The study on the impact of information disclosure and operational properties on capital cost of enterprises admitted in Tehran Stock Exchange Organization (TSEO) by means of Seemingly Unrelated Regressions (SURs)

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ABSTRACT

The present research examines the impact of information disclosure and operational properties on capital cost of the enterprises admitted in Tehran Stock Exchange Organization (TSEO) by using Seemingly Unrelated Regressions (SURs). For this purpose, by considering information and data which have been collected from 126 enterprises as sample during an 11-year period (2001-2011), the research subject was investigated. The applied criteria as information disclosure in financial statements included information transparency, utility (fairness) of financial statements while the given variables as operational properties of these enterprises comprised of profitability rate, size of company, ratio of book value to market value, Return On Assets (ROA) or efficiency, and corporative operational growth that were used in two separate model synchronously to test the hypotheses. The results derived from this study also indicate that none of information disclosure variables significantly affect on corporative capital cost. Likewise, based on the results regarding the model of impact of corporative operational properties on capital cost, it was characterized that only variables of profitability rate, company’s size, and ROA had negative significant impact on capital cost of the enterprises admitted in TSEO.

INTRODUCTION

Under the present conditions of economy and economic activities in the country, one of the important subjects regarding the relationship among investment and determination of corporative value is to introduce techniques and tools for analysis of capital structure. Given that there is no confidence (certainty) to the future events and also uncertainty for occurrence of all events is not definitely at the same level; thus, investors including shareholders and or suppliers of long run loans and financial facilities accept implicitly the risk of non-collection of their capital rather than delivery of their capital. With such an approach, rather than the normal interest capital cost expected by investor, one can admit that capital cost is also considered as bonus for risk admission that belongs to investors [19]. On the other hand, with respect to the point that providing financial sources to supply the needed cash funds for investment and implementation of corporative activities is one of the foremost tasks for financial managers. Inter alia, it is crucially important to determine an appropriate composition of these financial sources for the given enterprise and financial directors since this results in enterprise’s efficiency as well as productivity of the given company with the limited financial sources so that several theories have been purposed about determining an optimal composition where each of them addressed certain characteristics and assumptions. Capital cost is one of the issues and features that are purposed in determination of the needed financial sources for the enterprise and it has been discussed particularly as case study since this item is directly related to financial sources and corporative cash flows and at the same time it is important both from domestic users’ view and extra-organizational consumers such as investors and credit-granters [12]. Based on management’s viewpoint at different levels in an enterprise, since some issues like acquisition of sustainable and low cost financial sources are prioritized for them and at the same time attitude of investors and credit-granters typically indicates stability as well as rate of corporative risk, so subject of capital cost is significant. Moreover, whereas rate of capital cost may directly play an important role in enterprise’s potential and profitability rate thus it is considered as an important issue based on viewpoint from both groups of intra- and extra-organizational consumers [11]. Accordingly, in this survey we deal with study on the variances of capital cost versus information disclosure rate as well as operational properties of the enterprises.
that they are considered as corporative intra-organizational key variables and may widely affect on investors’ evaluations meanwhile these variables are important and noticeable for economic survival of an enterprise in competitive markets. For this purpose, primary data, which have been extracted from financial statements of the enterprises that admitted in Tehran Stock Exchange Organization TESO during years (2001-2011), are used and the criteria that are employed under title of information disclosure in financial statements including items of information transparency, utility of financial statements, and also the variables that are considered as operational properties for the enterprises consist of profitability rate, size of company, ratio of book value to market value, Return On Assets (ROA), and enterprise’s operational growth. In the following, we deal with theoretical framework and literature of subject matter. Then, hypotheses and methodology are purposed. Similarly, affirmation of model and analysis of the exclusive results are some other parts of this study. Conclusion is the last part of this investigation as well.

**Literature and Research History:**

In general, by conducting this study it is mainly intended to characterize the rate of impact of information disclosure quality on financial statements (comprising the parameters of information transparency, and utility of financial statements) and operational properties (including parameters of profitability rate, size of company, ratio of book value to market value, ROA and corporative operational growth) on capital cost of the enterprises that were admitted in Tehran Stock Exchange Organization (TSEO). In the following, we will introduce each of the aforesaid variables and describe the effect of each of them on capital cost based on theoretical bases.

- **Quality of information disclosure:**

Overall, the adequate and appropriate disclosure shall express the minimum needed disclosure to making deliberative decision. With respect to the fact that based on attitude of users of financial statements, particularly investors and credit-granters, transparent and appropriate disclosure of information is very important and vital for making decision about implementation of investment process therefore disclosure of the needed information for these two spectra of users may affect appropriately on corporative acquisition of aptly, sustainable, and low cost financial sources [16]. This issue may be also important due to the fact that enterprise’s acquisition to the needed financial sources to provide cash funds and capital deficit directly affects on corporative value and level of enterprise’s reputation so that more transparent disclosure of information may influences in corporative reputation and position. In this investigation, in order to determine the adequate cases of disclosure for financial statements a checklist has been prepared to identify quality of disclosure in parallel with the intended matters by review Iranian Accounting Standards [7]. It requires noting that only the needed cases of disclosure, which referred in Iranian Accounting Standards, have been used in this checklist. In this checklist, one column was designated to the cases that should be disclosed and the other column was allocated to the disclosed items by the enterprises. Thus, if the studied company have observed the disclosure cases, number one (1) is written in this column and if these cases have not been seen, number zero (0) should be recorded in this column. Similarly, if the case of disclosure does not correspond to the given enterprise the sign of (N/A) (Not Applied) is used in this part.

- **Operational Properties:**

Operational properties are those features by which financial status and performance of a company may be examined during certain period of time. Users of financial statements have certain criteria for making decisions about their investments out of which one of their basic criteria is evaluation of corporative operational properties during several fiscal periods since investment whether in stocks and or in bonds and securities published by the enterprises is mainly aimed at acquiring profit and increase in their wealth so evaluation of these properties is one of the cases that realize this goal. It is because of the fact that enterprise can evaluate the performance in payment of equity and repayment the invested funds through study on these criteria [9]. Some of features which may be useful for evaluation of investors consist of profitability rate, size of company, ratio of book value to market value, ROA and corporative operational growth.

- **Profitability rate:**

In this research, based on investors’ equity efficiency, rate of profitability that can be calculated from ratio of net interest (profit) to investors’ equity. According to theoretical bases, it is expected that if this ratio is at higher rate, the lower cost an enterprise will incur for its finance and acquisition of financial sources needed for the company so that if rate of profitability is high for that company the investors like to buy the published bonds by the given enterprise with a price higher than face value in the market since enterprise’s efficiency rate is high due to its profitability. This relationship has been confirmed in the studies that have been conducted by Brown *et al* [10], Easley and O’Hara [13], Goh [15], and Singhania and Seth [26].

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- **Size of company:**
  Size of company identifies company’s share in products competitive market proportional to its other rivals to a great extent. In this survey, natural logarithm of company’s sale rate is used to measure this variable. Theoretically, one can refer to a negative relationship among size of company and capital cost. It should be noted that with respect to reliability, potential, and various activities of large companies than small corporations, it is easily possible for them to acquire extra- organizational financial sources such as liability and or stock [20] and also this point that risk is lesser in these enterprises and this reduces the expected rate for credit- granters and investors in large companies than in small enterprises and its distribution costs are reduced [16].

- **Ratio of book value to market value:**
  Ratio of book value to stock market value is one of the important ratios in evaluation of corporative performance. This ratio is calculated by dividing sum of shareholders’ equity to total value of corporative stock market. It is expected generally that the enterprises with greater ratio of book value to stock market value have the higher risk for which one shock in this market causes stock market value to be equal to book value and or to approach to book value. Therefore, it can be logically implied that the higher ratio exists in the company the company will be exposed to greater risk and this risk requires higher efficiency. Based on other viewpoint, the lesser rate of this ratio may reflect this fact that a long time has passed since of establishment of the given company and whereas majority of enterprises do not like to reappraise their assets because of tax- related issues so this may cause stark differences among book value and stock market value [14]. An enterprise, which has acquired reputation after many years but this good repute, has not been recorded in financial books and statements and at the same time it has indicated its market value this measure causes creating of difference among book value and stock market value for this company. Thus, the smaller this ratio is, the company has greater solvency with lower risk. Therefore, it will have naturally lesser efficiency. Alternately, the lesser ratio of book value to stock market value exits in a company, this indicates the growing stock and if that ratio is greater, it denotes value- driven stock [8].

- **Return on Assets (ROA):**
  Return On Assets (ROA) is an index that shows how corporative profitability depends on its total assets. Assets of an enterprise play essential role in acquiring profit (interest). The more a company uses assets with greater efficiency, the more profitable that company will be. Regardless this point that the assets have been provided by loan- origin funds or investment of main shareholders, the given assets can do their related tasks more aptly. Assets efficiency (ROA) measure and evaluate way of using corporative assets toward creation of revenue and selling them by management. Shareholders and managers compare corporative ROA with the efficiency for utilization of sources in other fields; the higher this efficiency is, the better efficiency exists in the company to employ assets and sources [25]. Assets efficiency (ROA) purposes an idea about effective management to us regarding the utilization of assets toward production of interest that is computed by dividing of annual interest to corporative total assets. Accordingly, it is expected that the higher this ratio is, the lower cost that company incurs to supply its capital. This relationship has been verified in investigations done by Brown et al [10], Lambert et al [20], and Francis et al [14].

- **Corporative operational growth:**
  Enterprise’s operational growth is another studied factor as one of the corporative operational properties. This variable is measured by calculation of spread of sale in current year from sale in the last year. Since growth of corporative sale is directly derived from performance of enterprise and management so this variable may affect on total evaluation of investors from the given enterprise. Whereas changes in sale is directly followed by variations in corporative profitability; as a result, this causes enterprise to access more easily at lower cost to finance [24]. Similarly, on the other hand growth in sale may increase growth of corporative inside financial sources for finance and cause reducing tendency toward finance by liabilities and extra- organizational credits. Since this measure may affect on rate of corporative risk in all fields so it is crucially important and it causes reduction in corporative risk and this reduced risk may lead to a positive effect on corporative performance and finance and it will be followed by reduced costs of capital finance [22].

- **The conducted studies and researches:**
  In general, Modigliani and Miller [21] carried out the study on capital cost and structure for the first time. In a study, they examined capital structure and the costs relating to finance. By purposing this point that based on some assumptions including effectiveness of capital market, lack of tax for buying and sale as well as the fact that there is no cost for bankruptcy and agency expenditures and or some informative symmetry exists between owners and managers, they indicated that if procedure of corporative investments is assumed as fixed rate and regardless of tax and contract costs, corporative procedure for finance will not affect on current value and stocks of that enterprise. Theory of Capital Structure Irrelevance Principle by Modigliani and Miller suggests that
finance procedures will affect on value of enterprise only when corporative cash flows are changed. Afterwards, Modigliani and Miller published another article in which the assumption of lack of corporative tax was greatly balanced. They deduced that since payments of interest are reduced in calculations of tax on corporative income so the more liability is included in capital texture, the lower taxation liability that company has and as a result market value is increased for that company. In an investigation, Easley and O’Hara [13] studied on fundamental changes of capital cost in information disclosure structure at USA. By review on the effect of information propagation as well as some operational criteria for enterprises, all public community, disclosure of private and confidential corporative information, decisions made by investors who were aware of this information and also unaware investors, and based fixed assets pricing model, they showed that quality of information might noticeably be important for users and investors. Likewise, speed of transferring information flow and public information may also affect on capital cost of enterprises. Similarly, Henry [17] indicated in a study that when Developing Countries reconstruct stock market, their capital cost is reduced and rate of production growth per capita is increased, while the reality and facts challenge this idea that releasing capital account has no real interests. In a survey done by Francis et al [14], they explored the relationship among quality of interest and cost of finance. The resultant findings from this study show that those enterprises which qualitative feature of their interest has lower utility in comparison with the companies with better utility of interest qualitative feature, will incur further capital cost for their finance. By study on determinant factors of capital cost in Egyptian enterprises in a survey, Omran and Pointon [23] indicated that in general rate of sale growth and size of company were important factors and they might affect remarkably on determining the composition of financial sources and expenditures of finance. With approximation of the expected normal stock cost in Irish enterprises in a study, Klein et al [18] showed that several constraints in finance in some companies which had no adequate liquidity might expose them to many problems in finance and this is directly related to their capital cost.

Research Goals and Hypotheses:

Overall, the present research has been done by aiming mainly at identifying the rate of effect of information disclosure quality in financial statements and operational properties on capital cost. Thus, with respect to the considered variables and in order to review the impact of research variables in enterprises that admitted in Tehran Stock Exchange Organization (TSEO), the following hypotheses are also employed:

1- Quality of disclosure in financial statements (including information transparency and utility of financial statements) affects significantly on capital cost in enterprises that admitted in Tehran Stock Exchange Organization (TSEO).

2- Corporative operational properties (including profitability rate, size of company, ratio of book value to market value, Return on Assets (ROA), and operational growth of enterprise) affect significantly on capital cost in enterprises that admitted in Tehran Stock Exchange Organization (TSEO).

MATERIALS AND METHODS

The current research is type of fundamental study in terms of goal and it is of correlation study in terms of nature in which the relationship among variables is analyzed by formulation of regressive equations.

Statistical population of this study includes all enterprises that admitted in Tehran Stock Exchange Organization (TSEO) that the relevant information was gathered for a time period 11 years (from 2001 through 2011) and the related data are used annually. It requires nothing that systematic omission technique is used to select statistical sample and all the existing companies in this statistical population with the following specifications are selected as sample and the rest will be omitted:

1- Corporative stock has been transacted in TESCO during period (2001-2011) and the information of these enterprises is available during the aforesaid time period.

2- The selected enterprises in statistical sample should not belong to banks, industries, credit financial institutions, financial dealerships, investment companies, and multi-disciplinary industrial corporations.

3- Fiscal year in these companies should be ended to 21st March every year and it has not been changed during research time period.

4- The selected companies should not have transactional interruption during the studied period by aiming at maintenance of research internal consistency.

Based on obtained information, number of statistical samples with above-said qualifications is 126 companies from various industries.

Affirmation of research model:

With respect to above-mentioned issues, the regressive model is adapted that corresponds to analysis on the impact of information disclosure and operational costs on capital cost in enterprises which were admitted in TSEO by means of two synchronous models and Seemingly Unrelated Regression (SUR) as follows:

\[ WACCS_{it} = \alpha + \beta_1 \cdot DISC_{it} + \beta_2 \cdot OPP_{it} + \epsilon \]
Where, COE denotes cost of enterprise. If a commercial unit uses several techniques for finance, capital cost will be computed as follows:

\[ K_c = P_1k_1 + P_2k_2 + \ldots + P_nk_n \]

DISC is the level of information disclosure in financial statements and its enclosed notes. The criteria which have been used as information disclosure in financial statements consist of information transparency (TRAN), utility (fairness) of financial statements (FAIR) that show the rate of information disclosure impact level on corporate capital cost and are calculated as follows:

\[ DISC_u = \beta_1 TRAN_u + \beta_2 FAIR_u + \epsilon \]

OPP stands for corporate operational properties which the relevant symbols to this variable include profitability rate (PROF), Size of company (SIZE), book value - market value ratio (BVMV), Return On Assets (ROA), and corporate operational growth (GROW). These variables indicate the rate of corporate operational properties impact on capital cost and are computed as follows:

\[ OPP_u = \beta_3 . PROF_u + \beta_4 . SIZE_u + \beta_5 . BVMV + \beta_6 . ROA + \beta_7 . GROW + \epsilon \]

Based on the affirmed models, we study simultaneously on effect of the aforementioned variables on capital cost and use seemingly unrelated regression (SUR) to approximate the model. Similarly, F-statistic is used to test significance of the regressional model and t-statistic is utilized to test significance in regression coefficients. The common procedure for this purpose is in that null hypothesis \( H_0 \) is rejected in favor of hypothesis \( H_1 \) provided that F-statistics and t-statistic are significant at confidence level (1-\( \alpha \)).

Data analysis and testing of hypotheses:

Table 1 shows the results of approximation of multivariate regression model in this study are seemingly irrelevant according to regressional method so that they were tested in two models synchronously including two groups of the variables relating to information disclosure and corporate operational properties on capital cost for the companies that admitted in TSEO. Two variables of information transparency and utility of financial statements were used to examine information disclosure level on capital cost where the results show none of two given variables affect significantly on capital cost. Generally, based on the presented theoretical transparency as well as high quality of this information can be useful to present a better image from corporate general status in the market of importance of information disclosure and its utility and this mostly due to inefficiency of TSEO organization. It is required to mention that some studies that referred to lack of good efficiency of TSEO organization are as follows: Fadaeinejad [6], Johari [2], Abdoh Tabrizi and Shahverdi [5], Zariffard and Nazemi [4], Samadi et al. [3], Abzari et al. [1]. It should be noted that general conclusion in the aforesaid researches has implied inefficiency of TSEO organization. Review of the results regarding the impact of corporate operational properties on capital cost in the enterprises that admitted by TSEO indicates the significant effect of profitability rate, size of company, and ROA. Among these variables, size of company has the highest effect on capital cost in the companies which were admitted by TSEO, noting that one percent change in size of enterprise (for which natural logarithm of corporative sale rate is used to measure it) will cause 0.71 reverse change in capital cost in enterprises that admitted by TSEO. This quantity is statically at significant level and also based on theoretical bases, this refers to variances of size of company on corporate capital cost. As it is mentioned in theoretical bases, in general the larger company exists with more various activities the more stable cash flows it will have that are followed by reduced risk. Accordingly, with respect to reputation, potential, and various activities in the large companies than in small enterprises, they have greater capacity for taking loan and they can acquire their needed financial sources with a rate close to rate of public bonds and securities and without any risk. So this indicates lower cost for finance. Also, profitability rate as well as ROA has negative impact on capital cost in enterprises that admitted by TSEO (0.52% and 0.51% respectively). With respect to rate of similar effect by these two variables, it can be stated that whereas both of these variables are the criteria that have been used for profitability rate and evaluation of corporate performance so by considering variance trend in these variables, investors can appropriately act in consciously decision making process. It requires noting that rather than the aforementioned variables in the model that concerned with review on effect of corporate operational properties on capital cost in enterprises that admitted by TSEO, no significant results obtained from two variables i.e. ration of book value to market value and corporate operational growth. It can be observed from the given results that values of determination coefficient (\( R^2 \)) of the model regarding variables of information disclosure and cooperative operational properties are 0.68 and 0.77 respectively.
7- Conclusion and Summary:

The current research examines the effect of information disclosure and operational properties on capital cost of enterprises that admitted by TSEO. As it mentioned, one of the main tasks for managers of these companies is to determine an optimal composition of financial sources that have been specifically discussed. Capital cost is one of the issues that are purposed about determining the composition of the needed financial sources for the enterprise since it is directly related to corporative financial sources and cash flows and it is important both from domestic users’ view and extra-organizational users’ perspective. Whereas rate of capital cost can directly play important role in potential and profitability rate in an enterprise so it is considered as an important subject in both spectra of intra- and extra-organizational users. Accordingly, in this study the variations in capital cost versus rate of information disclosure in group of financial statements as well as important and key criteria of evaluating performance in enterprises that admitted by TSEO have been investigated in financial statement during years (2001-2011). The criteria that have been used in financial statements as information disclosure include some variables like information transparency, utility (fairness) of financial statements and those variables that are considered as operational properties of enterprises comprise of rate of profitability, size of company, ratio of book value to market value, return on assets (ROA), corporative operational growth. In order to review the impact of the aforesaid variables on capital cost in enterprises that admitted by TSEO, two separate models were utilized simultaneously based on seemingly unrelated regressions. The results came from two affirmed models indicate based on the aforesaid method, none of the given variables as information disclosure affected significantly on capital cost in enterprises that admitted by TSEO. As it implied, it was deduced this irrelevance is due to lack of investors’ awareness of the importance of information disclosure and rate of its transparency and utility, which mainly caused by lack of efficiency of enterprises that admitted by TSEO. According to the results relating to impact of corporative operational properties on capital cost, it was also characterized that variables of profitability rate, size of company, return on assets (ROA) negatively affect on capital cost in enterprises that admitted by TSEO. These similar results were confirmed by the studies conducted by Brown et al [10], Easley and O’Hara [13], Goh [15], Lambert et al [20], Francis et al [14], Singhaania and Seth [26], which had been purposed according to theoretical bases as well. It should be noted that in addition to the mentioned variables in model of review the impact of corporative operational properties on capital cost in enterprises that admitted by TSEO, no significant result was obtained from two variables of ratio of book value to market value and corporative operational growth. According to the given results, it is suggested to financial managers to consider quality of disclosure of the presented information as well as operational properties and widely address these cases and the relevant parameters in their decision making. This important point may guarantee success of enterprise in providing the needed financial sources to a great extent. Likewise, it is expected that general policies and procedures of Tehran Stock Exchange Organization (TSEO) to be planned, codified, and executed in such a way that the activists in this market and other persons who intend to enter this market to recognize the importance of information disclosure, transparency, and quality of the presented information within the financial statements and pay attention to them more than ever in their decision making and criteria of information disclosure as well as performance evaluation criteria for the enterprise.
REFERENCES


Latin sources: