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**STUDYING THE STOCK RETURNS AND STOCK PRICE
PERFORMANCE OF COMPANIES IN THE TEHRAN
STOCK EXCHANGE**

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ABSTRACT

The present study deals with the effect of stock price and firms' performance on stock return in Tehran Stock Exchange. This research aims at identifying that stock return is affected by stock price and firms' performance experimentally to financial analysts, investors, managers, and other users of accounting information. In this study we have used Mandelson's (2008) model to measure stock return and James's (2006) model to calculate firm performance and also Dicho's (2004) model to assess changes in stock prices. The present research is applied and correlation has been utilized in it and it is post-incident. The statistical population of this research consists of firms enlisted in Tehran Stock Exchange. The statistical sample includes 85 firms enlisted in Tehran Stock Exchange during a 6 years period between 2007 and 2012. To test research hypotheses we have used multiple variables regression model. Research results showed that there has been a positive and meaningful relationship between return on stock, stock price, and firms' performance.

Keyword: *Return on Stock, Stock Price, Firm Performance*

INTRODUCTION

The outstanding characteristics of Stock Exchange market have caused both companies and investors to consider capital market as an appropriate place to absorb financial resources and to invest and due to this fact today Stock Exchange is one of the economic foundations of any society in developed countries. Also its operations are considered as important indexes that represent social-economical status in these countries and thus they are analyzed here. On the other hand, any problem in Stock Exchange can result in great economic crises. By increasing capital markets qualitatively and quantitatively and increasing the number of those who are active in the market, it is crystal clear that studies should be enhanced to inform investors more than before (Khosroabadi, 2005). One of the main frameworks in investment theory is that return (in long-term) should adjust risk. The investor accepts risk by purchasing bonds and gains return for the risk incurred. Thus, we can say that return and its risk is the most important factor in making decision affecting the purchase of bonds compared to other investment opportunities. Novel revolutions in economic field have been globalized and their outcomes have forced beneficiaries to pay attention to firms' performance more than before. Shareholders, investors, customers, managers, staffs, raw material suppliers, distributors, governmental entities and foundations, entities presenting facilities, and in a way all those dealing with different entities assess them continually. This research has been done to describe the structure governing transactions, price, stock return and the relationship between return of stock and firm's performance and changes in price in Tehran Stock Exchange.

Statement of the Problem

In researches carried out about Tehran Stock Exchange, mostly the relationship between firms' internal information and their financial status and stock price and return of the firms have been investigated and firm's performance has not been taken into consideration as an effective factor in pricing and stock return of firms. In fact, in many cases changes in stock price and its effect on firm's return on stocks are not resulted from changing their financial status but they were caused by internal psychological and local factors of the market (being affected by firms' performance). Also in most researches the effect of

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revealing firms' information has been investigated, while in this research we wanted to focus on the effect of publishing market information and using it by traders. Thus, the most basic information published by Stock Exchange regarding the status of exchanges has been taken into consideration. The statistics of stock exchanges is broadcast almost daily in all newspapers and observed by the general public. Publishing information in this format associate the question in the minds of the users that what things are included in stock exchange statistics and what is the reason to emphasize on revealing the information by Tehran Stock Exchange and other Stock Exchanges throughout the world? Does increasing or decreasing the volume of exchanges on a share show that there exists a series of data that are not published for some of the traders? Do uninformed traders purchase stocks based on transactions' data and without gaining these data to purchase stocks or not? The number of exchanges and the number of stocks traded show the attractiveness of stocks for the purchasers and it can show the number of stock buyers on the one hand, and the number of sellers of the stocks, on the other hand (Ghaemi, 2010). Studying the relationship between transactions' amount, changes in price and stock return are among issues that have been considered severely by financial and economic researchers. The importance of this relationship is such that in Wall Street, there have been some proverbs devised regarding the volume of exchanges and return on stocks. Stock Exchange and capital market is a newly emerged market in Iran, but sometimes it can be seen that many retailers in capital market do not ignore movements in amounts of exchanges or changes in price for their immediate and short-term decisions and consider changes in price and amounts of exchanges resulting from news and information that they may have not heard (Kashi, 2009).

Stock price is one of the most important factors in helping the decision making of investors in order to invest or lack of investment in an economic unit. Two main factors affect devising stock price that include expected cash flows and expected return rate (or its reverse, i.e. the ratio of price per share). Additionally, there are other variables that affect stock pricing. These variables are divided into two groups of exogenesis variables including potential return of economy, firm taxation, changes in governmental expenses, and financial policies and ontogenesis variables including changes in total expenses, changes in price levels, nominal income of the company, firm's real earnings, expected real earnings of the company, and changes in real return of investment (Tabrizi & *et al.*, 2010). Novel changes in economic fields have been globalized and their outcomes have caused more attentions of beneficiaries focused on firms' performance more than the past. Shareholders, investors, customers, managers, staffs, raw material suppliers, distributors, governmental entities and foundations, entities presenting facilities, and in a way all those dealing with different entities assess them continually. Often stock price represents the expectations of the market about economic status of firms. Therefore, market indexes represent future status and performance of the whole economy. The bonds' analysts, portfolio managers and other economic tenures use market indexes to investigate about variables that affect the movement of total stock prices and by studying the movement trend of bourse market, return on investment of this market can be compared with other investment opportunities such as investment on bonds, gold, and foreign currencies.

Everyday stock price is affected by market conditions. In fact supply and demand in the market determines stock price. If shareholders tend to purchase certain stocks, the demand would go higher than the supply and prices will increase. And if shareholders tend to sell certain stocks, the supply will exceed than demand and we will observe a reduction of prices. Analyzing and understanding supply and demand is easy but the important point is that we should recognize what factors cause paying attention on the part of shareholders towards a certain share, meanwhile this stock has not been considered by them much in the past. We can mention many factors to answer this question and they are announcements and positive and negative news about firm's stocks that are about management, financial ratios, and other related cases. Of course, we should notice that any shareholder has his/her own ideas and strategies. Theoretically, stock's price fluctuations show the feelings of investors regarding the firm value. Of course, we can not say that a firm has more expensive stocks or more valuable ones or vice versa. We should pay attention to market capitalization (Khakpour, 2008).

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Now regarding the viewpoints mentioned above about stock return, firm performance and price changes, the present research tries to answer the question below: "Is there any relationship between stock return and firm performance and price changes in firms enlisted in Tehran Stock Exchange?"

Research Literature

Akbu & Nerley (2009) studied firms during a 3 to 5 years time period after primary supply in an article entitled: "leverage, liquidation, and stock returns". In this research a sample containing more than 5000 primary supply was investigated during the years between 1984 and 2007 and authors concluded that firms supplying stocks with low leverage and high liquidation in each of the years after primary supply reduced risk through lower leverage and higher liquidation and realized the shareholders' expected return, and thus both of these factors are valuable.

Results of researches carried out by Dogar (2011) showed that since the investors are uninformed about the type of the companies entering capital market, the owners and firm managers use the quality of cash flows in order to send positive signs to the market. Thus, those firms that tend to enter the market do so within the years they have a desirable cash flow quality and avoid joining the market when they have had weak performances in cash flows.

Zhung & *et al.*, (2012) investigated about a sample of 341 stocks issuing in Chinese market during the years between 2008 and 2010 in an article entitled: "long-term performance of primary supply and stock return". Their findings were different from American researchers'. They did not observe any long-term performance regarding primary stock supply in capital market in China .

Gao & *et al.*, (2012) studied about financial and non-financial variables affecting new stock price of medicine companies and biotechnologies. Results of their research showed that from among financial variables only capital expenditures (research and development) and from among non-financial variables, the number of products of companies, product development stage, and legal support of material and spiritual rights, and invention patents were the most important variables affecting stock supply price of medicine and biotechnology firms.

Colleen & *et al.*, (2013) studied the relationship between stock price and return per share and accounting quality. Results showed that throughout those periods that accounting quality has been weak in a company, if the delay price is adjusted, stock return would be higher in future. Thus, accounting quality plays an important role in stock return and stock price.

Ahmad & Hamaran (2014) studied the relationship between stock price changes and stock return. They concluded that changes in stock price may result in different stock returns. Their findings showed that economic factors such as foreign currency rate, interest rate, inflation, industry, production, money supply, and oil price have a considerable role in identifying stock return and changes in stock price.

Research Methods

Research Hypotheses

Main hypothesis

1-Stock return is affected by stock price and firms' performance .

Minor hypotheses

2-There is a meaningful relationship between stock return and stock price of firms.

3-There is a meaningful relationship between stock return and performance of firms.

4-There is a meaningful relationship between stock price and performance of firms.

Population and Statistical Sample

The statistical sample investigated in this research contained firms enlisted in Tehran Stock Exchange and the study period was between 2007 and 2012.

In this research we have used a systematic deletion method to reach our statistical sample and investing companies and those of financial intermediaries were omitted and 85 firms were chosen as our research sample.

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Variables' Measurement

1-To assess the stock return we have used Mendelson's (2008) model as follows:

$$R_t = \frac{((P_t - P_{t-1})) + DPS + (P_t - 1000)A + (P_t B * 100)}{P_{t-1}}$$

Where,

R = stock return rate at the end of year t

P_t = stock price at the end of year t

P_{t-1} = stock price at the end of year t-1

DPS = earning per share in cash based on stocks' number at the start of the period

A = capital increase percentage through cash inflow

B = capital increase percentage through accumulated earnings or reservoirs

2-To assess firm's performance we have used the model posed by James (2006) as follows:

$$PER = \frac{ME}{E - L}$$

PER = firm's performance

ME = firm's market value (through multiplying market price for stocks into the number of stocks)

E = book value of equity

L = book value of liabilities

1-To assess changes in stock price we have used a model posed by Dicho (2004) as follows:

$$\Delta P_t = P_{t_t} - P_{t-1}$$

P = stock price during financial period

Firm performance:

It is the amount of return caused by the firm which is the result of strategies posed by management (Roudposhti, 2009).

Stock Return

Return is a part of earning of an investor or return on investment, in other words. Stock return is composed of two parts: a) a return resulting from stock price increase exchanged in bourse. b) a return distributed among the shareholders as earnings.

Stock Price

Stock price is one of very important factors in helping the investors decide to invest or not to invest in an economic unit. Two main factors affect stock pricing that include expected cash flows and expected return rate (or its reverse, i.e. the ratio of price per share). Additionally, there are other variables affecting stock pricing. These variables are divided into two groups of exogenesis variables including potential return of economy, firm taxation, changes in governmental expenses, and financial policies and ontogenesis variables including changes in total expenses, changes in price levels, nominal income of the company, firm's real earnings, expected real earnings of the company, and changes in real return of investment (Tabrizi & *et al.*, 2010).

Testing Hypotheses

First Main Hypothesis: Stock return is affected by stock price and firms' performance.

The statistical hypothesis is presented as follows:

H₀: Stock return is not affected by stock price and firms' performance.

H₁: Stock return is affected by stock price and firms' performance.

The amount of Durbin-Watson statistic is 1.997 and since it is between 1.5 and 2.5, there is not correlation between error components of the model.

Hypothesis test showed that there has been a positive correlation coefficient between stock return, stock price and firms' performance and it amounts to %0.470 that shows a positive relationship. The adjusted correlation coefficient of %0.441 showed that this number has provided an appropriate balance of changes in stock return, stock price, and firms' performance. Regarding the meaningfulness level of the

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variable in regression table that equals 0.003, the relationship between the variables has been meaningful and the first hypothesis is approved.

Main hypothesis results

Symbol	Variable	Coefficient	t Statistic	Prob.
c	Fixed amount	83.745	6.626	0.000
PER	Firm performance	-0.364	-0.592	0.004
P	Stock price	8.518	0.862	0.009
	Correlation coefficient	0.470	D.W	1.977
	Meaningfulness level of f statistic	0.03	R ²	0.441

Based on the results of the main hypothesis the fixed amount and independent variable coefficient in the equation has been defined and this equation would be represented as follows:

$$y_{it} = 83.745 - .364PER + 8.518P_{it} + e_i$$

Since in this output, testing the equality of regression's coefficient and the fixed amount showed to be less than %5, the presupposition of the equality of these two coefficients with 0 is rejected and we should not delete them from the regression equation.

First minor hypothesis: There is a meaningful relationship between stock return and stock price of firms.

The statistical hypothesis is presented as follows:

H0: There is not a meaningful relationship between stock return and stock price of firms.

H1: There is a meaningful relationship between stock return and stock price of firms.

First minor hypothesis results

Symbol	Variable	Coefficient	t Statistic	Prob.
c	Fixed amount	81.661	6.732	0.000
P	Stock price	8.673	0.878	0.008
	Correlation coefficient	0.390	D.W	1.728
	Meaningfulness level of f statistic	0.008	R ²	0.260

The amount of Durbin-Watson statistic is 1.728 and since it is between 1.5 and 2.5, there is not correlation between error components of the model.

Due to the findings of testing the hypothesis, the adjusted correlation coefficient of %0.260 showed that this number has provided an appropriate balance of changes in the two variables of stock return and firm's stock price. Regarding the meaningfulness level of the variable in regression table that equals 0.008, the relationship between the variables has been meaningful and the first minor hypothesis is approved.

Based on the results of the main hypothesis, the fixed amount and independent variable coefficient in the equation has been defined and this equation would be represented as follows:

$$y_{it} = 81.661 + 8.673p_{it} + e_i$$

Since in this output, testing the equality of regression's coefficient and the fixed amount showed to be less than %5, the presupposition of the equality of these two coefficients with 0 is rejected and we should not delete them from the regression equation.

Second Minor Hypothesis

There is a meaningful relationship between stock return and performance of firms.

The statistical hypothesis is presented as follows:

H0: There is not a meaningful relationship between stock return and performance of firms.

H1: There is a meaningful relationship between stock return and performance of firms.

The amount of Durbin-Watson statistic is 1.981 and since it is between 1.5 and 2.5, there is not correlation between error components of the model.

Due to the findings of testing the hypothesis, the adjusted correlation coefficient of %0.190 showed that this number has provided an appropriate balance of changes in the two variables of stock return and firm's

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performance. Regarding the meaningfulness level of the variable in regression table that equals 0.005, the relationship between the variables has been meaningful and the second minor hypothesis is approved.

Second minor hypothesis results

Symbol	Variable	Coefficient	t Statistic	Prob.
c	Fixed amount	84.742	6.735	0.000
PER	Firm performance	-0.378	-0.615	5.00
	Correlation coefficient	0.270	D.W	1.981
	Meaningfulness level of f statistic	0.005	R ²	190.

Based on the results of the main hypothesis, the fixed amount and independent variable coefficient in the equation has been defined and this equation would be represented as follows:

$$Y_{it} = 84.742.291 - 375PER + e_i$$

Third Minor Hypothesis

There is a meaningful relationship between stock price and performance of firms.

The statistical hypothesis is presented as follows:

H0: There is not a meaningful relationship between stock price and performance of firms.

H1: There is a meaningful relationship between stock price and performance of firms.

Third minor hypothesis results

Symbol	Variable	Coefficient	t Statistic	Prob.
c	Fixed amount	11712.37	6.735	9.00
PER	Firm performance	-0.378	-	2.00
	Correlation coefficient	0.219	D.W	6412.0
	Meaningfulness level of f statistic	20.00	R ²	440.

The amount of Durbin-Watson statistic is 2.164 and since it is between 1.5 and 2.5, there is not correlation between error components of the model.

Due to the findings of testing the hypothesis, the adjusted correlation coefficient of %0.440 showed that this number has provided an appropriate balance of changes in the two variables of stock price and firm's performance. Regarding the meaningfulness level of the variable in regression table that equals 0.002, the relationship between the variables has been meaningful and the third minor hypothesis is approved.

Based on the results of the main hypothesis, the fixed amount and independent variable coefficient in the equation has been defined and this equation would be represented as follows:

$$y_{it} = 117112.372 - 164.192PER + e_i$$

After investigations and tests were carried out on research hypotheses, our conclusion about the overall results regarding the independent and dependent variables can be expressed as follows: based on what was posed and regarding the statistical results of the present research we can conclude that there has been a meaningful relationship between the variables of stock return, stock price, and firm performance. This means that in capital market the more stocks owned by the public can result in more rapid and less costly sale and this affects stock return. Also according to the results, we could conclude that almost 0.44 of changes in stock return were affected by the variables of stock price and firm performance. The stocks exchanged daily and frequently will have more liquidation capability compared to the stocks exchanged in limited amounts and with fewer frequencies and finally it results in more return for shareholders. Regarding the results of first and second minor hypotheses the amount and speed of flows of exchanges have increased, and stock price has gained a more reasonable and fair value. On the contrary, the less stocks owned by the people will enforce more recession on stock exchanges and if there is transaction, the prices would be one-way, either progressive or regressive and thus stock return will be affected. According to the results of the research it can also be concluded that %26 of changes in stock return was affected by stock price. High amounts of transactions in a firm result in the presence of an efficient

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market, it absorbs wandering capitals in the society and it increases liquidation. Also in such a market the competitive capability of prices results in optimal appropriation of resources and this increases firm's efficiency. As we concluded based on results gained from second minor hypothesis almost %19 of changes in stock return can be attributed to firm's performance effect.

In many bourse markets stock liquidation index is used to show firm's performance in identifying more active firms in capital market and it is highly important. Based on results gained from the third minor hypothesis high amounts of transactions increases stock flow owned by the public and this results in profitability during fiscal year (increasing stock return) and it increases per share earnings of shareholders. This shows a better performance of the company and based on the results of this hypothesis increasing efficiency and firm performance has a direct relationship with stock price and it is affected %44 by changes in firm performance affected by stock price.

Research Limitations

In all researches carried out, limitations are among the most inevitable items in research. These limitations set the ground for future and new researches and the present research is not an exception too. The time period to do the present research was designed to be between 2007 and 2012 when Tehran Stock Exchange encountered recession and inflation; but the research period was presupposed to be homogeneous.

Due to the occurrence of sever crises in Stock Exchange during these years, many firms encountered transaction stops for more than 1 or 2 months. Thus, the statistical society was affected by this incident and it was confined to 85 firms during the time period between 2007 and 2012.

Lack of efficiency of capital market in Iran, as an intervening factor, could affect the research results and its control was impossible for the researcher. This was one of bottlenecks in administering researches relying on capital market, especially in the present research.

The presence of intervening variables has been effective on research results, but recognizing the amount of its effect was not possible for the researcher.

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