ANALYSIS OF THE INFLUENCE OF INFLATION AND MONEY SUPPLY TO STOCK PRICES: A COMPARISON BETWEEN INDONESIA AND MALAYSIA

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Abstract
The purpose of this research was to find the connection between inflation and money supply to stock prices in two countries, Indonesia and Malaysia. Understanding factors that affect stock price movements are very important for an investor. The sample data started in 2000-2013. Result shows that there are differences in the factors that affect stock prices in Indonesia and Malaysia. In Indonesia, the share price is more influenced by past stock prices. In Malaysia, its stock price is strongly influenced by inflation. Although there is a difference, the Government of Indonesia and Malaysia need to increase monetary stability as monetary stability could affect investors' perceptions and influence fluctuations in stock prices.

Key words: stock price, inflation, money supply, Indonesia, Malaysia, VAR

Introduction
Knowing the factors that affect stock price movements are very important for an investor. If an investor wants to earn profit, an investor must be able to read the market and understand what are the factors that affect the stock price, so that the investor could predict the stock price and make a profit.

Questions about the factors that influence the stock price, are tried to explain with a theory by some economists, for example with the theory of one-period valuation models, Generalized Dividend Valuation Model, The Gordon Growth Model, The Efficient Market Hypothesis that is then challenged by a number of arguments. But these models are less able to explain the factors that affect stock prices.

The movement of the stock price index is very sensitive to changes in economic fundamentals and changes in expectations about future prospects. Expectations will be influenced by micro and macro fundamentals that can be formed in a rational or adaptive to the economic fundamentals are subjective and unpredictable and calculated (Ahmad and Ahmed, 2006). Macroeconomic variables can be linked to the stock price through the Arbitrage Pricing Theory (APT) (Ross, 1976), in which some risk factors can explain asset returns. Empirical studies based
on APT linking macroeconomic variables to stock prices, using the model of short-term relationships such as research conducted by Fama (1981), Fama and French (1989), Schwert (1981), FERSON and Harvey (1991) and Fraser and Power (1997). In general, these studies found a significant relationship between the stock price changes of macroeconomic variables (Humpe and Mc Millan, 2007)

Investors need to pay attention to dividends and the expected earnings of the company in the future in determining the value of shares. The amount of dividends and the expected earnings of a company will depend on the prospective benefits owned by the company. Since the company's prospects depend on the state of the overall economy, the stock valuation analysis performed by the investor also must take into account several macroeconomic variables that affect the company's ability to generate profits (Tandelilin, 2001).

There are three analyzes that can be done by investors, the capital market and economic analysis, industry analysis and company analysis. Economic analysis needs to be done because of the tendency of the strong links between what happens on the macroeconomic environment and the performance of a stock market. Capital markets reflect what is happening on the macro economy because the value of the investment is determined by the expected cash flow and required rate of return on the investment and the second factor is strongly influenced by changes in the macroeconomic environment.

Macroeconomic environment is the environment that affects the daily operation of the company. Investor's ability to understand and predict macroeconomic conditions in the future, will be very useful in making profitable investment decisions.

Unanticipated inflation negatively affects stock prices through changes in the price level that was not anticipated. Inflation uncertainty also affects the discount rate would reduce the present value of the cash flow of the company. According to DeFina (1991), an increase in inflation has a negative impact on corporate earnings due to higher costs of the company and the slow adjustment of output prices, reduce profits and then lower the price of the stock. Inflation is the general rise in prices of goods continuously. But rising prices are not always the same percentage (Nopirin, 2000). The price increase is measured in several ways, among others, the cost of living index (consumer price index), wholesale price index (whole sale price index) or also by the GNP deflator.

Based on the magnitude of the rate of inflation, the inflation categories can be classified into
three, namely inflation edging (creeping inflation) that is usually characterized by low inflation rates, i.e., less than 10% per year, inflation medium (galloping inflation) is characterized by rising prices and a large enough the condition runs in a relatively short time and have the nature of acceleration, meaning that the price of the month / next week is always higher than the previous time, and so on as well as high inflation (hyper inflation) which is very worrisome inflation, because the prices of goods to rise up to five or six times, so that the value of money fell sharply (Nopirin, 2001). High inflation is usually associated with economic conditions that are too hot (over heated), meaning that the economic conditions experienced a demand for a product that exceeds the capacity of its product offerings, so prices tend to rise. Over-heated economic conditions will also lower the purchasing power of money (purchasing power of money) and reduce the level of real income earned from the investment of investors (Tandelilin, 2001). Inflation increases revenues and expenses company. If increase in production costs is higher than the increase in prices that can be enjoyed by the company, the company's profitability will decline.

Changes in the money supply associated with unanticipated increase in inflation and inflation uncertainty in the future and negatively affect the stock price. Changes in the money supply can be a positive influence on stock prices through its impact on economic activity. Portfolio theory states a positive relationship due to the increase in the money supply makes investors change their portfolios of holding money into financial assets, including stocks.

Changes in money supply are determined by the result of the interaction between the public, financial institutions and central banks. The money supply is the product of base money (monetary base) the money multiplier (the money multiplier).

The creation of money or the amount of money circulating in the community can be described as a market process. The quantity theory of money states that money supply has a relationship with inflation. Money Supply also has ties to the interest rate. The more the amount of money circulating in the community, the investment becomes more attractive when compared to the store in the form of savings.

The definition of the money supply is divided into two, namely money in the narrow sense (M1) is defined as cash (currency and metals) are held by the public, not including cash money in the bank and the treasury, the money is known as currency. Then plus the money that is in the banking checking account that can be directly used for cashing checks, and commonly referred to

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as demand deposits, and money in the broad sense (M2) which is an extension of the definition of M1 plus quasi-money. Quasi-money is a form of wealth that is liquid consisting of a term deposit or savings account at a bank.

Data and Methodology
The object of this study are Indonesia and Malaysia. The sample data started in 2000-2013. Stock price data in each country used the Composite Stock Price Index (CSPI) or the Jakarta Composite Index (JCI) and the Kuala Lumpur Composite Index (KLCI). Inflation variable used is the monthly inflation rate which is a change in general prices rise continuously, which is calculated from the change in Composite Consumer Price each country and expressed in percent. And a variable amount of money supply is the amount of money circulating in the broad sense (M2) or liquidity in the economy billions of currency units. The data used in this study is a secondary data, the data obtained from the official website of the International Monetary Fund, Capital Markets at each country's central bank in each country and the Bureau of Statistics in each country. The analysis method used was Vector Auto Regression (VAR). There are several advantages of the VAR (Gujarati, 1995), VAR is able to see a lot more variables in the analysis of economic phenomena of short-term and long term, the VAR is able to assess the consistency of empirical models with econometric theory, VAR is able to find solutions to the problem of time series variables not stationary and spurious regression or spurious correlation in the econometric analysis.

The data used to estimate prior research is necessary to test a series of stages, namely: stationarity test, the determination of the lag length, Granger causality test, Impulse Response Function and Variance Decomposition. Determination of the amount of lag in the VAR model is determined on the information criteria recommended by the Final Prediction Error (FPE) or Aike Information Criterion (AIC) or Schwarz Criterion (SC) or Hannan-Quinn (HQ). Granger causality test is used to see the direction of the relationship of a variable with another variable.
Results

1. Malaysia

VAR Model - Substituted Coefficients:

\[ \text{INFLATION} = 0.9597036782*\text{INFLATION}(-1) - 0.07769966744*\text{INFLATION}(-2) + 0.04003530131*\text{INFLATION}(-3) - 0.1123896579*\text{INFLATION}(-4) - 7.117488444e-05*\text{STOCK}(-1) - 8.33949957e-05*\text{STOCK}(-2) - 4.812102808e-05*\text{STOCK}(-3) - 6.682334695e-05*\text{STOCK}(-4) - *\text{MONEY}(-1) - 1.124235699e-05*\text{MONEY}(-2) - 7.887950386e-06*\text{MONEY}(-3) + 1.325962315e-05*\text{MONEY}(-4) + 9.535308379 \]

\[ \text{STOCK} = -7.013453627*\text{INFLATION}(-1) - 165.2190138*\text{INFLATION}(-2) + 234.2370468*\text{INFLATION}(-3) - 162.3198865*\text{INFLATION}(-4) - 0.02172763621*\text{STOCK}(-1) + 0.003857721707*\text{STOCK}(-2) - 0.216749998*\text{STOCK}(-3) - 0.1604041527*\text{STOCK}(-4) - 16981.23213 - 0.01328319426*\text{MONEY}(-1) + 0.007315443755*\text{MONEY}(-2) - 0.007615237934*\text{MONEY}(-3) + 0.02243951262*\text{MONEY}(-4) + 6852.692589 \]

\[ \text{MONEY} = -155.2058401*\text{INFLATION}(-1) - 1042.455931*\text{INFLATION}(-2) - 4989.840765*\text{INFLATION}(-3) + 6232.172055*\text{INFLATION}(-4) + 0.7459088428*\text{STOCK}(-1) + 2.281808407*\text{STOCK}(-2) + 0.6039608303*\text{STOCK}(-3) + 0.6694342375*\text{STOCK}(-4) + 1.013270494*\text{MONEY}(-1) - 0.01221904445*\text{MONEY}(-2) - 0.1839818566*\text{MONEY}(-3) + 0.2503771217*\text{MONEY}(-4) - 127890.46 \]

Malaysia shows that stock prices are affected by inflation one and two previous periods. Inflation is affected by the inflation of the previous period. The money supply inflation is affected by the three previous periods, inflation four previous periods, the share price two previous periods, the money supply of the previous period, the money supply four previous periods.

In Malaysia, its stock price is affected by inflation one and two previous periods. Investors do not want to hold assets in a country whose currency has depreciated because it will erode investment returns. Unanticipated inflation negatively affects stock prices through changes in the price level that was not anticipated. Inflation uncertainty also affects the discount rate would reduce the present value of the cash flow of the company. According DeFina (1991), an increase in inflation has a negative impact on corporate earnings due to higher costs of the company and the slow adjustment of output prices, reduce profits and then lower the price of the stock. Inflation is the general rise in prices of goods continuously. But rising prices are not always the same percentage (Nopirin, 2000). The price increase is measured in several ways, among others,
the cost of living index (consumer price index), wholesale price index (whole sale price index) or also by the GNP deflator

2. INDONESIA

VAR Model - Substituted Coefficients:

\[
\text{INFLATION} = 0.88885741 \times \text{INFLATION}(-1) - 0.09715288326 \times \text{INFLATION}(-2) - 0.000578777408 \times \text{STOCK}(-1) + 0.000610760612 \times \text{STOCK}(-2) + 4.86427826e-06 \times \text{MONEY}(-1) - 4.553964287e-06 \times \text{MONEY}(-2) - 1.24945732
\]

\[
\text{STOCK} = -9.8970976 \times \text{INFLATION}(-1) + 11.44072877 \times \text{INFLATION}(-2) + 1.293688434 \times \text{STOCK}(-1) - 0.282299908 \times \text{STOCK}(-2) - 0.001045226037 \times \text{MONEY}(-1) + 0.0009539847424 \times \text{MONEY}(-2) - 229.4621718
\]

\[
\text{MONEY} = 644.9706076 \times \text{INFLATION}(-2) + 17.6177423 \times \text{STOCK}(-1) - 22.82075275 \times \text{STOCK}(-2) + 0.8255284226 \times \text{MONEY}(-1) + 0.2173868152 \times \text{MONEY}(-2) + 24928.54679
\]

For Indonesia, it can be concluded that in the long term in Indonesia, the share price is affected by the stock price of the previous period and two previous period while inflation is affected by the inflation of the previous period. The money supply is affected by the amount of money the previous period. Stock prices in Indonesia was not influenced at all by the monetary variables. It is affected by stock prices in the past. This could be due to economic conditions in Indonesia were less good and stable so that investors tend to invest in short term and expect to benefit from market changes. So that investors are more likely to see the stock price in the past to estimate the stock price in the future. It also implies that the monetary variable is not an appropriate indicator to predict the stock price index. It also indicates that investors in the Indonesian capital markets are not intensively use information about changes in monetary variables when deciding to trade in the stock market.

CONCLUSIONS

There are differences in the factors that affect stock prices in Indonesia and Malaysia. In Indonesia, the share price is more influenced by past stock prices. This suggests that the investors in Indonesia tend to perform technical analysis in the stock price and tend to look at short term profit. In Malaysia, its stock price is strongly influenced by inflation. Investors do not want to hold assets in a country whose currency has depreciated because it will erode investment returns.
Unanticipated inflation negatively affects stock prices through changes in the price level that was not anticipated. Inflation uncertainty also affects the discount rate would reduce the present value of the cash flow of the company. The increase in inflation has a negative impact on corporate earnings due to higher costs of the company and the slow adjustment of output prices, reduce profits and then lower the price of the stock.

Although there is a difference, the Government of Indonesia and Malaysia need to increase monetary stability as monetary stability could affect investors' perceptions and influence fluctuations in stock prices.
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