

Araştırma Makalesi

**The Relationship between Corporate Social Responsibility and
Earnings Management: Empirical Evidence from the U.S.**

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Abstract

The purpose of this study is to reveal the nexus between Earnings Management (EM) and Corporate Social Responsibility (CSR) as well as comparing the earnings management estimation models. Using Dechow and Dichev's (2002) and Kothari, Leone, and Wasley's (2005) models; in this study abnormal accruals are estimated and utilized as a sign of earnings quality. This study utilized data from 26 non-financial U.S. companies for the period between 2011 and 2020. The findings reveal that the Dechow and Dichev's (2002) model is more strongly pronounced than Kothari, Leone, and Wasley's (2005) model in estimating accruals EM. Furthermore, no significant relationship has been documented between EM and CSR. With respect to the control variables, it is found that audit-tenure, leverage, and cash flows from operations have an inverse association with EM whereas return on assets has a positive association. Finally, in this study no relationship is documented between firm size and EM.

Keywords: Corporate Social Responsibility, Earnings Management, Discretionary Accruals

JEL Classification Codes: M14, M41, Q56

Kurumsal Sosyal Sorumluluk ve Kazanç Yönetimi İlişkisi: Amerika Örneği

Öz

Bu çalışmanın amacı, Kazanç Yönetimi ve Kurumsal Sosyal Sorumluluk (KSS) arasındaki bağı ortaya çıkarmak ve kazanç yönetimi tahmin modellerini karşılaştırmaktır. Bu çalışmada kazanç yönetiminin bir göstergesi olarak Dechow ve Dichev (2002) ve Kothari, Leone ve Wasley'in (2005) ihtiyari tahakkukları tahmin etme modelleri kullanılmıştır. 2011-2020 mali yılları için 26 finansal olmayan ABD şirketinden oluşan bir örneklem kullanan bu çalışma, Dechow ve Dichev'in (2002) modelini Kothari, Leone ve Wasley'in (2005) tahakkukları tahmin etme modelinden daha güçlü bulmuştur. Ayrıca, kazanç yönetimi ile KSS arasında bir ilişki olmadığı tespit edilmiştir. Kontrol değişkenlerine ilişkin bulgular: denetim süresi, kaldıraç oranı ve faaliyetlerden kaynaklanan nakit akışları ile kazanç yönetimi arasında negatif bir ilişkinin olduğunu ortaya koyarken, aktif karlılığı ile kazanç yönetimi arasında pozitif bir ilişkinin olduğu şeklindedir. Son olarak firma büyüklüğü ile kazanç yönetimi arasında anlamlı bir ilişki bulunamamıştır.

Anahtar kelimeler: Kurumsal Sosyal Sorumluluk, Kazanç Yönetimi, İhtiyari Tahakkuklar

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1.Introduction

The importance of the CSR raised over the last decades. Many companies have started to integrate in environmental, social, and governance (ESG) principles after the corporate scandals emerged at the end of the 19th century (Bajic and Yurtoglu, 2018, p. 29). In order to promote CSR in the 1950s and 1960s, the theoretical focus of CSR research was concentrated on the macro social institutions. Bowen (1953, p. 67) conceptualized CSR as a social obligation in 1953. In the 1970s, with the Committee for Economic Development of the USA, a new rationale relied on the assumption that social agreement between business and community is growing; hence private companies are expected to have greater social responsibility than ever before. As a result, CSR was thriving but remained discretionary with limited attention to other aspects such as labor, human right, air pollution, and waste management. During the 1980s and 1990s, the implementation process of CSR gained more importance and grew faster. The establishment of the World Environment and Development Commission in 1983, approval of the Montreal Protocol in 1987 by the United Nations (UN), the founding of the Intergovernmental Panel on Climate Change in 1988, and the establishment of the Environment Agency of Europe in 1990 can be regarded as further steps of this process (Agudelo, Jóhannsdóttir and Davídsdóttir, 2019, p.6).

The CSR practices including minorities and women's advancement, consumer practices, environmental and sustainability initiatives other than philanthropy and charitability activities were extended during the 1990s. Apart from internal stakeholders (investors and owners), external stakeholders (consumers, minorities and environment) have become prominent. In the 1990s, the most significant progress of CSR was in business practices (Carroll, 2015, p.89). Although corporate governance was not the main problem in the 1990s, the role and responsibility of directors became increasingly important when companies transformed into the 21st century. The corporate scandals of the early 2000s, particularly the Enron scandal and its eventual insolvency, increased the importance of business ethics (Carroll, 2015, p.89).

The Sarbanes-Oxley Law (SOX) entered into force in the early 2000s because of the financial scandals of several companies in the U.S. Since this law aims to improve the status and clarity of financial statements and corporate disclosure as well as improving corporate governance; it has had a notable impact on CSR during the 2000s (Linck, Netter and Yang, 2009, p. 3291). On the other hand, the adoption of SOX in 2002, has increased the relevance of the audit and financial reporting quality (Linck et al., 2009, p.3291; Zhang, Zhu and Ding, 2013, p.381). Accordingly, empirical research on the link between CSR and EM has grown (Velayutham, 2018, p.532).

Together with the main motivation of being able to decide the best model to capture earnings management activities, the aim of this study is to investigate the association between EM and CSR activities for the selected U.S. companies between the periods 2011 and 2020. Using the models of Dechow and Dichev (2002) and Kothari, Leone and Wasley (2005) to estimate discretionary (abnormal) accruals as a sign of EM activities, this study compares two different models and reveals the association between CSR performance of the companies and their EM activities. In this way, this study aims to enrich the current academic literature.

The remaining of the study is structured as follows: Section 2 covers the theoretical background together with the estimation models for earnings management. Section 3 summarizes the literature review on both of the relationships between CSR-EM and vice versa. The data and variables utilized together with the methodology and research design of the models are displayed in Section 4. The findings of the empirical analysis are provided with details in Section 5. Finally, the final section is devoted to comments, concluding remarks, and recommendations for future studies.

2. Theoretical Background

The definition of earnings management dates back to the 1980s and all the definitions roughly compass that the main goal in earnings management is to make financial statements look better by altering and driving those financial statements towards the desired direction. In this way, Healy and Wahlen (1999, p.338) define it as “*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 reporting accounting numbers.*” The first attempt in measuring earning management practices with the total accrual approach is calculating total accruals (TA). Then, the non-discretionary parts (NDA) of the total accruals are calculated using different methods. Thus, the rest part of the total accruals other than non-discretionary accruals gives the discretionary accrual amount, which is accepted as a sign of EM practices (Önder, 2012, p.39). In this way, the literature starts with Healy's (1985) model which focuses on determining discretionary accruals (Aybars, 2013, p.46). Earlier models of accruals such as Healy's (1985) and DeAngelo (1986) consider the total accruals as a sign of EM activities. However, this assumption cannot be accepted as accurate because the non-discretionary accruals vary depending on changes in economic circumstances (Kaplan, 1985: 111). Following that, Jones (1991) develops a model which considers a firm's economic circumstances. Unlike Healy's and DeAngelo's Models, she proposed a time series model by considering changes in fixed assets (plant, property and, equipment) and revenues as indicators of economic circumstances that companies face (Habbash, 2010, p.27). Like other models, she considered abnormal accruals as a representative of earnings management (Kalmış and Yavuzaslan, 2016, p.363). Since then, many researchers have redefined and

compared different specifications of Jones model (Ye, 2007, p.5). Dechow Sloan, and Sweeney (1995) developed Jones model and used it for the purpose of detecting companies' opportunistic behaviors. Kothari et al. (2005) improved the Jones model by adding firm's profitability ratio. Using the information related with the companies' cash flows from operations for the current, previous, and future years, a new model to detect companies' accruals based earnings management activities was proposed (Dechow and Dichev, 2002). Furthermore, McNichols (2002) combined this model with Jones model and claimed that the new one would provide more accurate results in estimating earnings management activities based on accruals. In contrast, real earnings management means that companies adjust its earnings through actual activities (Roychowdhury, 2006, p.336).

The Agency Theory and Stewardship Theory describe the interactions between the financial and non-financial reporting with two different perspectives. In this sense, the manager incentives play a significant role. Under the Stewardship Theory, it is expected that the executives disclose more sound decisions and CSR information. Therefore, the earnings quality is expected to be better. If managers act as good stewards and have no financial interest, they disclose more adequate financial information. This attitude will improve financial and CSR performance. In this respect, managers are expected to maintain a long-run relationship with stakeholders. Those executives who strive to improve the CSR performance and reporting have fewer incentives to practice EM activities because low earnings quality will not reflect the stakeholders' interests. In other words, when the management follows the business principles and goals, it will result in an inverse relationship between accrual adjustment and non-financial reporting quality which is consistent with the Stewardship Theory (Kim, Park and Wier, 2012; Scholtens and Kang, 2013; Bozzolan, Fabrizi, Mailin and Michelon, 2015; Gras-Gil, Manzano and Hernandez, 2016).

However, the Agency Theory posits that an agent acts against the business principles and manipulates earnings to achieve desired income. In this respect, managers are expected to cover up their irresponsible actions by using CSR reporting and performance as a gadget to deflect stakeholder attention from earnings quality. Hence, managers who prioritize their opportunistic behavior instead of the companies' principles may manipulate both financial and non-financial reports. These actions will positively link financial reporting quality and social responsibility which is consistent with Agency Theory (Gargouri, Shabou and Francoeu, 1998; Laksmana and Yang, 2009; Lee, 2017).

3. Literature Review

Even the studies related to the impact of CSR on EM have documented mixed results, whilst an inverse relationship is mostly pronounced among them. The evidence for the U.S. is also mixed when the CSR and EM relationship is

considered. While some studies have revealed an inverse association between CSR and EM by using the model of Kothari et al., (2005) to measure earnings quality (Kim et al., 2012; Litt, Sharma and Sharma, 2014), some others have documented positive association for the U.S. (Laksmana and Yang, 2009; Lee, 2017). Furthermore, there are also studies which prove an insignificant relationship between the variables of interest for the U.S. companies (Toukabri, Jilani and Benjam, 2014; Moratis and van Egmond, 2018). The study by Liu, Shi, Wilson, and Wu (2017) investigated the relationship between CSR and EM for the family and non-family U.S. companies. They measured earnings quality with both accrual-based and real EM activities by using Kothari et al., (2005) and Roychowdhury's (2006) models. The findings revealed that while the family companies are less prone to practice accrual-based EM activities, there is no difference between family and non-family companies in terms of engaging in real EM activities. Yip, Stedan, and Cahan (2019) further argued that political costs are factors that influence the nexus between EM and CSR. That is why they have examined this relationship in two different sectors; namely, the petroleum industry which has excellent political attention, and the food industry which attracts political attention relatively less compared to the petroleum industry. While the link between CSR and EM has been found to be inverse for the petroleum industry, the relationship has been found to be positive for the food industry (Moratis and van Egmond, 2018; Toukabri et al., 2014).

Many of the studies investigating the nexus between CSR and EM activities have documented an inverse relationship for the firms in different countries. Choi and Pae (2011) evaluated the association between financial reporting quality and business ethics which is used synonymously for CSR for 242 Korean companies. Kothari et al., (2005) model was employed to calculate earnings management abnormal accruals. The result of the study indicated that companies performing more excellent business ethics demonstrate more incomparable financial statements than those that have lower degree of business ethics. Similarly, Gras-Gil et al., (2016) and Muttakin, Khan and Azim (2015) exhibited an inverse relationship between EM and CSR by using Modified Jones model for the Spanish and Bangladesh firms, respectively. Khosropour (2017) who used modified Jones model to measure earnings quality, also provided similar evidence for Iranian companies. It has been concluded that firms with more excellent CSR ratings engage less in EM activities. However, contrary to the most of many other studies Gargouri, Shabou, and Francoeur (1998) documented a positive link between CSR and EM for Canadian companies. It has been noted that the adoption of the excellent CSR performance encourages managers to manipulate earnings.

A cross country study by Dimitropoulos (2020) using 121,154 firm-year observation for several European Union countries, tested the association between CSR and EM. Using performance adjusted modified Jones model, an inverse association between CSR and EM has been documented. Scholtens and Kang

(2013) further analyzed the nexus between CSR and EM for 139 firms from ten different Asian countries. The proxy of EM, namely discretionary accruals, was computed relying on the model of Dechow and Dichev (2002). The study showed that good CSR performed firms adjust significantly fewer accruals. This finding concerns various ways to measure EM. Further, it has been found that large firms have more tendency to practice earnings smoothing than small ones. In addition, companies with higher financial performance have lower earnings smoothing, but are more prone to show earnings aggressiveness. Similarly, the study of Chih, Shen, and Khan (2008) investigated the nexus between CSR and EM across 1653 companies from 46 different countries. They classified companies as being CSR and non-CSR companies. They used earnings smoothing, earnings aggressiveness, and loss avoidance to measure EM. The modified Jones model was used to compute the accrual components of earnings. They found that the kind of EM determines the way of this relationship. In this respect; it is found that the growth in CSR reduces earnings smoothing and earnings losses as well as leading to higher earnings aggressiveness.

Considering the real earnings management activities, evidence has also been documented to be mixed related with the link between CSR and EM. In this respect, Zhang, Yap, and Park (2021) tested whether Chinese firms that have good CSR performance adjust their earnings or not. Roychowdhury's (2006) model was used to measure the earnings management activities. It was found that firms exhibiting better CSR performance have a greater tendency to practice EM through actual activities manipulation rather than accrual-based EM activities. Similarly, Bozzolan et al., (2015) also investigated the same relationship for 1141 entities from several developed countries. To measure real earnings management activities Roychowdhury's (2006) model was taken into consideration whereas accrual-based EM activities were estimated with the modified Jones model. It was revealed that entities with CSR adaptation have greater tendency to use accrual-based EM activities rather than real EM activities. Moreover, it was pointed out that, CSR is inversely related to EM activities. The study of Grougiou, Leventis, Dedoulis and Owusu-Ansah (2014) which analyzed the nexus between CSR and EM for 116 publicly traded U.S. commercial banks between the period 2003 and 2007, also documented an inverse relationship between EM and CSR.

While international evidence demonstrates both negative (Choi, Lee and Park, 2013) and positive (Prior, Surroca and Tribó, 2008; Salewski and Zülch, 2014) relationship between EM and CSR performance, there are also studies that have not revealed any significant link between the variables of interest (Rahmawati and Dianita, 2011; Sun, Salama, Hussainey and Habbash, 2010).

4. Data and Methodology

4.1 Data Set and The Variables Utilized

This study started with the data of 855 non-financial U.S. firms whose headquarters are in the U.S. from 2011 to 2020. As an initial step, the firms without CSR scores were eliminated. Since the calculation of EM's proxy requires all the variables to be available for all years, the companies without complete data have also been excluded. Accordingly, the final data set consists of 26 non-financial U.S. companies for a period from 2011 to 2020, which makes 260 firm-year observations.

The dependent variable of the study was chosen based on accrual-based EM. In this respect, the models of Dechow and Dichev (2002) and Kothari et al., (2005) were used to compute abnormal accruals as an indicator of EM activities. Whereas the former uses the contemporaneous and peek-ahead information in cash flows for the accrual estimation, the latter proposes the use of performance-matching.

Based on the Kothari et al., (2005) model, abnormal accruals are estimated as shown in Equation 1 and total accruals are computed as shown in Equation 2, respectively.

$$\begin{aligned} TAC_{it}/A_{it-1} = & \beta_0 + \alpha(1/A_{it-1}) + \beta_1(\Delta REV_{it} - \Delta REC_{it})/A_{it-1} + \beta_2(PPE_{it}/A_{it-1}) + \\ & \beta_3ROA_{it} + \varepsilon_{it} \end{aligned} \quad \text{(Equation 1)}$$

Where;

TAC= Total Accruals
A= Total Assets
 ΔREV = Change in Revenue
 ΔREC = Change in Receivables
PPE = Property, Plant and Equipment
ROA = Return on Assets (Net income/Total assets)
 ε it is error term for firm i in year t
i is firm index
t is year index

$$TAC_t = \Delta CA_t - \Delta Cash_t - \Delta CL_t + \Delta DCL_t - DEP_t \quad \text{(Equation2)}$$

Where;

ΔCA_t is change in current assets at year t
 $\Delta Cash_t$ is change in cash and cash equivalents at year t
 ΔCL_t is change in current liabilities at year t
 ΔDCL_t is change in debt included in current liabilities at year t.
 DEP_t is depreciation and amortization expense at year t

Based on the model of Dechow and Dichev (2002), discretionary accruals are estimated as shown in Equation 3.

$$\Delta WC_{it}/TA = \alpha_0 + \alpha_1 \Delta REV_{it}/TA + \alpha_2 PPE_{it}/TA + \alpha_3 CFO_{it-1}/TA + \alpha_4 CFO_{it}/TA + \alpha_5 CFO_{it+1}/TA + \varepsilon \quad (\text{Equation 3})$$

Where;

ΔWC_{it} is the change in working capital at year t

ΔREV_{it} is the change in revenues at year t

PPE_{it} is the plant, property and equipment at year t

CFO_{it} is cash flows from operating activities in year t

TA is total assets

The CSR scores of the companies were extracted from the Thomson-Reuters database. Afterwards, all the variables were tested whether they are normally distributed. The explanatory variable (i.e., CSR) was found to be moderately skewed. A variable is considered as moderately skewed if its skewness degree is higher than 0.5 (McNeese, 2016). Thus, the CSR values used in this study are the logarithm of CSR scores provided in the Thomson-Reuters database. Usage of logarithmic values for variables reduces the values based on a precise degree and reduces the skewness (Feng et al., 2014 ,p.106). This method is also utilized in the studies of Gras-Gil et al. (2016) and Khosropour (2017).

Some control variables namely; leverage, firm size, audit quality, firm financial performance, and cash flows from operations were also included into the analysis to investigate their association with EM activities in line with some other studies in the literature (Dechow, 1992; Gargouri et al., 1998; Hsu and Koh, 2005; Sun et al., 2010; Choi and Pae 2011; Hong and Andersen 2011; Rahmawati and Dianita, 2011; Choi et al., 2013; Toukabri et al., 2014; Bozzolan et al., 2015; Muttakin et al., 2015; Gras-Gil et al. 2016; Grecco et al. 2017; Khosropour 2017; Marta Cristina Pelucio et al. 2017; Yip et al., 2019; Boujelben, Khemakhem and Ahmad, 2020; Dimitropoulos 2020).

Table 1 below shows the variables used in the study with their abbreviations and explanations.

Table 1: The Variables Utilized and Their Abbreviations

Variable Name	Abbreviation	Explanation
Discretionary Accruals of Kothari, Leone, and Wasley Model (2005)	DACC1	The residuals value of the Kothari, Leone, and Wasley Model (2005)
Discretionary Accruals of Dechow and Dichev Model (2002)	DACC2	The residuals value of the Dechow and Dichev Model (2002)
Corporate Social Responsibility	CSR	Logarithm of CSR score of companies
Leverage	LEV	The ratio of total debt to total assets
Size	-	Logarithm of total assets
Return on Assets	ROA	Net Income/Total assets
Auditor Tenure	Aud	Tenure of the company auditor
Cash flows from operations	Cash	Cash flows from operations/ Total assets

4.2 Methodology

This study employs panel data methodology to explore the interaction between EM and CSR for 26 non-financial U.S. companies for the period between 2011 and 2020. One of the main reasons why this methodology is selected due to the advantage of panel data analysis which incorporates both cross sectional and time series data. While cross-sectional data gives information about only one period for many units, time-series data reports only one unit according to periods. However, panel data analysis ensures obtaining information about many units according to the periods (Tatoğlu, 2020: 3).

The basic question in this study is whether being a socially responsible company will lead to lower earnings management activities or not. Accordingly, the following hypothesis was developed.

H₀: Firms with better CSR performance have fewer incentives to practice EM activities

4.3. Research Design

To be able to explain the hypothesis, two different models were estimated to investigate the nexus between EM activities and the CSR degree of U.S. companies. While the first model is based on the Kothari et al., (2005) model; the second one is developed based on the model of Dechow and Dichev (2002).

Model 1:

$$DACC1_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 Lev_{it} + \beta_3 Size_{it} + \beta_4 Aud_{it} + \beta_5 ROA_{it} + \beta_6 Cash_{it} + \epsilon_{it}$$

Model 2:

$$DACC2_{it} = \beta_0 + \beta_1 CSR_{it} + \beta_2 Lev_{it} + \beta_3 Size_{it} + \beta_4 Aud_{it} + \beta_5 ROA_{it} + \beta_6 Cash_{it} + \epsilon_{it}$$

The estimators to be applied for each model are determined based on numerous tests. As a first step, F test was conducted to check for unit and/or time effects for the first model. The results prove that the model does not contain any unit and/or time effects which makes it classical. Furthermore, Berusch-Pagan, White, and Wooldridge tests are applied to test autocorrelation and heteroskedasticity problems. Finally, the Wooldridge test was applied to discern the serial correlation within the model. The results of the tests showed that the first model suffers from heteroskedasticity. Accordingly, the first model can be regressed with Huber, Eicker and White robust variance estimator due to the presence of heteroskedasticity (Tatoğlu 2020, p.304).

For the second model the F test was also applied to determine the presence of unit and/or time effects. The test result displays that the model is one-way with unit effect. Later, Hausman specification test is utilized to understand whether the model demonstrates random effects or fixed effects. As shown in Table 5, the Hausman test result leads to the random-effects model. Additionally, several tests have been conducted to test the underlying assumptions of panel data models; The Brown–Forsythe test for heteroskedasticity, Modified Bhargava et al. Durbin-Watson and Baltagi-Wu LBI test for autocorrelation, and Pesaran’s and Friedman’s tests for the cross-sectional independence, respectively. While the test results demonstrate the presence of heteroskedasticity and autocorrelation, the model is found to be free from cross-sectional independence. Accordingly, the model is regressed with clustered standard errors which overcome the heteroskedasticity and autocorrelation problems in random models (Tatoğlu, 2020, p.307)

5. Findings and Discussions

The descriptive statistics for the variables are demonstrated in Table 2 below. The mean value of the residuals is -0.006 and 0.02, respectively. The average CSR score of the selected companies is 47.5, with a maximum value of 97.9. The average value of leverage indicates that selected firms used in the study finance approximately %64 of their total assets with debt. Furthermore, the on assets and the ratio of cash flows from an operation on the total assets are 7% and 11% for the selected firms, respectively. The mean value of the Audit-tenure is approximately 15 years over a full year of 27. Considering the mean values of the variables, they are comparable with the values in other studies. However, it should be noted that the average size of the selected firms is relatively higher than the average size of the samples in other studies (Dechow and Dichev 2002; Kim et al., 2012; Liu et al. 2017; Lee 2017; Hong and Andersen 2011). Thus, it should be highlighted that big companies work more professionally and have more experience in their field, and thus, it is difficult to detect a notable association between CSR and EM (Hong and Andersen, 2011, p.466).

Table 2: Descriptive Statistics

	CSR	DACC 1	DACC 2	LEV	ROA	SIZE	CASH	AUD
Mean	47.540	-0.006	0.022	.6442	0.072	22.951	.1173	14.935
Maximum	97.900	0.9279	0.542	1.512	0.320	26.029	.49418	27.000
Minimum	0.000	-0.433	-0.405	.0814	-0.237	19.484	-.25326	1.000
Std. Dev.	33.694	0.1024	0.139	.2572	0.072	1.4217	.08378	6.585

Table 3 depicts the degree of relationship among the defined variables regardless of the significance levels. The correlation matrix illustrates that correlations between CSR and abnormal accruals with respect to Dechow and Dichev (2002) model and Kothari et al., (2005) model are found to be -0,155 and -0,031 respectively. Regarding audit quality, the correlation coefficient between abnormal accruals and audit tenure are -0.042 and -0,259, respectively. These values illustrate that the longer audit tenure is inversely related to EM activities. The leverage ratio has also negative relationship with EM activities for both models utilized. However, with respect to relationship between profitability and discretionary accruals, the direction of the relation is not consistent for two models representing EM. Moreover, the two control variables, size and cash flows from operations, have also inversely related to EM activities in both of the models.

Table 3: Correlation Matrix

	CSR	DACC1	DACC2	AUD	LEV	ROA	SIZE	CASH
CSR	1							
DACC 1	-0.155	1						
DACC 2	-0.031	0.142	1					
AUD	0.107	-0.042	-0.259	1				
LEV	-0.012	-0.104	0.114	0.050	1			
ROA	0.008	0.062	0.177	0.277	-0.372	1		
SIZE	0.411	-0.043	-0.052	0.120	-0.230	-0.170	1	
CASH	0.022	-0.040	-0.175	0.274	-0.350	0.766	-0.095	1

Table 4 and Table 5 show the results of Model 1 and Model 2, which investigate the relationship between CSR and EM activities for selected U.S. firms, are based on the models of Kothari et al., (2005) and Dechow and Dichev (2002), respectively. In contrast to the developed hypothesis which assumes an inverse relationship between CSR and EM activities, the evidence reveals any statistically significant association between them for the Model 1 which is displayed in Table 4, below. It means being a good corporate citizen firm has any impact on earnings quality of the selected firms i.e., being socially responsible will not hamper or improve the earnings quality.

An evaluation of the findings with respect to the control variables indicates that any variable except profitability and cash flows from operations are found to be significantly related to EM activities of the selected U.S. firms. The profitability, which is measured by ROA, is documented to be significantly and positively related to the earnings quality of selected firms which is in line with the studies of Kim, et al. (2012), Lee et al. (2006) and Dechow et al. (1995). On the other hand, the cash flows from operations which measures the firm's operating performance is found to be inversely related to earnings quality consistent with the studies of Boujelben et al. (2020), Hsu and Koh (2005) and Dechow (1992). Dimitropoulos (2020, p. 6) suggests that the inverse relationship between cash flows from

operations and earnings quality can be explained by the manager's incentive to adjust more accruals to respond to the company's poor operating performance.

Table 4: The Test Results of the Model 1

Pooled Ordinary Least Square	
Explanatory and Control Variables	Dependent Variable: DACC 1- Kothari, Leone, and Wasley (2005)
CSR	-.0082835 (-1.22)
Aud	-.0004748 (-0.51)
ROA	.4438449 (2.31) **
Lev	.0001034 (0.20)
Size	-.0021889 (-0.53)
Cash	-.2679925 (-1.68) *
Number of observations	260
Number of groups	26
F	1.48
Prob > F	0.1863
R-squared	0.0944

*, ** and *** indicate that the estimates are significant at 10%, 5% and 1% margins of error, respectively

Similar to the findings documented for Model 1, the results for Model 2 which is relied on Dechow and Dichev's (2002) model does not document any notable association between CSR and EM activities neither for the selected U.S. firms. The results of the analysis for Model 2 are displayed in Table 5. In terms of the control variables, only audit tenure and leverage variables are found to have significant relation with EM activities. Audit tenure which is used to represent audit quality is observed to be inversely related to earnings quality in line with the studies of Yang and Krishnan (2005) and Myers, Myers and Omer (2003). Accordingly, depending on the result of the analysis, it can be said that auditor with a long year of experience can curb the discretionary accruals which occurs due to the manager's opportunistic behavior. Leverage variable that is used to proxy indebtedness level of the companies is also inversely related to the earnings quality of the selected U.S. firms. A high leverage ratio can be considered as a potential sign for bankruptcy (Gras-Gil et al, 2016, p.294). Toukabri et al. (2014, p.108) claimed that firms with high

leverage ratios are monitored closely by the creditors and stakeholders. Thus, they are less likely to practice EM activities when compared with the firms having lower leverage ratios. The finding regarding the significant inverse relationship between leverage and EM activities in this study, was also reported in the study of Dechow and Skinner (2000) in which it was stated that highly leveraged firms report fewer EM activities.

Table 5: The Results of Model 2

Random Effect GLS	
Explanatory and Control Variables	Dependent Variable: DACC 2- Dechow and Dichev (2002)
CSR	0.62099 (0.81)
Aud	-8.51207 (-2.29) ***
ROA	-3.43209 (-1.00)
Lev	-2.31209 (-2.36) **
Size	-7.04207 (-0.53)
Cash	-3.13209 (-2.17)
Number of observations	260
Number of groups	26
Hausman Test Prob>Chi2	0.1100
R-squared	0.1558
Wald chi ²	35.77
Prob>Chi ²	0.000

*, ** and *** indicate that the estimates are significant at 10%, 5% and 1% margins of error, respectively

To compare the explanatory power of the earnings management estimation models two different models were used; Kothari et al., (2005) and Dechow and Dichev (2002) models. The regression analysis results between total accruals and other variables of Kothari et al., (2005) model is demonstrated in Table 6. Regarding the $p > |t|$ values of the variables, it can be highlighted that only the ROA has a notable impact on total accruals.

Table 6: The Regression Results of Kothari, Leno and Wasley, (2005)'s Model

TA _{it} / A _{it-1}	Coef.	Std.Err.	T	P> t
I / A _{it-1}	-1.29207	-1.16207	-1.11	0.269
ΔREV _{it} -ΔREC _{it}	.0551353	.0363128	.1.52	0.130
PPE _{it} / A _{it-1}	-.029658	.0299834	-0.99	0.324
ROA _{it}	.202069	.0981495	2.06	0.041
R-squared	0.0472			
Adj R-squared	0.0305			
Prob > F	0.0253			

The regression analysis results between total accruals and other variables of Dechow and Dichev (2002)'s model are demonstrated in Table 7. It shows that while the past, present, and future cash flows have a notable impact on the total accruals; revenues and fixed assets do not have any significant effect. Regarding the Prob>F values, coefficients of the two estimation models are different from zero since both models have a Prob>F values smaller than 0.05. In this sense, both models are appropriate for estimating the total accruals. However, Dechow and Dichev's (2002) model has a lower Prob>F value than the value of Kothari et al., (2005) model, and it is closer to zero. In this respect, the regression of Model 2 fits the data better than the regression of the first model. Furthermore, the R² value, which quantifies the power of the relationship between the developed model and the dependent variable, shows that the second model is more potent than the first model (Jim, 2017). In case the adjusted R² is considered to evaluate the explanatory power of the model, the performance-matched model of Kothari et al., (2005) has less explanatory power than Dechow and Dichev's (2002) model. To decide on the best-fitted EM estimation models R² was also considered in other studies (Callao Jarne, and Wróblewski, 2017; Siregar and Utama 2008; Ye, 2007).

Considering all the variables that compare the explanatory power of the developed models, it can be stated that Dechow and Dichev's (2002) 's model is better for capturing the total accruals of the sample companies used in this study.

Table 7: The Regression Results of Dechow and Dichev, (2002) 's Model

$\Delta WC_{it} / A_{it}$	Coef.	Std.Err.	t	$p > t $
$\Delta REV / A_{it}$	-.2083414	.1612651	-1.29	0.198
PPE / A_{it}	3030251	.1834817	1.65	0.100
CFO_{it-1} / A_{it}	.3133927	.1236376	2.53	0.012
CFO_{it} / A_{it}	-.0352591	.0097036	-3.63	0.000
CFO_{it+1} / A_{it}	-.3385845	.0416448	-8.13	0.000
R-squared	0.3232			
Adj R-squared	0.3065			
Prob > F	0.0000			

6. Conclusion

This study aimed to record evidence on the nexus between CSR performance and EM activities of selected 26 U.S. companies for the period between 2011 and 2020. The related literature generally supports evidence for a negative impact of EM activities on financial reporting quality. Therefore, companies with fewer EM activities are expected to attract more investors. In this study, it is questioned whether socially responsible companies are also behaving responsibly to maintain financial reporting quality. Abnormal accruals are utilized to measure earnings quality based on the two different models: the performance-matched model of Kothari et al., (2005) and the model of Dechow and Dichev (2002). Furthermore, control variables namely; audit-tenure, leverage, size, ROA, and cash flows from operations were also added to the analysis to test the possible association with EM activities of the selected firms.

The findings of the analysis demonstrate that for both of the models utilized, any significant relationship has been detected between CSR and EM activities of the selected companies. This evidence is in line with the studies of Moratis and van Egmond (2018) and Toukabri et al. (2014). With respect to the control variables; audit-tenure, leverage, and cash flows from operations were found to have a negative relationship with EM activities, whereas return on assets was found to have positive one. Finally, no relationship was documented between firm size and EM. Depending on a recent data set, this study has contributed to the existing literature

in that it compares the two most commonly used different accruals EM estimator models together with their superiority and inferiority in statistical terms.

This study is not free of limitations. Firstly, the accruals were measured solely through accruals EM rather than real EM. The second limitation is that the analysis rests upon the fact that the study consists of only selected U.S. companies; thus, the findings cannot be generalized. The analysis of the companies from other countries may reveal different findings regarding to the CSR-EM link. The reason is that the ‘CSR national system’ in Europe and the U.S. differ in terms of politics, culture, and control (Matten and Moon, 2008, p. 3). One another limitation of the study is that it compares merely two estimator models to find the best-fitted model for EM. Due to insufficient data, other EM measuring models as the models of Yoon and Miller (2002); Dechow, Richardson and Tuna (2003), and Larcker and Richardson (2004) could not be estimated. Further studies are recommended to compare other alternative models to decide on the best estimator of accruals EM. Additional studies can also be conducted by connecting some variables related to corporate governance when evaluating the association between CSR and EM activities. Since EM activities are argued to be inversely related to a solid corporate governance system, it will be compelling to question how the relationship between CSR and EM is affected by factors such as gender diversity on the board, percentage of the independent board members, the presence of the audit board committee and being audited by big four. In this way, future studies may shed a different light on the CSR- EM association.

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