

A study of the effect of firm size and quality of disclosure on the cost of company common stock

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ABSTRACT: The aim of the study is to explore the effect of firm size and quality of disclosure on the cost of common stock. The cost of common stock as dependent variable, quality of disclosure and firm size as independent variables, financial leverage and book value to market value, and systematic risk as control variables have been reviewed. The time span of the study was a ten year course starting from 2003 to 2012, and selected sample consisted of 1090 year-firm. The research method is a correlational descriptive method, and a multivariate regression method was used to test hypothesis. Results indicated that there is a significant negative relationship between firm size and cost of common stock as well as between quality of disclosure and cost of common stock.

KEYWORDS: quality of disclosure, firm size, cost of common stock.

1 INTRODUCTION

The main purpose of the research is to examine the effect of firm size and quality of disclosure on the cost of common stock. Indeed, in the study, as against previous studies where it appeared as a control variable, firm size was used to examine its effect on the cost of common stock. Accurate and timely disclosure of information is viewed as an important tool for managers so as to reduce costs. Nevertheless, it seems that big companies gain more advantage from improvement and promotion of disclosure level than smaller companies.

Financial reporting and disclosure are conceived as crucial instruments for managing effective information supply to individuals outside organization. In available literature, numerous hypotheses and theories have been expressed concerning disclosure, as the economic repercussion of disclosure and its positive effects have been pointed out. According to Embang et al. (2012), firm size modifies the relationship between disclosure level and cost of common stock, in that the relationship is negative in big firms as it is intangible in smaller firms. Firms with bigger size enjoy cash dividend policy more than smaller firms; disclosure measure, due to its frugality leading to lower production costs on the one hand and profit raise, and risk reduction as a result of information disclosure against owners on the other, benefit from higher profit quality compared to smaller firms, where further information disclosure would result in an increase in proprietary costs and risk of information disclosure. That is, firm with bigger size would incur lower costs than smaller firms, which indicates that increase in the quantity and quality of disclosure can result in further decrease in cost of common stock in bigger firms with respect to such costs and risks. By an increase in the quality of disclosure, it is expected the attempts by investors have been declined in getting access to private information, thereby reducing information asymmetry, so investors will demand less expected return. And, since the cost of investment is the least return expected, so it will decline (Embang et al., 2012).

2 RESEARCH THEORETICAL FRAMEWORK

The main goal of disclosure is to inform analysts and investors about the amount and timing of future cash flows so that financial analysts and investors make a better forecast about future earnings. Therefore, better transparency and disclosure can make better information available to shareholders.

According to information economy theory, soliciting information is acceptable when its benefits exceeds its costs. The theory states that information constitutes economic value, as there is a must to conduct benefit-cost analysis when making decision about whether or not we issue additional information. Thus, we can claim that soliciting further information is hardly recommended, because information comes with prices (Que, 2011).

According to signaling theory, firms with good performance benefit from strong incentives to report their operational status. Competitive pressure drives other companies to report, even if their results are not satisfactory.

Silence (negligence in reporting) could be interpreted as a malign news, so firms will be in a battle with one another about getting access to rare financial resources. Hence, it is imperative to deliberately divulge information in order to win the competition (Watson et al., 2002).

According to agency theory, information asymmetry between owner and managers would arise when one party (manager) has further access to valuable information, so managers have an incentive to voluntarily divulge additional information as a signal to their future expectation (Wallace et al., 1994).

The larger the size of firm, the more accurate guidelines, procedures, and organizational methods will be for controlling a firm. Thus, budgeting is formally addressed as an imperative, as it takes over an independent unit in the structure of final budgeting responsibility, because such firm is big enough to allow the establishment of such unit. Large companies can supply their necessary fund with lower interest due to a reputation they have in the world capital market. On the contrary, the smaller the firm, the more difficult the access to capital market will be, as lower credit along with high interest will be expected for the firms in the market. As well, because of high costs, the establishment of an independent unit for planning, budgeting, monitoring, controlling and modifying deviations seemed almost impossible, though it entails more activities that can result in further profitability for them compared to smaller firms. Larger firms can gain more benefit by divulging information as against smaller companies. A reason for saving caused by size; that is to say, bigger companies will incur lower costs when divulging information, while additional information disclosure would allow proprietary costs to rise in smaller companies, as well as posing the risk of information disclosure; the whole cost of such disclosure would rise compared to larger companies. Cognizant investor has access to private information and can make a decision as well as an attempt to make the incognizant sustain loss. By an increase in the quality of disclosure, it is expected that investor attempt to get access to private information would decline, as information asymmetry drops, so investors would demand less expected return. Since the cost of capital is the least expected, it will fall (Embang et al, 2012).

3 BACKGROUND

3.1 DOMESTIC RESEARCH

Bulow et al (2012), in a study entitled "financial ratios and capital costs", reviewed the relationship between financial ratios and cost of common stock during the period 2003-2009. The statistical population of the study consisted of 60 firms listed in stock exchange. In order to calculate the cost of capital, Gordon's model was used. The results indicated that there is a significant relationship between liquidity ratios, profitability ratios, leverage ratios, market ratios, and cost of common stock.

Dastgir and Bazazzadeh (2003) conducted a study entitled "a review of the effect of disclosure size increase (obligatory) on cost of common stock", coming up with the following results: level of disclosure has been addressed by comparing financial statement of sample firms with specified disclosure items, accounting guidelines, business law, and direct taxes. The cost of common stock has been calculated based on capital asset pricing model through Daymenson' method. The results of the study on 40 samples consisting of manufacturing companies indicated that increased disclosure level would result in a decrease in the cost of common stock.

Khodamipour and Ghadiri (2010) addressed the relationship of accruals to information asymmetry. In the study, in order to measure information asymmetry and accrual components, the scope of difference between proposed purchase price and share sell, and Jones' modified model were used respectively. The results of data analysis indicated that there is a significant positive relationship between accruals and information asymmetry.

A research was also conducted by Mehrzin et al (2011) and entitled “the relationship of information asymmetry to financial reporting quality in Tehran Stock Exchange with the participation of 90 firms listed in Iran Stock Exchange within the period 2008-2010. Results indicate that there is no significant correlation at all between the above mentioned variables in a linear or nonlinear fashion in Tehran Stock Exchange.

3.2 FOREIGN RESEARCH

Spense et al (1970) indicated that information asymmetry can give rise to adverse selection in markets, which occurs prior to a transaction made between individuals. Spense pointed out that cognizant mediators can earn more income from market by making their private information available to less-informed mediators.

Akerlof provides a picture of a market where seller make further information available to buyer, so to speak. However, accountants agreed the policy of total disclosure to reduce the problem of adverse selection so that they can increase the level of information available to the public.

Verchia (2001) and Diamond (1985) tested the results of voluntary disclosure of information, concluding that additional disclosure of information would make investors reap the benefits as much as they can. In case the disclosure of public information takes place for all investors, information asymmetry as well as exorbitant activities of information gathering will fade.

Kim et al (2004) assume that if information is by all means made available to all market activists, declaration of interest will reduce information asymmetry. They found that it is possible for high level information asymmetry to happen if some traders are able to process information better.

Batacharia et al (2007), in a research entitled “quality of earnings and information asymmetry”, demonstrated that low quality of earnings would result in high risk of wrong choice and stock liquidity reduction, thereby increasing information asymmetry. He addressed three parameters, stock buy and sale price difference, stock liquidity, prediction deviation analysis, as information asymmetry. According to the findings of the study, the voluntary and constant disclosure of information may lead to information asymmetry through stock liquidity increase and stock buy and sale price difference.

Vasan and Bowen (2010) studied the relationship between accruals and asymmetry of information. According to them, the relationship between the absolute value of total accruals and difference scope of stock buy and sale proposed price was negative and insignificant, and the relationship between the absolute value of abnormal accruals and difference scope of stock buy and sale proposed price was positive and insignificant.

4 RESEARCH STATISTICS MODELS AND ASSUMPTIONS

4.1 RESEARCH METHOD

To choose research method depends on the nature of topic, research objectives, designed hypotheses, ethical and human considerations of research subject, and the scope and facilities of its execution. The statistical population of the study consisted of all companies listed Tehran Stock Exchange. The scope of time included information on a ten year period from 2003 to 2012. The sample was chosen by the following conditions: they have a maximum of six month trading pause, they have cash dividend distribution over research period per annual, sample companies have manufacturing activities, the company’s fiscal year ending in March of each year, over the research course, no change was made in company’s fiscal period, company information is made available and comprehensive.

How sample firms are distributed in different industries is shown in table 1:

Table 1. distribution of sample firms in industries

Percentage of observations with respect to all available firms in		Frequency of available firms in		Type of industries	row
sample	society	sample	society		
%23.85	%63.41	26	41	Automotive and Parts Manufacturing	1
%14.68	%61.54	16	26	Machinery and equipment	2
%10.09	%45.83	11	23	Basic metals	3
%12.84	%53.85	14	26	Food products and beverages	4
%0.92	%20.00	1	5	Mining	5
%12.84	%60.87	14	24	Other non-metallic mineral products	6
%6.42	%46.67	7	15	Metal products	7
%15.60	%51.52	17	33	Chemical products	8
%0.92	%20.00	1	5	Electrical machinery and apparatus	9
%1.83	%22.22	2	9	Other metal products	10
%100	-	109	207	Total	

4.2 RESEARCH PATTERNS AND HYPOTHESES

With the increase of quality of disclosure, it is expected that information asymmetry will decrease when investor attempt to get access to private information is declined. Thus, investors would demand less expected return. As well, since cost of investment is the least expected return, it will diminish. Therefore, the first hypothesis is raised as follows:

Hypothesis 1: there is an inverse relationship between quality of disclosure and the cost of common stock.

To test the hypothesis, pattern (1) is used

$$\text{CoE} = \alpha_0 + \alpha_1 \text{ Disclosure} + \alpha_2 \text{ Beta} + \alpha_3 \text{ BTM} + \alpha_4 \text{ Lev} + \varepsilon \quad (1)$$

In smaller firms, further disclosure of information would lead to proprietary costs and disclosure risk increase, thereby increasing costs of firm capital. Therefore, firms with bigger size would incur lower costs than smaller companies by further information disclosure, so cost of common stock will rise in smaller companies due to such costs and risks. This indicates that an increase in the size of firm can result in further decrease of cost of common stock, so the second hypothesis is raised as follows:

Hypothesis II: there is an inverse relationship between size of firm and costs of common stocks

In order to test the hypothesis, pattern (2) is used;

$$\text{CoE} = \alpha_0 + \alpha_1 \text{ Disclosure} + \alpha_2 \text{ Beta} + \alpha_3 \text{ BTM} + \alpha_4 \text{ Lev} + \alpha_5 \text{ Size} + \varepsilon \quad (2)$$

4.3 THE OPERATIONAL DEFINITION OF VARIABLES

4.3.1 HOW TO MEASURE INDEPENDENT VARIABLES

In order to measure quality of disclosure variable, the scores given to each company and issued by Tehran Stock Exchange have been used. The use of disclosure quality measurement parameter has the advantage that it does not consider the quality, yet it deals with timeliness and reliability of data.

The size of firm variable was obtained through a stock market value logarithm calculation.

4.3.2 HOW TO MEASURE INDEPENDENT VARIABLES

Financial leverage can be calculated by dividing the book value of total long run debts by the book value of total assets, and the ratio of book value to stock market value and systematic risk, also by the data of RAHAVARD NOVIN software application.

4.3.3 HOW TO MEASURE THE DEPENDENT VARIABLE, COST OF COMMON STOCK

To measure the variable, the pattern known as OJ proposed by Olsen and Norse (2005) and used according to formula 3:

$$COE_1 = A_1 + \sqrt{A_1^2 + \frac{eps_1}{p_0}(g_2 - g_p)} \tag{3}$$

Where COE₁ cost of capital in the first year and A constant (equation 4), earnings growth rate g, earning per share eps, dividend per share dps, are calculated as follows

$$A_1 = \frac{1}{2} \left(g_p + \frac{dps_1}{p_0} \right) \tag{4}$$

G² earnings growth rate in the second year which is obtained through dividing earnings per share in the second year after being deduced from earnings per share in the first year by earnings per share in the first year

$$g_2 = \frac{eps_2 - eps_1}{eps_1} \tag{5}$$

g_p is profit growth during the ten year research course, which is obtained by dividing earnings per share of the last year, the tenth year, having been deduced from earnings per share of the first year by earning per share of each year (equation 6).

$$g_p = \frac{eps^{10} - eps^1}{eps^1} \tag{6}$$

EPS is earnings per share, which can be calculated by dividing net income by the weighted average of the number of common stocks.

DPS, dividend per share and P stands for the value of share which is extracted by RAHAVARD NOVIN software application

It should be noted that the pattern for the calculation of the cost of common stock based on Olsen and Jotner, known as OJ, have been less frequently used in research so far.

4.3.4 DESCRIPTIVE DATA STATISTIC

In order to review general characteristics of variables, as well as model estimate, and their thorough analysis, it is imperative to get acquaintance with descriptive statistic concerning variables

Table 2. descriptive statistics of research variables

max	min	strain	skewness	SD	median	mean	Number of observation	symbol	variable
0.419	0.012	4.018	0.537	0.066	0.125	0.119	1090	COE	Cost of equity
95.00	5.00	3.750	- 0.353	20.874	41.683	42.887	1090	Disclosure	Quality of disclosure
18.321	10.729	2.937	0.618	1.691	13.438	13.614	1090	Size	Firm size
0.327	0.000	3.980	- 0.357	0.198	0.513	0.674	1090	LEV	leverage
0.980	0.000	4.150	- 0.587	0.295	0.640	0.583	1090	BTM	Book value to market
7.550	- 4.480	5.012	1.096	1.202	0.195	0.248	1090	Beta	Systematic risk

The approximation of data mean and median indicate that data possess normal distribution. Mean and standard deviation of quality of disclosure in this research were 42,887 and 20.874, respectively. In Setayesh (2011), the mean and standard deviation of quality of disclosure were studied for 105 firms; 44.93 and 21.44. As well, Kazemnezad (2010), the mean and standard deviation of quality of disclosure were studied for 149 firms; 44.53 and 22.69, respectively. The variant median of common stock cost was 0.125, which shows that half of data was less than the quantity, as other half was more

than it. The mean of financial leverage is 0.674, which indicates that the amount of firms' debts is almost 67% of their assets. Skewness and strain coefficients of common stock costs stood at 0.537 and 4.0187, respectively, which indicates that the cost distribution of common stock was not deviated from normal distribution.

4.3.5 THE RESULTS OF THE RESEARCH FIRST HYPOTHESIS TEST

The statistical results of the research first hypothesis test are outlined by table 5:

Table 3. the statistical results of first hypothesis test

CoE = $\alpha_0 + \alpha_1$ Disclosure + α_2 Beta + α_3 BTM + α_4 Lev + ϵ				
significance	T statistic	Standard error	coefficient	symbol
0.0000	11.059	0.523	5.873	C
0.0105	- 2.574	0.246	- 0.634	DS
0.0013	3.253	0.591	1.923	BETA
0.4401	- 0.773	0.687	- 0.531	LEV
0.3697	- 0.898	14.954	- 13.435	BTM
Durbin-Watson statistic	F significance of statistic	F statistic	Modified coefficient of determination	Coefficient of determination
2.208	0.0000	19.099	0.651	0.683

Considering the quantity of F statistic, 19.098, as well as the rate of probability, it can be stated that the overall significance of fitted regression model stood at 95% significance level. The rate of coefficient of determination of model confirms that the independent variable of the model has an explanatory capability of about 68 percent in order to explain dependent variable.

Similarly, the value of Durbin-Watson statistic in this model was acceptable, which indicates that the model does not sustain autocorrelation between residual sentences. The estimate coefficient of the independent variable, quality of disclosure, indicated a negative significant relationship between quality of disclosure and cost of common stock at 0.05 error level, because the value of estimate coefficient probability of independent variable was less than 0.05. Thus, it can be stated that the first hypothesis of the research was accepted at 95% confidence level.

4.3.6 THE RESULTS OF THE RESEARCH SECOND HYPOTHESIS TEST

The statistical results of the first hypothesis test are outlined in table 6:

the statistical results of the second hypothesis test

CoE = $\alpha_0 + \alpha_1$ Disclosure + α_2 Beta + α_3 BTM + α_4 Lev + α_5 Size + ϵ				
significance	T statistic	Standard error	coefficient	symbol
0.0000	- 4.697	6.297	- 29.578	C
0.0000	- 5.694	0.535	- 3.049	DS
0.0012	3.258	0.599	1.953	BETA
0.0182	- 2.234	0.660	- 0.814	SIZE
0.4401	- 0.773	0.687	- 0.531	LEV
0.1778	- 1.350	14.300	- 19.314	BTM
Durbin-Watson statistic	F significance of statistic	F statistic	Modified coefficient of determination	Coefficient of determination
1.904	0.0000	16.936	0.605	0.625

In order to examine the overall significance of the model, F statistic was used. Considering the fact that the probability of F statistic was equal to 0.000 and less than 0.05, it can be claimed that the fitted regression model is significant. Given the coefficient of determination of the fitted model, it can be stated that almost 62 percent of variations of the model dependent variable (cost of common stock) can be explained by independent variable.

The computed value of Durbin-Watson statistic in this model was equal to 1.90, which suggests that the model does not sustain autocorrelation problem among residual sentences considering its approximation to number 2.

The estimate coefficient of independent variable, firm size, indicates that a negative significant relationship between firm size and cost of common stock was at 0.05 error level, because the amount of estimate coefficient probability of the variable was less than 0.05. Hence, we can say that the second hypothesis of the research can be accepted at 95% confidence level.

5 CONCLUSION AND INTERPRETATION OF RESULTS

The results indicated that an increase in disclosure level can bring down cost of common stock. In other words, investors are more inclined to invest in firms with further disclosure rate or lower risk of disclosure. As quality of disclosure improves, investors' effort to get access to private information will diminish, thereby reducing information asymmetry. Once information asymmetry is moderated, stock liquidity and transaction costs will decline and as the demand for company share rises, i.e. this is followed by company capital reduction. The results indicated that there is a negative significant relationship between level of disclosure and cost of common stock in larger firms as there is a subtle relationship in smaller companies. Generally, as disclosure rises in medium and large companies, cost of capital decreases, though it is negligible in case of smaller companies. In this respect, the sum total of results obtained from the present study is in line with foreign and domestic research, substantiating a negative relationship between quality of disclosure variable, firm size and cost of common stock.

6 SUGGESTIONS

6.1 RESEARCH APPLIED SUGGESTIONS

The study can be useful for all companies listed in stock exchange, investors, as well as relevant users. The study can

- Stock brokers can make use of the output of the study in an attempt to determine stock exchange prices and control rate volatility in main and side stock exchange halls within financial and capital market environment.
- There are many users including stock market investors and financial creditors. As well, government can be addressed as one of the main users of the research, because it can be used as a control tool in financial market context.

6.2 SUGGESTIONS FOR FUTURE RESEARCH

- The use of an index different in measuring cost of common stock and performing study
- Conducting the above research for stock exchange and non-stock companies and comparing them with the above study

7 LIMITATIONS OF THE STUDY

- Lack of access to financial data of companies
- 2- Time limitation concerning doing research

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