

ANALISA PENGARUH VARIABEL MAKROEKONOMI TERHADAP HARGA SAHAM DI BURSA EFEK INDONESIA DARI SEKTOR 2 PERIODE 2006-2016

ANALYSIS OF MACROECONOMIC VARIABLES IMPACT ON STOCK MARKET PRICE IN INDONESIA STOCK EXCHANGE (IDX) FROM SECTOR2 PERIOD 2006-2016

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Abstrak : Salah satu instrumen investasi yang tersedia di era ini adalah investasi saham. Pergerakan harga saham dapat dikaitkan erat dengan kondisi makro ekonomi suatu negara. Ada banyak penelitian yang telah dilakukan dalam hal investasi saham. Namun, para investor bersedia untuk membelanjakan dana mereka pada jenis investasi ini, untuk mendapatkan tingkat pengembalian yang lebih besar. Penelitian ini bertujuan untuk menganalisis hubungan antara variabel makroekonomi dan harga pasar saham dari sektor 2 di Bursa Efek Indonesia. Penelitian ini dilakukan untuk mengetahui pengaruh simultan dan parsial antara harga pasar saham dan variabel makroekonomi seperti harga minyak dunia, tingkat suku bunga, produk domestik bruto, harga saham sektoral dan jumlah uang beredar. Data sekunder adalah sumber untuk penelitian ini, akan didasarkan pada data triwulan mulai Januari 2006 sampai Desember 2016. Hasilnya menunjukkan bahwa variabel independen secara simultan mempengaruhi harga pasar saham, Dan secara parsial, hasilnya mengkonfirmasi bahwa jumlah uang beredar dan harga saham sektoral. Sangat mempengaruhi harga pasar saham.

Kata Kunci: Harga pasar saham, harga minyak dunia, tingkat suku bunga, produk domestik bruto, harga saham sektoral, dan jumlah uang beredar.

Abstract: *One of the investment instruments available in this era is stock investment. Stock price movements can be closely linked to a country's macroeconomic condition. There are many research that have been conducted in terms of stock investment. However, investors are willing to spend their funds in this type of investment, in order to attain greater return. This research aims to analyze the relationship between macroeconomic variables and stock market price from sector 2 in Indonesia Stock Exchange. This research is conducted to examine the simultaneous and partial influence between stock market price and macroeconomic variables such as world oil price, interest rate, gross domestic product, sectoral stock price and money supply by using time series regression as the analysis method. Secondary data is the source for this research, it is based on quarterly data from January 2006 to December 2016. The result reveals that the independent variables simultaneously influences stock market price, and by partially, the results confirm that money supply and sectoral stock price significantly influences the stock market price.*

Keywords: *Stock market price, world oil price, interest rate, gross domestic product, sectoral stock price, and money supply.*

INTRODUCTION

Research Background

Every company wants to have good developments in financial condition, in order to take their company's position higher, build a good reputation, reach their objectives, live a better company and keep the balance. It is all fine when everything are going just as planned, but when it is not, then some problems may occur starting from the simple until the complicated one. The factors can come from many aspects such as management, human resources, poor marketing strategies, funding, falling of stock price and much more.

However, the fall of stock mainly come from macroeconomy factors, but for some cases it can also harmed by unexpected world issues that suddenly appear and give bunch of negative impacts on the stock market. This is a big deal where everyone have to watch and anticipate in order to decrease the risks they may receive, because it is just like a midnight surprise when everyone was fall asleep and then shocked by the morning, it can turn all the hope and prediction upside down.

The progress of stock price is not always upward because sometimes it can go downward as well, there are several factors that can harm the growth of stock price such as macroeconomy factors in a country. In macroeconomy thereabouts GDP, money supply, interest rate, price of oil and even sectoral stock prices. The fact is all of this problems exists even in the biggest companies who already have experiences for years, it shows exactly if they need to be watchful with every decision and step they will run always and everywhere.

In Indonesia, companies that wants to sell their shares to the stock market are required to register to Indonesia Stock Exchange (IDX) by completing certain requirements, until now there are at least 535 companies that are listed as the companies who provided their shares in public.

Therefore, stock price of a company is not just about the amount of numbers people can spend to get the share, for the company who already listed and provide their shares in public, the stock price is like their biggest pride where sometimes it can bring joy and also tears for their shareholders and management. Stock price brings a lot of definition of company's current condition, the role of stock price in a company are as the monetary interest in a company where everyone can get the impact when the price rise and fall, as a tool to measure a company's financial health but also the company can earn more financing through the high stock price because the demand will be bigger, and then it can improve or drop the brand image, prestige and exposure of a company to the public. It is not impossible when a company's stock price keep getting weak and show no improvement, it can be collapse or if there is still a room for improvement, then another company will try to buy the majority of that company's shares and make an acquisition in order to wider the market coverage.

Research Objectives

There are some objectives regarding on this research are to know :

1. The overall influence of world oil price, interest rate, gross domestic product, sectoral stock price and money supply on the stock market price.
2. The partial influence of world oil price on the stock market price.
3. The partial influence of interest rate on the stock market price.
4. The partial influence of gross domestic product on the stock market price.
5. The partial influence of sectoral stock price on the stock market price.
6. The partial influence of money supply on the stock market price.

THEORETICAL REVIEW

Theoretical Framework

Stock Market Price

Indonesia Stock Exchange (IDX) defines shares (stock) as one of the most popular financial markets instruments. Issuing shares is one option the company wants to raise its capital. On the other hand, stocks are selected investment instruments that have been chosen by many investors because the stock is able to provide an attractive level of profits (www.idx.co.id).

World Oil Price

Crude oil is a commodity and major world needs today. Even Indonesia also experienced the oil crisis at the moment. Output of crude oil used daily is diesel, gasoline, pertamax, etc. Amounting to 84% of the crude oil

will be processed into vehicle fuel (gasoline), aircraft and jet (diesel), earth material heater (heating), other fuels and liquid gas (liquefied petroleum gas) (Roman, 2012).

Interest Rate

Interest rates are the reward paid by a borrower (debtor) to a lender (creditor) for the use of money for a period, and they are expressed in percentage terms per annum (pa), for example 6,25%pa, in order to make comparable. Note that the interest rate is part of denominator, which means that when the rate rises, the price (PV) of the investment falls. The converse obviously holds (Faure, 2015:9).

Gross Domestic Product

GDP can measure the value of an economy's production of goods and services (output, for short) over some interval of time. A related statistic, called the per capita GDP, measures the value of production per person, if the GDP changing a lot in a particular time, it would be a threat for that country because it will give impact directly into their economy activities like foreign investor will decide to cut the agreement with Indonesian companies for example and the increase of poverty because of the unstable economic development (Andolfatto, 2005:3).

Sectoral Stock Price

Stock is the right of ownership from a company, by buying shares in a company, the person owning the shares has purchased some of the companies. If the company is profitable, then the shareholders will usually earn a portion of the profits called dividends. The stock can also be sold to other parties, either at a higher price whose price difference is called capital gain or lower than we buy it which is the difference in price is called capital loss. So, the profit that can be obtained from the stock there are two types of capital gains and dividends (Siegel, 1998:72).

Money Supply

Handa (2009:3) explained money supply as the monetary policy instrument and is exogenously determined by the central bank and it is the behavior of the central bank of the country which is given the power to control the money supply and bring about changes in it. Money supply is exogenously determined, usually by the policies of the central bank. The control of the money supply rests with the monetary authorities. Their policy with respect to changes in the money supply is known as monetary policy.

In general the type of money is classified into two, namely M1 and M2, Federal reserve Bank explained the two types of money **M1 money supply** includes those monies that are very liquid such as cash, checkable (demand) deposits, and traveler's checks **M2 money supply** is less liquid in nature and includes M1 plus savings and time deposits, certificates of deposits, and money market funds (www.cnx.org).

Previous Research

One of the research that focusing in stock market price is the research made by Selviarindi (2011) to analyzed the impact of macroeconomic variables on stock market price in Indonesia Stock Exchange, this research confirms that interest rate has negative effect on the stock prices, inflation rate has no effect on stock prices, the exchange rate has a negative effect on stock prices, the money supply has no effect on stock prices, Gross Domestic Product has no effect on stock prices, the price of oil has no effect on stock price. Simultaneously independent variables influence on stock prices. Talla (2013) was aiming to investigate the impact of changes in selected macroeconomic variables on stock prices of the Stockholm Stock Exchange (OMXS30), this research confirms that inflation and currency depreciation have a significant negative influence on stock prices. In addition, interest rate is negatively related to stock price change, but it is not significant in the model. On the other hand, money supply is positively associated to stock prices although not significant. Asmy (2010) attempts to examine the short-run and long-run causal relationship between Kuala Lumpur Composite Index (KLCI) and selected macroeconomic variables, the results suggest that inflation, money supply and exchange rate seem to significantly affect the KLCI. These variables considered to be emphasized as the policy instruments by the government in order to stabilize stock prices.

Research Hypothesis

- H₁: World oil price, interest rate, gross domestic product (GDP), sectoral stock price, and money supply have a positive and significant influence on the stock market.
- H₂: World oil price has a positive and significant influence on the stock market price
- H₃: Interest rate has a negative and significant influence on the stock market price.
- H₄: Gross domestic product (GDP) has a positive and significant influence on the stock market price.
- H₅: Sectoral stock price has a positive and significant influence on the stock market price.
- H₆: Money supply has a positive and significant influence on the stock market price.

Conceptual Framework

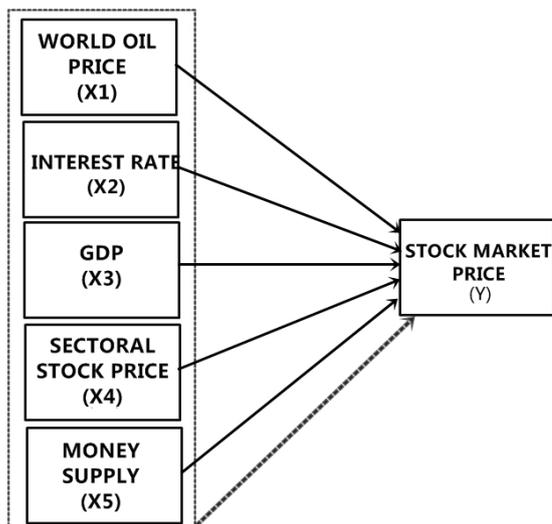


Figure 1. Conceptual Framework

Source: Data Processed, 2017

RESEARCH METHOD

Type of Research

This research is the type of quantitative research because in the process of solving the problems and calculating the result, it is using secondary data which is numerical data. In line with previous research

Place and Time of Research

This research will take place in Manado for all the making processes, the data required in this research will be taken from three major sources which are Badan Pusat Statistika (BPS), Indonesia Stock Exchange (IDX) and from OPEC. Moreover, mostly all the data has already been provided on the internet, but if there is something that this research need and not available on the website, then it would be better to go directly to the official data provider's office in Manado. Companies that are used as the object in this research comes from all the companies that have been listed in Indonesia Stock Exchange, scattered throughout this country

Population and Sample.

The population in this research are the 95 companies that listed in Indonesia Stock Exchange (IDX) at sector 2 as the go public companies and will be analyzed in period 2006-2016 by using quarter data.

Source and Data Collection Method

Data collected for this research was gathered from three major sources which are Badan Pusat Statistika (BPS), Indonesia Stock Exchange (IDX) and from OPEC. Furthermore, the data that will be use on this research are based on secondary data.

Research Design and Data Analysis

The regression of time series is similar to other types of regression with two important differences. First, time variables themselves: trend over time, seasonality, and business cycles, are often useful in describing

and/or predicting the behavior of a time series. Second, the order in which the data occurs in the spreadsheet is important because, unlike cross-sectional data, the ordering is not arbitrary but rather represents the order in which the data were collected. In this analysis method, the time series regression can be write as :

$$\log Y_t = \beta_0 + \beta_1 \log X_{1t} + \beta_2 X_{2t} + \beta_3 \log X_{3t} + \beta_4 \log X_{4t} + \beta_5 \log X_{5t} + \varepsilon_t$$

Whereas: Y= Stock Market Price, β_0 = Intercept, β = Coefficient of each variable, $\log X_1$ = World Oil Price (WOP), $\log X_2$ = Interest Rate (IR), $\log X_3$ = Gross Domestic Product (GDP), $\log X_4$ = Sectoral Stock Price (SSP), $\log X_5$ = Money Supply (MS), t = time period, ε = Error.

Operational Definition and Measurement of Variables

1. Stock Market Price (Y)
Stock market price is the amount of number an investor should spend to in order to earn a share from a certain company, the shares are available to buy in purpose of taking the bigger income from the sale of those shares later on, the shares comes from companies that have been listed as the go public companies in every stock exchange firm at every country.
2. World Oil Price (X_1)
Oil has been one of the most critical needs in today's era, it needs to be process before it is ready for the using, the outcome can be use in various purposes such as moving the vehicles like cars, airplanes, trains, motorcycles, ships, and the other kind of vehicles, and can become petroleum as well.
3. Interest Rate (X_2)
Interest rate is an extra payment someone should spent in a transaction that rate has been standardized by the authority of an official institution, mostly come from people who are dealing with credit in a bank or somewhere. The interest rate is one of the most significant prices in the economy, it can affect primary tools of monetary policy and advancing the consumption of investment.
4. Gross Domestic Product (X_3)
Gross Domestic Product (GDP) is the total value of the products and services that produced by a country. This Gross Domestic Product's data was taken from annual report and measured by trillion Rupiah.
5. Sectoral Stock Price (X_4)
Sectoral stock price is the price of share that available in Indonesia Stock Exchange, that comes from sector 4 (miscellaneous industry).
6. Money Supply (X_5)
Money supply is the amount of money that available in a country, the circulation money usually managed by monetary policy that exists in country.

DATA ANALYSIS AND DISCUSSION

Classical Assumption

Normality Test

Table 1. Normality Test Result

| Variable | Asymp. Sig. (2-tailed) | Interpretation |
|-------------------------|------------------------|----------------|
| Unstandardized Residual | 0.200 | Normal |

Source: Data Processed SPSS, 2017

Normality test result is 0.200 which is greater than 0.05 (>0.05), means that the data used has been distributed normally and has fulfilled the assumption.

Multicollinearity Test**Table 2. Multicollinearity Test Result**

| Variable | VIF | Tolerance |
|------------------------------|-------|-----------|
| World Oil Price (WOP) | 3.768 | 0.265 |
| Interest Rate (IR) | 2.425 | 0.412 |
| Gross Domestic Product (GDP) | 8.022 | 0.125 |
| Sectoral Stock Price (SSP) | 6.443 | 0.155 |
| Money Supply (MS) | 1.190 | 0.840 |

Source: Data Processed SPSS, 2017

From the calculation in the table above, the vif value of all independent variables is below 10 (<10), and the tolerance value is above 0.1 (>0.1), the results show that all independent variables have met the multicollinearity assumption and free from multicollinearity.

Heteroscedastisity Test**Table 3. Heteroscedastisity Test Result**

| Variable | Sig. |
|------------------------------|-------|
| World Oil Price (WOP) | 0.153 |
| Interest Rate (IR) | 0.584 |
| Gross Domestic Product (GDP) | 0.770 |
| Sectoral Stock Price (SSP) | 0.655 |
| Money Supply (MS) | 0.558 |

Source: Data Processed SPSS, 2017

Test results from the table above the significance value of P shows from all variables are greater than 0.05 (> 0.05) which explains if there is no heteroscedastisity occurs in this regression model.

Autocorrelation Test**Table 4. Autocorrelation Test Result**

| Dependent Variable | Durbin-Watson |
|--------------------------|---------------|
| Stock Market Price (SMP) | 1.358 |

Source: Data Processed SPSS, 2017

The calculation result shows that the Durbin Watson (dW) value is 1.480 and it exists between the Durbin Lower (dL) and Durbin Upper (dU) which makes the decision still inconclusive, for this reason another test need to be conduct in order to reach the assumption, in this case it will be by using run test to see whether the data used are random or not and the significant result value should be greater than 0.05 (>0.05).

Table 5. Run Test Result

| Variable | Asymp. Sig. (2-tailed) |
|-------------------------|------------------------|
| Unstandardized Residual | 0.10 |

Source: Data Processed SPSS, 2017

Run test's result shows that the significant value is 0.010 (> 0.05) it means that the data in this research are random enough so there is no autocorrelation problem.

Coefficient of Regression**Table 6. Coefficient Regression Result**

| Variable | B | T | Sig. | Interpretation |
|------------------------------|-------|--------|------|----------------|
| World Oil Price (WOP) | .534 | 5.197 | .000 | Significant |
| Interest Rate (IR) | -.031 | -1.982 | .055 | Insignificant |
| Gross Domestic Product (GDP) | .007 | .486 | .630 | Insignificant |
| Sectoral Stock Price (SSP) | .814 | 7.579 | .000 | Significant |
| Money Supply (MS) | -.244 | -.395 | .695 | Insignificant |
| Constant | 1.754 | .435 | .666 | |

Source: Data Processed SPSS, 2017

The equation is as follows:

$$\log Y_t = 1.754 + \log 0.534X_{1t} + -0.031X_{2t} + \log 0.007X_{3t} + \log 0.814X_{4t} + -\log 0.244X_{5t} + \varepsilon_t$$

This constant value of 1.754 indicates that if variable of World Oil Price, Interest Rate, Gross Domestic Product, Sectoral Stock Price, and Money Supply are remain constant, then the value of Stock Market Price will increase for 1.754 %. Coefficient value of 0.534 means if the World Oil Price variable in this research increased by 1%, we would expect the Stock Market Price to change by 0.534 %, coefficient value of -0.031 means if the Interest Rate variable in this research increased by 1%, we would expect the Stock Market Price to change by 0.031%, coefficient value of 0.007 means if the Gross Domestic Product variable in this research increased by 1%, we would expect the Stock Market Price to change by 0.007% as well, coefficient value of 0.814 means if the Sectoral Stock Price increased by 1 %, we would expect the Stock Market Price to change by 0.814%, coefficient value of -0.244 means if Money Supply value increased by 1%, it we would expect the Stock Market Price to change by 0.244%.

Coefficient Correlation and Determination**Table 7. Coefficient Correlation and Determination Result**

| R | R Square | Adjusted R Square | Std. Error of Estimate | Durbin-Watson |
|------|----------|-------------------|------------------------|---------------|
| .917 | .841 | .815 | .046 | 1.480 |

Source: Data Processed SPSS, 2017

Based on the analysis, the correlation coefficient (R) is equal to 0.917 indicating the correlation of all the independent variables and the dependent variable is strong. To determine how much the contribution of independent variables to the dependent variable then we need to test the determinant of the coefficient (R^2). $R^2 = 0.841$, implies that the contribution of independent variables on dependent variable is 84.1% while the remaining 15.9% involved by other predictors or variables that have not been examined in this research.

Hypothesis Test**4.4.1. Simultaneously Test****Table 8. Simultaneously Test Result (F-test)**

| Model | F | Sig. |
|-------|--------|------|
| 1 | 27.025 | .000 |

Source: Data Processed SPSS, 2017

Test result shows that $F_{count} = 27.025 > F_{table} = 24.500$, it means that H_0 is rejected and H_a accepted. This result also shows that this prediction confidence is above 95% and the probability of prediction error is below 5% which is 0.000. However, H_a is accepted in this case and indicates that the hypothesis of world oil price, interest rate, gross domestic product, sectoral stock price, and money supply work simultaneously on the stock market price is accepted.

Partially Test**Table 9. Partial Test Result**

| Variable | T | Sig. |
|------------------------------|--------|------|
| World Oil Price (WOP) | 5.917 | .000 |
| Interest Rate (IR) | -1.982 | .055 |
| Gross Domestic Product (GDP) | 0.486 | .630 |
| Sectoral Stock Price (SSP) | 7.579 | .000 |
| Money Supply (MS) | -0.395 | .695 |
| (Constant) | 5.917 | .000 |

Source: Data Processed SPSS, 2017

As it shows from the table above, T_{count} of world oil price is 5.917 which is greater than T_{table} of 2.024 ($T_{\text{count}} > T_{\text{table}}$), and the significant value of this variable is 0.000, it is lower than 0.050 ($0.000 < 0.050$) means this variable has significant influence partially on stock market price. However, H_0 is rejected and H_a is accepted. T_{count} of interest rate is -1.982 which is lower than T_{table} of 2.024 ($T_{\text{count}} < T_{\text{table}}$), and the significant value of this variable is 0.055, it is greater than 0.050 ($0.055 > 0.050$) means this variable has no significant influence partially on stock market price. However, H_0 is accepted and H_a is rejected. T_{count} of gross domestic product is 0.486 which is lower than T_{table} of 2.024 ($T_{\text{count}} < T_{\text{table}}$), and the significant value of this variable is 0.630, it is greater than 0.050 ($0.630 > 0.050$) means this variable has no significant influence partially on stock market price. However, H_0 is accepted and H_a is rejected. T_{count} of sectoral stock price is 7.579 which is greater than T_{table} of 2.024 ($T_{\text{count}} > T_{\text{table}}$), and the significant value of this variable is 0.000, it is lower than 0.050 ($0.000 < 0.050$) means this variable has significant influence partially on stock market price. However, H_0 is rejected and H_a is accepted. T_{count} of money supply is -0.395 which is lower than T_{table} of 2.024 ($T_{\text{count}} < T_{\text{table}}$), and the significant value of this variable is 0.695, it is greater than 0.050 ($0.695 > 0.050$) means this variable has no significant influence partially on stock market price. However, H_0 is accepted and H_a is rejected.

Discussion

World Oil Price, interest rate, gross domestic product, sectoral stock price, and money supply have a strong relationship influence on the stock market price at mining industrial sector in Indonesia Stock Exchange (IDX), it has been evidenced by the calculation result and the value contribution to the correlation with Stock Market Price. These results indicate that all factors have an important influence simultaneously for the dependent variable.

World oil price holds a significant impact on stock market price judged by the partial test analysis result. In terms of the stock sector used in this research which is mining, it is not a surprise if the world oil price will affect the stock price increase itself, the cause is some companies listed as a company go public in Indonesia stock exchange are the companies who producing oil, gas, and the other goods related in this sector. However, this result supports the previous research from Septian (2012) and Ouzan (2012).

The interest rate in this study has no significant impact on the stock price of sector 2, this is because the interest rate has a close relation with the companies' performance listed in the Indonesia Stock Exchange, this can affect the level of productivity of a company and can be a determinant as an inhibitor or enhancer for liquidity of the company itself and ultimately might reduce or increase the value of buying and selling shares in the stock market. Therefore, the result does not support the previous research from Barakat (2015), and supports the research from Ouma and Muriu (2014).

Gross domestic product in this research has no significant influence on the stock market price due to the partial test analysis result, people are more interested in using their money to get something more suitable for them, such as buying finished goods, and in terms of investment people more likely to choose other types of investment such as property, government bonds, gold, etc., this is because investors in Indonesia are looking for a better prospect ahead rather than hanging on the uncertainty for investing in stocks. The result itself has pointed on the same direction as Widodo (2011).

Sectoral stock price holds a significant influence on stock market price judged by the partial test analysis result. Interpretation of this analysis is when the stock prices value of companies coming from this sector (miscellaneous industry) increased, then similar thing will happen to the stock price in the mining sector, this result supports by the finding from Haryogo (2013).

Money supply has no significant influence on the stock market price according to the partial test analysis result. Explanation of this variable analysis result is the amount number of money supply can cause the inflation to show up, weaken the currency rate, and it will precisely decrease the stock price. However, this research supports the finding of previous research from Talla (2013) and Selviarindi (2011).

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the calculation, analysis, and discussion, six conclusions can be formulated, which are:

1. Macroeconomic variables that used in this research which consists of world oil price, interest rate, gross domestic product, sectoral stock price, and money supply do simultaneously influence stock market price from sector 2 in Indonesia Stock Exchange;
2. World oil price partially influence the stock market price positively and significantly;
3. Interest rate partially influence the stock market price negatively and not significantly;
4. Gross domestic product partially influence the stock market price positively and not significantly;
5. Sectoral stock price partially influence the stock market price positively and significantly;
6. Money supply partially influence the stock market price positively and not significantly.

Recommendation

Furthermore, this research can give recommendations that hopefully will be useful for the investment purposes or in order to make any decisions regarding to this topic of research, the recommendations are tended to:

1. Investors
Investors can be more strategic on reading the macroeconomic situation which some of them consists of world oil price, interest rate, gross domestic product, sectoral stock price, and money supply to help minimize the risks that can make them suffer a financial loss, and for choosing the best decision in order to gain greater profit.
2. Companies
Companies who involved in Indonesia Stock Exchange especially in mining sector can be more specific and watchful in terms of their decision making due to the alteration of macroeconomic factors, in purpose of building the companies' brand image, keep their business in balance, and preparing about the movement of stock price.
3. Academic
This research can be a proper reference for the study or another research in the future regarding to this topic, and for other researchers to use or add another macroeconomic variables that related with the movement of stock market price. Moreover, they also can create their concept judged from recent political issues that might influence stock market price.

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