

Research Article

The Relationship between Operational Financial Ratios and Firm's Abnormal Stock Returns

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Abstract: The investment in stock market and other stocks issued by the firms require sufficient knowledge and understanding of the financial reports and information of the business firms. This study aims to investigate the effects of three types of financial ratios, i.e., profitability/liquidity, continuity and efficiency of business firms over the investors' abnormal stock returns. To achieve the aim of the study, the ratios were categorized into two groups namely fundamental ratios and risk-proxy ratios. The financial ratios make a relationship between various economic variables of a firm and make it possible to compare financial information of various firms. The financial ratios also make it easier to evaluate the firm's performance through examining the relationship between the variables of the financial statements. The results of this study showed that there is a significant relationship between the most fundamental accounting variables, i.e., return on assets, operational cash flow, changes in return on assets, changes in net profit margin and total asset turnover. The existence of this relationship shows the high dependence of abnormal stock returns on its intrinsic fundamental variables. However, there was not any relationship the liquidity ratio and stock returns. Moreover, there was not any significant relationship between the majority of risk proxy variables i.e., the ratio of accruals, operating leverage and stock issuance indicating the independence of abnormal stock returns from risk proxy variables.

Keywords: Abnormal stock returns, activity ratios, operational financial ratios, profitability, performance ratios

INTRODUCTION

The investment in stock market and other stocks issued by the firms requires sufficient knowledge and understanding of the financial reports and information of the business firms. Generally, when people decide to invest in stocks issued by the firms, they need to obtain the financial information of the firms and analyze and interpret the information for a better decision-making on investment. Financial information and various fundamental and risk-proxy variables as well as analysis and interpretation of the information play a crucial role in evaluation and selection of the type of common stocks. One of the main criteria for selecting an investment in stock market is the expected return of the investment. Stockholders and investors are required to identify the major factors that determine the return of the investment. The sufficient knowledge of the variables and the attainment of an appropriate model can improve the investment decisions. Creditors need a model to assist them in assessing the customers' abilities to pay back the loans and financial facilities as well as their interests. The investors, whether personal stockholders or the firms, are in need of a model to assess the performance of the companies and determine their expected stock returns. This study aims to find the

variables with the greatest potential to explain the stock returns. In fact, the identification of determining factors of stock returns and providing an appropriate model help the investors in optimal allocation of resources in the micro and macro levels.

The study of related literature shows that the stock valuation approaches can be categorized into fundamental valuation approach and risk-proxy valuation approach. For the first time, Berk (1995) used the fundamental valuation approach to examine the factors affecting the stock return. The risk-proxy valuation approach was introduced for the first time by Fama and French (1996). They concluded that the size and ratio of book value to market value as two risk indicators are significantly related to future stock returns. In this study, the variables based on fundamental valuation approach such as the ratio of assets return and operating cash flow of the firm and the variables based on risk proxy valuation approach such as operational leverage, accruals and stock issuance in a particular fiscal year determined by a firm will be examined. The main reason for this research to focus on the operational financial ratios of the firms is that the financial ratios can simply and clearly present the significant information regarding the operations and financial statements of a business firm. The financial

ratios make a relationship between various aspects of economic position of a business firm and make it possible to compare the financial information of different firms. The financial ratios also make it easier to evaluate a business firm through the identification of the relationship between the items included in the financial statements.

The following sections of this study are organized in a way that, first, the theoretical principles of the study and the determinants of stock returns will be discussed. Next, the research background, the hypotheses and the research methodology will be explained. Then, the results obtained from hypotheses tests will be given. Finally, the conclusions of the study will be presented.

THEORETICAL BASIS AND RESEARCH BACKGROUND

Stock return is regarded as one of the complicated and multifaceted concepts in accounting and is interconnected with the criteria of profit, value and price. Although the criteria of profit, value and return can be extracted from the financial statements, these criteria are different from economic profit, economic value and economic returns which are of interest for many users of financial information. The stock analysts have always made an attempt to use accounting information and financial statements as well as other available information to identify the stock prices which are evaluated lower than their intrinsic values. If we can make a relationship between accounting variables and economic variables, then using the analysis of financial statements, there will be an opportunity to provide a framework to determine the potential profits, value and economic return. Below are some of the main variables that their relationships with the stock return have been approved in the literature.

Fama and French (1992) summarized the findings of the previous empirical studies and relied on Fama and MacBeth (1973) cross-sectional regression to examine the relationship between the variables of Beta, firm size, the ratio of book value to market price, financial leverage and the ratio of profit to expected stock returns in the US capital market. They concluded that the systematic risk (Beta) cannot explain the difference in stock returns. They suggested that from among the variables, the two variables of "firm size" and "the ratio of book value to market price" can better explain the differences in average returns. The empirical findings of Fama and French (1995) showed that there is no significant relationship between Beta and stock return by controlling the firm size and Beta. Moreover, they concluded that the average stock returns can be explained through the combination of variables such as firm size, the ratio of book value to market price and the ratio of earnings to costs.

In their continuous research studies, Fama and French (1992, 1993, 1996, 1998) examined the

explanatory power of the variables of firm size, financial leverage, E/P, B/M and Beta in cross-sectional regression from 1963 to 1990. The results of their studies showed that the ratio of B/M and firm size have the most significant relationship with stock returns. The explanatory power of other variables is insignificant whenever these two variables are in the regression.

In their study, Penman *et al.* (2005) asserted that the ratio of book value to price of each share (B/P) is related to two variables of "book value to the price" and "financial leverage". There is also a negative significant relationship between B/P and future stock returns. Moreover, both of the variables of "financial leverage" and "book value to price" can better explain the stock returns beyond the famous variables of Fama and French (1992) namely "the book value to the price".

In their study, Clubb and Naffi (2007) examined Berk (1995) fundamental valuation approach in British firms. Their study period lasted from 1980 to 2000. The most fundamental variables in their study were the expected return on equity ratio and the expected B/M ratio. They found out that these three variables explain a major part of stock returns in British firms. Furthermore, the explanatory power of the models can be increased by adding variables based on risk proxy indicators such as research and development costs, market momentum and market price. The results of their study showed that fundamental valuation influences the stock returns of the firms and expected stock returns.

Lam (2009) examined the effects of the variables of Beta, firm size, the ratio of book value to market price and the ratio of earnings to price on the stock returns in Hong Kong Stock Exchange. He came to this conclusion that there was not a relationship between Beta and stock returns in Hong Kong Stock Exchange; however, there was a significant relationship between the three variables of "firm size", "the ratio of book value to market price" and "the ratio of earnings to price" and the stock returns. Therefore, the empirical evidences indicate that the violating factors of Capital Asset Pricing Model (CAPM) cannot be attributed to a sample, a working environment, or a specific capital market.

Mehrani and Mehrani (2003) investigated the relationship between the ratios of profitability and stock returns in Tehran Stock Exchange. Their research time period lasted for two years and they investigated the variables of net profit margin, operating profit growth, sales growth, profit before tax payment, asset turnover and return on equity. The results of their study showed that net profit margin, return on equity and profit before tax payment are the best criteria for predicting stock returns. In this study, we develop (Mehrani and Mehrani, 2003) study from two aspects. First, the research time period used in this study is much longer than their research time period. Second, besides using

profitability ratios, in this study, the ratios of duration of the event and the ratios of debt (leverage) were used to derive an optimal model to predict the abnormal stock returns.

In his studies, Bagherzadeh (2003, 2005) examined the factors that influence stock returns in Tehran Stock Exchange from 1997 to 2004. The results of his studies showed that there is a positive linear relationship between systematic risk and stock returns in Tehran Stock Exchange; however, this relationship was statistically insignificant. Furthermore, among the variables under study, three variables of firm size, the ratio of book value to market price and the ratio of earnings to price were the most important variables in determining the stock returns. However, the existence of the relationship between the three above-mentioned variables and the stock returns was not supported by the established financial literature.

Saghafi and Salimi (2005) investigated the relationship between some basic variables of accounting and stock returns. In their study, they concluded that there is a significant relationship between the variables of 'changing the profitability', 'total assets' and 'the type of auditor's report' with the abnormal stock returns. The above-mentioned three variables explained 48% of the variation in the abnormal stock returns.

METHODOLOGY

This study is a quasi-experimental research in nature which follows practical aims. The study is an inductive correlational research which tests the hypotheses. The study is also a descriptive survey research for gathering the required data. The study requires the collection and analysis of the firms' existing data so that from the study of theoretical basis, it can be regarded as a library research.

Research hypotheses: The research hypotheses can be divided into main and sub-hypotheses, as described in the following sections. The main hypothesis is determined as follows:

The firms with higher F-score (good firms) have a higher future stock returns in comparison with the firms with lower F-score (bad firms).

The sub-hypotheses of this research are as follows:

- There is a significant relationship between return on equity ratio and abnormal stock returns ratio.
- There is a significant relationship between the ratio of operating cash flow to total assets and abnormal stock returns ratio.
- There is a significant relationship between changes in return on equity ratio and abnormal stock returns ratio.

- There is a significant relationship between the ratio of accruals and abnormal stock returns ratio.
- There is a significant relationship between the degree of operating leverage (the ratio of debt to assets) and abnormal stock returns ratio.
- There is a significant relationship between changes in cash flow ratio (liquidity) and abnormal stock returns ratio.
- There is a significant relationship between stocks issued by the firms and abnormal stock returns ratio.
- There is a significant relationship between gross profit margin change and abnormal stock returns ratio.
- There is a significant relationship between the change in total assets turnover and abnormal stock returns ratio.

Population and sample of the study: The research time period covers the years 2000 to 2008. The population of the study includes all the firms which have been listed in Tehran Stock Exchange prior to the year 2000. The number of active firms in Tehran Stock Exchange was around 296 in the beginning of the year 2000. The statistical sample of the study was chosen by taking the following criteria into account:

- The firm should not be chosen from among financial intermediaries.
- The firm's fiscal year should be the end of March.
- The firm should not have deadlock more than 5 months.
- In all the research time period (2000-2008), the firm's stock should be traded at least once in the last month of fiscal year.
- The firm should be listed in Tehran Stock Exchange prior to the year 2000.

The firms that did not have the above-mentioned criteria were removed from the list so that the number of firms reduced to 180. Since the population of the study was so limited, the research sample was selected using Cochran's formula at the 95 % confidence level:

$$n \geq \frac{N Z_{\alpha}^2 \times P(1-P)}{(N-1)\epsilon^2 + Z_{\alpha}^2 \times P(1-P)} \quad (1)$$

According to the above-mentioned criteria, from among 180 firms, 54 firms were selected as the research sample.

Research variables and their calculating process: Considering the research hypotheses, the research variables and how to calculate each of these variables are explained in the following sections:

- **Independent variables:**
 - **Return on Assets (ROA):** It is calculated by dividing a company's annual earnings by its total assets. ROA is displayed as a percentage.
 - Return on Assets (ROA) = Net income/Average total assets
 - **Cash Flow from Operations (CFO) to total assets:** Cash flow from operations to total assets = Cash flow from operations/Average total assets
 - **Changes in Return on Assets (Δ ROA):** Changes in return on assets = (Investment return ratio in year t)-(Investment return ratio in year t-1)
 - **The ratio of accruals:** The ratio of accruals = (Cash flow from operations/Net income)/(Total assets in the beginning of year t)
 - **Operating leverage change (the ratio of debt to assets) (Δ Lever):** The ratio of debt to assets = (Total long-term debt in year t/Average total assets)-(Total long-term debt in year t-1/Average total assets)
 - **Change in cash flow ratio (Liquidity) (Δ Liquid):** Change in cash flow ratio (Liquidity) = (Current assets in year t/current liabilities in year t)-(Current assets in year t-1/current liabilities in year t-1)
 - **Imaginary number for stock issuance:** When the firms have financial hardship, they can increase their capital through stock issuance which reflects their inability to create sufficient internal funds to fulfill their future liabilities (Piotroski, 2000). Furthermore, these firms probably issue the stocks when the firm's stock price has come down (high cost of capital). This action highlights the firm's poor financial conditions, so the stock issuance is considered as a negative sign (Piotroski, 2000). If the firm issues common stock in year t, this variable is taken to be zero.
 - **Gross profit margin change (Δ Margine):** Change in gross profit margin = (Gross profit in year t/Total sales)-(Gross profit in year t-1/Total sales)
 - **Change in total assets turnover (Δ Turn):** Change in total assets turnover = (Sales in year t/Average total assets)- (Sales in year t-1/Average total assets)
- **Dependent variable:** The abnormal stock return of the firm is the only dependent variable in this study. The abnormal stock returns can be calculated from Eq. (2):

$$AR_{it} = R_{it} - E(R_{it}) \quad (2)$$

where,

AR_{it} = Abnormal stock returns of firm i in year t

R_{it} = Stock return of firm i in year t

$E(R_{it})$ = Expected return of firm i in year t

As it can be seen in the Eq. (2), to calculate the abnormal stock returns, the actual stock returns and expected returns of the firms in each year are needed. Here it is explained how we can calculate these two components.

- **Calculating the ratio of return on equity:** The ratio of return on equity can be calculated from Eq. (3):

$$R_{it} = \frac{((1+\alpha) \times P_1) - P_0 + D_0 - C}{P_0} \quad (3)$$

where,

R_{it} = Stock returns of firm i in year t

α = Percentage of capital increase

P_1 = Stock price at the end of fiscal year

P_0 = Stock price in the beginning of fiscal year

D_0 = Degree of distribution of profit

C = The amount of stockholders' cash for increasing capital

Since the stock returns calculation using the Eq. (3) requires a lot of information about decisions of the communities, increase of capital, profit sharing and etc, to avoid possible errors and biases of the data, the indices of cash return and price of each firm were obtained from the database of Tehran Stock Exchange. Then, using Eq. (4), the stock return of each firm in each year was calculated:

$$R_{it} = \frac{TDP_{it} - TDP_{it-1}}{TDP_{it-1}} \quad (4)$$

where,

TDP_{it} = The index for cash return and price at the end of the year t for the firm i.

Then, the natural logarithm of stock returns for the time period t was used to normalize the calculated stock returns.

$$RET_{it} = Ln(1 + R_{it}) \quad (5)$$

where,

R_{it} = The stock returns of firm i in year t and is regarded as the basis of our calculations for actual stock returns and Beta.

In this study, the ratio of stock returns with a 6-month interval was calculated for different time periods. It is expected that a 6-month period is required to examine the behavioral reaction of the investors to financial information of the firms.

Table 1: Descriptive statistics of the research variables

	Δ Turn	Δ Margine	Issue	Δ Liquid	Δ Lever	Accrual	CFO	Δ ROA	ROA	Ri
Mean	-0.0159	-0.0177	0.70740	-0.0150	-0.0076	0.0617	0.1790	-0.0219	0.2407	0.0446
Median	-0.0213	-0.0141	1.00000	-0.0130	-0.0017	0.0438	0.1641	-0.0223	0.1935	-0.0547
Mode	-0.64 (a)	-0.49 (a)	1.00000	-0.79(a)	0.0000	-0.41(a)	-0.46 (a)	-0.39 (a)	-0.12 (a)	1.8500
Std.	0.19184	0.06864	0.45580	0.18899	0.07534	0.16345	0.20021	0.10967	0.16931	0.59966
Deviation										
Variance	0.03700	0.00500	0.20800	0.0360	0.00600	0.02700	0.0400	0.01200	0.02900	0.36000
Range	1.5200	0.68000	1.00000	1.4700	0.80000	1.39000	1.3300	0.89000	0.9200	3.9800
Minimum	-0.640	-0.4900	0.00000	-0.790	-0.3300	-0.4100	-0.460	-0.3900	-0.1200	-1.9800
Maximum	0.8700	0.19000	1.00000	0.6800	0.47000	0.9700	0.8700	0.50000	0.8000	2.0000
Sum	-4.300	-4.7800	191.000	-4.050	-2.0600	16.660	48.340	-5.9100	65.000	12.050

- **F-score:** Theoretically, it has been argued that the business firms with more positive variables have a higher value in comparison with the business firms that have more negative variables. To achieve the aim of this study, the scoring method of F-Score was used. In this method, the two-year information of the variables under study will be compared. If the absolute value of the score of a variable has increased over the previous year, it will be given the score one and otherwise it will be score zero. In this study, all the nine independent variables will be calculated for each firm and they will be labeled as good or bad. An index variable will be considered for each independent variable. If the variable is recognized as a good variable, the index variable equals to one and if it is recognized as a bad variable, the index variable equals to zero. Therefore, the index variable for each of the nine variables will be defined as the following:
 - If $ROA > 0 \rightarrow F_{ROA} = 1$, otherwise it is regarded as zero.
 - If $CFO > 0 \rightarrow F_{CFO} = 1$, otherwise it is regarded as zero.
 - If $\Delta ROA > 0 \rightarrow F_{\Delta ROA} = 1$, otherwise it is regarded as zero.
 - If $CFO > ROA \rightarrow F_{Accrual} = 1$, otherwise it is regarded as zero.
 - If $\Delta Lever_t < \Delta Lever_{t-1} \rightarrow F_{\Delta Lever} = 1$, otherwise it is regarded as zero.
 - If $\Delta Liquid > 0 \rightarrow F_{\Delta Liquid} = 1$, otherwise it is regarded as zero.
 - If $\Delta Margine > 0 \rightarrow F_{\Delta Margine} = 1$, otherwise it is regarded as zero.
 - If $\Delta Turn > 0 \rightarrow F_{\Delta Turn} = 1$, otherwise it is regarded as zero.
 - If the firm has not issued the stock in year t, the index variable of EQ Offer = 1, otherwise it is regarded as zero.

After defining the index variables, the F-Score index will be defined as the sum of each of the index variables. In other words:

$$F_SCORE = F_{ROA} + F_{CFO} + F_{\Delta ROA} + F_{Accrual} + F_{\Delta Lever} + F_{\Delta Liquid} + F_{\Delta Margine} + F_{\Delta Turn} + EQ_Offer \quad (6)$$

Taking the 9 variables into account, F-Score can be a range from zero to nine (0-9), in a way that low F-Score shows the firms with less positive variables, i.e. firms with F-Score between 0 to 3. On the other hand, high F-Score shows the firms more positive variables, i.e., firms with F-Score between 7 to 9. We expect that there is a positive relationship between F-Score and the changes in the firm's future performance as well as the stock returns.

HYPOTHESES TESTING AND ANALYSIS OF RESEARCH FINDINGS

In this study, in order to analyze the obtained data and test the hypotheses, the tests of means comparison as well as the univariate and multivariate regression models were used. Therefore, if they obtained coefficient for each of the variables in levels = $\alpha \% 1$, = $\alpha \% 5$ or even = $\alpha \% 10$ is significant, the hypotheses are accepted, otherwise they will be rejected. The main hypothesis will be tested based on the test of means comparison, but the sub-hypotheses will be tested based on univariate and multivariate regressions.

Descriptive statistics of the research variables: The summarized results of the descriptive statistics of the research variables are presented in Table 1. As it can be seen, the mean value for each of the variables Δ Turn, Δ Margine, Issue, Δ Liquid, Δ Lever, Accrual, CFO, Δ ROA, ROA and Ri is - 0.0159, -0.0177, 0.7074, -0.0150, -0.0076, 0.0617, 0.1790, -0.0219, 0.2407, 0.0446, respectively.

Moreover, their variance amounts are 0.037, 0.005, 0.208, 0.036, 0.006, 0.027, 0.040, 0.012, 0.029 and 0.360, respectively. This amount of variance is negligible for most of the variables indicating the less dispersion of the variables around the mean value. It also indicates that the research data have been normal and meaningful at the 5% level of significance.

Testing the main hypothesis: The main hypothesis of this study is as follows:

The firms with higher F-Score (good firms) have a higher future stock returns in comparison with the firms with lower F-Score (bad firms).

Table 2: Testing equality of variances

F	Level of significance
2.005	0.160

Table 3: Results of means comparison for the stock returns of good and bad firms

Standard deviation	Mean	Number	Firm's returns	Sig	df	t
0.51901	0.1327-	43	Low F-score	0.99	89.419	-3.116
0.69226	0.2595	50	High F-score			
0.64566	0.0782	93	Total			

Table 4: The relationship between independent variables and abnormal stock returns

Variable X _i	Constant value	Variable coefficient	R ²
Return on Assets (ROA)	-0.244 (-4.082***)	0.339 (5.898***)	0.112
Cash Flow from Operations (CFO) to total assets	-0.091 (-1.925)	0.254 (4.294***)	0.061
Changes in return on assets	0.090 (2.594***)	0.376 (6.646***)	0.138
Ratio of accruals	0.035 (0.909)	0.040 (0.661)	-0.002
Operating leverage change	0.044 (1.204)	-0.006 (-0.103)	-0.004
Change in cash flow ratio	0.048 (1.318)	0.075 (1.238)	0.002
Stock issuance	0.107 (10591)	-0.067 (-1.105)	0.001
Gross profit margin change	0.089 (2.462**)	0.287 (4.912***)	0.079
Change in total assets turnover	0.052 (1.436)	0.150 (2.481**)	0.019

R_i = β₀ + β₁X_i + e_{it} **α = % 1 level of significance ***α = % 5 level of significance

Table 5: The relationship between independent variables and abnormal stock returns

Signal	Variable coefficient	Coefficient of determination
Constant value	-0.038 (-0.452)	0.181
Return on Assets (ROA)	0.258 (4.116***)	
Changes in return on assets	0.273 (2.775***)	
Ration of accruals	-0.101 (-1.692*)	
Change in ratio of debt to assets	-0.032 (-0.570)	
Cash Flow Operations to total assets	0.069 (1.168)	
Stock issuance	-0.083 (-1.444)	
Gross profit margin change	0.024 (0.284)	
Change in total assets turnover	0.007 (0.101)	

*α = % 1 Level of significance *** α = % 10 Level of significance

The null hypothesis and the main hypothesis can be defined as follows:

$$\begin{aligned}
 H_0 &: \mu_{0,1,2} \geq \mu_{7,8,9} \\
 H_1 &: \mu_{0,1,2} < \mu_{7,8,9}
 \end{aligned}
 \tag{7}$$

To test the above hypothesis, first, the equality of variances between two groups is tested:

$$\begin{aligned}
 H_0 &: \sigma^2_{0,1,2} = \sigma^2_{7,8,9} \\
 H_1 &: \sigma^2_{0,1,2} \neq \sigma^2_{7,8,9}
 \end{aligned}
 \tag{8}$$

The findings regarding the equality of variances are presented in Table 2.

Based on the Table 2, the null hypothesis is rejected and the main hypothesis is accepted. Therefore, the variances of the two groups are not equal. Now, the main hypothesis will be tested. To test this hypothesis, the test of means comparison was used and the results are shown in Table 3.

Based on Table 3, the null hypothesis is rejected and the above hypothesis is accepted. Therefore, with 99 percent confidence, we can say that the firms with higher F-Score (good firms) have a higher stock returns in comparison with the firms with lower F-Score (bad firms).

Testing sub-hypotheses:

- **Testing sub-hypotheses based on univariate regression:** According to the results of the univariate regression, five variables out of nine variables had significant relationship with abnormal stock returns. Table 4 shows the results of testing the sub-hypotheses together.

As it can be seen, there is a significant relationship between the five independent variables of ratio of return on assets, ratio of Cash Flow Operations (CFO) to total assets, changes in return on assets, changes in gross profit margin and changes in total assets turnover and the dependent variable of abnormal stock return. The summary of these findings is given in Table 4.

- **Testing sub-hypotheses based on multivariate regression:** In the previous section, the sub-hypotheses were tested based on the univariate regression. In this section, these hypotheses will be tested using multiple regression to determine how the independent variables are related to the dependent variable of abnormal stock returns. The equation that can be used for this purpose is as follows:

$$R_i = \beta_0 + \beta_1 ROA + \beta_2 CFO + \beta_3 \Delta ROA + \beta_4 Accrual + \beta_5 \Delta Lever + \Delta Liquid + \beta_7 Issue + \beta_8 \Delta Margine + \beta_9 \Delta Turn + e_{it} \beta_6
 \tag{9}$$

The results derived from using the Equation 9 are shown in Table 5. As it can be seen, based on the multiple regression analysis, there is a significant

relationship between three independent variables of return on assets, changes in return on assets and ratio of accruals and the dependent variable of abnormal stock returns. Moreover, these three variables can explain about 18 % of the variations in stock returns

DISCUSSION AND CONCLUSION

The main hypothesis of this study was accepted with 99% confidence that the firms with higher F-Score have higher stock returns in comparison with the firms with lower F-Score. That is, we can claim with high confidence that the firms with more positive variables have a higher stock returns in comparison with the firms with more negative variables. Therefore, in their investments, the shareholders can consider this important factor and be sure about the increase of their assets and the return of their assets. Moreover, the univariate regression test showed that there is a significant relationship between most of the fundamental variables including return on assets, cash flow from operations, changes in return on assets, changes in net profit margin and change in total assets turnover indicating the strong significant relationship between abnormal stock returns and their intrinsic fundamental variables. However, there was not found any relationship between cash flow ratio (liquidity) and stock returns. Moreover, there was not a significant relationship between most of the risk proxy variables including the ratio of accruals, operating leverage and stock issuance representing that abnormal stock returns are independent from risk proxy variables. On the other hand, the findings of testing the sub-hypotheses based on multivariate regression analysis showed that only three sub-hypotheses were confirmed. It means that there is a significant relationship between three variables of return on equity ratio, changes in return on equity ratio and ratio of accruals with the abnormal stock returns. The results of the study showed that these three variables alone can explain about 18% of the variations in stock returns.

The results of this study indicate the significance of investigating the financial variables in general and the fundamental accounting variables in particular to explain the stock returns of the firms. So, the findings of this study signify that investors, firms and all other parties in capital market need to pay sufficient attention to such variables.

The results of the study showed that the firms with higher F-Score have higher stock returns in comparison with the firms with lower F-Score. Therefore, in their investments, the shareholders are suggested to consider the results of this study in general and the variables under study in particular. Moreover, due to the significance of financial information, the Standard Organization in Iran and Tehran Stock Exchange are suggested to determine some measure to validate and increase the quality of accounting information.

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