Abstract

There is a growing body of evidence in academic literature regarding the impact of voluntary disclosure and earnings quality on the cost of capital in developed countries, especially the U.S. However, a few studies have been conducted on the relationship between earnings quality and voluntary disclosures. Using different proxies for earnings quality and voluntary disclosures, these studies have examined the relationship between earnings quality and voluntary disclosures. The present paper investigates the relationship between earnings quality and voluntary environmental, social and governance (henceforth, ESG) disclosures for a sample of 151 firms. Whereas, the proxy for earnings quality is the accruals quality as measured by Dechow and Dichev (2002) model, the extent of voluntary ESG disclosures is measured by using a disclosure index model.

Introduction

The concept of earnings quality has multidimensional orientation. Earnings quality is contextual and depends on the user, who can be the standard setters, auditors, debt holders, investors or financial analysts. Whereas everybody will agree that fraudulent reporting is of low quality, every user’s perspective is, however, different. Literature on earnings quality provides mixed evidence across earnings quality proxies; which suggest that each individual proxy measures distinct features of decision usefulness of earnings. Research in accounting uses different definitions for earnings quality, which includes persistence (Penman and Zhang, 2002), predictability of future performance (Mikhail et al., 2003; Cohen, 2003), smoothness (Leuz et al., 2003) and the relationship of accruals with cash flows (Dechow and Dichev, 2002; Francis et. al., 2005). Dechow et al. (2010) in their review of more than 300 studies of characteristics or attributes of earnings reached on no single conclusion on what earnings quality is. Earnings quality is, therefore, contingent on the decision context.
Voluntary disclosures are the focus of increasing amount of attention by accounting researchers. The provision of voluntary disclosures assists investors in making informed judgement and decisions. Disclosure mitigates information asymmetry in the market, so that firms with greater asymmetry increase disclosure to improve shareholders’ information environment. Empirical studies of the relationship between voluntary disclosure and financial information quality (earnings quality) have found substitutive as well as complementary relations, depending on the measures of voluntary disclosure and information quality examined.

Using different measures of information asymmetry, studies (e.g., Aboody et al., 2005; Ecker et al., 2006; and Bhattacharya et al., 2012) have established a positive correlation between measures of information asymmetry and measures of earnings quality, such that poor earnings quality is significantly and incrementally associated with information asymmetry. Based on the results of these studies, earnings quality can be used as a proxy for information asymmetry. If a measure of earnings quality is used to proxy for information asymmetry, the implication would be that firm’s disclosure level is inversely correlated with earnings quality or a substitutive relationship (Francis et al., 2008). This would mean that firms with poor (good) earnings quality will issue more (less) expansive disclosures because information asymmetry between the firm and investors would be higher (lower) in such firms.

On the other hand, theoretical studies by Dye (1985) and Jung and Kwon (1988) model the endogenous relation between disclosure choice and information quality. This strand of research shows that as information quality increases, managers have incentives to disclose more. This strand of research predicts a complementary relationship between information quality and voluntary disclosure. Taking earnings quality as a proxy for information quality (as in Francis et al., 2008), it can be implied that firms with poor (good) earnings quality will issue less (more) expansive disclosures or a complementary relationship. The differing implications stem from the modelling of earnings quality.

\[1\] Earnings quality is an inverse measure of the earnings quality metric.
Review of Literature

Review of literature shows that empirical research has focused primarily on the relation between management earnings forecast frequency (proxy for voluntary disclosures) and earnings volatility (proxy for earnings quality), with mixed results. Imhoff (1978), for a sample of 100 non-forecast and 92 forecast firms documented that forecast firms had significantly less variability in their time series properties of earnings. This implies that firm’s forecast frequency (voluntary disclosures) is negatively related with their earnings volatility (poor earnings quality) and hence a complementary relationship between earnings quality and voluntary disclosure. Cox (1985) found earnings variability to be greater for non-disclosing firms and hence a complementary relationship between earnings quality and voluntary disclosures. Waymire (1985) also advocated a complementary relationship between earnings quality and voluntary disclosure on the basis of the results of the study that firms issuing earnings forecasts more frequently (Repeat forecasters) were characterized by less volatile earnings. Lev and Penman (1990), however, found no relation between disclosure frequency and earnings volatility. Some other notable authors who advocated a complementary relationship between earnings quality and voluntary disclosure include Francis et al. (2008) and Iatridis and Alexakis (2012).

On the other hand, Lang and Lundholm (1993) documented that disclosure scores were higher for firms with a weaker relation between annual stock returns and earnings. The correlation between annual returns and earnings may proxy for information asymmetry; a low correlation indicates that little information about firm’s value is captured by the mandatory earnings disclosure, so that the remaining asymmetry is high (lang and Lundholm, 1993). Thus, they advocated a substitutive relationship between earnings quality and voluntary disclosures. Tasker (1998) also documented a substitutive relationship. A study by Kim, Park and Wier (2012) is, however, the first step in examining the ethical concerns as an alternative motivation for corporate social responsibility (CSR) that drives corporate financial reporting. The authors in this study documented a negative relationship between CSR score of the firms and their accruals quality; indicating a complementary relationship between earnings quality (as measured by accruals quality) and voluntary disclosure of CSR
information. Studies by Francis et al. (2008) and Kim, Park and Wier (2012) were the motivation behind this research effort.

**Objective of the Study**

The objective of the study is to find if there is a complementary or a substitutive relationship between earnings quality and voluntary ESG disclosures by the firms.

**Research Methodology**

To examine the relationship between earnings quality and voluntary ESG disclosures, the extent of voluntary ESG disclosures and earnings quality were measured for a sample of 151 non-financial firms. The study has measured voluntary ESG disclosures by the sample companies in their annual reports for the year 2007-08. To measure the extent of voluntary environmental, social and governance disclosure by the firms, voluntary disclosure index was developed. **Appendix A** summarises the main information items and their number included in the disclosure index. As for the recording unit, each information item provided voluntarily by the sample companies regarding environmental protection, CSR activities and corporate governance in their annual reports was included in the voluntary disclosure index. The scoring procedure assigned one point for each disclosed item in the voluntary disclosure index and zero otherwise. The total ESG score was computed for each company by adding up the scores of all items disclosed by the companies from the index.

Further, McNichols (2002) modification of Dechow and Dichev (2002) model was used to measure accruals quality (a measure of earnings quality) of the sample firms. Dechow and Dichev characterize the linkage between current accruals and cash flows in the immediately adjacent periods. Recognising that accruals may arise following some cash flows and in anticipation of others, they developed a model that reflects estimation errors in anticipating cash flows. Dechow and Dichev define the quality of accruals and earnings as the magnitude of these errors. McNichols measure of accruals quality separates the accruals based on their association with cash flows.

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2 Though voluntary disclosures can take any form- press release, meetings with analysts, management forecasts and web reporting, annual reports of the companies have been chosen to examine the extent of disclosure.

3 Dechow and Dichev (2002) model was used, as the model was found to be widely used in the research relating to earnings quality.
flows by regressing working capital accruals on cash from operations in the current period, prior period and future period as well as change in revenues, property, plant and equipment. The unexplained portion of the variation in working capital accruals is an inverse measure of accruals quality, such that greater unexplained portion implies lower quality. Estimations of equation (1) below yields firm and year specific residuals, which forms the basis for the accruals quality (AQ) metric, \( AQ_j = \sigma(v_{jt}) \).

\( AQ_j \) is the standard deviation of firm j’s residuals, with larger standard deviations indicating poorer accruals quality.

In the present study, accruals quality (a measure of earnings quality-\( \text{EARNQUAL} \)) of the sample firms was calculated for a period of five years (2003-04 to 2007-08). But since the accruals quality measure includes both a lead and a lag cash flow term, equation (1) below was estimated for each firm using data from \( t = 2002-03 \) to 2008-09.

\[
\frac{TCA_{jt}}{\text{Assets}_{jt}} = \phi_{0,j} + \phi_{1,j} \frac{\text{CFO}_{jt-1}}{\text{Assets}_{jt}} + \phi_{2,j} \frac{\text{CFO}_{jt}}{\text{Assets}_{jt}} + \phi_{3,j} \frac{\text{CFO}_{j,t+1}}{\text{Assets}_{jt}} + \phi_{4,j} \frac{\Delta \text{Rev}_{jt}}{\text{Assets}_{jt}} + \phi_{5,j} \frac{\text{PPE}_{jt}}{\text{Assets}_{jt}} + v_{jt} \tag{1}
\]

Where

\[
\begin{align*}
TCA_{jt} &= \text{firm } j's \text{ total current accruals in year } t=(\Delta \text{CA}_{jt}-\Delta \text{CL}_{jt} \cdot \Delta \text{Cash}_{jt} + \text{STDEBT}_{jt}) \\
\text{Assets}_{jt} &= \text{Firm } j's \text{ average total assets in year } t \text{ and } t-1 \\
\text{CFO}_{jt} &= \text{Firm } j's \text{ cash flow from operations in year } t \\
\Delta \text{CA}_{jt} &= \text{Firm } j's \text{ change in current assets between year } t-1 \text{ and year } t \\
\Delta \text{CL}_{jt} &= \text{Firm } j's \text{ change in current liabilities between year } t-1 \text{ and year } t \\
\Delta \text{Cash}_{jt} &= \text{Firm } j's \text{ change in cash between year } t-1 \text{ and year } t
\end{align*}
\]
\( \Delta \text{STDEBT}_{jt} \) = Firm j’s change in debt in current liabilities between year t-1 and year t

\( \Delta \text{Rev}_{jt} \) = Firm j’s change in revenues between year t-1 and year t

\( \text{PPE}_{jt} \) = Firm j’s gross value of property, plant and equipment in year t

Fixed effect model, a technique of panel data estimation was used to calculate firm-specific and period-specific residuals for the financial year 2003-04 to financial year 2007-08 for all 151 firms. This resulted in five firm and year specific residuals for each sample firm. Standard deviation of these residuals for five years was calculated for each firm. Accruals Quality was taken to be \( \sigma(v_{jt}) \) equal to the standard deviation of firm j’s estimated residuals; which formed the basis for accruals quality metric. Larger (smaller) values of accrual quality correspond to poor (good) earnings quality. To test the association between earnings quality (\( \text{EARNQUAL} \)) and voluntary ESG disclosures, pairwise correlation was sought between earnings quality, voluntary ESG disclosures and firm specific characteristics influencing voluntary disclosures. Also to examine the importance of earnings quality in influencing voluntary ESG disclosures, ESG voluntary disclosure scores were regressed on earnings quality metric and other factors affecting voluntary disclosures. Following are the firm specific variables influencing voluntary ESG disclosures and their definitions.

(a) Firm Size (\( \text{LnMVE} \)) – Firm size was measured as logarithm of the market value of firm’s equity.

(b) Growth (\( \text{LnBM} \)) – Firm’s growth was measured as log of book-to-market ratio.

(c) Firm’s Performance (\( \text{ROA} \)) – Firm’s performance was measured as return on assets calculated as profit after tax divided by average assets.
Firm’s Complexity ($NSEG$) – Firm’s complexity was measured as the number of business segments.

Financing ($ISSUE$) – Firm’s financing transaction motive was included as a control variable using an equity financing dummy variable $ISSUE$, which was assigned a value of 1 if the sample firm’s split adjusted outstanding shares increased by 20 percent or more in the year 2007-08 relative to the year 2006-07 and 0 otherwise.

It was expected the firms with larger firm size, better growth, better performance, more complexity and with the motive to issue shares will have expanded ESG disclosures.

Results and Discussion

Results of the correlation analysis between voluntary ESG disclosures, earnings quality and other firm specific factors influencing voluntary disclosures provided an evidence of a significant negative association between voluntary ESG disclosures and earnings quality. Pearson and Spearman correlation between voluntary ESG disclosures and earnings quality was found to be −0.230 and −0.333 respectively significant at 0.01 level. Negative correlation between voluntary ESG and earnings quality is an evidence of a complementary association between voluntary ESG disclosures and earnings quality. This is because earnings quality is an inverse measure of the accruals quality metric. Results of the correlation analysis also show that firm size ($LnMVE$) and business complexity ($NSEG$) are significantly positively related to voluntary ESG disclosures(significant at 0.01 and 0.05 level respectively). This means larger firms and firms having more number of business segments provide more ESG disclosures. However, weak or no association was found of voluntary ESG disclosures with equity issuance, book-to-market ratio and leverage.

Further evidence of the importance of earnings quality in influencing voluntary ESG disclosures was provided by the regression of voluntary ESG disclosures on earnings quality and other firm controls. Table below reports the results of the regression.
### Table: Results of the Regression of Voluntary ESG disclosures on Earnings Quality

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARNQUAL</td>
<td>-0.197**</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
</tr>
<tr>
<td>LnMVE</td>
<td>0.030***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>LnBM</td>
<td>0.052**</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
</tr>
<tr>
<td>ROA</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(0.139)</td>
</tr>
<tr>
<td>ISSUE</td>
<td>0.034**</td>
</tr>
<tr>
<td></td>
<td>(0.027)</td>
</tr>
<tr>
<td>NSEG</td>
<td>0.009**</td>
</tr>
<tr>
<td></td>
<td>(0.017)</td>
</tr>
<tr>
<td>LEV</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(0.957)</td>
</tr>
</tbody>
</table>

R-Square 0.211  
Adjusted R-Square 0.172  
F-Ratio 5.448  
Significance (0.000)

Dependent variable is voluntary ESG disclosures.  
The P-Values are shown in parentheses.  
*** indicates level of significance at 1 percent. The test of significance is two-tailed.  
** indicates level of significance at 5 percent. The test of significance is two-tailed.  
* indicates level of significance at 10 percent. The test of significance  
Results are obtained by using SPSS 18.

Results in the above Table provide an evidence that earnings quality is significant (significant at 5% level of significance) in influencing voluntary ESG disclosures even on inclusion of other firm characteristics influencing disclosures. A negative coefficient on $EARNQUAL$ is an evidence of a complementary association between earnings quality and voluntary ESG disclosures. This means that good (poor) earnings quality firms issue more (less) expansive voluntary environmental, social and governance disclosures. Results also report that larger firms provide expansive ESG
disclosures. Also book-to-market ratio, equity issuing motive and complexity of the business as determined by number of segments are found to be significant determinants (significant at 5% level of significance) of voluntary ESG disclosures. Results, however, provide no evidence of a significant association of voluntary ESG disclosures with either Firm’s performance or its leverage.

Conclusion

The study concludes that good earnings quality firms (using accruals quality as a proxy for earnings quality) have more expansive voluntary environmental, social and governance disclosure

Appendix - A

Information Items in the Voluntary Disclosure Index

<table>
<thead>
<tr>
<th>Information Items</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Governance</td>
<td>21</td>
</tr>
<tr>
<td>Corporate Social Responsibility</td>
<td></td>
</tr>
<tr>
<td>Education and Sports</td>
<td>9</td>
</tr>
<tr>
<td>Medical Benefits</td>
<td>10</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>6</td>
</tr>
<tr>
<td>Inclusive Growth</td>
<td>6</td>
</tr>
<tr>
<td>Otherss</td>
<td>7</td>
</tr>
<tr>
<td>Environment Reporting</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
</tr>
</tbody>
</table>
References


