Sensitivity of Cash Flow of Investment and Cost of Capital on Conservatism

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Abstract. Generally accepted accounting principles as major deviations in the measurement range of assets, liabilities, costs and revenues are permitted. As there is logical ambiguity and uncertainty about measurement accounting elements, the concept of conservative rule that the process of measurement criteria to be considered as a cognitive which tend to show lower revenues and higher assets and the liabilities and costs in cases where a reasonable doubt on the accepted values are different, is emphasized. The purpose of this study was to evaluate the effect of cash flow sensitivity of investment, common shares cost of capital on conservative profit in the period 2008 to 2013 in listed companies on the Stock Exchange in Tehran. The survey consisted of 100 companies listed in Tehran Stock Exchange were selected through descriptive statistics such as mean, variance, standard deviation and quartiles were used. The survey in term of propose is development research and in term of data collection, is cross - correlation where the actual information in the financial statements of companies to gather information the data library was used and data analysis and testing with the help of Eviews and Excel software and other related software was done. The results showed that there is a significant negative correlation between the conservative and investment cash flow sensitivity and common stock cost of capita, that the results are based on the theories and literature on this subject.

Keywords: Cash flow sensitivity of investment, Cost of capital, Conservatism

1. INTRODUCTION

Generally accepted accounting principles as major deviations in the measurement range of assets, liabilities, costs and revenues are permitted. As there is logical ambiguity and uncertainty about measurement accounting elements, the concept of conservative rule that the process of measurement criteria to be considered as a cognitive which tend to show lower revenues and higher assets and the liabilities and costs in cases where a reasonable doubt on the accepted values are different, is emphasized. In today’s world, the concept of conservatism is less valid; for any high optimism or pessimism, leading to wrong decisions and reduce investment opportunity. Financial reporting should provide relevant information to help investors and creditors, in order to have better assess the possibility of access to the cash amount, timing and uncertainty of future expected cash flows.

Since the cash flows of investors and creditors depend on profit cash flows, cash resources invested in businesses, in addition to obtaining additional funds, sought to invest returns. The process in theoretical concepts of financial reporting, called financial flexibility. On other hand, the capital cost considered as the external and internal dimensions. In term of external dimension costs of capital in evaluation of the securities and to evaluate the performance of the company used. In term of internal dimension the cost of capital related to investment decisions and priorities of investment, investment optimal structure and performance evaluation is key sectors (1). Therefore, this study sought to examine the impact of cash flow sensitivity of investment, common shares cost of capital on conservative accounting.
2. THEORETICAL FOUNDATION AND RESEARCH BACKGROUND

1.2 Theoretical foundation

Free is a benchmark for measuring the value and performance of the companies, indicating the cash flow that the company after the necessary expenditure for maintenance or development of assets had at its disposal and is distributed among investors. The release does not mean that the company will be distributing the remaining cash among investors, but how to use it depends on the terms of the board of directors and company policies. The use of this criterion must be noted in some cases, especially in newly established companies may have a negative free cash flow, which can be a sign of serious investment in its assets during the early years of the company.

Jensen was the first person with respect to conflicts of interest between owners and managers examined these criteria and explained that managers can to maintain control, protect resources and maintain control of their own interests (the reward) do not pay surplus cash flow profits to investors and these funds invest in projects that even with a negative NPV. Free cash flow per share is a measure of the financial profitability of the company addressed through free cash flow divided by the number of shares issued. The benchmark is index to measure the change in earnings per share and an initial forecast of future stock prices. For example, when the low stock price and free cash flow are increasing the likelihood is that the net profit and shareholder value will increase, because high levels of free cash flow per share is likely to mean that earnings per share would have increased.

2.2 Background research

Kim, J. w. and Shi, Y., (7) also in a study examined the direct effect of anticipated profits by managing the cost of common stock. According to their findings negative adjusted news earnings forecast significantly lead to a higher cost of equity capital in a month after the disclosure.

However, the cost of common stock in response to news of positive adjusted profit forecast does not show significant response. Artiach, T. C. and Clarkson, P. M (8) in a study to evaluate the effect of conservatism and the quality of individual and shared the cost of common stock have been disclosed.

The results show that there is an inverse relationship between conservatism and the cost of capital in the company, for example, the company's common stock is listed on the American Stock Exchange, and however, the relationship in environments with a high level of disclosure is weakened.

3. RESEARCH METHODOLOGY

This research in term of proposes is applied research. According to this study, in terms of the purpose is applied, in terms of collecting data is a correlational.

In addition to collecting data through observation financial statements and attached notes to financial statements and other reports, database management companies and the Stock Exchange and with the extensive study of literature and history research, we used.

1.3 Hypotheses

1. Profit conservatism with cash flow sensitivity of investment firms listed in the Tehran Stock Exchange has a significant relationship.

2. Profit conservatism with common shares cost of capital of listed companies in Tehran Stock Exchange has a significant relationship.
2.3 The research model

1-2-3- Model hypothesis of research

\[ CFSI_{i,t} = \beta_0 + \beta_1 \times \text{Conservatism}_{i,t} + \beta_2 \times \text{BM}_{i,t} + \beta_3 \times \text{SIZE}_{i,t} + \beta_4 \times \text{DIV}_{i,t} + \beta_5 \times \text{LEV}_{i,t} + \beta_6 \times \text{PPE}_{i,t} + \beta_7 \times \text{RET}_{i,t} + \beta_8 \times \text{RETVOL}_{i,t} + \beta_9 \times \text{OI}_{i,t} + \beta_{10} \times \text{OIVOL}_{i,t} + \epsilon_{i,t} \]

2-2-3- The second hypothesis research model

\[ CE_{j,t} = \beta_0 + \beta_1 \times \text{Conservatism}_{i,t} + \beta_2 \times \text{BM}_{i,t} + \beta_3 \times \text{SIZE}_{i,t} + \beta_4 \times \text{DIV}_{i,t} + \beta_5 \times \text{LEV}_{i,t} + \beta_6 \times \text{PPE}_{i,t} + \beta_7 \times \text{RET}_{i,t} + \beta_8 \times \text{RETVOL}_{i,t} + \beta_9 \times \text{OI}_{i,t} + \beta_{10} \times \text{OIVOL}_{i,t} + \epsilon_{i,t} \]

CE\(_{j,t}\) common shares cost of capital

CFSI\(_{i,t}\) sensitivity index of cash flows to invest

Conservatism\(_{i,t}\) conservatism

BM\(_{i,t}\), ratio of book value to market value of equity (controlling the growth opportunities of the company);

SIZE\(_{i,t}\) logarithm of assets (as control of the company);

DIV\(_{i,t}\) in the form of dividend payments, the index is equal to one and otherwise zero (control of the company's dividend payment);

LEV\(_{i,t}\) the company's debts than assets (leverage control of the company);

PPE\(_{i,t}\) gross property, plant and equipment were homogeneous in terms of assets (tangible assets of the company's control)

RETI\(_{i,t}\) return on equity (controlled company performance indicators);

OI\(_{i,t}\) operating profit was homogeneous in terms of assets (corporate performance management indicators);

RETVOL\(_{i,t}\) stock return volatility (risk and volatility control of the company);

OIVOL\(_{i,t}\) fluctuating operating income (controlling risk and volatility of the company).

3.3 Definitions of variables

1-3-3- Dependent variable

1-1-3-3- Common shares cost of capital

Gordon model the stock price can be obtained from the following models:

\[ P_0 = \frac{D_0(1 + g)}{k - g} \]

In this model, assuming that \( k \) represents the common shares cost of capital, \( k \) can be achieved from the following equation:

\[ K = CE_{j,t} = \frac{D_1}{P_0} + g \]
In the above model:

$D_1$: dividends paid per share after deducting increase in capital of receivables and cash earned

$P_0$: price per share at the beginning of the year

$g$: dividend growth rate is equal to the geometric mean dividend growth rate.

$C_{Ej,t}$: the common shares cost of capital

**2-1-3-3- Investment cash flow sensitivity**

Other research dependent variable is investment cash flow sensitivity index. In fact, this variable sensitivity interaction between investment and operating cash flow are formulated. In the theoretical foundation, different models for extracting the index are intended. In some cases, variables derived based on a model where the dependent variable is investment and operating cash flow is independent variable. In this model, the ratio of operating cash flow is same the cash flow sensitivity index of investment. In other models, another relationship is used to derive this index. In this study, the sensitivity of cash flows to invest, according to the study Hovakimian (2), from the following equation is obtained.

$$ CFSI_{i,t} = \sum_{n=1}^{n} \left( \frac{O CF_{i,t}}{\sum_{r=1}^{n} O CF_{i,t}} \right) \times \frac{1}{n} \sum_{r=1}^{n} I_{i,t} $$

$K_{fsy i,t}$: the sensitivity of cash flows to invest

$OCF_{i,t}$: operating cash flow (homogeneous in terms of assets, beginning of period)

$I_{i,t}$: the cost of capital (homogeneous in terms of assets, beginning of period)

**2-3-3- Independent Variable**

**1-2-3-3- Conservative interest**

Conservatism in accounting for differences in the approval of the recognition of gains and losses defined (3). The origin of conservatism uncertainty is about the future. The future is always uncertain and no way to accurately predict future requirements. Two sources lead to uncertainty in accounting. First, the accounting for the business units that are expected to be allocated in the future about the logic of the allocation is based on assumptions of expected future should be considered. Although the allocation of some of the assumptions and expectations will be recognized in later periods, but could never quite allocation process cannot be confirmed. The second most in accounting calculations and measurements based on the "value for money" determined that the required future estimated uncertain amount (4).

Conservatism shows the ability of accounting earnings to reflect potential economic benefit (positive return on equity) and economic losses (negative return on equity). Conservatism emphasis on the distinction between positive and negative stock returns (economic profits and losses), respectively. Conservatism than explanatory variable interest rate (in the profit/output regression) in a negative return on equity positive returns are achieved. The combination of timeliness and conservatism represents the transparency of interest as a qualitative features demanded by the users. (5). To calculate the variable Francis research (2004) and Basu presents...
(6), based on the average ratio of negative returns on equity is considered positive rate of return is calculated as follows:

\[
Conservatism = \frac{(RET_{j,t} + NEG_{j,t})}{RET_{j,t}}
\]

RAT\textsubscript{j,t} efficiency company j in year t

NEG\textsubscript{j,t} negative returns index, if RET<0 is equal 1, and if RET> 0, then is equal to zero.

4. EXPERIMENTAL RESULTS

1.4. Statistical analysis of research hypotheses

• The first sub-hypothesis: Profit conservatism with cash flow sensitivity of investment firms listed in the Tehran Stock Exchange has a significant relationship.

Table 1.4. Coefficients, and test results from the regression analysis model.

<table>
<thead>
<tr>
<th>Dependent variable: CFSI\textsubscript{i,t} cash flow sensitivity of investment</th>
<th>Regression coefficient</th>
<th>T value</th>
<th>probability statistic T</th>
<th>Adjusted R\textsuperscript{2} coefficient</th>
<th>Watson camera index</th>
<th>Probability of F statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>185335.235</td>
<td>1.149</td>
<td>.252</td>
<td>0.004</td>
<td>1.978</td>
<td>0.02775</td>
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<tr>
<td>Conservatism\textsubscript{i,t}</td>
<td>.012</td>
<td>.061</td>
<td>-.02559</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BM\textsubscript{i,t}</td>
<td>.011</td>
<td>.053</td>
<td>.807</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE\textsubscript{i,t}</td>
<td>.010</td>
<td>.021</td>
<td>.431</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIV\textsubscript{i,t}</td>
<td>.078</td>
<td>.022</td>
<td>.784</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV\textsubscript{i,t}</td>
<td>.061</td>
<td>.034</td>
<td>.901</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPE\textsubscript{i,t}</td>
<td>.011</td>
<td>.012</td>
<td>.404</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RET\textsubscript{i,t}</td>
<td>.052</td>
<td>.054</td>
<td>.605</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OI\textsubscript{i,t}</td>
<td>.038</td>
<td>.032</td>
<td>.322</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RETVOL\textsubscript{i,t}</td>
<td>.012</td>
<td>.041</td>
<td>.459</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OIVOL\textsubscript{i,t}</td>
<td>.018</td>
<td>.021</td>
<td>.771</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant results of overall regression model fitted show significant level of the value F (2.775) is significantly less than 5% (0.05> sig). On the other hand conservative base variable t (-2.559) shows that the 5% error level has a significant negative impact on the cash flow sensitivity of investment, the null hypothesis is rejected at the 95% confidence level is higher, if conservative in accounting firm decreases (increases) more, investment cash flow sensitivity also (decreases) increases. Also check the t-statistic control variables regression model suggests that none of the control variables at the significant level 5% have a significant effect on the dependent variable.

• Second sub-hypothesis: Profit conservatism with common shares cost of capital of listed companies in Tehran Stock Exchange has a significant relationship.
Sensitivity of Cash Flow of Investment and Cost of Capital on Conservatism

Table 2.4. Coefficients, and test results from the regression analysis model.

<table>
<thead>
<tr>
<th>Dependent variable: CE_{j,t} common shares cost of capital</th>
<th>Regression coefficient</th>
<th>T value</th>
<th>probability statistic T</th>
<th>Adjusted R^2</th>
<th>Watson camera index</th>
<th>Probability of F statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
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<td>.000</td>
<td>0.002</td>
<td>1.911</td>
<td>0.03145</td>
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<tr>
<td>Conservatism_{i,t}</td>
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<td>.061</td>
<td>-.04121</td>
<td></td>
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<tr>
<td>BM_{i,t}</td>
<td>.011</td>
<td>.053</td>
<td>.807</td>
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<td>.784</td>
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<td>LEV_{i,t}</td>
<td>.061</td>
<td>.034</td>
<td>.901</td>
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<td>.404</td>
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<td>.771</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant results of overall regression model fitted show significant level of the value F (3.145) is significantly less than 5% (0.05 > sig). On the other hand conservative base variable t (-4.121) shows that the 5% error level has a significant negative impact on the cash flow sensitivity of investment, the null hypothesis is rejected at the 95% confidence level is higher, if conservative in firms decreases (increases) more, common shares cost of capital also (decreases) increases. Also check the t-statistic control variables regression model suggests that none of the control variables at the significant level 5% have a significant effect on the dependent variable that is common shares cost of capital. It is said that the larger the size of the companies, the cost of common shares cost of capital also increased.

5. CONCLUSION

Conservative procedures are effective factors for financial activities and decisions. Accordingly, study the relationship between conservatism accounting and financial decisions is important. Conservative accounting from balance sheet point of view led to less identification of assets net and from gains and losses view recognizes the loss against profits. On the other hand, free cash flow is a measure of the value and performance of the company and indicates cash flow that the company after expenses for maintenance or development of assets at its disposal and is distributed among investors. The release does not mean that the company will be distributing the remaining cash among investors, but how to use it depends on the terms of the board of directors and company policies. Also, the cost of capital is one of the concepts that have been the focus of financial experts and a major factor in creating the gap between accounting profit and economic benefit, this concept is defined in different ways, but a definition that is more acceptable, the cost of capital as a minimum rate of return is defined as an economic unit with that value remains constant. According to the explanations given, a summary of the research hypothesis is as follows:

The first sub-hypothesis: Profit conservatism with cash flow sensitivity of investment firms listed in the Tehran Stock Exchange has a significant relationship.

Based on statistical analysis should be expressed, in fact, companies with a higher degree of conservatism of accounting, has lower cash flow sensitivity of investment. In other words, when conservative refers to the difference in the ability to recognize gains and losses are confirmed, reduced cash flow sensitivity of investment to cash flow generated by the reaction of investors to the company, increased. This approach is the concept that is in view of efficient contracts. Accordingly, due to the inverse relationship between investment and cash flow sensitivity can be said of firms are statistical sample, efficient contracting perspective on information systems is the
dominant perspective distortion. The result of this research study, Francis (9), expressed with increasing conservatism in financial reporting, cash flow sensitivity of investment increased. The investigation Jimmy Lee (10), state the companies with a higher degree of accounting conservatism, has less flexible from the perspective of cash flow sensitivity of investment.

Two sub-hypothesis: Profit conservatism with common shares cost of capital of listed companies in Tehran Stock Exchange has a significant relationship.

In analyzing this hypothesis should be stated, with reference to the differences in the approval of conservative for the recognition of gains and losses, the cost of common stock which refers to the opportunity cost of all capital investment in an enterprise is increased. In fact, conservative accounting earnings reflect potential economic benefit (positive return on equity) and economic losses (negative return on equity). Conservative emphasis on the distinction between positive and negative stock returns (profits and economic losses), in such circumstances, investors cannot be more positive perception of the company and the investment opportunity is better to invest in the company.

It found with increasing conservatism, earnings stability is reduced. It should be noted, the adoption of accounting standards that contain conservative procedures, guarantees the costs for the capital market. These standards reduce the predictability of income and actual and potential investors from getting in the way of proper economic decisions are diverted. Under these circumstances, the cost of capital on the common shares has been reduced according to the description. The result of this hypothesis is corresponded with research of Artiach, T. C. and Clarkson, P. M (8) which states the relationship between conservatism and common shares cost of capital is negative. The research, Paek, Chen & Sami (11) that confirmed negative relationship between conservatism and the common shares cost of capital.

REFERENCES