

Monetary Policy Analysis Towards Inflation and Capital Market Performance

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ABSTRAK

This research is designed to analyze the monetary policy towards inflation and capital market performance during 1998 – 2004 period. The objectives of this research are: first, to analyze the direct influence of interest rate, base money, and exchange rate toward inflation and also to analyze the direct influence of interest rate, base money, and exchange rate toward capital market performance. Second, to analyze the indirect influence of interest rate, base money and exchange rate through inflation toward return market. Path Analysis is used as the research method. The result indicates that there have been some significant effects between interest rate, base money, and exchange rate toward inflation and return market. Indirect influence of interest rate, base money, and exchange rate toward return market through inflation arrives at 4.176%. Overall, the direct and indirect influence of macroeconomics variables toward return market reach 22.941%.

Keywords: monetary policy, inflation, capital market performance and path analysis.

ABSTRACT

Kajian ini dibentuk untuk menganalisa polisi kewangan terhadap inflasi dan prestasi pasaran modal sepanjang tempoh 1998 – 2004. Objektif kajian ini adalah: pertama, untuk menganalisa sumbangan langsung kadar faedah, wang pokok (base money), dan kadar pertukaran terhadap inflasi dan juga terhadap prestasi pasaran modal. Kedua, adalah untuk menganalisa sumbangan tidak langsung kadar faedah, wang pokok (base money) dan kadar pertukaran melalui inflasi terhadap pasaran pulangan. Analisis Path digunakan sebagai kaedah kajian. Hasil menunjukkan terdapat kesan yang signifikan antara kadar faedah, wang pokok (base money) dan kadar pertukaran terhadap inflasi dan pasaran pulangan. Sumbangan yang tidak langsung bagi kadar faedah, wang pokok (base

money) dan kadar pertukaran terhadap pasaran pulangan melalui inflasi pada 4.176%. Secara keseluruhan, sumbangan pembolehubah makro-ekonomi secara langsung dan tidak langsung terhadap pasaran pulangan mencapai 22.941%.

INTRODUCTION

The monetary policy of a state is a policy which share to influence the price stability as it revealed by the inflation growth and its impact to the state's economy including its capital market performance. It is a consequence of the enhancement in integration and interaction between various economic elements.

Inflation as an economic phenomenon occurring in the developing countries turns into an interesting subject to discuss. It has functions as one of the macroeconomics indicator of economics stability which at the same time becomes an indicator to affect the economics growth as well as influencing stock market performance.

In economics perspective, inflation is a domestic monetary event that tends to result in fluctuated economy as the consequence of the improvement of price level. The improvement of price will create a significant impact on the society's purchasing power, in particular situation, the inflation growth generates a wider effect to people through degradation of real income or it can also be said that the inflation will reduce people's purchasing power.

In line with the tendency of some world central banks in New Zealand, Canada, England, Germany, Japan and United States, the final target of the monetary authority is more focused on maintaining the inflation itself. Focusing the monetary policy target to attain the price stability with particular reason that applying single objective price stability based on relevance monetary policy target. In long term goal, the policy which conducted by central bank through demand side can only influence the nominal value of money, while the real economics activity is determined in the real sector through policy which can influence productivity or creativity.

To achieve selected inflation rate as monetary policy target, it cannot be separated from the understanding on how the inflation is achieved through monetary policy transmission mechanism. Theoretically, this can be differentiated into two ways : price channel and quantity channel (paper DKM-BI: 31). Price channel transmission can be separated into three

categories: channel exchange rate, interest rate and assets price, whereas quantity channel covers monetary channel and credit channel. For monetary policy cases in Indonesia conducted by Bank of Indonesia as central bank is through base money for quantity channel and interest rate certificate Bank of Indonesia (SBI) for price channel.

According to Lipsey, et al. (1999: 659) some factors might be interconnected with the inflation phenomenon: 1) demand side, the alteration of consumption expenditure, investment, government expenditure and export net, 2) bid side, the improvement of production cost and fee, 3) monetary expansion.

Darsono, et al. (2002: 34) cited that the source of inflation pressure in Indonesia, besides resulted by interaction between aggregate demand and aggregate supply, also predominated by exchange rate movement, distribution problem and the application of government policy in price area.

On the other hand, the monetary policy plays an important role in economics as well as resulting impact to the capital market. The improvement of interaction and integration between various economics elements in non-bank financial industry like capital market possess above condition. Thereby, investors should also consider various monetary variables.

Research in the impact of monetary policy towards stock return conducted by Thorbecke (1997: 18) implied the negative influence between federal funds rate with Dow Jones's stock market index, either in alliance share index or industry. The expansive or contractive monetary policy will increase or decline the cash flow in the future.

Mansor H. Ibrahim and Wan Sulaiman Wan Yusoff (2001: 157) clearly stated that the capital market in Malaysia is more influenced by domestic factor such as money supply rather than external factor such as exchange rate. The expanded monetary policy will possess positive influence towards share price, while exchange rate depreciation tends to decline the share price.

Previous studies revealed some significant variables which influence the inflation and stock market performance though the result are varied. It is a consequence of the differences in approach of analysis, specification of observation model, election of research variable, period of research and observation.

Related to the phenomenon occurring in Indonesia, this research uses path analysis which will focus on: First, analyzing the direct influence of interest rate, base money and exchange rate toward inflation and analyzing the direct influence of interest rate, inflation and exchange rate toward

capital market performance. Second, analyzing the indirect influence of interest rate, base money, and exchange rate through inflation towards capital market performance.

LITERATURE REVIEW

MONETARY POLICY

The discussion about monetary policy framework in economics cannot be separated from transmission mechanism of monetary policy. Theoretically, there are certain paths in transmission mechanism itself, such as interest path, asset price (exchange rate, equity, housing, and land) and credit (Mishkin 1996: 1). Suparmoko (1990: 125) stated that monetary policy is meant to raise the gross national income by altering the money supply or money demand. Meanwhile, Faried Wijaya (1990: 184) cited the aim of monetary policy is to create job opportunity for production factors in reaching full job opportunity output level without inflation.

According to the Law/Act Number 23 of 1999 concerning Bank of Indonesia as it has been altered with Act Number 3 of 2004, expressed that the Monetary Policy is a policy specified and conducted by Bank of Indonesia in order to achieve and maintain Rupiah's value stability through controlling money supply and/or interest rate. Later, Rupiah's value stability towards goods and service is measured with or reflected from the fast improvement of inflation. Monetary policy is separated into quantitative and qualitative policy character (Sadono S. 1998: 233).

INTEREST RATE CERTIFICATE BANK OF INDONESIA (SBI)

Certificate Bank of Indonesia (SBI) is a security at sight in Rupiah issued in discount system by Bank of Indonesia as short term debt confession. Certificate Bank of Indonesia is used as an apparatus of Open Market Operation and sold by Bank of Indonesia through stop out rate auction system and based on discount system according to true discount formula.

Interest rate level consists of two types ; the nominal interest rate and the real interest rate. Generally, the formula between real and nominal cash flow can be described by using the example of nominal interest rate and inflation rate (Ross, et al. 2005): $1 + \text{nominal interest rate} = (1 + \text{real interest rate}) \times (1 + \text{inflation rate})$ or $\text{real interest rate} = [(1 + \text{nominal interest rate}) / (1 + \text{inflation rate})] - 1$.

Besides being the investment advantage measurement earned by investor, interest rate is also constituting as the expense of capital which must be released by company in order to use fund from the investor (Karvof 2004).

Nevertheless, the increasing of interest rate might possibly do not make the share price declines. If the interest rate rises steadily, economics overheating can be prevented. Share price will increase constantly if the economics doers admit that the increase of interest rate is needed to cooling down the economy, the share price will increase higher instead of decline. Even there is a degradation of share price, it is only a spontaneous market reaction happened before interest rate really boosts up. Afterwards, share becomes the center of investors' attention, the increase of share price at the same moment as the interest rate is increasing occurs because of investors' anticipation at share prospect.

On the contrary, if interest rate degrades, it will clearly assess capital market performance. Not only capital market instrument will become more interesting for investor, but also performance of emitter will be better in a long term because cost of capital is relatively lower which in turn improving company's finance performance. Therefore, share price might possibly rally when interest rate degrades.

MONEY SUPPLY

In some countries, the definition of money supply is defined according to the components inside. In general, those components are fiat money, demand deposit, and quasi money. Thereby, according to the various coverage money supply, types of money supply also varies. There are only two types of money supply in Indonesia recently (Economic Statistics and Indonesian Finance, BI), those are: (1) Money supply in narrow meaning, often conceived as *M1*, is interpreted as obligation of monetary system towards domestic private sector which consists of fiat money (C) and demand deposit (D). (2) Money supply in wide meaning or economics liquidity, often conceived as *M2*, is interpreted as obligation of monetary system towards domestic private sector which consists of fiat money (C), demand deposit (D), and quasi money (T). Equally, *M2* is *M1* plus *T*.

The expansion volume of money supply is a potential inflation incident in an economy because the increased volume of money supply correlates directly with the increase of price (inflation). The first symptom of inflation is the effect of the increase volume of money supply which is faster compared to output accretion occurs in an economy.

According to Lipsey, et al. (1995) monetary adjustment mechanism will eliminate every inflation gap, as long as the amount of nominal money supply remains constant. Thereby, as long as inflation tends to correct itself and the money supply does not improve, the price level will rise, but this improvement motivates certain occurrence in the market for money asset which in turn eliminate the inflation gap. Self-corrective mechanism is the main reason why price level and money supply related to economics science. The improvement of price level is related to some matters. Nevertheless, whatever it is, if the amount of money supply does not increase, the improvement of price level will raise strength to eliminate inflation gap, thereby inflation request discontinues.

The increase of money supplies amount degrades interest rate and boosts up expenditure of wanted investment. At the height of expenditure of investment, capital market performance will increase.

Manurung's research (1996) revealed that interest rate, exchange rate of Rp/US, inflation and the alteration of money supply significantly influence return market (IHSG). Similar theory expressed that the improvement of money supply will degrade interest rate which in turn affects price and if it cannot be controlled, it will influence inflation and Rupiah's exchange rate towards US dollar.

BASE MONEY

As the producer of monetary authority function, central bank has an authority to release and circulate fiat money consists of paper money and coin as well as accepting bank clearing account. Fiat money and clearing account in central bank are referred as base money or core money with *MO* as the symbol. In Indonesia, base money is defined as the obligation of Bank of Indonesia towards domestic private sector and private bank which consist of paper money and coin circulated beyond Bank of Indonesia as well as private bank's clearing account in Bank of Indonesia. (Solikin & Suseno 2002: 18).

INFLATION

Inflation is a condition where common price improves continuously. Inflation forms a very attractive economics distortion because whenever social, politics, or economics distortion inside or outside occur then society always correlates them with inflation problem.

State economic susceptibility can be shown through its inflation which in turn influencing the investors' trust, especially foreign investment

related to the state's income. Inflation can be happened because of the demand excess towards goods, service, and money supply requisition in real sector.

EXCHANGE RATE

Foreign currency exchange rate is a value showing the amount of domestic currency which needed to achieve one unit of foreign currency (Sadono Sukirno 1998: 358). The main actors in currency market are very immeasurable, not only in the operation scale but also in the target and method exploiting this market.

Dominick Salvatore defines exchange rate as foreign currency price in set of domestic currency price (Indra S. 2003: 38). In the on going of floating exchange system, the central bank lets exchange rate to adjust and equalize its market value or it can also be said that the value of exchange rate is created through pure market mechanism.

RETURN MARKET (IHSG)

Index is needed as the main indicator to perceive the price movement in securities. According to Tjiptono, et al. (2001: 95), an index in the capital market is expected to become (1) indicator of market trend, (2) indicator of advantage level, (3) benchmark of portfolio performance, (4) facilitate portfolio establishment with passive strategy, and (5) facilitate the expansion of derivative products.

Return market (IHSG) was first introduced on April 1st, 1983 by using August, 10th 1982 baseline.

PREVIOUS STUDIES

EMPIRICAL STUDY TOWARDS INFLATION

Juda Agung, et al. (2003: 68) in his empirical study regarding *Identified Information Variable In Framework Inflation Targeting* expressed that exchange rate is the best indicator inflation and most likely offer immediate effect toward inflation. Meanwhile, money quantity variables such as fiat money, base money, M1 and M2 have enough high-information content toward inflation with around 20-24 months lag. Stated from money quantity variable, base money (M0) has enough high-information content to predict inflation (price consumer index). On the other hand, interest

rate variable especially PUAB interest rate has better information content towards inflation than money quantity variable, whereas information content of interest rate certificate Bank of Indonesia towards inflation is very weak.

Heni Noviarita (2003: 94) in study of *Inflation Analysis In Indonesia (Dynamic Model Approach) 1980:03-2002:04 Period*, indicated that in long term, variables of money supply, exchange rate, gross domestic product, inflation expectation influence significantly toward inflation, while real interest rate and government expenditure do not influence as above.

Firman Mochtar (2003: 73) in his study regarding *SBI, T-Bills and Inflation Controlling* revealed that tight-money monetary policy conducted by Bank of Indonesia and its certificate as an apparatus of open market operation will not always have outcome to inflation degradation until the end of period. The application of tight-monetary policy will surely degrade inflation at the moment it is applied but after the existence of fundamental obligation reimbursement, interest rate certificate Bank of Indonesia resulted as source of inflation improvement caused by tight-money policy.

EMPIRICAL STUDY TOWARDS CAPITAL MARKET PERFORMANCE

Mansor H. Ibrahim and Wan Sulaiman Wan Yusoff (2001: 157-158) in *Macroeconomic Variables, Exchange Rate and Stock Price: A Malaysian Perspective*, found empirical evidence that macroeconomics variables (real output, price level and money supply) and exchange rate can improve the forecasting of equity price in Malaysia. The study also found that domestic factor (especially amount of money supply) holds significant movement to Malaysian capital market compared to external factor (especially exchange rate). Furthermore, in short term, monetary expansion positively influence the equity price, while in long term results the contrary and exchange rate brings negative influence towards equity price. It can also be said that the depreciation of Malaysian Ringgit correlates with the depreciation of capital market performance. The result also indicated that exchange rate significantly influences Malaysian economics condition.

Wilem Thorbecke (1997: 18) in his study, *On Stock Market returns and Monetary Policy* also found empirical evidence that there is significant negative influence between Fedres' level of interest rate with Dow Jones's share index. It is also valid for industrial share group.

Rini Dwi Astuti (2001: 23) in research of *Macro Analysis of Capital Market Performance In Indonesia With Error Correction Model Approach*

(ECM) also found empirical evidence that capital market performance possesses a strong relation with macroeconomics stability. The research told that capital market performance is influenced significantly by rate variable, people fund condition, deposit interest rate, and foreign interest rate. Furthermore, empirical evidence was found during 1996-1999 supervision period, that variable rate, deposit interest rate, and foreign interest rate have a negative influence toward capital market performance. It defines that the increase of rate value (weak of IDR towards other currency), deposit interest rate, and foreign interest rate will assess the degradation of capital market performance reflected in return market (IHSG). Meanwhile, variable of people fund condition possesses a positive influence towards capital market performance. It explains deeply that greater people deposit fund in banks means fund availability invested to capital market is bigger.

RESEARCH METHODOLOGY

Descriptive method is used as research methodology where research is intended to investigate the direct and indirect influence between exogenous variable towards endogen variable based on existing historical data.

PATH ANALYSIS

Data processing in this research uses structural equation form which constitutes multiple regression linear equation at SPSS path coefficient value by counting beta values. Path Analysis is useful to analyze direct influence of independent variables (X_1, X_2, X_3) toward dependent variable (Y) and also to analyze indirect influence of X_1, X_2, X_3 variables through Y toward Z and analyze direct influence X_1, X_3, Y variables toward Z. Common form for structural equation can be compiled as follows:

$$Y = P_{yx1}X_1 + P_{yx2}X_2 + P_{yx3}X_3$$

$$Z = P_{zx1}X_1 + P_{zy}Y + P_{zx3}X_3.$$

Where:

Y = inflation

P_{yx} = path coefficient of first equation

X_1 = certificate Bank of Indonesia's interest rate

X_2 = base money

X_3 = exchange rate

Z = return market

P_{zx} = path coefficient of second equation

Path analysis model with two dependent variables is shown below:

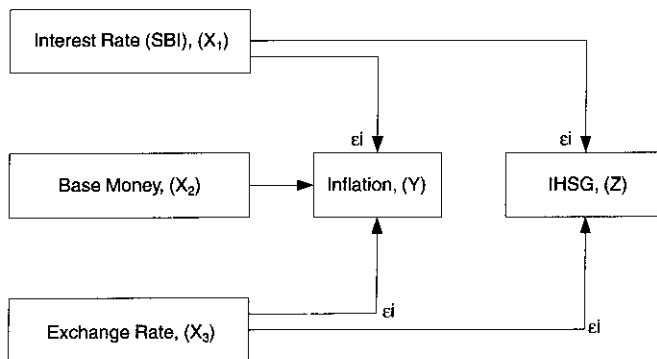


FIGURE 1. Path analysis model with two dependent variables

RESEARCH HYPOTHESIS

Based on the idea framework, research hypothesis is described below:

1. H_0 : no significant influence between X_1 , X_2 , X_3 toward Y.
 H_1 : there is significant influence between X_1 , X_2 , X_3 toward Y.
2. H_0 : no significant influence between X_1 , Y, X_3 toward Z.
 H_1 : there is significant influence between X_1 , Y, X_3 toward Y.

This research is designed to analyze direct influence and indirect influence between exogenous variable, interest rate level (SBI), base money, exchange rate of Rp/US\$ towards endogen variable; inflation (Price Consumer Index) and exogenous variable; interest rate level (SBI), inflation, exchange rate towards endogen variable; return market (IHSG).

This path analysis is addressed to measure direct or indirect influence between reliant and independent variable fulfilling recursive model. This analysis is not meant to predict dependent variable based on independent variable, thereby regression analysis is not used in overview the influence. This path analysis is used to confirm model of reliance level among

perceived phenomenon. Path coefficient is conducted based on sample data. Model conformity testing is conducted by comparing suspected result covariance matrix with observation data covariance matrix. Hence, if a researcher wishes to determine how big the influences between variables without making prediction, path analysis is the best appliance to consider. If influence values between variables are big enough then analysis to predict dependent variable value can be considered to be applied.

RESULT AND DISCUSSION

RESULT AND DISCUSSION ANALYSIS

Based on the observation data concerning interest rate certificate Bank of Indonesia, base money, exchange rate of Rp/US\$, inflation (IHK), and return market (IHSG), the data can be processed with the assistance of SPSS program and the result is shown in the following tables.

In order to achieve better and valid formation model, the data is transformed into logarithm form. Interest rate certificate Bank of Indonesia is already served in percentage form without log form. Pursuant to former research pickings, more valid and best result would be achieved by using linear log form.

Correlation matrix among interest rate level certificate Bank of Indonesia, base money, exchange rate of Rp/US\$, inflation (IHK), and return market (IHSG), written in the following Table 1.

FIRST STRUCTURAL EQUATION OF PATH ANALYSIS

The first equation defines multiple linear regressions at SPSS path coefficient values, by calculating beta values. Table 2 shows data processing result concerning direct and indirect influence between exogenous variable, interest rate level, base money, exchange rate towards endogen variable, inflation (Consumer Price Index); obtaining beta values as path coefficient values.

Based on table 2, structural equation can be compiled as follows:
$$Y = 0.118 X_1 + 1.028 X_2 - 0.128 X_3$$

Significant Value Calculation

Table 4.2 shows that variable of interest rate certificate Bank of Indonesia (X_1), base money (X_2) and exchange rate (X_3) possess significant values

TABLE 1. Correlation matrix: Interest rate (SBI), base money, exchange rate, inflation (IHK), and return market (IHSG)

	SBI	LOG_MO	LOG_KURS	LOG_IHK	LOG_IHSG
SBI	1.000	-.628	.332	-.570	-.500
	Pearson Correlation	.000	.002	.000	.000
	Sig. (2-tailed)	84	84	84	84
LOG_MO	-.628	1.000	.068	.945	.479
	Pearson Correlation	.000	.539	.000	.000
	Sig. (2-tailed)	84	84	84	84
LOG_KURS	.332	.068	1.000	-.019	-.333
	Pearson Correlation	.002	.539	.864	.002
	Sig. (2-tailed)	84	84	84	84
LOG_IHK	-.570	.945	-.019	1.000	.379
	Pearson Correlation	.000	.864	.000	.000
	Sig. (2-tailed)	84	84	84	84
LOG_IHSG	-.500	.479	-.333	.379	1.000
	Pearson Correlation	.000	.002	.000	.000
	Sig. (2-tailed)	84	84	84	84

** Correlation is significant at the 0.01 level (2-tailed).

TABLE 2. First structural coefficient beta values

Model	Unstandardized coefficients		Standardized coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	-.277	.226		-1.228	.223
SBI	6.487E-02	.027	.118	2.367	.020
LOG_MO	.675	.031	1.028	21.757	.000
LOG_KURS	-.193	.059	-.128	-3.284	.002

a Dependent Variable: LOG_IHK

toward inflation (consumer price index) as much as 0,020; 0,000 and 0,002 for each. It means toward significant influence between dependent variable with independent variable at alpha equals to 5 percent. Hypothesis used to test each path analysis coefficients is:

1. $H_0 : \rho_{YX1} = 0$
 $H_a : \rho_{YX1} \neq 0$
2. $H_0 : \rho_{YX2} = 0$
 $H_a : \rho_{YX2} \neq 0$
3. $H_0 : \rho_{YX3} = 0$
 $H_a : \rho_{YX3} \neq 0$

Based on the regression analysis result, H_0 is refused and H_a is accepted. It can be concluded that calculated path coefficients is significant and trimming does not occur.

Individual Difference Testing

Scale difference testing of path coefficients is necessary conduct to investigate which independent variable possesses more dominant or bigger influence towards dependent variable (Joreskog: 1993, and Joreskog & Dag Sorbom 1995). Operational hypothesis to test the differences among existing path is stated below:

1. $H_0 : \rho_{YX1} - \rho_{YX2} = 0$
 $H_a : \rho_{YX1} - \rho_{YX2} \neq 0$
2. $H_0 : \rho_{YX2} - \rho_{YX3} = 0$
 $H_a : \rho_{YX2} - \rho_{YX3} \neq 0$

$\rho_{YX1} - \rho_{YX2}$ values are $-0.910 (0.118 - 1.028)$, and table value is $\rho=0.450$ (alpha 5% and $n=84$). Value -0.910 is bigger than -0.450 (residing at deduction area) so that H_a is accepted which implies significant difference between ρ_{YX1} and ρ_{YX2} .

$\rho_{YX2} - \rho_{YX3}$ values are $1.156 (1.028 - 0.128)$, and table value $\rho=0.450$ (alpha 5% and $n=84$). Value 1.156 is bigger than 0.450 (residing at deduction area) so that H_a is accepted which implies significant difference between ρ_{YX2} and ρ_{YX3} .

Finishing of First Structural Equation

Direct influence of exogenous variable interest rate certificate Bank of Indonesia (consumer price index) is $(0.118)^2$ or 1.40%; direct influence of exogenous variable base money towards inflation is $(1.028)^2$ or 105.678%, while direct influence of exogenous variable Rp/US\$ exchange rate towards inflation is $(-0.128)^2$ or 1.638%. Overall, the total amount of those three exogenous variables toward inflation is 108.716%. The calculation result shows exogenous variable which possesses the biggest direct influence towards inflation is base money with 105.678% and the result reflects that base money possesses a dominant influence towards inflation (consumer price index). It is possible because during research period, base money has made a significant movement. Juda Agung, et al. (2003:68) found the same result that based on the testing, the variable is strong enough to directly influence the inflation compared to other monetary scales (M1 and M2). In this case, interest rate certificate Bank of Indonesia and exchange rate do not assess significant influence, economics condition was not stable at the time when the research was conducted so that there was a constraint to detect the influence of interest rate and exchange rate toward inflation.

Second Structural Equation of Path Analysis

The second equation defines multiple linear regressions at SPSS path coefficient values, by calculating beta values. Table 3 shows data processing result concerning direct and indirect influence between exogenous variable, interest rate level, inflation (IHK), exchange rate toward endogen variable; return market (IHSG); obtaining beta values as path coefficient values.

Based on Table 3, structural equation can be compiled as follows:
 $Z = -0.314 X_1 + 0.196 Y - 0.225 X_3$

TABLE 3. Coefficients beta values of secondary structural equation

Model	Unstandardized coefficients		Standardized coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	3.896	.789	4.937	.000	
SBI	-.225	.088	-.314	-2.547	.013
LOG_KURS	-.444	.199	-.225	-2.226	.029
LOG_IHK	.256	.152	.196	1.687	.095

a Dependent Variable: LOG_IHSG

Significant Values Calculation

Table 3 indicated that variable of interest rate level certificate Bank of Indonesia (X_1), Inflation (Y) and exchange rate (X_3) possess significant values toward return market as much as 0,013; 0,095 and 0,029 for each. It means toward significant influence between dependent variable and independent variable at alpha are 5 percent and 10 percent. Hypothesis used to test each path analysis coefficients is:

1. $H_0 : \rho_{ZX1} = 0$
 $H_a : \rho_{ZX1} \neq 0$
2. $H_0 : \rho_{ZY} = 0$
 $H_a : \rho_{ZY} \neq 0$
3. $H_0 : \rho_{ZX3} = 0$
 $H_a : \rho_{ZX3} \neq 0$

Based on the regression analysis result, H_0 is refused and H_a is accepted. It can be concluded that calculated path coefficients is significant and trimming does not occur.

Individual Difference Testing

Scale difference testing of path coefficients is also necessary to conduct to investigate which independent variable possesses more dominant or bigger influence towards dependent variable (Joreskog 1993; Joreskog & Dag Sorbom 1995). Operational hypothesis to test the differences among existing path is stated below:

1. $H_0 : \rho_{ZX1} - \rho_{ZY} = 0$
 $H_a : \rho_{ZX1} - \rho_{ZY} \neq 0$

$$2. \quad H_0 : \rho_{ZY} - \rho_{ZX3} = 0$$

$$H_a : \rho_{ZY} - \rho_{ZX3} \neq 0$$

$\rho_{ZX1} - \rho_{ZY}$ values are 0.510 (0.196 - -0.314), and table value ρ 0.450 (alpha 5% and n=84). 0.510 is bigger than 0.450 (residing at deduction area) so that H_a is accepted which implies significant difference between ρ_{ZX1} and ρ_{ZY} .

$\rho_{ZY} - \rho_{ZX3}$ values are -0.421 (-0.225- -0.196), and ρ -0.450 table (alpha 5% and n=84). -0.421 is bigger than -0.450 (residing at deduction area) so that H_a is accepted which implies significant difference between ρ_{ZY} and ρ_{ZX3} .

Finishing of Second Structural Equation

Direct influence of exogenous variable interest rate certificate Bank of Indonesia towards return market (IHSG) is $(-0.314)^2$ or 9.860%; direct influence inflation exogenous variable (consumer price index) towards return market (IHSG) is $(0.196)^2$ or 3.842%, while direct influence of exogenous variable exchange rate of Rp/US\$ towards return market (IHSG) is $(-0.225)^2$ or 5.063%. Overall, the total amount of those three exogenous variables toward return market is 18.765%. The calculation result shows exogenous variable which has the biggest direct influence towards return market is interest rate level certificate Bank of Indonesia with 9.860% and the result reflects that interest rate level possesses a dominant influence towards return market (IHSG). Regression analysis result also found significant negative influence between interest rate level and exchange rate toward return market (IHSG). The result is similar to Karvof theory (2004); if interest rate degrades, it will clearly assess the capital market activity. Not only capital market instrument will become more interesting for investor, but also performance of emitter will be better in a long term because cost of capital is relatively lower which in turn improving company's finance performance.

PROBLEM SOLVING OF INDIRECT INFLUENCE

Indirect influence of exogenous variables of interest rate (SBI), base money, Rp/US\$ exchange rate toward return market (IHSG) through inflation (IHK) can be calculated as follows:

1. Return market is influenced indirectly by interest rate through inflation as much as $(0.118)^2 \cdot (0.196)^2 = 0.053\%$

2. Return market is influenced indirectly by base money through inflation as much as $(1.028)^2 \cdot (0.196)^2 = 4.060\%$
3. Return market is influenced indirectly by base Rp/US\$ through inflation as much as $(-0.128)^2 \cdot (0.196)^2 = 0.063\%$
4. The total indirect influence of three variables (interest rate, base money, and exchange rate) through inflation reaches 4.176%.
5. Hence, the total of direct and indirect influence toward Z = 18.765% + 4.176% = 22.941%.

It can be concluded from the calculation result that Bank of Indonesia Certificate's interest rate exogenous variable and Rp/US\$ exchange rate possess the smallest indirect influence through endogen variable of inflation toward market index. Overall, direct and indirect influence from those variables toward market index (IHSG) reach 22.941%.

CONCLUSION AND IMPLICATION

1. Path analysis result of direct influence by using beta coefficient at regression analysis shows that exogenous variable of interest rate (SBI) towards endogen variable (price consumer index) reaches 1.40%; direct influence of exogenous variable of base money towards endogen variable of inflation reaches 105.678%, while direct influence of exogenous variable of Rp/US\$ exchange rate towards endogen variable of inflation reaches 1.638%. Regression testing result also shows significant influence between interest rate, base money and Rp/US\$ exchange rate toward inflation. Sakhowi's research in 2004 also found that base money possesses a dominant influence towards inflation. Economists have stated the same opinion that inflation symptom constitutes that the increase of money supply is faster than the increase of output occurs in an economy.
2. The result of path analysis using coefficient beta at regression analysis also shows direct influence of exogenous variable of interest rate (SBI) towards endogen variable of return market (IHSG) reaches; direct influence of exogenous variable of inflation (consumer price index) towards return market reaches 3.842%, while direct influence of exogenous variable of Rp/US\$ exchange rate towards return market reaches 5.062%. Regression testing result also shows significant influence between interest rate, inflation, and Rp/US\$ exchange rate toward return market. The result is in line with Manurung's (1996)

- and Ang's (1997) research that interest rate possesses negative influence towards return market. It implies that if interest rate degrades then it will assess the performance of capital market.
3. Indirect influence of exogenous variables of interest rate (SBI), base money, Rp/US\$ exchange rate toward return market (IHSG) through inflation (IHK) reaches 4.176%. This matter is shown with interest rate possesses value of indirect influence as much as 0.053%, base money possesses value of indirect influence as much as 4.060%, and exchange rate possesses value of indirect influence as much as 0.063%. Overall, the direct and indirect influence of those variables toward return market (IHSG) reach 22.941%.

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