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THE IMPACT OF STOCK MARKET RETURN BASED ON PRICE VOLATILITY ON COMPANY'S COMPETITIVE INDEX IN TEHRAN STOCK EXCHANGE

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ABSTRACT

In growing economy investors, investment managers and portfolio managers are always looking for good investment options to obtain the desired benefit and increase their wealth in the long term. Therefore, determination of factors that affect the efficiency of the company, both for investors and for financial managers is great importance. Financial markets are one of the circles, which can manifest incentives for investors to make investments. Currently in our country stock exchange market taken this important. The study uses panel data for firms in Tehran stock exchange for the period 2007 to 2013 have been analyzed to test the hypotheses that the results are as follows:

The results of the first model indicate that impact of stock price volatility based on returns of firm in the year on the competitive index variable based on profit margins is negative and significant and suggests that increased volatility of stock prices would be led to a decline in competitiveness index based on the profit margins for companies in Tehran stock exchange. This means that the volatility in the stock market led to a decline in gross profit margin in stock company that this finding is consistent with the conclusions of **Cerrato *et al* (2011)**.

Keywords: Stock Price Volatility, Competitive Factors, Profit Margins

INTRODUCTION

In growing economy investors, investment managers and portfolio managers are always looking for good investment options to obtain the desired benefit and increase their wealth in the long term **(Cerrato *et al*, 2011)**. Therefore, determination of factors that affect

the efficiency of the company, both for investors and for financial managers is great importance. Financial markets are one of the circles, which can manifest incentives for investors to make investments **(Dvorˇak, 2005)**. Currently in our country stock exchange market taken this important. Investment managers and portfolio managers seek to selection of securities that have the highest profitability and return. Also if investment be to form of maintaining a collection of various securities (portfolio), the risk of it will be lower **(Chen *et al*, 2009)**. In other words, portfolio selection with different prices regardless of the factors affecting the return, is risky **(Edelen & Warner, 2001)**. The point that should be mentioned is that, in practice, investors do not pay attention to the changing risk beside the return or in other words to risk as an important criterion for investment do not value and more attention of them is to the final output based on stock price due to fluctuations caused by factors other than the risk **(Chai & Zheng, 2004)**. Investors and purchasers of shares in the normal course look for companies that are the actual and predicted stock returns are higher and less attention to the corporate risk and most of his comments focused on large and small companies compete based on indicators **(Fornell *et al*, 2006)**. The expected stock abnormal return of a firm is influenced by many factors and sometimes unexpected factors **(Choe and Eom, 2009)**. In fact, it is something that affects the return of a company that, in general, the situation inside and outside organization; some of these are: Stock price volatility **(Boyer and Zheng, 2009)**, company risk **(Danielsson, 2006)**, firm size **(Blume *et al*, 1986),** corporate market value (Zhang, 2005), the index of industrial competitiveness **(Cerrato *et al*, 2011)**, market size **(Boyer and Zheng, 2009)**, the price volatility of stock returns **(Albuquerque, 2009)** and investment ratios **(Dennis and Strickland, 2002)**. The main objective of this study is to answer the main question do stock market returns based on price volatility impact on the company's competitive or not?

RESEARCH LITERATURE

Determination of stock price volatility based on stock market returns

Stock price at any time, and can change as a result of changes in market supply and demand. If the number of buyers of the stock is greater than the number of its suppliers, the demand is greater than supply for sale is buying a share, the share prices rise and vice versa. Understanding of supply and demand and price changes resulting from it is very easy, but what is difficult; understanding of that is what leads to changes in supply and

demand in the stock market and makes a specific contribution of the applicant or buyer, and others, are alienated or vendor **(Khakpour, 2008, p 58)**.

According to economic theory of capital asset pricing model, the price of an asset is a function of risk and volatility conditional. Therefore, it is important to predict stock price volatility or the returns on portfolio selection, asset management and stock prices of companies that are new to stock market **(Mehrara and Abdul, 2008, p 126)**.

Capital market development and reflection as the engine of economic development requires public confidence in the efficiency and integrity of the participants in determining the fair price of securities. A new share do not any price at the market, because the deal has not yet released in the free market. So the question arises how to determine the right price for the shares?

Stock determine the price is a difficult matter, obviously the company that issued this securities would be sold to the highest price possible and buyers, or those who want to invest in these stocks tend to have the lowest possible prices buy. Most of the time, companies' stock price determined through supply and demand, or by brokers, financing institutions. Order to pricing shall be the price set for the stock release are reasonable, appropriate and fair on the other hand consider it attracts buyers and investors and the willingness and desire to stimulate investment in them. Experience has shown that if the stock price be defined as "reasonable and appropriate", its stock price is slowly, on the market takes uptrend (**Khakpour, 2008, p 125)**.

Daily stock prices are affected by market conditions. In fact, the stock price is determined by market supply and demand. If investors are willing to buy the stock, in this case, the demand is greater than supply and prices rise and if shareholders wish to sell a particular stock, supply is greater than demand, and we'll be seeing deflation. It is easy Understanding of supply and demand analysis but the important thing is to identify what factors make a contribution towards shareholders tend to show that, while this stock has not been considered previously.

Background of Research

Tavangar and Khosraviani (2011), in research entitled the test of D-CAPM model Power compared to the CAPM model to explain the relationship between risk and return on equity (2004-2008); expressed, in many academic studies beta factor (beta) are used as a measure of risk is volatility of stock returns and the capital asset pricing model (CAPM) are used to measure the portfolio

risk and estimates expected return. The results showed that beta-(D-beta) based on D-CAPM in terms of expressive power in risk measurement and prediction of stock returns is more effective than the traditional CAPM beta and the model.

Lambert *et al* and Keynes *et al* (2013) in studies showed that in conditions of imperfect competition, information asymmetry among traders leads to stock price declines than perfect competition. Information asymmetry leads to supply liquidity, and this affects the cost of capital. Hence, excite a positive relationship between traders notified / non-notified, and the cost of capital.

Jackson (2012) in his paper entitled "The volatility of stock returns and forecasts of earnings management" studied the relationship between stock returns and volatility forecasts of earnings management. The first hypothesis examines that is the increase in the number of changes over the forecast earnings management for companies that offer them compared with companies without earnings management forecasts is within history and then the result will check according to the characteristics of prediction and forecasting records vary. In general, the result of a discussion paper on information asymmetry challenges the disclosure, reduce the number of changes in the long term.

Armstrong *et al*., (2011) in research entitled "in what case a competitive market, on the relationship between information asymmetry and cost of capital affect?" showed that when the capital market is complete competition, information asymmetry will not affect the cost of capital; but if capital markets are imperfect competition, information asymmetry has a separate impact on cost of capital and between information asymmetry and cost of capital, there will be a positive relationship. They also found that the degree of market competition in order to consider the relationship between information asymmetry and cost of capital is an important and effective variable.

Model and Variables

1. Dependent variables
   - Competitive Index based on profit margin of firm i in year t.
   - Competitive Index based on the expected return of firm i in year t.
2. Independent variables:
   - Fluctuations in stock prices based on returns of firm i in year t.
3. Control variables
   - Size of firm i in year t.
   - Growth opportunities for firm i in year t.
   - The efficiency of industry i in year t.

- Dummy variable declared dividends of firm i in year t.
- Risk of firm i in year t.
- Interaction dummy variable declared dividends and the risk of firm i in year t.
- Market size of firm i in year t.
- Interaction dummy variable declared dividends and the market size of firm i in year t.
- The market value of firm i in year t.
- Interaction dummy variable declared dividends and market value of firm i in year t.

Models of Research

This model is derived from the study by **Chen *et al* (2002)** and adjusted variables of cow and et al (2009) and Chang and Samael (2011) has been estimated as follows:

$$X_{t+1} = \alpha_0 + \beta_1 ACSI_{i,t} + \beta_2 Size_{i,t} + \beta_3 BM_{i,t} + \beta_4 IndEff_{i,t} + \beta_5 ANNC_{i,t} + \beta_6 MKTRF_{i,t} + \beta_7 ANNC_{i,t} * MKTRF_{i,t} + \beta_8 SMB_{i,t} + \beta_9 ANNC_{i,t} * SMB_{i,t} + \beta_5 HML_{i,t} + \beta_9 ANNC_{i,t} * HML_{i,t} + \varepsilon_{i,t}$$

In this model, we have:

i represents the company (sectional units) and t represents year.

$\varepsilon_{i,t}$ = Random error of firm i in year t.

According to the results of the Chow test and its P-Value (0/0066), the hypothesis is rejected in 95% confidence level and indicates that the panel data method may be used. Also according to the results of the Haussmann test and the P-Value (0/0226) is less than 0/05, test assumptions and hypotheses are rejected in 95% significance level is accepted. Therefore, it is necessary to estimate the model using fixed effects.

For measuring validity of the model and check the assumptions of classical regression is necessary to examining the lack of linearity between the independent variables in the model, tests remained normal in relation to the consistency of variance, independence of residuals and the lack of error states of the model (linearity of the model). To test normality of the error terms can be used for various tests. One of these tests is Jarque-Bera test that in this study is used. Jarque-Bera test results indicate that the residues obtained from the estimation model are present in 95% confidence level has the normal distribution, The probability associated with this test (0/3894) is larger than 0/05. One of the assumptions of the classical regression residual is consistency variance. If the variances are heterogeneous linear estimator will not the unbiased and do not have a minimum variance. In this study for testing the homogeneity of variances, Brush pagan test method is used. Due to the importance of this test, which is smaller than 0/05 (0/0097), the null hypothesis based on homogeneity of variance was rejected and we can say that the model has a variance homogeneity. In this

study, to address the problem in Estimate the generalized least squares estimation method (GLS) is used. The study also aims to test the residuals are not correlated that is one of the assumptions of regression analysis and correlation analysis called, Durbin Watson test (DW) has been used. According to the preliminary results of the model Estimate, the amount of Durbin Watson value is equal to 2.29 and since it's between 1.5 and 2.5 we can conclude the residuals are independent of each other. In addition, to test whether the model is a linear relationship, and whether the model is linear or non-linear relationship the Ramsey test is applied. Due to the importance level of Ramsey test (0/7845) that is larger than 0/05 the null hypothesis based on the linear model are accepted and the model error is not specified. **Table 2** summarizes the results of these tests are presented.

According to the results of Chow and Haussmann tests and also test the assumptions of the classical regression, model (1) of research using panel data and fixed effects are estimated. The model estimation results are presented in **Table 3**.

At reviews significance of the model, given that the probability of F-statistic is smaller than 0/05 (0/0001), with 95% confidence significantly of the whole model is confirmed. The coefficient of determination of the model also suggests that 73% of competitive factors based on profit margins of companies is explained by the variables in the model.

One percentage change in stock price volatility variable based on returns made a 0/1524 decline in competitiveness index based on the profit margins of the Company which shows a negative and significant impact of this variable on the competitive index is based on profit margin of the company.

One percent change in the risk variable company causes 0/0332 decline in competitiveness index based on company's profit margins which shows a negative and significant impact of this variable on the competitive index is based on profit margin of the company.

One percentage change in market value variable caused 0/0773 increase in the competitive index variable based on the profit margins of the company which shows a positive and significant impact of this variable on the competitive index based on the profit margins of the company.

Table 1: Chow and Hausman test results for model (1)

P-Value	Degrees of freedom	Amount of Statistics	Statistics	Number	test
	(631،106)	1/4258	F	**749**	Chow
0/0226	11	22/2388	χ^2	**749**	Haussmann

Table 2: Test results of the statistical assumptions of the model (1)

Ramsey Statistics		Durbin-Watson Statistics	Breusch-Pagan Statistics		Jarque-Bera Statistics	
$P-Value$	F	**D**	$P-Value$	F	$P-Value$	χ^2
0/7845	0/2427	2/29	0/0097	4/7606	0/3394	**1/4672**

Table 3: Test results of the first hypothesis of research with using of fixed effects

Dependent variable: competitive factors based on profit margins Number views: 107 years - Company				
Effect	**P-Value**	**t- Statistics**	**Coefficient**	**Variable**
Positive	0/0023	2/9453	0/3452	**c**
Negative	0/0043	-3/3362	-0/1524	**Stock price volatility based on returns**
Positive	0/0021	2/7345	0/3223	**Size of Company**
Positive	0/0000	3/3122	0/4326	**Opportunities for Growth**
Positive	0/0032	3/0324	0/7032	**Industry Performance**
Positive	0/0576	2/0235	0/0221	**Dummy variable to declare dividend**
Negative	0/0046	-3/6125	-0/0332	**Corporate Risk**
Negative	0/0002	-4/7534	-0/0662	**Interaction of dummy variable to declare dividends and risk**
Negative	0/0024	-3/0554	-0/1932	**Size of Market**
Positive	0/0091	2/8553	0/0437	**Interaction of dummy variable to declare dividends and market size**
Positive	0/0190	2/7739	0/0773	**Market Value**
Negative	0/3770	-0/8842	-0/0734	**Interaction of dummy variable to declare dividends and market value**
0/7360	**R2**			
1/6560 (0/0001)	F **Statistics** ($P-Value$)			

CONCLUSIONS AND SUGGESTIONS

The overall results show that impact of stock price volatility based on returns of firm i in year t on the competitive index variable based on profit margins is negative and significant and suggests that increase in volatility of stock prices led to a decline in competitiveness index based on the profit margins of Tehran stock exchange. This means that the volatility in the stock exchange listed companies will lead to a decrease in gross profit margin. Therefore it is recommended that in order to increase competitiveness based on profit margins, policies have to reduce the volatility of stock returns.

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