The Relationship between Macroeconomic Indicators and Stock Returns of Listed Companies in Tehran Stock Exchange

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Abstract: The aim of this study was to investigate the relationship between macroeconomic indicators and stock returns of listed companies in Tehran Stock Exchange. The research method was correlation-descriptive method. The statistical population of this study was all the listed companies in Tehran Stock Exchange which were as many as 449 companies over 2009 to 2013. The population was included all the companies, during this period of 5 years in industry and groups several. 91 companies were chosen as the sample. Regression was used to analyze the data. The results showed that there was a significant relationship the macroeconomic indicators and performance of listed companies in Tehran Stock Exchange.

Keywords: Stock Returns, Exchange, Investment.

Introduction

In this study, factors affecting market behavior and market economy, or variables that could explain the relationship between the financial sectors of the economy to the real economy are very important. Money and capital markets are responsible for the pillars of the financial sector, the task of financing the real economy. Performance of the financial sector to economic activity will lead to optimal allocation of scarce resources. Optimal allocation of resources, in turn, led to efficiency savings and investment and thus economic growth close to the potential of the economy entails (Fakhr-hoseyni & Shahabi, 2010). Stock price index shows the general trend of the market. In fact, it is the success of the country's capital market. In any decision to invest, there are two very important factors which are the base of investment. These two factors are risk and return. Any investment that increases the value of your investment has taken that risk factors and have its constituent identify and calculate investment returns (Saidi & Amiri, 2008). One of the risks is the systemic risk (market risk) which is caused by environmental conditions and management has no control over it. The importance of the stock exchange and its function in the industrialized countries is obvious that in most industrialized countries, the scholarships are part of the economic institutions of society (Sameti & Moradian-tehrani, 2013). The importance of the stock exchange in the country is such that economies dependent on the stock, if the stock market is booming, the economy is booming and if the stock market is wavering, this instability and the downturn in the economy also will reflect. In fact, the stock exchange in industrialized countries is considered an indicator of the economic situation, which according to the situation inside and outside the Tehran Stock Exchange has no exception (Azizi, 2012). The aim of this study was to investigate the relationship between macroeconomic indicators and stock returns of listed companies in Tehran Stock Exchange.

Materials and Methods

The research method was correlation-descriptive. The statistical population of this study was all the listed companies in Tehran Stock Exchange which were as many as 449 companies over 2009 to 2013. The population were included all the companies, during this period of 5 years in industry and groups several. 91 companies were chosen as the sample using the following criteria.

1. By the end of March 2009 and is listed in Tehran Stock Exchange for the fiscal year ended March.
2. Companies have their fiscal year during the periods are changed.
3. The financial information required for this study in the period of 2009 to 2013 when it is fully implemented.
4. do not as a part of banks, financial institutions (investment companies, financial intermediaries, Holding companies, leasing) means do not be as the manufacturer, because the disclosure of financial information and corporate governance structure is different in them.
5. Companies must be out of stock before 2013.
6. Companies should not be among the companies from 2013 onwards, were accepted at Tehran Stock Exchange.

In this study, the independent variable was economic indicators in oil prices and inflation and exchange rates and interest rates that the oil price per barrel of crude oil was based on the dollar on world markets which was calculated on a monthly basis in the period from year 2007up to the end 2012. Inflation rates, exchange rates and interest rates from 2007 to 2012 are extracted from the central bank. And the dependent variable was the return on equity. The rate of return on each share, the cash flow difference between incoming and outgoing cash flows on the cash flow comes out which consisted of two parts:

$$R_t = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$$

Payments received for dividends (D2) are the stock movements during the period of investment $(P_t - P_{t-1})$. Pt: share price at the end of t period, Pt-1: The share price at the beginning or end of period t t-1, DT: dividend shares at end of t period. Control variables were obtained from the company 1) Company's size: there are different criteria for measuring several variables "size of the company" which include the total amount of assets, sales and number of employees. In this study, the logarithm of total assets to measure Nehpri variable "company size" was used. 2) Financial lever: The use of financial resources of the business relationship in terms of debt or equity, and the determination and evaluation of the composition of the review. In this study, to measure the financial leverage of long-term debt divided by the book value of the total assets were used (Sinai and Nisi, 2003). To achieve the objectives of the study using regression equation as below:

$$R_t = \beta_0 + \beta_1 OP + \beta_2 ER + \beta_3 IN + \beta_4 IR + \beta_5 SIZE + \beta_6 FL + \varepsilon$$

In this equation: P_t = return on equity, OP = oil price, ER: exchange rate, IN= the inflation rate, IR = Interest rates, FL= financial lever, SIZE = size of the company. Regression was used to analyze the data. In all analyzes, the significance level was considered $P < 0.05$.

Results

Kolmogorov - Smirnov test showed normal distribution of the data ($P > 0.05$). Before fitting the model, the F-Limer and Hausman diagnostic test to select the appropriate method to estimate the pattern in which the results are presented in Table Table 2. As can be seen in the F-Limer test has achieved a significant level and considering the significance level of 5% was acceptable in the light of panel data with fixed effects and lots of choice. The results of the Hausman test shows that the method is estimating panel data with fixed effects.

Table 1. The results of diagnostic tests.

Model with the dependent variable	Test	Static	Significant level	Accepted methods
Stock returns	F Limer	1.359	0.0269	Panel data with fixed effects
	Hausman	1.595	0.004	Panel data with fixed effects

The estimation results are presented in Table 2. According F static (1.656) obtained can be stated that the 99% confidence level, a total of independent variables associated with the dependent variable. Also, according to the coefficient of determination, these findings indicate that about 68 percent of the variation in the dependent variable explained by the independent variables. Moreover, according to the Durbin-Watson statistic obtained is equal to 2.04 that can be stated there was no correlation between the first order patterns of the remains. Due to

the significant coefficients of the variables in oil prices, exchange rates, inflation and interest rates can be stated that the macro-economic indicators and stock returns of companies listed in Tehran Stock Exchange. The coefficient of the price of oil was (0.209) due to the significant level of less 0.05. Therefore, there was a significant positive correlation between oil prices and stock returns. Variable rate of inflation and significant negative correlation with the dependent variable and the relationship was statistically significant at the five percent level. Exchange rate negative and statistically significant coefficient was evaluated. Hence, there was a negative relationship between exchange rate and stock returns. Variable rate interest rates were due to the significant level of less 0.05. There was a negative and significant relationship with the dependent variable yield, and this relationship was not statistically significant at the five percent level.

Table 2. Analysis of the results.

Dependent variables: return on equity			
The independent variable	Coefficient	Statistic t	Significant level
Oil prices	0.209	4.732	0.000
The inflation rate	1.270-	-14.483	0.000
Exchange rate	0.010-	-31.79	0.000
Interest rates of bank	0.660-	-8.790	0.000
Size of the company	42.446-	-2.607	0.009
Financial Lever	0.931	0.537	0.591
Intercept	23.132	0.775	0.438
The coefficient of determination	0.688	Adjusted coefficient of determination	0.622
F statistic	1.656	F statistic error	0.000
Durbin Watson statistic 2.04			

Discussion and Conclusion

The aim of this study was to investigate the relationship between macroeconomic indicators and stock returns of listed companies in the Tehran Stock Exchange. The results indicated that the oil price and stock returns of companies listed in Tehran stock exchange. There was a significant relationship between the inflation rate coefficient and negative relationship between the dependent variable. This had a significant relationship statistically at the one percent level. In terms of inflation, the average nominal profit of the company after a period of time, without any substantial increase in profitability have increased; therefore, inflation, real income lowers quality and value intrinsic per share decreased. Also, with the increase in the inflation rate, the interest rate increases expected by investors, therefore, cash flow discount rate increases the opportunity costs of lost money. There was expected a negative relationship between inflation and stock returns. The results were consistent with the expected results and the results of Madsen and Jakob (2002). There was a relationship between the exchange rate and stock returns of companies listed in Tehran stock exchange. Changes in exchange rates can have two different effects on stock prices. On the one hand, exchange rate (the demand side) to an increase in income of the exporters of commodities and the price of their shares and the other side (of the offer), leading to a decline in profits and share prices of firms importing intermediate products. Stock buyers, in addition to the dividend, pay attention to changes in the intrinsic value of their company. Industries require the establishment and operation of machinery from abroad, the effect of exchange rate changes, affected its intrinsic value. If needed machinery company with lower prices entered than the exchange rate, the exchange rate, the company will also increase the intrinsic value and the increase in the intrinsic intensified since the establishment of similar companies due to the high exchange rate if it is not possible and the company's products exclusively, the increased demand for the company's profits will increase over time. On the other hand, the share of machinery depreciation expense in cost of goods decreased production company (Barzani et al., 2010). Having regard to the foregoing by investors increased demand for the company's share issue will increase the efficiency of the company's shares. In addition, if the exchange rate decreases over time, these companies will leave backfire. The results of the study were consistent with the results of Jacob Madsen Jakob (2002). There was a relationship between interest rates and stock returns of companies listed in Tehran stock exchange. Coefficient of interest rates showed that the eight research hypothesis was confirmed. The results showed that the increase in bank deposit interest rates reduce the return index stock, which results were consistent with the results of studies such as: Maysami and Koh (2000). Given that the steady rise in the rate of inflation and exchange rates and oil prices led to, lower stock returns, which may result in a decrease in private investment in the economy, in order to ensure shareholders should have a minimum income strategies such as: coupon shares with a

guarantee of profitability, the investment insurance, ability to buy and sell risk, portfolio of innovative ways to support the exchange of investors with different methods and be studied and implemented.

Conflict of interest

The authors declare no conflict of interest

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