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## **THE RELATION BETWEEN CHANGES OF CASH FLOW STATEMENT'S COMPONENTS AND MARKET VALUE OF ACCEPTED COMPANIES IN TEHRAN STOCK EXCHANGE**

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### **ABSTRACT**

As an information system, accounting can assist users by providing them with relevant and reliable information for making reasonable decisions. The information including financial statements can meet the needs of financial users. One of these financial statements is cash flow statement. Thus, this study surveys the relationship between changes in the components of cash flow statement and market value changes of accepted companies in Tehran Stock Exchange from 2001-2004. For evaluating five subsidiary hypotheses and a main hypothesis, two-variable regression and multiple-variable regression was used. None of the hypotheses was confirmed. This means that the changes in component of cash flow doesn't have any significant correlation with market value of the companies. One of the factors for the lack of such relationship between these variables is non-efficiency of Iran's stock exchange market and higher volatility of the independent variable versus dependent variable.

**Key-words:** cash flow statement, market value, efficient market, net income, operating cash flow, investment, finance

### **INTRODUCTION**

Since balance sheet and income statement are provided with accruals and accruals result from assumptions and estimations, offering cash flow statement as an important complement statement for income statement seems necessary. Cash flow statement shows information of cash input and output, assisting investors and creditors in evaluating access to cash flows and timing or ambiguity about future perspective of input cash flow in a business entity. According to FASB, first focus of financial reporting is offering information on the performance of an entity, provided by the return and its components. Investors and creditors, who intend to evaluate cash flows and net input cash flow in the entity, are the main users of this information. As a foundation of capital market, Tehran Stock Exchange can have a significant role in reaching these goals, creating a good environment for healthy investments and a balance in return and risk of an investment efficiently. During investment on joint stocks, investors should conduct broad studies. In other words, they should consider many factors for investment. If investors start without considering important factors, they won't get desirable results. This is much likely in the countries with inefficient stock market such as Iran. The main goal of investors is gaining return and cash from investments. Although the level of stock prices in an entity is affected by different factors such as general economic conditions, market return rate, and current life of investment market, creating a stable cash flow in it is an essential factor in the success of the company as well.

### **LITERATURE**

Ball and Brown (1968) examined the relationship between cash flow and unusual return. They observed that return of positive and negative cash flow statement's changes is lower than changes in return's components. Therefore, the correlation between cash flow and unusual return is not significant. Thus, cash flows and return don't have a significant correlation. Beaver and Dukes (1972) agreed with Ball and

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Brown (1968). They found that the correlation between unexpected net return and return is stronger than the correlation between cash flows and return. Patell and Kaplan (1977) examined if operating cash flow can offer the information content more than net return. They concluded that cash flow doesn't have any extra information content. Bowen et al. (1986) used 4 models with explanatory variables of net return, net return plus depreciation, operating cash flow, and past cash flows to predict operating cash flow one or two years later. They found that traditional measurement of net return plus depreciation flows are significantly correlated with accruals' return; while the correlation of other cash flow measures and return is weak.

In a study titled "Increasing information content of accruals and cash flow", Arabmazar Yazdi (1995) aimed to answer two questions: 1. Does cash flow data have higher information content than accruals? and 2. Does data of accruals have higher information content than cash flow? Results of testing hypotheses showed that cash flow's data don't have higher information content than accruals. Also, there is no significant correlation between unexpected changes of operating cash flows and unexpected changes of stock market. Mahmoodi (2003) tested 6 hypotheses to examine the correlation between changes of cash flow statement's components and stock return. He found that at 95% confidence level, there is no significant correlation between changes of cash flow statement's components individually and totally and stock return at 95% confidence level.

### **THE IMPORTANCE OF STOCK PRICE CHANGE**

Investors are the most deserved group for gaining on-time, relevant, and efficient information. Changes of stock price are an important and effective source for them in evaluating the status of business unit's efficiency, and decision-making. Thus, the most important issue for investors is the possibility of predicting price changes. In 1960s, there were some studies on predicting price, the effect of information on price, behavior of capital market, the ways of price changes, and the correlation of these changes with capital market. Their results led to the formation of a hypothesis about the functions of capital market under the title of efficient market. Their goal was examining the reflection of stock market to getting and processing information to see if the information affects stock prices directly and immediately. Capitalist countries have paid special attention to the efficiency of capital market. In case of efficiency in capital market, stock prices are determined fairly and investors become assured for investments. Otherwise, there is the possibility of price prediction, leading to the profit of a group at the expense of other groups' losses.

### **EFFECTIVE FACTORS IN STOCK PRICE**

Volatility of stock price in all stock exchange markets is common. Stock price is affected by many factors each of which creates volatility and changes in stock market differently. They can be divided into internal and external factors. Internal factors are inside the company. They may be decisions, made inside the company, affecting stock price. Examples are earnings or return per share, trend of stock price in the past, financial structure of the company, demands for the products, changes in accounting trends, management of the company, ownership and merger, earnings and policies for its division, reward stock and stock analysis, capital increase. External factors refer to the events and decisions which occur outside the company, but affect stock price of the company. They include economic, political / military, and cultural / behavioral factors.

### **HYPOTHESES**

H1. There is a significant correlation between changes of operating cash flow statement's components and market value changes in the company.

H1<sub>a</sub>. There is a significant correlation between the changes of net cash flow related to operating activities and market value changes in the company.

H1<sub>b</sub>. There is a significant correlation between the changes of net operating cash flow related to return on investment and market value changes in the company.

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H1<sub>c</sub>. There is a significant correlation between the changes of net operating cash flow related to tax on income and market value changes in the company.

H1<sub>d</sub>. There is a significant correlation between the changes of net operating cash flow related to investing activities and market value changes in the company.

H1<sub>e</sub>. There is a significant correlation between the changes of net operating cash flow related to financing activities and market value changes in the company.

**METHODOLOGY**

This study uses descriptive methods with applied goals based. It uses field method for data gathering. To test subsidiary hypotheses, two-variable regression and to test main hypothesis, multi-variable regression was used. For the large number of independent variables for testing above hypothesis, *F* test was used. Regarding parameters of regression model for testing which t-test was used, the hypotheses were as follows:

H0:  $\beta = 0$

H1:  $\beta \neq 0$

Independent variables of this study are components of operating cash flow statement. While, dependent variable is market value changes of those companies. Statistical population includes all accepted companies in Tehran Stock Exchange from 2001-2005. Examining financial information of the companies, it was found that only stocks of 267 companies were actively transacted in Tehran Stock Exchange (n= 267). Thus, statistical population with the size of 267 was achieved. To select sample, stratified random sampling was used. For this purpose, the companies were classified based on their industry. Then, according to their frequency, sample size in each group was achieved by simple random sampling. 71 companies had required information of this study and were active in Tehran Stock Exchange.

**RESULTS AND DISSCUSION**

Gathered data using theoretical model and regression tests were analyzed by SPSS software. As seen in Table 1, R coefficient which shows the type of correlation between dependent and independent variables and R<sup>2</sup> determination coefficient that shows the percent of changes in dependent variables by independent variable are very low in 2001-2002, 2002-2003, and 2003-2004 in cumulative state. This indicates that there is no significant correlation between the changes of operating cash flow statement's components (operating activities, return on investment, tax on income, investment, and financing activities) and market value changes in the company. *t* value which shows the correlation's significance between dependent and independent variable is very low in 2001-2002, 2002-2003, and 2003-2004 in cumulative state. Also, *Sigt* is above 0.05 for all years. This indicates that at 95% confidence level, H<sub>0</sub> is accepted. In variance analysis, *F* value in 2001-2002, 2002-2003, and 2003-2004 in cumulative state is lower than Table F. Also, *SigF* is above 0.05 for all years. This indicates that there is no linear correlation between the changes of net operating cash flow and market value changes in the company at 95% confidence level.

**Table 1. Results of H1<sub>a</sub>**

| Year      | $\alpha$ | $\beta$ | R     | R <sup>2</sup> | t      | sigt  | F     |
|-----------|----------|---------|-------|----------------|--------|-------|-------|
| 2001-2002 | 0.023    | 0.044   | 0.093 | 0.009          | -0.776 | 0.440 | 0.602 |
| 2002-2003 | 0.181    | 0.003   | 0.033 | 0.001          | 0.278  | 0.782 | 0.077 |
| 2003-2004 | 0.051    | 0.011   | 0.044 | 0.002          | 0.369  | 0.713 | 0.136 |
| 2004-2005 | -0.238   | -0.035  | 0.216 | 0.046          | -1.836 | 0.071 | 2.362 |
| All years | 0.018    | 0.004   | 0.031 | 0.001          | 0.514  | 0.607 | 0.265 |

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**Table 2. Results of H1<sub>b</sub>**

| Year      | $\alpha$ | $\beta$ | R     | R <sup>2</sup> | t      | sigt  | F     |
|-----------|----------|---------|-------|----------------|--------|-------|-------|
| 2001-2002 | 0.071    | 0.019   | 0.067 | 0.004          | 0.554  | 0.581 | 0.307 |
| 2002-2003 | 0.207    | 0.001   | 0.490 | 0.002          | 0.403  | 0.688 | 0.162 |
| 2003-2004 | 0.028    | -0.015  | 0.100 | 0.010          | -0.824 | 0.413 | 0.680 |
| 2004-2005 | -0.248   | 0.000   | 0.024 | 0.001          | 0.195  | 0.846 | 2.038 |
| All years | 0.000    | 0.000   | 0.028 | 0.001          | 0.471  | 0.638 | 0.222 |

**Table 3. Results of H1<sub>c</sub>**

| Year      | $\alpha$ | $\beta$ | R     | R <sup>2</sup> | t      | sigt  | F     |
|-----------|----------|---------|-------|----------------|--------|-------|-------|
| 2001-2002 | 0.025    | 0.051   | 0.178 | 0.032          | 1.467  | 0.147 | 2.154 |
| 2002-2003 | 0.199    | 0.016   | 0.045 | 0.002          | 0.369  | 0.714 | 0.136 |
| 2003-2004 | 0.049    | -0.134  | 0.200 | 0.040          | -1.657 | 0.102 | 2.746 |
| 2004-2005 | -0.249   | 0.000   | 0.159 | 0.025          | -1.321 | 0.191 | 1.744 |
| All years | 0.006    | 0.000   | 0.012 | 0.000          | -0.193 | 0.847 | 0.037 |

**Table 4. Results of H1<sub>d</sub>**

| Year      | $\alpha$ | $\beta$ | R     | R <sup>2</sup> | t      | sigt  | F     |
|-----------|----------|---------|-------|----------------|--------|-------|-------|
| 2001-2002 | -0.005   | -0.005  | 0.051 | 0.003          | 0.421  | 0.675 | 0.177 |
| 2002-2003 | 0.190    | 0.002   | 0.017 | 0.000          | 0.143  | 0.887 | 0.020 |
| 2003-2004 | 0.079    | 0.005   | 0.137 | 0.019          | 1.147  | 0.255 | 1.315 |
| 2004-2005 | -0.234   | 0.000   | 0.117 | 0.014          | -0.976 | 0.333 | 0.952 |
| All years | 0.002    | -0.001  | 0.034 | 0.001          | -0.578 | 0.564 | 0.334 |

**Table 5. Results of H1<sub>e</sub>**

| Year      | $\alpha$ | $\beta$ | R     | R <sup>2</sup> | t      | sigt  | F     |
|-----------|----------|---------|-------|----------------|--------|-------|-------|
| 2001-2002 | 0.006    | 0.000   | 0.040 | 0.002          | 0.330  | 0.742 | 0.109 |
| 2002-2003 | 0.182    | -0.001  | 0.012 | 0.000          | -0.098 | 0.923 | 0.010 |
| 2003-2004 | 0.060    | 0.000   | 0.012 | 0.000          | -0.097 | 0.923 | 0.009 |
| 2004-2005 | -0.238   | 0.005   | 0.030 | 0.001          | 0.248  | 0.805 | 0.062 |
| All years | 0.002    | 0.000   | 0.000 | 0.000          | -0.001 | 0.999 | 0.000 |

Results of H1 (main hypothesis) test are shown in Table 6.

**Table 6. Results of H1 test**

| Year      | $\alpha$ |           |           |           |           |           | R     | R <sup>2</sup> |
|-----------|----------|-----------|-----------|-----------|-----------|-----------|-------|----------------|
|           |          | $\beta_1$ | $\beta_2$ | $\beta_3$ | $\beta_4$ | $\beta_5$ |       |                |
| 2001-2002 | 0.033    | 0.011     | 0.006     | 0.053     | 0.008     | 0.000     | 0.210 | 0.044          |
| 2002-2003 | 0.239    | 0.004     | 0.002     | 0.020     | 0.002     | 0.003     | 0.460 | 0.216          |
| 2003-2004 | 0.043    | 0.006     | 0.009     | 0.112     | 0.004     | 0.000     | 0.237 | 0.056          |
| 2004-2005 | 0.261    | 0.002     | 0.011     | 0.000     | 0.000     | 0.016     | 0.239 | 0.057          |
| All years | 0.003    | 0.005     | 0.000     | 0.000     | 0.001     | 0.000     | 0.058 | 0.003          |

| t <sub>1</sub> | t <sub>2</sub> | t <sub>3</sub> | t <sub>4</sub> | t <sub>5</sub> | Sigt <sub>1</sub> | Sigt <sub>2</sub> | Sigt <sub>3</sub> | Sigt <sub>4</sub> | Sigt <sub>5</sub> | F     | SigF  |
|----------------|----------------|----------------|----------------|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------|-------|
| -0.296         | 0.144          | 1.375          | -0.617         | 0.429          | 0.768             | 0.886             | 0.174             | 0.540             | 0.670             | 0.470 | 0.828 |
| 0.380          | 0.598          | 0.440          | 0.145          | -0.217         | 0.705             | 0.552             | 0.662             | 0.885             | 0.829             | 0.745 | 0.816 |
| 0.172          | -0.382         | -1.355         | 1.021          | -0.073         | 0.864             | 0.704             | 0.181             | 0.311             | 0.942             | 0.586 | 0.740 |
| 0.058          | -0.358         | -1.374         | -1.015         | -0.654         | 0.954             | 0.721             | 0.175             | 0.314             | 0.516             | 0.613 | 0.719 |
| 0.612          | 0.042          | -0.203         | -0.605         | -0.059         | 0.541             | 0.966             | 0.839             | 0.546             | 0.953             | 0.148 | 0.989 |

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As seen in Table 6, R and R<sup>2</sup> determination coefficient are very low in 2001-2002, 2002-2003, and 2003-2004 in cumulative state. This indicates that there is no significant correlation between the changes of operating cash flow statement's components (operating activities, return on investment, tax on income, investment, and financing activities) and market value changes in the company. Only in 2002-2003, R<sup>2</sup> is 0.216, showing a weak correlation between dependent and independent variables. t value is also very low in 2001-2002, 2002-2003, and 2003-2004 in cumulative state. Also, Sig t is above 0.05 for all years. This indicates that at 95% confidence level, H<sub>0</sub> is accepted. In variance analysis, F value in 2001-2002, 2002-2003, and 2003-2004 in cumulative state is lower than Table F. Also, Sig F is above 0.05 for all years. This indicates that there is no linear correlation between the changes of dependent and independent variables.

### **CONCLUSION**

According to the results, since R and R<sup>2</sup> coefficients for all years were very weak, none of the hypotheses were confirmed. Thus, there is no correlation between changes of operating cash flow statement's components. This result agrees with Ball and Brown (1968) and Patell and Kaplan (1977). The reason for such lack of correlation can be explained. Examining the trend of operating cash flow statement's components and market value during study period showed that changes in independent variables have had lower fixed trend than changes in dependent variable. Percentage of decrease and increase of independent variables has a significant difference with decrease and increase of market value. For example, if changes of operating cash flow statement's components had 800% increase, market value had 30% increase. This difference led to the lack of a significant correlation between these variables. Thus, many changes of independent variables couldn't explain low changes of market value. From the other hand, since financial events in accruals accounting system are recorded and reported, cash flows have lower predictability than net return. Inefficiency of Tehran Stock Exchange is another reason. In an efficient market, stock prices reflect all information and new information affects stock price very fast in a way that investors decide based on available information and expectations from stock return in future. But, Tehran Stock Exchange doesn't have such features. Thus, investors have a short-term attitude to return on investments for the instability of capital market whereas most companies get return in long-term, not observing investment effects in first year. Tehran Stock Exchange is the main source of capital equipment and allocation, playing a major role in economic development. Thus, the more efficient the market, the better role it plays in reaching goals. For helping its efficiency, creating some rules in this respect, and people's involvement in investment, some measures should be taken to force the companies to obey these rules and provide users and investors with correct, and on-time information offers, to avoid ambiguity in decision-making.

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