LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER
ACCOUNTING, TAXATION AND CORPORATE FINANCE

MASTER´S FINAL WORK
DISSERTATION

CORPORATE SOCIAL RESPONSIBILITY AND EARNINGS MANAGEMENT: EUROPEAN EVIDENCE

MARIA VERÓNICA FARIA DE SOUSA

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ABSTRACT

The present study examines the association between Earnings Management and Corporate Social Responsibility. Moreover, and relying on previous studies, it is investigated if the corporate social responsibility orientation of a firm moderates the trade-off between accruals and real earnings management. Thus, it is considered a sample of 308 listed companies from the European Union between 2013 and 2019. As a measure of discretionary accruals, it is used the modified Jones model (1991) as developed by Dechow, Sloan & Sweeney (1995). As a proxy for real earnings management, Roychowdhury's (2006) combined measure with three components is used. Corporate social responsibility is computed using the ESG Score from the Thomson Reuters Eikon Database. The results suggest a negative relationship between corporate social responsibility and earnings management in general. By analysing the trade-off between both earnings management strategies, results suggest that socially responsible firms engage less in real activities management. This study contributes to the literature by considering that the corporate social responsibility orientation of a firm moderates the use of accruals and real earnings management. Results are robust after considering a different measure of real earnings management and after altering sample composition. Therefore, the evidence is consistent with the idea that socially responsible activities are associated with ethical behaviors and are not used as a concealing instrument to less honorable practices.

Keywords: *earnings management, corporate social responsibility, accruals earnings management, real earnings management.*

RESUMO

O presente estudo analisa a relação entre Gestão de Resultados e Responsabilidade Social Empresarial. Para além disso, e com base em estudos anteriores, é investigado se a orientação para responsabilidade social de uma empresa condiciona o *trade-off* entre gestão de resultados por *accruals* e gestão de atividades reais. Assim, é considerada uma amostra de 308 empresas cotadas da União Europeia para o período de 2013 a 2019. Como medida de *accruals* discricionários é usado o modelo de Jones modificado (1991), como descrito por Dechow, Sloan & Sweeney (1995). Como medida de gestão de atividades reais é usada a medida combinada com três componentes como descrita por Roychowdhury (2006). Finalmente, como medida de responsabilidade social empresarial recorre-se ao *ESG score* divulgado na base de dados Thomson Reuters Eikon. Os resultados sugerem uma relação negativa entre responsabilidade social empresarial e gestão de resultados no geral. A análise da relação de *trade-off* entre estratégias de gestão de resultados sugere que as empresas praticam menos gestão de atividades reais. Isto traz contributos adicionais à literatura por considerar que a orientação para responsabilidade social de uma empresa modera o uso das estratégias de gestão de resultados. Os resultados são robustos depois de considerar uma medida diferente para gestão de atividades reais e depois de alterar a composição da amostra. Como tal, a evidência é consistente com a ideia de que as atividades consideradas socialmente responsáveis estão associadas a comportamentos éticos por parte das empresas e não são uma tentativa de ocultar práticas menos corretas.

Palavras Chave: *gestão de resultados, responsabilidade social empresarial, accruals discricionários, gestão de atividades reais.*

Acknowledgments

To my adviser, Professora Doutora Cristina Gaio, thank you for your availability and guidance. I am pleased for having you assist me with your knowledge, advices and inputs, which has contributed to the enrichment of this work.

To my parents, Isidro and Maribell, for your unconditional support. You are the reason I have accomplished all of this. I am very grateful for all the effort and everything you have given me throughout my life. I always carry your values with me.

To my brothers, Junior and Roberto. Thank you for all your support and for motivating me into achieving my goals. Someone once said that being a brother is better than being a superhero and you make it true.

To my boyfriend, Bruno, my partner in this and many other journeys, for always being by my side, for your patience and for believing in my potential. I am thankful for having you in my life.

I dedicate my dissertation to my brother Junior. For being my role model, for all your advices, for giving me so much strength and support, for being the best brother in the world. You will always live inside of me and your spirit will never be forgotten. May your soul rest in peace, my brother.

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LIST OF ABBREVIATIONS

AEM – Accruals Earnings Management

CFO – Chief Financial Officer

CSR – Corporate Social Responsibility

EM – Earnings Management

EIRIS – Environmental Information Resources System

ESG – Environmental, Social and Governance

EU – European Union

GAAP – Generally Accepted Accounting Principles

GICS – Global Industry Classification System

GRI – Global Reporting Initiative

IFRS – International Financial Reporting Standards

KLD – Kinder, Lydenberg & Domini

NACE – Statistical classification of economic activities in the European Community

OLS – Ordinary Least Squares

REM – Real Earnings Management

SOX – Sarbanes-Oxley Act

US/USA – United States of America

UK – United Kingdom

VIF – Variance Inflation Factor

WCED – World Commission on Environment and Development

1.INTRODUCTION

The traditional theory of the firm presents profit maximization as the ultimate goal of a company. In this context, earnings play an important role when assessing firm value. For instance, earnings are used by stakeholders to evaluate management's performance and determine executive compensation, which induces incentives to report pleasing earnings (Xu, Taylor & Dugan, 2007). Earnings management (EM) occur when managers use their judgment on the financial reporting process to obtain some private gain (Schipper, 1989).

Over the past few decades, the growing concerns about the environment and sustainability have contributed to the rising importance of Corporate Social Responsibility (CSR). As a result, stakeholders request for transparency on all aspects of the business, not only to understand the financial position and performance of the firm but also to measure the level of social responsibility. Carroll (1991) affirms that social responsibility commitment will lead companies to make profit, behave ethically and legally. Thus, socially responsible activities allow companies and managers to enhance a reliable position amongst stakeholders.

Several empirical researches aim to study whether EM and CSR are connected. Although CSR is generally perceived to be associated with transparent and honest financial reports (Kim, Park & Wier, 2012), some authors declare that managers take advantage of this perception to hide less ethical practices. Prior, Surroca & Tribó (2008) and Choi, Lee & Park (2013) claim that managers who pursuit private benefits use CSR strategically to disguise their opportunistic behavior. However, the most frequent standpoint is that EM and CSR are negatively related, i.e., firms with strong commitment to CSR are disposed to act in a responsible way when reporting financial statements and will not distort earnings (Kim et al., 2012; Choi et al., 2013; Toukabri, Jilani & Jemâa, 2014; Almahrog, Aribi & Arun, 2018). Bozzolan, Fabrizi, Mallin & Michelon (2015) and Mutuc, Lee & Tsai (2019) do not completely discard the possibility of EM on CSR-oriented firms. These authors argue that, in the case of practicing EM, managers from CSR-oriented firms will manage accruals rather than real operations in order to protect firm's long-term profitability. This perspective comes in line with the idea of two substitute ways to manage earnings: accruals and real activities (Zang, 2012).

All this considered, this work proposes to examine the association between earnings management and CSR. The research considers that the CSR-orientation of a firm constrains the use of EM in general. More than that, it is considered that CSR restrains actions that will harm the company's future performance. Therefore, and considering the trade-off between EM strategies, it is expected that CSR-firms will less likely engage in real operational decisions than in accruals.

The sample is composed of 308 listed firms from the European Union, resulting in a number of 1,347 firm-year observations, for the period of 2013-2019. Accruals-based earnings management is calculated using the modified Jones model (Dechow, Sloan & Sweeney, 1995). Real earnings management is computed following Roychowdhury's model (2006) as an aggregate measure of abnormal cash flows from operations, abnormal production costs and abnormal discretionary expenses. As a measure of CSR, Thomson Reuters ESG score is used in the analysis and corresponds to a percentile ranking across ten categories of social responsibility.

In order to test our hypotheses and relying on previous studies (e.g. Kim et al, 2012), two models were estimated using multiple regressions with standard errors adjusted by a two-dimensional cluster at the firm and year levels. Our evidence suggests that CSR-firms do not behave opportunistically. Also, larger firms with more growth opportunities are less willing to manage accruals and firms with better performance, more growth opportunities and audited by a Big Four auditor do not distort real activities. These findings are robust for a different measure of REM, with two components of the combined variable, and for a different sample composition.

Much of prior literature neglects the possibility to manage earnings through real operations and focuses mainly on discretionary accruals (e.g. Chih, Shen & Kang, 2008; Prior et al., 2008; Calegari, Chotigeat & Harjoto, 2010; Gras-Gil, Manzano & Fernández, 2016). In this study, by using a combined measure of REM (Roychowdhury, 2006) and the measure for discretionary accruals as described by the modified Jones model (Jones, 1991; Dechow et al., 1995), both earnings management strategies are studied. Therefore, the study extends the literature by studying the association between EM and CSR considering the trade-off between AEM and REM practices. Moreover, aware that the majority of studies center on an American context (Yip, Van Staden & Cahan, 2011; Kim et al., 2012; Bozzolan et al., 2015), this empirical work contemplates a sample of firms from the European Union.

This study is organized into five sections. Section two contains the literature review regarding the topic of Earnings Management and Corporate Social Responsibility and culminates with the development of the research hypotheses. The third section presents the research design, including the sample characterization, the variables measurement and the empirical models. The fourth section contains the results and robustness tests and, finally, section five concludes the empirical research.

2. LITERATURE REVIEW

2.1. Earnings management

Accounting earnings have become an important instrument to evaluate corporate performance (Healy & Wahlen, 1999). Financial statements are regulated by accounting standards that enable a certain level of flexibility, where managers and accountants make choices regarding what practices to adopt. In this context, when managers use such discretion over the accounting numbers, the conception of earnings management (EM) arises (Watts & Zimmerman, 1986).

Throughout the literature, EM has been defined in multiple ways. According to Schipper (1989, p. 92), EM is a "purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain". This intervention may be intended to either mislead stakeholders about the underlying economic performance of the company, or to control contractual outcomes dependent on reported accounting practices (Healy & Wahlen, 1999).

The definitions presented above highlight significant features of EM practices. EM refers to a deliberate behavior with the ultimate purpose to modify reported earnings and, therefore, it is different from unintentional errors (Marai & Pavlović, 2013). Apart from that, Dechow & Skinner (2000) emphasize that EM – which is possible within the boundaries of the Generally Accepted Accounting Principles (GAAP) (Healy & Wahlen, 1999) - diverges from the concept of fraud – which clearly proves an intent to deceive beyond the acceptable.

Prior literature assumes two predominant perspectives on EM: the opportunistic behavior and the signaling perspective (Holthausen, 1990). The opportunistic behavior perspective is based on the premise that managers try to misinform investors, in order to pursuit their own private welfares at the expense of stakeholders (Schipper, 1989; Healy & Wahlen, 1999). On the contrary, in line with the signaling perspective, executives use their knowledge and judgments on transactions to communicate with outsiders, by releasing inside information to investors, such as expectations regarding future cash flows and the firm's future performance (Holthausen & Leftwich, 1983). The prevailing research relies on the view that managers opportunistically benefit themselves (Beneish, 2001). Information asymmetry inhibits stakeholders to access relevant information and to monitor manager's actions, which creates the opportunity to manage earnings (Warfield, Wild & Wild, 1995, Richardson, 2000; Sun & Rath, 2008).

Matsumoto & Parreira (2007) argue that managers practice EM due to the lack of accounting standards for all possible situations, combined with economic and financial incentives. By using EM practices, it is possible to artificially modify results to meet analyst's forecasts, which may result in aggregated value for the firm (Dechow & Skinner, 2000). Further motives to the practice of EM concern contractual constrains dependent on reported values and financial advantages, such as low financing costs and easy access to credit (Dechow & Sloan, 1996). Jaggi & Lee (2002) argue that EM is implemented in financial distressed firms to avoid debt covenants violations. Alternatively, Healy (1985) suggests that managers choose to adjust earnings in order to maximize their remuneration, since compensation incentives often rely on indicators such as price per share (Cheng & Warfield, 2005; Mendes & Rodrigues, 2006). Also, managing earnings not always means presenting boosted profits. For instance, when it is not possible to meet the targets for a particular year, managers can implement "big bath" practice and save earnings for a posterior period (Guidry, Leone & Rock, 1999).

Despite the motive, when companies manage earnings, the quality of financial statements may be reduced through lack of accuracy, relevance and reliability (Marques & Rodrigues, 2009). As a consequence, the ability to assess the current economic situation of a firm as well to predict its future earnings and cash flows may be compromised (Lev, 2003).

2.1.1. REM and AEM strategies

Managerial actions can either involve real earnings management (REM) and/or accruals-based earnings management (AEM) strategies (Bozzolan et al., 2015). The former is related to cash flows from business transactions, whilst the latter refers the accrual part of earnings.

REM, or real earnings management, consists on deviating from the normal operational decisions to alter reported earnings, which ultimately deceives stakeholders by believing that the desired financial goals were achieved (Roychowdhury, 2006). Amongst others, these actions include reducing discretionary expenditures, such as advertising costs, or aggressive price discounts to increase product sales (Roychowdhury, 2006).

AEM, or accruals-based earnings management, is related to a change in the accrual process. Accruals are the difference between the firm's net income and cash flows and are decomposed in nondiscretionary and discretionary (Yip et al., 2011). Nondiscretionary accruals reflect the economic variations related to the company's activity (Healy, 1985). As for discretionary accruals, these refer to the adjustments not economically justified made by managers (Dechow, Ge & Schrand, 2010). Thus, AEM strategies rely on discretionary accruals, through the modification of estimates, assumptions and accounting methods dependent on the manager's judgment (Dechow & Skinner, 2000). Examples of these techniques include changing estimates regarding the useful life and the method of depreciation and impairments of non-current assets.

Executives who choose to depart from optimal operational choices may put at risk future cash flows and alter the firm's operational, investment and financing structure, in order to obtain greater earnings in the current period (Dechow & Skinner, 2000; Roychowdhury, 2006; Zang, 2012). Despite the true economic consequences, Graham et. al (2005), through a survey conducted to CFOs[1] of U.S. listed companies, reported that these are more prone to apply REM than AEM to achieve financial reporting targets. One possible explanation to the preference of REM is that AEM is prone to additional risks and costs regarding auditing and regulatory scrutiny (Cohen, Dey & Lys, 2008), while

[1] CFO as Chief Financial Officer.

REM is more difficult to detect (Bozzolan et al., 2015). Cohen et al. (2008) observed that SOX[2] caused executives to shift from accrual-based to real earnings management, suggesting the preference for strategies underlying real business transactions when the level of enforcement is high. However, despite the emergent use of REM techniques, most of EM occurs through discretionary accounting choices since they do not impact cash flows, are less costly and less resource-consuming (Mendes & Rodrigues, 2006; Chen, 2009).

Zang (2012) claims that REM and AEM are used as substitute strategies to distort earnings. If REM reveals to be costlier than managing accruals, the latter is applied to a higher extent and vice versa. From this point of view, REM is limited by levels of industry competition, tax rates and financial distress (Zang, 2012). The adoption of AEM strategies is dependent on accounting flexibility and the degree of auditors and regulators' control (Zang, 2012). Following this premise, Joosten (2012) finds that European firms use REM to reduce earnings during the year, and then apply upward AEM at the end of the fiscal year to achieve the desired results.

On the contrary, Mizik & Jacobson (2007) defend that given the variety of ways to distort earnings, managerial decisions probably include multiple techniques at the same time. The authors contend that these tools are used as complementary, firstly to increase earnings and then to maximize firm value. Additionally, Chen, Huang & Fan (2012) documented that managers jointly and simultaneously employ both strategies to obtain the greatest effect in the process of earnings reporting. Nevertheless, Fields, Thomas & Linda (2001) explains that, in order to investigate the overall effect of EM activities, studying only one technique is insufficient, especially if managers use both AEM and REM to accomplish the same objective.

2.2. Corporate Social Responsibility

According to Carroll (1979, p. 500), "The social responsibility of business encompasses the economic, legal, ethical, and discretionary [philanthropic] expectations

[2] Sarbanes-Oxley Act (2002) is a U.S. federal law created after financial scandals involving publicly traded companies, such as Enron Corporation. The main purpose of SOX was to restore the integrity of financial statements by restraining earnings management and accounting fraud (Cohen et al., 2008).

that society has of organizations at a given point in time". This definition is generally accepted in the contemporary literature.

Corporate Social Responsibility (CSR) entails companies voluntarily taking actions that comprise environmental protection, moral issues, relations with the community, human resources management and other aspects (Castelo & Lima, 2006) which, subsequently, will offer social good beyond the firm's interests and law requirements (McWilliams & Siegel, 2001; Branco & Rodrigues, 2006). Socially responsible activities taken by companies include, for instance, participating in social campaigns, reducing the use of non-recyclable and non-reusable materials, embracing environmental targets and providing healthcare assistance for employees.

One factor that has contributed to the rising importance of CSR is the concern on sustainability (Yip et al., 2011). The term sustainable development refers to a development that attends to the needs of present generations without jeopardizing the capacity of future generations to correspond theirs (WCED, 1987). The "triple bottom line" approach recognizes three elements companies should take into consideration when assessing their sustainability goals: profit, people and the planet (Elkington, 1994). Still, it is important to acknowledge that, although sustainability and social responsibility have similar conceptualizations of economic, social and environmental dimensions, the terms do not strictly cover the same issues (Montiel, 2008). This study goes in line with the definition that CSR integrates social, environmental, ethical, human rights and consumer concerns, as well as shareholders' wealth (European Commission, 2011).

Besides making morally acceptable decisions, CSR-oriented firms are concerned in satisfying the demands of the diverse parties and, therefore, will not engage in transactions harmful to stakeholders (Bansal & Kandola, 2004; Branco & Rodrigues, 2006). In such a manner, engaging in socially responsible activities, along with improving corporate image and reducing financial risk, also improves stakeholder satisfaction (Orlitzky, Schmidt & Rynes, 2003). Hence, the firm will benefit from the support of different stakeholders: greater employee commitment, customer loyalty and collaboration from partners (Prior et al., 2008).

The engagement with CSR became a way to endorse firm's legitimacy (Grougiou, Leventis, Dedoulis & Owusu-Ansah, 2014). Dowling & Pfeffer (1975) defined legitimacy as a resource that is essential for organizational continued existence. By engaging in socially responsible activities, companies establish a trustworthy image and expand the ability to negotiate contracts with suppliers, to charge the desired prices for their products and to reduce cost of capital (Fombrun & Gardberg, 2000).

Lev et al. (2010) assume that CSR activities are implemented to develop firm's reputation because managers believe a good reputation leads to sales growth. Other researchers (e.g. Paine, 1994; Dhaliwal, Radhakrishnan, Tsang & Yang, 2012) suggest that the voluntary disclosure of CSR reports with GRI[3] complements financial statements, which may indicate greater integrity over earnings reporting. On the other hand, Prior et al. (2008) go further and state that managers use CSR to obtain favorable coverage from the media, legitimacy from the community and less scrutiny from employees and investors. From this point of view, socially responsible activities can be used to conceal the negative impact on firm value of some corporate misconduct (Gray, Kouhy & Lavers., 1995).

2.3. Earnings Management and Corporate Social Responsibility

Literature concerning the association between CSR and EM is ample, but the results are mixed. For instance, Almahrog et al. (2018) revealed that UK companies with a higher commitment to CSR activities are less likely to manage earnings through accruals. On the other hand, Graham, Harvey & Rajgopal (2005) claim that CSR-oriented firms would prefer to employ AEM because REM would sacrifice the firm's long-term performance. Furthermore, other literature (Hong & Andersen, 2011; Kim et al., 2012) corroborates the idea that CSR constrains both REM and AEM. However, it is important to be careful when generalizing results due to the diversity of samples contemplated on the various studies – for instance, some rely on multinational firm data, others in U.S. firms, others in Asian firms (Choi et al, 2013). Salewski & Zülch (2014) mention a potential explanation for the inconsistency within the existing research. Based on a sample of European firms applying International Financial Reporting Standards (IFRS), the authors argue that country-specific characteristics moderate the association between

[3] The Global Reporting Initiative (GRI) is an organization that developed a program of global standardization for economic, environmental and social sustainability reporting.

CSR and earnings quality. Different theorical perspectives applied as foundation for research on this topic are explored hereafter.

The conflicts of interest driven by the separation of ownership and management of a company, along with information asymmetry, expand the possibility of opportunistic behavior by the manager (agent) (Jensen & Meckling, 1976). Agency problems occur when managers pursue self-serving goals rather than maximizing the shareholder's wealth (Watts & Zimmerman, 1986). Various authors (e.g. Watts & Zimmerman, 1986; Dingwerth & Eichinger, 2010) point that increasing the information transparency and accountability are possible solutions to enable shareholders and other stakeholders to detect harmful actions. Given this premise, disclosure of information regarding social responsibility becomes a form of reputation insurance (Kim et al., 2012), potentially encouraging managers who distort earnings to disguise their misconduct through CSR.

This argument, in accordance with the managerial opportunism hypothesis, was used as a starting point to the studies of Prior et al. (2008) and Calegari et al. (2010). Prior et al. (2008) claim that executives engage in EM and, therefore, implement CSR activities, to compensate stakeholders for their detrimental actions. Similarly, Calegari et al. (2010) start by assuming CSR as a principal-agent problem. The authors also present the possibility of CSR being part of corporate culture, thus being exercised despite of the agency problem. The findings suggest that CSR positively enriches the earnings reporting quality, contrarily to what was expected from the theorical stand. In the same line, the findings from Toukabri et al. (2014) were contradictory to the theorical framework. Focusing on the agency problem, the empirical evidence indicates that CSR activities do not encourage managerial discretion and discretionary accruals are not positively related to CSR.

The long-term hypothesis, associated with the stakeholder theory (Freeman, 1984), suggests that firms should be focused on fostering long-term relationships with stakeholders (Gras-Gil et al., 2016). In this regard, CSR is seen as an investment, which will intensify social legitimacy and earnings quality, thus providing proper information to stakeholders (Kim et al., 2012; Gras-Gil et al., 2016). Based on this, Chih et al. (2008) explore the extent of the relationship between CSR and EM. The authors claim that a greater commitment to CSR reduces the extent of earnings smoothing, a form of EM that consists on moving revenues and expenses from one accounting period to another. Further that, their research suggests an inverse relationship for moderate levels of CSR, but a positive association for high levels of CSR, i.e., executives only perform EM to achieve social, environmental and economic aims. Hong & Andersen (2011) investigate the association between CSR and EM, considering both accruals-based and activities-based EM. From the sample of non-financial U.S. firms from 1995 to 2005 and using KLD[4] data as a proxy for CSR, they find that companies committed to CSR have greater quality accruals and less activity-based EM. Likewise, Choi & Pae (2011) and Gras-Gil et al. (2016) find that socially responsible firms have low incentive to manage earnings.

Choi et al. (2013) suggest two possible scenarios. The first one where the long-term hypothesis is dominant and, so, a negative association between CSR and EM is expected. The second one where the authors present the possibility of CSR as mechanism to hide opportunistic behavior by managers. Findings show that CSR is negatively related with the level of EM, when all non-financial Korean firms from the sample are considered. Additional evidence suggests that CSR practices can be used by firms with highly concentrated ownership to conceal poor earnings quality.

Ethical, political and integrative theories of CSR offer valuable insights for the research of CSR and EM. Jones (1995) recognizes that CSR firms have an incentive to be honest, trustworthy and ethical because such behavior is beneficial to the firm. In this context, Kim et al. (2012) argue that CSR-oriented firms are more disposed to restrain EM and to make responsible operating decisions, thereby presenting reliable financial information. Alternatively, the authors also present the hypothesis of CSR engagement induced by managerial opportunism. Empirical findings suggest that firms are less willing to manage earnings through discretionary accruals and to alter real business transactions.

EM alters the information available for stakeholders and society as a whole in respect to the firm's value, assets, transactions or financial position (Zahra, Priem & Rasheed, 2005). To this point, EM can deceive and mislead investors which is considered unethical and irresponsible (Kaplan, 2001). In agreement with ethical, political and integrative perspectives as well with previous findings (Hong & Andersen, 2011; Choi &

[4] KLD - Kinder, Lydenberg & Domini is a database that incorporates environmental, social and governance (ESG) factors. It is mainly used in the United States of America.

Pae, 2011; Kim et al., 2012; Gras-Gil et al., 2016), it is possible to argue that ethical concerns will drive executives to produce high-quality financial reports and, consequently, constrain the use of EM. Therefore, in order to protect corporate reputation, a negative relation between CSR and EM is expected. The following hypothesis is presented:

H1: *Corporate social responsibility is negatively associated with earnings management.*

CSR orientation seems to prevent the use of both REM and AEM, still, it is unclear whether it happens in different patterns. Bozzolan et al. (2015) extend the literature by analyzing the relationship between CSR and EM, considering that a firm's CSR orientation may also shape the trade-off between AEM and REM. The research was based on an international sample of 1141 firms, over the period 2003-2009. CSR data were obtained from the EIRIS[5] database, AEM was measured using the modified cross-sectional Jones model (Jones, 1991; Dechow et al., 1995) and REM was measured following Cohen et al. (2008) and Roychowdury (2006). Results show that, assuming that some form of EM will occur, CSR shapes the choice between EM strategies. The concern with the impacts on the long run will drive companies to apply AEM rather than REM. This suggests that CSR can create value for the stakeholders by selecting accounting strategies and the trade-offs amongst them (Bozzolan et al., 2015).

Likewise, Mutuc et al. (2019) investigate the effects of CSR on EM through accruals and operating decisions. The study examines a sample of 558 firms, from eleven Asian countries, listed in the Thomson Reuters ESG database. CSR was measured using ESG score and earnings management was measured applying two proxies. The first one regarding discretionary accruals and the second one for REM. This research provides consistent findings within the ones resulted from the work of Bozzolan et al. (2015). Overall, Asian firms prefer to apply discretionary accruals since all accruals can be reverted in the future periods. Contrarily, real operating decisions not only deteriorates stakeholder's satisfaction, but also compromises actual company resources (Mutuc et al., 2019).

[5] EIRIS - Environmental Information Resources System.

Prior literature suggests a positive association between CSR and performance (e.g. Orlitzky et al., 2003), i.e., CSR heightens the concerns about the continuity of the firm. Recognizing that REM will affect the firm's long-term performance, we believe that CSR-oriented companies will less likely adopt REM practices (Porter & Kramer, 2006; Hong & Andersen, 2011). Assuming that some sort of EM will occur, socially responsible firms will prefer accruals to REM because strategies underlying real operations will cause detrimental consequences on future performance (Graham et al., 2005) and, unlike REM practices, the effects of accruals can be reverted. Aligned with the findings of preceding literature (Bozzolan et al., 2015; Mutuc et al., 2019), it is possible to argue that CSR-orientation and, thus, the commitment towards stakeholders, guides companies to worry about the firm's future viability and competitiveness (Porter & Kramer, 2006). It is expected that CSR-orientation will restrain the use of REM. Hence, the subsequent hypothesis is developed:

H2: *Corporate social responsibility restrains the use of real earnings management.*

3. METHODOLOGY

3.1. Sample characterization

Financial and accounting data as well as data from social responsibility were retrieved from Thomson Reuters Eikon database, also known as Refinitiv Eikon, during the month of June 2020. Period sample was from 2013 to 2019, in order not to consider the potential effects of the crisis.

On a first instance, all public companies from the European Union (EU) with accounting, financial and CSR data (ESG score) available were selected, except companies from the financial sector and public administration, since these have unique characteristics and specific regulations which may affect the results of this research (Prior et al., 2008; Hong & Andersen, 2011; Almahrog et al., 2018). It is important to refer that this sample includes companies from the United Kingdom (UK) since, for the period in analysis, UK was still a member of the EU. The initial sample was of 1,130 companies.

The selected companies use the IFRS and the currency is Euro. Additionally, all firms which did not present enough data to calculate the metrics of discretionary accruals and real earnings management were excluded. Also, countries and industries with less that 6 firm-year observations were eliminated from the sample (Almahrog et al., 2018). Therefore, companies from Cyprus, Czech Republic, Hungary, Malta and Slovenia were removed from our sample as well the sector of Real State. This sample follows the GICS[6] sector classification because NACE Rev.2[7] classification was not available for all companies on the database.

Taking into consideration the potential effects of outliers, the necessary data values for the calculation of *AEM*, *REM* and the independent variables not included between the percentile 1 and 99 were removed.

Thus, the final sample consists of 308 listed firms, from 16 EU countries and 9 different sectors, corresponding to a number of 1,347 firm-year observations.

Appendix I displays the distribution of observations across countries. A large amount of the sample is represented by companies from Germany (18.56%), the United Kingdom (16.41%) and France (14.92%). Appendix II contains the list of sectors of activity, following GICS sector classification. The most represented sectors are Industrials (26.28%), followed by Materials (13.96%) and Communication Services (12.92%).

3.2. Variables measurement

3.2.1. Accruals-based earnings management

Relying on previous studies (Prior et al., 2008; Gras-Gil et al., 2016; Bozzolan et al., 2015), this study uses discretionary accruals to estimate EM. The Jones model (Jones, 1991) is broadly used in EM research and splits accruals into their discretionary and nondiscretionary components. More specifically, in this analysis the modified cross-sectional Jones model (Jones, 1991) as described by Dechow et al. (1995) is used to obtain the total accruals, due to its greater specification and less restrictive data (DeFond & Jiambalvo, 1994).

The accrual component of earnings is computed as:

[6] Global Industry Classification Standard (GICS) is classification system by economic sector and industry group, developed by MSCI and Standard & Poor's (S&P).

[7] NACE Rev.2 - Statistical Classification of Economic Activities in the European Union - is the standard system used in the EU to classify industries.

$$TA_{i,t} = (\Delta CA_{i,t} - \Delta Cash_{i,t}) - (\Delta CL_{i,t} - \Delta STD_{i,t}) - Dep_{i,t} \quad (1)$$

For each company i and year t: TA refers to total accruals; ΔCA is the change in current assets; $\Delta Cash$ is the change in cash; ΔCL is the change in current liabilities; ΔSTD is the change in short-term debt included in current liabilities and Dep is the depreciation and amortization.

The main difference between the Jones model (1991) and the modified Jones model (Dechow et al., 1995) is that the latter includes revenues as a discretionary element. Thus, the modified Jones model includes the variation of accounts receivable, as done in equation (2).

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad (2)$$

Where: $TA_{i,t}$ is the value of total accruals deflated by total assets for firm *i* in the beginning of year *t*. $A_{i,t-1}$ is the total assets at the beginning of year *t* for firm *i*. $\Delta REV_{i,t}$ is the variation in revenue between the prior year (*t*-1) and the current year (*t*) for the firm *i*. $\Delta REC_{i,t}$ is the variation in receivables between the prior year (*t-1*) and the current year (*t*) for the firm *i*. $PPE_{i,t}$ is the gross property, plant and equipment for firm *i* in year *t*. $\varepsilon_{i,t}$ is the firm's (*i*) regression error in period *t*. As it is possible to observe, all the variables are deflated by lagged total assets ($A_{i,t-1}$) in order to control to control potential size differences of a given company that affect the estimate of accruals (Cohen et al., 2008; Prior et al., 2008).

Discretionary accruals are computed as the residual value of the regression (2) (i.e. $\varepsilon_{i,t}$). In order to consider both the extent of EM and the direction of EM, the absolute value of discretionary accruals (*AEM*) and the signed value of discretionary accruals (*DACC*) are used. A high value of absolute discretionary accruals means a superior level of earnings management, or lower quality of earnings, and vice versa (Gras-Gil et al., 2016).

Hence, the absolute value of discretionary accruals (*AEM*) for firm *i* in year *t* is defined as:

$$AEM_{i,t} = |\ \varepsilon_{i,t}\ | \quad (3)$$

3.2.2. Real earnings management

Roychowdhury (2006) develops a widely accepted model to measure REM, applied by several authors in their empirical works, such as Cohen et al. (2008), Zang (2012), Bozzolan et al. (2015) and Mutuc et al. (2019). Specifically, Roychowdhury (2006) used an aggregate measure that combined three ways to detect REM: abnormal levels of operating cash flows, abnormal production costs and abnormal discretionary expenses.

Roychowdhury (2006) argues that sales management activities will cause lower current period operating cash flows due to aggressive price discounts or more lenient credit terms. This practice allows firms to boost current year sales by accelerating the ones from the next fiscal year (Gunny, 2005). Increased sales will be reverted once the normal prices are restored.

Dechow, Kothari & Watts (1998)'s model implemented by Roychowdhury (2006) is used to estimate the normal operating cash flows (*CFO*) as a linear function of sales and changes in sales in the current period. Hence, the following cross-sectional regression for industry and year is used to estimate the model:

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \beta_1 \frac{S_{i,t}}{A_{i,t-1}} + \beta_2 \frac{\Delta S_{i,t}}{A_{i,t-1}} + \theta_{i,t} \quad (4)$$

Where CFO_{it} refers to the operational cash flows of firm *i* in year *t*. A_{it-1} is the total assets for the same firm *i* in the prior year. S_{it} is the total sales of organization *i* in year *t* and ΔS_{it} refers to the variation in sales ($S_{it} - S_{it-1}$) of organization *i* in the prior year.

In accordance with Roychowdhury (2006), all the dependent and independent terms from the equation above (4) are divided by lagged assets (A_{it-1}) to control potential size differences of a given company.

Abnormal cash flows from operations (*AB_CFO*) are the deviations from the normal levels of cash flow (Dechow et al., 1998; Roychowdhury, 2006). *AB_CFO* is calculated using estimated coefficients from the corresponding industry-year model and the firm-year's sales and lagged assets. This is given by:

$$AB\_CFOi,t = \theta_{i,t} \quad (5)$$

A second measure of REM is the abnormal production costs. Roychowdury (2006) states that overproduction is another method companies may use to increase earnings in the current year. High production levels will decrease fixed costs per unit since these costs are spread over more units. The incremental marginal costs incurred in producing additional inventories result in abnormally high production costs (Roychowdury, 2006).

Prior studies (Roychowdhury, 2006; Cohen et al., 2008; Kim et al., 2012; Bozzolan et al., 2015) define production costs (*PROD*) as the sum of cost of goods sold (*COGS*) and the change in inventory between year *t* and year *t*-1 (ΔI*NV*).

Following these studies, normal *COGS* is computed by:

$$\frac{COGS_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \beta \frac{S_{i,t}}{A_{i,t-1}} + \mu_{1_{i,t}} \tag{6}$$

Likewise, the model for normal inventory growth (ΔI*NV*) is estimated as:

$$\frac{\Delta INV_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \beta_1 \frac{\Delta S_{i,t}}{A_{i,t-1}} + \beta_2 \frac{\Delta S_{i,t-1}}{A_{i,t-1}} + \mu_{2_{i,t}} \tag{7}$$

Using the estimated coefficients from Equation (7) and Equation (8), for every industry-year, normal production costs (*PROD*) are computed as followed:

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \beta_1 \frac{S_{i,t}}{A_{i,t-1}} + \beta_2 \frac{\Delta S_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta S_{i,t-1}}{A_{i,t-1}} + \mu_{i,t} \tag{8}$$

The abnormal level of production costs (*AB_PROD*) is calculated by the actual production costs minus the normal level of production costs. For simplification, it is presented as:

$$AB\_PROD_{i,t} = \mu_{i,t} \tag{9}$$

As to the third measure of REM, discretionary expenses, according to Roychowdhury (2006), when managers reduce discretionary expenditures to meet earnings targets, the value of these expenses should be unusually low. Discretionary expenses are the sum of research and development costs (*R&D*), advertising costs (*ADV*) and selling, general and administrative expenses (*SG&A*).

For every firm-year, the normal level of R&D, advertising and SG&A costs is given by Equation (12), (13) and (14), respectively.

$$\frac{R\&D_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{S_{i,t-1}}{A_{i,t-1}} + \gamma_{1_{i,t}} \tag{10}$$

$$\frac{ADV_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{S_{i,t-1}}{A_{i,t-1}} + \gamma_{2_{i,t}} \tag{11}$$

$$\frac{SG\&A_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{S_{i,t-1}}{A_{i,t-1}} + \gamma_{3_{i,t}} \tag{12}$$

Following Roychowdhurry (2006), as long as the values for *SG&A* are available, it is possible to calculate the value of discretionary expenses. If values for *R&D* and *ADV* are missing, these will assume the value “0”. Therefore, using the estimated coefficients from Equations (12), (13) – when existing - and (14), the normal level of discretionary expenses (*DEXP*) is given by the following industry-year regression:

$$\frac{DEXP_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \beta \frac{S_{i,t-1}}{A_{i,t-1}} + \gamma_{i,t} \tag{13}$$

Thus, for every firm-year, abnormal discretionary expenses are given by:

$$AB\_DEXP_{i,t} = \gamma_{i,t} \tag{14}$$

In line with previous studies (Cohen et al., 2008; Kim et al., 2012; Bozzolan et al., 2015), an aggregate measure of individual real activities management proxies is used in this analysis. Considering the direction of each REM components, the combined measure (*COMBINED_REM)* is calculated as *AB_CFO – AB_PROD* + *AB_DEXP*. The combined measure decreases when companies engage in EM through real activities, i.e., higher levels of overall REM imply more reluctance regarding the use of operating decisions (Kim et al., 2012). For simplification, this measure is labeled as *REM* in the empirical models.

3.2.3. Corporate Social Responsibility

Considering the theoretical contribution of Carroll (1979) and the empirical work done by Gargouri, Shabou & Francoeur (2010) and Mutuc et al. (2019), this study contemplates the multidimensional nature of CSR and takes into consideration three attributes to assess corporate behavior: environmental, social and governance (ESG). The Thomson Reuters ESG database has as an extended worldwide coverage and provides reliable, up-to-date and accurate information from more than 6,000 public companies with reported data since 2002 (Sikacz & Wolczek, 2018; Mutuc et al., 2019).

Thomson Reuters ESG Scores are an improved version of the existing ASSET4 ratings as they measure a company's relative ESG performance across ten main ESG themes. There are three categories of ESG indicators in the Thomson Reuters Eikon: the ESG score, the ESG controversies (ESGC) score and the combined score (ESG+ESGC) (Sikacz & Wolczek, 2018). The ESGC score measures the exposure of a company to ESG controversies and the negative events reflected in global media (Thomson Reuters, 2019). Since the purpose of this study is to study the relationship between EM and CSR rather than the effect of EM in the reputation of companies, the ESG score is solely used. This score contemplates a scope of information from ten categories: resource use; emissions; innovation; management; shareholders; CSR strategy; workforce; human rights; community and product responsibility.

The score calculation follows the percentile rank scoring methodology, i.e., each company is ranked according to its performance in each category comparing to the others. The score is then calculated based on the following model:

$$Score = \frac{\#\ of\ companies\ with\ a\ worst\ value + \frac{\#\ of\ companies\ with\ the\ same\ value}{2}}{\#\ of\ companies\ with\ a\ value} \qquad (15)$$

The ESG score (*CSR_score*) is later conversed to a letter grade in a scale from D- to A+ for a range of values. The score measures the ESG results of companies based on publicly available data, contemplating issues associated with materiality, availability of data and significance to the sector (Thomson Reuters, 2019).

3.2.4. Control variables

Considering the effect of potential correlated omitted variables, several control variables regarding the incentives and restrictions involved in the process of EM are incorporated in this analysis.

Roychowdhury (2006) suggests that firm-specific growth opportunity can potentially explain significant variation in EM. Skinner & Sloan (2002) claim that companies with growth opportunities are penalized by the stock market when the forecasted earnings are not met. Some studies (e.g. Chih et al., 2008; Van Tendeloo &

Vanstraelen, 2008) indicate that growing firms have more incentives to engage in EM because these firms are under greater pressure to maintain or increase their profitability rate. Hence, the variable *GROWTH* is included to control for firm's growth prospects and is calculated as the percentage change in total revenues between year *t*-1 and year *t.* It is expected a positive relationship between *GROWTH* and EM.

The study controls for *SIZE*, a variable incorporated to represent the firm's size as the natural logarithm of total assets. Larger companies are subject to potential scrutiny from investors, auditors and regulators (Watts & Zimmerman, 1990). Based on this premise, Gras-Gil et al. (2016) argue that closer control by outsiders reduces the opportunity to exercise accounting discretion in larger firms and, therefore, it is expected a negative relationship between discretionary accruals and firm size.

The variable *LEV* represents the financial leverage, measured by the long-term debt to total assets ratio. Prior research (DeFond & Jiambalvo, 1994; Park & Shin, 2004) suggests that managers may adjust earnings upwards to avoid violations of debt covenants and the risk of bankruptcy. These arguments would predict a positive relationship between discretionary accruals and financial leverage (Gras-Gil et al., 2016). However, the findings from the study of Toukabri et al. (2014) indicate that more leveraged firms engage less in EM because they are prone to strict monitoring by creditors and other stakeholders. As so, there is no agreement in the literature concerning the impact of financial leverage of a firm on EM.

To control for performance, the variable *ROA* (return on assets) is included and measured as the ratio between net income and total assets. A higher *ROA* value indicates that a business is more profitable and efficient. According to Dechow et al. (1995), discretionary accruals are correlated with performance. Orlitzky et al. (2003) point that ROA is an indicator subject to manager's discretionary choices. Prior et al. (2008) argue that managers use EM to boost profits. Toukabri et al. (2014) found that a company with good financial performance, will not distort earnings. Chen (2010) argues that companies with low profitability tend to manage earnings. After all, the expected signal of the correlation between financial performance and EM is not obvious.

It is expected that firms audited by large audit firms might have a different behavior towards EM. Previous research (Bonner & Lewis, 1990; DeFond & Jiambalvo, 1991;

DeFond & Subramanyam, 1998) suggest that larger audit firms have more experienced, specialized and conservative auditors. Becker, DeFond, Jiambalvo & Subramanyam (1998) and Krishnan (2003) find that high-quality and experienced auditors are more probable to detect questionable practices and object to the use of EM, thus influencing earnings quality. Therefore, the dummy variable *BIG4* is included and assumes the value "1" if the auditor is a Big 4 auditor and "0" otherwise.

The extent of EM may vary across industries (Almahrog et al., 2018), which is why the model controls for industry (*IND*). Following Bozzolan et al. (2015), the variable *IND* is computed as a dummy variable that includes the industry sensitiveness of CSR orientation. This means that this variable assumes the value "1" if the firm's industry is considered socially and environmentally sensitive and the value "0" if not. For the purpose of this classification and following previous studies (e.g.: Freedman, Jaggi & Stagliano, 2004; Brammer & Millington, 2005; Cho & Patten, 2007; Bozzolan et al., 2015), socially and environmentally sensitive industries are the extractive (mining and petroleum), metals, chemicals, paper, pharmaceuticals, alcoholic beverages, utility and defense.

Furthermore, since there are country-specific characteristics that may potentially moderate the use of EM (Prior et al., 2008), the variable *COUNTRY* and the variable *YEAR* are introduced to control for country and year fixed effects.

3.3. Empirical Models

In order to test the relation between EM and CSR in financial reporting, the following models are estimated:

$$AEM_{i,t} = \beta_0 + \beta_1 CSR\_Score_{i,t} + \beta_2 REM_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 ROA_{i,t} + \beta_7 BIG4_{i,t} + \beta_8 IND_i + \sum YEAR_t + \sum COUNTRY_i + \varepsilon_{i,t} \quad (16)$$

$$REM_{i,t} = \beta_0 + \beta_1 CSR\_Score_{i,t} + \beta_2 AEM_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 ROA_{i,t} + \beta_7 BIG4_{i,t} + \beta_8 IND_i + \sum YEAR_t + \sum COUNTRY_i + \varepsilon_{i,t} \tag{17}$$

The variables are calculated as previously described in section 3.2.

Equations (16) and (17) are estimated with OLS regressions. Following Cohen et al. (2008) and Kim et al. (2012), in order to control for the substitute nature of these two earnings management methods, *AEM*, a proxy for accruals-based EM, is used as a control variable for real activities management (i.e. *REM*) regressions and a proxy for *REM* is used as a control variable in the *AEM* regressions.

According to previous literature (Kim et al., 2012; Bozzolan et al., 2015; Mutuc et al., 2019), H1 is verified if β_1 is negative and significant for Equation (16) and positive and significant for Equation (17).

4. RESULTS

4.1. Descriptive Statistics

Table I reports descriptive statistics. The mean value of the absolute discretionary accruals is 0.0595 and the mean of signed discretionary accruals is 0.0056. This suggests that, on average, managers tend to practice income increasing accruals. The mean values of *AB_CFO*, *AB_PROD*, *AB_DEXP* and *REM* are 0.6119, 0.0382, -0.1127 and 0.0754, respectively, suggesting that, on average, firms do not seem to engage in real activities management such as sales manipulation.

Regarding the variable of interest *CSR_Score*, European firms have an average ESG score of 0.2263. This value is greater than the one presented by Mutuc et al. (2019) because it does not include the ESG controversy score. For the control variables, on average, the firms included in the sample present an annual sales growth of 3.32% and the natural logarithm of total assets, *SIZE*, has a mean value of 22.7606. In addition, the average leverage of sample firms is 20.90% which suggest that firms are not in risk concerning long-term debt to total assets. The mean value of *ROA* is 4.52%. Thus, the sample is mainly composed of large and profitable firms. Also, 81.74% of the sample firms are audited by a Big Four firm and 31.77% belong to an industry sensitive to CSR orientation.

Table I. Descriptive Statistics

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
AEM	1,347	0.0595	0.0413	0.0594	0.0001	0.4451
DACC	1,347	0.0056	0.0025	0.0839	-0.3686	0.4451
AB_CFO	1,347	0.0382	0.0322	0.1184	-0.6075	0.9831
AB_PROD	1,347	-0.1127	-0.0794	0.2066	-1.2715	0.7423
AB_DEXP	1,347	0.0754	0.0420	0.1418	-0.3345	0.7573
REM	1,347	0.2263	0.1606	0.3591	-0.6565	1.9059
CSR_Score	1,347	0.6119	0.6319	0.1790	0.0033	0.9513
GROWTH	1,347	0.0332	0.0291	0.1539	-0.7803	2.3461
SIZE	1,347	22.7606	22.5883	1.4396	19.0505	26.6925
LEV	1,347	0.2090	0.1901	0.1369	0	0.8154
ROA	1,347	0.0452	0.0396	0.0849	-0.6228	1.5857
BIG4	1,347	0.8174	1	0.3865	0	1
IND	1,347	0.3177	0	0.4658	0	1

Variables: *AEM* is the absolute value of discretionary accruals; *DACC* is signed discretionary accruals; *CSR_Score* is score of ESG rating. *REM* is sum of real earnings management proxies, abnormal cash flows *(AB_CFO)* plus abnormal discretionary expenses *(AB_DEXP)* minus the abnormal production costs *(AB_PROD)*. *GROWTH* is percentage change in sales. *SIZE* is natural logarithm of total assets. *LEV* is total long-term debt to total assets ratio. *ROA* is ratio between net income and total assets. *BIG4* dummy variable that assumes "1" if the company is audited by a Big Four firm and "0" otherwise. *IND* dummy variable that assumes "1" if the company's industry is CSR sensitive and "0" if not.

4.2. Correlation Matrix

Appendix III presents Pearson correlation coefficients among Earnings Management Proxies, CSR Score and control variables. *CSR_Score* is negatively and significantly correlated with *AEM*. This suggests that CSR oriented firms are less likely to engage in accruals earnings management. *AEM* is also negatively and significantly correlated with *SIZE* and *LEV*. This suggests that larger and more indebted firms are less likely to manage accruals.

The correlation matrix shows that *REM* is negatively and significantly correlated with *SIZE, LEV* and *IND*, meaning that larger, riskier and industry sensitive firms are more probable to practice real activities management. The positive and significant correlations between *REM* and *GROWTH*, *ROA* and *BIG4* reveal that larger firms, with better financial performance and audited by a Big Four are less likely to manage earnings through real operations.

It is possible to identify the absence of strong relationships between the variables of interest and other variables since the value of correlations is low (<0.6). This can be ensured by the variance inflation factors presented on Appendix IV (VIF<5) regarding the independent variables for each model, which lead us to reject the possibility of multicollinearity in the subsequent regressions.

4.3. Regression analysis

Table II reports the results of the multivariate regression of earnings management regressions. In order to control for a possible heteroscedasticity problem, model (16) and model (17) are estimated using pooled OLS regression with standard errors clustered at firm and year level and with year and country fixed effects (Bozzolan et al., 2015).

In respect of AEM regressions, the results are reported using the absolute value of discretionary accruals and the direction of discretionary accruals.

Table II. Results from the AEM multiple regressions on CSR

Variable	Expected Signal	AEM (1)	DACC (2)
constant		0.2931*** (7.89)	0.5642*** (13.53)
CSR_Score	-	-0.0220* (-1.89)	0.0504*** (3.37)
REM	-	-0.0003 (-0.05)	-0.0546*** (-6.98)
GROWTH	+	-0.0275* (-1.66)	-0.1839*** (-6.40)
SIZE	-	-0.0094*** (-5.53)	-0.0258*** (-13.09)
LEV	?	-0.0202 (-1.60)	-0.0375** (-2.14)
ROA	?	0.0375 (1.27)	0.0291 (0.47)
BIG4	-	0.0036 (0.86)	-0.0061 (-1.25)
IND	-	0.0009 (0.25)	0.0223*** (5.10)
Year Fixed Effects		Yes	Yes
Country Fixed Effects		Yes	Yes
Observations		1,347	1,347
R-squared		0.1180	0.3199
Adjusted R-squared		0.0986	0.3049
p-value		0.0000	0.0000

Note: Pooled OLS regressions with standard errors clustered at firm year level. T-stat values are in parenthesis. *, **, *** indicate statistical significance at 10%, 5% and 1%, respectively. The expected signal column refers to the magnitude of accruals and REM. Variables: *AEM* is the absolute value of discretionary accruals; *DACC* is signed discretionary accruals; *CSR_Score* is score of ESG rating. *REM* is sum of real earnings management proxies, abnormal cash flows plus abnormal discretionary expenses minus the abnormal production costs. *GROWTH* is percentage change in sales. *SIZE* is natural logarithm of total assets. *LEV* is total long-term debt to total assets ratio. *ROA* is ratio between net income and total assets. *BIG4* dummy variable that assumes “1” if the company is audited by a Big Four firm and “0” otherwise. *IND* dummy variable that assumes “1” if the company’s industry is CSR sensitive and “0” if not.

Column 1 shows that there is a negative and significant relation between the absolute value of discretionary accruals, *AEM*, and *CSR_Score*. This suggests a negative relation between the magnitude of accruals EM and CSR, consistent with H1. In terms of the direction of discretionary accruals, a positive and significant relation between *DACC* and *CSR_Score* is found, indicating that CSR firms engage more in income increasing earnings management than in income decreasing accruals. This is consistent with Chih et al. (2008) findings that, for certain levels of CSR, companies engage in earnings aggressiveness.

Regarding the proxy for real activities manipulation, *REM*, it is negatively and significantly associated with the accrual-based earnings management in *DACC* regression. This suggests that European firms use both EM strategies as substitutes, supporting a trade-off between discretionary accruals and real activities decisions. These findings are consistent with Kim et al. (2012), Zang (2012) and Bozzolan et al. (2015).

As to the control variables, *GROWTH* and *SIZE* are negatively associated with *AEM*, suggesting that firms with growth opportunities and larger firms are less likely to engage in earnings management through accruals. This is consistent with previous studies (Gras-Gil et al., 2016) that argue that larger firms have less opportunities to manage accruals.

For the *DACC* regression, there is a negative and significant relation between *DACC* and *GROWTH*, *SIZE* and *LEV*. It is possible to link these results with the logic of cookie jar, indicating that firms that beat the expected growth rates are more likely to manage earnings downward, as well as larger and more indebted firms. In terms of *IND*, the coefficient is positively correlated with the direction of accruals (*DACC)*, suggesting that firms from industries sensitive to CSR-orientation are more likely to manage earnings upward.

The variation of the magnitude of the discretionary accruals can be explained in 11.80% by the regression model presented in column (1) that includes both year and country fixed effects. In terms of the direction of the discretionary accruals, these can be explained by 31.99%. It is important to denote that R^2 is higher in this last regression, but still reduced, which is coherent within the literature regarding this topic (e.g. Bozzolan et al., 2015).

The results of REM regressions are presented in table III. The results are reported using the combined measure of REM and the level of abnormal cash flows, abnormal production costs and abnormal discretionary expenses.

Table III. Results from the REM multiple regressions on CSR

Variable	**Expected Signal**	**REM** (3)	**AB_CFO** (4)	**AB_PROD** (5)	**AB_DEXP** (6)
constant		1.2705*** (6.53)	-0.4066*** (-6.52)	-0.8718*** (-7.70)	0.8053*** (10.30)
CSR_Score	+	0.2558*** (3.84)	-0.0163 (-0.89)	-0.1331*** (-3.37)	0.1390*** (4.93)
AEM	+	-0.0098 (-0.05)	-0.0994 (-1.03)	0.0317 (0.27)	0.1213 (1.48)
GROWTH	-	0.1771*** (2.79)	-0.0503* (-2.38)	-0.1551** (-3.24)	0.0723** (2.94)
SIZE	?	-0.0532*** (-5.89)	0.0202*** (7.09)	0.0389*** (7.44)	-0.0345*** (-9.09)
LEV	?	-0.0782 (-1.12)	-0.0545* (-2.46)	-0.0420 (-1.02)	-0.0657* (-2.47)
ROA	?	1.4740*** (5.43)	0.8176*** (7.25)	-0.4871*** (-4.32)	0.1693* (2.36)
BIG4	+	0.0506** (2.19)	0.0177** (2.70)	-0.0237 (-1.71)	0.0092 (1.01)
IND	+	-0.1669*** (-9.87)	-0.0410*** (-6.94)	0.0730*** (6.71)	-0.0529*** (-7.40)
Year Fixed Effects		Yes	Yes	Yes	Yes
Country Fixed Effects		Yes	Yes	Yes	Yes
Observations		1,347	1,347	1,347	1,347
R-squared		0.2818	0.4336	0.1927	0.2221
Adjusted R-squared		0.2660	0.4212	0.1749	0.2049
p-value		0.0000	0.0000	0.0000	0.0000

For the regressions of *REM* and *AB_DEXP*, the estimated coefficients for *CSR_Score* are positive and significant, as expected. As to the abnormal production costs, these are negatively and significantly related with *CSR_Score*. It is important to consider the direction of the proxy of *REM*, in which a higher (lower) level of abnormal expenses (abnormal production costs) and the combined measure indicate more cautious choices. Therefore, consistent with Kim et al. (2012) and Bozzolan et al. (2015), these findings reveal that CSR-oriented firms engage less in real activities distortion.

GROWTH and *ROA* present positive and significant coefficients for the *REM* regression, evidencing that firms with higher growth opportunities and better performance are less likely to engage in REM. As to the variable *SIZE*, the outcomes suggest that larger firms practice more *REM* than smaller ones (p-value <0.05). In terms of *IND*, the coefficient is negative and significant, suggesting that companies from industries sensitive to CSR engage more in activities management.

AB_CFO coefficient is negatively related with industry and leverage and positively related with performance, size and *BIG4*. Larger firms, firms with better performance and firms audited by a BIG4 are less likely to engage in sales manipulation, whilst more leveraged firms are more prone to distort sales. This supports the statement that a rigorous auditing control leads to less sales manipulation, as suggested by Becker et al. (1998) and Krishnan (2003).

AB_PROD coefficient is negatively correlated with growth and performance. This indicates CSR-oriented firms are less likely to manage activities through overproduction as well as firms with more growth opportunities and better efficiency on assets.

Finally, *AB_DEXP* coefficient is positively and significantly correlated with *GROWTH*. This denotes that socially responsible firms as well as firms with growth opportunities are less willing to reduce discretionary expenses.

The variation of the level of activities management can be explained in 28.18% by the regression model presented in column (3) that includes both year and country fixed effects.

Hence, these findings are consistent with H1 and H2 that state that socially responsible firms are less prone to manage their earnings and are less likely to use real activities management.

4.4. Additional analyses

4.4.1. Different measure of REM

On this section, considering the lack of information on the Thomson Reuters Eikon regarding some data for the second measure of REM, the abnormal production costs are not considered in the aggregated measure used as a proxy for REM. Therefore, and considering the direction of each REM components, the combined measure (*COMBINED_REM)* is now calculated as *AB_CFO* + *AB_DEXP*. The results are presented in Appendix V. As it is possible to observe, the number of observations increases with this modification.

Although a negative but not significant relation is found between the magnitude of accruals and CSR, the results suggest that CSR-oriented firms are more prone to manage earnings upward. Furthermore, the findings go in line to what was previously found, i.e., CSR-oriented firms do not engage in real activities distortion. As a whole, concerning REM regressions, the results were very similar to those of the main analysis.

Regarding the substitute nature of the two methods of EM, the findings are consistent with Kim et al. (2012), Zang (2012) and Bozzolan et al. (2015). The negative and significant coefficients in both AEM and REM regressions suggest that European firms use both strategies as substitutes, supporting a trade-off between discretionary accruals and real activities decisions.

In terms of the control variables *LEV* and *ROA*, which had no significant relation in the prior AEM regressions, the coefficients are now negative and significant for *LEV* and positive and significant for *ROA*. This is consistent with Takoubri et al. (2014) and Prior et al. (2008) that argued that more leveraged firms practice less in accruals contrarily to firms with better performance.

4.4.2. Robustness analysis

In order to test the robustness of our results and given that a large part of the sample is constituted by companies from Germany (18.56%), firms belonging to this country are removed from the analysis. The results are presented on Appendix VI.

The outcomes are substantially robust when compared with the main analysis. For the level of significance of 10%, *CSR_Score* is negatively correlated with *AEM*. Meanwhile, for the level of significance of 1%, *CSR_Score* is positively correlated with *REM*. These results support the hypothesis that CSR-oriented firms are less likely to manage earnings (H1).

5. CONCLUSION

The present study examines the relation between EM and CSR. Based on the premise of the financial reporting transparency, it is hypothesized that CSR-oriented firms are worried about the company's reputation and the relationship with stakeholders.

Hence, managers from CSR-firms are worried about the company and its relationship with the society in general, not only about delivering attractive results to shareholders. Moreover, it is argued that managers of socially responsible firms are attentive on the firm's future performance and will not engage in practices harmful for the continuity of the firm (Bozzolan et al., 2015).

Overall, within the European firms from the sample, the results show that EM is negatively related with CSR. These findings are in conformity with the hypothesis that CSR-oriented firms do not engage in earnings management, specifically engage less in real earnings management. This could be explained in part by the fact that REM present higher costs in the long-term performance of the companies. As the matter of fact, *ROA* is significantly correlated with *REM* which indicated that more profitable firms are less likely to engage in strategies underlying real operations. Since previous literature documents a positive relation between CSR and performance (Orlitzky et al., 2003), responsible firms will behave ethically and cautious about the consequences of these practices on the long run. This is also coherent with our standpoint that CSR-firms are transparent when delivering financial information and with a large part of literature (Kim et al., 2012; Hong & Andersen, 2011; Choi et al., 2013; Toukabri et al., 2014; Gras-Gil et al., 2016; Almahrog et al., 2018).

On one hand, higher levels of CSR seem to be related with higher levels of prudency on using REM strategies. However, on the other hand, there seems to be a moderate relation between CSR and discretionary accruals. This would entail that these firms apply earnings management upward for certain levels of CSR, as suggested by Chih et al. (2008).

Several firm characteristics were also controlled, such as financial performance, size of the firm, level of indebtedness and growth opportunities. Firms with growth prospects engage less in both AEM and REM practices. Although these firms are under more pressure to reach forecasts (Chih et al., 2008), the level of inquiry is high and could jeopardize future results. Consistent to what is expected (Watts & Zimmerman, 1999 & Gras-Gil et al., 2016), larger firms are more likely to engage in REM than in AEM. Since these firms are more prone to scrutiny and control, managers choose practices harder to detect, i.e., real activities management. Regarding the level of indebtedness, and contrarily to what is predicted by Gras-Gil et al. (2016), there is a negative relationship between the direction of accruals and the financial leverage ratio. Once again, this could be explained because more leveraged firms are under strict monitorization which restricts managing earnings upward.

All this considered, these findings support the idea that CSR activities are aligned with the organization's purpose and vision and are not driven by managerial opportunism. Also, it seems to contemplate the long-term hypothesis, which coincides to the previous literature that supported this work (Kim et al., 2012 and Bozzolan et al., 2015).

The results are strengthened after altering the measure of REM and considering only two components of REM, abnormal cash flows and abnormal discretionary expenses. The results are also robust to the modification of sample composition.

This study intends to address concerns from previous literature. The present research considers two estimates of EM, discretionary accruals and REM, and the trade-off amongst them, i.e., the use of these strategies as substitutes, where firms choose the one that is less costly to them (Cohen et al., 2008; Zang, 2012). Specifically, REM was presented as a combined measure of three components, following Roychowdhury (2006). Using this measure suggested that, for instance, CSR-oriented firms do not manage activities through overproduction and are less disposed to alter the value of discretionary expenses.

As a limitation for this study, I identify the lack of information regarding the ESG score. This is due to inconsistent metrics which do not take into account distinct regulatory regimes across different countries, causing different definitions of what constitutes ESG for companies (Doyle, 2018; Mutuc et al., 2019). Additionally, the absence of information about some components of *AEM* and *REM* such as cost of goods sold and advertising costs, for the period of 2011-2012, caused a number of observations lower than initially expected.

Future research should expand this study by investigating the relationship between Earnings Management, Corporate Social Responsibility and Corporate Financial Performance. If possible, contemplating a higher number of observations. This would revise the results from this study that suggest a negative relationship between financial performance and REM.

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7. Appendix

Appendix I. Sample distribution by country

Country		# of obs.	% of sample
AT	Austria	21	1.56%
BE	Belgium	32	2.38%
DK	Denmark	47	3.49%
FI	Finland	93	6.90%
FR	France	201	14.92%
DE	Germany	250	18.56%
GR	Greece	13	0.97%
IE	Ireland	11	0.82%
IT	Italy	62	4.60%
LU	Luxembourg	24	1.78%
NL	Netherlands	71	5.27%
PL	Poland	31	2.30%
PT	Portugal	23	1.71%
ES	Spain	136	10.10%
SE	Sweden	111	8.24%
UK	United Kingdom	221	16.41%
Total		1,347	100%

Appendix III. Distribution of Firm-Year observations by Sector of activity

Code	Sector of Activity (GICS)	# of obs.	% of sample
50	Communication Services	174	12.92%
25	Consumer Discretionary	134	9.95%
30	Consumer Staples	113	8.39%
10	Energy	92	6.83%
35	Health Care	126	9.35%
20	Industrials	354	26.28%
45	Information Technology	47	3.49%
15	Materials	188	13.96%
55	Utilities	119	8.83%
Total		1,347	100%

Appendix III. Pearson Correlation Matrix

	AEM	CSR_Score	REM	GROWTH	SIZE	LEV	ROA	BIG4	IND
AEM	1								
CSR_Score	-0.1998***	1							
REM	0.0589**	-0.0350	1						
GROWTH	-0.0454*	-0.0893***	0.0960***	1					
SIZE	-0.2789***	0.5686***	-0.1881***	-0.0709***	1				
LEV	-0.1012***	0.0831***	-0.1417***	0.0330	0.1700***	1			
ROA	0.0813***	-0.0184	0.3713***	0.1099***	-0.1236***	-0.2328***	1		
BIG4	0.0612**	-0.0310	0.0588**	-0.0364	-0.0724***	0.0010	0.0032	1	
IND	-0.0486*	0.0839***	-0.2837***	-0.0194	0.2509***	0.0335	-0.0439	-0.0447	1

Note: The table shows Pearson correlation coefficients among the selected variables. *, **, *** indicate statistical significance at 10%, 5% and 1%, respectively.
Variables: *AEM* is the absolute value of discretionary accruals; *CSR_Score* is score of ESG rating. *REM* is sum of real earnings management proxies measured as abnormal cash flows plus abnormal discretionary expenses minus the abnormal production costs. *GROWTH* is percentage change in sales. *SIZE* is natural logarithm of total assets. *LEV* is total long-term debt to total assets ratio. *ROA* is ratio between net income and total assets. *BIG4* dummy variable that assumes "1" if the company is audited by a Big Four firm and "0" otherwise. *IND* dummy variable that assumes "1" if the company's industry is CSR sensitive and "0" if not.

Appendix IV. Variance Inflation Factors regarding the independent variables of AEM and REM regressions, respectively.

Variable	CSR_Score	AEM	REM	GROWTH	SIZE	LEV	ROA	BIG4	IND
VIF AEM	1.50	-	1.29	1.03	1.65	1.09	1.23	1.01	1.15
VIF REM	1.50	1.10	-	1.03	1.69	1.09	1.09	1.01	1.07

Appendix V. Results from the AEM and REM multiple regressions on CSR, with two measures of REM

Variable	AEM (7)	DACC (8)	REM (9)	AB_CFO (10)	AB_DEXP (11)
constant	0.4629*** (12.77)	0.7517*** (18.32)	0.5294*** (5.49)	-0.4773*** (-9.12)	0.9392*** (13.76)
CSR_Score	-0.0107 (-0.98)	0.0409*** (3.06)	0.1487*** (5.35)	0.0294* (1.89)	0.1193*** (5.20)
AEM	-	-	-0.2875*** (-3.05)	-0.3376*** (-4.11)	0.0501 (0.87)
REM	-0.0418*** (-2.95)	-0.1950*** (-12.16)	-	-	-
GROWTH	-0.0031 (-0.16)	-0.1506*** (-2.95)	-0.0179 (-0.76)	-0.0691*** (-3.78)	0.0512*** (3.54)
SIZE	-0.0169*** (-9.97)	-0.0324*** (-15.95)	-0.0193*** (-4.87)	0.0209*** (8.92)	-0.0402*** (-12.33)
LEV	-0.0363*** (-3.74)	-0.0485*** (-4.02)	-0.0592** (-2.13)	-0.0250 (-1.63)	-0.0342 (-1.62)
ROA	0.0586** (2.36)	0.1813*** (2.76)	1.0502*** (8.43)	0.8720*** (10.35)	0.1783** (2.56)
BIG4	0.0041 (0.94)	-0.0043 (-0.91)	0.0274*** (2.67)	0.0238*** (4.30)	0.0035 (0.40)
IND	-0.0027 (-0.77)	0.0067* (1.82)	-0.1044*** (-13.78)	-0.0374*** (-7.84)	-0.0670*** (-10.41)
Observations	2,202	2,202	2,202	2,202	2,202
R-squared	0.1564	0.3767	0.2741	0.4298	0.2036
Adjusted R-squared	0.1447	0.3680	0.2641	0.4219	0.1926
p-value	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Pooled OLS regressions with standard errors clustered at firm year level with year and country fixed effects. T-stat values are in parenthesis. *, **, *** indicate statistical significance at 10%, 5% and 1%, respectively. Variables: *AEM* is the absolute value of discretionary accruals; *DACC* is signed discretionary accruals; *CSR_Score* is score of ESG rating. *REM* is sum of real earnings management proxies, abnormal cash flows (*AB_CFO)* plus abnormal discretionary expenses *(AB_DEXP)*. *GROWTH* is percentage change in sales. *SIZE* is natural logarithm of total assets. *LEV* is total long-term debt to total assets ratio. *ROA* is ratio between net income and total assets. *BIG4* dummy variable that assumes "1" if the company is audited by a Big Four firm and "0" otherwise. *IND* dummy variable that assumes "1" if the company's industry is CSR sensitive and "0" if not.

Appendix VI. Results from the AEM and REM multiple regressions on CSR, robustness test

Variable	AEM (12)	DACC (13)	REM (14)	AB_CFO (15)	AB_PROD (16)	AB_DEXP (17)
constant	0.3475*** (8.47)	0.5932*** (12.75)	1.0794*** (5.25)	-0.5054*** (-7.15)	-0.8526*** (-6.80)	0.7323*** (9.57)
CSR_Score	-0.0257* (-1.96)	0.0437*** (2.69)	0.1755** (2.50)	-0.0143 (-0.69)	-0.0923* (-1.97)	0.0976*** (3.81)
REM	0.0003 (0.04)	-0.0566*** (-6.03)	-	-	-	-
AEM	-	-	0.0082 (0.04)	-0.0684 (-0.66)	0.0629 (0.48)	0.1394 (1.55)
GROWTH	-0.0136 (-0.91)	-0.1824*** (-6.30)	0.1438** (2.08)	-0.0373 (-1.92)	-0.1270* (-2.40)	0.0542* (2.19)
SIZE	-0.0117*** (-6.18)	-0.0272*** (-12.31)	-0.0443*** (-4.75)	0.0246*** (7.75)	0.0378*** (6.57)	-0.0311*** (-8.70)
LEV	-0.0218* (-1.72)	-0.0289 (-1.55)	0.0357 (0.47)	-0.0483* (-2.08)	-0.1028* (-2.22)	-0.0189 (-0.68)
ROA	0.0279 (1.01)	0.0532 (0.80)	1.3946*** (5.02)	0.7680*** (7.08)	-0.4823*** (-4.01)	0.1443* (2.03)
BIG4	0.0063 (1.28)	-0.0038 (-0.67)	0.0546** (2.01)	0.0169* (2.22)	-0.0273 (-1.56)	0.0105 (1.12)
IND	0.0054 (1.36)	0.0273*** (5.48)	-0.1634*** (-8.82)	-0.0530*** (-7.97)	0.0691*** (5.62)	-0.0414*** (-5.98)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,097	1,097	1,097	1,097	1,097	1,097
R-squared	0.1491	0.3450	0.2722	0.4562	0.1898	0.2100
Adjusted R-squared	0.1268	0.3278	0.2531	0.4419	0.1686	0.1893
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: Pooled OLS regressions with standard errors clustered at firm year level. T-stat values are in parenthesis. *, **, *** indicate statistical significance at 10%, 5% and 1%, respectively. The expected signal column refers to the magnitude of accruals and REM. Variables: *AEM* is the absolute value of discretionary accruals; *DACC* is signed discretionary accruals; *CSR_Score* is score of ESG rating. *REM* is sum of real earnings management proxies, abnormal cash flows plus abnormal discretionary expenses minus the abnormal production costs. *GROWTH* is percentage change in sales. *SIZE* is natural logarithm of total assets. *LEV* is total long-term debt to total assets ratio. *ROA* is ratio between net income and total assets. *BIG4* dummy variable that assumes “1” if the company is audited by a Big Four firm and “0”otherwise. *IND* dummy variable that assumes “1”if the company’s industry is CSR sensitive and “0”if not.