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Corporate Social Responsibility and Earnings Management

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Abstract: This study aims to investigate the relationship between CSR and constraint of earnings management on Swedish firms listed on OMX Stockholm. Earnings management is estimated using two accrual-based models to detect discretionary accruals. The first hypothesis explores whether a continuous CSR score is correlated with earnings management. Secondly, a model using a binary variable capturing disclosure of CSR is constructed exploring the second hypothesis concerning the relationship between CSR disclosure and earnings management. The results contradict current studies in the U.S. as we find no significant evidence for neither of the hypotheses. This indicates an absence of such a relationship in Sweden, which could be attributed to the underlying cultural and legal differences. These results can be attributed to the two primary perspectives, CSR as a moral imperative or managerial opportunism, offsetting a potential effect. Concluding, no reliable relationship between firms' CSR score nor disclosure of CSR and the ability to efficiently produce transparent financial reports through constraining earnings management can be drawn.

Tutor: Liwei Zhu

Keywords: earnings management, corporate social responsibility, ESG, discretionary accruals, transparent financial reporting

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1. Introduction

The purpose of financial statements is to provide insights for stakeholders and enable them to make better-informed decisions. This relies on the financial reporting being accurate and transparent. There are aspects within financial reporting where management discretion can be exercised without compromising the purpose of the financial statements. However, managerial discretion can also be used to mislead stakeholders about the firm's actual economic performance, also referred to as earnings management (Healy and Wahlen 1999). When earnings are managed the purpose of providing financial statements is undermined. Different methods can be used to detect earnings management, most used is estimating accruals where divergence from the expected values may indicate earnings have been managed, captured by the discretionary accruals. The most widely accepted accrual-based models within this field of study are the Modified Jones Model and the Kothari Model, both of which are applied in this study (Prior et al. 2008; Dechow et al. 2010; Kim et al. 2012).

Transparency is not only required from firms through financial statements, but stakeholders also put increasing pressure on firms to disclose socially responsible activities. Currently, organizations are not only expected to generate financial profit but also contribute to the society it operates in. Recently, the Non-Financial Reporting Directive (NFRD 2014) from the EU requires firms of significant size and of public interest to provide sustainability reports and was introduced in 2014. Current additional directives are being introduced and will be implemented in the near future extending this requirement to cover the majority of firms. Corporate social responsibility, hereafter used interchangeably with CSR, is thus of growing importance for firms. Current studies have primarily focused on the implications of CSR on financial performance. However, with regard to transparency and responsibility, the relationship between CSR and earnings management becomes an interesting topic. Implementing CSR practices requires effort and resources to fulfill ethical expectations by stakeholders, likely causing CSR firms to actively constrain earnings management and provide transparent financial information.

This study aims at investigating whether socially responsible firms also behave responsibly in providing transparent and accurate financial reports by constraining earnings management. Therefore we aim to answer the following empirical research question:

Is earnings management associated with corporate social responsibility?

To answer this question two statistical hypotheses are constructed. The first examines the relationship between a continuous corporate social responsibility rating and earnings management. The second hypothesis instead questions whether there is a relationship between the choice of publicly disclosing corporate social responsibility and earnings management. Earnings management is estimated using two accrual-based methods, the Modified Jones Model and the Kothari Model. CSR is evaluated using a proxy of ESG scores constructed by Eikon Refinitiv. These allow us to study the relationship between increasing CSR engagement and earnings management as well as the implication for earnings management if firms choose to disclose CSR information.

The relationship between CSR and earnings management is complex and multifaceted. Prior studies within CSR and earnings management present inconsistent findings. Two primary opposing theories explain the diverging relationships between CSR and earnings management. The first theoretical framework suggests CSR as a moral imperative which creates an incentive for ethical considerations in other aspects of the firm, including transparent financial reporting. Based on this theory the relationship is expected to be negative, implying that increased CSR is associated with less earnings management. The above results were found in the U.S. and cover earnings management measured through discretionary accruals (Kim et al. 2012). However, the opposite results of a positive relationship between earnings management and CSR were found in an international study (Prior et al. 2008). These findings are on the contrary coherent with the theory of CSR being strategically undertaken by managers for personal gain, consistent with an agency theoretic framework (McWilliams et al. 2006). Thus, arguing for the reverse causal effect, namely that CSR activities are undertaken to cover up managerial misconduct, including earnings management.

Previous research focused predominantly on the U.S. market and countries practicing common law (Prior et al. 2008; Kim et al. 2012). It has been proven that the level of CSR depends on the legal origin of the country the firms operate in, with the highest CSR levels existing in countries practicing civil law, especially in Scandinavia (Liang et al. 2017). As this difference seems to influence the effect between CSR and earnings management (Prior et al. 2008), conducting the study on the Swedish market can therefore contribute to the existing

literature. Further, as the reporting climate for CSR is constantly evolving, with new directives being introduced, an increasing number of firms are incentivized to report causing the availability of data to increase. Therefore, another contribution of our study comes from the relevance of data available now compared to when prior studies were conducted. With respect to the growth and development of CSR, studies conducted previously do not necessarily remain relevant to date.

We found no significant evidence for our first hypothesis exploring the relationship between CSR and earnings management. Neither did we find significant evidence for the second hypothesis examining the relationship between CSR disclosure and earnings management. These results suggest that there is no presence of a relationship between CSR nor disclosing CSR and earnings management. However, it could also be attributed to country differences where primarily the different jurisdictions are anticipated to affect the relationship. Another explanation could be that the two opposing incentives for conducting earnings management with regard to CSR are canceling out a potential effect. Concluding, we find no significant evidence that CSR engagement has an effect on the earnings quality of a firm in either direction. These findings have important implications for CSR and earnings management research as the findings in the U.S. cannot necessarily be transferable to the Swedish setting.

1.1 Contribution

Previous studies on the association between CSR and earnings management have shown varying results (Prior et al. 2008; Kim et al. 2012). The discrepancy in the findings can, according to previous research, be attributed to country differences and cultural aspects (Leuz et al. 2003). Our study contributes to the existing literature in primarily two ways. First, by exploring the effects in a particular, and somewhat neglected market, namely Sweden. Previous research focused primarily on the U.S. or internationally (Prior et al. 2008; Kim et al. 2012). Although Sweden was included as a part of the international study conducted by Prior et al. (2008), it constituted only 3.68% of the full sample, thus directing focus to Sweden contributes to new insights. Secondly, CSR is a growing concern for businesses as new guidelines were introduced with the EU Non-Financial Reporting Directive (NFRD) in 2014, changing the reporting climate. Although this has not been implemented into Swedish legislation as of the current date, the directive is expected to require firms to produce CSR reports as early as 2024 for firms of a certain size and character. It is planned to be fully

implemented for all listed firms by January 2026. This study, therefore, contributes by using recent data from times when non-financial reporting is more widespread (KPMG 2020).

1.2 Delimitation

The study is limited to considering data on Swedish firms listed on OMX Stockholm during 2014-2021 excluding financial institutions in line with prior earnings management research. This limitation is imposed on our study in order to reduce the bias associated with varying accounting regulations across markets. Furthermore, earnings management is studied based on accrual-based methods, excluding real activity earnings management. Lastly, our choice of method and estimating discretionary accruals as absolute values do not allow us to draw any conclusion about the direction earnings are managed, but rather the presence of earnings management regardless of direction.

1.3 Disposition

In the following Section 2, theories and related literature is discussed culminating in the hypothesis development. Thereafter, the applied methodology and empirical data are outlined in Section 3 and Section 4 respectively. The results are then presented in Section 5 and analyzed in Section 6 in combination with an analysis of the research method. Based on the analysis, Section 7 brings up suggestions for future research. Concluding remarks appear in Section 8.

2. Theory and Literature Review

This section aims at providing a theoretical background for our study. Earnings management is described and the underlying theories arguing for the incentives relating to earnings management are presented. Furthermore, corporate social responsibility is defined as well as the implications and reasons for businesses to engage in CSR activities. Lastly, studies on the relationship between CSR and earnings management are presented. The section is concluded with hypothesis development based on theories and literature.

2.1 Earnings Management

The most widely accepted definition of earnings management is proposed by Healy and Wahlen (1999): “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.” (Healy and Wahlen 1999 p. 368). For example, managers with equity incentives are more likely to manage earnings to meet analyst’s forecasts and market expectations (Cheng and Warfield 2005). Additionally, in order to avoid breaching debt covenants, managers might engage in income-increasing earnings management (Sweeney 1994).

There are two perspectives suggesting the incentives for managers to engage in earnings management. The *opportunistic perspective* proposes earnings management is primarily used to mislead the users of the financial reports (Schipper 1989; Healy and Wahlen 1999). Whereas the *beneficial perspective* instead suggests that managed earnings communicate more accurate information to stakeholders (Arya et al. 2003; Jiraporn et al. 2008). The beneficial perspective suggests managerial discretion exercised on earnings is conducted to reflect the managers’ tacit knowledge. However, the incentive most in line with current research is coherent with the opportunistic perspective arguing earnings management is inherently negative (Schipper 1989; Healy and Wahlen 1999; Prior et al. 2008; Kim et al. 2012).

Earnings quality captures the usefulness of the financial reports, where the quality is considered higher if relevant and precise information about the firm's financial performance

is communicated to decision-makers (Dechow et al. 2010). Following the opportunistic perspective, earnings management decreases the quality of earnings. Furthermore, Dechow et al. (2010) identify nine consequences found in research to be associated with low earnings quality. Amongst them, an increase in cost of equity capital (Hribar and Jenkins 2004), an increased cost of debt (Francis et al. 2005), and lastly the likelihood of modified audit opinions increase when firms exhibit high accruals (Francis and Krishnan 1999). Concluding that earnings management has several implications for businesses, both direct and indirect through a lowered earnings quality.

Due to its unobservable features, there is an ambiguity in studying earnings management (Beneish 2001). Earnings are primarily managed through either *accrual-based methods* or *real activity based methods*. Real activity based methods include, but are not limited to, increasing sales through price discounts or cutting discretionary costs to improve margins to an extent that is abnormal in regard to their economic conditions (Roychowdhury 2006). However, as opposed to real activity manipulation originating from operational decisions, accrual-based methods concern accounting treatment of a particular transaction, without altering the transaction itself (Zang 2012).

Earnings management is not detectable with absolute certainty, therefore several proxies are available. The least controversial is the use of Accounting and Auditing Enforcement Releases (AAERs) considered violations of generally accepted accounting practices (GAAP). These reflect serious violations and in many jurisdictions, including Sweden, the availability of similar reports is limited. Alternatively, indications of earnings management can be detected using models relying on either real activity manipulation or accruals, considered within GAAP earnings management. Accrual-based models to detect earnings management are predominantly used in research, given their well-documented ability to reliably detect earnings management (Healy and Wahlen 1999). Based on this, and the limitation of available substitutes of AAERs, accrual-based methods to estimate earnings management will be applied in this study.

2.1.1 Accrual-based Earnings Management

Accrual accounting refers to the recognition and realization of revenue and expenses and the discrepancy that arises when the two occur in different time periods. Total accruals can be

divided into non-discretionary and discretionary accruals. The discretionary accruals are attributable to management discretion and have thus become a widely used proxy in earnings management research (Jones 1991; DeFond and Subramanyam 1998; Prior et al. 2008; Kim et al. 2012). The intuition behind this relies on the assumption that lower discretionary accruals imply less managed earnings (Healy and Wahlen 1999). Jones (1991) proposed a widespread model for capturing and quantifying discretionary accruals. This model has been further complemented by Dechow et al. (1995) and Kothari et al. (2005) into the Modified Jones Model and the performance-adjusted Modified Jones Model, hereafter referred to as the Kothari Model. Both of these are further outlined in section 3.1.2 *Estimation of Discretionary Accruals*.

2.2 Corporate Social Responsibility

Corporate social responsibility is defined by Carroll (1979) through a model of four responsibilities. Firstly, *economic responsibilities* constitute the foundation for any business and specify that the business should produce the goods the society demands and simultaneously generate a profit. Secondly, *legal responsibilities* rely on the expectation that business operations should follow the laws and regulations within the market it operates. Thirdly, *ethical responsibilities* that, although not required by law, are expected by the members of society that businesses adhere to. The last responsibility is categorized as *discretionary responsibilities* and are actions above those ethically expected by society. Such actions are completely voluntary for businesses to engage in through the desire to contribute exceeding the economic, legal, and ethical responsibilities specified. The four constituting responsibilities have later developed into an adjusted pyramid model (Carroll 1991). Where the fourth and final responsibility discretionary responsibilities is developed into and refers to the philanthropic responsibility, which entails to “be a good corporate citizen, contribute resources to the community, and improve quality of life.” (Carroll 1991 p. 42). The pyramid captures the fundamental responsibilities, however, they are suggested to be seen as a whole (Carroll 1991).

Further examining CSR, the most prominent opposing argument is by Friedman (1970): “the social responsibility of business is to increase its profits” (Friedman 1970 p. 1). Additionally, arguing that the cost of engaging in social activities outweighs the benefits causing inefficient

use of company resources (Friedman 1970). Thus, giving rise to an abundance of studies examining the relationship between CSR and financial performance in terms of profitability. However, the results in these studies remain inconsistent with some arguing that CSR has positive implications for financial performance (Orlitzky et al. 2003; Lys et al. 2015), others argue that CSR does not necessarily impact financial performance (McWilliams and Siegel 2001; Mackey et al. 2007). One common argument made by some studies, regardless of the relationship with financial performance, is that CSR signals ethics and trustworthy behavior which can constitute a competitive advantage (Lys et al. 2015; Jones 1995).

Moreover, as social activism by corporate leaders has increased, the business acceptance of CSR follows this trend (Carroll 2021). Activist organizations have also become more efficient at bringing pressure to companies by demanding more transparency. Resulting in social responsibility reporting gaining credibility and mandate in government regulations, further increasing the implementation of CSR (Porter and Kramer 2006). Nonetheless, it is also relevant to note that the legal origins of the country the company operates in affect the CSR performance and the average level of CSR within these systems. Previous research focuses mostly on countries utilizing common law (Prior et al. 2008; Kim et al. 2012). Common law relies on a discretion-oriented system with rules and regulations following precedent litigations. In contrast, the civil law system relies on state intervention through preventative rules and regulations. As a result, firms operating primarily within civil law systems exhibit higher CSR scores, whereas Scandinavian countries in particular exhibit the highest (Liang et al. 2017).

Measuring CSR is undoubtedly difficult given its qualitative character (Carroll 1991). However, environmental, social, and governance (ESG) can be evaluated quantitatively by a limited set of factors (Capelle-Blancard and Petit 2017). The term ESG arose after the UN's report "Who Cares Wins" (United Nations 2004), and has thereafter been used interchangeably with CSR (Liang et al. 2021). ESG captures three pillars of sustainability: environmental, social, and governance. Because of the conceptual proximity of ESG and CSR and the quantitatively measurable features, ESG is used as a proxy for CSR, further specified in *3.1.1 Measuring CSR*.

2.3 CSR and Earnings Management

There is an inconsistency in the results of prior studies within CSR and earnings management research. One study in the U.S. found support for CSR being correlated with (1) less earnings management through discretionary accruals, (2) less real activity manipulation, and (3) less likelihood of being subject to SEC investigations. The underlying argument is that CSR creates an incentive for ethical considerations in other aspects of the firm, including transparent financial reporting (Kim et al. 2012). However, another perspective suggests CSR is used strategically by managers for personal gain, consistent with an agency theoretic perspective (McWilliams et al. 2006). From an agency theoretic perspective, there is reason to expect a positive relationship between CSR and earnings management, consistent with the findings of Prior et al. (2008). These findings argue for the reverse causal effect, namely that CSR activities are undertaken to cover up earnings management, although acknowledge the possibility of endogeneity issues in their findings. Following, firms operating within “sin” industries (e.g. gaming, tobacco, and alcohol) are showing superior financial reporting quality compared to a control group (Kim and Venkatachalam 2011). Thus, there are previous studies supporting both a positive and negative relationship between CSR and earnings management, explained by different perspectives on both causality and incentives. Another argument posed by Kim et al. (2012) is that the inconsistent findings can be attributed to country differences. Further supported by CSR policies differentiating between countries as a result of national legal origins (Liang et al. 2017), as well as earnings management being subject to cultural differences (Leuz et al. 2003).

2.4 Hypothesis Development

The most widely accepted definition of CSR incorporates ethicality as one of the responsibilities companies should adhere to. In line with this definition is an expectation for firms to behave ethically towards the society it operates in. Studies on CSR suggest there is a moral imperative for managers to behave ethically (Donaldson and Preston 1995; Phillips et al. 2003). Further arguing that ethical behavior is beneficial to the firm. If the incentive for managers to engage in CSR is based on this moral imperative, the manager is expected to actively constrain earnings management. Based on the above reasoning we would therefore expect engagement in CSR to extend to the transparency objective of financial reporting. Additionally, previous research found that Scandinavian countries exhibit the highest CSR

rating (Liang et al. 2017). Therefore, the findings of CSR being associated with less accrual-based earnings management in the U.S. is consistent with this theory and should possibly extend to the Swedish setting (Kim et al. 2012).

However, another theoretical framework supports the strategic use of CSR for purposes other than a moral imperative. From an agency theoretic perspective, CSR may be used as an attempt to diverge focus from managerial misconduct (McWilliams et al. 2006). This perspective suggests managers act primarily in their self-interest and engagement in CSR may be driven by desires of career advancements and pursuit of personal agendas. This is further supported by the findings of Prior et al. (2008) of a positive relationship between earnings management and corporate social responsibility.

Taken together, the direction of the relationship is still uncertain and thus a null hypothesis is constructed. The null hypothesis states that there is no relationship between earnings management and firm engagement in CSR.

H0: There is no relationship between earnings management and CSR.

Considering the above-proposed perspectives we further construct two versions of the alternative hypotheses with regard to the direction of the relationship. The first hypothesis is based on the theory of a moral imperative driving engagement in CSR and the expected constraint of earnings management. Thus, expecting a negative relationship between earnings management and CSR.

H1a: There is a negative relationship between earnings management and CSR.

The second hypothesis instead proposes the relationship between earnings management and CSR is positive, based on the agency theoretic framework of CSR and managerial opportunism.

H1b: There is a positive relationship between earnings management and CSR.

Reporting of ESG is mandatory since 2016 for firms of public interest with more than 500 employees in accordance with the Non-Financial Reporting Directive (2014) within the EU.

However, for a majority of firms sustainability reports are still an active decision. Incentives to disclose sustainability reports can be attributed to both the transparency argument and the managerial opportunism argument. Firms may disclose sustainability reports for increased transparency or as an attempt of window-dressing (Kim et al. 2012; Muttakin et al. 2015). As an additional analysis, based on these theories, we expect disclosure on CSR to be correlated with earnings management.

H2: There is a relationship between firms choosing to disclose CSR and earnings management.

3. Methodology

In this section, the method used to conduct our study is introduced. The method consists of two stages, wherein the first is to construct our estimated absolute values of discretionary accruals for each firm-year observation using a cross-sectional method. The second step is conducting our empirical tests using models specified in this section.

3.1 Research Design

The research design is defined in this section. Including specification of the models used to test our hypothesis and definitions of dependent, independent, and control variables. All continuous variables are winsorized at the 1st and 99th percentile to adjust for extreme observations.

3.1.1 Measuring CSR

Per definition CSR is not quantitatively measurable because of the abstract features, thus a proxy of ESG scoring will be used. As mentioned in section 2.2 *Corporate Social Responsibility*, the terminologies CSR and ESG are used interchangeably (Liang et al. 2021). The largest difference that needs to be acknowledged in our regression modeling is that ESG also directly captures the governance factor (Gillan et al. 2021). Previous research has shown that there is a relationship between earnings management and governance (Xie et al. 2003; Larcker et al. 2007; Ali and Zhang 2015). To isolate the effect between the environmental and social pillar from earnings management we exclude the governance pillar from the independent variable. Given the exclusion of the governance pillar for the purpose of our study, the ESG variable is self-constructed using the same allocated relative weights as Refinitiv Eikon, which constitutes 0.58 and 0.42 for the environmental and social pillars respectively. The scores for each pillar can be given a value between zero and 100, with 100 being the best.

The study further extends to explore the relationship between disclosing CSR information and earnings management. Thus, a second independent variable representing CSR is constructed. This variable is constructed as a binary variable representing if the firm reports on CSR or not. Further specifications on this variable and the data retrieval process are presented respectively in 3.1.3 *Main Regression Model* and 4.2 *Data Collection*.

3.1.2 Estimation of Discretionary Accruals

For the purpose of this study, earnings management is captured using an accrual-based approach that relies on the estimation of discretionary accruals, serving as a proxy for earnings management. The models are specified in the following section, relying on the mathematical specification in *Equation 1* and *Equation 2* presented below (Dechow et al. 1995):

$$TA_{it} = NI_{it} - CFO_{it} \quad (1)$$

$$DA_{it} = TA_{it} - NDA_{it} \quad (2)$$

where, for firm and time-specific value of TA_{it} refers to the total accruals, NI_{it} to net income, CFO_{it} to cash flow from operations, DA_{it} to the discretionary accruals, and NDA_{it} to the non-discretionary accruals. Two models, the Modified Jones Model and the Kothari Model, will be used for estimating discretionary accruals which both build on the model proposed by Jones (1991). Both are included due to their divergent performance under different conditional settings. To collect discretionary accruals for each firm-year observation, a two-step method is employed. First total accruals are calculated based on *Equation 1* for each firm and each year. Secondly, the two models are used to distinguish the non-discretionary accruals from the discretionary accruals. The discretionary accruals are captured by the residuals of the models, giving us two separate estimates for discretionary accruals per firm-year observation. The models employed for this purpose are outlined below.

3.1.2.1 Modified Jones Model

The Modified Jones Model, see *Equation 3*, establishes an improvement of the initial Jones Model used for estimating discretionary accruals. This model relaxes the assumption that all revenue is non-discretionary by adjusting for the change in accounts receivables and improves the accuracy of the model in the case where discretion is exercised on revenue. However, the Modified Jones Model instead implicitly assumes that all changes in credit sales are results of earnings management. This was proven a more reasonable assumption and thus this model has demonstrated a more accurate estimation of discretionary accruals

(Dechow et al. 1995). We intend to use the following model in *Equation 3* for the estimation of discretionary accruals according to the Modified Jones Model¹:

$$\frac{TA_{it}}{A_{i,t-1}} = \beta_0 \frac{1}{A_{i,t-1}} + \beta_1 \frac{(\Delta REV_{it} - \Delta AR_{it})}{A_{i,t-1}} + \beta_2 \frac{PPE_{it}}{A_{i,t-1}} + \varepsilon_{it} \quad (3)$$

Where all variables are scaled by lagged total assets to achieve comparability. The discretionary accruals for firm i at year t are captured in the error term ε_{it} .

3.1.2.2 Kothari Model

Our second model intended to estimate discretionary accruals is the Kothari Model, which is a further augmentation of the Modified Jones Model, *see Equation 4*. It includes return on assets (ROA) to account for the correlation between performance and accruals. The Modified Jones Model fails to account for performance and in cases with outstanding performance achieved through the growth of the firm, misspecification of discretionary accruals occurs. Performance matching on ROA is successful in reducing the amount of type I errors but has shown limitations for certain settings where the type II errors may increase (Kothari et al. 2005). Overall the model efficiently reduces misspecification and the likelihood of incorrectly identifying earnings management. The model has been used extensively in recent earnings management studies specifically in relation to CSR (Prior et al. 2008; Kim et al. 2012). The following *Equation 4* is the intended model to estimate discretionary accruals in accordance with Kothari's adjusted Model²:

$$\frac{TA_{it}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta REV_{it}}{A_{i,t-1}} + \beta_3 \frac{PPE_{it}}{A_{i,t-1}} + \beta_4 ROA_{it} + \varepsilon_{it} \quad (4)$$

Where all variables are scaled by lagged total assets to achieve comparability. The discretionary accruals for firm i at year t are captured in the error term ε_{it} .

¹ Specific information on all separate variables is found in Appendix 1

² Specific information on all separate variables is found in Appendix 1

3.1.2.3 Time-series and Cross-sectionality

Studying earnings management also involves a distinction between employing a time-series approach or a cross-sectional approach to the estimation of the discretionary accruals. The time-series approach relies on identifying earnings management based on variations over time implying large requirements on data, as well as potentially imposing survivorship bias (Subramanyam 1996). Because of this, the time-series approach has in recent years been replaced by the cross-sectional approach mostly due to its more plausible data requirements and superior specification (DeFond and Subramanyam 1998; Kim et al. 2012). The cross-sectional approach instead relies on comparison across firms within industries and years which is superior in terms of accounting for industry-specific factors (Peasnell et al. 2000). However, the limitations of the cross-sectional approach include assumptions of similar firm characteristics across industries. Given the superior specification capacity of the cross-sectional approach, suitability for limited samples, and in accordance with similar studies the cross-sectional method is employed.

3.1.2.4 Absolute and Non-absolute Discretionary Accruals

Discretionary accruals can be measured in absolute or non-absolute values depending on the research question. Using absolute values is useful when assessing the presence of earnings management regardless of the direction earnings are managed. Although, earnings management can both inflate or deflate earnings depending on the incentive and purpose of managing earnings. Non-absolute values instead capture both income-decreasing and income-increasing accruals, wherein the effect might be canceled out. Using non-absolute values, therefore, runs the risk of showing no significant effect where there actually is an effect. However, in studies of the incentives for earnings management where a specific direction is investigated, non-absolute values are best suited. Considering the purpose of this study is to examine the presence of earnings management irrespective of the direction, absolute measures will be used.

3.1.2.5 Balance Sheet and Cash Flow Approach

The accrual-based method employed in this study also relies on the choice of either the balance sheet approach or the cash flow approach for obtaining the necessary financial data. Total accruals are calculated using cash flows from operations, which can be derived directly from the cash flow statement or indirectly through a balance sheet approach. The balance

sheet approach has shown limitations as measurement errors may distort estimated accruals in the presence of non-operating activities such as mergers and acquisitions or discontinued operations (Hribar and Collins 2002). Based on this research, we use the cash flow approach when obtaining the necessary variables for estimating total accruals.

3.1.3 Main Regression Model

To test our hypothesis four Ordinary Least Squares (OLS) multivariate regression models have been constructed, which are presented in *Equation 5*, *Equation 6*, *Equation 7*, and *Equation 8*.

To test our null hypothesis *H0: There is no relationship between earnings management and CSR*, the following Model 1 is subsetting into two regressions based on different methods of discretionary accruals estimation, *Equation 5* and *Equation 6* presented below. Note that the models presented are not to be confused with the Modified Jones Model and Kothari Model which are methods to identify earnings management.

Model 1

$$\begin{aligned} ModJDA_{it} = & \beta_0 + \beta_1 CSR_{it} + \beta_2 Size_{it} + \beta_3 MB_{it} + \beta_4 ROA_{it} + \beta_5 Lev_{it} \\ & + \beta_6 Gov_{it} + \beta_7 Age_{it} + YearFE + IndustryFE + \varepsilon_{it} \end{aligned} \quad (5)$$

$$\begin{aligned} KotDA_{it} = & \beta_0 + \beta_1 CSR_{it} + \beta_2 Size_{it} + \beta_3 MB_{it} + \beta_4 ROA_{it} + \beta_5 Lev_{it} \\ & + \beta_6 Gov_{it} + \beta_7 Age_{it} + YearFE + IndustryFE + \varepsilon_{it} \end{aligned} \quad (6)$$

To test our second hypothesis *H2: There is a relationship between firms choosing to disclose CSR and earnings management*, the following Model 2 divided into two regressions are constructed *Equation 7* and *Equation 8*.

Model 2

$$\begin{aligned} ModJDA_{it} = & \lambda_0 + \lambda_1 ReportCSR_{it} + \lambda_2 Size_{it} + \lambda_3 MB_{it} + \lambda_4 ROA_{it} \\ & + \lambda_5 Lev_{it} + \lambda_7 Age_{it} + YearFE + IndustryFE + \varepsilon_{it} \end{aligned} \quad (7)$$

$$\begin{aligned} KotDA_{it} = & \lambda_0 + \lambda_1 ReportCSR_{it} + \lambda_2 Size_{it} + \lambda_3 MB_{it} + \lambda_4 ROA_{it} \\ & + \lambda_5 Lev_{it} + \lambda_7 Age_{it} + YearFE + IndustryFE + \varepsilon_{it} \end{aligned} \quad (8)$$

We construct two regressions for each hypothesis to ensure the reliability of our findings across different methods of earnings management estimations. $ModJDA_{it}$ captures the absolute value of discretionary accruals for firm i in year t using the Modified Jones Model described above in 3.1.2.1 *Modified Jones Model*. Secondly, $KotDA_{it}$ captures the absolute value of discretionary accruals for firm i in year t using the Kothari Model described above in 3.1.2.2 *Kothari Model*. The coefficients β_0 and λ_0 explain the average level of absolute discretionary accruals in the sample.

CSR_{it} is the independent variable for our first hypothesis. It is a running variable based on the ESG score received from the Eikon database further described previously in 3.1.1 *Measuring CSR*. The β_1 coefficient is intended to capture the effect of corporate social responsibility on earnings management, directly related to our empirical research question.

$ReportCSR_{it}$ is our second independent variable to test our second hypothesis. It is constructed as a binary variable, hence taking on the value 1 if firms disclose on ESG and 0 if not. The coefficient λ_1 explains the effect on discretionary accruals when firms report ESG with respect to the scenario where they do not.

The remaining β_i and λ_i explains the magnitude of the effect of each control variable on the absolute discretionary accruals. Control variables are included to isolate the effect of CSR on discretionary accruals, evaluated and selected based on previous studies and further motivated below. The ε_{it} is the residual.

3.1.3.1 Control Variables

Control variables are selected based on previously proven significant variables in other earnings management studies. This ensures the inclusion of relevant control variables and the exclusion of redundant variables. However, due to data constraints, some variables were omitted. The final selection of control variables is presented below.

Size is measured with the natural logarithm of the market value of equity. The correlation between CSR performance and firm size has been suggested by previous research (Waddock and Graves 1997; McWilliams and Siegel 2001; Prior et al. 2008). Further, larger firms are less likely to manage their earnings because of the increased monitoring and political costs (Kim et al. 2012). Thus, a negative correlation with absolute discretionary accruals is expected.

MB is market to book ratio measured as the market value of equity divided by the book value of equity. Literature has found that firms with growth potential are more concerned with meeting benchmarks and correlation with increased earnings management has been proven to exist (Frankel et al. 2002). Therefore, a positive correlation with absolute discretionary accruals is expected.

ROA is measured as the income before extraordinary items scaled by lagged total assets. Firms that disclose noteworthy high profitability correlate with higher discretionary accruals (Kothari et al. 2005). A positive correlation with absolute discretionary accruals is expected.

Lev captures the leverage measured by long-term debt scaled by total assets. Research has found that firms in financial distress are more incentivized to positively manage their earnings to not violate their debt covenants (Jaggi and Lee 2002). Therefore, a positive correlation with absolute discretionary accruals is expected.

Gov is the governance factor measured as Eikon governance score. Xie et al. (2003) and Larcker et al. (2007) argue that there is a relationship between earnings management and governance. Governance includes amongst other board composition and audit committee practice, findings argue that developed governance structures ensure effective monitoring

which is associated with less earnings management. Consequently, in line with the literature, a negative correlation between absolute discretionary accruals can be expected.

Age is measured as the natural logarithm of 1 + number of years the firm has been active. As firms mature both involvement in CSR and financial reporting behavior could develop. Thus, a control variable on the firm age is included to capture the potential effects of the maturity of the firm.

4. Empirical Data

The data used for the purpose of this study is hereby introduced. The section includes motivation for our sample selection and an in-depth explanation of database resources and the process for gathering our data.

4.1 Sample Selection

For the purpose of our study, we collect data on Swedish firms listed on OMX Stockholm. The first stage of our research design is estimating discretionary accruals for all firms covering the entire time period. The obtained dataset originally covers 778 firms examined over an 8-year period from 2014-2021 resulting in 6 224 firm-year observations. Financial institutions are removed from our sample due to operational differences causing them to be incomparable across other industries, reducing our sample to 5 328 observations (Kim et al. 2012). Due to issues of missing data, our sample is further reduced by 2 085 observations. Based on the employed method of estimating discretionary accruals cross-sectionally, requirements on sufficient industry-year observations, a minimum of ten, led to the exclusion of the industries Agriculture, Mining, and Public administration (Kothari et al. 2005). We make one exception to this and include Construction. Even though it has slightly fewer observations in 2014 and 2015, we do not expect this to affect our results. The final sample for our estimation of discretionary accruals is 3 153 firm-year observations, see *Appendix 3*.

Investigating the relationship between CSR and earnings management requires data on ESG performance, further causing the sample to decrease significantly due to missing data. The final sample for Model 1 consists of 401 firm-year observations, presented in *Table 1*. For Model 2, a larger sample can be utilized since firms without an ESG score are also included to construct the binary variable. The final sample for that purpose is 1 352 firm-year observations, for full details see *Table 1*.

Table 1.
Sample Selection

Industry	Model 1		Model 2	
	Number of Observations	Number of Firms	Number of Observations	Number of Firms
Construction	18	7	37	11
Manufacturing	335	104	782	224
Transportation	26	10	81	23
Wholesale	25	12	69	17
Retail	30	8	66	13
Services	67	41	317	99
Total	401	182	1352	387

4.2 Data Collection

The data collection process is divided into two stages. First, financial data from Standard & Poor's Capital IQ is obtained to estimate discretionary accruals for all firms in our sample. The financial data needed to construct the control variables is also obtained from the Capital IQ database. Secondly, the ESG data required to construct our independent variable are collected from Refinitiv Eikon. Since 2002 Refinitiv's ESG ratings cover over 12,500 public and private companies globally, hence it is one of the most comprehensive ESG databases (Refinitiv 2022). Refinitiv collects data and constructs ESG scores for all firms that publicly present documents declaring ESG. Documents observed are e.g. CSR reports, webpage, annual reports, code of conduct, and so forth. If Refinitiv does not report an ESG score, the conclusion that the firm neither reports ESG can be established³.

4.3 Industry Classification

The cross-sectional approach to estimating discretionary accruals relies on comparison within industries and industry classification becomes central. Classifying industries using SIC code is used extensively in U.S. research (Kothari 2005, Kim et al. 2012). Considering the requirement of sufficient industry-year observations, firms are classified in accordance with the ten overall divisional categories (Occupational Safety and Health Administration 2023).

³ This has been confirmed through personal contact with representatives from Eikon Refinitiv and complemented by our own confirmation tests.

5. Results

The following section aims at presenting the results of our study. First, descriptive statistics for our sample are presented. Followed by the Pearson correlations for the variables ensuring that the sample does not exhibit problems of multicollinearity. Lastly, the regression output investigating the hypotheses for both of the models is presented.

5.1 Descriptive Statistics

In *Table 2* the descriptive statistics for the variables used in Model 1 and Model 2 are presented. The mean of absolute discretionary accruals for Model 1 using Modified Jones's estimation and Kothari's estimation respectively is 0.0573 and 0.0526. Comparing the discretionary accruals of the Modified Jones model and Kothari model it is observable that the figures are aligned and do not deviate from each other. However, when comparing the values of discretionary accruals to U.S. firms we observe that the mean of absolute discretionary accruals for both Model 1 and Model 2 are less for our sample of Swedish firms (Kim et al. 2012). Thus, suggesting that the firms within our samples manage earnings less. As discussed in 2.3 *CSR and Earnings Management* this could be attributed to cultural differences. The running independent variable *CSR* has a mean of 47.5827, which is similar to previous research conducted on an international basis (Prior et al. 2008).

Control variables are similar to previous research with a few exceptions. *Size*, *MB*, *Lev*, and *Age* deviate from the descriptive statistics of previous studies. The mean for *Size* is larger and the standard deviation is higher than what previous literature conducted in the U.S. presents, implying that our sample contains larger firms and more spread in market capitalization. This could be explained by previous studies being conducted on all firms, while this study focuses on publicly listed firms, which usually is large in size. The mean *MB* is higher and the standard deviation is less than in previous literature implying that our sample displays higher-valued firms relative to their equity book value. The standard deviation for *Lev* is higher, implying a larger spread of long-term debt levels. Lastly, the mean and standard deviation of *Age* is higher, implying that our sample firms are older and exhibit a larger variation of firm age compared to previous research conducted on U.S. firms (Prior et al. 2008; Kim et al. 2012).

Table 2.*Panel A: Model 1 Descriptive Statistics*

	Mean	Median	St. Dev	Min	Max
Discretionary Accruals					
<i>ModJDA</i>	0.0573	0.0333	0.0888	0.0003	0.6628
<i>KotDA</i>	0.0526	0.0294	0.0843	0.0001	0.6312
Control Variables					
<i>ROA</i>	4.1505	5.2400	8.6502	-37.4000	20.9000
<i>Size</i>	4827.7783	1417.1000	8736.8085	15.1000	46731.3000
<i>MB</i>	4.2628	2.9664	4.4247	0.3101	29.0130
<i>Lev</i>	0.7636	0.0516	3.5965	0.0000	26.7022
<i>Age</i>	83.6010	66.0000	75.5493	8.0000	408.0000
<i>Gov</i>	49.5714	50.2744	23.5824	3.8422	92.3047
Independent Variable					
<i>CSR</i>	47.5827	48.1522	26.1123	0.8043	92.4614

Panel B: Model 2 Descriptive Statistics

	Mean	Median	St. Dev	Min	Max
Discretionary Accruals					
<i>ModJDA</i>	0.0872	0.0481	0.1175	0.0005	0.7635
<i>KotDA</i>	0.0834	0.0474	0.1128	0.0003	0.7391
Control Variables					
<i>ROA</i>	-4.3818	2.9000	18.4083	-77.5000	22.3000
<i>Size</i>	1510.6467	119.7000	4657.6979	2.1900	32546.1000
<i>MB</i>	4.3936	2.8643	5.7218	-3.0986	41.0448
<i>Lev</i>	12.8050	0.1159	52.0853	0.0000	371.5935
<i>Age</i>	48.3099	27.0000	52.6302	4.0000	327.0000
Independent Variable					
<i>ReportCSR</i>	0.2973	0.0000	0.4573	0.0000	1.0000

5.2 Pearson Correlations

Pearson correlations for the variables used in our study are presented in *Table 3 Panel A and Panel B* representing Model 1 and Model 2 respectively. The correlation values are examined to exclude issues of multicollinearity in our datasets. Correlation between the dependent variable and control variables is expected as that ensures our selected control variables contribute to the explanatory power of our model. Based on our method, control variables are intended to capture different aspects of financial health and it is expected that these show significant correlation. However, to disregard multicollinearity the independent variables should not exhibit high correlation. This is further complemented by conducting a VIF test, presented in *Appendix 4*.

Interpreting *Table 3 Panel A* we find a significant correlation between all variables and the independent variable *CSR*. The significant negative correlation between *CSR* and the two dependent variables *ModJDA* and *KotDA* respectively, suggest that firms with higher *CSR* scores are less likely to engage in earnings management. Thus, adhering to the transparency perspective. The two dependent variables *ModJDA* and *KotDA* are strongly correlated as expected, given they measure discretionary accruals similarly using slightly different methods. All control variables, excluding *Size*, significantly correlate with the dependent variables in one or both of the models. This is consistent with our expectations and supports our choice of control variables contributing to the models. The fact that *Size* does not significantly correlate to our dependent variables suggests the explanatory power contributed by that variable is less, but does not necessarily suggest it should be excluded.

Interpreting *Table 3 Panel B* shows similar characteristics as the previously mentioned, note that they cover different samples and small variations occur. We find all variables to be correlated with the independent variable. The high correlation between the dependent variables is expected as they both measure discretionary accruals and confirm that they provide coherent estimates of discretionary accruals. In this sample, *Size* is significantly correlated with the dependent variables, as are all remaining variables. Concluding for our second model, all variables contribute to the model.

Table 3.*Panel A: Pearson Correlations Model 1*

	<i>CSR</i>	<i>ModJDA</i>	<i>KotDA</i>	<i>ROA</i>	<i>Size</i>	<i>MB</i>	<i>Lev</i>	<i>Age</i>	<i>Gov</i>
<i>CSR</i>	1.00								
<i>ModJDA</i>	-0.20***	1.00							
<i>KotDA</i>	-0.18***	0.94***	1.00						
<i>ROA</i>	0.27***	-0.24***	-0.25***	1.00					
<i>Size</i>	0.50***	-0.07	-0.05	0.21***	1.00				
<i>MB</i>	-0.24***	0.11*	0.10*	-0.01	0.03	1.00			
<i>Lev</i>	-0.20***	0.21***	0.23***	-0.17***	-0.09	0.08	1.00		
<i>Age</i>	0.43***	-0.17***	-0.15**	0.16**	0.24***	-0.24***	-0.13**	1.00	
<i>Gov</i>	0.50***	-0.09	-0.10*	0.07	0.20***	-0.13**	-0.15**	0.02	1.00

*, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests.

Variables are defined in *Appendix 2*.

Panel B: Pearson Correlations Model 2

	<i>Report</i>	<i>CSR</i>	<i>ModJDA</i>	<i>KotDA</i>	<i>ROA</i>	<i>Size</i>	<i>MB</i>	<i>Lev</i>	<i>Age</i>
<i>Report</i>	1.00								
<i>CSR</i>	-0.18***	1.00							
<i>ModJDA</i>	-0.20***	0.91***	1.00						
<i>KotDA</i>	0.30***	-0.28***	-0.30***	1.00					
<i>ROA</i>	0.47***	-0.15***	-0.16***	0.22***	1.00				
<i>Size</i>	0.00	0.09**	0.12***	-0.25***	-0.01	1.00			
<i>MB</i>	-0.16***	0.11***	0.07*	-0.29***	-0.09***	0.02	1.00		
<i>Lev</i>	0.43***	-0.26***	-0.27***	0.40***	0.47***	-0.18***	-0.16***	1.00	

*, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests.

Variables are defined in *Appendix 2*.

5.3 CSR and Earnings Management

In this section, the results aimed to investigate our empirical research questions are presented in *Table 5* and interpreted in respective sections.

5.3.1 CSR and Earnings Management

The first hypothesis asks whether CSR scoring and earnings management are related, and in which direction, if that relationship is proven to exist. The regression results aimed to investigate this hypothesis are presented in *Table 5 Panel A: Model 1*. Two separate regressions are run based on discretionary accruals estimated using the model by Modified Jones (1) or Kothari (2). The coefficient for the independent variable *CSR* is insignificant in both cases. Thus, we cannot reject the null hypothesis that there is no relationship between CSR and earnings management. Therefore, no significant relationship is proven to exist. The coefficient for *CSR* is positive indicating a positive relationship between CSR and earnings management, however only marginally as the coefficients are close to zero. However, due to the insignificance of these coefficients, they cannot be interpreted reliably. The only significant coefficients are those of *ROA* and *Lev*, which are significant for both regressions and exhibit the same sign and equivalent magnitude. This implies that more profitable and less leveraged companies in general are less likely to engage in earnings management using accruals. The explanatory power of the model is captured by the adjusted R^2 which is 0.093 when approximating accruals using Modified Jones (1) and 0.096 when using Kothari (2), which is in line with comparable studies (Prior et al. 2008; Kim et al. 2012).

5.3.2 CSR Reporting and Earnings Management

The second hypothesis investigates the relationship between the disclosure of CSR-related material and earnings management. Model 2 is constructed based on a binary variable representing firms reporting CSR as opposed to not disclosing CSR activities. Results from the regressions are presented in *Table 5 Panel B: Model 2*. The coefficient of the independent variable *Report CSR* is positive for both Modified Jones (1) and Kothari (2) estimated discretionary accruals. However, the coefficient is insignificant in both cases and cannot be interpreted reliably. The control variables *Size*, *ROA*, and *Age*, are significant at the 0.01 level, all of which exhibit negative coefficients, implying that higher valued, more profitable, and older firms in general are less likely to engage in earnings management using accruals.

Lev is significant at the 0.05 level with a negative coefficient for the Kothari (2) estimated discretionary accruals. The explanatory power of our model is captured by the adjusted R^2 which are 0.12 and 0.131 for Modified Jones (1) and Kothari (2) respectively, thus higher compared to Model 1.

Table 5.

Panel A: OLS Multivariate Regression Models of Model 1

Dependent variable: EM	Modified Jones (1)		Kothari (2)	
	Coefficient	Std. Error	Coefficient	Std. Error
<i>Intercept</i>	0.082*	0.043	0.089**	0.0410
<i>CSR</i>	0.00001	0.0003	0.0002	0.0003
<i>Size</i>	-0.002	0.004	-0.003	0.004
<i>MB</i>	0.001	0.001	0.001	0.001
<i>ROA</i>	-0.002***	0.001	-0.002***	0.001
<i>Lev</i>	0.003***	0.001	0.004***	0.001
<i>Gov</i>	-0.0001	0.0002	-0.0001	0.0002
<i>Age</i>	-0.006	0.007	-0.007	0.006
<i>YearFE</i>	YES		YES	
<i>IndustryFE</i>	YES		YES	
Observations	401		401	
R^2	0.136		0.139	
Adjusted R^2	0.093		0.096	
Residual Std. Error	0.085		0.080	
F-Statistic	3.165***		3.248***	

*, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests.

Variables are defined in *Appendix 2*.

All standard errors are robust.

Panel B: OLS Multivariate Regression Models of Model 2

Dependent variable: EM	Modified Jones (1)		Kothari (2)	
	Coefficient	Std. Error	Coefficient	Std. Error
<i>Intercept</i>	0.201***	0.027	0.175***	0.026
<i>Report CSR</i>	0.009	0.01	0.009	0.009
<i>Size</i>	-0.008***	0.002	-0.008***	0.002
<i>MB</i>	0.0003	0.001	0.001	0.002
<i>ROA</i>	-0.001***	0.0002	-0.001***	0.0002
<i>Lev</i>	-0.00000	0.0001	-0.0001**	0.0001
<i>Age</i>	-0.014***	0.004	-0.012***	0.004
<i>YearFE</i>	YES		YES	
<i>IndustryFE</i>	YES		YES	
Observations	1,352		1,352	
R ²	0.132		0.142	
Adjusted R ²	0.120		0.131	
Residual Std. Error	0.110		0.105	
F-Statistic	11.266***		12.295***	

*, **, *** indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively, based on two-tailed tests.

Variables are defined in *Appendix 2*.

All standard errors are robust.

6. Analysis

In this section we will analyze the obtained results. Further, discussing the heteroskedasticity, multicollinearity and robustness of the results. Concluding this section with a discussion of the chosen research method and the validity, reliability and comparability of our study.

6.1 Analysis of Results

6.1.1 Analysis of CSR and Earnings Management

Our first hypothesis questions if a relationship between CSR and earnings management is present. The following sub-hypothesis questions the direction of the relationship if that is proven to exist. Based on our results we were not able to reject the null hypothesis. Evidently, our study suggests that CSR level does not indicate the presence of earnings management. These results deviate from previous studies finding significant evidence for a relationship between CSR and earnings management. However, it is to be noted that Prior et al. (2008) found CSR for non-anglo-saxon countries, whereof Sweden is included, negatively correlated with earnings management, although these effects were insignificant (Prior et al. 2008). Thus, our results are coherent with these additional findings. The first explanation is that this relationship between CSR and earnings management simply does not exist in Sweden. Several alternative explanations for the ambiguous results might exist, which this section aims to discuss.

The discrepancy between our study finding no significant evidence and the relationship found in previous studies could be attributed to the complexity of estimating CSR. As a result, divergence amongst ESG scores between different rating agencies has been found. The rating agencies' overall view of the firms influences the measurement of ESG, therefore great attention to the underlying score composition is advised (Berg et al. 2022). Previous research accessed the MSCI database, which is one of the most commonly used in research. Due to a lack of access, our ESG ratings were collected from Refinitiv Eikon. Relating to the subjectiveness of ratings, due to the different coverage and allocated weights, the deviating ESG measurements between rating agencies could explain the diverging results.

Furthermore, the perception of CSR differs between the U.S. and Europe. In the U.S., where most research previously has been conducted, companies view CSR as an additional voluntary contribution and will externally communicate it, whereas CSR is perceived as implicitly essential for companies in Europe. This ambiguity could be attributed to more extensive CSR legislation in Europe than in the U.S. (Danko et al. 2008). Because CSR is viewed as implicit by European countries, CSR engagement will not be a strategic decision, but rather something anticipated. Thus, simply a result of the environment's expectations of businesses. Following this argument, the discrepancy between our results and previous research might be affected by the different standpoints of CSR, reinforcing the underlying cultural variations that exist between prior studies conducted internationally and in the U.S. (Prior et al. 2008; Kim et al. 2012), as opposed to our study conducted on the Swedish market.

Another contrast with previous research is the legal origins of the country observed. Prior literature mostly observes the U.S., utilizing common law, as opposed to the civil law based system utilized in Sweden. Support has been found that CSR rating and legal origins are strongly correlated, further suggesting that Scandinavian firms exhibit the overall highest CSR ratings (Liang et al. 2017). In line with this reasoning, findings show that non-anglo-saxon countries, utilizing civil law, do not show a significant relationship between CSR and earnings management (Prior et al. 2008). The differing legal origins and subsequent litigation jurisdiction could therefore explain our results. This could potentially affect the incentives to engage in CSR. If firms operating in Sweden to a larger degree consider CSR a norm, it decreases the likelihood of that being correlated with earnings management.

Additionally, previous research found contradictory incentives for the relationship between CSR and earnings management. One perspective finds CSR and earnings management being positively related, arguing for the agency theoretic framework claiming that managers use CSR to mask engagement in earnings management (Prior et al. 2008). On the contrary, other evidence suggests CSR and earnings management are negatively correlated (Kim et al. 2012). The latter study argues that CSR creates an ethical incentive for managers to act more transparently. Following, these opposing perspectives may declare diverging results and cancel out a potential effect. Assuming that both of these theories act simultaneously and of the same magnitude within our sample, they would generate diverging results in opposite directions. The theory of a relationship between CSR and earnings management being driven

by a moral imperative and the theory of earnings management and CSR as a result of managerial opportunism is what makes the results insignificant and us unable to reject the null hypothesis. We could consequently be posed with the issue of unidentified main incentives why managers engage in CSR and if that is transferable to the same incentives managers engage in or actively constrain earnings management. With these incentives being difficult to measure quantitatively they consequently will remain unknown.

In conclusion, we are unable to confirm nor disregard results found in prior studies, considering the insignificant results and the evident geographic differences of the study.

6.1.2 Analysis of Reporting CSR and Earnings Management

Our second hypothesis questions whether a relationship between reporting CSR and earnings management is present, using a constructed binary CSR variable. The binary variable takes on the value 1 if the firm reports CSR and 0 if they do not. We did not find significant evidence for the second hypothesis. Hence, reporting CSR is not related to engagement in earnings management. Following the same argumentation as previously presented in the analysis of our first hypothesis, the insignificant results could be a consequence of the culturally diverging views of CSR, being viewed as voluntary by the U.S., contra being viewed as essential by Europe (Danko et al. 2008). Moreover, the differing legal origins are strongly correlated with CSR rating, whereas Scandinavian civil law firms exhibit the highest ratings (Liang et al. 2017). Lastly, being unable to reject the null hypothesis could be due to the managers contradicting incentives of the transparency approach presented by Kim et al. (2012) and the agency approach presented by Prior et al. (2008), culminating in inconclusive results. As incentive engaging in CSR with respect to earnings management is problematic to measure quantitatively and thus remains unknown, we are not able to control for this issue, leaving us with ambiguous results.

Concluding, it is important to emphasize that all results obtained use absolute discretionary accruals. Thus, we cannot draw any conclusions regarding the direction of the discretionary accruals and if managers upwards or downward manage their earnings. Consequently, we can neither draw any causal claims regarding the association of earnings management and CSR due to the ambiguity of managers' incentives.

6.1.3 Analysis of Control Variables

Size measured by market capitalization is as expected negatively correlated with earnings management, coherent with previous research (Kim et al. 2012). However, the variable is only significant for Model 2 when investigating whether reporting CSR affects engagement in earnings management. It is significant at the 0.01 level with using both the Modified Jones Model and the Kothari Model with the same coefficient of -0.008.

MB is as expected positively correlated with earnings management with varying coefficients of 0.001 for all regressions except for Model 2 using the Modified Jones Model where the observed coefficient is 0.0003. This is coherent with previous literature implying that companies with growth potential are less willing to miss earnings targets (Frankel et al. 2002). However, the coefficients are insignificant for all models. Thus, no certain conclusion can be drawn from them.

ROA is negatively correlated with earnings management with coefficients -0.002 and -0.001 for Model 1 and Model 2 respectively. All coefficients are significant at 0.01 level. Implies that more profitable firms exhibit less discretionary accruals, suggesting less earnings management within these firms. However, that result is not coherent with previous literature arguing that noteworthy high profitability correlates with higher discretionary accruals (Kothari et al. 2005). It could instead be the case that high-performing firms could have no reason to engage in earnings management, while firms experiencing liquidity issues might have more incentive to manage their earnings (Butler et al. 2004).

Lev is as expected positively correlated with coefficients of 0.003 for Modified Jones Model and 0.004 for Kothari Model within Model 1, coherent with previous literature (Jaggi and Lee 2002). The coefficients are both significant at 0.01 level. This implies that higher leveraged firms are associated with increased accrual-based earnings management. On the contrary, for Model 2 the coefficients are both negative with the values -0.0000 and -0.0001 for Modified Jones Model and Kothari Model respectively, nonetheless very close to zero. Although only the latter one using the Kothari Model is significant but only at the 0.05 level. A possible explanation for the negative signs could be that high leverage is associated with financial distress. Thus, firms would experience increased pressure and scrutiny from lenders, leading to decreased ability to manage earnings. Because of the insignificance and small magnitude

of the effects, these conclusions cannot be drawn reliably. The diverging effects might also be associated with the sample characteristics of the two different samples.

Gov is only used as a control in Model 1 for the purpose of the study. Previous studies would suggest that a negative correlation should be expected (Xie et al. 2003; Larcker et al. 2007). The coefficients are -0.0001 for both the Modified Jones Model and the Kothari Model. Since neither of them is significant no conclusions can be drawn.

Age is as expected negatively correlated with earnings management, in line with previous research (Kim et al. 2012). However, the coefficient is only significant for Model 2 at the highest level yet insignificant for Model 1. The Model 2 coefficients are -0.014 and -0.012 for Modified Jones Model and Kothari Model respectively. Thus, firm age is the variable with the largest magnitude and significant effect on earnings management in Model 2.

6.2 Multicollinearity, Heteroskedasticity, and Robustness

6.2.1 Multicollinearity

Multicollinearity arises when independent variables are highly correlated within the multivariate regression, violating one assumption of OLS. Thus, when multicollinearity is present, the results cannot be interpreted reliably, since the independent variable causing the explained variance cannot be distinguished (Farrar and Glauber 1967). Variance inflation factors (VIF) are examined to ensure against the presence of multicollinearity in our models, presented in *Appendix 4*. The variables show VIF values ranging from approximately one to three for our sample. VIF values exceeding ten suggest presence of multicollinearity (Wooldridge 2012). Criticism has been directed that the threshold should not be fixed, but rather be adjusted to the setting of the data and study, alternatively restricted to a threshold of 4 (O'Brien 2007). We observe no VIF value above 3, concluding no observable issues with multicollinearity and our results can be interpreted reliably.

6.2.2 Heteroskedasticity and Robustness

Heteroskedasticity exists when the standard errors of the regressions are not constant but rather increase, thus violating one assumption of OLS⁴. To ensure the robustness of our results we use robust standard errors as well as both year and industry fixed effects independently, as systematic variation across year and industry are assumed.

Furthermore, the models are conducted without the continuous variables being winsorized, observing no significant change in results of neither coefficients nor significance. We observe our results remain robust to the inclusion of all real values. As mentioned we use industry and year fixed effects determined by a Hausman Test, presented in *Appendix 9*. The null hypothesis states that there is no significant difference between the random and fixed effects model, and we conclude that the null hypothesis is rejected for both regressions within Model 2. However, we are only able to reject the null hypothesis for Modified Jones in Model 1. Although, even if the null cannot be rejected, fixed effects may still be appropriate for Kothari in Model 1.

6.3 Analysis of Research Method

This section aims to discuss the research method. First, the criticism of accrual-based models is addressed. Then we address the validity, reliability, and comparability of our findings.

6.3.1 Accrual-based Models Criticism

Accrual-based models to detect earnings management are commonly used in current research, although the method has been criticized. Using the cross-sectional approach relieves the large data requirements, but instead relies on the assumption of similar characteristics within industries. Problems with misspecification of earnings management may arise if unexplained variation exists within industries, for example through credit policy varying significantly across firms (McNichols 2000). Accrual-based models may also better detect earnings management where earnings are managed substantially, based on the linkages between SEC investigations and accruals as opposed to weaker indications of earnings management (Dechow et al. 1995; Bradshaw et al. 1999). Suggestions of directing focus to single components of earnings in order to achieve greater precision in detecting earnings

⁴ For full specifications of assumptions for OLS, see Appendix 7.

management have been made (McNichols 2000). However, the drawback of such an approach is that other components being managed might go undetected.

Furthermore, incentives for managers to manipulate earnings remain ambiguous. Standard setters rely on the assumption of opportunistic incentives driving managers to exercise discretion on earnings and tend to act to reduce it (Bernard and Skinner 1996). However, some studies find results consistent with the beneficial perspective (Subramanyam 1996). Thus, a problem of interpreting discretionary accruals arises, concluding that there are drawbacks to the reliability of using discretionary accruals as a proxy for earnings management. Although, given the improvements in specification of including adjustments for change in receivables and performance adjusting through return on assets, the models remain the most commonly used in earnings management research (Dechow et al. 1995; McNichols 2000; Kothari et al. 2005).

6.3.2 Validity, Reliability, and Comparability

The validity refers to the extent our research design contributes to the relevance of our conclusions. This relies on deliberate decisions of samples and variables included in our study. Our study is limited to considering solely Swedish companies listed on OMX Stockholm. This limitation is imposed on our study in order to reduce the bias associated with varying accounting regulations across markets. To further decrease the possibility of biased results, the sample was reduced by industries where accrual-based methods to estimate discretionary accruals are not applicable. The control variables were chosen to fulfill the purpose of our study. The variables were further tested for multicollinearity where no indicators were found and our results should be robust. Furthermore, the mentioned criticism in section *6.3.1 Accrual-based Models Criticism* and the fact that earnings management is not exclusively exercised on accruals implies that our conclusions regard only earnings management captured by accrual-based methods.

The reliability measures the accuracy and replicability of a study. Strengthening the reliability of our study is the choice to collect data from reliable sources. Additionally, references are carefully selected from renowned research papers. However, the construction of our binary variable indicating CSR reporting behavior relies on Eikon Refinitiv standards and practices to collect ESG data on firms. To ensure the reliability of our findings based on this variable it

was both confirmed with representatives of Eikon Refinitiv on the causes of missing data, as well as performed additional manual tests within our sample, where we only found minor cases of discrepancy.

The comparability of our findings increases through our choice of using multiple models of estimating discretionary accruals, both of which are frequently used. Given the time period of our study the comparability is reduced as research on this recent data is still being performed and the time period is relatively short compared with more extensive studies. The sample consists of only listed firms, increasing the comparability given that most studies within this field are limited to considering only publicly listed firms. However, delimiting our study to consider only the Swedish market decreases the comparability of the study across markets with significantly different rules and regulations. Lastly, the comparability of CSR studies is often lowered considering the ambiguity of measuring and classifying CSR which should be considered when interpreting our study.

7. Suggestions for Future Research

This study examined the relationship between earnings management and CSR on Swedish listed firms. During the process further aspects within this field have been identified as interesting topics for future research, presented in this section.

Our study focuses on accrual-based methods to estimate discretionary accruals used as a proxy for earnings management. These methods have shown limitations mentioned in previous sections and therefore alternative methods to use as proxy are interesting to study. Previous literature has used real activities manipulation or Accounting and Auditing Enforcement Releases (AAERs), considered violations of generally accepted accounting practices, GAAP (Dechow et al. 1996; Kim et al. 2012). Considering variations in generally accepted accounting practices across countries, studying violations of Swedish GAAP provide a basis for interesting research. Furthermore, real activities manipulation also provides an interesting basis for a study, following the findings that firms generally consider accrual-based methods and real activity based methods as substitutes (Roychowdhury 2006).

Given the scope of this study, the Eikon Refinitiv ESG scores were used as the sole representative of CSR. Combining several CSR ratings retrieved from various sources into an aggregated score would ensure against measurement bias and could provide a more comparable study. Another interesting topic would be to direct the focus to single aspects incorporated within CSR.

Our study focuses on detecting earnings management and thus applies absolute values to the estimation of discretionary accruals. This approach does not allow us to make any conclusions about the direction earnings are managed. Consequently, the incentives remain ambiguous and studying earnings management using non-absolute values, obtaining more information on the direction in which earnings are managed, might provide greater insights into the correlation with CSR if that is proven to exist.

8. Conclusion

In this study, we examine the relationship between CSR and earnings management. We first hypothesize that there is no relationship between earnings management and CSR, with two following sub-hypothesis regarding the direction of the effect. Secondly, we investigate whether disclosing CSR affects earnings management. Using two different accrual-based models determining earnings management, we cannot find evidence for a relationship between CSR and earnings management. Contrary to several previous studies, our results suggest that neither CSR score nor disclosing CSR are shown to have a significant effect on earnings management. Acknowledging the potential explanations for our results, legal origin has shown importance in previous studies. Evidence for a non-significant relationship between CSR and earnings management within non-anglo-saxon countries has been found (Prior et al. 2008). Where non-anglo-saxon countries apply a civil law based system, also identified to be significantly correlated with CSR performance (Liang et al. 2017). Concluding that although the results contradict the previous findings in the U.S., they are in line with previous studies adjusting for these judicial aspects. Nonetheless, the degree of earnings management is rather attributed to other observed variables such as return on assets and leverage. The results hold valid after controlling for variables of interest, using robust standard errors and industry and year fixed effects respectively.

These results are of interest to investors, stakeholders, and regulators, as earnings management considerably impacts earnings quality, posing risks of investor uncertainty and information asymmetry (Beyer et al. 2019). As prior literature on CSR in relation to earnings management focuses primarily on U.S. or international data, our study contributes to the comprehension of the relationship in a Swedish setting. Regardless, there are aspects that can be extended to improve our study. It would be interesting to examine if the results remain robust after creating an aggregated CSR score from multiple measuring agencies. Another interesting extension would be to use different measures of earnings management such as real activities manipulations and AAERs, providing a broader definition of earnings management. We look forward to future research addressing these issues.

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Appendix

Appendix 1.

Discretionary Accrual Estimation Variable Definitions

Variable Name	Definition	Data Source
ΔREV	Change in revenue calculated through revenue at time t less revenue at time t-1	Capital IQ
ΔAR	Change in accounts receivable calculated as accounts receivable in time t less accounts receivable at time t-1	Capital IQ
PPE	Property, plant and equipment	Capital IQ
A	Total Assets	Capital IQ
NI	Net Income	Capital IQ
CFO	Cash Flow from Operations	Capital IQ
ROA	Return on assets retrieved as a value	Capital IQ
TA	Total Accruals calculated as net income less cash flow from operations	Capital IQ

Appendix 2.

Main Regression Models Variable Definitions

Variable Name	Definition	Data Source
$ModJDA$	Absolute value of discretionary accruals according to the Modified Jones Model	Estimated in R using variables specified in Appendix X Panel A.
$KotDA$	Absolute value of discretionary accruals according to the Kothari Model	Estimated in R using variables specified in Appendix X Panel A.

Continuing Appendix 2.

Variable Name	Definition	Data Source
<i>ESG</i>	Our ESG score excluding governance measured as the average of the environmental pillar score and social pillar score	Eikon Refinitiv
<i>Size</i>	Market capitalization in USD measured as the natural logarithm	Capital IQ
<i>MB</i>	Market to book equity ratio, calculated as market capitalization / book value of equity	Capital IQ
<i>ROA</i>	Return on assets retrieved as a value	Capital IQ
<i>Lev</i>	Calculated as long-term debt divided by total assets	Capital IQ
<i>Gov</i>	Governance pillar score	Eikon Refinitiv
<i>Age</i>	Retrieved as year founded and then deducted from the respective year. Then adjusted for normal distribution by taking the $\ln(\text{age} + 1)$ for the age.	Capital IQ

Appendix 3.

Firm observations per industry and year (all industries)

	2014	2015	2016	2017	2018	2019	2020	2021	Total
Industry									
Agriculture	1	1	1	1	2	2	1	2	11
Mining	5	5	6	7	7	7	7	7	51
Construction	9	9	10	10	11	14	12	14	89
Manufacturing	160	182	200	226	244	267	277	277	1833
Transportation	16	17	17	21	24	24	25	27	171
Wholesale	12	12	16	16	17	16	17	19	125
Retail	11	12	13	12	13	15	21	23	120
Services	63	74	87	97	106	121	134	133	815
Public Admin	3	2	4	3	4	4	4	4	28
Total	280	314	354	393	428	470	498	506	3243

Appendix 4.*Multicollinearity*

Dependent Variable: Earning Management		
	Model 1	Model 2
Variable	VIF	VIF
<i>CSR</i>	2.80	
<i>Report CSR</i>		1.79
<i>Size</i>	2.28	2.54
<i>MB</i>	1.26	1.15
<i>ROA</i>	1.18	1.71
<i>Lev</i>	1.07	1.12
<i>Age</i>	1.76	1.71
<i>Gov</i>	1.44	

Appendix 5.*Panel A: Model 1 Firm observations per industry and year*

	2014	2015	2016	2017	2018	2019	2020	2021	Total
Industry									
Construction	1	1	1	1	1	3	4	6	18
Manufacturing	9	10	14	17	18	31	44	92	235
Transportation	2	2	2	2	3	2	4	9	26
Wholesale	0	0	1	2	2	3	5	12	25
Retail	1	2	3	3	5	4	7	5	30
Services	0	0	1	1	2	11	16	36	67
Total	13	15	22	26	31	54	80	160	401

Panel B: Model 2 Firm observations per industry and year

	2014	2015	2016	2017	2018	2019	2020	2021	Total
Industry									
Construction	2	2	3	3	5	7	6	9	37
Manufacturing	41	51	70	89	116	133	137	145	782
Transportation	5	5	6	9	11	16	13	16	81
Wholesale	5	6	6	9	10	9	9	15	69
Retail	6	7	8	8	10	8	12	7	66
Services	15	13	24	36	48	56	61	64	317
Total	74	84	117	154	200	229	238	256	1352

Appendix 6.

Firm observations of reporting ESG or not grouped by industry

R = reporting firms
NR = non-reporting firms

Model 2								
	2014		2015		2016		2017	
Industry	R	NR	R	NR	R	NR	R	NR
Construction	1	1	1	1	1	2	1	2
Manufacturing	9	32	10	41	14	56	17	72
Transportation	2	3	2	3	2	4	2	7
Wholesale	0	5	0	6	1	5	2	7
Retail	1	5	2	5	3	5	3	5
Services	0	15	0	13	1	23	1	35
Total	13	61	15	69	22	95	26	128

Continuing Appendix 6.

Model 2									
	2018		2019		2020		2021		Total
Industry	R	NR	R	NR	R	NR	R	NR	
Construction	1	4	3	4	4	2	6	3	37
Manufacturing	18	98	31	102	44	93	93	52	782
Transportation	3	8	2	14	4	9	9	7	81
Wholesale	2	8	3	6	5	4	12	3	69
Retail	5	5	4	4	7	5	5	2	66
Services	2	46	11	45	16	45	36	28	317
Total	31	169	54	175	80	158	161	95	1352

Appendix 7.

Assumptions of OLS model

- (1) *Linearity*: The regression model is linear in the coefficients and the error term
- (2) *No endogeneity*: All independent variables are uncorrelated with the error term
- (3) *Normality of data*: The error term has a population mean of zero
- (4) *Homoscedasticity*: Constant variance of error term, large outliers are unlikely
- (5) *No autocorrelation*: Observations of the error term are uncorrelated with each other
- (6) *No multicollinearity*: The independent- and control variables are not correlated with each other

Appendix 9.
Hausman Test

	Model 1		Model 2	
	Modified Jones	Kothari	Modified Jones	Kothari
P-value	0.00001	0.08530	0.00146	0.00021
Null hypothesis	Reject	-	Reject	Reject