The Effect of Management Earning Forecast's Error on Cost of Equity Capital of Companies Listed in Tehran Stock Exchange

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Abstract   *Predicting profit of each stock is one of the key factors in investment and in compatibly of stock methods it is highly important both for providing capital and for users who use it for decision-making. Measuring future profit in each stock, managers seek to have the trust of the users who consider profit as a tool for assessing. Following empirical research is for assessing effect of management profit prediction error on capital cost in companies accepted in stock exchange of Tehran. Statistical society of the research includes 73 companies which are active in stock exchange of Tehran for a-five-year period from 2007-2010. Multi-variable regression method was used for investigation. The results gained out of the research indicates a direct and meaningful relation between profit prediction error and capital cost.*

Key words   Profit prediction, profit prediction errors, capital cost

1. Introduction

Profit is one of the most controversial and important notions in the business world. Financial report which is gained from profit and factors related to it, provides data associated with company function (FASB, 1978). Therefore, profit as a factor in measuring function of business unit is extremely significant. The idea of recognizing accounting profit is established based on developing quantitative development of management and the necessity of recognizing needs of those use financial statements. The idea is beyond measuring present findings and it can provide the possibility of helping accounting science through helping in decision-making (Lotfy vakil Abadi *et al.* (2010). Accounting profit is widely cared about in assessing stock, assessing management function and debt contracts and company function can be passed through it. Therefore, predicting accounting profit is important and investors make decision based on it regarding buying, selling or maintaining stock (Dicho, 2002). Investors` decision-making based on predicted profits increases importance of profit prediction error. Inaccurate in predicting profits by managers will cause risk in data and the risk will cause higher-rate demands from investors and finally cost of asset will increase normal stock of company. Accuracy in predicting profits by managers will establish a secure condition which can increase investors` trust. Increase in investors` trust and reducing risk cost will reduce expected return and can rise value of company (Lotfi Vakili Abad *et al.* 2010; Mohajer, 2010).

2. Research methods

The profits predicted in management sector are one of revelation information of organizational Malibron statements indicating management point of view on company future. Performing condition of

companies is full of due to change in trading environment (like unpredictable change in market demand and components` strategy). In fact, management knowledge is not full regarding trading environment of the company. Inaccurate knowledge of management will cause errors in assessing trading point of views in an unavoidable manner. Moreover, lack of certainty in performing condition can cause some mistakes in managing data processing which itself can bring about some mistakes in future assessing of business. So if managers` level of accuracy in predicting profit is low, investor may have more demand for this type of data risk related to low level of accuracy in predicting profit. As a result, increasing profit rate expected by investor can cause increase of investment cost (Moramya, 2005).

At this point companies may reduce investing risks in order to increase investors` wealth and then they will reduce cost of their own capitals, and after than data risk will be considered as a risk factor in investing. Individual data of management and lack of accuracy in data reports may increase data risk (Fransis *et al.*, 2008). Therefore, the goal of the research is identifying the way of behavior of capital cost through profit prediction management data.

The results expected can be established based on theoretical relations between variables in hypotheses:

H1: *There exists a meaningful relation between prediction errors of management profit and capital profit.*

The current research is a correlation research where hypotheses were investigated through multi-variable regression. Data needed were deduced for error of profit perdition and capital cost through financial statements of companies accepted in stock exchange of Tehran and through software of data bank and sites related.

The research is applied one where descriptive and correctional methods were used. Data were gathered using post-event method (historical data). Correlation research was conducted for investigating presence of correlation. The research population includes companies recorded in Tehran Stock Exchange from 2007 to 2010 and it contained 73 companies with following characteristics:

1. To be able to compare, companies` data during 2007 to 2010 should not have any changes in financial year and it should lead to end of March.

2. It should not be among banks and financial institutions (investing companies, financial intermediation, holding companies and banks). Since financial revelations and structure of strategic principles of companies are different in them.

3. The company should be accepted before 2007 in stock exchange of Tehran and should be active to the end of 2010.

4. Financial data needed, especially explanatory notes along with financial statements should be available in order to extract data needed.

Variables used in the research are as follows:

1. Independent variables: error of profit prediction in the research is an independent variable which canbe calculated from the difference between the profit predicted and profit of real stock (Koen *et al.*, 2009; Lotfy Vakily Abad *et al.*, 2010; Mohajer, 2009).

$$FERE_{i,t} = \frac{FEi,t - Rei,t}{Fei,t}$$

(1)

Where:
FERE I, t: error of predicting company profit i in year t;
Rei,t: real profit of company i in year t;
FE I,t : predicted profit of company i in year t.

2. Dependent variables: average weight of capital cost is the dependent variables of the research which can be calculated as follow:

$$WACC_t = \frac{Lt}{L_t + E_t} * K_d(1-t) + \frac{E_t}{L_t + E_t} * Ke$$

(2)

Where:
Lt: financial cost of company i in period t;
Et: rights of owners of company stock i in period t;
Kd: debt cost.

$$k_d = \frac{1 - E}{Eps} * ROE$$

(3)

Where:
E: division profit;
ROE: capital return;
EPS: net profit after tax reduction.

Gordoon model is used for calculating cost of normal stock (Ke):

$$Ke = \frac{D_0(1 + g)}{P_0} + g$$

(4)

Where:
D0: profit of each stock at the end of previous year;
P0: selling price of each company stock i at the start of financial year t;
g: rate of profit growth (geometric average of profit).

To gain average profit growth rate we can use average in a way that first annual growth can be calculated through dividing annual profit for each stock and then by receiving average from values gained, average growth rate can be calculated (for calculating growth rate, usually geometric average can be applied).

Controlling variables
In this research controlling variable includes company size, financial leverage and systematic risk.

Company size:
Company size can be calculated through logarithm of total company selling:

SIZE i,t = log (SALE i,t)
SIZE i,t: company size
SALE i,t: selling of company i in year t

Financial leverage:
In indicates how much assets was provided from debts location (source) and how much was provided from salary location (source) of owners. In this research debts ratio to salaries were used to calculate. They can be calculated as follows:

$$LEV_{it} = \frac{STL_{it} + LTL_{it}}{TA_{it}}$$

(5)

Where:
STL it: short-term debt;
LTL it: long-term debt;
Tait: total assets of company i in year t.

Systematic risk:

Beta shows sensitivity of fluctuations of return in stock exchange instead of market return fluctuations and it can be gained by dividing covariance of market return and stock market in market return. Beta coefficient instead of each stock is as ratio of market risk for each stock and can be calculated as follows:

$$\beta = \frac{COV\ (R_m + R_i)}{Var(R_m)}$$
(6)

Where:
β: systematic risk of each stock;
Rm: market return;
Ri: stock return.

3. Research findings

Research findings are deductive type. Test type of hypotheses is sectional correlation. We examined hypotheses through multi-regression model. Confidence level was around %95 and statistical tests needed were conducted through SPSS model. Following model was determined for testing hypotheses

$\hat{y}$=b0+b1x1+b2x2+b3x3+b4x4
(7)

Where:
Y= dependent variable (capital cost);
X1= profit prediction error;
X2=company size;
X3= financial leverage;
X4=systematic risk.

Minor correlation coefficient between independent variable (errors of predicting profit and dependent one (capital cost) with entrance of controlling variables. Before presenting analysis, minor correlation coefficient between independent variable (profit prediction error) and dependent (capital cost) will be investigated, especially when effect of controlling variables are constant.

ρ=0 There is no relation between independent variable (profit prediction error) and dependent (capital cost) with entrance of controlling variables Sig. ≥ 0.05.

ρ≠0   Independent variable (profit prediction error) and dependent one (capital cost) with entrance of controlling variables Sig. < 0.05.

Correlations

Control Variables			ERROR	T_LNWACC
SIZE & LEV & B	ERROR	Correlation	1.000	.386**
	T_LNWACC	Correlation	.386**	1.000

**. Correlation is significant at 0.01 level

Minor correlation coefficient between independent variable (profit prediction error) and independent (capital cost) with entrance of controlling variables it is meaningful in level 0.01.

According to r=0.386 as you can observe, there is a direct and meaningful relation between independent variable (profit prediction error) and the dependent one (capital cost), especially when effect of controlling variables are constant. Therefore, hypothesis zero in the research is rejected and the research hypothesis is accepted.

Lateral hypothesis:
There is a meaningful relation between dependent variable of the capital cost and dependent variable of profit prediction error with the entrance of controlling variables (financial leverage, company size and systematic risk).

H0: there is no meaningful relation between dependent variable of the capital cost and dependent variable of profit prediction error with the advent of controlling variables (financial leverage, company size and systematic risk).

$(.0b2=b3=b4==H0: b1)$.

H1: there exists a meaningful relation between dependent variable of the capital cost and independent variable of profit prediction error with the advent of controlling variables financial leverage, company size and systematic risk).

Foe at least one j: H1: $bj≠0j=1,2,3,4$.

Model Summary b

Model		R	R Square	Adjusted R Square	Std. Error of the Estimate
dimension0	1	.613a	.376	.368	.54937

a. Predictors: (Constant), B, LEV, SIZE, ERROR
b. Dependent Variable: T_LNWACC

Output of multi-variable linear regression analysis between capital cost variable and profit prediction error variable with the advent of controlling variables (companies` size, financial leverage and systematic risk).

The above table demonstrates a summary of the model including multiple correlation coefficient, determination coefficient and adjusted determination coefficient. As it can be observed correlation coefficient is R=0.613 indicating a meaningful and direct relation between average capital cost and independent variables present in the model. Determination coefficient shows that nearly 38 percent of changes in dependent variable (Average capital cost) can be determined by independent variables present in the model. The less the difference between determination coefficient and adjusted one, the better the result. Watson camera statistic value indicates lack of a relation between errors. If the value is between1.5 to 2.5, we can conclude that there is no auto-correlation or in other words part of error in an observation is not influenced by another error.

ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.812	4	14.703	48.717	.000a
	Residual	97.784	324	.302		
	Total	156.596	328			

a. Predictors: (Constant), B, LEV, SIZE, ERROR
b. Dependent Variable: T_LNWACC

The above table shows variance analysis of the regression model's being meaningful. F=48.717 and Sig.<0.05 show that multi-variable regression model and dependent variable (average capital cost) is meaningful with the advent of controlling variables).

Coefficients a

	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.531	.321		7.874	.000
	ERROR	.515	.068	.354	7.536	.000
	SIZE	-.214	.051	-.185	-4.171	.000
	LEV	1.402	.204	.322	6.885	.000
	B	-.004	.002	-.067	-1.531	.127

a. Dependent Variable: T_LNWACC

Having regression coefficients, above table shows regression equation which can be written as follows:

$$\hat{y}=b0+b1x1+b2x2+b3x3+b4x4 \tag{8}$$

B0=constant value, bb1=profit prediction error, b2=company size, b3=financial leverage and b4=systematic risk

Beta Coefficient also indicates that with change of a standard deviation and change in independent variable of profit prediction error, 35 percent of standard deviation will occur in dependent variable. Hence, variable of financial leverage (0.32) and company size (0.18) have the most change on the dependent variable, respectively. Variable of systematic risk has no effect on the model and can be removed from the model. (This can be approved from statistic t as well. Sig>0.05 .statistic t: test of regression coefficients` being meaningful). Therefore, regression model of capital cost and profit prediction error are meaningful with the advent of controlling variables such as company size and financial leverage

4. Conclusion

The results gained out of the hypotheses test was investigated using data associated with 72 companies which are active in stock exchange of Tehran during a five-year period (2007-2011). Following conclusion was gained: there is a meaningful relation between error of predicting management profit and cost of capital of companies which were accepted in stock exchange of Tehran. The results gained indicate a positive and meaningful relation between profit prediction errors and capital cost. Therefore, the research hypothesis is approved. Hence, it seems that capital cost can go higher with the increase of management profit prediction error.

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