The Effect of Internal and External Factors on Stock Return: Empirical Evidence from the Indonesian Construction Subsector

Widya Retno Utami[1*], Sri Hartoyo[2] and Tubagus Nur Ahmad Maulana[1]

[1] Graduate School of Management and Business, Bogor Agricultural University
Bogor, Indonesia

[1,2] Department of Economic and Development, Bogor Agricultural University
Bogor, Indonesia

[*]*Corresponding author's email*: *widyaretnoutami [AT] gmail.com*

ABSTRACT— ***Many objectives that become a concern for investor while investing in the stock market. The aims of this study are to identify the effect of internal factors and external factors on stock returns construction Subsector in Indonesia Stock Exchange (IDX) during 2010 to 2014, and analyzing the beta values of all construction companies which will determine investment decisions. The internal factors are financial performances there are Quick Ratio, Debt to Equity Ratio (DER), Return on Equity (ROE), Earning per Share (EPS), and Price earning Ratio (PER). The external factors are Inflation, Interest Rate, Exchange Rate and Presidential Regulation. Panel data analysis was applied to estimate the relationship between internal factors and external factors on stock returns. The result of the study shows that the internal factor which is Quick Ratio, Debt To Equity Ratio (DER) and Price Earning Ratio (PER) has a significant negative effect on stock returns in Indonesian construction subsector. The study also shows that Inflation and Interest rate, has a significant negative effect on stock returns construction Subsector. The Exchange Rate has a significant positive effect, and Presidential regulation has insignificant effect on stock returns construction subsector. The beta values shows that all of beta values construction companies are above one, which implies that these stocks of construction companies are aggressive stocks.***

Keywords— Internal and External Factors, Construction Subsector, Stock Returns, Panel Data Analysis, Indonesia Stock Exchange (IDX)

1. INTRODUCTION

One of investment activity is by getting involved to become an investor in the stock market. In recent decades, the stock became one of the many investment options are quite attractive to foreign and local investors [15]. Stocks that have high price become potential to attract investors due to the increases movement of the stock price, in specific sectors reflecting better fundamental performance of the issuers concerned. In the course of exchange, stock market prices change according to the market activity as influenced by the forces of demand and supply. If there is a high demand for a given stock, its price will move upwards [2]. Investment in shares offers the benefit of liquidity as well as the opportunity the beat the market and earn high returns [18]. The higher rate of return generated by the company will attract investors to invest. Things that can affect stock price movements among others, comes from internal and external factors. Internal factors in question are a factor that comes from within the company in the form of company performance as well as the fundamentals of the company. External factors such as fluctuations in inflation rates, interest rates and the exchange rate that determines the transaction in the capital market so it is important for investors to consider matters that could affect the stock price as it will ultimately have an impact on yield that will be obtained by the investor.

Previous research regarding the effect of internal factors or external factors to stock return has been widely applied to the various sectors with varying research results. The study conducted by Alam & Rashid [1] found that the consumer price index (CPI), money supply (MS), exchange rate (ER) and interest rate (IR) proved to be negatively associated with the stock returns while the industrial production index (IPI) was found to be positively associated with the stock returns. Hunjra *et al.* [13] found that earnings per share have significant positive impact on stock price and return on equity shows positive insignificant impacts on stock price. Arabsalehi & Mahmoodi [3] considered that stock returns are more

closely associated with ROA and ROE than other performance measures. Meanwhile, Petcharabul & Rompraser [22] found that only ROE and PE have a significant relationship with stock returns.

The construction sector in Indonesia has a strategic role in the growth of the national economy. The strategic role includes the contribution of the construction sector to Gross Domestic Product (GDP), which peaked at number six out of nine sector contributor to the national GDP, and the absorption of a large workforce, and also supply chain which can encourage industry to support the construction sector so on finally able to move the business growth in the procurement of goods and services to increase productivity and income distribution community. The construction sector also played a role in employment. In 2013 the number of construction workers is estimated at around six million people. That number continues to increase from year to year. In 2006, the number of construction workers there were approximately 4.7 million people. In 2009 the number growing to 5.7 million people or 5.3 percent of the national workforce. The government hopes construction workforce can be increased by 60 percent, or three million people in 2015. So with the addition of Indonesian construction is expected to be able to compete within ASEAN [11].

When focused on shares of the construction sector, throughout 2014, the shares of the construction sector continued to strengthen. Macroeconomic indicators such as inflation and interest rates also affect the movement of the stock price. The inflation rate will have a significant influence on stock prices [1]. Fluctuating inflation rates also affect the movement of stock returns in the construction Subsector in the opposite direction. However, an inverse relationship does not take place at the end of 2014, the higher inflation rate followed by stock returns construction Subsector which also showed an increase drastically.

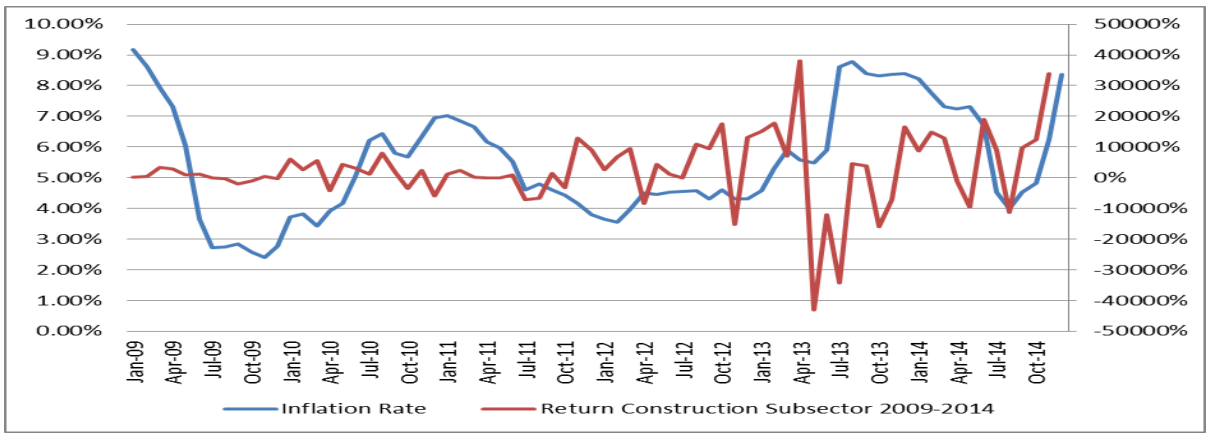

Figure 1: Fluctuations of Stock Return Construction Sub-Sector Towards The Inflation Rate for 2009-2014

This study elaborates the impact of internal and external factors on stock return and analyzing prediction beta shares of each construction company that will determine investment decisions. Internal factors are under management control and by controlling the internal factors managers can control the stock price to some extent [13]. The objective of this paper is to determine the impact of quick ratio, debt to equity ratio, return on equity, earnings per share and price earning ratio as internal factors and inflation, interest rate, exchange rate, and presidential regulation no.32 year 2011 as external factors in construction firms listed in Indonesia Stock Exchange (IDX).

2. LITERATURE REVIEW

There are many studies related to the effect of internal factors or external factors on stock return. This study will examine both of factors. Petcharabul and Rompraser [22] examined about relationship between financial ratios and stock return in technology industry of the Stock Exchange of Thailand (SET) from year 1997 to 2011. Five financial ratios from each category are used as sample of dependent variables; current ratio fom liquidity ratio, debt to equity ratio from debt ratio, inventory turnover ratio from asset activity ratio, return on equity from profitability ratio, and price earnings ratio from market value ratio. Ordinary Least Square Regression (OLS estimate) to test the relationship between financial ratios and stock returns and found that only ROE and PE have a significant realtionship with stock returns.

Thim *et al*.[27] investigated the factors affecting the performance of 36 property firms listed on the Main Board of Bursa Malaysia from 2003 to 2007. Ordinary least squares (OLS) method has been applied to represent all the variables comprising stock performance, return on assets (ROA), return on equity (ROE), debt ratio (DR), net profit margin (NPM), effective tax rate (ETR), earnings per share (EPS), and price earning ratio (PER). Result show that ROA, ROE, and EPS have strong significant relationships with the property stock performance. Then Alam & Rashid [1] investigated the relationship between Karachi stock market 100 index and macroeconomic variables, i.e., inflation, industrial production, money supply, exchange rate and interest rate. The consumer price index (CPI), money supply (MS), exchange rate (ER) and interest rate (IR) proved to be negatively associated with the stock returns, while industrial

production index (IPI) was found to be positively associated with the stock returns. All the variables were significantly associated to stock market returns except inflation.

Idawati & Wahyudi [15] explained about relationship and influence of earning per share (EPS) and return on asset (ROA) on stock prices. The panel data methods has been applied and the best model is Fixed Effect. The results of that study indicate that EPS and ROA has a positive realtionship to the stock price and simultaneously affect stock prices. Ozlen & Ergun [21] investigated internal determinants of the stock price movement on sector basis. Financial ratio such as total assets turnover ratio, debt ratio, current ratio, net profit margin, price to earnings ratio and book value is the most important internal factor in explaining stock price movements for all sectors.

The research that investigated about the effect of macroeconomic factors on stock return in many various ways has been conducted, among others are Benakovic & Posedel [5] observe the relation between inflation, industrial production, interest rates, market index and oil prices as factors on fourteen stocks return of the Croatian capital market. The results show that the market index has the largest statistical significance for all stocks and a positive relation to returns. Interest rates, oil prices and industrial production also marked a positive relation to returns, while inflation had a negative influence. Chidoti [7] examined the relationship between inflation and stock prices. In general the study found a negative relationship between stock prices and the concurrent rates of inflation over the last decade. Singh *et al.* [25] examined the the casual relationship between Taiwan index returns and the macroeconomic variables namely employment rate, exchange rate, GDP, inflation and money supply. Empirical findings revealed that exchange rate and GDP seem to affect returns of all portfolios, while inflation rate, exchange rate and money supply were having a negative relationship with returns for portfolios of big and medium companies. Another research that examines the impact of macroeconomic factors on stock returns there is Garba [10] who examines the relationship between the inflation, interest rate, exchange rate of domestic currency and gross national income on stock returns of the manufacturing firms listed on the Nigerian Stock Exchange. Among the major findings of the study was that none of four independent variables has significant impact on the common stock returns of the sampled manufacturing firms in Nigeria.

3. RESEARCH METHODOLOGY

3.1 Data

The research used financial statement data from construction Subsector companies listed in Indonesia Stock Exchange from 2010 until 2014. The analysis consists of the quarterly data from six firms traded continuously in the Indonesian Stock Exchange (IDX) construction and building industry during 2010-2014 with a main period of 2010 Q1-2014 Q4. The data from the six companies was calculated using the balance sheet and income statements that they had announced quarterly.

3.2 Variables

Independent variables that used in this study are quick ratio, debt to equity ratio (DER), return to equity (ROE), Earning per Share (EPS) and Price Earning Ratio (PER) as internal factors, meanwhile variable inflation, interest rate, exchange rate, and presidential regulation No.32 year 2011 as dummy variable are used as external variables to stock return as dependent variables.

3.3 Regression Model and Technical Estimates

This research uses panel data regression analysis to investigate the effect of internal and external factor on stock return. Data panel is a combination of time series data and cross section data. Regression models performed using software eviews 7.0. Regression models were used to analyze the effect of internal and external factor on stock return in the construction Subsectors in Indonesia Stock Exhange. The regression model are:

$$R_{it} = \alpha_{0+} \alpha_1 QR_{it} + \alpha_2 DER_{it} + \alpha_3 ROE_{it} + \alpha_4 EPS_{it} + \alpha_5 PER_{it} + \alpha_6 INF_{it} + \alpha_7 IntRate_{it} + \alpha_8 ExRate_{it} + \alpha_9 PresReg_{it} + e_{it}$$

$$\alpha_1, \alpha_3, \alpha_4, \alpha_5, \alpha_6 > 0 ; \qquad \alpha_2, \alpha_7, \alpha_8, \alpha_9 < 0$$

Where:

Rit = return of stock construction company
QR = quick ratio
ROE = ratio of return to total quity owned by the firms
EPS = ratio of earning per share
PER = ratio of price to earning
INF = inflation
IntRate = interest rate
ExRate = exchange rate
PresReg = presidential regulation no.32 in 2011
e_{it} = error
α_0 = intercept

α_i = regression coefficient

To estimate the parameters of the model with panel data, there are several techniques that are offered, namely Pooling Least Square (PLS) or Common Effect, Fixed Effects Model (Fixed Effect), and Random Effects Model (Random Effect). Furthermore, after the model chosen estimation done some testing to choose the most appropriate model among the three types of estimation techniques panel data regression model. Stage tests performed among others by F test or Chow test to choose between methods Pooling Least Square or Fixed Effect, after it conducted tests Langrange Multiplier or Test LM used to choose between Pooling Least Square (PLS) or Random Effect, Hausman test is then performed to choose between models Fixed Effect or Random Effect Model. To determine what type of panel regression analysis was suitable for the model, Chow and Breush Pagan tests were applied in the first stage [6]. The H_0 hypothesis which resulted in the Pooled model was accepted. Therefore, all the models were analysed according to the pooled regression method.

After the stages of testing to choose the best model is done, the use of regression analysis is necessary to test the classical assumption that the results of the regression analysis show valid relationships to meet the assumption BLUE (Best Linear Unbiassed Estimators), the experiments performed in this study is normality, heteroscedasticity, autocorrelation and multicolinearity. The classical assumption test is used to determine the condition of the data used in the study. This is done in order to obtain the proper analytical model.

4. RESULT AND ANALYSIS

4.1 Descriptive satistics

The table 1 shows descriptive statistics of all variables in this study. The return has an average value of 2.7% over a five year period. From the above data it can be seen that the stock returns on average changes with a positive return on average stock return of 2.7 percent. This indicates that the company's share price construction subsector has increased over the period 2010-2014. The standard deviation of stock returns is 0. 160 or 16 percent that exceeds the value of the average stock return of 2.7 percent. The value of the return`s standard deviation exceeds the value of the average stock return shows a high fluctuation of the stock return variable data during the observation period. Likewise with variable quick ratio, return on equity (ROE), earning per share (EPS), price earning ratio (PER). Different with debt to equity (DER) variable which has the average (mean) of 257.8 per cent and the value of a standard deviation of 167.2 percent. A standard deviation value which is smaller than the average value (mean) showed that the distribution of data in the variable DER has a distribution that is small, so that the data in the variable DER quite good, and means the average of firm debt in construction Subsector is 2.57 times of the total quality.

Table 1: Descriptive statistics

Variable	Mean	Maximum	Minimum	Std. Dev.
Return	0.027	1.209	-0.279	0.160
Quick Ratio	1.474	2.526	1.017	0.310
Debt Equity Ratio	2.578	6.289	0.475	1.672
Return On Equity	0.108	0.830	0.002	0.108
Earning Per Share	38.818	225.000	-3.400	40.529
Price Earning Ratio	91.453	533.352	-22.660	131.755
Inflation	0.056	0.086	0.036	0.014
Interest Rate	0.065	0.065	0.075	0.057
Exchange Rate	9787.90	12245.34	8013.12	1240.69

4.2 Regression Results

The Chow and hausman test is conducted to choose the right model on panel data regression. The best model chosen is Pooled Least Square (PLS). Based on the results of chow test, H_0 is rejected and H_1 accepted, that in this study the approach Pooled Least Square (PLS) is better than a model approach to the Fixed Effect Model (FEM). Because the chosen model is Pooled Least Square (PLS), so we don`t have to process to the Hausman test.

4.3 Regression Model Panel data Analysis

After conducting the OLS regression between stock return as dependent variable and internal and external factors as independent variables to determine the relationship, the result of the analysis is shown below. The result includes the coefficient of all variables and the signs of their relationship to stock returns in that quarter. Regression analysis based on the model chosen chow test results Pooled Least Square (PLS) as the best model. Table 1 shows that internal factors are the quick ratio (CR), debt equity ratio (DER), and price earning ratio (PER) has a significant effect on stock returns, and the entire external factors, namely inflation, interest rate rate and the exchange rate have a significant impact on stock

returns subsector construction with the real level of ten percent. Meanwhile, variables return on equity (ROE), earning per share (EPS), has no significant effect on stock returns subsector construction.

Table 2 : Panel data regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Quick Ratio	-0.012203	0.005837	-2.090715	**0.0194**
Debt Equity Ratio	-0.001460	0.000692	-2.108539	**0.0186**
Return On Equity	0.006585	0.005580	1.180222	0.1202
Earning Per Share	1.36E-05	2.09E-05	0.649242	0.2587
Price Earning Ratio	2.76E-05	1.79E-05	1.541381	**0.0630**
Inflation	-0.201736	0.149328	-1.350958	**0.0897**
Interest Rate	-0.875770	0.560926	-1.561292	**0.0606**
Exchange Rate	0.009851	0.004491	2.193611	**0.0151**
President Regulation	0.004351	0.004830	0.900853	0.1848
R-Square	0.112965			
Adjusted R-Square	0.049035			

* significant at 10% level
Source : Eviews 7 software ouput

As for the dummy variable is the variable Presidential Regulation No.32 of 2011 regarding the Master Plan for the Acceleration and Expansion of Indonesian Economic Development (MP3EI) showed that this Presidential Regulation No.32 of 2011 has no significant effect on stock returns Subsector construction.

4.4 Internal Factors Analysis on Construction Subsector

The Fundamental factors that have a significant effect is quick ratio, debt to equity ratio (DER) and price earning ratio (PER). Quick ratio, which represents the ratio of liquidity has a negative coefficient, which means the company's ability to manage its liquidity is inversely related to the return received by investors, it is not in line with the hypothesis of the study that the quick ratio has a positive effect on stock returns. Good liquidity will reflect the condition of good firms so that investors expect profits will also be good. Cash flow also affects the distribution of dividends to investors. The results showed a probability variable quick ratio is 0.0194 with α ten percent and the coefficient of -0.012203. These results indicate that the variable quick ratio (QR) has significant influence and has a negative coefficient on stock returns subsector construction. It shows that the quick ratio in this sub-sector has an inverse relationship with stock returns subsector of construction, the higher the value of the quick ratio (QR) construction sub-sector issuers, the lower the acquisition of the stock return earned by investors who invest in this subsector. The result showed that the variable quick ratio is not in line with the hypothesis, it is can caused by the end of 2014 the government issued a plan that would not be attractive dividends to state-owned construction company with the aim of encouraging the development of infrastructure projects, it is expected to affect investor interest in the shares of construction subsector. So that if the cash flow that is owned by the issuer, the better it is not used by the company for distribution of dividends but rather to extend the expansion. The results of this study are not consistent with research Komala and Nugroho [17], as that Quick Ratio does not affect any or no effect on the investment return of manufacturing companies.

Another factor is the debt to equity ratio (DER) which has a probability value of 0.0186 with a value of α by ten percent, it showed that this DER variable significantly influence the construction sub-sector stock returns. Coefficient values obtained amounted -0.001460, a negative sign in the coefficient indicates that the variable has a negative or opposite relationship to the dependent variable namely construction subsector stock return. It shows that if debt to equity ratio (DER) listed companies increased the construction subsector will result in the acquisition of returns to be received by the investor decreased. This is consistent with the original hypothesis which debt to equity ratio (DER) is negatively related to stock return if the level of debt to equity ratio (DER) construction subsectors increased the construction sub-sector stock returns will decline. The larger the company's debt will affect more low returns generated by the company to investors. The greater level of company will result in the rate of return earned by the investor will be smaller because of profit will be used first for debt repayment. The results are consistent with research Thim [27], and Hussain [14] that the debt to equity ratio (DER) a significant negative effect on stock returns.

Another factor is the variable price earnings ratio (PER) which have a significant impact and has a positive coefficient on stock returns subsector of construction means the construction subsector are all in the high growth that investors are willing to pay a premium share price. This PE ratio result of this research also supports Petcharabul & Rompraser [22] mentioned that there is show a significant amount of quarterly stock return.

Overall issuers subsector construction have positive results it can be seen from the coefficient of return on equity (ROE) and earnings per share (EPS), which represents the ratio of the profitability of a company that has a positive value, although this ratio does not have a significant influence on the stock returns subsector construction.

4.5 External Factors Analysis on Construction Subsector

Based on the test results of external variable panel data, all of external variables except dummy variable that is President Regulation No.32 year 2011 has a significant effect on construction subsector stock return. All external variables that are inflation, interest rate and exchange rate against the USD dollar significantly in the real level of ten percent. Inflation, interest rate and exchange rate have a significant effect on stock returns in the construction sub-sector of the real level of ten percent.

Inflation variable has a value of 0.0897 and a probability coefficient value of -0.201736, with α amounting to ten percent of the inflation variable significant negative effect on stock returns subsector construction . It shows that inflation is actually one of the factors that affect investment in construction subsector. The increases inflation will affect investments made for investors. Because inflation also affects the value of the money invested by the investor. Inflation will erode investment returns of the investors. So that it is consistent with the hypothesis that inflation negatively affect stock return subsector construction. The results are consistent with research conducted Alam & Rashid [1], Benakovic & Posedel [5], Wongbangpo & Sharma [28], Flannery & Protopapadakis [8] that the variable inflation significant negative effect on stock returns of real estate and property sector. While the research results of Singh [25] in yield portfolio inflation have positive relationships with stock returns, Garba [10] showed that inflation had no significant impact on stock returns of manufacturing in Nigeria.

Another significant variable is interest rate. The probability value that is owned by the variable interest rate is equal to 0.0606 and has a coefficient of -0.875770. With α ten percent then, the variable interest rate influence significantly and negatively related to stock returns subsector construction. The interest rate that applies in this case to follow the provisions of Indonesian of Bank is the cost if companies make loans in the process of funding. Most companies do reimbursing in the procurement of equipment, supplies, capital, derived from loans, when interest rates go down, then it will reduce borrowing costs by a decrease in interest rates would result in increased stock returns because it will affect the stock price because investors are willing to paying stocks through get hope of higher returns in the future. With the results that the variable interest rate significant negative effect on stock returns subsector of construction it is in line with the hypothesis. This is not supported by research Benakovic & Posedel [5] variable interest rates has positive regression coefficients signs and statistical significantly for seven stocks in the Croatian market. Meanwhile Garba [10] found that the variable interest rates had no significant impact on stock returns of manufacturing in Nigeria.

The exchange rate variable that was rupiah against the US dollar has a probability of 0.0151 and the coefficient value of 0.009851, with the α amounting to ten percent of the variable rate of significant and positively related to the construction sub-sector stock returns. This result contradicts the hypothesis made that exchange rates negatively affect stock return subsector construction. But the value of exchange rate coefficient not in line with hypothesis of the study. In the test results of panel data the exchange rate variable has a positive coefficient. This can be caused by many foreign investors who invest in the construction sub-sector in Indonesia, so that when the rupiah weakened, the construction subsector stock return is even more increased. The results of this study are in line with previous research that has been done by Singh *et al.* [25] which states that the exchange rate has a significant positive effect on stock returns and not supported by research Alam & Rashid [1] that found the exchange rate negatively associated with the stock market returns.

4.6 Beta Shares of The Construction Sub-Sector

Beta shares that will explain in this section is the average beta stocks from 2010 to 2014. Every company has a beta value which will determine the position of the issuer's shares in a stock's beta aggressive or defensive. Beta aggressive stocks are generally owned by the issuer that is preferred by the market, in the event of changes in the market will provide a rapid effect on stock price movements that impact on the value of return obtained by investors. Stock purchasing decisions can also be seen from the value of stock beta. when the market is bullish (positive growth) investors should buy stocks which has aggressive beta. If the market is bearish (negative growth) investors are advised to buy stocks which has defensive beta.

Table 3: Beta stock construction subsector

No.	Issuer Code	Beta
1	ADHI	2.373843
2	DGIK	1.482525
3	PTPP	1.986448
4	SSIA	2.090694
5	TOTL	1.716628
6	WIKA	1.695974

Table 3 shows the beta values of all construction companies examined in the study. From the table, it can be seen that all the beta values are above one which implies that these stocks of construction companies are aggressive stocks. The beta values of above one indicates that the stock prices of construction companies can rise so quickly exceed the increase in the market or Jakarta Composite Index (JKSE). However, when the market is down, the price will go down faster than the market. That is, if the market is rising, the stock will rise higher than the market. However, if the market is down, stock prices of construction companies will fall by more than the market decline.

The beta values construction stocks classified into aggressive stocks, so the construction sector becoming into an option in investor transactions when macroeconomic conditions were bullish. Meanwhile, when the bearish market conditions, investors prefer to trade on another stock that has a defensive beta stocks.

5. MANAGERIAL IMPLICATIONS

5.1 Implication to Investors

For investors, can be taken into consideration in making investment decisions when there are fluctuations in macroeconomic variables and to better understand the behavior of the value of shares related to internal factors that influence. The investor can find out the proper conditions in determining the buying and selling of shares in listed companies subsector construction, then can become suggestions or input for investors in choosing company that have good performance or performance which reflected the value of its financial ratios. In addition, for investors who want to get a return of investment in the subsector of construction in order to obtain optimal results, can be noticed macroeconomic conditions that influence the movement of the stock return, among them at the time when inflation is increasing which will result in a further decline in the return obtained investors, then the exchange rate that would indicate reversibility conditions in which the weakening of the rupiah against the US dollar will increase the rate of yield that would be obtained if investing in this construction subsector.

5.2 Implication to Regulator

The construction sector has an important role in the economy of the country as a contributor to the development of infrastructure. It is therefore important for regulators or governments in implementing policies currently focus on the accelerated development of infrastructure. So the government should be able to better prepare skilled workers category construction sector and experts that are expected to compete or cooperate with contractors who come from outside.

6. CONCLUSION REMARKS

This study is on the assessment of the impact of internal and external factors on stock returns subsector of construction was undertaken with the major aim of discovering results that can assist stockholders, and government as regulator. To answer the research questions are obtained from an analysis of Panel data method to determine the relationship between six financial ratios; quick ratio, debt to equity ratio (DER), return on equity (ROE), earning per share (EPS), and price earning ratio (PER) as internal factors as well as inflation, interest rates, and exchange rates as external factors to stock returns of construction companies in the Indonesia Stock Exchange during year 2010 to 2014. Based on the research that has been done and in accordance with the purpose of research, it can be concluded that internal factors indicated by the variable quick ratio, debt to equity ratio (DER), and price earning ratio (PER) are variables that significantly influence the construction sub-sector stock returns. External factors indicated by the variable inflation, interest rate and the exchange rate Rupiah against the US dollar significantly influence stock return subsector construction.

7. REFERENCES

[1] Alam Z, Rashid K, "Time series analysis of the relationship between macroeconomic factors and the stock market returns in Pakistan", *Journal of Yasar University*, vol. 9, no. 36, pp. 6361-6370, 2014.
[2] Al-Qudah MAL, "The factors that affect shares'return in Amman Stock Market", *Interdisciplinary Journal of Contemporary Research in Business*, vol. 4, no. 6, 2012.
[3] Arabsalehi M, Mahmoodi I, "The quest for the superior financial performance measures", *International Journal of Economics and Finance*, vol. 4, no.2, 2012.
[4] Arslan M, "Impact of dividend yield and price earnings ratio on stock returns: A study non-financial listed firms of Pakistan", *Research Journal of Finance and Accounting*, vol. 5, no. 19, pp. 68-79, 2014.
[5] Benakovic D, Posedel P, "Do macroeconomic factors natter for stock return? Evidence from estimating a multifactor model on the Croatian market", *Business Systems Research*, vol. 01, no. 1-2, pp. 1-5, 2010.
[6] Chambers N, Sezgin F, Karaaslan B, " An analysis of the effect of capital structure and the beta coeeficient on stock returns: A case study of the Istanbul Stock exchange (ISE) – manufacturing industry", *International Journal of Business and Social Science*, vol. 4, no. 7, 2013.
[7] Chidothi D, Sheefeni JP, "Relationship between inflation and stock prices in Zambia", *Asian Journal of Business and Management*, vol. 01, no. 4, 2013.

[8] Flannery MJ, Protopapadakis A, "Factors do influence agregate stock returns", *The Review of Financial Studies Summer*, vol.15, no. 3, pp. 751-782, 2002.
[9] Gao Y, Oler D, "Rumors and pre-announcement trading: why sell target stocks before acquisition announcements?", *Review of Quantitative Finance and Accounting*, pp.1-24, 2011.
[10] Garba A, "Impact of macroeconomic factors on common stock returns: A study of listed manufacturing firms in Nigeria", *European Journal of Business and Management*, vol. 6, no. 13, 2014.
[11] Hermawan E. "2015, Pekerja Konstruksi bertambah 60 persen", from http://bisnis.tempo.co/read/news, Jakarta, Indonesia, 2013.
[12] Hooker MA, "Macroeconomic factors and emerging market equity returns: A Bayesian model selection aproach", *Emerging Markets Review*, vol. 5, pp. 379-387. 2011.
[13] Hunjra AI *et al*, " Impact of dividend policy, earning per share, return on equity, profit after tax on stock prices", *International Journal of Economics and Empirical Research*, vol. 2, no.3, pp. 109-115, 2014.
[14] Hussain NM, "Impact of capital structure on stock price of cement sector in Pakistan", *Interdisciplinary Journal of Contemporary Research in Business*, vol. 3, no. 3, pp. 778-798, 2011.
[15] Idawati W, Wahyudi A, "Effect of earning per share (EPS) and return on assets (ROA) against share price on coal mining company listed in Indonesia Stock Exchange", *Journal of Resource Development and Management*, vol. 7, pp. 79-91, 2015.
[16] Jabbari E, Fathi Z, "Prediction of stock returns using financial ratios based on historical cost, compared with adjusted prices (accounting for inflation) with neural network approach", *Indian Journal of Fundamental and Applied Life Sciences*, vol. 4 (S4), pp. 1064-1078, 2014.
[17] Komala LAP, Nugroho IP, "The effects of profitability Ratio, liquidity, and debt towards investment return", *Journal of Business and Economics*, vol. 4, no. 11, pp. 1176-1186, 2013.
[18] Malhotra N, Tandon K, "Determinants of stock prices: Empirical evidence from NSE 100 companies*", International journal of Research in Management & Technology*, vol. 3, no.3, pp. 86-95, 2013.
[19] Mirela C, "Financial return in the field of constructions: what accounting issues should an investor know?", *Bulletin of The Transilvania University of Brasov*, vol. 7, no. 56, pp. 175-180, 2014.
[20] Oladipo FO, Oni OJ, "A review of selected macroeconomic factors impacting building material prices in developing countries", *Ethiopian Journal of Environmental Studies and Management EJESM*, vol. 5, no.2, pp. 131-137, 2012.
[21] Ozlen S, Ergun U, "Internal determinants of the stock price movements on sector basis", *International Research Journal of Finance and Economics*, no. 92, pp. 111-117, 2012.
[22] Petcharabul P, Rompraser S, "Technology industry on financial ratios and stock returns", *Journal of Business and Economics*, vol.5, no.5, pp. 739-746, 2014.
[23] Pettengil GN, Sundaram S, Mathur I, "The conditional relation between beta and returns", *The Journal of Financial and Quantitative Analysis*, vol. 30, no. 1, pp. 101-116, 1995.
[24] Saeed S, "Macroeconomic factor and sectoral indices; A study of Karachi Stock Exchange (Pakistan)", *European Journal of Business and Management*, vol. 49, no. 17, pp. 132-152, 2012.
[25] Singh T, Mehat S, Varsha MS, "Macroeconomic factors and stock returns: Evidence from taiwan", *Journal of Economics and International Finance*, vol. 2(4), pp. 217-227, 2011.
[26] Srinivasan P, "Determinants of equity share prices in India: A panel data approach", *The Romanian Journal*, vol. 15, no. 46, pp. 132-152, 2012.
[27] Thim KC, Choong YV, Asri NQB, "Stock performance of the property sector in Malaysia", *Journal of Modern Accounting and Auditing*, vol. 8, no. 2, pp. 241-246, 2012.
[28] Wongbangpo P, Subhash CS, "Stock market and macroeconomic fundamental dynamic interactions: ASEAN-5 Countries", *Journal of Asian Economic*, vol.13, pp. 27-51, 2002.