

Disclosure, Conservatism and their Influence on Cost of Capital of the Companies Accepted by Tehran Stock Exchange (TSE)

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Abstract: This study attempts to examine the relevance of Disclosure, conservatism and their influence on cost of capital of the companies accepted by Tehran Stock Exchange (TSE) and Compare the relative information content of them. Based on sampling, 113 firms from Tehran Stock Exchange (TSE) were selected and examined during 2003 to 2009. The results support the priority of accounting figures over dividend policy. The results show there is some significant relation between the conservatism rate and cost of capital. The relation between the conservatism and cost of capital is on the basis of the Spence (1973). By virtue of the theory the companies benefit from the conservative accounting policy as a quality sign. When the conservative accounting policy is chosen it indicates a positive qualitative sign. Higher quality indicates the information risk of a company decreases probably; when the information risk of a company decreases the cost of capital decreases, too. Also the results show a significant relation between the disclosure rate and cost of capital namely when the disclosure rate of a company is higher (better) the usual shares cost is lower.

Keywords: Conservatism, cost of capital, disclosure, life cycle

INTRODUCTION

The most important duty of the companies managers is to maximize the shareholders' wealth so they should consider financial items and influential factors in relation to the situation and financial structure of the companies; one of the influential factors is the capital cost.

It is necessary to know the factors influencing the companies costs of capital and find the ways controlling and decreasing the costs. Financing has different forms including: borrowing, share issue and company profit accumulation. It is necessary to select the best way by considering the financing which is mentioned as related cost of capital in finance literature (Fama and French, 1999). The company should know the financiers' expectations and tastes who secure the cash amounts so it would be able to manage its cost of capital well. In fact, the cost of capital means the least yield rate to be gained by the economic unit to secure the yield expected by the investors.

Cost of capital means uniquely usual shares capital or debt cost of capital in most done studies that certainly has not complete reliance; that is why WACC (Weighted Average Cost of Capital) was used in the study and the cost of capital was considered in the companies life cycle. Generally two groups of uncontrollable and controllable factors influence the capital. The first ones are inflation, macroeconomic policies, etc. and the second ones are debt rate, company size, liquidity, growth, disclosure, accounting policy, etc.

By virtue of many studies findings it was shown that conservatism and disclosure factors are common factors influencing the cost of capital. In the study it was attempted to examine how the two factors influence the cost of capital of the companies accepted in stock exchange companies.

LITERATURE REVIEW

Cost of capital: One of the most important ways to increase general value of a company is to select the best strategy to invest and form the most appropriate capital structure.

Finance is done in different forms: borrowing, share issue and company profit accumulation. It is necessary to select the best way by considering the financing which is mentioned as related cost of capital in finance literature.

Different definitions of cost of capital: Cost of capital is discount rate or time money value to be used by the investors for cost of capital conversion namely both company creditors and investors expect to bear the cost of their money investment occasion and compensate its risk in order to receive the yield (Copeland *et al.*, 2000).

Westan defines cost of capital as follows: cost of capital and the costs of all elements of it represent the cost or the least yield necessary for the investors (Easton, 2007). Simkins (2000) defines it as follows: cost of capital means the least yield rate.

Disclosure: Which type of data the superior management should present out of the little circle? It should be confessed that there is no satisfactory response in this regard (At least in a manner that it satisfies everybody), but it does not mean that we have no defined view about it; so everybody has his own view and unfortunately the responses are in contrast to each other and sometime the contrast is very intensely. At first such situation creates despair, but after a bit of deliberation it is clear that there is the same situation in all fields of science in relation to our life (Hendriksen and Vanberda, 1992).

Data disclosure correction means data presentation in its most general notion. The expression is used in a more limited manner in accounting and means uniquely financial data presentation in relation to a company in related financial or yearly reports. In some cases disclosure is even more limited and means data presentation which is not mentioned in the financial statements (Hendriksen and Vanberda, 1992).

Many experimental and theoretical studies were done about the correlation between disclosure and cost of capital in recent years and two views were found in this regard:

- There is positive relation between disclosure and cost of capital.
- There is negative relation between disclosure and cost of capital.

Positive correlation between disclosure and cost of capital: Perhaps Botosan (1997) is the first one who examined directly the relation between the cost of capital and the disclosure level. He examined the relation between voluntarily disclosure level in the reports in 1990 and the cost of capital in a sample including 122 producing companies active in U.S.A machinery industry and found that there is a negative correlation between cost of capital and the disclosure level in the companies following the analysts less, but he found no relation between these two parameters in the companies following the analysts too much. Botosan (1997) used EBO (The model depending on accounting) to examine the cost of capital estimation.

Lang and Lundholm (1993) found that the disclosure level increase accompanies positively the more exact forecasts of the analysts in relation to the profit, less difference between their forecasts and less volatility in renewing the forecasts so such conditions decrease the cost of capital (Poshkwale and Courtis, 2005).

By virtue of the quality of the disclosure data (Easley and O'Hara, 2004) show that usually the assets necessitate some risk and the quality and quantity of the data may influence the price of the assets and cost of capital (Cheng *et al.*, 2006).

Kristandl and Bontis (2007) examined the relation between the disclosure rate and cost of capital in 95 companies accepted in Germany, Australia, Sweden and Denmark. They used the historical data and the

information leaning toward future to measure the disclosure rate. Finally they concluded that there is a negative relation between the information leaning toward future and cost of capital, but there is a positive correlation between the rate of historical data and cost of capital (Kristandl and Bontis, 2007).

Francis *et al.* (2008) present some new reasons in relation to the voluntary disclosure influence on a company cost of capital and the conditional effects of the profit quality. They found a positive relation between the profit quality and the disclosure rate indicating a complementary relation. Also they present more reasons about the correlation between the voluntary disclosure and cost of capital which are decreased essentially after controlling the effects of profit quality. They found that their findings are stable for other scales of cost of capital and profit quality, but the findings do not match the primary voluntary disclosure scale when they use other factors presenting the disclosure (Such as management's forecasts, management's quotation).

By virtue of their compound sectional sample study (Including several American companies) in 1985-1994, Artiach and Clarkson (2010) found an inverse relation between the disclosure rate and cost of capital, in their study they use AIMR reports to rank the companies according to the disclosure rate to define the disclosure quality.

Negative correlation between disclosure and cost of capital: Many theoretical studies support the negative correlation between disclosure and cost of capital. The theoretical support of the negative correlation between the two parameters depends on two attitudes based on liquidity and assessment risk.

In the attitude based on liquidity it is argued that the disclosure promotion decreases the investors' ambiguities and absorbs long-term investments. If the industrial units disclose some information enabling the investors of some organizations to gain stably good results, the long-term investment seems better than the short-term considerations and the company absorbs longer-term investments, it influences positively the market price and supply capacity in the market so decreases the cost of capital (Poshkwale and Courtis, 2005).

The companies disclose as much as possible to the solve the problem concerning lack of interest on behalf of the potential investors to maintain shares in illiquid markets (Not be liquidated) and then decrease the cost of capital (Blasco and Trombetta, 2004). The reasons of Demsetz (1968), Galai and Copeland (1983), Amihud and Mendelson (1986), Diamond and Verrecchina (1991) and Baiman and Verrecchina (1995) are based on this attitude. These researchers look the effects of the data symmetry decrease and liquidity increase in several viewpoints (Botosan and Plumlee, 2002).

Dimaond (1985) and Fishman and Hagerty (1989) argue that disclosing voluntarily more information leads to better managers' control; the markets find that

the managers who disclose the information have nothing to hide and doing contrary to it is illogic. When someone knows more about a company, he (she) is more interested in gaining stock exchange of the company and it leads to less cost of capital (Poshkwale and Courtis, 2005).

By virtue of the attitude based on assessment risk the adherents argue that the investors assess the parameters concerning the stock exchange yield distribution according to the data available in the company. When the data are less, the ambiguities concerning the real parameters are more; in such conditions the investors are obliged to estimate the above mentioned parameters so the assessment or estimation is with risk. Considering the assessment risk has not the variable capacity, the investors demand some recompense in relation to the additional element. The view is based on logic indicating more information disclosure may decrease the cost of capital because of decreasing assessment risk. It is supposed that the investors consider more systematic risk for the assets with little information than for the assets with much information. In fact, the companies with information promotion increase try to decrease the investors' potential assessment risk in relation to the stock exchange yield parameters or the yield distribution.

This attitude focuses on the investors' assessment concerning future liquidities the investors benefit from the disclosed information to foresee future liquidities to define actual value of their investments. If the disclosed cases are more related, the ambiguities decrease and the assessment risk is lower; so the cost of capital decreases (Poshkwale and Courtis, 2005).

Conservatism: Undoubtedly conservatism has had a very important position for accountants and some accounting writers have mentioned it as the most important principle; for example, the cash in hand assessment is based on the least cost price or classic market price. Conservatism has been present in accounting since many centuries ago. The 15th century records concerning the partnership and guaranteed transactions show that accounting in Middle Age Europe had been conservative. Basu believes that conservatism has influenced the accounting theory and practice during the centuries. The records concerning the partnership and guaranteed transactions from the first years of 15th century show that accounting in Middle Age Europe had been conservative.

Watts (2003) (Quoted by Bliss) has defined conservatism for accountants as follows:

Traditionally conservatism has been defined by the proverb, "Never foresee any profit, but foresee all the losses. In fact, it is possible to consider conservatism as the product of the ambiguity and whenever the accountants encounter with ambiguity they use conservatism. Conservatism application may play a role in issuing financial statements in the borrowing contracts and the advantages of compensating managers' services related to legal proceedings and tax.

In all above mentioned cases conservatism results from asymmetric information and asymmetry against both parties of the contract for the legal proceedings, tax payer and tax receiver (Lim, 2006).

Many experimental and theoretical studies were done about the correlation between conservatism and cost of capital in recent years:

The potential influence of conservative accounting policy based on signaling theory in finance literature shows that the companies may use their financial decisions to announce the company quality (For example, profit division or capital structure policy). In this field (Gietzmann and Trombetta, 2003) present theoretically a model; by virtue of the model the companies may benefit from conservative accounting policy to announce the company quality. The managers who have secret information about future views of the financial units are able to use conservative accounting policy as a quality sign on the basis of Spence (1973) signaling theory.

Like Gietzmann and Trombetta (2003) and Bagnoli and Watts (2005) benefited from the signaling hypothesis to show how conservative accounting can be used to announce the secret information of the company. These theoretical affairs are in harmonization with the Ahmed *et al.* (2002) findings and proposals. They believed that the influences because of conservatism are to gain economic advantages in form of less debt cost (Poshkwale and Courtis, 2005).

By virtue of their study concerning the compound sectional sample including American companies done in 1985-1994, Artiach and Clarkson (2010) concluded that there is an inverse relation between conservatism and cost of capital. In fact, through qualitative signaling of the conservative accounting strategies the companies may decrease the invariable information risk so they benefit from decreasing capital cost. They use PEG method to calculate cost of capital and benefit from conservative model based on undertaking items to define the conservatism level.

Some studies concerning disclosure, conservatism and cost of capital are stated in this section.

On the basis of the reasons stated between conservatism and cost of capital it can be said that the companies benefited bravely from accounting policy need to increase disclosure to present information enough to satisfy market activists because the accounting policy increases bravely the risk and then the cost of capital increases.

Having considered the type of accounting policy (Blasco and Trombetta, 2004) consider the relation between disclosure and cost of capital. Based on future forecasts they gained cost of capital for 119 Spanish nonfinancial companies in 2001-2002. By virtue of the analyzed report information quality the brilliant companies with membership focused on yearly reports and by virtue of the data and information published regularly by valid commercial magazines defined some index to define the information quality. Their reasons refused any general negative correlation between cost

of capital and the disclosure level; in a more exact statement they concluded that the companies benefiting bravely from accounting policy have higher cost of capital than ones who select conservative accounting policy.

In their study concerning the compound sectional sample of the American companies in 1985-1994, Artiach and Clarkson (2010) examined mutual influence of disclosure and conservatism and concluded that when the disclosure is high (The information symmetry is low) the conservative influence on cost of capital decreases less. In fact, the conservatism advantages in cost of capital decrease depends on the information disclosure level, too. The proofs show that conservatism and disclosure play some role in the reporting strategy of the company.

Hypotheses development:

H1: There is a negative relation between the conservatism rate and Cost of Capital (WACC).

Spense believes that when the managers accept conservative accounting policies they have less access to financial aids so it is not free. The companies with high quality may bear such cost, but the low quality ones cannot work like the high quality ones because of the costs and few financial aids. So conservative accounting policy is a negative sign for the quality. High quality shows the information risk decreases probably. The decreased information risk in a company leads to cost of capital decrease.

H2: There is a negative relation between the company disclosure rate and Cost of Capital (WACC).

If the commercial units disclose some information enabling the organizational investors have good results a long-term investment seems better than a short-term one and more long-term investors are absorbed; this phenomenon influences positively the market price and supply power and then cost of capital decreases (Poshkware and Courtis, 2005).

RESEARCH MODELS

In this section we state the study parameters and the method measuring them. Our main model is as follows:

$$WACC = \beta_0 + \beta_1 conservatism + \beta_2 disclosure + \beta_3 leverage + \beta_4 size$$

Dependent variable: Dependent variable is cost of capital in this study and is measured by weighted average model of cost of capital as follows:

$$WACC = K_i \cdot \frac{D}{D+S} + K_e \cdot \frac{S}{D+S}$$

where,

K_i : The yield rate expected by the debt

K_e : The yield rate expected by shares capital

D : Debt book value

S : Shares market value

K_i is measured by dividing total financial costs by total company debts.

K_e is measured by the model Costing Capital Assets (CAMP) as follows:

$$R_i = R_f + (R_m - R_f) \cdot \text{Beta}$$

where,

R_i : The expected yield rate

R_m : Market yield equal to average exchange yield in each period

Beta : The gradient coefficient in the regression line from the monthly usual yield in the market

R_f : The yield rate without risk

Independent variables:

Disclosure: In the study we use the points relating to the companies disclosure announced by the Tehran Stock Exchange Organization in order to define the rate of the companies disclosure.

Conservatism: In the study the Givoly and Hayn (2000) is applied to measure the accounting conservatism index and is calculated as follows:

$$\text{Conservatism index} = (\text{Operational undertaking items} / \text{Primary total assets}) * -1$$

The undertaking items are measured by virtue of the difference between net profit and operational liquidity plus amortization cost.

Control variables:

Company size: The company size was assessed by the natural logarithm of total company assets at the end of the period:

$$\text{Ln Assets} = \text{Company size}$$

Financial lever: The debt rate in the capital structure of each company is a factor increasing the cost of capital because it increases volatility debt of future profits. We

Table 1: Descriptive statistics of the research variables

Variables	Mean	S.D.	Min.	Max.	No.
WACC	0.0961	0.16309	-0.73	2.67	791
Conservatism	-0.0975	0.87257	-14.93	1.74	791
Disclosure	43.0300	24.88500	-12	100	791
Leverage	2.3839	4.32351	0.00	75.27	791
Size	5.6517	0.65422	4.00	7.96	791

S.D.: Standard deviation; Min.: Minimum; Max.: Maximum

Table 2: Kolmogorov-Smirnov test

WACC	
Kolmogorov-Smirnov Z	1.268
Asymp Sig.	0.800

Table 3: Hypotheses test

Variables	Sig.				Pearson correlation			
	Conserve	Disclosure	Leverage	Size	Conservatism	Disclosure	Leverage	Size
WACC	0.000	0.000	0.593	0.000	-0.518*	-0.309*	-0.019	0.279*

*: Correlation is significant at 0.01 level

Table 4: The test defining some significance for regression equation (ANOVA test) by step by step method

Model summary ^b		
R	R-squared	Durbin-Watson stat
0.598 ^a	0.358	1.976

^a: Predictors: (constant), size, leverage, disclosure, conservatism; ^b: Dependent variable WACC

Table 5: ANOVA^b

	Mean square	F	Sig.
Model	1.879	109.398	0.000 ^a

^a: Predictors: (constant), size, leverage, disclosure, conservatism; ^b: Dependent variable WACC

Table 6: Testing if regression coefficients (test 't') and examining VIF

Coefficients ^a			
Variables	t-statistic	Sig.	VIF
(Constant)	-2.376	0.018	-
Conservatism	-15.798	0.000	1.036
Disclosure	-7.636	0.000	1.036
Leverage	-0.607	0.544	1.003
Size	6.199	0.000	1.037

^a: Dependent variable WACC

use market lever scale to measure the financial lever. By virtue of this scale the yearly lever of each company is equal to total debts divided by the company going rate:

$$\text{Financial lever} = \text{Total debts}/\text{Company going rate}$$

Having gathered and categorized the data and examined if they are normal we use ANOVA test in order to test the hypotheses of our study.

RESULTS ANALYSIS

In this section the average, middle, the least and the most statistics and the standard deviation of each variable are presented (Table 1).

The test precondition of each hypothesis is normal data which are shown in related Table 2.

As you see the gained Sig. is more than 0.05 so the cost of capital is normal. Now we test the hypotheses (Table 3).

As you see the gained Sig for conservatism, disclosure and company size is less than 0.05 and is 0.593 for financial lever which is more than 0.05 so we concluded that there is some relation between cost of capital, conservatism, disclosure and company size, but they have no relation with financial lever (Table 4).

By virtue of the table showing a summary of the statistical model we see the gained Durbin-Watson

statistic is acceptable ($1/5 < \text{Durbin-Watson} < 2/5$) so it is correct to use the regression model (Table 5).

In the variance analysis test table by 'F' test we examine if there is any significant regression. As you see in the figure considering the significant values are less than 0.05 the significant regression hypothesis is right (Table 6). So we can write the equation as follows:

$$\text{WACC} = \beta_0 + \beta_1 \text{conservatism} + \beta_2 \text{disclosure} + \beta_3 \text{leverage} + \beta_4 \text{size}$$

As you see the amounts of the VIFs are little in third step (Near 1) so there is no same line in the model and considering the Sig. calculated for the width from the origin and CON, DIS and SIZE coefficients are less than 0.05 so the regression coefficients are significant, but considering the Sig. calculated for 'lev' is more than 0.05 so the variable is eliminated from the model.

Testing the influence of regression model: Regression model is effective when there is one of the three conditions:

- The errors are normal
- The errors have stable variance
- The errors are not interdependent

Considering there are all above three conditions it was sure that the model of the study is right and effective.

CONCLUSION

The findings of statistic tests in previous section show that there is a significant relation between the conservatism rate and cost of capital. The relation is on the basis of the Spence (1973) signaling theory. By virtue of the theory the companies use conservative accounting policy as a sign to show the quality. When a company selects the conservative accounting policy it is a sign for the positive quality. Higher quality states that the information risk of the company decreases probably; less information risk of a company leads to decrease the cost of capital. By virtue of study done on a compound sectional sample of the American companies in 1985-1994, Artiach and Clarkson (2010) concluded that there is a reverse relation between conservatism and cost of capital.

By virtue of the tests in previous section there was a significant relation between disclosure and cost of capital; it means when the company disclosure rate is

higher (Better) the usual shares costs is lower. This reverse relation originates from the attitude based on liquidity and the attitude based on assessment risk. By virtue of the attitude based on liquidity it is argued that on one hand, the disclosure increase decreases the exchange cost and on the other hand, it increases the demand for company stock exchange. By virtue of the attitude based on assessment risk it is argued that more information disclosure may decrease the cost of capital through assessment risk decrease. Botosan (1997) and Poshkwale and Courtis (2005) were of the researchers who found some experimental proofs indicating there is a reverse relation between usual shares cost and the disclosure rate.

REFERENCES

- Ahmed, A., R. Morton and T. Schaefer, 2002. Accounting conservatism and the valuation of accounting numbers: Evidence on the feltham-ohlson (1996) model. *J. Account. Audit. Financ.*, 15(3): 271-292.
- Amihud, Y. and H. Mendelson, 1986. Asset pricing and the bid-ask spread. *J. Financ. Econ.*, 17(2): 223-249.
- Artiach, T.C. and P.M. Clarkson, 2010. Conservatism, Disclosure and the Cost of Equity Capital. Social Science Research Network. Retrieved from: <http://ssrn.com/abstract=1673596>.
- Bagnoli, M. and S.G. Watts, 2005. Conservative accounting choices. *Manag. Sci.*, 15: 786-801.
- Baiman, S. and R.E. Verrecchina, 1995. Earnings and price-based compensation contracts in the presence of discretionary trading and in complete contracting. *J. Account. Econ.*, 20: 93-121.
- Blasco, M.E. and M. Trombetta, 2004. The Reputational Consequences of Disclosure. Social Science Research Network. Retrieved from: <http://ssrn.com/abstract=511682>.
- Botosan, C.A., 1997. Disclosure level and the cost of equity capital. *Account. Rev.*, 72(3): 323-349.
- Botosan, C.A. and M. Plumlee, 2002. A re-examination of disclosure level and the expected cost of equity capital. *J. Account. Res.*, 40: 21-40.
- Cheng, A., D. Collins and H. He Huang, 2006. Shareholder rights: Financial disclosure and the cost of equity capital. *Rev. Quant. Financ. Account.*, 25: 175-204.
- Copeland, T., T. Koller and J. Murrin, 2000. *Valuation: Measuring and Managing the Value of Companies*. John Wiley and Sons, New York.
- Demsetz, H., 1968. The costs of transacting. *Quart. J. Econ.*, 82: 33-53.
- Diamond, D. and R. Verrecchina, 1991. Disclosure: Liquidity and the cost of equity capital. *J. Financ.*, 46(4): 1325-1359.
- Dimaond, D.W., 1985. Optimal release of information by firms. *J. Financ.*, 40: 1071-1094.
- Easley, D. and M. O'Hara, 2004. Information and the cost of capital. *J. Financ.*, 59(4): 1553-1583.
- Easton, P., 2007. Discussion of: When capital follows profitability: Non-linear residual income dynamics. *Rev. Account. Stud.*, 6: 267-274.
- Fama, E.F. and R. French, 1999. The corporate cost of capital and the return on corporate investment. *J. Financ.*, 54: 1939-1967.
- Fishman, M.J. and K.M. Hagerty, 1989. Disclosure decisions by firms and the competition for price efficiency. *J. Financ.*, 44: 633-646.
- Francis, J., D. Nanda and P.M. Olsson, 2008. Voluntary disclosure: Earnings quality and cost of capital. *J. Account. Res.*, 46(1): 53-99.
- Galai, D. and T.E. Copeland, 1983. Information effects on the bid-ask spread. *J. Financ.*, 38: 1457-1469.
- Gietzmann, M.B. and M. Trombetta, 2003. Disclosure interactions: Accounting policy choice and voluntary disclosure effects on the cost of raising outside capital. *Account. Bus. Res.*, 33: 187-205.
- Givoly, D. and C. Hayn, 2000. Measuring reporting conservatism. *Account. Rev.*, 82: 65-106.
- Hendriksen, E. and M. Vanberda, 1992. *Accounting Theory*. 5th Edn., Irwin, Homewood, IL.
- Kristandl, G. and N. Bontis, 2007. The impact of voluntary disclosure on cost of equity capital. *J. Intell. Cap.*, 8: 549-577.
- Lang, M. and R. Lundholm, 1993. Cross-sectional determinants of analyst ratings of corporate disclosures. *J. Account. Res.*, 31: 246-271.
- Lim, R., 2006. The Relationship between Corporate Governance and Accounting Conservatism: Australian Evidence. Retrieved from: <http://www.ssrn.com>.
- Poshkwale, S. and T.K. Courtis, 2005. Disclosure level and cost of equity capital: Evidences from the banking industry. *Manag. Decis. Econ.*, 26: 431-444.
- Simkins, C., 2000. Income inequality and unemployment in South Africa: Facts, causes and perspectives. Proceedings of Konrad Adenauer Stiftung Conference, Bridging the Gap between Rich and Poor, Bronkhorstspuit.
- Spence, M., 1973. Job market signaling. *Quart. J. Econ.*, 87: 355-374.
- Watts, R.L., 2003. Conservatism in accounting Part I: Explanations and implications. *Account. Horizons*, 17: 207-221.