Disclosure Quality and Information Asymmetry: Evidence from Iran

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ABSTRACT

Background: Understanding how disclosure quality affects information asymmetry is important because it provides insights into several fundamental issues that are of interest to managers, investors, academics and regulators. Objective: We examine how the quality of a firm’s disclosures is related to the average level of information asymmetry among equity investors over a year. We have proposed a conceptual framework based measurement of disclosure quality. Result: Using sample of 70 listed companies in TSE, we find only TSE reported ranks has strong relation with information asymmetry. Moreover, our results show that there is no significant difference between explanatory power of disclosure ranks reported by TSE and disclosure quality ranks based on financial reporting qualitative characteristics. Conclusion: We conclude that disclosure quality is a relevant factor in estimating the information asymmetry and no significant difference between usefulness of two kinds of ranks disclosure quality ranks, has found. Our finding may be useful for potential investors and creditors in financing the companies.

INTRODUCTION

We examine how the quality of a firm’s disclosures is related to the average level of information asymmetry among equity investors over a year. Information asymmetry occurs when one or more investors possess private information about the firm’s value while other uninformed investors only have access to public information. The presence of information asymmetry creates an adverse selection problem in the market when privately-informed investors trade on the basis of their private information. Healy et al. (1999), Hefflin et al. (2005), and Welker (1995) find that there is a negative association between disclosure quality and spread-based measures of information asymmetry. In this paper, we explore the precise mechanisms through which disclosure quality affects information asymmetry. Our findings provide some empirical support for regulators’ beliefs that high quality disclosures make the capital markets more attractive to ordinary uninformed investors (FASB (2001), FASC (1998), Levitt (1998)). We estimate our proxy for information asymmetry, using an ask–bid spread (Easley, Kiefer, and O’Hara, 1997).

We use disclosure quality compiled by the Tehran stock exchange (TSE) as our proxy for disclosure quality (DQte), and disclosure quality based on financial reporting qualitative characteristics (DQfrq). While the TSE scores are imperfect measures of disclosure quality, they offer several advantages over alternative proxies. TSE scores are based on a comprehensive evaluation of a firm’s disclosure activities over an extended time period. Thus, our study generalizes and complements other studies that focus on just one type of disclosure (e.g. Coller and Yohn (1997), Marquardt and Wiedman (1998), and Brown et al. (2004)). In addition, the TSE scores allow us to examine the effects of disclosure quality on a relatively large cross-section of firms, although one that is skewed toward larger firms with high analyst following. While not fully representative, using this sample makes it more difficult for us to reject the null hypotheses since there is likely less variation in disclosure quality and information asymmetry in our sample compared to the entire population of firms.

Understanding how disclosure quality affects information asymmetry is important because it provides insights into several fundamental issues that are of interest to managers, investors, academics and regulators. A growing body of literature reports a negative relation between various measures of disclosure quality and cost of capital estimates (Botosan (1997), Botosan and Plumlee (2002), Francis et al. (2005), and Sengupta (1998)). Extant literature also documents a positive association between the level of information asymmetry and the cost of capital (Easley et al. (2002), Easley et al. (2004)). Together, these findings suggest that disclosure quality is
related to the cost of capital via its effect on information asymmetry. This link suggests that understanding how disclosure quality affects information asymmetry is an important step in gaining a deeper understanding of why disclosure quality is related to the cost of capital.

We next discuss how we expect disclosure quality to affect the level of information asymmetry and develop our hypothesis in Section 2 and discuss our research methodology in Section 3. Section 4 discusses data sources and provides descriptive statistics and the results of our empirical. We discuss the applicability of our results, summarizing and concluding the paper in Section 5.

**MATERIALS AND METHODS**

Information asymmetry occurs when one or more investors possess private information about the firm’s value. Asymmetry creates an adverse selection problem in the market as informed investors trade on the basis of their private information. These trading activities manifest themselves as unusually large imbalances in the observed order flow; therefore the extent of information asymmetry between investors can be characterized as the probability that a particular buy or sell order comes from an investor with private information. In this section, we discuss how a firm’s choice of disclosure quality potentially influences the level of information asymmetry.

One of the ways in which disclosure quality affects information asymmetry is by altering the trading behavior of uninformed investors. According to the Investor Recognition Hypothesis (Merton (1987)), such investors are more likely to invest and trade in firms that are well known or that they judge favorably. If higher disclosure quality increases a firm’s visibility and/or reduces the costs of processing firm-specific public information, then higher disclosure quality will induce more trading in the firm’s stock by uninformed investors. Fishman and Hagerty (1989) make a similar argument.

While a higher intensity of uninformed trading reduces the probability of trading against a privately informed investor, ceteris paribus, prior research indicates that greater uninformed trading attracts more informed trading. Kyle (1985) posits that the amount of informed trading varies proportionately with the expected amount of uninformed, liquidity-based trading. The net result is that the relative amount of informed trading remains unchanged even as the expected amount of uninformed trading changes. However, to the extent that informed traders are risk averse and capital constrained, we expect that the relative amount of informed trading will fall as uninformed trading increases. Accordingly, higher disclosure quality will be associated with relatively less informed trading, which in turn will reduce information asymmetry. Empirical evidence in Brown et al. (2004) supports this argument.

A second way disclosure quality affects information asymmetry is by altering the incentives to search for private information. Verrecchia (1982) examines a setting where public information disclosed by the firm is a perfect substitute for private information. He shows that the amount of costly private information that investors choose to acquire is generally decreasing in the amount of firm-disclosed public information. Diamond (1985) also finds that the incentives for investors to acquire private information are reduced when firms disclose information publicly.4 Firms with high disclosure quality are more likely to publicly release material information promptly and provide forward-looking information. As such, we expect that higher disclosure quality reduces private information search incentives.

Prior empirical literature also suggests disclosure quality will be negatively related to the frequency of private information events. Gelb and Zarowin (2002) and Lundholm and Myers (2002) find that current stock returns reflect more information about future earnings when disclosure quality is higher. These results imply that by “bringing the future forward,” more informative disclosures reduce the total set of information about future earnings that can be privately discovered about a firm. Since there is less information available to be discovered, in addition to the reduced search incentives discussed above, we expect that the frequency of private information events will be declining in disclosure quality.

The above discussion suggests that low disclosure ranks (high quality) is positively associated with information asymmetry because (1) although it is positively associated with the absolute amount of uninformed and informed trading, it is negatively associated with the relative amount of informed trading; and (2) it is negatively associated with the frequency with which informed investors discover and trade on private information. So our hypothesis proposed accordingly:

**Hypothesis 1**: there is significant difference between explanatory power of TSE disclosure quality ranks and financial reporting qualitative characteristics based ranks in explaining the information asymmetry.

**Sample selection:**

Our sample includes all the 70 firms listed in Tehran stock exchange having following characteristics:

1. All firms except banks, insurance companies, investment firms, and other intermediary firms.
2. Firms that their fiscal year conforms with Iranian formal year (hijrishamisi).
3. Firms that listed in TSE before 1998.
4. Firms that their stock has traded on the TSE continuously.
5. Their data that used in this research were available.

**Variables Measurement:**

The main focus of this study is to construct a summary measure for earnings quality in line with the SFAC No. 8 and to validate the measure by showing that the earnings quality construct reflects decision usefulness. To construct a summary measure, we consider different variables that encompass components of relevance and reliability of earnings as specified in the SFAC No. 8. Here, we discuss the measures of those variables.

**Relevance measures:**

**Predictive value:**

Predictive value is measured in terms of the ability of earnings to predict future earnings and future cash flows. To measure predictive ability of earnings, we use four models where future earnings and cash flows are regressed on current earnings as well as components of current earnings.

1. Future earnings on current earnings:
   \[ \text{ROA}_{t+1} = \lambda_0 + \lambda_1 \text{ROA}_t + e_t \]  
   Where, \text{ROA} Earnings before extraordinary items and discontinued perations scaled by average total assets. \(e\), error term

**Feedback value:**

I estimate the feedback value of earnings by measuring the ability of current year’s earnings to change the predictions about next year’s earnings. The feedback value is measured by the difference between absolute prediction errors for next year before and after considering current year’s earnings.

\[ FV_t = |PE_{B,t}| - |PE_{A,t}| \]  
Where, \(FV_t\) Feedback value of earnings for year \(t\) \(PE_B\) Prediction error of next years earnings without considering current earnings \(PE_A\) Prediction error of next years earnings after considering current earnings If \(|PE_B| > |PE_A|\), then feedback value is positive. However, to be consistent with other inverse measures, we use negative value of \(FV_t\) as the inverse measure of feedback value.

**Reliability measures**

**Abnormal Accruals neutrality:**

Abnormal accruals, are used to proxy for neutrality. we use a cross-sectional estimation process for the different accrual models.

**Abnormal Accruals:**

Ee estimate abnormal accruals by using the variation of the Modified-Jones Model. we estimate equation (6) crosssectionally for each of the 48 industries classified by Fama and French (1997):

\[ \text{TA}_{it} = \beta_1 \left( 1/A_{it-1} \right) + \beta_2 (\Delta \text{REV}_{it} - \Delta \text{REC}_{it}) + \beta_3 \text{PPE}_{it} + \epsilon_{it} \]  
Where:
\(\text{TA}_{it}\) Total accruals for firm i for year t scaled by total assets for year t-1, \(A_{it-1}\) Total assets for year t-1, \(\Delta \text{REV}_{it}\) Revenues for firm i for year t less revenues for firm i for year t-1 scaled by total assets for year t-1, \(\Delta \text{REC}_{it}\) Receivables for firm i for year t less receivables for firm i for year t-1 scaled by total assets for year t-1, and \(PPE_{it}\) Gross property plant and equipment for firm i for year t scaled by total assets for year t-1.

\(\epsilon_{it}\) Error terms

Abnormal accruals (AA) for year t are absolute values of residuals from the cross-sectional ordinary least-square (OLS) estimates of equation.

**Representational faithfulness:**

We use following regression R squared to measure the faithfulness:

\[ t_{i} + \frac{\epsilon_{P_{i,t}}}{\text{NI}_{i,t}} \beta_0 + \beta_1 \text{RET}_{i,t} = \]  
where : \(t_i\) annual return of firm stock in market \(\text{NI}\) net income for firm in the fiscal year \(P_i\) firm stock price in stock exchange

Estimation of the Information Asymmetry

Bid-ask spread has been used in the literature to estimate the information asymmetry:

\[ \text{spread} = (\text{ask} – \text{bid}) / \left( (\text{ask} + \text{bid}) / 2 \right) \]
Where:
\[ \text{spread} = \text{difference between bid and ask prices.} \]
\[ \text{bid} = \text{proposed buy average prices of stock} \]
\[ \text{ask} = \text{proposed sale average prices of stock} \]

**control variables**

we control the effects of firm size, leverage and sales growth.

**Size** = natural logarithm of firm’s assets,

**Lev** = book value of total debts to total assets,

**Gwt** = sales growth from \( t \) to \( t+1 \).

**Results:**

Table 1 illustrates descriptive statistics of the research variables. Descriptive statistics include mean, median, standard deviation, range, maximum, minimum and quartiles.

Table 2 indicates pearson correlation of the variables. As seen in this table, information asymmetry has positive relation with disclosure quality. It means, low disclosure ranks (high disclosure quality) lowers the information asymmetry.

In other words, firms with high disclosure quality enjoy low information asymmetry and investors interested in these firms. This results are consistent with the opinion that high disclosure quality lowers the information asymmetry and increases the stock liquidity. It should be noted that disclosure quality ranks based on financial reporting quality (DQfrqc) and TSE reported ranks relations with information asymmetry are not significant.

Table 3 shows the result of man-whitney U tests and cramer’s Z:

\[ Z = \frac{(R^2_{tse}) - (R^2_{frqc})}{\sqrt{\delta^2 (R^2_{tse}) + \delta^2 (R^2_{frqc})}} \]

Table 3: R squared of different models based on disclosure in year 2005 to 2011.

<table>
<thead>
<tr>
<th>year</th>
<th>Info.assy. ( \beta_0 + \beta_1 \text{D.Qfrqc} + \text{size} + \text{lev} + \text{growth} + \text{£} )</th>
<th>Info.assy. ( \beta_0 + \beta_1 \text{D.Qtse} + \text{size} + \text{lev} + \text{growth} + \text{£} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0.124801</td>
<td>0.107366</td>
</tr>
<tr>
<td>2006</td>
<td>0.012804</td>
<td>0.054248</td>
</tr>
</tbody>
</table>
In this paper we examined the difference between explanatory power of models that uses disclosure quality measured based on financial reporting quality (DQfrqc) and TSE reported disclosure ranks. As seen in this table, there is no significant difference between explanatory power (R squared) of models. Because cramerZ is less than 1.96 and man whitney sig. is higher than 0.05, so our hypothesis was rejected.

Table 4 illustrates pooled regression of two separate models that use different disclosure scores provided by Tehran stock exchanges and financial reporting qualitative characteristics. As seen in this table, TSE reported disclosure quality ranks (DQ_tse) have positive and significant relation with information asymmetry. It means, low disclosure ranks (high quality) lowers the information asymmetry. However, disclosure ranks based on financial reporting qualitative characteristics (DQ_repc) have not any significant relation with information asymmetry. Also, DQ_tse and DQ_repc R-squared are 0.13 and 0.11, respectively that are not significantly different, so hypothesis of this research rejected.

Discussion:

In this tests we examine the difference between explanatory power of models that uses disclosure quality measured based on financial reporting quality (DQfrqc) and TSE reported disclosure ranks. As seen in this table, there is no significant difference between explanatory power (R squared) of models. Because cramerZ is less than 1.96 and man whitney sig. is higher than 0.05, so our hypothesis was rejected.

Table 4 illustrates pooled regression of two separate models that use different disclosure scores provided by Tehran stock exchanges and financial reporting qualitative characteristics. As seen in this table, TSE reported disclosure quality ranks (DQ_tse) have positive and significant relation with information asymmetry. It means, low disclosure ranks (high quality) lowers the information asymmetry. However, disclosure ranks based on financial reporting qualitative characteristics (DQ_repc) have not any significant relation with information asymmetry. Also, DQ_tse and DQ_repc R-squared are 0.13 and 0.11, respectively that are not significantly different, so hypothesis of this research rejected.

Conclusion:

This paper examined the relation between high disclosure quality and information asymmetry in 70 firms listed in Tehran stock exchange, as well as comparison of explanatory power of disclosure ranks reported by Tehran stock exchange and ranks derived from financial reporting qualitative characteristics. We find that there is significant relation between disclosure quality ranks reported by TSE and information asymmetry. But there is not any significant relation between disclosure quality ranks based on financial reporting qualitative characteristics and information asymmetry, but in man whitney U test and Cramer Z test our hypothesis based on existence of significant difference between explanatory power of disclosure ranks reported by TSE and derived from financial reporting qualitative characteristics was rejected. Finally our findings reject the research hypothesis. This finding are consistent with Mitton (2002) and Durnev and Kim (2003). Also our findings are not consistent with Botosan and Plumlee (2002) and Welker (2008).

This effort can be useful for potential investors and creditors that interested in any company. Its advised that They take care and consider the disclosure quality of firms. It can be suggested that future researchers investigate the relation between disclosure quality and information asymmetry using other proxies of information asymmetry and other stock market variables, like liquidity and stock mispricing.

REFERENCES


