/pressmeddelanden/2016/06/okad-insyn-i-hur-stora-foretag-arbetar-med-hallbarhet-och-mangfald/

H&M Group, *The H&M Group Sustainability Report 2016*, 2017, accessed on November 12, 2017
https://sustainability.hm.com/content/dam/hm/about/documents/en/CSR/2016%20Sustainability%20report/HM_group_SustainabilityReport_2016_FullReport_en.pdf

IAS Plus, *International Financial Reporting Standards*, 2017, accessed on November 9, 2017
https://www.iasplus.com/en/standards

KPMG, *Currents of Change – The KPMG Survey of Corporate Responsibility Reporting 2015*, accessed on July 11, 2017
https://assets.kpmg.com/content/dam/kpmg/pdf/2016/02/kpmg-international-survey-of-corporate-responsibility-reporting-2015.pdf

Nasdaq OMX, *Companies Listed on Nasdaq Stockholm*, accessed on September 21, 2017
http://www.nasdaqomxnordic.com/shares/listed-companies/stockholm

Nasdaq OMX, *Index Info OMX Stockholm Large Cap GI*, accessed on September 15, 2017
http://www.nasdaqomxnordic.com/index/index_info?Instrument=SE0001775792

RobecoSAM, *Country Sustainability Rankings*, 2017, accessed on July 11, 2017
http://www.robecosam.com/images/Country_Ranking_Update_May_2017.pdf

RobecoSAM, *CSA Guide – RobecoSAM's Corporate Sustainability Assessment Methodology*, 2016, accessed on September 27, 2017
http://www.sustainability-indices.com/images/corporate-sustainability-assessment-methodology-guidebook.pdf

9.3. Databases

Bloomberg Terminal, accessed on September 15, 2017

10. Appendix

Appendix includes tables for sector-specific descriptive statistics (A1-A8), regression summaries (A9-10) and model testing (A11-A12) that are referred to in the text.

Table A1 - Descriptive statistics for Basic Materials

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	56	0.0645	0.0581	0.0015	0.2609
ABS McN	56	0.0364	0.0506	0.0015	0.3160
ABS Kot	56	0.0638	0.0577	0.0046	0.2712
ESG	56	49.4318	11.9500	19.0083	73.9669
Market-to-Book	56	0.0012	0.0009	0.0002	0.0038
Debt-to-Equity	56	0.4778	0.2983	0.0029	1.5393
Revenue growth	56	0.1346	0.3468	(0.4508)	1.8100
ROA	56	0.0412	0.0528	(0.0738)	0.1740
CFO	56	0.1075	0.0883	0.0009	0.6077
Ln(Assets)	56	9.9438	0.8992	7.9646	11.4263

Table A2 - Descriptive statistics for Consumer Goods

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	65	0.0490	0.0671	0.0007	0.4327
ABS McN	65	0.0393	0.0414	0.0021	0.1768
ABS Kot	65	0.0485	0.0681	0.0004	0.4313
ESG	65	40.3942	14.1325	14.0496	63.2231
Market-to-Book	65	0.0025	0.0082	(0.0221)	0.0434
Debt-to-Equity	65	1.3827	6.8642	(20.1950)	32.8016
Revenue growth	65	0.0331	1.3157	(0.2537)	0.4003
ROA	65	0.0603	0.0552	(0.0696)	0.2013
CFO	65	0.1040	0.0511	(0.0552)	0.2274
Ln(Assets)	65	9.9971	1.0905	8.5536	11.9495

Table A3 - Descriptive statistics for Consumer Services

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	40	0.0526	0.1085	0.0006	0.6774
ABS McN	40	0.0455	0.0630	0.0021	0.3340
ABS Kot	40	0.0563	0.1220	0.0021	0.7612
ESG	40	34.3160	12.0341	9.9174	48.3254
Market-to-Book	40	0.0042	0.0076	0.0002	0.0329
Debt-to-Equity	40	0.1540	0.1935	0.0000	0.6273
Revenue growth	40	0.6744	3.6058	(0.0620)	22.9013
ROA	40	0.1752	0.1338	(0.1200)	0.4229
CFO	40	0.2588	0.1710	0.0352	0.6848
Ln(Assets)	40	9.5119	1.4396	6.0923	11.3599

Table A4 - Descriptive statistics for Healthcare

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	30	0.0534	0.0400	0.0003	0.1465
ABS McN	30	0.0446	0.0460	0.0005	0.1839
ABS Kot	30	0.0541	0.0406	0.0007	0.1515
ESG	30	30.0551	18.0103	9.9174	62.3967
Market-to-Book	30	0.0011	0.0006	0.0005	0.0023
Debt-to-Equity	30	0.6756	0.4162	0.0793	1.3974
Revenue growth	30	0.0829	0.1211	(0.1672)	0.4701
ROA	30	0.0686	0.0660	(0.0416)	0.2207
CFO	30	0.1148	0.0834	(0.0767)	0.3239
Ln(Assets)	30	10.1914	0.7948	8.7493	11.0030

Table A5 - Descriptive statistics for Industrials

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	125	0.0529	0.0575	0.0011	0.5460
ABS McN	125	0.0445	0.0434	0.0005	0.1840
ABS Kot	125	0.0522	0.0585	0.0006	0.5633
ESG	125	40.1554	12.6701	10.3306	63.2231
Market-to-Book	125	0.0010	0.0011	0.0001	0.0092
Debt-to-Equity	125	0.6877	0.3975	0.0000	1.8112
Revenue growth	125	0.1518	1.0210	(0.2262)	11.4165
ROA	125	0.0769	0.0677	(0.0272)	0.6838
CFO	125	0.1165	0.1895	(0.0497)	2.1440
Ln(Assets)	125	10.5840	0.8300	7.5549	12.8325

Table A6 - Descriptive statistics for Oil & Gas

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	2	0.0395	0.0202	0.0252	0.0537
ABS McN	2	0.0240	0.0262	0.0252	0.0425
ABS Kot	2	0.0443	0.0219	0.0288	0.0598
ESG	2	25.5187	2.0539	24.0664	26.9710
Market-to-Book	2	0.0046	0.0001	0.0045	0.0047
Debt-to-Equity	2	0.2972	0.0641	0.2519	0.3425
Revenue growth	2	0.2177	0.0605	0.1749	0.2604
ROA	2	0.0368	0.0178	0.0242	0.0494
CFO	2	0.1846	0.0033	0.1822	0.1869
Ln(Assets)	2	8.0820	0.0076	8.0766	8.0873

Table A7 - Descriptive statistics for Technology

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	35	0.0475	0.0358	0.0009	0.1489
ABS McN	35	0.0517	0.0491	0.0016	0.1747
ABS Kot	35	0.0399	0.0352	0.0003	0.1352
ESG	35	36.1866	10.7575	17.7686	50.4132
Market-to-Book	35	0.0067	0.0059	0.0001	0.0156
Debt-to-Equity	35	0.3145	0.2528	0.0000	0.9163
Revenue growth	35	0.0817	0.1289	(0.1843)	0.4643
ROA	35	0.0930	0.0885	(0.0243)	0.3146
CFO	35	0.1362	0.0890	0.0354	0.3640
Ln(Assets)	35	9.1705	2.3403	6.9388	12.5898

Table A8 - Descriptive statistics for Telecom

	Observations	*Mean*	*Std. Dev.*	*Min*	*Max*
ABS ModJ	28	0.0566	0.0553	0.0023	0.2322
ABS McN	28	0.0293	0.0346	0.0014	0.1374
ABS Kot	28	0.0591	0.0598	0.0002	0.2539
ESG	28	31.4080	12.6365	2.8807	48.5597
Market-to-Book	28	0.0013	0.0017	0.0001	0.0051
Debt-to-Equity	28	0.7014	0.4412	0.0596	1.8871
Revenue growth	28	0.0209	0.1361	(0.2502)	0.4547
ROA	28	0.0934	0.0782	(0.0469)	0.3277
CFO	28	0.1549	0.0527	0.0657	0.2400
Ln(Assets)	28	10.8672	1.4345	8.5604	12.5138

Table A9 - Regressions by company size

Size group	**Lower Third**			**Middle Third**			**Upper Third**		
Coefficients	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*
ESG	(0.0005)	0.0002	(0.0006)*	(0.0015)**	(0.0002)	(0.0014)**	(0.0003)	(0.0001)	(0.0002)
Market-to-Book	3.6147	2.8055	3.0040	(4.3512)	7.6921*	(6.2363)	(34.0837)	107.0435***	(38.8647)
Debt-to-Equity	0.0603***	0.0007	0.0689***	0.0042	(0.0100)**	0.0064	0.0590***	0.0156	0.0575
Revenue growth	0.0449**	0.0035	0.0495**	(0.0075)	0.0404	(0.0051)	0.0271***	0.0126	0.0308
ROA	0.2852**	0.1088	0.3015**	(0.0857)	(0.0100)	(0.0357)	(0.0792)	0.0559	(0.0762)
CFO	(0.0650)	(0.0268)	(0.0887)	0.1160	0.0151	0.0905	0.1074	0.1582	0.1271
Ln(Assets)	0.0071	0.0182	(0.0018)	0.0036	(0.0130)	0.0051	(0.0401)***	0.0320*	(0.0411)***
Constant	(0.1454)	(0.0050)	(0.0930)	0.0655	0.1688	0.0416	0.5023***	(0.3615)	0.5073***
R^2	**0.66**	**0.35**	**0.68**	**0.31**	**0.44**	**0.30**	**0.81**	**0.61**	**0.83**
Adj. R^2	**0.58**	**0.20**	**0.60**	**0.16**	**0.33**	**0.16**	**0.76**	**0.53**	**0.79**
Observations		**127**			**127**			**127**	

****, **, * indicate significance at 0.01, 0.05, 0.10 levels, respectively*

Table A10 – Regressions by earnings management quartiles

Quartile	**First Quartile**			**Second Quartile**			**Third Quartile**			**Fourth Quartile**		
Coefficients	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*	*Mod. Jones*	*McNichols*	*Kothari*
ESG	0.0002**	0.0000	0.0000	0.0001	0.0000	(0.0000)	(0.0000)	(0.0000)	0.0000	(0.0009)	(0.0000)	(0.0009)
Market-to-Book	(1.6305)***	0.0910	0.0322	(0.8076)	0.6425	(0.5600)	(0.5585)	(0.7758)	(0.2435)	0.7714	(0.9577)	1.9337
Debt-to-Equity	0.0021***	(0.0002)	(0.0002)	(0.0015)	(0.0010)	0.0007	0.0007	0.0012	0.0001	(0.0016)	0.0023	(0.0032)
Revenue growth	(0.0109)	0.0016	0.0064*	0.0011	0.0020	(0.0048)	(0.0134)	0.0085	(0.0170)	0.0258***	0.0102***	0.0298***
ROA	0.0109	0.0051	(0.0146)	(0.0067)	0.0174	(0.0041)	(0.0375)*	(0.0330)	0.0205	0.1444	0.0422	0.1552
CFO	(0.0099)	0.0036	(0.0053)	0.0092	(0.0061)	0.0175	0.0459*	0.0159	0.0183	0.0362	(0.0581)	0.0206
Ln(Assets)	(0.0024)**	0.0003	0.0007	(0.0015)	0.0012	(0.0006)	(0.0019)*	(0.0010)	(0.0019)*	0.0028	(0.0006)	0.0055
Constant	0.0201*	(0.0003)	(0.0051)	0.0450***	0.0101	0.0371***	0.0632***	0.0470***	0.0625***	0.1161	0.0937	0.0916
R^2	**0.35**	**0.20**	**0.32**	**0.21**	**0.32**	**0.24**	**0.34**	**0.30**	**0.31**	**0.77**	**0.46**	**0.79**
Adj. R^2	**0.14**	**(0.06)**	**0.10**	**(0.06)**	**0.10**	**(0.03)**	**0.12**	**0.06**	**0.07**	**0.69**	**0.29**	**0.72**
Observations		**96**			**95**			**95**			**95**	

****, **, * indicate significance at 0.01, 0.05, 0.10 levels, respectively*

Table A11 - Multicollinearity diagnostics

	ABS ModJ				ABS McN				ABS Kot			
	VIF	*Sq. Rt. VIF*	*Tolerance*	R^2	*VIF*	*Sq. Rt. VIF*	*Tolerance*	R^2	*VIF*	*Sq. Rt. VIF*	*Tolerance*	R^2
Earnings management	1.79	1.34	0.5579	0.4421	1.12	1.06	0.8955	0.1045	1.93	1.39	0.5195	0.4805
ESG	1.21	1.10	0.8234	0.1766	1.21	1.10	0.8254	0.1746	1.21	1.10	0.8235	0.1765
Market-to-Book	4.45	2.11	0.2248	0.7752	4.46	2.11	0.2244	0.7756	4.45	2.11	0.2248	0.7752
Debt-to-Equity	2.94	1.71	0.3404	0.6596	2.94	1.72	0.3397	0.6603	2.94	1.71	0.3403	0.6597
Revenue growth	1.84	1.36	0.5445	0.4555	1.36	1.17	0.7351	0.2649	1.97	1.40	0.5075	0.4925
ROA	2.46	1.57	0.4061	0.5939	2.46	1.57	0.4060	0.5940	2.47	1.57	0.4054	0.5946
CFO	2.97	1.72	0.3366	0.6634	2.94	1.72	0.3396	0.6604	2.96	1.72	0.3382	0.6618
Ln(Assets)	2.51	1.58	0.3984	0.6016	2.50	1.58	0.3995	0.6005	2.51	1.58	0.3986	0.6014
Mean VIF	**2.52**				**2.37**				**2.56**			

Table A12 - Earnings management and CSR, Winsorized overall regressions

	Modified Jones				McNichols				Kothari			
	Coeff.	*Robust Std. Err.*	*t*	$P > \|t\|$	*Coeff.*	*Robust Std. Err.*	*t*	$P > \|t\|$	*Coeff.*	*Robust Std. Err.*	*t*	$P > \|t\|$
ESG	(0.0004)*	0.0002	(1.8000)	0.0780	(0.0001)	0.0002	(0.2800)	0.7820	(0.0004)	0.0003	(1.6000)	0.1160
Market-to-Book	0.1027	1.0991	0.0900	0.9260	0.0864	0.8996	0.1000	0.9240	0.3277	1.2211	0.2700	0.7900
Debt-to-Equity	0.0013	0.0031	0.4100	0.6820	(0.0011)	0.0019	(0.5600)	0.5760	0.0013	0.0032	0.4100	0.6800
Revenue growth	0.0549	0.0364	1.5100	0.1370	0.0546***	0.0202	2.7000	0.0090	0.0582	0.0368	1.5800	0.1200
ROA	0.1014	0.0873	1.1600	0.2510	(0.0085)	0.0422	(0.2000)	0.8410	0.1253	0.0964	1.3000	0.2000
CFO	0.0442	0.0800	0.5500	0.5830	0.0500	0.0512	0.9800	0.3330	0.0323	0.0899	0.3600	0.7210
Ln(Assets)	(0.0032)	0.0035	(0.9200)	0.3630	0.0022	0.0027	0.8100	0.4240	(0.0032)	0.0038	(0.8400)	0.4040
Constant	0.0716*	0.0364	1.9700	0.0550	0.0170	0.0258	0.6600	0.5120	0.0665	0.0388	1.7100	0.0930
R^2	**0.21**				**0.36**				**0.22**			
Adj. R^2	**0.15**				**0.31**				**0.16**			

****, **, * indicate significance at 0.01, 0.05, 0.10 levels, respectively*