

The Effect of Inflation, BI Rate, and Rupiah Exchange Rate on Stock Returns and Its Effect on Return on Investment
(Study on Manufacturing Sector of Industry listed in Jakarta-Indonesia Stock Exchange period 2010-2014)

Dr. Acep Edison.,SE.,MM.,AK.,CA¹

Dr. Sugiartiningsih S.E.,M.Si²

Tria Aprialiana S.E.,M.Si³

¹Department of Accounting, University of Widyatama, Bandung, Indonesia

²Department of Accounting, University of Widyatama, Bandung, Indonesia

³Department of Accounting, University of Widyatama, Bandung, Indonesia

(acep.edison@widyatama.ac.id, sugiarti.ningsih@widyatama.ac.id, tria.aprialiana@widyatama.ac.id)

Abstract

This study aims to determine the relationship of economic variables among others are inflation, BI (Bank of Indonesia) interest rates, Rupiah to US Dollar foreign exchange rates on stock returns in order to obtain the findings whether the stock returns in the manufacturing sector in Indonesia Stock Exchange (IDX) is affected by inflation, BI interest rates, and Rupiah to US Dollar foreign exchange rates in order to get a solution to the stock returns when economic variables get turbulence. Data analysis in this study is performed using

causality-verify technique using Equation Structural Modeling (SEM).

The results showed that inflation partially affects the stock returns, interest rate has no effect on stock returns, and Rupiah exchange rate affects the stock returns. Inflation, interest rate and exchange rate simultaneously affect stock returns as well as the impact on Return On Investment .

Keywords: Inflation, Exchange Rate, Stock returns, Return on Investment, Equation Structural Modeling (SEM)

1. Introduction

Financial crisis problem that occurred in various parts of the world has become a phenomenon in this millennium century. The occurring financial crisis does not only affect the economic fundamentals in a country, but it affects financial crisis in many parts of the world, such as the financial crisis in America which has

affected the Indonesia economy. Then it causes financial crisis in the Indonesia's company directly and indirectly because of the use of Dollar as transaction tool. Capital markets have an important role in the economy of a country that serves as a means for funding, developing, expanding, and increasing working capital for company (www.idx.co.id,2015).

The stock price is formed from supply and demand of stock. Supply and demand occurs due to various factors, both of specific factors relating to the company's performance of the company and macroeconomic factors such as; inflation, BI interest rate, Dollar price, oil price, and non-economic factors such as; social and political conditions, and other factors as external factors (www.idx.co.id. 2015).

The fluctuation of stock price index is influenced by external and internal factors of company. External factors coming from other foreign countries stock index (Dow Jones, Hang Seng, etc.), the trend of overseas gold price, the trend of overseas oil price fluctuation, and the overseas market sentiment. Meanwhile, internal factors derived from the value of a country's currency exchange rate against other countries, interest rates, and inflation in a country (Mauliano, 2010).

The inflation rate's fluctuation can influence the investors' return from the company's shareholding, particularly those that listed in Indonesia Stock Exchange (IDX). A low inflation rate can reach two or three percent. Moderate inflation levels reach between four to ten percent. Very serious inflation may reach the level of a few dozen or several hundred percent in a year (Sukirno 2008). Serious inflation can greatly affects the company's ability to operate then will ultimately affect the ability to generate profit and it influences the return on shares. (www.idx.co.id 2015).

In addition to the inflation effect on stock returns, can be seen from the effect of interest rate bank certificates of Indonesia. Certificate issued by Indonesian banks known as Bank Indonesia certificates (BI), reinforced by the BI

Board of Directors SK 31/67 / KEP / DIR concerning the issuance and trading of BI and rupiah investment ie "Bank Indonesia Certificates (BI) is the bearer securities on rupiah issued by Bank Indonesia in recognition of short-term debt discount system ". The effect of rising interest rates will encourage investors to switch from stocks to bank deposits. Theoretically, interest rates and stock prices have a negative relationship. Beside inflation rate, stock return can affected by certificate of BI rates. The certificate that published by Indonesia Bank, based on the Decree of BI Director No. 31/67/Kep/DIR about the SBI issuance and trading and also rupiah investment namely "Bank of Indonesia Certificates (SBI) is the bearer securities on rupiah issued by Bank Indonesia in recognition of short-term debt discount system". The effect of rising interest rates will encourage investors to switch from stocks to bank deposits (Tandelin, 2010).

It was alleged that the stock return problem in companies listed on FSA in particular and on the stock market in Indonesia will be affected if the macroeconomic variables namely inflation, SBI interest rate, and Rupiah exchange rate experienced shock, as occurred in the fourth quarter of 2015, the devaluation of Chinese Yuan caused the rising of interest rates and Rupiah to US Dollar foreign exchange rates which is experiencing sustained pressure and causes weakness in the purchasing power of rupiah. This condition influenced the financial performance of companies in Indonesia. Based on that conditions, it is interesting to study "Effects of Inflation, Interest Rate SBI, Exchange Rate Of Return Stocks impact on Return On Investment Study on Manufacturing sector listed in IDX".

Based on the described background of problems, the identification of problems in this study is related to how big the influence of inflation, SBI interest rate, and

2. Literature Review

Stock Return

Stock return is income earned during the investment period per amount of funds invested in stocks (Boediono, 2000).

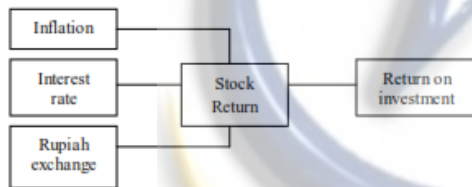
Inflation

Inflation is a general rise in prices, or a reduction in purchasing power of money. The higher the increase of price increase resulted in getting the value of money down (Sukirno, 2006: 14).

Interest Rate

Interest rate is the price of the use of money for a certain period of time or the

3. Conceptual Framework



4. Research Hypotheses

Hypotheses in this study are as follow:

H₁: Inflation affects Stock Return.

H₂: Interest rate affects Stock Return.

H₃: Exchange Rate affects Stock Return.

H₄: Stock Return affects Return On Investment.

H₅: Inflation, Interest Rates, Exchange Rate simultaneously affects Return on Equity and and it affects Return On Investment.

5. Methodology

Rupiah exchange rate partially or simultaneously on stock return and its impact on Return On Investment in the manufacturing listed in IDX.

price of the use of money which is used at the moment and will be returned later (Herman (2003) in Meta (2005)).

Exchange Rate

Exchange rate is an exchange between two different currencies, namely the value or price comparison between the two currencies (Triyono ,2008).

Return On Investment (ROI)

Return on investment is a ratio that measures the overall ability of the company in generating profits for a total amount of assets available within the company (Syamsuddin, 2009: 63).

The design of causality-verification analysis using Structural Equation Modeling is as follow:

1) The design of Goodness and Fit test

In this study, Goodness and Fit testing is designed using:

1. Chi-Square (χ^2), the model is good if the value of Chi-Square=0 and p-value (significance level) > 0,05
2. Goodnes of Fit Indices (GFI), the model is good if PGFI> 0,60 ; GFI > 0,90 ; RMR < 0.80 ; AGFI ≥ 0.90
3. Root Mean Error of Approximation (RMSEA), the model is very good if the value of RMSEA < 0,05, the model is good if the value of RMSEA ≤ 0,08, the model to be repaired if the value of RMSEA > 0,05.

2) The design of Path Analysis

This study is using Structural Equation Modeling (SEM) with setting all variables as obseverbs or variables that are directly

observable in the form of secondary data.
The equation is as follow:

Equation 1:

Stock Return = ρ Inflation + ρ Interest Rate + ρ Rupiah Exchange Rate + ϵ .

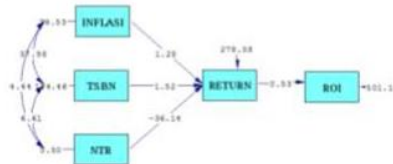
Equation 2:

Return On Investment = ρ Stock Return + ϵ .

6. Result

Goodness and Fit test

The result of test is as follow:



1. Chi – Square test (χ), a model is good if Chi – Square = 0 and p-value (p) > 0,05.

Normal Theory Weighted Least Squares Chi-Square = 0.00 (P = 0.038) **Estimated Non-centrality Parameter (NCP) = 0.0**
90 Percent Confidence Interval for NCP = (0.0 ; 1.96)

It means that there is no difference between observed and predicted input.

2. Goodnes of Fit Indices (GFT) test, a model is good if PGFI > 0,60; GFI > 0,90 ; RMR < 0.80; AGFI \geq 0.90.

Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.97

Adjusted Goodness of Fit Index (AGFI) = 0.97 artinya nilai AGFI > 0,90

Shows that overall predicted goodness of fit level has no difference with the real observation.

3. Root Mean Error of Approximation (RMSEA) test. the model is very good if the value of RMSEA < 0,05, the model is good if the value of RMSEA \leq 0,08, the model to be repaired if the value of RMSEA > 0,05.

Root Mean Square Error of Approximation (RMSEA) = 0.0
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.13)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.90

The value of RMSEA of 0.0 means that the model is fit and confidence interval is 0,13 (ranging from 0-15), p-value for RMSEA 0,90 and it is greater than 0,05. Based on Chi-Square test, the SEM model is fit or showing matches between prediction and observation.

Hypotheses Testing

Partial significancy test (t-test)

RETURN = 1.28*INFL + 1.52*TSBN - 36.14*NTR, Errorvar.= 279.38, R² = 0.40

$$\begin{array}{cccc}
 (0.44) & (0.41) & (7.77) & (65.85) \\
 2.90 & 0.75 & 4.65 & 4.24 \\
 \text{ROI} = 0.53 * \text{RETURN}, \text{ Errorvar.} = 501.14, R^2 = 0.21 \\
 (0.17) & & (118.12) & \\
 3.07 & & 4.24 &
 \end{array}$$

The partial t-test is resulting :

t tabel \rightarrow df = N – m – 1 \rightarrow 42 – 5 – 1 at the significance level sig. 5 % = 1,688.

Hypothesis 1 :

1. The result of t-value is 2,9 and the t-table is 1,688, it means that t-value > t-table . the conclusion is accepting H_{a1} . It indicates that inflation has effect on stock return.

2. The result of t-value is 0,75 and the t-table is 1,688, it means that t-value < t-table . the conclusion is accepting H_{02} . It indicates that interest rate has no effect on stock return.

Hypothesis 2:

Hypothesis 3 :

3. The result of t-value is 4,65 and the t-table is 1,688, it means that t-value > t-table . the conclusion is accepting H_{a3} . It indicates that Rupiah exchange rate has effect on stock return.

Hipotesis 4 :

4. The result of t-value is 3,07 and the t-table is 1,688, it means that t-value > t-table . the conclusion is accepting H_{a4} . It indicates that stock return has effect on Return On Investment.

Simultaneous Significancy Testing (F-test)

Based on F-test result, the significance value generated is 0,000232. This value is less than significance level of 0,05. F-value generated is 8,277900 and F-

tables is 3,46. It shows that F-value > F-table. The conclusion is all of independent variables namely inflation, interest rate, and Rupiah exchange rate simultaneously affect dependent variable namely stock return significantly.

Structural Equation Modeling (SEM) Analysis

The result of testing can be analyzed as follow:

Equation 1

$$\begin{aligned} \text{RETURN} &= 1.28 \cdot \text{INFL} - 1.52 \cdot \text{TSBN} - 36.14 \cdot \text{NTR}, \text{Errorvar.} = 279.38, R^2 = 0.40 \\ &\quad (0.44) \quad (0.41) \quad (7.77) \quad (65.85) \\ &\quad 2.90 \quad 0.75 \quad 4.65 \quad 4.24 \\ \text{ROI} &= 0.53 \cdot \text{RETURN}, \text{Errorvar.} = 501.14, R^2 = 0.21 \\ &\quad (0.17) \quad (118.12) \\ &\quad 3.07 \quad 4.24 \end{aligned}$$

1. Exogenous variables namely inflation, interest rate, and Rupiah exchange rate showed $R^2 = 0.40$, it means that inflation, interest rate, and Rupiah exchange rate contribute on shareholders' return in the amount of 40%. The rest, 60%, allegedly affected by company's performance, regulation, and other fundamental economic information.
2. Exogenous variable namely stock return demonstrate the value of $R^2 = 0.21$ it means that stock return contribute to the changes of Return On Investment in the amount of 20% from the total funds invested by investors.
3. If the value of interest rate and exchange rate are constant, then the contribution of inflation on stock return is 1,28. It means that every change of inflation is tend to increase the stock return of 1,28 times.
4. If the value of inflation and Rupiah exchange rate are constant, the contribution of interest rate on stock return is 1,52. It means that every change of interest rates is tend to increase the stock return of 1,52 times.
5. If the value of inflation and interest rate are constant, then the contribution of exchange rate to stock return is – 36,15. It means that every change of exchange rate is tend to decrease the stock return of 36,15 times.
6. If the value of stock return shows contribution of 0,53 on the Return On Investment, it means that every change of stock return will lead to increase in Return On Investment of 0,53 times.

5. Discussion

The Effect of Inflation on the Stock Return

The result of t-test showed that t-value is 2.9 while t-table is 1.688 . It means that t-value is larger than t-table. The conclusion is accepting H_0 or inflation affects stock return significantly. Conceptually, inflation is a condition indicating that purchasing power is getting weakening and it is followed by the declining value of currency (Khlawaty, 2000: 96).

The Effect of Interest Rate on the Stock Return

The result of t-value is 0,75 and the t-table is 1,688, it means that t-value < t-table . the conclusion is accepting H_0 . It indicates that interest rate has no effect on stock return. The results of this research will lead to two conditions, the first is: the rising Bank's interest rates will provide an opportunity for investors to re-calculate the amount of return gained by depositing their money in the bank or by putting their money on shares. The second is: the rising interest rates for companies will result in

an increase of interest expense that would affect profit, then the net profit earned will decrease.

The Effect of Exchange Rate on the Stock Return

The result of t-value is 4,65 and the t-table is 1,688, it means that $t\text{-value} > t\text{-table}$. the conclusion is accepting H_{a1} . It indicates that Rupiah exchange rate has effect on stock return. The test results shows the coefficient value of exchange rate is -36,15, it means that an increase in the Rupiah to US Dollar foreign exchange rates will lead to a decrease on the stock return as 36,15 times. This condition is caused by an increase in the share price as a result of the increase in the Rupiah to US Dollar foreign exchange rates is not followed by an increase of the stock return, so the rise in Rupiah exchange is negatively affect the stock returns.

The Effect of Inflation, Interest Rate, and Exchange Rate on on the Stock Return

Based on the results of simultaneous hypothesis testing, the F

value is 0.000232, this value is smaller than the significance level of 0.05. F-value is 8.277900 and F-table is 3,46 means that $F\text{-value} > F\text{-table}$. It is concluded that inflation, interest rates, and the exchange rate affect simultaneously and significantly on stock returns. The results of this study is also supported by Faoriko (2013), whose results showed that inflation, interest rates and the exchange rate interconnected and affect stock returns simultaneously.

The Effect of Stock Return on Return On Investment

The t-test results showed that t- value is 3.07 while t-table is 1.688. This means that $t\text{-value} > t\text{-table}$, so it can be concluded that H_{a5} is accepted, it means that the stock return affects Return On Investment . It demonstrates that there is increase in stock returns of investors of 32 companies. Companies services in the property sector are registered and active on the Stock Exchange during the years 2010-2014, having an effect on the increase Return on Investment.

6. Conclusion

The fluctuation of inflation has effect on the stock return. The increasing inflation will lead to the increasing of shareholders' return assuming the company showed good performance. The interest rate has no effect on stock returns, the result of not influential Interest Rate Of Return Shares. The rupiah exchange rate has effect on the stock returns. The higher the value of foreign exchange rates, Rupiah exchange rate will go down then it can lead to higher stock prices with a constant

return. Thus the change of Rupiah exchange rate has negative effect on investor's stock return. Inflation, interest rate, and exchange rate affect positively the stock returns in aggregate. The stock returns affects the Return On Investment return. Investors from 32 company service company in the property sector are registered and active on the Stock Exchange during 2010-2014 obtain a Return On Investment is high enough on the Return Shares received.

References

- Acep Edison, 2014 Akuntansi Manajemen, Edisi 2, Mentari, Bandung
- Agus Ferdinand, 2002, Structural Equation Modeling Dalam Penelitian Manajemen, Fakultas Ekonomi UNDIP. Semarang.
- Arikunto, S.2012. Prosedur Penelitian Suatu Pendekatan Praktik. Jakarta: PT. Rineka Cipta.
- Bank Indonesia, 1998. S.K Direksi BI No.31/67/Kep/DIR, Bank Indonesia, Jakarta.
- Boediono, 2000. *Ekonomi Moneter*, Edisi ke 3, BPFE, Yogyakarta.
- Boediono, 2000. *Ekonomi Moneter*, Edisi ke 3, BPFE, Yogyakarta.
- Bursa Efek Indonesia Tentang Ekuitas saham bagi investor www.idx.co.id
- Bursa Efek Indonesia Tentang Pengantar pasar modal bagi investor, 2015. www.idx.co.id
- Data tingkat inflasi, tingkat suku bunga, nilai tukar rupiah tahun 2010-2014. Terpublikasikan melalui website: www.bi.go.id.
- Gejolak IHSG2014 : Ini Penyebab Pasar Modal RI Goyah Versi Bursa Efek www.market-bisnis.com
- Grafik BI Rate 2014 www.trandingeconomics.com and Bank indonesia
- Husen Umar, 2008. Metode Penelitian, Jakarta: Salemba Empat.
- Inflasi di Inonesia (Indeks Harga Konsumen) 2014 www.indonesia-investment.com
- Jogiyanto Hartono.(2009). *Teori Portofolio dan Analisis Investasi*. Edisi Keenam. Yogyakarta: BPFE.
- Kasmir. 2008. *Bank Dan Lembaga Keuangan Lainnya*. Edisi Revisi 8. Jakarta: PT Raja Grafindo Persada.
- Putong, Iskandar. 2002. *Ekonomi Mikro dan Makro*, Edisi Kedua. Jakarta: Penerbit Ghalia Indonesia.
- Samsul. 2008. Pasar Modal dan Manajemen Portofolio. Jakarta: Erlangga.
- Sektor Properti Terimbas Daya Beli yang Rendah www.katadata.co.id
- Spekulasi di Pasar Modal Inonesia 2014 www.medanbisnis.com
- Sukirno Sadono. 2008 Mikro Ekonomi Teori Pengantar. Jakarta. PT. Raja Grafino Persada
- Tandelilin, Eduardus, 2010, *Portofolio dan Investasi – Teori dan Aplikasi*, Penerbit Kanisius, Yogyakarta
- Triyono. 2008. Analisis Perubahan Kurs Rupiah Terhadap Dollar Amerika. *Jurnal Ekonomi Pembangunan*. Vol.9 No. 2, Desember 2008 : 156-167. Universitas Muhammadiyah Surakarta.
- Uma Sekaran. 2009. *Reserch Methods For Business*,Metode Penelitian Untuk Bisnis. Jakarta: Salemba Empat.
- Yuniarti,Sari. 2011. Strategi Adaptif Bank Perkreditan Rakyat Dalam Menhadapi Ekspansi Kredit UMKM Bank umum di Malang. *Jurnal keuangan dan Perbankan*. Volume 15, No. 3. Hal. 437-445
- Suyanto. 2007. Analisis Pengaruh Nilai Tukar Uang, Suku Bunga, dan Inflasi Terhadap *Return Saham Perusahaan Properti Yang Tercatat di Bursa Efek Jakarta*.
- Nordhaus, Samuelson, 2004. Ilmu Makro Ekonomi. PT. Media Global Edukasi : Jakarta.