The Relationship Between Corporate Social Responsibility and Earnings Management: An Exploratory Study

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Abstract In this article, we explore the relationship between corporate social responsibility (CSR) and earnings management (EM). Our CSR index, using KLD data, incorporates information from the following issue areas: the community, corporate governance, diversity, the product, employee relations, the environment, and human rights. Results show that more socially responsible firms have higher quality accruals and less activity-based EM, both of which impact financial reporting quality.

Keywords Accruals quality · Corporate social responsibility · Earnings management · Ethics · KLD database

Introduction

Companies provide financial information to raise debt and equity capital, as well as to comply with governmental regulations and contractual requirements. External stakeholders assess the amount, timing, and uncertainty of future cash flows, using information such as the earnings reported in the financial statements. They make investment and credit decisions based on their assessment. Therefore, the quality of the reported earnings plays an important role in the communication process between companies and external stakeholders. Decades of empirical research have focused on the factors influencing the quality of earnings, specifically the accruals. However, there is also increasing attention being paid to the managerial activities which can lead to the manipulation of earnings. In this article, we examine the communication process by investigating the potential relationship between corporate social responsibility (CSR) and the quality of their financial reporting.

The results of accounting are an important part of the communication process companies engage into provide information to their stakeholders. Any communication process has at least three parts: a sender of the message (the company), the message (financial reports), and the receivers of the message (the company's stakeholders). While their objectives are not necessarily at odds with each other, the company has an incentive to influence the communication process to encourage particular actions from its various stakeholders. Examples of this include encouraging creditors and stockholders to supply additional capital under favorable terms and the government to decrease regulatory pressures on the firm.

Ethics plays an important role in this communication process. In a recent academic paper, Reynolds and Yuthas (2008) discuss whether companies engage in "ethical communications" with their stakeholders. From the same time period, a newspaper editorial cites the need for an "ethical bailout," not just a financial one (Friedman 2008). The concern about ethics in corporate communications, and actions, is widespread. Financial reporting is the communication process of interest in this article.

The rest of the article is organized as follows. In the "Literature Review and Hypothesis Development" section, we discuss the motivation for companies to engage in socially responsible actions, interpret earnings management (EM) as a means of influencing the accounting message to external stakeholders, and discuss the possibility that these two influences (CSR and EM) are related. Next, we identify all models and describe the variable

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measurements in the "Research Design" section. We present our results in the "Results and Discussion" section. Finally, we discuss limitations and extensions of this article in the "Conclusion" section.

Literature Review and Hypothesis Development

Corporate Social Responsibility

An early and influential voice in the CSR literature is that of A.B. Carroll. In 1979, he proposed the following four-part definition of CSR: "The social responsibility of business encompasses the economic, legal, ethical and discretionary expectations that society has of organizations… (Carroll 1979, p. 500)." He subsequently identified the discretionary component as philanthropic. In describing his CSR pyramid, Carroll summarizes his ideas as follows: A company engaging in CSR will work to make a profit, obey the law, behave ethically, and be a good corporate citizen (Carroll 1991).

Drucker (1984) expanded on the perspective that profitability and social responsibility are compatible. He is one of the first to suggest that companies should ensure that their social responsibilities also become business opportunities (Drucker 1984). As this idea has matured, it has become known as strategic philanthropy.

Porter and Kramer (2006) identify four prevailing reasons for companies to engage in social responsibility. First, society, in general, and many firms in particular, have believed that companies have a moral obligation to engage in actions for the benefit of all; whether or not these actions are profitable. Second, the concept of sustainability stresses the need for the firm's stewardship of the environment and the community. Third is the idea of a license to operate. Governments, communities, and others give companies tacit or explicit permission to do business. Finally, being socially responsible can enhance the firm's reputation. Porter and Kramer (2006) state that firms are socially responsible because it "will improve a company's image, strengthen its brand, enliven morale, and even raise the value of its stock." These reasons for companies to engage in CSR can be viewed as attempts to influence external stakeholders to view the company's financial reports favorably.

The stakeholder management theory states that companies try to satisfy stakeholder expectations. This includes the recognition that some investors consider CSR in their investing decisions. The 2007 Report on Socially Responsible Investing (SRI) Trends in the United States reports that SRI assets increased from \$639 billion in 1995 to \$2.71 trillion in 2007, an increase of more than 300%. This reason to engage in social responsibility is supported and supplemented by the long stream of empirical research that finds that CSR and financial performance are positively related (e.g., Callan and Thomas 2009; Griffin and Mahon 1997; Preston and O'Bannon 1997; Waddock and Graves 1997).

Strategic philanthropy appears to combine all of these motives for CSR. A cornerstone of strategic philanthropy is that businesses and society are interdependent (Porter and Kramer 2006; Stewart 2006). Further, with good management, firms can be socially responsible and turn that responsibility into a competitive advantage for the firm (Cohen 2009). Saiia et al. (2003) find that companies with greater business exposure have higher levels of strategic philanthropy. Thus, companies engage in CSR for many reasons. In the next section, we discuss why companies may manage earnings.

Earnings Management

Companies can influence the message conveyed to external users by modifying the actions they take and thus affect their true economic reality, which is often referred to as real earnings management (R-EM) (Roychowdhury 2006; Bens et al. 2003). For instance, firms may decrease discretionary costs such as advertising and training to boost earnings. However, such an action will undermine the firms' competitive power. R-EM is costly. In another form of EM, companies can adjust the accruals part of earnings without inducing real economic consequences, often referred to as accrual-based earnings management (A-EM) (Dechow et al. 1995). For example, firms can change their estimates of warranty liabilities. This will change the accruals part of earnings but have no actual impact on future cash flows. Accounting ME disguises the real economic conditions and lowers the quality of reported earnings.

A simple example may help illustrate. Suppose shortly before the fiscal year-end, a company makes a \$30 sale. Further, assume at the time of the sale, the company receives \$20 cash and records an account receivable (A/R) of \$10. This \$10 expected future cash payment is, of course, an accrual. If the company subsequently receives payment of \$10 cash in settlement of the A/R, the prior accrual "maps" perfectly into the current cash flow.

Now imagine that management decides to engage in A-EM. Also, assume that past experience has indicated that the company is likely to collect only \$9 of the \$10 A/R. Management could manipulate earnings by overestimating or underestimating bad debt expense. Only if the bad debt expense is recorded as 10% of A/R and the company does receive \$9 cash will the accrual accurately map into the cash flow. As just illustrated, EM affects accrual quality (AQ).

In this simple example, management may also choose to engage in activities-based or "real" earnings management (R-EM). With this approach, managers may manipulate sales revenue by modifying their credit terms. For example, they may increase the time before payment is due. Some recent television advertisements, e.g., offer 0% financing for a year or more! As a result, sales revenue and income can be expected to increase but there will be a poor mapping of accruals into cash flows. This simple example highlights the effects of both accruals-based manipulations and activities-based manipulations on the mapping of earnings into cash flows. EM decreases the information content of financial reporting.

A vast number of scholarly empirical papers have identified a variety of methods and motives for firms to manage earnings (e.g., Merchant and Rockness 1994; Teoh et al. 1998). We will provide only a brief overview here. Healy and Wahlen (1999) report that managers use EM to affect contractual outcomes. Accounting information is frequently used to monitor contracts companies have with a variety of external stakeholders; a common example is its use in debt covenants. Also, managers have been shown to inflate earnings in order to meet budget goals (Merchant 1990). Further, it has been documented that managers will use EM to increase their compensation (Guidry et al. 1999; Healy 1985). In general, these EM actions are opportunistic in nature, distort a firm's intrinsic economic value, and may be detrimental to future performance.

Being aware of the existence of opportunistic EM activities, there is a general interest in factors that may constrain these actions. Governmental regulation is often viewed as a potential constraint to managerial manipulations of accounting numbers reported to the public. For example, after the Enron and other headline-producing ethical failures, the Sarbanes–Oxley Act was passed in July, 2002. The legislation was intended to curb corporate fraud (Leder 2003).

We are interested in investigating the possibility that CSR will inhibit EM. The question of interest for this article is the following: does a company which is socially responsible engage in less EM? In our attempt to answer this question, we examine both A-EM and R-EM.

One possible response to our research question is that companies which are socially responsible actually engage in more EM than companies that are less socially responsible. In fact, firms may manage earnings using socially responsible actions. Petrovits (2006) provides evidence that firms time contributions to their philanthropic foundations in order to achieve earnings objectives. Managers who are skillful may be able to obtain both higher profits and greater credit in measures of CSR (deMaCarty 2009). In fact, deMaCarty (2009) argues that such management skill may be the reason for the empirical finding of a positive correlation between CSR and financial performance. Chih et al. (2008) report that companies with more CSR exhibit more earnings aggressiveness, a form of EM.

On the other hand, Jensen et al. (2004) provide a compelling description of the agency costs incurred when a company's equity is overvalued. An anticipated consequence of EM is to increase the stock price; thus, EM can lead to overvalued equity. When this happens, the company's performance eventually will be unable to meet the market's expectations. The authors (Jensen et al. 2004, pp. 44–45) describe it as follows: "The situation faced by managers and the board of such a company is fraught with confusion and mixed signals that makes it extremely difficult to limit the destruction of the core value of the firm…."

Companies using accruals to manage earnings face negative long-term consequences. Sloan (1996) finds that firms with large positive discretionary accruals subsequently experience significant negative abnormal returns. Beneish (1997) examines a number of companies using aggressive accruals to manipulate earnings which were subsequently charged by the Securities Exchange Commission for violating generally accepted accounting principles. Finally, accounting-based EM is generally believed to be unethical (Fischer and Rosenzwieg 1995; Kaplan 2001). We state our first research hypothesis in the alternate form:

H$_{A1}$ There is a positive relationship between CSR and accruals quality (AQ).

The R-EM literature identifies the following common ways to use activities to manipulate earnings: boost sales by increasing price discounts or through more lenient credit terms; reduce discretionary expenditures such as advertising or training expenses, and/or reduce reported cost of goods sold by overproducing (Healy and Wahlen 1999; Fudenberg and Tirole 1995; Dechow and Skinner 2000). Roychowdhury (2006) finds evidence that these R-EM activities are not optimal corporate responses to economic circumstances. As a result, firms may suffer long-term consequences. Due to (ethical and) long-run profitability issues, R-EM is not an optimal choice for firms either. Our second hypothesis is the following:

H$_{A2}$ There is a negative relationship between CSR and R-EM.

There has been little prior research to suggest an answer to our research question. Labelle et al. (2010) point out there is a "near vacuum" of empirical literature which addresses the role ethics plays in controlling EM. Their results indicate that a higher level of corporate moral development is associated with higher quality financial reporting. The results of Chih et al. (2008) are similar.

They find that companies with higher social responsibility engage in less earnings smoothing and less earnings decrease/loss avoidance. In addition to providing more direct evidence that firms which are socially responsible have higher quality accruals, we also find that socially responsible firms (SRFs) engage in less activities-based EM.

Research Design

Measuring CSR

To test our hypotheses on the relationship between CSR and EM, we use information from the Kinder Lydenburg and Domini (KLD) database to construct our measure of CSR. KLD has covered the S&P 500® since 1991 and expanded its coverage in 2002 to the largest 3000 U.S. publicly traded companies by market capitalization according to their website (http://www.kld.com/research/stats/index.html). Hillman and Keim (2001) identify the KLD database as the best source of social responsibility measures available. Waddock and Graves (1997) identify several advantages to using KLD as a source of CSR measures. The Kinder Lydenburg and Domini database includes a large number of companies; currently there are over 3,000 companies listed. These companies are reviewed by independent research analysts. These professional analysts consistently apply the same criteria to the companies. The results they report include strengths and concerns in seven issue areas: human rights, corporate governance, diversity, employee relations, the environment, product characteristics, and community relations. A more detailed description of the strengths and concerns for these issues is provided in the "Appendix" section.

The sample consists of non-financial U.S. firms from 1995 to 2005. For each company in the sample, we sum the number of strengths and the number of concerns across the seven issue areas. We determine a CSR index for each company by subtracting the sum of the concerns from the sum of the strengths. If the resulting CSR index is positive, we identify the company as socially responsible. Across all seven issue areas, this socially responsible company has more positives (strengths) than negatives (concerns). If the CSR index is zero or negative, we classify the company as less socially responsible.

Measuring Accruals Quality (AQ)

Our measure of accruals quality is based on the argument that accruals are one of the two components in earnings (the other one is cash flows) and contain management's forecast and estimation of past, current, and future cash flows. A better mapping of accruals into cash flows would reflect higher quality accruals and, therefore, a higher quality measure of earnings (McNichols 2002). We relate current accruals to cash flows from the time periods before and after, as well as the current time period, using the model in Dechow and Dichev (2002) and Francis et al. (2005). Specifically, we measure accruals quality (AQ) as the standard deviation of residuals $\sigma(\varepsilon)$ from Eq. 1:

$$TCA_t = b_0 + b_1 CFO_{t-1} + b_2 CFO_t + b_3 CFO_{t+1} + b_4 \Delta Rev_t + b_5 PPE_t + \varepsilon_t, \tag{1}$$

where $TCA = \Delta CA - \Delta CL - \Delta CF + \Delta DCL + DAE$; TCA is the total current accruals; ΔCA is the change in current assets (Compustat data item 4); ΔCL is the change in current liabilities (Compustat data item 5); ΔCF is the change in cash flows (Compustat data item 1); ΔDCL is the change in debt in current liabilities (Compustat data item 34); DAE is the depreciation and amortization expense (Compustat data item 14); CFO is the operating cash flows (Compustat data item 308); ΔRev is the change in revenues (Compustat data item 12); and PPE is the total property, plant and equipment (Compustat data 7).

The residual ε reflects the part of accruals that does not map into cash flows; and the subscript "t" denotes period t. Following Francis et al. (2005), we add the variables ΔRev and PPE to reduce measurement errors. The standard deviation of this error term from Eq. 1 is our measure of accruals quality. A higher $\sigma(\varepsilon)$ indicates a poor mapping of accruals into cash flows and suggests the presence of EM and unintentional forecast errors. A lower $\sigma(\varepsilon)$ shows high accruals quality and the absence of EM and fewer forecast errors.

Following Roychowdhury (2006), we use the following equations to estimate normal operating activities for each firm in the sample:

$$CFO_{(i,t)} = b_0 + b_1 SALES_{(i,t)} + b_2 \Delta SALES_{(i,t)} + e_{(i,t)}, \tag{2a}$$

$$PROD_{(i,t)} = b_0 + b_1 SALES_{(i,t)} + b_2 \Delta SALES_{(i,t)} + b_3 \Delta SALES_{(i,t-1)} + e_{(i,t)} \tag{2b}$$

$$DEXP_{(i,t)} = b_0 + b_1 SALES_{(i,t-1)} + e_{(i,t)}, \tag{2c}$$

where CFO is the cash flow from operations; PROD is the production costs, the sum of cost of goods sold and the change in inventories; DEXP is the discretionary expenses, the sum of advertising, R&D, and SG&A expenses; SALES is the sales revenue, and $\Delta SALES$ is the change in sales revenue.

The abnormal CFO (R_CFO), abnormal PROD (R_PROD), and abnormal DEXP (R_DEXP) are computed as the difference between the actual values and the normal levels predicted by Eqs. 2a–2c. We use these abnormal

measures as proxies for R-EM. In order to make interpreting the results easier, we multiply R_CFO and R_DEXP by negative one. Then, if firms which are not socially responsible are using real activities to manipulate earnings, they will have higher R_CFO, R_PROD, and/or R_DEXP than SRFs.

Model Selection

We investigate whether more socially responsible corporations will have higher or lower quality accruals. We model the association between accruals quality and CSR in Eq. 3:

$$\sigma(\varepsilon)_t = b_0 + b_1 CSR_t + b_2 LnOC_t + b_3 Size_t \\ + b_4 \sigma(Sales)_t + b_5 \sigma(Cash)_t + b_6 \sigma(NI)_t + b_7 FreqNNI_t \\ + \varepsilon_t, \tag{3}$$

where LnOC is the natural log of operating cycles, calculated as 360/(Sales/Average Accounts Receivables) + 360/(Cost of Goods Sold)/(Average Inventory); Size is the log of total assets (Compustat data item 6); $\sigma(Sales)$ is the standard deviation of sales (Compustat data item 12); $\sigma(Cash)$ is the standard deviation of cash flows (Compustat

data item 308); $\sigma(NI)$ is the standard deviation of net income (Compustat data item (18); and FreqNNI is the frequency of negative net income.

In addition to our test variable CSR, we include control variables in Eq. 3. Prior research (Dechow and Dichev 2002; Francis et al. 2005) has shown that these control variables—LnOC, size, $\sigma(Sales)$, $\sigma(Cash)$, $\sigma(NI)$ and FreqNNI—affect the standard deviation of accruals residuals $\sigma(\varepsilon)$.

To control for the outlier effect, the extreme values of the distribution are winsorized to the 1st and 99th percentile before we run the model in time-series at the firm level. The time-series regression requires eight consecutive firm-year observations. This provides at least six estimated accruals residuals to allow us to compute the standard deviation of the residuals.

Sample Selection

Table 1 Panel A summarizes the sample selection process. To test our hypothesis, we obtain non-financial US sample firms from the Compustat North America Tape and merge this data set with the CSR data from the KLD database. We exclude financial firms from our sample because their

Table 1 Sample selection and distribution

Panel A: Sample selection

	Firm-years
Initial non-financial Compustat sample merged with KLD data 1991–2007	26,589
Less: Firm-years with incomplete summary KLD data before 1995	−4,547
Less: Firms with less than 8-year observations	−11,849
Firm-years available	10,193
Firm-years after computing accruals quality	8,078

Panel B: Sample distribution

Year	Full sample	No. of socially responsible firms	No. of less socially responsible firms
1995	307	147	160
1996	314	165	149
1997	333	167	166
1998	346	169	177
1999	372	194	178
2000	401	206	195
2001	621	239	382
2002	657	251	406
2003	1,577	395	1,182
2004	1,675	384	1,291
2005	1,475	340	1,135

Note The second column of Panel B shows all firm-year observations used in this study. The third column lists the number of socially responsible firms, i.e., firms with a CSR index greater than 0. The CSR index is calculated by adding up each firm's community, corporate governance, diversity, employee relations, environment, human rights, and product strengths minus concerns reported in the KLD database. The number of less socially responsible firms, those with a CSR index less than or equal to zero, is reported in the last column

earnings are of a different nature than non-financial firms. The initial merged sample has 26,589 firm-years. We further reduce our sample size by 4,547 firm-years because of incomplete CSR data before 1995. Another 11,849 firm-years are lost due to the lack of 8 years of observations required by the accruals quality calculation. This process yields 10,193 firm-year observations. After computing accruals quality based on Eq. 1, we have 8,078 observations to test our hypothesis.

We divide the sample into SRFs, those with a positive CSR index, and less SRFs which have a CSR index less than or equal to zero. The SRFs have 2,657 observations, while the less SRFs have 5,421 observations. We use these two subsamples in the univariate analysis.

Sample Distribution

Table 1 Panel B shows the distribution of sample firms. We report the number of firms in the full sample, the SRFs, and the less SRFs (LSRFs) in columns two, three, and four, respectively. In general, the sample size increases over the years. However, the number of SRFs decreases after 2003. This decrease implies more social responsibility concerns after 2003.

Descriptive Statistics

Table 2 presents descriptive statistics and correlations. Panel A shows that the sample firms have accruals residuals with a mean standard deviation of 0.04. The average operating cycle (OC) is around 122 days and the standard deviation of sales (σ(Sales) has a mean of 0.15. The mean standard deviation of cash flows σ(Cash) is 0.05; the mean standard deviation of earnings (σ(NI)) is 0.05, and the frequency of negative net income (FreqNNI) is 0.18. These data are comparable to those in Dechow and Dichev (2002). However, our sample firms are larger in size (natural log of total assets = 7.41) than those in Dechow and Dichev (2002). Because larger firms tend to have more stable income and have more experience in their industries, a sample with larger firms would work against finding a significant relationship between CSR and accruals quality.

A careful examination of Panel B reveals that CSR is significantly negatively correlated with $\sigma(\varepsilon)$. This provides initial support for H_{A1}. Consistent with the findings in Dechow and Dichev (2002) and Francis et al. (2005), all control variables are significantly correlated with the $\sigma(\varepsilon)$ and most of them (except OC) are significantly correlated with CSR. Multicollinearity would also work against

Table 2 Descriptive data

Panel A: Descriptive statistics

Variable	Mean	Standard deviation	Lower quartile	Median	Upper quartile
$\sigma(\varepsilon)$	0.04	0.03	0.02	0.03	0.05
OC	122.43	77.73	72.06	108.47	153.11
Size	7.41	1.59	6.27	7.39	8.50
σ(Sales)	0.15	0.14	0.06	0.11	0.18
σ(Cash)	0.05	0.04	0.02	0.04	0.06
σ(NI)	0.05	0.07	0.01	0.03	0.06
FreqNNI	0.18	0.28	0.00	0.00	0.20

Panel B: Spearman correlation between test and control variables

Variable	CSR	$\sigma(\varepsilon)$	OC	Size	σ(Sales)	σ(Cash)	σ(NI)
$\sigma(\varepsilon)$	−0.04***						
OC	0.00	0.20***					
Size	0.06***	−0.34***	−0.18***				
σ(Sales)	−0.05***	0.36***	−0.01	−0.20***			
σ(Cash)	−0.02*	0.50***	0.17***	−0.42***	0.43***		
σ(NI)	−0.04***	0.42***	0.21***	−0.35***	0.37***	0.60***	
FreqNNI	−0.09***	0.28***	0.08***	−0.24***	0.19***	0.38***	0.67***

***, **, * indicates significance at the 1, 5, and 10% levels, respectively

$\sigma(\varepsilon)$ is the standard deviation of unexpected accruals from Eq. 2; OC is the operating cycle, calculated as 360/(Sales/Average Accounts Receivables) + 360/(Cost of Goods Sold)/(Average Inventory); Size is the log of total assets; σ(Sales) is the standard deviation of sales; σ(Cash) is the standard deviation of cash flows; σ(NI) is the standard deviation of net income; FreqNNI is the frequency of negative net income; CSR = 1 if a firm's social responsibility index is greater than 0, and 0 otherwise. The CSR index is described in Table 1

finding a significant relationship between CSR and accruals quality ($\sigma(\varepsilon)$).

Results and Discussion

Earnings Management and Accruals Quality

Earnings management, and thus the quality of financial reporting, is a complex construct which has been measured in a variety of ways. In the literature, the absolute value of total accruals (AbsAccr) has been used as a proxy for EM; the absolute value of discretionary accruals (AbsDAccr) has served as a more refined measure of EM (e.g., Jones 1991; Dechow et al. 1995; Kothari et al. 2005). In Table 3, we report the results of comparing three measures of EM between firms classified as socially responsible (SRFs) and those identified as LSRFs.

First, Table 3 shows there is no significant difference in the absolute value of total accruals (AbsAccr) between SRFs and LSRFs. This result suggests that SRFs report a similar dollar amount of accruals as do LSRFs. This does not hold, however, for the other two measures of EM. SRFs have significantly lower (absolute value) discretionary accruals than do LSRFs. This significant difference

(7.86%) suggests that a more socially responsible environment may curb EM and supports for H_{A1}.

The results reported in Table 3 also provide evidence relating to R-EM and support for H_{A2}. LSRFs have significantly higher values of R_CFO, R_PROD, and R_DEXP than SRF. Recall that higher values for these measures indicate a greater discrepancy between the observed and predicted values. These discrepancies are likely due to managerial actions taken to manipulate earnings such as boosting sales by granting more liberal credit terms, reducing cost of goods sold by overproducing, or increasing income by decreasing discretionary expenses. These R-EM activities negatively affect the quality of financial reporting of these firms.

Finally, for our proxy for EM, $\sigma(\varepsilon)$, we find a similar significant difference between SRFs and LSRFs. That is, LSRFs have a significantly higher $\sigma(\varepsilon)$ (8.62%) and thus a significantly lower accruals quality than do SRFs. This suggests SRFs have higher accruals quality, and higher quality financial reporting, than LSRFs.

Dechow and Dichev (2002) point out that improved accruals quality could be attributed to more accurate management forecasts and estimates as well as less EM. If the measure AbsDAccr accurately captures EM and if its impact on the current portion of EM is proportional, the

Table 3 Comparison of accruals, discretionary accruals, and accruals quality between socially responsible and less socially responsible firms

Variable	Less socially responsible firms (LSRFs)[a] (N = 5,421)[c]	Socially responsible firms (SRFs) (N = 2,657)	Difference[b] (LSRFs–SRFs)	t Value	p Value
AbsAccr	0.0719	0.0704	0.0014	0.89	0.37
AbsDaccr	0.0508	0.0468	0.0040	2.74	0.01***
R_CFO	−0.0369	−0.0661	0.0291	12.34	<0.01***
R_PROD	−0.0089	−0.0559	0.0470	11.39	<0.01***
R_DEXP	0.0706	0.0598	0.0109	2.00	0.04**
$\sigma(\varepsilon)$	0.0402	0.0367	0.0035	5.19	0.00***

Table 3 compares the mean difference of proxies for accruals-based earnings manage (the absolute value of accruals and discretionary accruals), proxies for R-EM (abnormal operating cash flows, production cost, and discretionary expenses), and the proxy for accruals quality (standard deviation of total current accruals) between social responsible and less social responsible firms

AbsAccr is the absolute value of total accruals (Accr), where Accr are calculated by subtracting cash flows from earnings; AbsDaccr is the absolute value of discretionary accruals (Daccr), where Daccr is the difference between total accruals and non-discretionary accruals (Ndaccr), estimated using performance controlled modified Jones model, $ACCR = b_0 + b_1(\Delta REV - \Delta REC) + b_2 PPE + b_3 ROA + \varepsilon$; R_CFO abnormal operating cash flows, which is the residual obtained from Roychowdhury (2006) models; R_PROD is the abnormal production cost (the sum of cost of goods sold plus the change in inventories), which is the residual obtained from Roychowdhury (2006) models; R_DEXP is the abnormal discretionary expenses (the sum of advertising, R&D, and SG&A expenses), which is the residual obtained from Roychowdhury (2006) models; $\sigma(\varepsilon)$ is defined in Table 2

***, **, * indicates significance at the 1, 5, and 10% levels, respectively

[a] Socially responsible and less socially responsible firms are classified based on their corporate social responsibility index (CSR). If CSR is larger than 0, a firm is labeled as socially responsible, and less socially responsible otherwise. The CSR index is described in Table 1

[b] The difference is computed as less socially responsible firms minus socially responsible firms. Positive differences in AbsAccr, AbsDaccr, R_CFO, R_PROD, and R_DEXP indicate that LSRF firms engage more in A-EM and R-EM. Positive difference in $\sigma(\varepsilon)$ indicates that LSRF firms have lower accruals quality than SRF firms

[c] We report the number of less socially responsible/socially responsible firm-years in the parentheses

decrease in EM explains approximately 91% of the increase in the SRFs' accruals quality (7.86%/8.62% = 91.1%). The remaining portion, about 9%, is likely to be the result of better predictions and estimates.

Accruals Quality and Corporate Social Responsibility

In addition to the univariate test reported in Table 3, we provide direct evidence of the association between accruals quality and CSR in Table 4. We regress the AQ measure, $\sigma(\varepsilon)$, on the CSR dummy variable while controlling for other confounding factors documented in Dechow and Dichev (2002). The estimated coefficient of CSR is negative and significant. This result suggests that firms showing more social responsibility have a lower standard deviation of current accruals residuals. A low standard deviation of

Table 4 Regression of accruals quality on corporate social responsibility

$\sigma(\varepsilon)_t = b_0 + b_1 CSR_t + b_2 LnOC_t + b_3 Size_t$
$+ b_4 \sigma(Sales)_t + b_5 \sigma(Cash)_t + b_6 \sigma(NI)_t + b_7 FreqNNI_t + \varepsilon_t$

Variable	Estimated coefficient
Intercept	0.018***
(t value)	(6.37)
CSR	−0.001**
(t value)	(−2.20)
LnOC	0.005***
(t value)	(10.20)
Size	−0.002***
(t value)	(−11.4)
$\sigma(Sales)$	0.036***
(t value)	(16.01)
$\sigma(Cash)$	0.159***
(t value)	(17.58)
$\sigma(NI)$	0.040***
(t value)	(6.27)
FreqNNI	0.008***
(t value)	(5.89)
No. of observations	6956
Adjusted R^2	28.8%

***, **, * indicate significance at the 1, 5, and 10% levels, respectively

In Table 4, we examine the impact of corporate social responsibility (CSR) on accruals quality using a multiple regression model. The dependent variable is the standard deviation of current accruals residuals, $\sigma(\varepsilon)$. A higher $\sigma(\varepsilon)$ indicates a poor mapping of accruals into cash flows, namely a lower accruals quality, vice versa. Our interested test variable is CSR. An estimated significant positive coefficient implies that socially responsible firms report higher quality accruals

$\sigma(\varepsilon)$ is our measure of AQ and is defined in Table 2; CSR index is described in Table 1; LnOC, Size, $\sigma(Sales)$, $\sigma(Cash)$, $\sigma(NI)$ and FreqNNI are defined in Table 2

residuals implies an improved mapping of accruals into cash flows; in another words, more SRFs provide higher quality accruals in their reported financial statements. Our research hypothesis H_{A1} is supported.

Consistent with Dechow and Dichev (2002), we find a significant and negative coefficient for size, but significant positive coefficients for the operating cycle (LnOC), the standard deviations of sales ($\sigma(Sales)$), of cash flows ($\sigma(Cash)$) and of net income ($\sigma(NI)$), and the frequency of negative income (FreqNNI). This result implies that larger companies have higher accruals quality, represented by lower $\sigma(\varepsilon)$. The volatility in sales, cash flows, and net income, as well as the frequency of negative income appear to lower accruals quality. The above results indicate that CSR, the variable of interest, has incremental explanatory power over the control variables in explaining the improved accruals quality.

Robustness Tests

In the extant literature, there is no agreement on the measurement of CSR. We net each firm's strengths and concerns across seven issue areas as reported in the KLD database. This method may increase the noise in our measure of CSR. To refine our measure of CSR, we replace the CSR index dummy variable with all of the component measures of CSR in Eq. 3 and rerun the regression. The untabulated results show that only corporate governance, the environment, the product, and human rights have incremental explanatory power over the control variables. We recalculate the CSR index by adding all strengths and subtracting all concerns in only these four issue areas. We then replace the CSR index with the refined CSR index (RCSR) in Eq. 3.

In Table 5, we report the result of regressing $\sigma(\varepsilon)$ on the RCSR index. The estimated coefficient of RCSR is negative and significant at the 1% level, whereas the coefficient of our original measure of CSR is negative and significant at the 5% level. The adjusted R^2 also increases slightly from 28.8 to 29.0%. These results indicate that the RCSR index better reflects the impact of social responsibility on the quality of accruals. They further suggest that the following issue areas play a key role in measuring CSR: corporate governance, the environment, human rights, and product characteristics. The results again support H_{A1}.

Conclusions

In the wake of a new wave of financial scandals since the start of the new millennium, the quality of financial reporting has received renewed scrutiny. EM reduces the quality of financial reporting. This article addresses two

Table 5 Regression of accruals quality on refined measure of corporate social responsibility

$$\sigma(\varepsilon)_t = b_0 + b_1 RCSR_t + b_2 LnOC_t + b_3 Size_t + b_4 \sigma(Sales)_t + b_5 \sigma(Cash)_t + b_6 \sigma(NI)_t + b_7 FreqNNI_t + \varepsilon_t$$

Variable	Estimated coefficient
Intercept	0.019***
(t value)	(6.95)
CSR	−0.003***
(t value)	(−4.17)
LnOC	0.005***
(t value)	(10.10)
Size	−0.002***
(t value)	(−12.1)
σ(Sales)	0.036***
(t value)	(16.01)
σ(Cash)	0.157***
(t value)	(17.34)
σ(NI)	0.040***
(t value)	(6.24)
FreqNNI	0.008***
(t value)	(5.91)
No. of observations	6956
Adjusted R^2	29.0%

***, **, * indicate significance at the 1, 5, and 10% levels, respectively

In Table 5, we repeat the analysis done in Table 4, but using the refined measure of corporate social responsibility, our RCSR index. The dependent variable in the multiple regression analysis is again $\sigma(\varepsilon)$, our measure of accruals quality

$\sigma(\varepsilon)$ is our measure of AQ and is defined in Table 2; RCSR = 1 if a firm's social responsibility index is larger than 0, and 0 otherwise. Refined social responsibility index is the sum of a firm's social responsibility indicators, including corporate governance, environment, human rights, and product, provided by KLD database; LnOC, Size, $\sigma(Sales)$, $\sigma(Cash)$, $\sigma(NI)$, and FreqNNI are defined in Table 2

forms of EM: accruals based and activity based. Our paper contributes to the literature by examining both using the same sample and time-frame; thus providing a more complete picture of EM. Our sample consists of non-financial U.S. firms from the time period 1995–2005. Consequently, any conclusions must be about American firms without generalizing to international firms.

Our paper also begins to fill the vacuum that exists in the literature investigating the role of ethics in financial reporting. We find evidence that firms which engage in CSR are less likely to manage earnings. Although our paper contributes to this emerging literature stream, much remains to be done.

Ethics, CSR, EM, and financial reporting quality are complex constructs. It is difficult to operationalize such concepts; yet empirical research demands it. Future

research could advance our understanding by providing more refined measures of these ideas. Similarly, methodological improvements would be helpful. Models of the complicated relationships among these constructs would allow additional insights and would be very useful.

Appendix: Components of the Strengths and Concerns for the KLD Issue Areas

Community

Strengths:

- Charitable giving
- Innovative giving
- Non-US charitable giving
- Support for housing
- Support for education
- Indigenous peoples relations
- Volunteer programs
- Other strengths

Concerns:

- Investment controversies
- Negative economic impact
- Indigenous peoples relations
- Tax disputes
- Other concerns

Corporate Governance

Strengths:

- Limited compensation
- Ownership
- Transparency
- Political accountability
- Other strengths

Concerns:

- High compensation
- Ownership
- Accounting
- Transparency
- Political accountability
- Other concerns

Diversity

Strengths:

- CEO
- Promotion

- Board of Directors
- Work/Life benefits
- Women and minority contracting
- Employment of the disabled
- Gay and lesbian policies
- Other strengths

Concerns:

- Controversies
- Non-representation
- Other concerns

Employee Relations

Strengths:

- Union relations
- No-layoff policy
- Cash profit sharing
- Employee involvement
- Retirement benefit
- Health and safety
- Other strengths

Concerns:

- Union relations
- Health and safety
- Workforce reductions
- Retirement benefit
- Other concerns

Environment

Strengths:

- Beneficial products and services
- Pollution prevention
- Recycling
- Clean energy
- Communications
- Property, plant and equipment
- Management systems
- Other strengths

Concerns:

- Hazardous waste
- Regulatory problems
- Ozone depleting chemicals
- Substantial emissions
- Agricultural chemicals
- Climate change
- Other concerns

Human Rights

Strengths:

- Positive record in South Africa
- Indigenous peoples human relations
- Labor rights
- Other strengths

Concerns:

- South Africa
- Northern Ireland
- Burma
- Mexico
- Labor rights
- Indigenous peoples relations
- Other concerns

Product

Strengths:

- Quality
- R&D/Innovation
- Benefits to economically disadvantaged
- Other strengths

Concerns:

- Product safety
- Marketing/contracting
- Antitrust
- Other concerns

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