Original Article

Investigating the Relationship between Disclosure Quality and Cost of Capital of 50 Top Companies Listed on the Tehran Stock Exchange Enhancing

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ABSTRACT

In this study, we examined the relationship between quality of disclosure and cost of capital. The present study has addressed the issue of whether reduction of disclosure quality increases the cost of capital? The survey included all the companies listed on the Stock Exchange of Tehran. A total of 50 participants were selected and have been examined during the period of 2006 to 2011. Panel least squares regression analysis was used to test hypotheses and estimating the coefficients. Corporate disclosure quality in annual concessions for listed companies in Tehran Stock Exchange is used to measure the disclosure quality. The results indicate that there is the 95% confidence level and a significant negative relationship between disclosure quality and cost of capital. In fact, decline in the disclosure quality as a result of increased information asymmetry caused the investors try more to gain access to confidential information. With the increase in information asymmetries, transaction costs and increased liquidity of company's stock shares decrease and this will be followed by the increase in the demand for the firm's cost of capital.

Keywords: Disclosure Quality, Capital Costs, Information Asymmetry, Informed Investors, Confidential Information.

Introduction

Capital market participants are always looking for qualified financial information because these information decrease the information asymmetry between company management and outside investors (Nouravesh and Hosseini, 2009).

Faced with the problem of information asymmetry and to protect the rights of investors and creditors by promoting transparency, financial reporting standards in each country as well as capital market supervisory bodies have determined requirements for disclosing personal information (Francis *et al.,* 2005).

Transparency and disclosure of corporate information can be considered as a mechanism to protect the rights of foreign investors. This is due to the fact that there

would be less information asymmetry and agency cost would be low.

Generally, various undesirable consequences, such as increased information asymmetry in weak market liquidity and low transaction costs will reduce the profits of capital market transactions (Chen *et al.,* 2007).

Information asymmetry due to the low disclosure quality will be followed by wrong choice issue.

Securities dealing with this problem have the less liquidity (Amihood and Mendelssohn, 1989) and their transaction costs will be more in buying and selling. Thus, buyers are less willing to buy them. Investors demand more rewards for added transaction fee paid by them.

Transaction costs in buying and selling become more. Thus, buyers are less willing to buy them. Investors demand more rewards for added a transaction fee. Disclosure of private information and improving the disclosure quality make companies able to exchange information asymmetry. Consequently, the cost of the securities and the cost of capital will reduce. Thus, increasing liquidity and reducing costs are important consequences of improving the quality of disclosure and transparency information.

In this regard, this study examines the impact of disclosure quality on capital cost of listed companies in Tehran Stock Exchange, empirically.

The present study sought to examine the issue of "whether the decline in the quality of disclosure will increase the cost of capital?"

Literature Review

Setayesh and colleagues in an article entitled "The Effects of Disclosure Quality on stock liquidity and capital costs of listed companies in Tehran Stock Exchange" investigated disclosure quality and cost of capital Normal impact on current and future liquidity of listed companies in Tehran Stock Exchange. In this regard, the effect of firm size is controlled. To measure disclosure quality variable, the scores allocated to each which are published by Tehran Exchange Market through the statement "the quality of information disclosure and proper", were used. Findings of the survey about 105 firms during the period of 2004 to 2008 indicate that there is a significant positive relationship between the size of the company and its current and future realizability. However, no significant relationship exists between the disclosure quality and current and future liquidity of the company. In addition, there is a significant negative relationship between current and future disclosure quality and cost of common stock capital of the company. (Setayesh *et al.,* 2011).

In an article entitled "The Relationship between Disclosure Quality and Cost of Capital in listed companies", Malekian et al. examined the relationship between disclosure quality and cost of capital. Survey results show that all listed companies at Tehran Stock Exchange are the population.

103 companies were selected and have been examined during the period 2004 to 2009. The results indicate that there is a significant negative relationship between quality of disclosure and cost of capital. In fact, by increasing the quality of disclosure, investors' attempts to gain access to confidential information decreases which in turn causes reduced information asymmetry.

By reducing information asymmetries, transaction costs and liquidity decreases and demand for stock increases. This, in turn, will be followed by reduction in the cost of capital shares of the company. (Malekian *et al.,* 2011). Yaghoubnejad and Zabihi in an article entitled "The relationship between quality of disclosure and liquidity of shares in listed companies in Tehran Stock Exchange" studied the relationship between the quality of disclosure the liquidity of the company

shares using historical data for years 2004 to 2008 about 72 companies listed in Tehran Stock Exchange. Empirical evidence from other countries shows that improving the quality of corporate disclosure can reduce the information asymmetry and liquidity of the stock rises by reducing information asymmetry. The underlying assumption of this research is that improvement in the quality of disclosure is positively associated with the liquidity of the shares (James race zabihi, 2011).

Results of a study by Botosan show in the companies that many financial analysts follow their activities, the relation between disclosure and stockholders' cost of capital will be minimized. He argued that since the activities of these companies are followed by many financial analysts, the important information is distributed in capital market by them and is accessed nonarbitrary to the investors and capital market.so, the effect of distributed information will be minimized at the end of the year (Botosan, 1997).

Jung et al. investigated arbitrary disclosure and cost of capital in an article (predicting management from documents). The results indicated that managers, who predicted bad news, had experienced a significant increase in cost of capital during a month after publishing the financial report. However, predictors of good news during same period of time did not witness any significant change during the same period of time. In addition, changes in cost of capital for good news prediction had been significantly lower compared to bad news prediction and no prediction. It showed that consider lower reliability for good news prediction (Jung *et al.,* 2011).

Kristen and Bontis investigated the relationship between voluntary disclosure and cost of capital. Two assumptions are suggested in this research:

1.   There is a negative relationship between voluntary disclosure of information of certified company and cost of capital.
2.   There is a negative relationship between voluntary disclosure of future information of certified company and cost of capital.

According to the results, first hypothesis was rejected but the second one was accepted (Kristen and Bontis, 2007).

Research Hypothesis

Quality of disclosure can affect information asymmetry through changing trade behavior of unknown investors. When disclosure quality decreases, a few investors will enter the business. Increasing the quality of disclosure causes the investors to try more for gaining the secret information and consequently, information asymmetry increases. As information asymmetry increases, stock liquidity and cost of trade will increases and demand for company's stock decreases. This will be followed by capital cost increase.

Based on the above mentioned issues, following research hypothesis are suggested:

Main hypothesis: there is a negative relationship between disclosure quality and cost of capital.

Secondary hypothesis 1: there is a significant relationship between timely disclosure and cost of capital.

Secondary hypothesis 2: there is a negative relationship between disclosure reliability and cost of capital.

Research Method

This research is an applied research. It is considered a descriptive research based on methodology. In addition, it is a correlative descriptive research since it is investigating the relationship between dependent and independent variables. Data of the study are collected form stock report disk (a product of Tadbirpardaz Company), Rahavard Novin

Software and reports published by Stock Exchange.

Population, Sample and Sample Size

Research population includes the companies listed in Tehran Stock Exchange during a six-year time period from 2006 to 2011. Population of the present research has been selected based on following factors:

1.   Needed information about companies should be available from 2006 to 2011.
2.   The end of financial year should be in March and it has not changed during 2006 to 2011.
3.   Company's stock should be traded during research time period.
4.   Annual rate of company's disclosure quality and financial information should be available.

Based on these factors, 50 companies were selected as research sample.

Measuring Company Disclosure Quality

Company disclosure quality is a dependent variable. In this research, annual rates of disclosure quality of the companies listed in Tehran Exchange are used. Disclosure quality rates of the listed companies are published for 3, 6, 9, 12 month. Delay in sending information to stock market compared to deadlines and difference between due profits and predictions are used for punctuality and reliability of disclosure. In order to calculate the total rate of disclosure, punctuality and reliability with a weight of one third or two third were used (Lobow and Zhu, 2001).

Measuring Cost of Capital

Cost of capital is defined as a concept related expected to range. In other words, cost of capital refers to the minimum acceptable range of new investment. In due profit rate of company's investment is higher than cost of investment and increases without high risk level, the value of the company increases (Odes, 2008). Another definition of cost of capital is a due profit that causes cost of stock be equal to the current liquidity (Hogs *et al.,* 2008, Starrer and Schroder, 2007).

Cost of capital is the weighted average of cost of supplied resource which comes from liabilities and stockholders' rights. Since rate of the cost of debt financing is usually specified imperatively so we just consider the cost of stockholders rights.

This equation is used In order to measure the cost of capital:

Gordon Model

$Ke = D_1 / P_0 + g$
Where ;
Ke: rate of stockholders' expected profit
D1: expected profit for next year
P0: the cost of Stock at the beginning of the year
g: expected rate of growth

For measuring expected stock profit, predicted profit of each share is considered and then expected share profit will be measured based on the average of profit divided to the total profit in a five-year period of time.

Total net profit during last five years/ total of divided profit during last five years = Dt^*
PDPSt: expected profit of shares
PEPSt: expected profit of each share

In order to calculate the growth rate we usually use growth rate of the share. Iranian companies do not follow the policy of dividing a fixed profit. So, growth rate of divided profit is not reliable. Other alternatives are profit growth rate and selling rate.

Total profits of different elements such as non-operating revenues and operating costs and can be manipulated by management using accruals. So the only option for growth is sales growth rate. Sales growth with is more stable and predictable compared to profit growth rate. Using the geometric average growth rate of sales during the

period of study will be calculated. (Bülow, 2007).

Test Hypotheses

Multivariate linear regression model is used to test the research hypotheses. In this model the dependent variable is the cost of capital and disclosure quality in annual concessions of the company is the main independent variable. In order to control the risk factor, three other independent other variables which are the known risk factors of Fama- French model (as beta, size and book-to-market ratio), have entered into the regression model (Gao, 2009)

$$COE_{jt} = \alpha_0 + \alpha_1 DS_{jt} + \alpha_2 Beta_{jt} + \alpha_3 Size_{jt} + \alpha_4 BM_{jt} + \varepsilon_{jt}$$

COE: cost of capital
DS: Rating Quality expose the company j in year t
Beta: covariance of the output share of firm j and the market portfolio divided by the variance of the market portfolio
Size: logarithm of the market value of firm j in year t
BM: logarithm of the ratio of book value to market value of firm j in year t
And two other control variables include turnover (H) and the natural logarithm of the market value of equity (AS).

Test method of reliability of the research model

As can be seen, the hypothesis of this study is modeled in the form of regression equations. Therefore it is necessary to pre-test the regression equations and their analysis since the assumptions underlying these relationships are considered as very important.

Therefore, the following four basic arguments about the relative research studied are included:

1. Test of Data normality: One of the assumptions of the regression model is having a normal distribution for the remainder of the model. It is assumed in the models and consequently the remaining dependent variables are random variables. The distribution of the dependent variable follows the distribution of residuals. Kolmogorov - Smirnov test has results which correspond 28.0, 34.0, 14.0, all of them are significantly higher than the 50.0 and the data is confirmed by the results of the normal distribution.

2. Lack of autocorrelation: Watson test was used to evaluate uncorrelated error terms. Amounts for hypothesis equal to 1.99, 1.89, 1.88 which according to the resulted number indicated lack of correlation in the pattern.

3. The suitability of the linear model and having no irrelevant points: for this purpose distribution curves are used in these diagrams to represent the absence of a clear pattern.

4. Equality of variances: for this purpose, plot residuals versus the fitted values are used.

The results of the tests show that the realization of the credit default regression model is used.

Results

The Main Hypothesis

The F-statistic of around 52.7 in Table 1, showed a general model with a significance level of 95 percent. The adjusted R2 for this model indicated that about 68% of the variation in the cost of capital in this research study is explained by the quality of corporate disclosure. As expected, a negative correlation between these two variables is negative and negative correlation in quality of corporate disclosure indicates it. It can be stated that the main hypothesis of this study indicates that there is a negative relationship

between corporate disclosure quality and   cost of capital at the 95% confidence level.

Table 1. The results of testing main hypothesis

probability	statistics t	Standard Deviation	Beta Coefficient	Dependent Variable
0.0003	- 3.27	0.13	- 0.48	Intercept
0.048	- 2.58	4.22	- 0.22	Rate the quality of corporate disclosure
0.097	1.66	0.003	0.005	**Beta**
0.015	2.43	0.008	0.02	**Company Size**
0.073	1.79	0.006	0.01	**Official value**
0.053	- 2.14	5.50	- 0.16	**Turnover**
0.010	- 2.11	7.10	- 0.38	**Stock market Value**
7.52	**statistics F**	0.77		coefficient of determination
1.99	**Watson Test**	0.68		Modified coefficient of determination
	0.000			**Probability**

F statistics of about 6.54 in chart 2 indicates general support of the model at a significant level of 95 percent. In addition, modified R^2 of the model indicates that 69 percent of changes in cost of capital in the present study can be described by timely corporate disclosure as one of the quality factors. As could be predicted, relationship between these two factors is negative and negative coefficient of timely corporate disclosure supports this finding. So, it can be said that the first secondary hypothesis indicates a negative relationship between corporate disclosure and cost of capital at a 95 percent confidence level.

Table 2. The results of the first secondary hypothesis

probability	statistics t	Standard Deviation	Beta Coefficient	Dependent Variable
0.0013	-4.87	0.12	-0.62	Intercept
0.041	-2.42	4.41	-0.17	Rate the quality of corporate disclosure
0.087	2.54	0.001	0.004	Beta
0.022	2.87	0.01	0.03	Company Size
0.063	1.86	0.01	0.02	Official value
0.042	-2.02	5.39	-0.24	Turnover
0.024	-2.01	7.10	- 0.18	Stock market Value
6.52	F Statistics	0.71		coefficient of determination
1.89	Watson Test	0.69		Modified coefficient of determination
0.000				probability

Testing the Second Secondary Hypothesis

F statistics of about 9.52 percent in chart 3 indicates general support of the model at a significant level of 95 percent. In addition, modified R^2 in this model indicates that about 68 percent of changes in cost of capital can be described as a factor of corporate disclosure quality. As can be predicted, relationship between these two variables is negative and negative coefficient of corporate disclosure

quality in this model supports it. So, it can be said that the second secondary hypothesis based on a negative correlation between corporate disclosure reliability and cost of capital at a significance level of 95 percent is supported.

Table 3. The results of second secondary hypothesis

probability	statistics t	Standard Deviation	Beta Coefficient	Dependent Variable
0.0013	0.052	- 1.87	- 0.75	Intercept
0.041	0.048	- 2.42	- 0.19	Rate the quality of corporate disclosure
0.087	0.023	2.64	0.02	**Beta**
0.022	0.012	2.87	0.04	**Company Size**
0.063	0.045	1.86	0.03	**Official value**
0.042	0.052	- 2.02	- 0.71	**Turnover**
0.024	0.042	- 2.01	- 0.48	**Stock market Value**
9.52	F statistics	0.73		coefficient of determination
1.88	Watson Test	0.68		Modified coefficient of determination
0.000				**probability**

Conclusion

Existence of information asymmetry among different investors groups is due to the fact that some of them have access to secret information of the enterprise. However, some others don not have such an access. This can cause reverse selection problem, so that some informed investors decide based on the secret information. Quality of disclosure can affect this asymmetry through changing trade behavior of investors. When quality of disclosure increases, more investors enter the trade. Generally it is expected that there is a reverse correlation between quality disclosure and information asymmetry since increasing quality of disclosure makes the investors to try less for gaining access to secret information. Reduction of information asymmetry, stock liquidity and cost of trade will be followed by reduction in cost of capital. In order to measure the quality of disclosure, annual rates of corporate quality of disclosure was measured for the listed companies in Tehran Exchange Market. . The results show that there is a significant negative relationship between cost of capital and disclosure quality. Findings of the present research conform to researches of Chung *et al.,* (2008), and Jung *et al.,* (2011).

Suggestions

Based on the results of the present research, it is suggested that information disclosure for listed companies in Tehran Exchange Market should be continuously evaluated by the researchers and their improvements should also be taken into account. In addition, since the quality of disclosure plus revenue and liquidity of shares can be used by users of financial information, it is necessary to measure their correlation. Furthermore it is suggested that corporate quality of disclosure based of annual and periodical fiscal statements and other disclosed information are categorized and their relationship with cost of capital must be analyzed separately.

References

Amihud, Y. and Mendelson, H. (1986). Asset Pricing and the Bid-Ask Spread. *Journal of Financial Economics*, 1, 223-249.

Botosan, C. (1997). Disclosure level and the cost of equity capital. *The Accounting Review* 72, 323-349.

Asymmetry. Review of Accounting Studies, 1, 443–477.

Bolou, G. (1386). The cost of due stockholders and profit characteristics, Ph.D., Thesis, Allame Tabatabaie University.

Brown, S. and A. Hillegeist. (2007). How disclosure quality affects the level of information.

Chang, M., D'Anna, G., Watson, I., and Wee, M. (2008). Does Disclosure Quality via Investor Relations Affect Information Asymmetry? *Australian Journal of Management*, 33.

Clarkson, G., Jacobsen, T.E., and Batcheller, A.L. (2007). Information asymmetry and information sharing. *Government Information Quarterly*, 24(4), 827-839.

Dhaliwal, D., O. Z.Li, A. Tsang and Y.G. Yang. (2009). Voluntary NonFinancial Disclosure and the Cost of Equity Capital: The Case of Corporate Social Responsibility Reporting. The Chinese University of Hong Kong.

Eades, K.M. (2008). Corporation's Cost of Capital and the Weighted-Average Cost of Capital.University of Virginia - Darden Graduate School of Business Administration.

Espinosa, M. and Trombetta, M. (2007). Disclosure Interactions and the Cost of Equity Capital: Evidence fromthe Spanish Continuous Market. *Journal of Business Finance &Accounting*, 34(10), 1371-1392.

Esterer, F. and D. Schroder. (2007). Predicting Equity Returns with the Implied Cost of Capital. Swisscanto Funds Centre and EDHEC Business School.

Gao, P. (2009). Disclosure Quality, Cost of Capital, and Investor Welfare. Electronic copy available at: http://ssrn.com/abstract=1156407.

Ghaemi, M. and Vatanjerst, M. (1384). Investigating the role of accounting in reducing information asymmetry in Tehran Exchange Market, 16(134), 55-117.

Hughes, J. and Liu, J. (2008). On the Relation between Expected Returns and Implied Cost of Capital. University of California at Los Angeles.

Kristandl, G. and N. Bontis. (2007). The impact of voluntary disclosure on cost of equity capital estimates in a temporal setting. *Journal of Intellectual Capital*, 8(4), 577-594.

Lambert, R., C. Leuz, and R. Verrecchia. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45, 385-420.

Lobo G.J. and Zhou J. (2001) Disclosure quality and earning management. *Asia-Pacific Journal of Accounting and Economics*; 8(1), 1-20.

Matoussi, H., Karaa, A. and Maghraoui, R. (2004). Information Asymmetry, Disclosure Level and Securities Liquidity in the BVMT. Finance India, 18, 547-557.

Nouravesh, I. and Hosseini, A. (1388), investigating the relationship between quality of disclosure and Revenue Management, *Accounting and Auditing Investigation*, 16(134), 55-117.