The Effect of Volatility of Earnings and Cash Flows on Stock Returns in The Listed Companies in Tehran Stock Exchange

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ABSTRACT

one of the main criterion of decision making in stock exchange market is the stock return. Stock return alone has informational content and most of the potential and active investors use in financial analysis and estimations. The return is calculated and recognized based on the commitment. Based on the commitment approach, recognizing the incomes and costs is not along with the pay and receive the cash. In other words, in the commitment method, the principles such as realization and compatibility are used for reflecting the incomes and costs and calculating the returns. So, there is a difference between the return and cash flow and although benefiting of the commitment accounting is not deniable in financial condition and reporting the results of the operation but the need for the data about input and output of the cash flow is a reality that cannot be denied. The present study tries to investigate the relationship between the earnings and cash flow volatility with the stock return. The present study is done on 48 participants of the companies listed in Tehran stock market between the years 2008 and 2012. The results indicated that the earning volatility has a positive correlation with the stock return but it has no relationship with cash flow. In addition, there is a positive and significant relationship between the earning returns, financial lever and stock return from among the controlling variables. The controlling variable of firm size and the ration of the market value to the official ratio has negative and significant relationship with stick return.

INTRODUCTION

The aim of accounting is to provide the financial information for the users in order to improve the decision making process and the aim of the present study and studying the accounting information is to evaluate the benefit of the information for the investors and other users. Financial statements are important informational resources which the investors need them to decide about the investing.

one of the main criterion of decision making in stock exchange market is the stock return. Stock return alone has informational content and most of the potential and active investors use in financial analysis and estimations [9].

Earning is the sum of the performance of the firm which is based on the commitment. Since the earning is used by many of the users as a criterion for evaluating the performance of the firm, it has a significant importance [18].

Results of the study by Dicho and Tung in 2008 indicated that the study of the evidences shows that the managerial beliefs are based on the fact the volatility has a negative effect on predicting the benefit. This study shows that the volatility of earnings is due to the accounting and economic factors and both of these factors reduce the estimation of the benefit [7].

In the past, the emphasize on commitment accounting in spite of having informational importance, limits the actions related to the improvement of financial reporting quality. The information related to the cash flow along with the information provided by accounting can be used in the judgment and decision making of the users of the financial information and it should be emphasized that although the role of commitment accounting earning is not deniable on providing the financial report but the need for the input and output cash flow is also a reality that cannot be ignored. The earning ability is one of the main factors of survival and development of the
private units in long term but other important factors are present and future cash flow. Commitment accounting and cash flow statement is basically related with different aspects of operation and events [1]. So, the present study investigates the effect of the earnings and cash flow volatility on the stock return.

**Literature Review:**

Iran is a country that is suffering from the lack of investing in recent two decades and achieving an acceptable economic growth ratio and has been considered on top of the main civilization goals as an indispensable part of development. More production and investment are necessary for economic growth [12].

Insecure condition for investment or conditional uncertainties includes the changes in earning of the report and emphasize on the imbalance of information among the managers and external investors. Managers activate in an unsecure condition and so, try to use the techniques for reducing these changes [21].

Studies of different researchers have shown that the risks always change during the time and it has been observed that it is the function of the present condition and future expected economic condition and also uncertainties about economy and investing. Uncertainty of the market about the future changes increases the volatility and deviations in predicting the future earnings which is in fact influencing the present earning of total share of the firm. Volatility and deviation of future expected income is effective on the uncertainty through affecting the total earning of the total share on the employment and unemployment condition [17].

Moreover, the findings of some studies by Graham and colleagues indicated that the managers of business units believe that the earning volatility reduces its predictability [19].

The return is calculated and recognized based on the commitment. Based on the commitment approach, recognizing the incomes and costs is not along with the pay and receive the cash. In other words, in the commitment method, the principles such as realization and compatibility are used for reflecting the incomes and costs and calculating the returns. So, there is a difference between the return and cash flow and though benefiting of the commitment accounting is not denteable in financial condition and reporting the results of the operation but the need for the data about input and output of the cash flow is a relativity that cannot be denied [13].

Cash is one of the most vital and important sources of each economic unit. Creating balance between the cash and the cash needs is one of the most important factors of economic health of each economic unit and continuity of their activities. In most of the financial decision, the models of evaluating the stock and evaluation methods of investments have pivotal role in cash flow.

Short term and long term volatilities of the cash flow can provide information for predicting the stock revenue. The operational cash flow is always one of the most important parts of the financial statement. The accounting earning cannot provide the proper information for the investors alone since the earning is based on the commitment method and follows the principles and assumptions of the accounting. So, it can be easily affected by the action and choices of the managers. In contrast, the cash flow have more objectivity and are less affected by the actions of the managers, results of the different researches indicated that the cash flow have informational content and so have the ability of affecting the decisions of the managers [24].

Active people in investment market are looking for the methods which help them to obtain more range. Predicting the decision making is the necessary condition of them. Prediction is effective when it is based on correct and reliable dat. Investors and other people have to estimate the future related to return and earning of the firm. Due to the increased trades in stock market of Iran and necessity of applying proper devices for studying the condition of the firms for investing, needs to use the patterns which can understand the financial condition of the firms in future and in uncertain condition. So, the present study deals with the relationship between the volatility of the benefits and cash flow with the total return of the firms listed in Tehran Stock Market. Various studies have been done regarding the return volatility and cash flow, the most important of which are:

Board and Day in 1989 in England studies the role of accounting earnings and cash flow of the operation in explaining the stock return and studied the informational content of the cash flow and that which of them can explain the stock return more. They have found that the effect of accounting earnings is more than the cash flow of the operations.

Easton and colleagues in 1992 studied the relationship between the earnings and return of the stock on a sample of firms listed in NY stock market in 1968-1986. They studied the correlation of these two variables assuming that by increasing the time period, their correlation would increase. Results of the study indicated that in longer periods of time, the correlation between two variables increases and determines more return.

Haugen and Baker [11] in the study titled as the effective common factors on stock return which was done in America, found that the volatility in cash flow has a negative effect on the stock return. But they found no evidences based on the relationship between the earning volatility and stock return.

Michelson and colleagues [20] tried to find the market response to the performance of the firm and its relationship with the return. They found that the firms with more flat return reported abnormal return average higher than other firms.
Charituo and colleagues [5] in the study about the relationship between the cash flow and return with the stock return of in Japan stock market. The study showed the evidence that first, the cash flow has more data content compared to the stock return and cash flow has no fixed earnings ratio but have more important role in stock market compared to the return.

Findings of Hant and colleagues in Washington America indicated that there are more flat returns for a fixed level of benefits compared to the right of the stock owners. The results after controlling the basic volatility of the cash flow indicated that the return volatility has higher informational content than the cash flow.

How and colleagues in 2001 did a study as the relationship between the cash flow and commitment with the stock ratio on 14 to 15 firms during the years 1988-1995 and investigated the extra content of the commitment in investment market of China. The results of the regression when return is studied with return have more explaining power than the operational cash flow. The earnings only predict 5.8 percent of the yearly changes in return while cash only predict 3 percent. The findings indicated that the earnings have more informational content than the cash flow. The results indicated that the temporal correlations show that earning have more stable power of prediction compared to the cash flow operation. Results of the regression show that the commitment increases information to cash flow.

Wei and Zhang [25] in the study done in Hong Kong showed that there is a positive relationship between the earning and return volatility. They suggested that the volatility return in resulted from the future earnings.

Huang [15] in the study of the temporal volatility of the expected cash flow and stock return in Waterloo in Canada and concluded that chronic cash flow have negative relationship with the future return.

Jorgensen et al., [17] in the study titled as the earning volatility and total return of the stock in America concluded that there is a positive relationship between the total share and earning volatility so that higher volatility is related to the higher expected return. In addition, they have found that there is a negative correlation between the total return and earning volatility in future. They have found a meaningful relationship between the stock return and volatility of cash flow.

Internal Studies:

Haghighat and Motamed [10] studied the relationship between the volatility and predictability of earnings. This research included 165 listed firms in Stock Exchange during 1995 to 1999. Findings of the study indicated negative relationship between volatility of the return in short time and long time.

Roudposhti and colleagues did a study as the informational content of the earnings and the volatility cycle. This study was done in Tehran Stock Exchange and a sample of 50 firms was selected during 1999 and 2008. In order to analyze the data the Panly method was used. The results indicated that earning has informational content. Another findings of the study indicated that the informational content has reduced in the firms with more flat return. Valipour [24] did a study as the relationship of the cash flow volatility for predicting the stock return. Population of the study was the firms listed in Tehran Exchange market including 50 firms during the period of 2001 and 2008. The Panly method was used to analyze the data. The results indicated that controlling variable of Beta and Official value affect the ratio of return.

Babaiean [2] studied the relationship between the changing in the components of balance sheet and changes in stock earnings. Components of the balance sheet which is selected as the independent variable include changes in common assets, long term assets, changes in common loans, changes in long term loan and changes in equity. The research included that there is no significant relationship between the return ration changes of the firms listed in Exchange market in 1994 to 1999 and the components of the balance sheet.

Zariffard and Nazemi (2004) did a study titles as the study of earning role and cash flow in measuring the performance of the firms listed in Tehran Exchange market which studied the role of the commitment figure on the relationship between the earnings and cash flow while measuring the performance of the firms listed in Exchange market. The commitment figures which differentiate the earnings from the cash flow become more important when the measurement period of the earnings and cash flow are short and when the amount of changes in assets of the firms are more. The results of the study indicated that the size of the companies have meaningful effect on the relationship between earning and cash flow but the effect of type of the industry is not well recognized on the cash and commitment flow.

Bahramfard and Shamsealal (2004) did a study of investigating the effect of accounting variables on abnormal earnings of the firms listed in Exchange market. The goal of the study was to study the effect of accounting variables on abnormal earnings of the firms. It was concluded that the information related to the financial lever, commitment components, return ratio, asset growth and changes in cash performance, loan ratio to the rights of the stockholders, loan cost and cash distribution affects the abnormal revenue.

3. Research Hypothesis:

Following hypotheses are investigated in order to find the answers to the question that "do the volatility of earning and cash flow affects the stock return?"
H1: there is a meaningful relationship between the earning volatility and stock return.
H2: there is a meaningful relationship between the cash flow volatility and stock return.

4. Research Method:
The frame techniques are used in this study. In addition, in order to test the hypothesis, the method of fixed combinational data is used. Moreover, the coefficient of the models was estimated by EGLS after doing the Chao test and Hussmann test and selecting the fixed effect or random/pooled method.

4.1 Population and Sample
Population of the present study included the firms listed in Tehran Stock Market.
In order to have a proper representatives of the population, the pooled method was used and so the following criterion were considered and if a firm had all the factors, it would be selected as one of the participants. These criterions include:
1. They have been selected before 2007 and have been active until the end of 2012.
2. In order to compare the information, the firms studied during the period and the end of their financial year is 29th of Esfand.
3. In order to have harmonious information, the firms should not be among the investing or intermediary firms including banks and insurance companies.
4. The firms should not have losses
5. The maximum performance interruption should be six months.
6. All the information needed should be available.
So, 48 firms have been selected from among the population during 2002 to 2012 which were compatible with all the criterions.

4.2. Research variables

Dependent variable:
Return is the ration of total earnings of the investment in a limited period of time to the primary investment which is consumed to obtain the earnings. The earnings which are created during a year are affected by two factors: one is increases in the price of each share (price return) and the other is the paid cash return (cash return) (Lashgari and Naderi, 2009). In other words, the stock return is the ration of total earnings of investing in a special period which is consumed in that period of time. Generally, the stock return can be calculated as below:

In this formula: \( R \) is the yearly return in the year \( t \); \( P_t \) is the cost of the normal stock in the year \( t \) and \( P_{t-1} \) is the cost of the stock in the year \( t-1 \); and \( DPS_t \) is the cash return of the normal stock in the year \( t \).
if the increase in the investment is from the place of the savings, collection and cash inputs, the stock return is calculated as below:

\[
R_t = \frac{(P_t - P_{t-1}) + DPS_t}{P_{t-1}}
\]

\[
R_z = \frac{(1 + a_1 + a_2)P_t + D_t - P_{t-1} - a_1x}{P_{t-1} + a_1}
\]

In this formula, \( X \) is the nominal value of each stock; \( a_1 \) is the percent of the capital increase from the collections and cash input of \( a_2 \) is defined as the investment increase from the savings.

Independent Variable
Earning volatility (\( Evol_{it} \)) in this study, in order to measure the earning volatility, the variances of the last year earnings were used before the components of five years.
cash flow volatility (\( CFvol_{it} \)) in order to measure the cash flow volatility, the variances of the cash flow of the last year were used before the components of five years.

Controlling variable:
Return of assets (ROA): returns of assets of firm \( i \) in year \( t \) is obtained by dividing the pure earning to the total assets.
\( ROA_i = \frac{\text{net earnings}}{\text{total assets}} \)
Financial lever (\( Lev_{it} \)): financial lever of the firm \( i \) in year \( t \) is the ration of all the loans to all the assets.
\( Lev_i = \frac{\text{total loans}}{\text{total assets}} \)
The ratio of the market value to the official value: the ration of the market value to the official value of the
firm i in year t is the ration of the market value of the stockholders to the official value.

\[ MTB_{it} = \frac{\text{Market value of the stockholders}}{\text{official value of the stockholders}} \]

Size of the firm (\( SIZE_{it} \)): size of the firm i in year t is the logarithm of total assets of the firms

Research model:

In order to test the research hypothesis, the multivariate regression was used.

Model 1 is based on the hypothesis that there is a significant relationship between the earning volatility and stock earning.

\[ R_{it} = \beta_0 + \beta_1 EVol_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 MTB_{it} + \beta_5 Size_{it} + \varepsilon_{it} \]

Model 2 is based on the hypothesis that there is a significant relationship between the cash flow volatility and stock earnings.

\[ R_{it} = \beta_0 + \beta_1 CFVol_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 MTB_{it} + \beta_5 Size_{it} + \varepsilon_{it} \]

In which:

- \( R_{it} \) = earning return of the company i in year t
- \( EVol_{it} \) = earning volatility of the company i in year t
- \( CFVol_{it} \) = cash flow volatility of the company i in year t
- \( ROA_{it} \) = asset return of the company i in year t
- \( Lev_{it} \) = financial lever of the company i in year t
- \( MTB_{it} \) = ratio of market value to official value of the company i in year t
- \( SIZE_{it} \) = size of the company of the company i in year t
- \( \varepsilon_{it} \) = error statement of the company i in year t

5. Testing the Hypotheses:

Research hypotheses are tested in the form of two models as below:

1. Testing hypothesis 1: after studying the regressions of normality of data distribution, no correlation, non-linearity, variance difference, residuals and validity of holding them, the results are provided in table 1 below.

As it is seen in table 1, it is seen that the modified coefficient for model 1 is 231331 which indicates the points that the independent variable and controlling of the model has the ability of explaining 23 percent of the independent variable.

Since the earning volatility had the coefficient of 159718 and significant level of 0.044, it can be stated that there is a positive and meaningful relationship between the earning volatility and return at the level of less than 0.5. so, \( H_0 \) is rejected with 95% confidence and so first hypothesis is approved. The results of about testing controlling variables shows that the coefficient of the asset return (0.196087), financial lever (0.213869), the ratio of market value to the official value (-0.7818704) and company size (-0.07818704) and since the level of the obtained error for them are 0.0000, 0.0000, 0.0000, 0.0034, respectively. It can be stated that there is a positive and meaningful relationship between the asset return and financial lever and the stock return. In addition, there is a negative and meaningful relationship between the size of the company and market ration to the official value with the stock return.

Testing the second hypothesis using the second model:
Results of the testing the second hypothesis after doing regression and removing the extra variable of financial lever, the best results are obtained in figure 3.

As it is seen in figure 3, the modified coefficient of this model is 0.224957 which indicates the point that independent variables and control ones of the second model are able to predict 22 percent of the changes in the dependent variable. Since the significant level of the cash flow changes is 0.3226 and more than the acceptable error of 5%, it can be indicated that there is no significant relationship between the cash flow volatility due to operational performance and stock return. So the second hypothesis is not approved.

Model:
\[ R_{it} = \beta_0 + \beta_1 CFVol_{it} + \beta_2 ROA_{it} + \beta_3 Lev_{it} + \beta_4 MTB_{it} + \beta_5 Size_{it} + \varepsilon_{it} \]
Method: Pooled EGLS (Cross-Section Effects)
Cross-Sections included: 48
Linear estimation after one-step weighting matrix
White cross-section standard errors & covariance (d.f corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(C)</td>
<td>7.594645</td>
<td>1.487243</td>
<td>5.106526</td>
<td>0.0000</td>
</tr>
<tr>
<td>CFVol</td>
<td>0.092446</td>
<td>0.087414</td>
<td>1.057561</td>
<td>0.2912</td>
</tr>
<tr>
<td>ROA</td>
<td>0.189628</td>
<td>0.065239</td>
<td>2.906669</td>
<td>0.0039</td>
</tr>
<tr>
<td>Lev</td>
<td>0.022734</td>
<td>0.076225</td>
<td>0.0291685</td>
<td>0.7707</td>
</tr>
<tr>
<td>MTB</td>
<td>0.674697</td>
<td>0.111931</td>
<td>5.087223</td>
<td>0.0000</td>
</tr>
<tr>
<td>Size</td>
<td>-0.569417</td>
<td>0.111931</td>
<td>-5.087223</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Conclusion:
What can be stated about conclusion and resulting of all the research hypotheses based on the significant and meaningful relationship between the earning volatility and cash flow volatility with the company return during 2006 to 2012, is that the variable of the earning volatility has a positive relationship with the stock return but cash flow has no significant relationship. In addition, there is a positive and significant relationship between the variables of the asset return, financial lever and the stock return. However, the variables of the company size and the ratio of market value and the market value to the official value have significant and negative relationship with the stock return.

Suggestions based on research results:
1. According to the first hypothesis, investors and shareholders are recommended to become familiar with the concept of higher earnings volatility and use in their decision makings. Because according to the results, volatility in earnings has positive and significant relationship with stock returns.
2. Based on the results of the second hypothesis, investors and shareholders are recommended to use the concept of volatility in cash flows in their predictions decisions and act. Because according to the results of this study, these volatilities are not significantly related to stock returns.

Suggestions for Future Research:
1. The effects of inflation and other macroeconomic parameters are related swings and streamline being the final cash dividend and stock returns.
2. Study of longer duration and the variables calculated on a weekly basis or on the basis of quarterly data.
3. Identification and consideration of other factors affecting stock returns are not investigated in this study, such as the ratio of book value to market value (BV / MV), the ratio of price to earnings per share (P / E),
the volume of transactions, financial structure, profitability ratios and activity ratios) in terms of performance and workflow.

4. Another study on the impact on stock return volatility of earnings and cash flows for each of the main and secondary stats the stock exchange.

REFERENCES


