Do the results of information transparency reflect firms’ accounting quality?

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This work mainly uses the information in financial statements from Taiwanese listed firms from the start of 2006 to the end of 2009 to build a proxy of accounting quality. Discriminant and correlation analyses are used to discuss whether the information transparency results announced by the Information Transparency and Disclosure Rankings System maintained by the Securities and Futures Institute properly reflect the quality of financial reporting. The empirical results indicate that information transparency and accounting quality are not highly related, although they are more related in the electronics industry than in other industries. The empirical findings suggest that it may be important to include more accounting-quality related items into the proxies of financial reporting when building an information evaluation system.

Key words: Accounting quality, feedback, information transparency, neutrality, predictability, representational faithfulness, timeliness.

INTRODUCTION

Financial statements are the main source of information that enables investors to understand a firm’s operations. More informative accounting reporting can enhance market efficiency, and thus benefit the allocation of resources. The quality of financial reporting will also affect investor opinion about a firm’s future operations. Therefore, the study of accounting quality has become a more subject for both practitioners and researchers.

In order to follow the international trend in terms of the information disclosure ranking systems, both the Taiwan Stock Exchange Corporation (TSEC) and the over the counter market (OTC), authorized the Securities and Futures Institute (SFI) to establish the Information Transparency and Disclosure Rankings System (ITDRS) in 2003, with the hope of providing both the TSEC and OTC with an index so that investors can evaluate the information transparency of a firm when making investment decisions. The main evaluation index includes the factors of timeliness of reporting, compliance with the mandatory disclosures, corporate website disclosure, disclosure of financial forecasts, and disclosure of annual reports. A firm can achieve one of five possible ranking results, A+, A, B, C, and C-, which are used to evaluate its accounting quality.

The quality of accounting information depends mainly on the relevance and reliability of the data provided. This work used the financial reporting information of firms listed on the TSEC from 2006 to 2009 to build the two main dimensions of accounting-information quality, such as, relevance and reliability, and checked whether the information transparency revealed by the ITDRS truly reflected these two dimensions. Further, compared to other industries, electronic firms provide more information on their websites (Cooke, 1991); therefore this work further separated the samples into electronics and non-electronics industry firms, and examined whether or not the results are the same in different industries.

The empirical results indicated that ITDRS and the quality of accounting information were not highly related to each other. In addition, when the samples were further
partitioned into electronics and non-electronics industries, both accounting quality and information transparency were found to be more related to each other in the former rather than the latter.

**DATA SOURCE AND VARIABLE MEASUREMENTS**

**Data source**

The evaluation of information transparency comes from the ITDRS issued by the SFI. The data for both the financial statements and closing prices come from Taiwan Economic Journal Database (TEJ).

The samples include the firms listed on the TSEC from 2006/1/1 to 2009/12/31. The number of samples is 123 after excluding the following firms during the study period: (a) non-public listed firms or those that stopped trading temporarily; (b) firms with a trading volume or trading price of less than 0; (c) firms with less than ten trades a day (He and Wu, 2005); (d) banking, security and insurance firms; (e) firms for which the ITDRS results cannot be obtained. Further, because there are too few samples ranked as A+ or C-, only the samples ranked as A, B, and C are included in this work.

**Variable measurements**

Accounting quality can be evaluated using the following factors: (a) relevance, including predictability, feedback, and timeliness, and (b) reliability, including neutrality, and representational faithfulness.

**Predictability**

*Statement of Financial Accounting Concepts* (SFAC) No. 2 indicates that if information can help decision makers to make predictions, then it is valuable.

This work defines the index of predictability (Bernstein, 2000) as follows:

\[ \text{Predictability}_{j,t} = \frac{CFO_{j,t}}{NI_{j,t}} \]  

(1)

Where \( CFO_{j,t} \) denotes the cash flow from operations for firm \( j \) in year \( t \) and \( NI_{j,t} \) is the net income for firm \( j \) in year \( t \).

**Feedback**

SFAC No. 2 indicates that information is valuable to investors if it can help decision makers to verify (or correct) the expected results of the decisions they have already made, as well as help investors to correct their decisions. It means that the information has the property of feedback.

This work regressed a firm’s stock returns on both its earnings and the changes in earnings over the previous ten years (Francis and Schipper, 1999; Bushman et al., 2004), and further used R-Square in the following regression equation to evaluate the quality of the information. That is, the higher the R-Square, the higher the accounting quality. The regression equation is as follows:

\[ \text{Ret}_{j,t} = \delta_0 + \delta_1 \text{Earn}_{j,t} + \delta_2 \Delta \text{Earn}_{j,t} + \varepsilon_{j,t} \]  

(2)

Where \( \text{Ret}_{j,t} \) indicates the annual return for firm \( j \) in year \( t \), \( \text{Earn}_{j,t} \) indicates the net income of extraordinary items for firm \( j \) in year \( t \), and \( \Delta \text{Earn}_{j,t} \) indicates the change of net income from extraordinary items for firm \( j \) in year \( t \). Both \( \text{Earn}_{j,t} \) and \( \Delta \text{Earn}_{j,t} \) are scaled by the market value for firm \( j \) in year \( t-1 \).

**Timeliness**

If a loss can be recognized immediately, then the earnings quality in a financial reporting has the characteristic of timeliness (Ball et al., 2000; Lang and Huddart, 2003). This work regresses a firm’s earnings on its stock return, and then measures the timeliness of earnings quality (Basu, 1997; Ball, Kothari and Robin, 2000) using the previous ten years’ data.

The value, \( \text{R-Square} \), is used as the index of timeliness, and the measure is negatively related with the timeliness of accounting information. The regression equation is defined as follows:

\[ \text{Earn}_{j,t} = \alpha_0 + \alpha_1 \text{D}_{jt} + \alpha_2 \text{Ret}_{jt} + \alpha_3 \Delta \text{D}_{jt} + \text{Ret}_{jt} + \varepsilon_{j,t} \]  

(3)

Where \( \text{Earn}_{j,t} \) indicate the net profit of extraordinary item for firm \( j \) in year \( t \), which is deflated by market value in year \( t-1 \); \( \text{Ret}_{jt} \) is the stock return for firm \( j \) in the year \( t \); \( \Delta \text{D}_{jt} \) is a dummy variable, if \( \text{Ret}_{jt} \) is less than 0, \( \Delta \text{D}_{jt} \) is 1, otherwise, \( \Delta \text{D}_{jt} \) is 0.

**Neutrality**

Earnings can be separated into cash flow and discretionary accruals, as the latter are more easily manipulated than the former, earnings with less discretionary accruals are seen as having better earnings quality (Sloan, 1996; Dechow and Schrand, 2004).

Discretionary accruals have thus been widely used to proxy earnings quality (Aboody et al., 2005; Bharath et al., 2008; Francis et al., 2008), and in this work, we use a measure of discretionary accruals (DACC) from the modified Jones model proposed by Dechow et al. (1995) as one proxy of earnings quality, which is as follows:

\[ \text{DACC}_{i,t} = \frac{\text{TA}_{i,t}}{\text{A}_{i,t-1}} \left[ \hat{\alpha}_1 \left( \frac{1}{\text{A}_{i,t-1}} \right) + \hat{\alpha}_2 \left( \frac{\Delta \text{REV}_{i,t-1} - \Delta \text{REC}_{i,t-1}}{\text{A}_{i,t-1}} \right) + \hat{\alpha}_3 \left( \frac{\text{PPE}_{i,t-1}}{\text{A}_{i,t-1}} \right) \right] \]  

(4)

in which \( \text{NDA}_{i,t} \) is the non-discretionary accruals for firm \( i \) in year \( t \); \( \text{A}_{i,t-1} \) is the total assets for firm \( i \) at the end of year \( t-1 \); \( \Delta \text{REV}_{i,t-1} \) is the change in sales for firm \( i \) in year \( t \); \( \text{PPE}_{i,t-1} \) is the gross value of property, plant and equipment for firm \( i \) in year \( t \); \( \text{TA}_{i,t} \) is the total accruals for firm \( i \) in year \( t \); and \( \Delta \text{REC}_{i,t} \) is the change in accounts receivable for firm \( i \) in year \( t \).
Table 1. Summary statistics-accounting quality and transparency of financial reporting.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (Median)</th>
<th>Skewness (Kurtosis)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
<td>2007</td>
</tr>
<tr>
<td><strong>Panel A: Accounting quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predictability</td>
<td>2.34 (1.01)</td>
<td>2.58 (1.14)</td>
</tr>
<tr>
<td>Feedback</td>
<td>-0.29 (-0.28)</td>
<td>-0.29 (-0.25)</td>
</tr>
<tr>
<td>Timeliness</td>
<td>-0.37 (-0.33)</td>
<td>-0.36 (-0.32)</td>
</tr>
<tr>
<td>Neutrality</td>
<td>0.05 (0.03)</td>
<td>0.04 (0.03)</td>
</tr>
<tr>
<td>Representation</td>
<td>0.13 (0.07)</td>
<td>0.12 (0.05)</td>
</tr>
<tr>
<td><strong>Panel B: Transparency of financial reporting</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic</td>
<td>A 12 B 20 C 3</td>
<td>A 11 B 23 C 0</td>
</tr>
<tr>
<td>Non-electronic</td>
<td>28 45 15 50 19</td>
<td>30 40 19 42 44</td>
</tr>
<tr>
<td>n</td>
<td>40 65 18 41 63 19</td>
<td>59 62 2 52 60</td>
</tr>
</tbody>
</table>

This table presents the summary statistics of Accounting Quality and Transparency of Financial Reporting. Panel A presents the summary statistics of five attributes of accounting quality, including predictability, feedback, timeliness, neutrality, and representational faithfulness (representation), while Panel B includes the summary statistics of transparency of financial reporting. The total sample size (n) is 123.

**Representational faithfulness**

If the measurement (or description) in accounting items is consistent with the phenomena which we want to express, the financial reporting has the characteristic of representational faithfulness.

This work regresses the next year's operating cash flow ($CFO_{jt}$) on the earnings per share ($\hat{Earn}_{jt-1}$) over the previous ten years (Fairfield, 1996). The determinant coefficient, R-Square, in the regression analysis, is used as the index of representational faithfulness. The higher the value, the greater the degree of representational faithfulness. The model is defined as follows:

$$CFO_{jt} = \alpha_0 + \alpha_1 \hat{Earn}_{jt-1} + \varepsilon_{jt}$$  \hspace{1cm} (6)

**EMPIRICAL RESULTS**

**Summary statistics**

Based on the results in Panel A of Table 1, the values of accounting quality, including feedback, predictability, timeliness, neutrality, and representational faithfulness, did not change much during the study period. Further, the coefficients of both skewness and kurtosis indicated that all the variables deviated seriously from the normal distribution. Therefore, in the later analysis, this work will use the nonparametric method to discuss the relationship between accounting quality and information transparency. Panel B in Table 1 shows that the majority of the firms received a rank of B with regard to their accounting quality.

**Discriminant analysis and analysis of correlation**

Discriminant analysis was used to examine the relevance between the five dimensions of accounting quality and financial transparency in each year, and the results showed that this was not high, remaining under the significance level of 0.10 in all years. Further, the firms were divided into electronics and non-electronics industries, and the canonical correlation coefficient was also not significantly different from 0. However, because the proxy of information transparency revealed by SFI is an ordinal variable and the five dimensions of accounting quality formed by financial statement are continuous variables, using canonical correlation analysis to examine their relevance might lead to unreliable results. Hence, this work uses discriminant analysis to partition the accounting quality into three levels and further measure the relevance between the classification of discriminant analysis and ranking results of ITDRS using a nonparametric statistical method, Goodman-Kruskal G coefficient. Table 2 shows the empirical results for the Goodman-Kruskal G coefficient, and it can be
Table 2. The association between financial reporting quality and accounting quality.

<table>
<thead>
<tr>
<th>Variable (%)</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>49.85</td>
<td>42.85</td>
<td>18.89</td>
<td>26.14</td>
</tr>
<tr>
<td>Electronic</td>
<td>-37.42</td>
<td>37.50</td>
<td>83.83</td>
<td>80.27</td>
</tr>
<tr>
<td>Non-Electronic</td>
<td>63.80</td>
<td>-16.47</td>
<td>0.045</td>
<td>-17.90</td>
</tr>
</tbody>
</table>

This table uses the Goodman-Kruskal G coefficient to evaluate the association between financial reporting quality and accounting quality. The Goodman-Kruskal G coefficient is defined as \( G = \frac{(P_D - P_S)}{(P_S + P_D)} \), where \( P_S \) denotes the number of pairs of cases ranked in the same order on both variables, and \( P_D \) denotes the number of discordant pairs.

seen that the relevance between its proxy of accounting quality and the transparency of the disclosure ranking system was not high. The highest relevance was 49.85% (in 2006), and the lowest was 18.89% (in 2008). Based on the results, the relevance between the ITDRS and the proxy of accounting quality was not high, and it did not increase over time. A possible reason for this is that the ITDRS not only includes the quality of financial reporting, but also other items such as the intensity of private information acquirement, and the quality of information communication.

Next, the samples were further separated into electronics and non-electronics firms based on the classification of industries by TEJ. After analyzing the samples by canonical correlation analysis, the results were similar to those without classification, that is, there was still no obvious relation. Nevertheless, after the classification based on industry, with the exception of 2006, the relevance between information transparency and the accounting quality in electronics firms was higher than that in non-electronics firms. This indicates that the financial reporting in the electronics industry provides more trading information to investors, consistent with the results in Cooke (1991).

Conclusions

This work examined whether the ITDRS maintained by the SFI would reflect the five dimensions of financial reporting. The results showed that the transparency of financial reporting did not fully reflect accounting quality, which was evaluated from the available accounting information, although firms in the electronics industry had greater accounting quality with regard to information transparency than non-electronics firms. There are at least two possible reasons for this. First, the five dimensions which we regarded as the proxies of good accounting quality in this work may not well specify the proxies of accounting quality included in the empirical work. Second, the proxy of information transparency, ITDRS, may include other measurements, such as the intensity of private information acquirement, so that the relationship between the information transparency and the accounting quality is not significant.

This work may have some policy-making implication for government authorities, such as the need to include more accounting-quality related items into the proxy of information transparency when developing a new information evaluation system. In addition, we suggest that future researchers use more proxies of accounting quality to examine their relationship with information transparency.

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