THE INFLUENCE OF MACROECONOMIC VARIABLES TO STOCK MARKET RETURNS OF THREE SECTORS (AGRICULTURE, PROPERTY, AND MINING) IN INDONESIA

MINOR THESIS

BY:

NAME: IHWANUL MUSLIMIN

STUDENT ID: 155020107121011

Submitted in Partial Fulfillment of the Requirements

for the Degree ofBachelor of Economics

INTERNATIONAL UNDERGRADUATE PROGRAM IN ECONOMICS
FACULTY OF ECONOMICS AND BUSINESS
UNIVERSITAS BRAWIJAYA
MALANG

STATEMENT OF ORIGINALITY

1. The undersigned

Name	:Ihwanul Muslimin
Student Number	:155020107121011
Faculty	:Economics and Business
Departement	:International Undergraduate Program in Economics
Study Program	:Economics Development
Address	: Joyograng street A.15

Hereby certify that I am the sole author of this minor thesis entitle:

THE INFLUENCE OF MACROECONOMIC VARIABLES TO STOCK MARKET RETURNS OF THREE SECTORS (AGRICULTURE, PROPERTY, AND MINING) IN INDONESIA

And this minor thesis has not previously been submitted for a degree in any other university or institution

I confirm that, to the best of my knowledge, my minor thesis does not violate anyone's copyright, does not violate any ownership rights, and that any ideas, methods, quotes or other material from the work of others included in my minor thesis is published or, on the contrary, shown to be in full compliance with standard reference practices

Malang, October 15th, 2020

Author

Ihwanul Muslimin

NIM: 155020107121011

APPROVAL PAGE

Minor thesis entitled:

THE INFLUENCE OF MACROECONOMIC VARIABLES TO STOCK MARKET RETURNS OF THREE SECTORS (AGRICULTURE, PROPERTY, AND MINING) IN INDONESIA

Written by:

Name	:Ihwanul muslimin
Student Number	:155020107121011
Faculty	: Economics and Business
Department	: Economics
Study Program	: Economics Development

Has been approved to be proposed to a Minor Thesis Comprehension.

Supervisor

Prof. Devanto Shasta Pratomo, SE.,M.Si.,PhD
NIP. 197610032001121003

Malang, October 15th, 2020
Head of International Undergraduate Program in Economics,

Dias Satria, SE., M.App.Ec., Ph.D.
NIP. 198208072005011002

APPROVAL PAGE

Minor Thesis entitled:

THE INFLUENCE OF MACROECONOMIC VARIABLES TO STOCK MARKET RETURNS OF THREE SECTORS (AGRICULTURE, PROPERTY, AND MINING) IN INDONESIA

Written by:

Name	:Ihwanul Muslimin
Student Number	:155020107121011
Faculty	: Economics and Business
Department	: Economics
Study Program	: Economics Development

Has been examined by the Board of Examiners on March 19, 2021 and certified and eligible to be accepted as a minor thesis.

1. Prof. Devanto Shasta Pratomo,SE.,M.Si.,PhD
   NIP. 197610032001121003
   (Supervisor)

2. Moh. Athoillah, SE.M.E
   NIP 198411212019031004
   (First Examiner)

3. Atu Bagus Wiguna,SE., M.M
   NIP. 2016079101181001
   (Second Examiner)

Malang, March 19, 2021
Acknowledge by
Head of Undergraduate Program
in Economics Development,

Dra. Marlina Ekawaty, M.Si., Ph.D.
NIP. 196503111989032001

GRATITUDE

Praise the author, pray to God Almighty, who has given all His graces and gifts so that the author can complete minor thesis and Equal Credit Points for activities that have been followed while being a student in the development economics major (Faculty of Economics and Business, Brabwjaya University is a form of devotion both to the person and the environment, which participates in supporting the learning experience that the author undertakes. These activities provide a positive experience of increasing the competence of writers both hard skills and soft skills during this opportunity, the authors would like to thank profusely for suggestions, guidance, and the instructions given to assist the process of completing activities and writing minor thesis and my thanks go to:

1. Allah SWT who has given His Grace and Hidayah, so that we are given fluency and also physical and spiritual health in carrying out apprenticeships.
2. Both parents and all families who have given a lot of support in the form of prayer
3. Mr Drs nurkholis, M.Buss., Ak Phd as the dean of the Faculty of Economics and Business Universitas Brawijaya.
4. Mr. Dias Satria SE., MApp.E.c., PhD, who has also provided a lot of direct and indirect guidance.
5. Mr. Prof.Devanto Shasta Pratomo, PhD as the supervisor who has provided input, direction, suggestions and motivation in completing this minor thesis
6. And do not forget the author would like to say many thanks to other parties who have helped a lot for the completed minor thesis and

suggestions, constructive criticism are expected by the authors. Hopefully this minor thesis work is useful and can provide meaningful contributions

LIST OF TABLE

LIST OF FIGURE

ABSTRACT

The objective of this research was to determine the effect of macroeconomic variables such as inflation (CPI), exchange rate (ER), money supply (M2) and additional dummy variables to distinguish stock prices of 5000 and stock prices above 5000 on stock returns in three sectors such as agriculture, mining and property on the Indonesia Stock Exchange and the data used is panel data consisting of monthly data from 2008 to 2018. Based on the research, it was found that there was no significant effect between inflation (CPI) and stock market returns and also The exchange rate variable (ER) has no significant effect on stock market returns. Furthermore, The money supply (M2) variable has a significant influence on stock market returns. An increased in money supply (M2) has an impact on increasing stock returns and simultaneously inflation (CPI), Exchange rate (ER) and money supply (M2) have a significant influence on stock market returns in the three sectors of agriculture, mining and property.

CHAPTER I

INTRODUCTION

1.1 Background of Research

The existence of the Indonesia stock market adds alternative financial instruments in the form of marketable securities to the investor. Stocks are the most sensitive financial assets to economic conditions. It has higher price fluctuation compared to other financial assets. The internal and external factors determine the stock price fluctuation. The internal factors can be controlled because company management can control them. On the other hand, the external factors are uncontrollable, especially macroeconomic factors which influence the whole economy. Therefore, the external factors are riskier thainternal ones. The firms should take more attention to the fluctuation of macroeconomic movements for their sustainability, according to Barakat et al. (2016).

Investment is one of the ways investors can make profits, for example investing in the capital market. In this case, the capital market can be defined as a place for activities related to public offering and trading of stock and institutions related to the stock exchange (Regulation No. 8/1995 Concerning Capital Markets). The capital market is alternative funding for developing companies in Indonesia because, through the capital market, funds can be easily obtained in large amounts compared to funds obtained from banks. Initial Public Offering (IPO) is an initial public offering to companies that need funds by selling stock in the form of shares in the capital market.

Increased investment in a country is influenced by the country's Gross Domestic Product (GDP). One way to invest is in the form of shares traded on the capital market. The capital market has an essential role in the economy because

it has two functions, namely the economic function and financial function. The economic function means to unite two interests, those who have excess funds (investors) and those who need funds (issuers). With the capital market, those who have excess funds can invest through the purchase of new securities offered by the primary market and traded in the secondary market in the capital market in the hope of profit. While the company issuer will obtain the funds needed by offering long-term financial instruments for investment purposes without having to wait for funds availability from the company's operations. The financial function means the investors in the capital market have the opportunity to obtain a return in accordance to the selected investment characteristics.

The capital market is an alternative of investment that facilitates investment by providing benefits with certain risks. By allowing investors have healthy companies and good prospects, the company is not owned by a number of people because the widespread distribution of ownership will encourage the development of the company to be more transparent. Besides that, through the capital market, it is expected that economic activity will increase because the capital market is an alternative source of funding, so that companies can operate on a larger scale and in turn this will increase company revenue and the prosperity of the wider community.

The Indonesian Capital Market was opened in 1992 and has experienced ups and downs in its development. The Financial Services Authority (OJK) is a state institution established under Regulation Number 21 year of 2011 whose function is to organize an integrated regulatory and supervision system for all activities in the financial services sector in the banking sector, capital market and nonbank financial services sectors such as Insurance, Pension Funds, Financing Institutions, and other Financial Services Institutions.

In January 1996, to provide complete information to the public, the Indonesia Stock Exchange grouped all shares listed on the IDX into nine sectors based on industry classifications, namely: (1) agriculture, (2) mining, (3) basic and chemical industries, (4) other industries, (5) goods and consumption industries, (6) property and real estate, (7) transportation and infrastructure, (8) finance and, (9) trade, services and investment. In this study, only three sectors are investigated, namely: (1) agriculture, (2) mining, and (3) property and real estate. The three sectors was selected because they have positive influence toward the Gross Domestic Product (GDP),

The agricultural sector has an important role in the national economy. More than 40% of Indonesian people rely on their lives in the agricultural sector both directly and indirectly (Barakat et al., 2016). The agricultural sector contributes greatly to national economic development through the acquisition of foreign exchange, providers of industrial raw materials, providers of employment and poverty alleviation. One way to improve the development of the agricultural sector is investing in the agricultural sector industry.

According to Central Bureau of Statistics (BPS), related to economic growth in the Second Quarter of 2018, the contribution of agriculture to the growth rate of Gross Domestic Product (GDP) reached 13.63%. It indicates that the agricultural sector is one of the main drivers in the economic development of the Indonesian people. Data published by BPS on August 6, 2018, noted that all business fields grew positively during the second quarter of 2018. However, the highest growth was in the agriculture, forestry and fisheries sectors with a growth rate of 9.93% compared to the first quarter 2018. This was triggered by increased production in line with the ongoing harvest season for several commodities in several sub-sectors such as horticulture and plantations with the growth of 22.86% and 26.73% respectively.

Ministry of Agriculture was able to increase some agricultural commodities such as rice which reached 81.16 million tons or an increase of 14.42 percent in 2017 compared to 2014. Corn production in 2017 also increased by 52.17 percent from 2014 to 29.86 million tons. While the production of shallots reached 1.47 million tons, increased by 18.79 percent from 2014. The production of chilli in 2017 increased to 2.38 million tons or 27.09 percent compared to 2014.

The most influential commodities are palm oil, and Indonesia is the world's largest producer of Crude Palm Oil (CPO). Based on the Mundi Index, Indonesia's palm oil production reached 33 million tons in 2014. After Indonesia, the second largest producer of palm oil is Malaysia, with a total production of 19.8 million tons. As the largest CPO producer in the world and many other countries that need CPO for industrial purposes, this is an opportunity for issuers engaged in the oil palm plantation business to be able to increase total CPO exports to other countries which in turn will increase the profits of plantation companies so that it will influence the increase of share price of the plantation issuer.

Demand for Crude Palm Oil (CPO), which is gradually increasing on the global market as well as on the domestic market, will raise the price of CPO. The end has a positive impact on CPO issuers' stocks which are predicted to be bullish, and the achievement of the first stage of a trade agreement between the United States (US) and China is a positive signal of improving global CPO demand. Then the potential increase in CPO imports from India also contributed to positive sentiment for palm oil issuers and from within the country, the 30% biodiesel mixing program or B30 to be implemented this year also added to the positive sentiment for palm oil companies.

Indonesia also has other leading sectors, such as mining areas. Indonesia has many natural resources and human resources, where these assets are spread throughout Indonesia. Thus, Indonesia should have no difficulty to work

on that, and the most promising wealth to be managed is in the mining sector. It absorbs large workforce, excites so many supporting sectors, and the value of the products taken is valuable. Indonesia has vast mining areas, including coal mines in Kalimantan, sand mines in the Bangka Belitung, gold mines in Papua, oil and natural gas mines, rock mines, asphalt mines, and other mineral mines. No wonder if we make mining the main natural resources in Indonesia.

Mining has become an increasingly strategic sector for Indonesia, and hence the government is determined to increase growth in the mining sector. Indonesia is the fourth largest producer of copper in the world, and also the second largest producer of tin and nickel in the world. Starting in 2010, the value of the mining industry reached more than 73 billion US dollars, which accounted for around 11 percent of Indonesia's Gross Domestic Product (GDP). In the next five years, the Indonesian mining industry will achieve an average double digit annual growth rate. Mining is an integral economic driver for Indonesia, wherein 2018 the mining sector managed to grow 127.8% with an average net profit of Rp 4.78 trillion. Bukit Asam Tbk (PTBA) is the mining issuer with the highest net profit, followed by Adaro Energy Tbk (ADRO). The improved performance of the mining sector cannot be separated from the improvement in coal prices. In addition, high demand is also a positive catalyst for boosting the mining sector.

The good growth reflects the level of good health in the mining sector, which is supported by high prices for accommodation, and the growing importance of foreign investment in Indonesia.

In addition, the property sector is considered to have an important role in contributing to the growth of the national economy. In fact, this sector is able to become a benchmark of economic growth in the future. The importance of this sector is one of them related to the development of new cities in recent times. More than 34 new cities have been developed by REI developers. That is around

100,000 hectares and there are also those engaged in the office sector, apartments, malls and others.

So this sector may in the future make the property as national economic growth benchmark, the capitalization value of 35 percent of the shares of 46 property groups listed on the Indonesia Stock Exchange reached Rp 280 trillion. If the value is accumulated up to 100 percent, the amount is predicted to reach Rp 840 trillion. That is only 46 group companies, what about the 1,000 companies engaged in non-MBR, what if we add up more with 3,500 engaged in MBR. That will make multiply effect in how the property sector is an excellent economic sector power.

The performance of property companies in 2018 is pretty good. As seen from the performance of PT Intiland Development Tbk (DILD) which managed to record growth in performance during 2018. Moreover, they posted a net profit of Rp 112.8 billion, an increase of 178% over the same period last year. The growth in net profit was in line with an increase in operating income by 78% to Rp 709.2 billion.

In addition, one of the strategic functions of developers in the national economy sector is attracting investors. At least, that has been done by Sinarmas Land that is able to bring AEON to BSD or IKEA, which is presented by Alam Sutera. The presence of these two shopping centers from abroad helped encourage economic growth because they absorb labor besides labor from the property sector itself, which has 174 derivative industries in it. Developers in the property sector can create new investments.

1.1.1 The Effect of Macroeconomics on The Capital Market Returns

The stock price index is one of the main indicators of stock price movements that provide information on stock market developments. A composite stock price index uses all listed companies as a component of index calculation. At the same time, the sectoral stock price index in its calculation uses all issuers included in each sector so that it can be seen the development of each sector. In addition to provide benefit, investment in the capital market also contains many risks. The ability of investors to understand and predict macroeconomic conditions and the influence of the global economy by considering the development of sectoral stock price indexes will be useful in making the right investment decisions with a low level of risk.

Many factors affect stock returns including fundamental and technical information. The use of the model becomes very important to assess stock prices and assist investors in planning and deciding their investments effectively. Many factors affect the return on investment, one of which is a macroeconomic factor, for example, inflation(CPI), money supply (M2), and Exchange Rate (ER). Such as the research conducted by Wongbangpo & Sharma (2002) that investigated the role of selected macroeconomic determinants namely the MS, the ER and the consumer price index (CPI) on the stock prices in five selected ASEAN countries (Malaysia, Philippines, Thailand, Indonesia and Singapore). Overall, the Granger causality test detected the connection between selected macroeconomic determinants toward the stock prices in all five ASEAN stock market. The results suggested that stock prices in Malaysia, Thailand and Singapore positively related to MS, yet negative in Philippines and Indonesia. In terms of ER, stock prices in Indonesia, Malaysia and Philippines were positively related to ER, yet negative in Singapore and Thailand.

The objective of this research to find out and prove the effect of macroeconomic factors on stock returns by using dependent variables studied, which are stock market returns on three selected sectors (agriculture, property, mining) on the Indonesia Stock Exchange in 2008 up to 2018. This study aims to continue and explore further research on the predictability of stock returns, using predictive factors in the form of macroeconomic variables. This study bases on previous findings of the effect of these three variables on the predictability of stock returns on the IDX. In this study, the author explains whether there are differences in the influence of macroeconomic factors on returns on three selected sectors (agriculture, property, mining) in Indonesia. The variables are, namely, inflation, money supply, and the exchange rate of stock returns. In theory, there are many indicators that can measure macro variables, including economic and political indicators. However, the indicators that commonly used to predict stock fluctuations are variables that are directly controlled through monetary policy and fiscal policy. Some of these variables are inflation, money supply and exchange rates.

Inflation is a process of rising prices that prevails in an economy. Inflation shows a general price flow. Inflation is very influential in the purchasing power of individuals or companies. The higher the inflation, the lower the level of profitability of the company. If a company's profitability decreases, it is bad information for traders on the stock exchange, which results in a decrease in the company's stock price. High inflation for a stock will reduce the profitability of the company so that stock returns can experience a significant effect.

Then, when the money supply is increasing, there is a tendency for increased overall economic activity, this is because companies get more supply than before. When the money supply increases, profit oriented operational activities will increase, and it will also increase stock returns to the company.

Macroeconomic factors are factors outside the company that affect the increase or decrease of company performance. The effect of economic factor conditions is the basis of securities analysis, where if economic conditions are bad, then the rate of return of shares in circulation might reflect a comparable decline. If a country's economy grows sustainably, with reasonable good macro variables, such as controlled inflation and an attractive monetary situation, investors will be interested in investing their money in the stock exchange. Conversely, if the country's economy deteriorates, the political situation is unstable, there are many economic and monetary scandals, then investors will immediately prepare to withdraw funds invested in these exchanges. Investors always want to maximize expected returns based on their tolerance level to risk.

The exchange rate is exchange rates between two countries at the price level agreed upon by residents of the two countries to trade with one another. The decline in the Rupiah exchange rate against foreign currencies, especially the US Dollar, influences the economy and capital markets. Statistical data on exchange rates are obtained from the Bank Indonesia (BI) Monthly Report Statistics published in 2008-2018. Stock returns can be influenced by the exchange rate through the money demand equation, which forms a basis for the portfolio and monetary allocation models of the determination of the exchange rate. The exchange rate greatly influence stock returns, but the growth of the stock market also exerts a positive influence on the exchange rate.

The economic factor is a factor that is often used to find out the macro conditions of an economic situation. Common factors that affect stock market returns are interest rate, monetary policy and fiscal policy implemented by a country such as investigated by Ratanapakorn & Sharma (2007) who examined the short-run and long run relationship between the US stock price index and macroeconomic variables using quarterly data from 1975 to 1999. By employing

Johansen's co-integration technique and vector error correction model (VECM) they found that the stock prices positively relates to industrial production, inflation, money supply, short term interest rate and also the exchange rate. But it is negatively related to long term interest rate. Their causality analysis revealed that every macroeconomic variable considered caused the stock price in the long run but not in the short-run.

Mukherjee & Naka (1995) employed a vector error correction model (VECM) to examine the relationship between stock market returns in Japan and a set of six macroeconomic variables such as exchange rate, inflation, money supply, industrial production index, the long-term government bond rate and call money rate. They found that the Japanese stock market was cointegrated with these set of variables indicating a long-run equilibrium relationship between the stock market return and the selected macroeconomic variables.

Bailey (2005) examined the macroeconomic determinants of stock market returns for the Malaysian stock market by employing cointegration technique and vector error correction mechanism (VECM). Using the monthly data ranged from January 1986 to March 2008, they found that interest rates, reserves and industrial production index were positively related while money supply and exchange rate were negatively related to Malaysian stock market return in the long run. Their causality test indicates a bi-directional relationship between stock market return and interest rates.

Muhammad Akbar (2012) examined the relationship between the Karachi stock exchange index and macroeconomic variables for the period of January 1999 to June 2008. Employing a co-integration and VECM, they found that there was a long-run equilibrium relationship exists between the stock market index and the set of macroeconomic variables. Their results indicated that stock prices

were positively related to money supply and short-term interest rates and negatively related to inflation and foreign exchange reserve.

Masuduzzaman (2012) examined the long-run relationship and the short-run dynamics among macroeconomic variables and the stock returns of Germany and the United Kingdom. He used the Johansen co-integration test to indicate the cointegrating relationship between the stock prices and macroeconomic determinants. Moreover, he used error-correction models to investigate both the short-and long-term casual relationships and each case was examined individually. For the Germany case, the results show that the short-run causality runs from stock returns to inflation, from money supply to stock returns and from industrial production to stock returns. The long-run causality runs from inflation to stock returns and from exchange rate to stock returns. There was only one short- and long-run relationship, that was from the stock returns to industrial production. For the United Kingdom case, he found that the short-run causality run from stock returns to T-bill, from stock returns to the money supply, from stock returns to exchange rate, exchange rate to stock returns and stock returns to industrial production. The long-run causality runs from inflation to stock returns. The short and long-run causal relationship runs from stock returns to inflation, from money supply to stock returns and from industrial production to stock returns. These results indicate the existence of short-run interactions and long term causal relationship between both Germany and the UK stock markets and the macroeconomic fundamentals.

Talla tagne Josep (2013) used unit multivariate regression model computed on the OLS method and Granger causality test to investigate the impact of macroeconomic changes on the stock prices of the Stockholm Stock Exchange (OMXS30). The findings show that the stock prices of the Stockholm Stock Exchange (OMXS30) positively related to the MS, but it was not significant. On

the other hand, ER and CPI shows a negative and insignificant relationship on the stock prices.

Anam Gul (2013) aimed to elaborate the stock return using the Arbitrage Pricing Model by addressing the selected macroeconomic determinants such as MS and ER in the case of Pakistan. The analysis shows that both MS and ER have a significant relationship toward the KSE 100 index. As expected, ER positively influences the stock index while MS influences the stock index negatively.

Sieng & Leng (2005) results were similar, as their study reveals that stock prices, economic activities, real interest rates and real money balances in Malaysia were linked in the long run both in the pre- and post-capital control sub-periods in Malaysia

Khan et al. (2005) examined the long-run equilibrium relationships between the major stock indices of Singapore and the United States using selected macroeconomic variables with time-series data from January 1982 through December 2002. The results of cointegration test suggest that Singapore's stock prices generally display a long-run equilibrium relationship with interest rate and money supply (M1). Still, a similar relationship does not exist in the United States. Their study is, however, not country-specific. Chen, Roll and Ross (1986) assessed the relationships between macroeconomic variables and stock prices with US economic data and documents. They found that there is a strong relationship between them.

Bilson et al. (2001) attempted to find evidence about the explanatory power of local macroeconomic determinants in affecting the stock return in the case of an emerging market. At the end of this study, the researchers concluded that the ER determinant had given a significant relation and impact toward stock returns in an emerging market. Consistently with the previous studies, the dominant sign

of the coefficients on the ER toward stock return was mostly negative. While the MS determinant also showed a significant relation in six markets among emerging countries and mostly positively related as expected.

Abugri (2008) investigated the link between macroeconomic variables and the stock return for Argentina, Brazil, Chile, and Mexico using a monthly dataset from January 1986 to August 2001. His estimated results showed that the MSCI world index and the U.S. T-bills were consistently significant for all the four markets he examined. Interest rates and exchange rates were significant three out of the four markets in explaining stock returns. However, it can be observed from his analysis that, the relationship between the macroeconomic variables and the stock return varied from country to country. For example, from his analysis, it is evident that, for Brazil, the exchange rate and interest rate were found to be negative and significant. At the same time, the IIP was positive and significantly influenced the stock return. For Mexico, the exchange rate was negative and significantly related to stock return, but interest rates, money supply, IIP were insignificant. For Argentina, interest rate and money supply were negatively and significantly influenced stock return, but the exchange rate and IIP were insignificant. But for Chile, IIP was positively and significantly influence stock return, but the exchange rate and money supply were insignificant. These results imply that the response of market return to shock in macroeconomic variables cannot be determined a priority, since it tends to vary from country to country.

Previous research shows that macroeconomics has a significant effect on stock market returns, so investors need to assess economic conditions and their implications for the capital market. The reason why economic factors can influence stock returns is due to the size of the money in circulation.

The concept of High Risk-High Return investment means investors who risk lover will choose stocks that have high risk, so that in the future they will get

high returns as well. On the other hand, investors who do not like risk (risk avesters) plan normal profits. Investment always contains element of risk, because the expected return will only be received in the future, the risk also arises because the return received may be greater or smaller than the funds invested (Reilly, 2000).

Figure 1.1

Indonesia composite index returns for the last ten years

Source: IDX.COM

In the 2008 economic crisis, the IHSG fell by 10.38% or 168 points to 1,451 in the period known as Black Wednesday. At that time trading on the Stock Exchange was suspended after the index slid down to 10.38%. The transaction value only reached Rp 988 billion, the frequency was recorded at 27,494 times, and volume was 1.129 billion shares. This position is the lowest since September 2006, and in the next period IHSG continued to strengthen as at the close of December 30, 2009, IHSG closed at 2,534.3 points. While the lowest closing point of the IHSG in 2010 occurred on February 8, 2010, at the level of 2,475.6 points and on (9/12/2010) IHSG had closed at the highest position at 3,786.09 points. The growth had a positive impact on market participants. The increase in the index can trigger an increase in market participants, both local and foreign, to

invest in the Indonesian capital market. From year to year, IHSG continue to rise as in 2012 it rose by 34.83 points (0.81%) to 4,316.69. When compared to the closing of 2011, the position was at 3,821.99, it means that during the year the IHSG had managed to grow 12.94%. Moreover, in 2013 the IHSG closed stronger in 2013 to 5,178,373 on December 29, 2014. The increase continued in 2016 so that the IHSG closed down 0.12% by 6.57 points to 5,410.27. However, in the week, IHSG was still positive, with a gain of 0.02% by 1.02 points. Then, on December 21, 2017, IHSG rose again to a high record, it rose 73.91 points or 1.21 percent to close at 6,183.39. This is the highest level record of all time for CSPI. And the trend of uterine utterance to wander in 2018, IHSG rose 0.06% or 3.85 points to 6,194.50 at the close of capital market trading at the end of the year.

1.2 Research Question

1. Does money supply (M2) influence conventional stock market returns in the three sectors (agriculture, property, mining)?
2. Does the exchange rate (ER) influence conventional stock market returns in the three sectors (agriculture, property, mining)?
3. Does inflation (CPI) influence conventional stock market returns in the three sectors (agriculture, property, mining)?
4. Does money supply (M2), exchange rate and consumer price index together have a significant influence on stock market returns in the three sectors (agriculture, property, mining)?

1.3 Research Objective

1. To examine the influence of inflation (CPI) on conventional stock market returns in the three selected sector in Indonesia (agriculture, property, mining).
2. To examine the influence of money supply (M2) on conventional stock market returns in the three selected sector in Indonesia (agriculture, property, mining).
3. To examine the influence of the exchange rate (ER) on conventional stock market returns in the three selected sector in Indonesia (agriculture, property, mining).
4. To examine the influence of money supply (M2), exchange rate and consumer price index together have a significant effect on stock market returns in the three sectors (agriculture, property, mining).

CHAPTER II
LITERATURE REVIEW

2.1 Theoretical Basis

The relationship between macroeconomic fundamentals and stock market returns have been a major topic of engagement within the financial economics circus. This relationship is an object of on-going interest of investors, academics and policymakers. Several theories and empirical evidence alike have shown much detail on this subject of concern to economies. Literature, such as that by Markowitz (1959) Sharpe (1964), Lintner (1969), Ross (1976), Fama & French (1995) has provided a theoretical basis by which stocks may be valued. However, the simplifying assumptions, upon which many of these models are derived and based present key weaknesses. These weaknesses become increasingly evident in the implementation and practical application of the model in reality. Nonetheless, from a theoretical point of view, these models present a sound theoretical foundation on which stock market movement may be attributed to the influences of the macroeconomic factors.The Capital Asset Pricing Model (CAPM) and Asset Pricing Theory (APT) are be reference in this study to underpin the relationship between the stock market and the economic activities.

2.1.1 Portfolio Theory

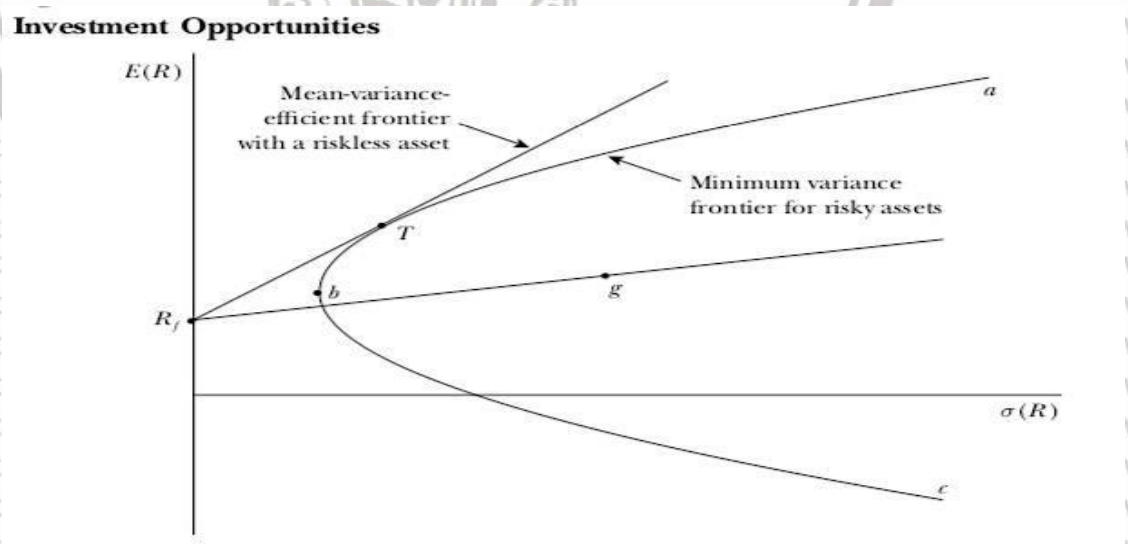
The single factor model known as the Capital Asset Pricing Model (CAPM) evolves from Portfolio Theory. The portfolio choice theory was developed by Markowitz (1959) and assumes that people are risk-averse. Moreover, recent studies show evidence that a big part of the variation in the expected return of historical data is not related to market beta. Prices of securities not only depend on expected cash flows but also the expected returns. Fama & French (1995) identify a covariance between the company's book-to-market ratio and size. This

covariance is expressed as two additional variables, size and the book-to-market ratio. This led to the development of the Fama-French Three-Factor Model Fama & French (2004).

Investors are met by risky and non-risky investment opportunities. Investors combine the same risk tangency portfolio *T* with lending or borrowing at the risk-free rate. Risky assets, also known as the market assets, are weighed in the tangency portfolio is the total value of all outstanding assets divided by the total market value of all exceptional risky assets. According to the Separation Theorem, efficient portfolios are a combination of risk-free assets combined with the risky market assets. Every investor favors different exposure to risk. Exemplified in Figure 1 at point *T,* the investor invests in the "optimal" point where both the risk-free rate and risky security are tangent. In the optimal point of investment, *T*, the return is maximized, and the volatility is minimized by Fama & French (2004).

Figure 2.1

Visual description of investment opportunities



Source: The Capital Asset Pricing Model: Theory and Evidence written by published 2004(Fama & French, 2004).

As already mentioned, investors prefer different exposure to risk in a portfolio. The point Rf itself represents a zero-variance state where all assets are invested in the risk-free security. The minimum variance frontier for risky assets does not include any risk-free security. The risky investment curve represents combinations of risks and expected returns. Investors can minimize the return variance on certain levels of expected return by their own choice. In Figure 2.1, there is one example, point *g* represents a portfolio with a combination of investment in the risk-free security and the risky assets, but it is not an optimal investment point for the investor Fama & French (2004).

2.1.2 Capital Asset Pricing Model

The Capital Asset Pricing Model was developed by Sharpe (1964) and Lintner (1969) to investigate the effect of risk on the expected return of an investment relative to the market portfolio. The capital asset pricing model relates the expected return of an asset to its riskiness measured by the variance of the asset's historical rate of return relative to its asset class. The model decomposes a portfolio's risk into systematic and specific risk. Systematic risk is the risk of holding the market portfolio. To the extent that any asset participates in such general market movement, it carries systematic risk. Specific risk is the risk which is unique to an individual asset. It represents the component of an asset's return which is uncorrelated with general market moves.

Fama & French (2004), in their recent study to validate the model, fronts the portfolio theory that said investors choose portfolios that are said to be mean-variance-efficient, and found along the efficient frontier for portfolios. The CAPM assumes that any portfolio that is mean-variance-efficient and lies on the efficient frontier is also equal to the market portfolio. The implications of this, according to

the authors, are that the relationship between risk and expected return for any efficient portfolio must also hold for the market portfolio if an balance is to be maintained in the asset market.

According to the capital asset pricing model (CAPM), the marketplace compensates investors for taking a systematic risk but not for taking a specific risk. This is because specific risk can be diversified away. When an investor holds the market portfolio, each asset in that portfolio entails specific risk, but through diversification, the investor's net exposure is just the systematic risk of the market portfolio.

2.1.3 Arbitrage Pricing Theory

Another framework to the CAPM is the arbitrage pricing theory (APT) by (Ross, 1976) in which the return on an asset is specified as a function of several risk factors common to these asset class. The model assumes that investors take advantage of arbitrage opportunities in the broader market; thus, an asset's rate of return is a function of the return on alternative investments and other risk factors. The APT in contrast to CAPM acknowledges several sources of risk that may affect an asset's expected return. The model attributes the expected return of a capital asset to multiple risk factors, and in the process measures the risk premiums associated with each of these risk factors.

APT is however based on Multi-factor linear model. Jecheche (2006) argues that Multi-factor models allow an asset to have not just one, but many measures of systematic risk. Each measure captures the sensitivity of the asset to the corresponding pervasive factor. The author further argues that the intuition for the result when assets have no specific risk, is that all asset prices move in lockstep with one another and are therefore just leveraged 'copies' of one other. The result becomes more difficult when the assets accept specific risk. In such a

case, it is possible to form portfolios with a diversifiable specific risk. In order to achieve full diversification of residual risk, however, a portfolio needs to include an infinite number of securities. With a finite set of securities, each of which has specific risk, the APT pricing restriction.

2.1.4 The Fama-French Three-Factor Model

In the year 1995, Fama and French proposed a new model with additional factors that shown to be more precise in predicting the excess return of portfolios than the equation of Jensen (1968). They observe two other factors in terms of market capitalization and book-to-market value by Sattar (2017).

Fama & French (1995) identify covariance between the company's book-to-market ratio and size. The covariance is expressed with two additional variables size and the book-to-market ratio. The return of large firm stocks has similar covariance with smaller firms. SmB is the return of a portfolio with a small market cap minus big market cap. HmL is the return of a portfolio stock with high book-to-market value minus the return on a portfolio with stocks that have low book-to-market values by Bartholdy & Peare (2005); Fama & French (2004).

The Capital Asset Pricing Model: Theory and Evidence written by Fama and French, published 2004 presents the theory and evidence for the Capital Asset Pricing Model (CAPM), and the development of the Fama-French Three-Factor Model (FF3). Behaviorist is critical to the Capital Asset Pricing Model's ability to explain the true covariance of market return according to Fama and French. They argue that the average return premium related to the FF3 model is misleading in terms of pricing. They explain the empirical evidence for the weak explanatory power of the CAPM, developed by Sharpe (1964) and Lintner (1969). In the late 1970s, the new variables price-ratios and size were found to have explanatory power on the return of portfolios. The work of Fama and French is a

significant part of finance and the two models CAPM and FF3. Fundamentals of Fama and French findings influenced the current global research when they showed that FF3 produced a better result of estimating average returns on portfolios than CAPM used on the international market by Fama & French (2004).

Bartholdy & Peare (2005) compared expected returns between the performance of estimating individual stock returns using CAPM and FF3. The result of the study was shown to be limited in its explanatory power of the expected returns. On average CAPM explained 3% of the differences in return and the Fama-French model on average 5%. Testing different intervals of data frequencies and indexes to see what resulted in the best estimation, it was found that monthly observations over five years were the best fit. Bartholdy and Peare (2005) found in their research that the models performed differently using different indexes. They identified that the best type of index used was the equal-weighted and not the more common value-weighted index. The analysis in their study was made on the New York Stock Exchange, the U.S. stock market. In conclusion, the author presents that none of the models produced high significance results and the explanatory power is too low to be useful for estimating the cost of equity. The bullet point of this article is that CAPM and FF3 are imperfect models; by applying different datasets and particular periods, the model yields a different outcome.

Suh (2009) conducted a time-series test on CAPM and FF3 for a specific estimation of the equity capital in a corporate investment decision-making perspective. The data was collected from a wide variety of stocks for over five years, conducted daily and monthly. The most consistent result of the study was the market risk premium. The results of the study show that the market risk premium, for individual stocks and portfolios, is significant in its results and the two models worked as complements. CAPM was generally better at estimating

the large-growth portfolio returns and was not able to provide a reasonable estimate for the small-value portfolios.

On the other hand, FF3 showed better accuracy in estimating the small-value portfolios and less efficient at estimating the large-value portfolios. Furthermore, Suh supports the founding of the importance of the datasets from the previous study of Bartholdy and Peare (2005). The two financial models work as counterparts in the sense of explanation power.

The research by Grauer & Janmaat (2010) studied the significance of CAPM compared to the market line using cross-sectional testing. It was shown that the expected return of portfolios that are unit-weight and the zero-weighted portfolios, both were tangents to the origin. The range of betas in the regression increased in significance when low-beta portfolios were replaced by short high-beta portfolios. Furthermore, the second part of the study was focused on testing the two pricing models on a real-life dataset. The second part of the study showed that the cross-sectional tests of the two models are both insufficient in explaining the expected return of portfolios, and the majority of the estimates showed a negative coefficient. As previously mentioned, the choice of a dataset has a great impact on the results of the models. Grauer & Janmaat (2010) show a different in datasets with and without zero-weights portfolios.

Zhang & Wihlborg (2010) investigated whether CAPM applies in up and down markets on six European emerging markets. Emerging markets are characterized by high volatility and negative excess returns. Zhang and Wihlborg found that CAPM does not provide any sufficient results while including both developed and emerging markets. CAPM provides better predictions with a singular market category. The empirical results are based on monthly observations testing CAPM. Results show that global events influence stock markets. One implication of the analysis that a beta is a useful tool for portfolio

managers considering investments in emerging markets. The concluding findings from this research are that stocks on emerging markets react more inconsistent exploiting CAPM to produce efficient results.

In the paper of Östermarkc (1991), CAPM was compared on the Swedish and the Finnish Stock Markets. Ostermark restructured his sample before running the regressions by neglecting extreme values, in terms of abnormal returns. It was found that Swedish data performed better, in terms of the stated coefficient of determination, and the standard error than the Finnish data. Furthermore, CAPM showed a higher significance of predicting the return on the Swedish stock market compared to the Finish Stock Market. This is a result of the interdependence between individual assets return on the Finnish Stock Market. One more conclusion made in the paper is that weekly observations and more extended periods for computing returns give better results in the purpose of CAPM. Ostermark (1991) concluded that CAPM performs better on the Swedish stock market compared to the Finish Stock Market.

Kilsgård & Wittorf (2010) conducted a similar study to Suh (2009) but chose to investigate the performance of the models of the decision-making perspective. The study was outlined to test the performance of the models on the Swedish Stock Market with companies Large and Mid-Cap size during the 2008 crisis. They constructed in a total of 16 different portfolios, for the period 2005-2010. Furthermore, to establish a difference in the two models, Kilsgard and Wittorf (2010) chose to analyze the R-squared and the P-values of the regressions. According to their findings, the variance of R-squared estimates for all the regression was highly inconsistent. The volatility of R-squared was directly linked to the crises. However, the study concluded that FF3 outperformed CAPM on the Swedish Stock Market even in this specific period.

In recent times, there has been a further development of FF3, and the progress resulted in the Fama-French Five-Factor Model. The two new additional variables in the Fama-French Five-Factor Model are operating profitability and investments. Gruodis & Kahraman (2015) examine the performance of the Fama-French Five-Factor Model on the Swedish Stock Market, between 1991-2014. The findings of this study are that the five-factor model, on average, predicts absolute intercepts closer to zero compared to the intercepts predicted by the three-factor model. In the end, Groudis (2015) concluded that the additional variables raise the degree of the prediction with Swedish data.

Chen et al. (1986) in their first empirical investigation of the APT argued that the most basic level some fundamental valuation model determines the prices of assets. That is, the price of a stock will be the correctly discounted expected future dividends. Therefore the choice of factors should include any systematic influences that impact future dividends, the way traders and investors form expectations and the rate at which investors discount future cash flows.

It is through this mechanism that macroeconomic variables become part of the risk factor in the equity market. The authors further acknowledges that stock returns are exposed to systematic economic news, that they are priced in accordance with their exposures, and that the news can be measured as innovations in state variables whose identification can be accomplished through simple and intuitive financial theory.

However that the CAPM and APT have advantages and disadvantages as models of asset returns. The CAPM is seen as parsimonious and commonly employed by equity analysts but requires a precious identification of the portfolio against which the asset is compared. On the other hand, Mosley & Singer (2008) contended that APT accommodates multiple sources of risk and alternative investment, the model suffers from a similar challenge of identification since

many factors, both international and domestic could influence the performance of an asset. The model, as with the CAPM, is subject to certain assumptions; the first is that investors may borrow and lend at the risk-free rate, there are no taxes and short selling of securities is unrestricted. The second assumption assumes that a wide variety of securities exist. Thus risk unique to those securities may be diversified away, and lastly, investors are risk-averse who aim to maximize their wealth.

The criticisms of the model have centred on the generality of the APT itself. The APT sets no theoretical foundations for the factors that should be included in ascertaining the risk-adjusted return of the capital asset, and does not state the number of risk factors that should be included. The APT also presents specific methodological issues relating to the estimation of the model. Cheng (1996) points out that the model may be sensitive to the number of independent variables included in the linear regression. Evidence of this was found by Günsel and Çukur (2007). However, in both cases, it was found that the applicability of the APT in establishing asset returns may still be valid.

APT and CAPM can, however, be explained by a single model as demonstrated by Bailey (2005). If asset returns are explained by a single factor model, where the single factor is the market rate of return, then the prediction of the APT is identical with that of CAPM. It is possible for the CAPM and APT to be compatible with one another even if the return on the market portfolio is not one of the factors-indeed, even if the factors are not portfolio return at all.

The nexus between macroeconomic fundamentals and stock market returns have become a vital debate subject within the financial economics circle by Ouma and Muriu (2014). Many theoretical frameworks have been used by different scholars to simulate the fluctuations in macroeconomic determinants toward stock market performance. The current study adopts EMH, and arbitrage

pricing theory (APT) to highlight the relationship between the macroeconomic variables and stock market returns.

The EMH, also known as random walk theory developed by Fama (1970), suggests that in an efficient market, all stock prices fully reflected all the information available in the market. Hence, investors would not be earned abnormal profits in such a market. On the other hand, the APT developed by Ross (1976) provides a theoretical framework of the linkage between stock prices and macroeconomic fundamentals.

Stock price movements are highly sensitive to macroeconomic factors such as interest rate, inflation, and exchange rate (Shafana, 2014). The interested parties of stock market focus on what factors and at which level their impact on the stock price. Policymakers can predict the effect of current and upcoming policies and regulations. Investors can make a better decision when they understand this relationship and take action to reduce their risk

Gan et al. (2006) examined the connection between the New Zealand stock market index and selected macroeconomic determinants using monthly data from January 1990 to January 2003. The study reveals a negative relationship between CPI and stock index as well as MS determinant.

Liu and Shrestha (According to Alam & Rashid, 2015) investigated the long term relationship between the macroeconomic factors and the stock returns in the Chinese market. They used the exchange rate, inflation, money supply, industrial production and interest rate as independent variables and stock exchange indices as a dependent variable. By using the heteroskedastic cointegration, they found the long term relationship between the macroeconomic factors and the stock returns. Industrial production and money supply were positively associated with the stock returns, while inflation, exchange rate and interest rate were

negatively associated with the stock returns. Chinese stock market was found as reactive to the macroeconomic information

Ozcan (2012) used Johansen's cointegration to investigate the long run equilibrium interaction between selected macroeconomic determinants toward Istanbul Stock Exchange (ISE) index. The researcher employed monthly data for all the determinants covering the period from January 2003 to December 2012. The study found that both determinants; MS and ER depicted a long run equilibrium interaction toward ISE index.

Khodaparasti (2014) examined the role and impact of macroeconomic variables on the Iranian stock market. Using historical data from 2007 to 2011, the paper shows evidence that ER poses a greater effect on the stock market compared to inflation and MS. However this paper failed to depict a significant relationship between MS and CPI towards the stock index except for ER that shows a significant positive relationship to Iranian stock index.

Miseman et al. (2013) studied the impact of macroeconomic forces on five ASEAN stock market movement, including used as a proxy for stock market returns and are considered as the dependent variable. Since it is quite impossible to investigate every potential macroeconomic determinant to explain the variation in stock market return, the choice of determinants are based on the previous studies, and three macroeconomic determinants have been chosen to be independent variables in this study namely MS, ER and CPI.

Fama (1981) also explains a strong positive correlation between common stock returns and real economic-variables like capital expenditures, industrial production, real GNP, money supply, lagged inflation and interest rates. In Nigeria, Soyode (1993) tested the association between stock prices and macroeconomic variables such as exchange rate, inflation and interest rate and

found that macroeconomic variables are cointegrated with stock prices and consequently related to stock returns.

Geetha et al. (2011) investigated the relationship between the stock market, expected inflation rate, unexpected inflation rate, exchange rate, interest rate and GDP in the case of Malaysia, US and China. They used cointegration test to determine the number of cointegrating vectors, which shows the long-run relationship between the variables. In contrast, the short-run relationship was determined using the Vector Error Correction model. Their results indicate that there is a long-run cointegration relationship between stock markets and those variables in Malaysia, US and China. On the other hand, there is no short-run relationship between the stock market, unexpected inflation, expected inflation, interest rate, exchange rate and GDP for Malaysia and US using VEC. However, China's VEC result shows that there is a short-run relationship between expected inflation rates and China's stock market.

Amadi et al. (2000) employed multiple regressions to estimate the functional relationship between money supply, inflation, interest rate, exchange rate and stock prices, and reveal that the relationship between stock prices and macroeconomic variables are consistent with theoretical postulation and empirical findings in other countries.

Nwokoma (2002) also attempted to establish a long-run relationship between stock market returns and some macroeconomic indicators. The study findings reveal that only industrial production and level of interest rates, as represented by the 3-month commercial bank deposit rate have a long-run relationship with the stock market returns. Further findings also revealed that the Nigerian stock market responds more to its past prices than changes in the extant macroeconomic variables in the short run.

Ologunde Elumilade and Asaolu (2006), upon examining the relationships between stock market capitalization rate and interest rate, fioud that prevailing interest rate exerts a positive influence on stock market capitalization rate. Their study also reveals that government development stock rate exerts a negative influence on stock market capitalization rate and that prevailing interest rate exerts a negative influence on government development stock rate.

2.1 Previous Research Table

No.	Name	Title	Variable	Results of Research
1.	Benjamin A. Abugri	Empirical relationship between macroeconomic volatility and stock returns : Evidence from Latin American markets.	1. exchange rates 2. interest rates 3. industrial production 4. money supply global variables 5. MSCI world index 6. the U.S. 3-month T-bill yield .	The study finds that the global factors are consistently significant in explaining returns in all the markets. The country variables are found to impact the markets at varying significance and magnitudes. These findings may have important implications for decision-making by investors and national policymakers.
2.	1. Mohd Rizal Miseman 2. Fathiyah Ismail 3. Wardiyah Ahmad 4. Farazida M. Akit 5. Rohana Mohamad 6. Wan Mansor W Mahmood	The Impact of Macroeconomic Forces on the ASEAN Stock Market Movements	1. interest rate 2. broad money supply 3. domestic output 4. inflation rate	The results show a strong and significant impact of interest rate, broad money and inflation rate on the stock market movement, while the domestic output is found to be surprisingly insignificant. The quantum effect of time onto the stock market movement also shows the significant impact and is unchanged over time.
3.	• Orawan Ratanapakorn	Dynamic analysis between the		They observe that the stock prices negatively

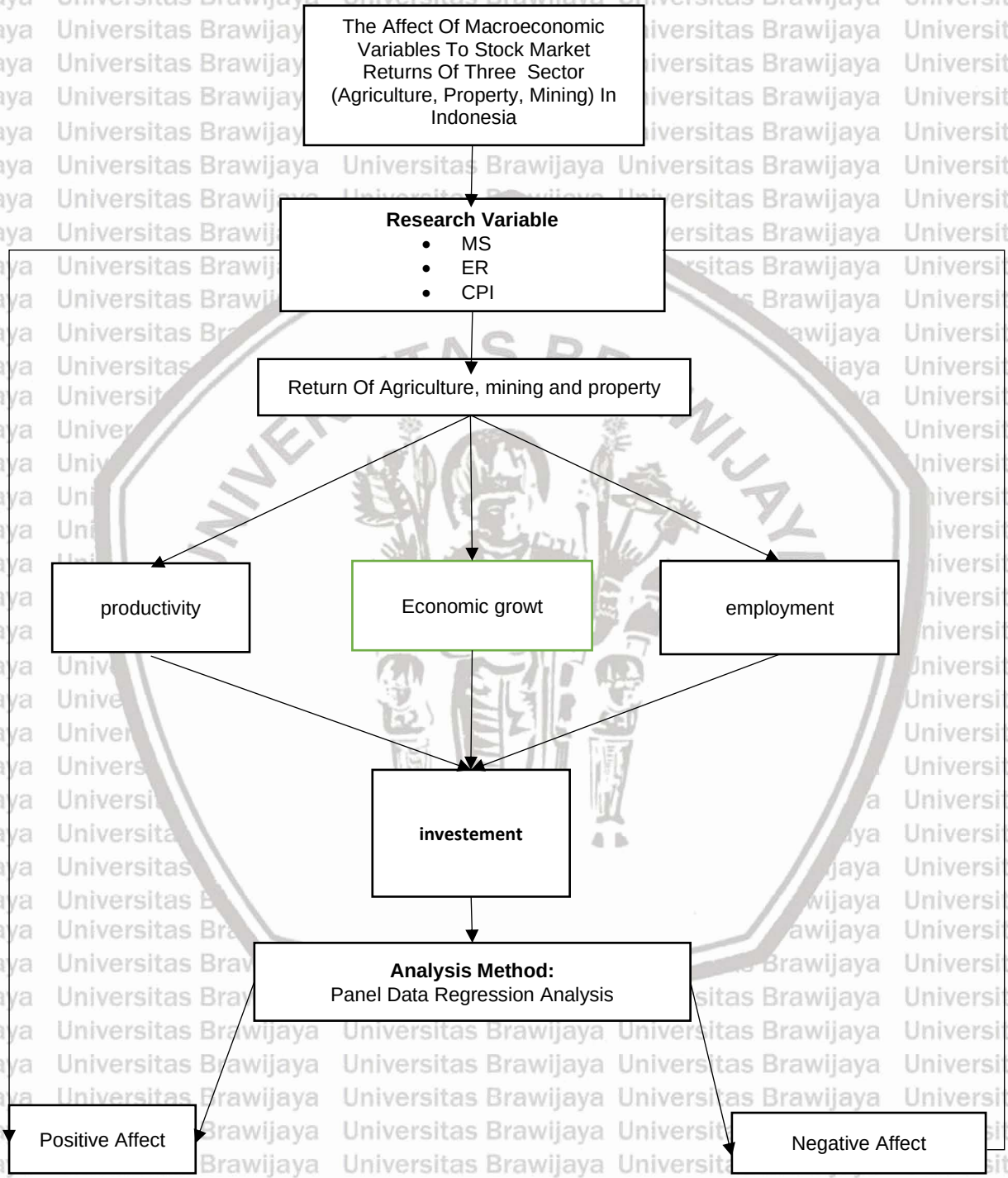
	• Subhash C. Sharma	US stock returns and the macroeconomic variables		relate to the long-term interest rate, but positively relate to the money supply, industrial production, inflation, the exchange rate and the short-term interest rate. In the Granger causality sense, every macroeconomic variable causes the stock prices in the long-run but not in the short-run. Moreover, these results are also supported by the VDC, i.e. the stock prices are relatively exogenous about other variables because almost 87% of its own variance is explained by its own stock even after 24 months.
4.	1. Tarun K. Mukherjee 2. Atsuyuki Naka	DYNAMIC RELATIONS BETWEEN MACROECONOMIC VARIABLES AND THE JAPANESE STOCK MARKET: AN APPLICATION OF A VECTOR ERROR CORRECTION MODEL		By employing the vector error correction model (VECM) in a system of seven equations, they find that the Japanese stock market is cointegrated with a group of six macroeconomic variables. The signs of the long-term elasticity coefficients of the macroeconomic variables on stock prices generally support the hypothesized equilibrium relations. Their findings are robust to different combinations of macroeconomic variables in six-dimension systems and two subperiods. Also, the VECM consistently outperforms the vector autoregressive model in forecasting ability
5.	1. Christopher Gan 2. Minsoo Lee	MACROECONOMIC VARIABLES AND STOCK	1 interest rate 2 money supply 3 real GDP	The New Zealand Stock Index is a leading indicator for macroeconomic

	3. Hua Hwa Au Yong 4. Jun Zhang	MARKET INTERACTIONS: NEW ZEALAND EVIDENCE		variables. In addition, this paper also investigates the short run dynamic linkages between NZSE40 and macroeconomic variables using innovation accounting analyses. In general, the NZSE40 is consistently determined by the interest rate, money supply and real GDP and there is no evidence that the New Zealand Stock Index is a leading indicator for changes in macroeconomic variables.
6.	Mahedi Masuduzzaman	Impact of the Macroeconomic Variables on the Stock Market Returns: The Case of Germany and the United Kingdom	1. consumer price index (CPI), 2. interest rates 3. exchange rates 4. money supply 5. industrial productions	The findings also indicate that there are both short and long run causal relationships between stock prices and macroeconomic variables. The results imply the existence of short-term adjustments and long-term dynamics for both the UK and the German stock markets returns and the certain macroeconomic fundamentals. The results of the study also indicate that the variables employed in the VARs explain some of the variation of the stock market indices, while the intensity and the magnitude of the responses are comparable with regard to the UK and the German stock markets.
7.	Ahmet Ozcan	The Relationship Between Macroeconomic Variables and	1. interest rates 2. consumer price index	This paper examines to address the question of whether macroeconomic variables have a significant

		ISE Industry Index	3. money supply 4. exchange rate 5. gold prices 6. oil prices 7. current account deficit 8. export volume.	relationship with ISE industry index using monthly data for the period from 2003 to 2010. The selected macroeconomic variables for the study include interest rates, consumer price index, money supply, exchange rate, gold prices, oil prices, current account deficit and export volume. The Johansen's cointegration test is utilized to determine the impact of selected macroeconomic variables on ISE industry index. The result of the Johansen's cointegration shows that macroeconomic variables exhibit a long run equilibrium relationship with the ISE industry index.
8.	1. Joseph Tagne Talla 2. Per-Olof Bjuggre 3. Louise Nordström	Impact of Macroeconomic Variables on the Stock Market Prices of the Stockholm Stock Exchange (OMXS30)	1. inflation 2. currency depreciation 3. interest rate 4. money supply	It is found 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. No unidirectional Granger Causality is found between stock prices and all the predictor variables under study except one unidirectional causal relation from stock prices to inflation.
9.	1. Mahmoud Ramadan Barakat 2. Sara H.Elgazzar1	Impact of Macroeconomic Variables on Stock Markets: Evidence from	consumer price index (CPI), exchange rate, money supply, and interest rate	This research result indicated that there is a causal relationship in Egypt between market index and consumer price

	3. Khaled M.Hanafy	Emerging Markets		index (CPI), exchange rate, money supply, and interest rate. The same goes for Tunisia except for CPI, which had no causal relationship with the market index. Results also revealed that the four macroeconomic are cointegrated with the stock market in both countries.
10	Pramod Kumar NAIK *, Puja PADHI	The Impact of Macroeconomic Fundamentals on Stock Prices Revisited: Evidence from Indian Data	1. *industrial production index* 2. *wholesale price index* 3. *money supply* 4. *treasury bills rates* 5. *exchange rates*	*It is observed that the stock prices positively relate to the money supply and industrial production but negatively relate to inflation. The exchange rate and the short-term interest rate are found to be insignificant in determining stock prices. In the Granger causality sense, macroeconomic variable causes the stock prices in the long-run but not in the short-run. There is bidirectional causality exists between industrial production and stock prices whereas, unidirectional causality from money supply to stock price, stock price to inflation and interest rates to stock prices are found.*

2.2 Research Framework



The diagram shows the structure model of influence when macroeconomic variables change such as money supply, exchange rate and inflation (CPI) on stock market returns and the effect on macro conditions such as economic growth, productivity and employment, finally, when change is sustainable, it ultimately impacts investment.

Inflation (CPI) is a process of rising prices that prevails in an economy. Inflation shows a general price flow. Inflation is very influential in the purchasing power of individuals or companies. The higher the inflation, the lower the profitability of the company. If the company's profitability decreases, it is bad information for traders on the stock exchange, which results in a decrease in the company's stock price. High inflation for a stock will reduce the profitability of the company so that stock returns can have a significant effect. Conversely, if inflation declines and tends to be stable, it will have a positive effect on sectoral stock market returns, and it will increase company productivity

The decline in the Rupiah Exchange Rate (ER) against foreign currencies especially the US Dollar influences the economy and capital markets. Stock returns can be influenced by the exchange rate through the money demand equation, which forms a basis for the portfolio and monetary allocation models of the determination of the exchange rate. The exchange rate greatly affects stock returns, but the growth of the stock market also exerts a positive influence on the exchange rate.

When the money supply (M2) is increasing, there is a tendency for an increase in overall economic activity; this is because companies get a higher supply than before. Because when the money supply rises, operational activities that are profit-oriented will also increase which will increase stock returns to the company. Macroeconomic factors are factors outside the company that affect the increase or decrease in company performance.

As the results of the high stock market returns, the company's profitability will increase than before. In addition, companies have more capital to expand their business by buying new production equipment or new production land to continue to increase company productivity and increase company profits. The effect will be absorption of more labor to reduce unemployment in Indonesia and increase the income of the community. When income rises, consumption also increases, and it will directly influence the Indonesian Gross Domestic Product (GDP), Indonesia will become an investment destination for domestic or foreign investors.

2.2 Hypothesis Development

Based on the literature reviewed, the current study develops the following hypotheses:

H1: The Money Supply (MS) positively influences stock market returns based on conventional indices in the selected sector (agriculture, property, mining).

H2: The Exchange Rate (ER) positively influences stock market returns based on conventional indices in the selected sector (agriculture, property, mining)

H3: The Consumer Price Index (CPI) positively influences stock market returns based on conventional indices in the selected sector (agriculture, property, mining).

H4: The Money Supply (M2), Exchange Rate (ER) and Consumer Price Index (CPI) together positively influence stock market returns based on conventional indices in the selected sectors (agriculture, property, mining).

CHAPTER III
RESEARCH METHOD

3.1 Type of Research

According to the level of exploration, this research is an explanatory research. Explanative research aims to explain and tests hypotheses from research variables. The focus of this study is the analysis of the relationships between variables (Singarimbun, 1981). Explanative research requires planning. Planning is necessary so that the description covers all the problems in each phase. Formulating the right problem will show what kind of information is needed.

3.2 Type of Data and Data Collection

This study uses secondary data. The study is conducted in the context of three selected sector (agriculture, property, mining) in Indonesia. In this study, stock price indices for conventional is used as a proxy for stock market returns and are considered as the dependent variable. Since it is almost impossible to investigate every potential macroeconomic determinant to explain the variation in stock market return three selected sector (agriculture, property, mining) in Indonesia, the choice of determinants are based upon the previous studies. Three macroeconomic determinants have been chosen as the independent variables in this study, namely MS, ER and CPI.

The study uses monthly data for all the variables started from January 2008 to December 2018, which are obtained from www idx.co.id, www.bps.go.id www.bi.go.id and ojk.go.id. The index used is Indonesia Stock Exchange (IDX).

3.3 Definition of Variable

3.3.1 Independent Variable

An independent variable is defined as the variable that is changed or controlled in a scientific experiment. It represents the cause or reason for an outcome. Independent variables are the variables that the experimenter changes to test their dependent variable. A change in the independent variable directly causes a change in the dependent variable. The effect on the dependent variable is measured and recorded. In this study, the independent variable studied was MS, the money supply is one of the monetary instruments used by the central bank to control the overall economy. The money supply is used as a proxy for (M2). Usually, the components of broad money are very liquid, although it also takes into account the non-cash components. In the economic literature, the relationship between MS and stock market returns is widely discussed because of its ambiguous effects (Abbasy, 2012). The significant relationship between both variables have been documented, but the effect of changes in the (M2) towards the stock market returns is still debated Vejzagic and Zarafat (2013) Talla (2013).

3.3.2 Dependent Variable

A dependent variable is a variable being tested in a scientific experiment. As the experimenter changes the independent variable, the change in the dependent variable is observed and recorded. When you take data in an experiment, the dependent variable is the one being measured. In this study, the dependent variable studied was stock market returns on three selected sector (agriculture, property, mining) in Indonesia.

The operational variable is the definition of the research variable is an explanation of each variable used in the study of the indicators that form it. The operational definition of this research can be seen in the following table.

3.1 Definition variable

Variable	Definition	Indicator
Independent variable (X) • MS • ER • Inflation	• Money Supply • Exchange Rate • Consumer price index (CPI) proxy of inflation	• M2: M1+time and saving Natural deposit logarithm of the month-end money supply (M2) • Natural logarithm of month-end real effective exchange rate • Consumer price index (2005=100) Natural logarithm of the month-end consumer price index
Dependent variable (Y) • Stock index	A stock market index can be based on three selected sector (agriculture, property, mining) in Indonesia,	• Return of Jakarta Islamic Index • Return of Indonesia Stock Exchange (IDX)

The study employed a multiple regression model in undertaking the panel analysis as follows:

$$Y_{i.t} = \beta_o + \beta_1 X_{1it} + \beta_2 X_{2it} + X_3 X_{3it} + e_{i,t}$$

Where *t* = 1……, *T* refers to the time period and *i* =1……, *N* refers to the members of the panel while *k* = 1……, *K* refers to the specific coefficient of variable. *Yit* and *Xit* refer to the dependent and independent variable, respectively for sector *i* at time *t*. Finally, *e* refers to the random error in the equation.

Through the use of panel data analysis, it was possible to investigate the impact of the macroeconomic determinants on the stock returns three selected

sector (agriculture, property, mining) in Indonesia, The specification models for both conventional and *Shariah* indices employed in this study be written as follows.

3.3.3 Conventional Indices

Panel I:

$$Y_{i.t} = \beta_o + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + e_{i,t}$$

Where

Y = the natural logarithm of the market return of stock price index at the period

X_1= the natural logarithm of the month-end M2 money supply;

X_2= natural logarithm of the monthly-end real effective exchange rate

X_3= natural logarithm of the monthly-end consumer price index,

i = the sector selected

t = time series

e = represent the error term for each model.

Large y bool= dummy variable is a variable to distinguish the stock price that more than Rp 5000 or less than Rp 5000

3.4 Analysis Method

3.4.1 Panel Data Regression Analysis

Panel data analysis is used in this paper to investigate every potential macroeconomic determinant to explain the variation in stock market return of three selected sector (agriculture, property, mining) in 2008 and 2018, the choice of determinants are based upon the previous studies, three macroeconomic determinants have been chosen to be independent variables in this study namely MS, ER and CPI.

Panel data is compared to the purely cross-sectional or purely time-series data sets, the panel data has several major advantages. First of all, by pooling the data, the panel analysis increases the accuracy of the parameter estimates. It therefore allows the estimation procedure to have more degrees of freedom and sample variability (Ozturk and Yilma, 2015).

Secondly, the key element of using panel analysis over a cross-section data set is it grants the author more flexibility in generating the differences in term of behavior across members of the panel (Greene, 2010). Last but not least, panel analysis is more reliable compared to the time series and cross section data sets as it is possible to track the individual individual-specific characteristics and conduct Granger causality across variables simultaneously (Kunst, 2010).

Widarjono (2009) states that there are several methods commonly used in estimating regression models with panel data, namely least-square pooling (Common Effect), Fixed Effect approach, random effect approach.

3.4.2 Pooled Least Square (Common Effect)

The common effect model combines cross section data with time series and uses the OLS method to estimate the panel data model (Widarjono, 2009). This model is the simplest model compared to the other two models. This model cannot distinguish variance between crossing place and time point because it has a fixed intercept, and not varies randomly (Kuncoro, 2012). The equation for the Common Effect model, according to Gujarati (2012) is as follows:

Where shows the subject (cross section) and t shows the period. This model assumes that the behavior of data between companies is the same in various time periods (Widarjono, 2009).

3.4.3 Fixed Effect Model

The definition of a fixed-effect model is a model with different intercepts for each subject (cross section), but the slope of each subject does not change over time (Gujarati, 2012). This model assumes that the intercept is different for each subject while the slope remains the same between subjects. In distinguishing one subject from another subject, dummy variables are used (Kuncoro, 2012). This model is often called the Least Square Dummy Variables (LSDV) model. Based on Gujarati (2012) the equation of this model is as follows:

Where dummy variables d1t for the first subject and 0 if not, d2t for the second subject and 0 if not, and so on. If in a study using ten cross-sections, then the number of dummy variables used is nine variables to avoid the trap of the dummy variable, that is the condition in which perfect colinearity occurs (Gujarati, 2012). Intercept b0 is the value of the first subject intercept and the coefficient b6, b7, b8 indicates the difference between the other subject's intercept of the first subject.

3.4.4 Random Effects Approach

Random effects are caused by variations in the value and direction of relationships between subjects assumed to be random which are specified in the residual form (Kuncoro, 2012). This model estimates panel data that the residual variable is thought to have a relationship between time and between subjects. According to Widarjono (2009), the random effect model is used to overcome the weaknesses of the fixed-effect model that uses dummy variables. The panel data analysis method with the random effect model must meet the requirements, namely, that the number of cross sections must be greater than the number of research variables. The equation of the random effect model according to Gujarati (2012).

Where wit consists of two components, namely ei (residual cross section) and m (combined residual time series and cross section). This model is also called the Error Components Model (ECM) because of the residual consists of 2 components.

3.5 How to Determine the Best Model

Determination of the best model between common effects, fixed effects, and random effects uses two model estimation techniques. These two techniques are used in panel data regression to obtain the right model in estimating panel data regression. Three tests are used, first, the Chow test is used to choose between the common effect or fixed effect models. Second, the Hausman test is used to choose between the best fixed effect or random effect models in estimating panel data regression. Third, to find out whether the Random Effect model is better than the Common Effect model, Lagrange Multiplier (LM) is used, The third tests in selecting the best model panel data regression is shown in the following figure.

3.5.1 Chow Test

Chow test is a test to compare common effect models with fixed effects (Widarjono, 2009). The chow test in this study used the Eviews program. The hypotheses formed in the Chow test are as follows:

H0: Common Effect Model

H1: Fixed Effect Model

H0 is rejected if the P-value is smaller than the value of a. Conversely, H0 is accepted if the P-value is greater than the value of a. The value of a user is 5%.

3.5.2 Hausman Test

This test compares the fixed effect model with random effects in determining the best model to be used as a panel data regression model (Gujarati, 2012). Hausman test uses a program similar to Chow test, called the EViews program. The hypothesis formed in the Hausman test is as follows:

H0: Random Effect Model

H1: Fixed Effect Model

H0 is rejected if the P-value is smaller than the value of alpha. Conversely, H0 is accepted if the P-value is greater than the value of alpha. The value of alpha used is 5%.

3.5.3 Lagrange Multiplier

According to Widarjono (2007: 260), to find out whether the Random Effect model is better than the Common Effect model, Lagrange Multiplier (LM) is used. This Random Effect Significance Test was developed by Breusch-Pagan. Tests are based on residual values from the Common Effect method.

This LM test is based on the Chi-Squares distribution with degrees of freedom (df) equal to the number of independent variables. The null hypothesis is that the right model for panel data regression is Common Effect, and the alternative hypothesis is that the right model for panel data regression is Random Effect. If the calculated LM value is greater than the critical Chi-Squares value, the null hypothesis is rejected, which means that the right model for panel data regression is the Random Effect model. Furthermore, vice versa, if the calculated LM value is smaller than the Chi-Squares critical value, then the null hypothesis is accepted, which means the right model for panel data regression is the Common Effect model.

3.6 The Classic Assumptions in The Panel Data

Panel data is a regression that combines time-series data and cross-section data (Widarjono, 2009). There are several benefits obtained by using panel data estimation. First, increasing the number of observations (samples), and second, obtaining variations between different units according to space and variations according to time (Kuncoro, 2012). According to Gujarati (2012), the panel data has slight collinearity between variables so that there is very little chance of multicollinearity. Based on these descriptions, the classical assumptions used in the study were autocorrelation and heteroscedasticity tests.

3.6.1 Autocorrelation Test

Autocorrelation arises because the residuals are not free between one observation to another (Kuncoro, 2011). It is because errors in individuals tend to affect the same individual in the next period. Autocorrelation problems often occur in time-series data (sequential time). Detection of autocorrelation in panel data can be through the Durbin-Watson test. The Durbin-Watson test value is compared with the Durbin-Watson table value to find out the existence of a positive or negative correlation (Gujarati, 2012). The decision regarding the existence of autocorrelation is as follows: If d <dl, it means there is positive autocorrelation. If d> (4 - dl), it means there is negative autocorrelation. If du <d <(4 - dl), it means that there is no autocorrelation. If dl <d <du or (4 - du), it means that it cannot be concluded.

3.6.2 Heteroscedasticity Test

Heteroscedasticity arises when the residual value of the model does not have a constant variance. That is, each observation has different reliability due to changes in background conditions not summarized in the model (Kuncoro, 2011).

These symptoms often occur in cross-section data (Gujarati, 2012), so that it is possible to occur heteroscedasticity in panel data.

The implication of autocorrelation and heteroscedasticity in panel data can be improved by SUR Cross-section model. If the panel data model experiences heteroscedasticity without autocorrelation, it can be overcome with the Cross-section Weight model.

3.6.3 Hypothesis Testing

Testing the hypothesis in this study can be measured from the goodness of fit regression function. Statistically, this analysis can be measured from the statistical value t, the statistical value F, and the coefficient of determination (Kuncoro, 2011). This regression analysis aims to know partially or simultaneously the influence of independent variables on the dependent variable and to determine the proportion of independent variables in explaining changes in the dependent variable.

3.6.4 T-Statistic Test

The t-statistical test was conducted to determine the effect of the significance of each independent variable on the dependent variable. According to Kuncoro (2011), the formula used is as follows: Where S is the standard deviation calculated through the root variance. The hypothesis in t-statistical testing is:

H0: partially does not have a significant effect on the dependent variable

H1: partially has a significant effect on the dependent variable

If the probability of the value of tcount> 0.05, then H0 is accepted or rejects H1. Conversely, if the probability of the value of tcount <0.05, then H0 is rejected or accepts H1. The level of significance used in this test is 5%. T-

statistical testing can also be done by comparing the t-statistic value with the critical point according to the table (Widarjono, 2009).

3.6.5 F-Statistic Test

The F statistical test shows whether all the independent variables in the model have a joint influence on the dependent variable (Kuncoro, 2011). This test is conducted to see the simultaneous effect of independent variables on the dependent variable. This test is carried out with a confidence degree of 5% by using the following formula (Kuncoro, 2011):

Where:

SSR: sum of squares due to regression

SSE: sum of squares error n: number of observations

k: number of parameters (including intercepts) in the model

This test is done in two ways. First, if the probability of a Fstatistic value is> 0.05, then H0 is accepted or rejects H1, whereas if the probability of a Fstatistic value is <0.05, then H0 is rejected or accepts H1. Second, comparing the F-statistic value with the F value according to the table. If Fstatistic> F table, then H0 is rejected or accepts H1. H0 is rejected, meaning that all independent variables simultaneously affect the independent variable.

3.6.6 Determination Coefficient Test (R^2)

The coefficient of determination test (R^2) is used to explain how much the proportion of dependent variable variations can be explained by independent variables (Widarjono, 2009). This test measures how far the independent variable describes the dependent variable variation. According to Kuncoro (2011), the coefficient of determination (R^2) ranges between zero and one ($0 < R^2 < 1$). The value of R^2, which is small or near zero, means that the ability of the independent

variable to explain the dependent variable is very limited. R^2 values that are large or close to one mean that the independent variable is able to provide almost all the information needed to explain changes in the dependent variable.

3.6.7 Correlation Analysis

It is good to maintain a low degree of correlation among the explanatory variables. One reason behind this is to prevent multicollinearity problem among variable. The easiest way to examine the collinearity problem is by Pearson correlation matrix. Hence, this research also adopts the correlation analysis to identify the Pearson correlation coefficients among the variables. According to the experts, a high correlation that causes a serious multicollinearity problem refers to the value of the coefficient between two regressors that exceed the value of 0.8.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Descriptive Variable

In this section, the results of data processing output are explained in order to answer the research questions that have been raised previously. Data processing uses panel data with the help of Stata to analyze the dependent variable in the form of stock market returns of three sectors (agriculture, property, and mining), and the independent variables are money supply, exchange rate, and consumer price index (CPI) proxy of inflation. In accordance with the characteristics of panel data that is a merger between cross-section and time-series data, in the form of a cross-section that is the object of research consisting of three active companies listed on the stock exchange. While the form of time-series is the annual period starting from 2008 to 2018. The sources of data were obtained from the IDX publication reports, Yahoo Finance, annual reports from the BPS, and annual reports of related companies.

Indonesian Capital Market

The capital market is a market for a variety of long-term financial instruments that can be traded, both debt securities, equities (shares), mutual funds, derivative instruments, and other instruments. According to UU No. 8 of 1995 concerning the capital market, capital market is "Activities related to public offering and trading of securities, public companies related to the issuance of securities, and institutions and professions related to securities." Financial instruments that are traded or used as investments in the capital market are long-term instruments (more than one year) such as stocks, bonds, warrants, rights,

mutual funds, and various derivative instruments such as options, futures, and others.

The capital market has two important functions that play a role in the economy in Indonesia. The function includes as a means for business funding or as a means for companies to get funds from the investor community. The next function is as a means for the public to invest in financial instruments such as stocks, bonds, mutual funds, and others. Thus, the community can place their funds in accordance with the characteristics of the benefits and risks of each instrument.

Ciputra Development Tbk

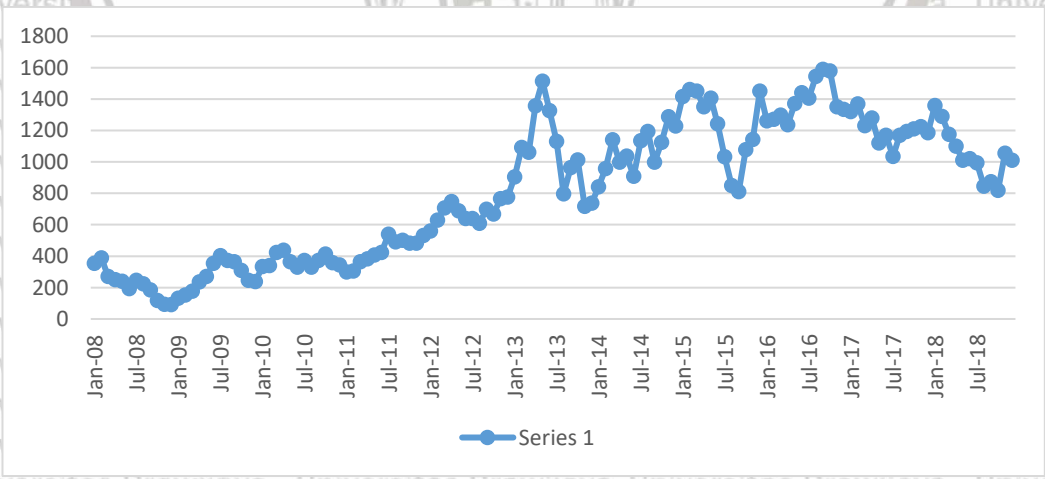
Company Profile

The history of the company as one of the leading and most diversified property companies in Indonesia started when Dr. (HC) Ir. Ciputra founded PT Citra Habitat Indonesia on October 22, 1981, which in 1990 changed its name to PT Ciputra Development. In line with the development of the business, on March 28, 1994, the Company conducted an Initial Public Offering (IPO) and listed its shares on the Indonesia Stock Exchange (at that time it was still called the Jakarta Stock Exchange). In 1999, PT Ciputra Surya (CTRS), a subsidiary, listed its shares on the Indonesia Stock Exchange (Jakarta Stock Exchange), which was followed by PT Ciputra Property (CTRP) which conducted an IPO and listed its shares in 2007. In October 2016, the company, together with CTRS and CTRP submitted a planned merger, which then obtained an effective statement from the Financial Services Authority on December 23, 2016, and was ratified through the signing of the Merger Deed on January 12, 2017. With more than 30 years of experience in the property sector, the company has become an integrated property developer that offers high-quality products with competitive selling prices. The company also benefits from economy of scale, allowing for cost

efficiency for development contracts. Until now, the company has developed more than 75 projects which include housing, apartments, offices, shopping centers, hotels, hospitals, and golf courses located in 33 cities throughout Indonesia. With that portfolio and land owned, the company has succeeded in gaining the trust of the wider community and becoming a leading property company. The company divides its business activities into two segments, namely residential project development, especially township residential, and development and management of commercial property. The company's residential products generally consist of land plots, residential houses, shop houses, apartments, and strata title offices. While the development and management of commercial properties include rental of commercial centers, hotels, apartments, offices, hospitals, golf courses, and water parks. Throughout 2018, the company launched four new projects, namely Vertu Apartment Ciputra World Surabaya, CitraLand Palembang (landed house), Citra Land Vittorio Surabaya (mixed-use project consisting of apartments, SOHO and shop houses), and Newton 2 (strata-title apartments).

Figure 4.1

Historical Stock Price of Ciputra Development Tbk



Source: Yahoo Finance

Based on the table above, Ciputra Development Tbk's share price has an average price of Rp560.41, the lowest price of Rp92.91, and the highest price of Rp1,580.00. The highest price occurred in 2016 while the lowest price occurred in 2011. Overall, the stock price from year to year forms an upward trend.

Bukit Asam Tbk

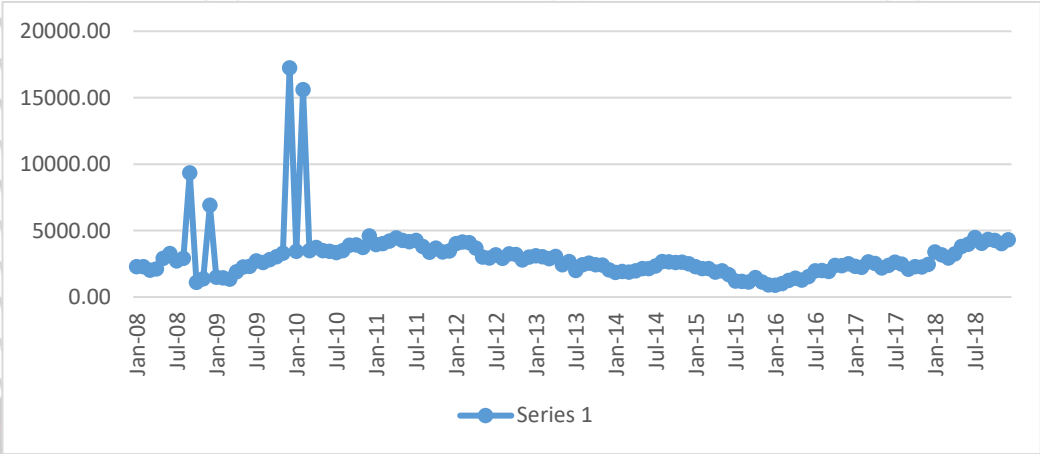
Company Profile

PT Bukit Asam Tbk was established on March 2, 1981. The operation of the company was marked by the operation of the Air Laya mine in Tanjung Enim in 1919 by the Dutch Colonial Government. The scope of activities of the company and its subsidiaries comprises coal mining activities, including general surveying, exploration, exploitation, processing, refining, transportation and trading, maintenance of special coal port facilities for internal and external needs, operation of steam power plants for internal and external needs, and providing consulting services related to the coal mining industry as well as its derivative products. In 2017, the company entered a new chapter by officially joining the Holding of Mining SOEs together with PT Aneka Tambang Tbk and PT Timah Tbk with PT Inalum (Persero) as the holding company. The merger of the company into the holding also provided a domino effect in the corporate culture, including the change of the name of PT Bukit Asam (Persero) Tbk to become PT Bukit Asam Tbk. In 2018, PTBA not only succeeded in increasing sales but also developed business diversification, down streaming coal to synergize with members of the SOE Holding of Mining Industry. In 2018, the company was awarded as The Best Overall BUMN Award in Anugerah BUMN Awards, Padmamitra Award 2018, The Asian Export Awards 2018 metal and mining category, Indonesia Green Awards 2018 Pioneering Pollution Prevention, Developing Biodiversity, and Developing Renewable Energy on Technology

Techniques categories, Indonesia Most Trusted Company at Good Corporate Governance Award 2018, and others. The company is located at Jalan Parigi No. 1 Tanjung Enim 31716, South Sumatera. As of June 30th, 2019, the Company had a total of 2,280 employees.

Figure 4.2

Historical Stock Price of Bukit Asam Tbk



Source: yahoo finance

Based on the table above, Bukit Asam's stock price has an average price of Rp2,820.00., In 2008, it had the lowest price of Rp095.00, and the highest price of Rp4,480.00 which occurred in 2018. Overall, the stock price from year to year forms an upward trend.

Astra Agro Lestari Tbk

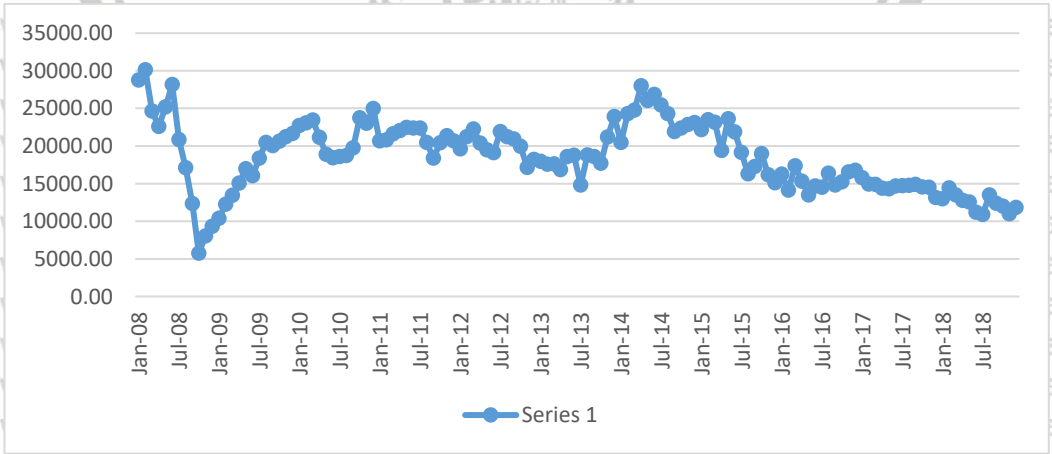
Company Profile

PT Astra Agro Lestari Tbk was established on October 3, 1988. The company is committed to manage oil palm plantation with locations spread over Sumatra, Kalimantan, and Sulawesi, producing high-quality Crude Palm Oil (CPO) to meet the demands of both the domestic and export markets. Apart from producing CPO, the company also produces palm oil derivative products at its refinery established in West Sulawesi. These palm oil derivative products are

aimed to satisfy the demands of the export market. As one of the largest oil palm plantations in Indonesia which has been operating for 35 years, PT Astra Agro Lestari Tbk may be considered as a role model in managing oil palm estates. Through a partnership model with the communities, both through a plasma program and Income Generating Activities (IGA), the company was able to realize its vision to become a leading company and contribute to the development and prosperity of the nation. In addition to strengthening its position at the upstream sector by managing an area of 297,862 hectares comprising nucleus and plasma plantations, the company also strengthened its palm oil down stream business. Owning a palm oil refinery, PT Tanjung Sarana Lestari in the Mamuju Utara Regency, West Sulawesi and 50% equity shares in PT Kreasijaya Adhikarya in Dumai, Riau Province, has significantly strengthened the company's competitiveness in the palm oil business chain. PT Astra International Tbk is the parent entity of the company, whereas Jardine Matheson Holdings Ltd, incorporated in Bermuda, is its ultimate parent entity. As of December 31st, 2016, the company and subsidiaries have 35,400 permanent employees.

Figure 4.3

Historical Stock Price of Astra Agro Lestari Tbk



Source: Yahoo Finance

Based on the table above, Astra Agro Lestari Tbk's stock price has an average price of Rp16,269.90. In 2018, it had the lowest price of Rp10,875.00 and the highest price of Rp30,110.10 which occurred in 2008. Overall, the stock price from year to year forms an upward trend

Money Supply (M2)

The money supply is the entire stock of currency and other liquid instruments circulating in a country's economy as of a particular time. The money supply can include cash, coins, and balances held in checking and savings accounts, and other near money substitutes. Economists analyze the money supply as a key variable in understanding the macroeconomy and guiding macroeconomic policy.

Effect of Money Supply on the Economy leads an increase in the supply of money typically lowers interest rates, which in turn, generates more investment and puts more money in the hands of consumers, thereby stimulating spending. Businesses respond by ordering more raw materials and increasing production. The increased business activity raises the demand for labor. The opposite can occur if the money supply falls or when its growth rate declines.

Change in the money supply has long been considered to be a key factor in driving macroeconomic performance and business cycles. Macroeconomic schools of thought that focus heavily on the role of money supply include Irving Fisher's Quantity Theory of Money, Monetarism, and Austrian Business Cycle Theory.

Historically, measuring the money supply has shown that relationships exist between it, inflation, and price levels. However, since 2000, these relationships have become unstable, reducing their reliability as a guide for monetary policy. Although money supply measures are still widely used, they are

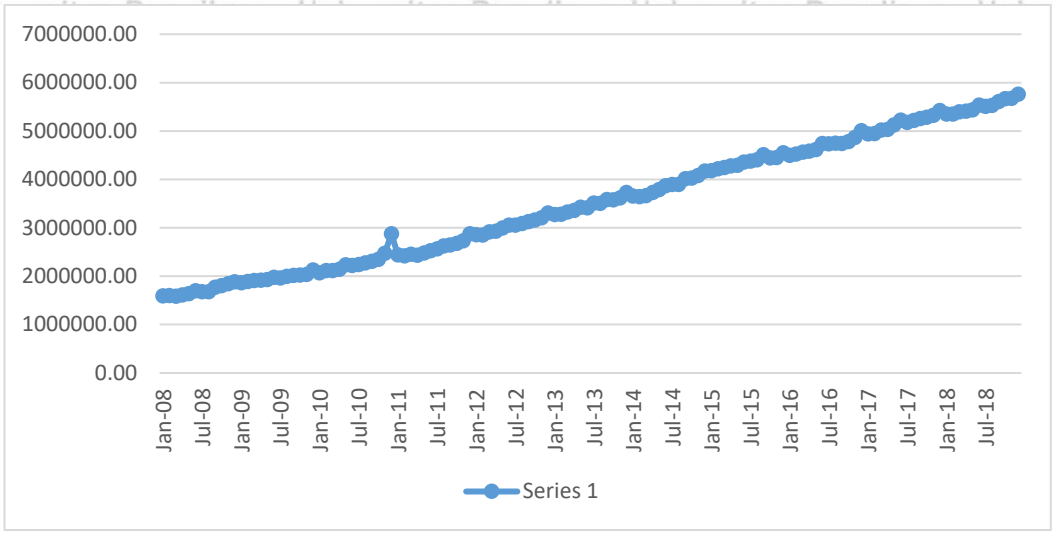
one of a wide array of economic data that economists and the Federal Reserve collects and reviews.

The various types of money in the money supply are generally classified as Ms, such as M0, M1, M2 and M3, according to the type and size of the account in which the instrument is kept. Not all of the classifications are widely used, and each country may use different classifications. The money supply reflects the different types of liquidity each type of money has in the economy. It is broken up into different categories of liquidity or spend ability. M0 and M1, for example, are also called narrow money and include coins and notes that are in circulation and other money equivalents that can be converted easily to M2 includes M1 and, in addition, short-term time deposits in banks and certain money market M3 includes M2 in addition to long-term deposits. However, M3 is no longer included in the reporting by theMZM, or money zero maturity, is a measure that includes financial assets with zero maturity and that are immediately redeemable at par. The Federal Reserve relies heavily on MZM data because its velocity is a proven indicator of inflation.

Money supply data is collected, recorded, and published periodically, typically by the country's government or central bank. The Federal Reserve in the United States measures and publishes the total amount of M1 and M2 money supplies on a weekly and monthly basis. They can be found online and are also published in newspapers. According to data from the Federal Reserve, as of March 2019, a little over $3.7 trillion in M1 money was in circulation, while almost $14.5 trillion in M2 money was circulating in the United States.

Figure 4.4

Historical Data of Money Supply (M2)



Source: Central Bureau of Statistics (BPS)

The average value of the money supply (M2) variable during the period 2008 to 2018 was 15.00%. The lowest money supply (M2) occurred in 2008 of 14.27% or Rp1,588,962 billion, while the highest money supply level occurred in 2018, which was 15.56 % or Rp5,760,046.2 billion. Overall, the money supply from year to year has seen an upward trend.

Inflation (CPI)

Consumer Price Index refers to an indicator of price variation in the prices of consumer goods as well as services that are bought by households. Typically, the consumer price index measures changes in the price levels of services and goods that people in a country purchase over time.

It examines the average price of the consumer basket of goods bought and the services hired by consumers such as medical care and transportation. It is calculated by averaging changes in the price of items in predetermined baskets. Changes in consumer price index help countries in assessing changes in price that are associated with living standards or cost of living and coming up with appropriate economic policies.

Additionally, the consumer price index is used in escalating a particular dollar value with time and preserving buying power of given dollar value. It implies that CPI is used in adjusting contracted payments that include rents, wages, spousal or child support, and leases among others. CPI is also used to escalate public and private pension programs, social payments, and tax deductions.

Different economic aggregates are also deflated using a consumer price index. These can be income inflows that are used to obtain income estimates based on a constant dollar or expenditure flows that are used in obtaining estimates of personal expenditures when prices are constant.

Banks also use CPI in setting and monitoring the implementation of different economic policies. Economists and business analysts also use the consumer price index to analyze and research economic trends and issues in a country. These include causes of inflation and its effects. By using CPI, economists and business analysts are also able to understand differences in price changes in a region.

Consumer price index weighs price movements of consumer goods and services on the basis of their relative importance in the overall consumers' expenditure. Each service or good is considered as an element in the consumer's basket, and it represents consumer spending. The price movement of that good or service is then assigned a share in the basket that is proportional to the overall consumption expenditure.

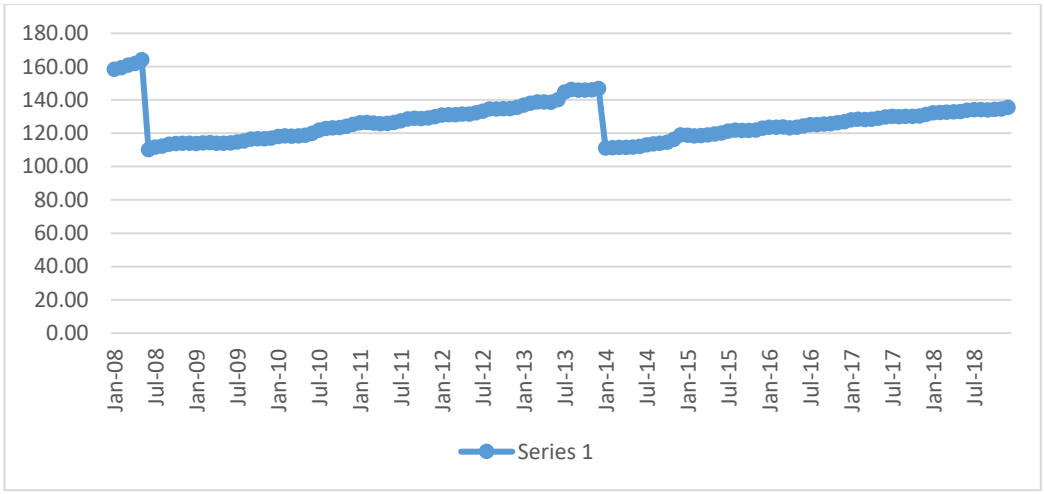
The Bureau of Labor Statistics computes CPI in the United States. It measures two types of consumer price index statistics. One type of CPI statistics is the CPI for the urban income earners and the clerical workers. The other type is the CPI of all urban consumers. CPI for all urban consumers provides the best

statistics because it represents the public in general, and it accounts for approximately 87% of the entire population.

Consumer price index is commonly used in identifying durations of deflation and inflation. A rapid rise in consumer price index denotes inflation while a sharp drop in consumer price index within short duration indicates deflation.

Figure 4.5

Historical Data of Consumer Price Index



Source: Central Bureau of Statistics (BPS)

The average value of the consumer price index variable during the period 2008 to 2018 was 4.837%. The lowest consumer price index occurred in 2008 log 4.70 or 110.08%, while the value of the highest consumer price index occurred in 2018 log 5.09 or 135.39%.

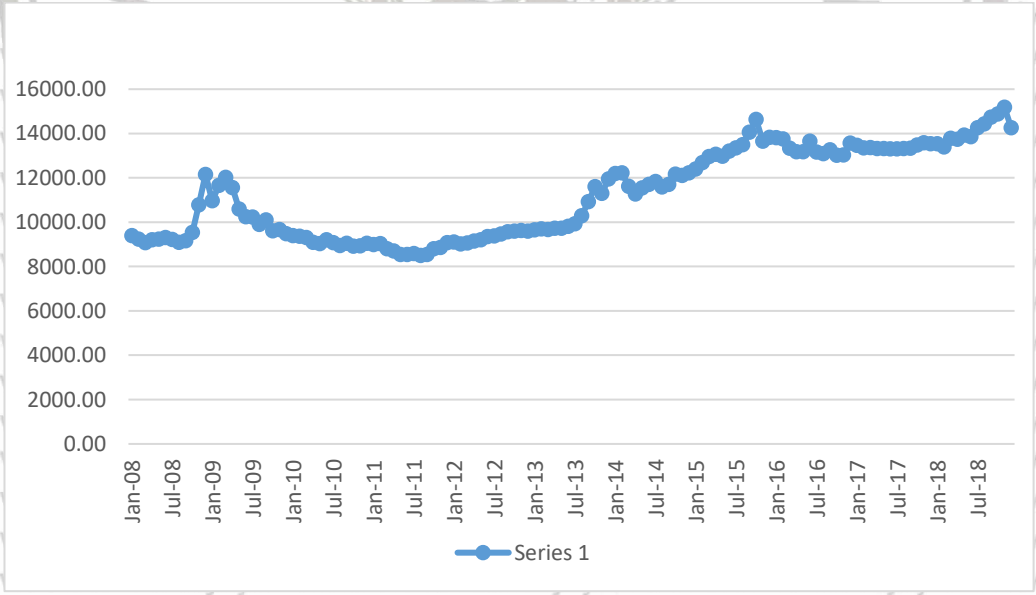
Exchange rate (ER)

Exchange rate is the price of one country's currency to that of another country. It implies that exchange rate has two components, i.e. the domestic and foreign component and hence indicating that it can be expressed directly or indirectly (Akong'a, 2014). Direct expression of exchange rate is where the

exchange rate is expressed based on the domestic currency. On the other hand, an indirect expression is where the rate of exchange is expressed in foreign currency terminologies. In direct expression, a local currency is termed as the counter currency, while the foreign currency, becomes base currency.

Globally, most exchange rates are expressed in United States Dollar (USD), and in some cases, Euro and other currencies from the commonwealth including: the British pound and Australian dollar (Akong'a, 2014). There are two exchange rate regimes; the floating (flexible) and fixed. In the fixed exchange rate regime, the rates of exchange are determined by central banks, while in the floating regime, forces of demand and supply determine exchange rates.

Figure 4.6
Historical Data of Exchange Rate



Source: Bank Indonesia

Based on the table above the exchange rate has an average value of Rp12,220.00. It has the lowest value of Rp8,945.00 and the highest value of

Rp15,182.50. The highest rate occurred in 2018, while the lowest exchange rate occurred in 2011. Overall, the money supply from year to year has seen an upward trend.

4.2 Descriptive Statistic

The following statistical analysis of the variables was used in the research model. The statistical analysis and research data processing that will explain the model in panel data regression, model testing and selection, and classic assumption tests to produce research that is BLUE (Best Linear Unlock Estimator).

Table 4.1 The Results of Descriptive Statistic

Variable	Obs	Mean	Std. Dev	Min	Max
Y	396	7464.469	8420.571	90.45	30110.1
X1	396	15.00124	3859784	14.27723	15.56646
X2	396	9.312473	1777725	9.046998	9.627899
X3	396	4.837306	.0852524	4.701207	5.099927
Large y_bool	396	.3434343	4754556	0	1

Source: Stata Output

$\boldsymbol{Y}$ = the natural logarithm of the market return of stock price index at a period

$\boldsymbol{X_1}$= the natural logarithm of the month-end M2 money supply

$\boldsymbol{X_2}$= natural logarithm of the monthly-end real effective exchange rate

$\boldsymbol{X_3}$= natural logarithm of the monthly-end consumer price index

Large y bool = dummy variable

Based on statistics descriptive of the variables used in the research model in accordance with the table above, the descriptive analysis of each variable includes the following:

From 396 observations, it can be seen that the average value of the variable stock market returns for the period 2008 to 2018 is log 7464,469 with a standard deviation of 8420,571 percent. The company with the lowest share price is Ciputra Development Tbk with the CTRA code in 2008, amounting to Rp90.45, while the company with the highest share price was Agro Lestari Tbk with the AALI code in 2008 which amounted to Rp30110.1.

The average value of the money supply (M2) variable during the period 2008 to 2018 was 15.00 percent with a standard deviation of 3857 percent. The lowest money supply (M2) occurred in 2008 of 14.27 percent or Rp1,588,962 billion, while the highest money supply level occurred in 2018 which was 15.56 percent or Rp5,760,046.2 billion

The average value of the exchange rate variable during the period 2008 to 2018 was log 9.33 with a standard deviation log .1777 The lowest exchange rate occurred in 2011 in the amount of log 9.04 or Rp8,945.00, while the highest exchange rate occurred in 2018, which was the log 9.62 or Rp15,182.50.

The average value of the consumer price index variable during the period 2008 to 2018 was 4.837 percent, with a standard deviation of 0.805 percent. The lowest consumer price index occurred in 2008 log 4.70 or 110.08 percent, while the value of the highest consumer price index occurred in 2018 log 5.09 or 135.39 percent.

4.3 Panel Data Regression Model

Panel data regression model is divided into three models which are pooled least square or also called the common effect, fixed-effect model, and random effect model. Following are the results of data analysis from the three-panel data regression models:

Pooled Least Square/Common Effect

In this model, the data are treated the same or ignore the differences in individual dimensions and time. Following are the results of the regression estimation using pooled least square.

Table 4.2 The Results of Common Effect Model

Model	T test		F test		R^2	Coefficient	Constanta
Common Effect	P-value	T-test	prob	f	0.8929		47990.68
(X1)	0.001	3.23	0.0000	814.58		2126.47	
(X2)	0.000	-5.67				-8064.603	
(X3)	0.717	-0.36				-628.1409	
Large y bool (Dummy)	0.000	56.71				16637.84	

Source: Stata Output

Based on the pooled least square estimation results above, the consumer price index and exchange rate variables have insignificant influence on stock market returns. Then, it can be seen that the statistically significant F value is not indicated by the Prob> F value greater than α. It shows that the independent variable does not significantly influence the dependent variable. R-square value of 0.8929 means that this model can only explain variations of 89.29 percent of stock market returns.

Fixed Effect Model

This model assumes that the intercepts of each individual are different while the slope between individuals is fixed. Following the results of the regression estimation using the fixed effect model.

Table 4.3 The Results of Fixed Effect Model

Model	**T test**		**F test**		**R^2**	**Coefficient**	**Constanta**
Fixed Effect	P-value	T-test	prob	f	0.2021		
(X1)	0.005	2.80				1734.057	
(X2)	0.000	-5.72	0.0000	24.64		-7633.778	55096.74
(X3)	0.459	-0.74				-1204.718	
Large y bool (Dummy)	0.000	7.13				9526.354	

Source: Stata Output

Based on the Fixed Effect Model estimation results above, the consumer price index and exchange rate variables have insignificant influence on stock market returns. Then, it can be seen that the statistically significant F value is not indicated by the Prob> F value greater than α. It shows that the independent variable does not significantly influence the dependent variable. R-square value of 0.2021 means that this model can only explain variations of 20.21 percent of the stock market.

Random Effect Model

The random effect model assumes that each research object has a different intercept, which intercept is a random or stochastic variable. Following are the results of the regression estimation using the random effect model.

Table 4.4 The Results of Random Effect Model

Model	T test		F test		R^2	Coefficient	Constanta
Random Effect	P-value	T-test	prob	f			
(X1)	0.002	3.05	0.0000	209.21	0.1978	1918.286	51760.6
(X2)	0.000	-5.78				-7836.041	
(X3)	0.572	-0.57				-934.0278	
Large y bool (Dummy)	0.000	12.77				12865.04	

Source: Stata Output

Based on the random effects model estimation results above, the consumer price index and exchange rate variables have insignificant influence on stock market returns. Then, it can be seen that the statistically significant F value is not indicated by the Prob> F value greater than α. It shows that the independent variable does not significantly influence the dependent variable. R-square value of 19.97 means that this model can only explain variations of 19.79 percent of stock market returns. This value is lower than the fixed effect model.

4.3.1 Model Testing and Selection

Testing and selecting panel data estimation models are used to choose one of three models that are more appropriate and have a more efficient estimate. There are several ways that can be used to determine which model is most appropriate in estimating panel data parameters. There are three tests to choose the panel data estimation model, namely the Chow-test, used to choose between the Pooled Least Square model or the Fixed Effect method. The second test is the Lagrange Multiple Test used to choose between the Pooled Least Square method or the Random Effect method. In addition, there is a Hausman Test that is used to choose between the Fixed Effect method or the Random Effect method.

Chow-Test

The Chow-Test is used to choose between the pooled least square model or the fixed effect method. The following are the results of the F-test.

Table 4.5 The Results of Chow-Test

Model	**T test**		**F test**		**R^2**	**Coefficient**	**Constanta**
Fixed Effect	P-value	T-test	prob	F	0.2021		
(X1)	0.005	2.80				1734.057	
(X2)	0.000	-5.72	0.0000	24.64		-7633.778	55096.74
(X3)	0.459	-0.74				-1204.718	
Large y bool	0.000	7.13				9526.354	

(Dummy)							

Source: Stata Output

Based on the results of these outputs, it can be seen that the probability value of 0.000, means that it gives significant results. Because the probability is smaller than the value of α (0.05), then H0: PLS is rejected, and H1: FE is accepted. So, the conclusions that can be drawn are using the fixed effect model.

Hausman Test

The Hausman test is the final test of the panel data estimation model selection test used to choose between the fixed effect method or the random effect method. The following are the results of the Hausman test.

Table 4.6 The Results of Hausman Test

Hausman Test	Coefficients		Difference	Prob>chi2
	Fe	Re		
x1	1734.057	1918.286	-184.2296	0.0060
x2	-7633.778	-7836.041	202.2629	
x3	-1204.718	-934.0278	-270.6904	
Large y_ bool	9526.354	12865.04	-3338.688	

Source: Stata Output

From the results of the Hausman test above, it can be seen that the results have a Prob> chi2 of 0.0060, smaller than 0.05 meaning H0: RE is rejected, and H1: FE is accepted. So, the conclusions that can be drawn are using the fixed effect model.

4.4 Goodness of Fit Model Testing

Hypothesis testing in research is essential. It can determine whether the research conducted is scientific or not. To determine the feasibility of the model scientifically, based on the three estimation models that have been carried out, namely pooled least square, fixed effect model, and random effect.

Table 4.7 The Results of Goodness of Fit Model Testing

Model	T test		F test		R^2	Coefficient	Constanta	Wald chi2
Fixed Effect	P-value	T-test	prob	F				
(X1)	0.005	2.80			0.2021	1734.057		
(X2)	0.000	-5.72	0.0000	24.64		-7633.778	55096.74	3299.98
(X3)	0.459	-0.74				-1204.718		
Large y bool	0.000	7.13				9526.354		

Source: Stata Output

Based on the comparison of the outputs above, seen from the value of t test, f test, determinant coefficient (R2), coefficient and constant, the fixed effect model is the appropriate approach compared to the random effect model and pooled least square.

T test

This test is conducted to find out how much influence one independent variable individually in explaining the dependent variable. This research tried prove the effect of each of the independent variables, namely money supply

(M2), exchange rate and consumer price index on the dependent variable, stock market returns. The independent variable is said to have a significant influence on the dependent variable or Ho: βxy = 0 and Ho: βxy ≠ 0 is accepted if the value of p-value <of the α value is equal to 0.05 or t test> t table. This study was using t-test one-way test because the hypothesis in this study known direction is positive and significant. From the above table, the following results are obtained:

- The Effect of Money supply variable to the stock market returns variable

The result of p-value money supply (M2) is 0.005, meaning that p-value is smaller than the α value of 0.05. In addition, the t-test value was 2.80 while the t-table value for one-way testing was of 5% significance and df 63 (n-k ie 68-5) was 1.66940, then the t test was greater than t table. So that money supply (M2) significantly influences stock market returns or Ho1: βx1y ≠ 0 is rejected and Ho1: βx1y = 0 is accepted.

• The Effect of exchange rate variable to the stock market returns variable

The result of p-value is an exchange rate of 0.000, meaning that p-value is smaller than the α value of 0.05. In addition, the t-test value of -5.75 while the t-table value for one-way testing at a significance of 5% and df 63 (n-k is 68-5) of 1.66940, then the t test is smaller than t table. So that the exchange rate variable does not significantly influence the stock market returns or Ho2: βx2y ≠ 0 is rejected and Ho2: βx2y = 0 is accepted.

• The Effect of consumer price index variable to stock market returns

The result of the p-value consumer price index is 0.459, meaning that p-value is greater than the α value of 0.05. In addition, the t-test value of -0.74 while the t-table value for one-way testing at a significance of 5% and df 63 (n-k is 68-5) of 1.66940, then the t test is smaller than t table. So, the consumer price

index does not significantly influence the stock market returns or Ho3: βx3y ≠ 0 is rejected and Ho3: βx3y = 0 is accepted.

F test

The F test shows whether all independent variables included in the model have a simultaneous effect on the dependent variable. The independent variables together have a significant effect on the dependent variable or Ho5: βx5y = 0 and Ho5: βx5y ≠ 0 accepted if value of {prob> F} <of α value of 0.05 or Ftest value> Ftable.

In the table above, the prob> F results obtained by 0.0000. The value is smaller than the α value of 0.05 and the Ftest (Wald chi2) value of 3299.98. While the value of F table with α of 0.05 and df value of 63 (n-k value of 68-5) obtained a figure of 2.97.

So, the value of Ftest> Ftable. So together with the variable money supply (M2), exchange rate and consumer price index significantly influence the capital market returns or Ho5: βx5y ≠ 0 accepted and Ho5: βx5y = 0 rejected.

Correlation Coefficient Test (R)

The correlation coefficient (R) shows how much the relationship occurs between the independent variables X1, X2, X3, ..., Xn simultaneously against the dependent variable (Y). Correlation coefficient values in this study are the two roots of the determinant coefficient (R^2) or R = $\sqrt{R^2}$. The value of the determinant coefficient in this study was 0.2021. So, the correlation coefficient value of $\sqrt{0.2021}$ = 0.4496. It means that simultaneously the independent variable can explain the dependent variable of 0.4496 or 44.96%.

Determination Coefficient Test (R^2)

The determinant coefficient (R^2) shows how much the variation of the independent variable used in the model is able to explain the variation of the dependent variable. The value of the determinant coefficient (R^2) in studies using the fixed effect model can be seen from the R-sq within of 0.2021 or 20.21%, which means the ability of the variable money supply (M2), exchange rate, and consumer price index in explaining the dependent variable namely stock market returns of 20.21%. At the same time, the remaining 79.79% is explained by other variables outside of this research variable. It means that the error rate generated in the regression equation from the results of this study is 79.79%. It means that, if a unit changes in the independent variable, the dependent variable will change by one unit assuming the other variables are constant.

Research Hypothesis Analysis

This chapter contains a discussion of research findings that are linked to the initial research hypothesis. The results of the probability of the t-Statistic that tests the significance level of each independent variable, indicate that, at a significance level of 5 percent, the independent variable money supply significantly influences the dependent variable stock market returns.

Prob> F probability results have a value of 0.0000, which shows that together the regression coefficient has a significant value, meaning that the independent variables jointly have an influence on the dependent variable.

R^2 value has a value of 0.2021, which indicates that the level of determination of the independent variable on the dependent variable is equal to 20.21 percent. It means that 20.21 percent of the dependent variable stock market return can be explained by the independent variables.

4.4.1 The Following Discussion of Hypotheses and Economic Analysis in Research

- Hypothesis testing 1: money supply (M2) has a significant influence on stock market returns

The money supply variable gives the estimated positive coefficient according to the initial hypothesis. The t-test results show that the money supply variable has a significant influence on stock market returns at alpha 5 percent. Furthermore, regarding the magnitude of the effect of money supply (M2) on stock market returns, it can be seen from the regression coefficient value of the money supply variable that is 1734,057. It shows that when the money supply has increased by 1 rupiah, stock market returns will increase by 1734,057 percent.

- Hypothesis testing 2: exchange rate has a significant influence on stock market returns

The exchange rate variable gives a negative coefficient estimation result, not in accordance with the initial hypothesis, but the t-test results show that the exchange rate variable has no significant influence on stock market returns at alpha 5 percent. Furthermore, regarding the magnitude of the effect of the exchange rate on stock market returns, it can be seen from the regression coefficient value of the exchange rate variable that is -7633.778. It shows that when the exchange rate increases by 1 Rupiah, stock market returns will increase by -7633.778 percent.

- Hypothesis testing 3: the consumer price index has a significant influence on stock market returns

Consumer price index variable gives the estimated coefficient negative, not in accordance with the initial hypothesis. T-test results indicate that the variable consumer price index has no significant influence on stock market returns at a significance level of 5 percent. Furthermore, the magnitude of the effect of the consumer price index on stock market returns can be seen from the regression coefficient value of the consumer price index variable of -1204.718. It shows that when the consumer price index increases by 1 percent, stock market returns will increase by 0.0616612 percent.

- Hypothesis testing 4: money supply (M2), exchange rate, and consumer price index together have a significant influence on stock market returns

Chi square probability results have a value of 0.0000. It shows that together the regression coefficient has a significant value, meaning that the independent variables jointly have an influence on the dependent variable. So, it can be said that the model used is quite good. Wald chi2 value in the results of this regression has a value of 3299.98, which is greater than the value of Ftable 2.97. It has the same meaning that all the independent variables together have a significant effect on the dependent variable namely stock market returns.

Table 4.8 The Research Evidence of Previous Hypothesis

Variable	Coefficient	p-value	Result	Previous hypothesis	Evidence
Money supply	1743.057	0.005	positive	positive	Correct
Exchange rate	-7633.778	0.000	negative	positive	Incorrect
Consumer Price Index	-1204.718	0.459	negative	positive	Incorrect

4.5 Economy Analysis

Effect of Macroeconomics on the Capital Market Stock price index is one of the main indicators of stock price movements that provide information on the development of the stock market. A composite stock price index uses all listed companies as a component of index calculation. At the contrary, the sectoral stock price index in its calculation uses all issuers included in each sector so that it can be seen the development of each sector. Investment in the capital market in addition to providing benefits also contains several certain risks. The ability of investors to understand and predict macroeconomic conditions and the influence of the global economy by considering the development of sectoral stock price indices will be useful in making the right investment decisions with a low level of risk. Including investment in the agricultural sector requires calculations that are mainly affected by the effects of macroeconomic variable movements such as inflation, exchange rates, and money. Investment in the agricultural sector is currently quite profitable, especially in the palm oil sector because the ranking star has a desire to reduce dependence on imports of crude oil from other countries. Moreover, the government is currently promoting a campaign to use new and renewable energy by 23% in 2025. It is stated in the National Energy General Plan with a breakdown of the renewable energy mix of 23%, Gas 22%, Coal 30%, and Petroleum by 25% (National, 2017). One program to support the renewable energy mix target of 23% by 2025 is the B30 moratorium. The government is gradually increasing the content of palm oil in biodiesel or biodiesel from 10% (B10), to 20% (B20) according to the Decree of the Director General of Oil and Gas No. 28 of 2016. Currently, the government is conducting a B30 trial which is planned to take effect in 2020 and even plans to be raised to B50 by 2021.

The B30 program initiated by the government certainly has many impacts on the economic and social aspects of the community. One of them is reducing petroleum imports and increasing domestic palm oil production. Crude Palm Oil (CPO) is a mixture of biodiesel. As a result, CPO production needs and production have increased and impacted the economic and social changes of the community.

The B30 program which is targeted to start in 2020 will increase the composition of biodiesel blends in fuel which was originally 20% to 30%. The increase certainly causes an increase in demand for Crude Palm Oil (CPO). The need for palm oil raw materials to be processed into biodiesel also increased.

The Indonesian palm oil industry plays a major role as a driver of the national economy by contributing total exports in 2016 of US$16,943,095,000 or equivalent to Rp228 Trillion (with an exchange rate equivalent to Rp13,481.82/USD) (BPBD, 2017). The total exports recorded oil palm as a commodity contributing to the largest export value, greater than the total oil and gas exports. Indonesia is currently the world's largest producer and exporter of palm oil, with the largest market share of 54% and a total production of 36 million metric tons.

Palm oil is currently supporting the national economy. The increasing demand also triggers the rapid growth of oil palm plantations in Indonesia. The area of palm oil plantations was only 295 thousand hectares in 1980, a nearly 50-fold increase in 2018 with a total area of 14.68 million hectares. The palm oil industry as a biodiesel feedstock also provides a large number of jobs. The Directorate General of Plantations, the Ministry of Agriculture, said that in 2019 59% of palm oil plantations would be managed by the company, and the remaining 41% would be managed by the community.

The B20 program is estimated to save US$5.13 billion in foreign exchange or Rp74.93 trillion. In 2019, the B20 program foreign exchange saved US$3.54 billion or Rp51.73 trillion. In the previous year or 2018, foreign exchange with B20 savings reached US$1.89 billion or Rp26.67 trillion. Indonesia is the largest palm oil producer in the world. Some of the main export countries are India, China, and European countries. The total value of palm oil exports reached US$21.4 billion, involving as many as 5.5 million workers and 12 indirect workers.

In 2020 the movement of palm oil stocks continued to strengthen in the movement of the index of the agricultural sector on the exchange in session I which rose 0.28% on the exchange. From 11 CPO issuers whose shares are actively traded on the exchange, as many as six shares have strengthened. Only three stocks weakened and the remaining two traded stagnant. The highest gain was experienced by Bakrie Sumatera Plantations Tbk (UNSP) shares, which gained five points or 5.62% at the price of Rp 94/unit of shares. While the weakest CPO shares were PT Sampoerna Agro Tbk (SGRO), which experienced a weakening of 40 points or 1.67% to a level of Rp2,360/share.

However, it should be noted that the issue of a rejection of CPO by the European Union. The European Union rejects CPO from Indonesia on the grounds that the expansion of oil palm plantations is driving deforestation. The impact of the rejection needs to be carefully considered because the European Union is the largest CPO market share in Indonesia. If the European Union insists that it continues to ban the import of CPO from Indonesia, then a review of the palm oil industry needs to be done whether to find a new market share to replace the European Union or use it for domestic consumption.

Increased workforce of the Indonesian palm oil sector by 10.8% annually directly increases the welfare of the community. However, research conducted by

Susila and Munadi (2008) on the impact of the development of CPO biodiesel on poverty found that developing CPO-based biodiesel will reduce poverty in coconut plantations oil palm but can add poverty outside the plantation area. An increase in CPO prices and production will increase the income of oil palm growers which will reduce poverty. However, the increase in CPO also causes a decrease in cooking oil production, which will impact on rising cooking oil prices. Cooking oil is one of the people's staples. The slightest increase in prices of cooking oil will have an impact on increasing poverty levels in an area. So, the government as a regulator needs to act quickly to see the positive impact given by the development of CPO-based biodiesel by accelerating it and starting to prepare for anticipation if the production of cooking oil as a staple decrease which has an impact on rising cooking oil prices.

Indonesia also has other leading sectors such as mining, currently the world metal and mineral commodity market is experiencing a booming price and unpredicted conditions while exploration and investment activities are also increasing. However, Indonesia is still unable to make optimal use of this interesting condition. This obstacle has nearly the optimization of the contribution of the mining sector in boosting the national economy. Behind that, there is a very large opportunity for Indonesia because mining will always be needed by humans, as well as Indonesia's very high geological potential and of course the soaring mineral demand.

The other sectors that influence the economy is mining sector, and mining is one of the commodities to cover the trade balance deficit from its export results. The mining sector is important because this sector has the potential to attract new investment. It is because Indonesia has large reserves of mineral resources. Unfortunately, this huge potential is not offset by the large flow of

investment for exploration activities. There are still many obstacles faced to optimize the great potential of minerals and coal, not only from the downstream side but also from the upstream side.

From 2015 to 2017, Indonesia only received an investment portion of only 1%. It is very small if compared to the potential for minerals in Indonesia which is so huge. Exploration is the most fundamental factor in the mining industry. Because, there will be no mining activities without exploration activities. So that investors are interested in investing in and developing the mining business in Indonesia, the government should share risks by providing exploration data that is good, cheap, and easily accessible. Without exploration, it certainly will not find new reserves. However, that needs to be considered, and exploration activities need to involve the community. Therefore, it is important from the aspect of sustainability income and operations and to reduce unemployment in Indonesia.

In addition, there needs to be a policy that encourages collaboration between the mining industry and industries that require mining products as raw materials. For example, synergizing iron ore mining with steel producing companies so that the downstream process provides added value for all parties. "Down streaming should not only stop at the smelter, but also the final product. That will provide even greater added value. To close the trade balance deficit and increase the country's foreign exchange, in the short term, the policy to open the tap of exports of mining raw products is considered suitable. "While restructuring the policy and most importantly, the problem of overlapping land must be considered. The government must intervene related to problems faced by the industry, do not ask the industry to solve itself. Moreover, the government must make policies to encourage exports in Indonesia.

The other contributions of the mining sector to state revenue from the tax sector is also large. Meanwhile, mineral exports which fall into the category of ore, crust, and metal ash fell slightly by around 3.6% to a level of US$3 billion. It is partly because not all smelters (mineral processing factories) are required by law to be completed. Mining export growth is significant.

Pushed Indonesia's total exports through US$153.9 billion, in the January-November period last year. This figure increased by 17.2% compared to the same period in 2016. Likewise, the non-tax state revenue (PNBP) of the mining sector managed to reach Rp40.6 trillion, 25% exceeding the target set in the 2017 Revised State Budget of Rp32.7 trillion. The PNBP target has been achieved due to the improvement in coal prices throughout 2017, where 80% of state revenue from the mining sector comes from coal. Meanwhile, in the previous three years, the state's revenue was not encouraging, as coal prices fell due to the drop in oil prices. In 2014, the realization of mining PNBP was only IDR 35.4 trillion, and in the next two years, it continued to decline to IDR 29.6 trillion and IDR 27.2 trillion. For 2017, coal and mineral exports have strengthened, in line with the projected increase in commodity prices which has boosted global oil prices. The reference coal price (HBA) in January 2018 increased to US$95.54 / ton compared to early 2017 which was US$86.23 / ton. The upward trend in coal prices is expected to continue until the end of the year. The improvement in the global economy 2017 is also predicted to hoist coal demand from foreign countries.

than 371 million tons or an increase of 7 million tons, from the total national coal production target of 485 million tons. The realization of coal export volume last year was 364 million tons, from the realization of a national production of 461 million tons. While strengthening mineral exports will be supported by the increasing number of smelters being completed. The export

price of smelter products is far higher than only mineral concentrates. It certainly gives hope in the midst of our economy, which growth rate is being held back by the sluggishness of household consumption. Growth in household consumption - which still accounts for 56% of Gross Domestic Product (GDP) - slipped below 2016's estimated economic growth of 5.05%, below the 2017 Revised State Budget target of 5.2%. However, given the increase in exports and investment are increasingly needed to boost economic growth targeted at 5.4% this year, and extra efforts need to be made by the government in the year. It included completing the negotiation of the 51% divestment obligation of PT Freeport Indonesia, which is the largest gold mining company in the world.

The mining industry hopes that the government will immediately make big improvements in the mining sector. The improvement which is considered urgent to be carried out is concerning regulatory issues which are currently considered to be unable to provide legal certainty to the mining industry players. The mining industry is a potential sector to reduce the trade balance deficit because this sector is one of the biggest contributors to the country's foreign exchange and contributes up to 6% of the Gross Domestic Product (GDP).

Through the issuance of Ministerial Regulation No. 11 of 2018 on Procedures for Granting Areas, Licensing, and Reporting on Mineral and Coal Mining Business Activities, it is hoped that it will ease investors who wish to invest in the mining sector. The mining industry hopes that the government will consistently reform the mining sector policy as a whole so that the permit issuance policy has been running optimally. It is because the mining industry believes that there are still several things that the government must complete to stimulate investment in the mining sector. For example, the issue of legal certainty to the problem of increasing added value through the smelter industry. The Government through the Ministry of Energy and Mineral Resources

continues to encourage the development of domestic processing facilities, by providing lower export levies for mining companies that are willing to commit to developing processing or processing facilities.

Although this is welcomed, other incentives are still needed that are more in line with investor needs. For example, providing tax incentives or other incentives for these highly capital-intensive businesses. It is because the mining industry requires a fairly large initial investment and has a long payback period. Government consistency is also needed so that mineral and coal products are not only as a trade commodity that is exported but must also have an impact on the growth of other industries in the form of downstream products.

Therefore, it can be concluded that there are factors which become obstacles to the investment climate of the mining sector such as legal uncertainty and overlapping regulations between the central and regional governments and between the Ministry of Energy and Mineral Resources. It must be addressed immediately so that they can face the investment deficit in Indonesia.

In relation to the obstacles and opportunities faced by the mining sector, there are several efforts that can be carried out, such as the need to accelerate the passage of the Mineral and Coal Bill which regulates the use of minerals and coal, synchronization and harmonization of policies for all legal products relating to the mining sector which are cross-sectoral, both central as well as regions, encouraging increased local expenditure by increasing the utilization of products from domestic supporting industries, encouraging the growth of the domestic mineral product processing industry so as to increase the added value of national mineral and coal products, and the one-stop policy in licensing for investment in the mining sector.

In addition, the property sector in Indonesia also needs attention. The development of the property industry in Indonesia will also have a major impact

on national economic growth. In the development of the national economy the property sector has an important role. This sector is as strategic as other sectors, such as agriculture, mining, and others. Property with a focus on the field of housing construction and construction is one sector that absorbs large numbers of workers and the multiplier effect is quite long. Therefore, this sector has a large impact on attracting and encouraging the development of other economic sectors.

In 2013, the Ministry of Industry made a publication stating that there were more than 175 industrial products related to the property sector. For example, steel, aluminium, pipe, cement, ceramic, brick, tile, glass, paint, furniture, wood, industrial products household appliances, electrical appliances, home appliances, gypsum, and others. The building and construction materials industry is generally a labor-intensive sector that absorbs large numbers of workers. Therefore, the property sector has directly or indirectly boosted national productivity, reduced unemployment, and reduced poverty. The property sector itself creates a large number of jobs from unskilled laborers or laborers, staff, to professional workers.

It does not yet mention the positive impact on the related professions, such as architects, interior designers, contractors, landscapers, property agents, notaries, etc. The banking sector certainly feels the benefits of the property sector business through lending to both developers (corporations) and consumers (mortgages/KPA).

A 2012 study with the topic "Contribution of the housing sector to the national economy" states that each investment of Rp1 billion/year in the housing/construction sector will absorb a workforce of 105 people. The question is how much labor has been absorbed by looking at the performance in the

property sector in recent years. It is not easy to answer because the data about this is indeed not available either from the government or the private sector.

According to the REI's indication, the supply of houses of all types is around 400 thousand units per year. If the price is an average of Rp350 million per unit, the transaction value is Rp140 trillion. If the investment is assumed to be 30%, the value is IDR 42 trillion. By using the results of this study (an investment of Rp1 billion, absorbing 105 workers/year) that size of investment absorbs a workforce of 4.4 million per year. It is only from the housing subsector, not apartments, flats, shophouses, offices, shopping centers, malls, villas, resorts, industrial estates, warehousing, and so on. All these property sub-sectors have experienced extraordinary growth in recent years.

The high economic growth for almost ten years and the phenomenon of the growth of a new middle class that is large enough to ignite property development. The peak of growth occurred in 2010-2012 then slowly weakened until 2013 as a result of the global economic crisis. Even though the condition has not fully recovered, the condition has improved. Moreover, in 2016, the increase in Indonesia's economic growth is predicted to have an impact on the rise in the property sector. This year's property market is believed to be back on fire. The condition of the property market in 2016 is projected to grow around 8% -10% compared to 2015. Besides getting a positive boost from Indonesia's growing economic growth in 2016, the passion of the property market is also influenced by various reasons.

Along with the focus of the government in boosting infrastructure development to support the movement of the real sector and increase people's purchasing power. It will open up several opportunities and potential developments in the property market. Call it the construction of light rail transit

(LRT), a mass transit system with integrated light rail in the Jakarta, Bogor, Depok, and Bekasi regions. Ease of access caused by the presence of transportation infrastructure facilities will make a region develop both as a residential and business area.

The property sector is unique. On the one hand, it is strongly influenced by the macroeconomic situation. Also, it has a positive influence on the real sector and economic growth. So, in certain situations, the property sector can become a locomotive and carriage of the national economy. Data by the Indonesian Central Bureau of Statistics (BPS) from 2017 to 2018 show the contribution of the property and construction sector to the Gross Domestic Product (GDP) is 2.74%. The results of the study can show that the property sector is still an indicator of national economic development. Moreover, in 2019 the contribution of the property sector rose by 3.5%.

According to the Ministry of Finance's calculations in 2019, the rapid growth of the property industry will also have an impact on the country's economic growth to create jobs. Moreover, this sector has a multiplier effect above 1%. It means if this sector rises, its influence is large. If property grows to Rp1 trillion, the impact is Rp1.9 trillion for construction, and Rp1.2 trillion for real estate and this sector is important for Job creation.

The new description is from the aspect of the physical value of a property project and its absorption on related industries and labor. This value does not include the great effect of the existence of property. Each property and settlement area built in the future always grows as a new economic center. Many businesses were opened in each residential area because the developer also built a shop beside the house. Not even a few around or even within the residential area opened a trade center, mall, or plaza. This region then became

the center of money circulation, contributing regional GDP, and contributing GDP nationally.

CHAPTER V

CONCLUSION AND IMPLICATIONS

5.1 Conclusions

Testing using panel data regression with fixed effect models produce the following conclusions.

T test

- Influence of money supply (M2) variable on stock market returns based on t test is greater than t table. So that money supply (M2) significantly influences stock market returns.
- The effect of the exchange rate variable on stock market returns based on t test is smaller than t table. So that the exchange rate variable does not significantly influence the stock market returns.
- The influence of the consumer price index variable on stock market returns based on t test is smaller than t table. So, the consumer price index does not significantly influence stock market returns.

F test

The f test basically shows whether all the independent variables entered in the model have a simultaneous effect on the dependent variable. The independent variables together have a significant influence on the dependent variable.

In the f test the value Ftest>Ftable. So together with the variable money supply (M2), exchange rate and consumer price index significantly influence the capital market returns.

5.2 Research Limitations

This research has been done as well as possible, but due to the limitations of researchers, this study still has some weaknesses, including the following:

- Many factors influence the stock market returns, but this study only uses three variables, namely money supply, exchange rate, and consumer price index. So, the results obtained are less able to explain variations in the stock market return variable.
- This research only limits the proxy for share developments in Indonesia through sub-sectors listed at LQ45, even though there are many other stock indices.
- The research period is only ten years, so the results obtained may not be consistent with the results of previous studies.
- All significant variables should be high R2, but in this study low R2 is equal to 20.21%. It is because there are still many other factors that influence the stock market returns, which have not been included in the model.

5.3 Suggestion

Based on the conclusions and limitations of this study, the following suggestions can be submitted:

- The government must maintain the stability of the Indonesian currency exchange rate by reducing the trade balance deficit. The government must reduce oil and gas imports and increase oil production capacity at domestic refineries and increase the production of Crude Palm Oil (CPO) to support the energy mix target renewable by 23% in 2025. The government must gradually increase the content of palm oil in biodiesel or

biodiesel from 10% (B10) to 20% (B20) in accordance with Decree of the Director General of Oil and Gas No. 28 in 2016. Also, pushes up to B100 or 100 percent fuel from biodiesel. In the non-oil and gas sector, the government must open of investment in the Minera sector because Indonesia is a country with abundant natural resources, especially mineral mining which has been one of the largest mineral production in the world. The mineral and coal sub-sector are still a significant contributor to state revenues. As of June 2018, Rp20.1 trillion flowed into the state treasury which came from royalties, mining product sales, and fixed mineral contributions. Knowing the wealth of our mineral and coal resources has become an important task of the Government, so that development planning and policy development involving the mineral and coal sector can take place better. Moreover, the government must expand access and reach non-traditional export markets. With ongoing down streaming and connectivity through market identification, trade attaches are left to promote.

When Indonesian exports increase and imports decrease, it will directly influence the decrease Current Account Deficit (CAD) and finally will strengthen the Indonesian currency Exchange rate.

- The government and Indonesia central bank must coordinate fiscal and monetary policies to maintain economic conditions. Good supervision and banking arrangements are needed so that macroeconomic stability and economic development can be maintained. Because further coordination is needed for institutions such as the Financial Services Authority (OJK) so that coordination can be better maintained, and also maintain inflation stability and cash on hand.

- Investors should understand the stability of fiscal and monetary policies in a country before investing. The most important thing is political stability because it can directly affect the movement of the composite stock price index on the IDX so that it can be used as part of the consideration to predict stock market returns, and then it can make investment decisions.
- Investors should use fundamental analysis and technical analysis to calculate stock market returns and trading volume before making an investment decision. This information has been shown to influence the movement of the composite stock price index on the IDX both simultaneously and partially.
- As an alternative financing institution, the government must encourage the capital market by providing incentives for businesses to become listed companies in the capital market, and the government must make policies to increase Gross Domestic Product (GDP). In the end, it will influence the sectoral stock price index.
- We recommend that investors also use other information that can be used as a reference in making investment decisions because there are many other factors that influence the movement of stock price indexes besides the three variables used in this study.
- The government must be wise in controlling macroeconomic conditions so that the economy remains stable and healthy so that it can increase the passion for investment in the country.
- This study only uses three variables as factors that influence the stock market returns, while the factors that influence stock market returns are certainly more than those used in this study. Therefore, for further

research it is expected to use a combination with other independent variables.

- This study uses a long-term estimate. Short-term estimation or dynamic estimation is suggested to be done for the future research.

REFFERENCES

Abugri, B. A. (2008). Empirical relationship between macroeconomic volatility and stock returns : Evidence from Latin American markets. *International Review of Financial Analysis*, *17*, 396–410. https://doi.org/10.1016/j.irfa.2006.09.002

ALAM, Z., & RASHID, K. (2015). Time Series Analysis of the Relationship between Macroeconomic Factors and the Stock Market Returns in Pakistan. *Journal of Yaşar University*, *9*(36), 10. https://doi.org/10.19168/jyu.55431

Anam Gul, A. G. (2013). An application of Arbitrage Pricing Theory on KSE-100 Index; A study from Pakistan (2000-2005). *IOSR Journal of Business and Management*, *7*(6), 78–84. https://doi.org/10.9790/487x-0767884

Bailey, R. E. (2005). The Economics of Financial Markets (5th ed.). New York: Cambridge University Press. In *Cambridge University Press*.

Barakat, M. R., Elgazzar, S. H., & Hanafy, K. M. (2016). Impact of Macroeconomic Variables on Stock Markets : Evidence from Emerging Markets. *International Journal of Economics and Finance*, *8*(1), 195–207. https://doi.org/10.5539/ijef.v8n1p195

Bartholdy, J., & Peare, P. (2005). Estimation of expected return: CAPM vs. Fama and French. *International Review of Financial Analysis*, *14*(4), 407–427. https://doi.org/10.1016/j.irfa.2004.10.009

Bilson, C. M., Brailsford, T. J., & Hooper, V. J. (2001). Selecting macroeconomic variables as explanatory factors of emerging stock market returns. *Pacific Basin Finance Journal*, *9*(4), 401–426. https://doi.org/10.1016/S0927-538X(01)00020-8

Chen, N.-F., Roll, R., & Ross, S. A. (1986). Economic forces and the stock market revisited. *Journal of Business*, *13*(2), 383–403. https://doi.org/10.1016/j.jempfin.2005.09.001

Fama, eugene f., & French, kenneth r. (1995). Size and Book-to-Market Factors in Earnings and Returns. *JOURNAL OF FINANCE **, (1), 1–25.

Fama, B. E. F. (1981). Stock Returns , Real Activity , Inflation , and Money. *The American Economic Review, Vol.*, *71*(4), 545–565.

Fama, E. F., & French, K. R. (2004). The Capital Asset Pricing Model: Theory and evidence. *Journal of Economic Perspectives*, *18*(3), 25–46. https://doi.org/10.1257/0895330042162430

Ferson, W. E., & Harvey, C. R. (1998). Fundamental determinants of national equity market returns: A perspective on conditional asset pricing. *Journal of Banking and Finance*, *21*(11–12), 1–41. https://doi.org/10.1016/S0378-4266(97)00044-7

Gan, C., Lee, M., Au Yong, H. H., & Zhang, J. (2006). Macroeconomic variables and stock market interactions: New Zealand evidence. *Investment Management and Financial Innovations*, *3*(4), 89–101.

Geetha, C., Chong, V., Mohidin, R., & Chandran, V. V. (2011). The Relationship Between Inflation And Stock Market : Evidence From Malaysia , United States And China. *International Journal of Economics and Management*

Sciences, *1*(2), 1–16.

Grauer, R. R., & Janmaat, J. A. (2010). Cross-sectional tests of the CAPM and Fama-French three-factor model. *Journal of Banking and Finance*, *34*(2), 457–470. https://doi.org/10.1016/j.jbankfin.2009.08.011

Gruodis, D., & Kahraman, B. (2015). *The Fama-French Five-Factor Asset Pricing Model for the Swedish Stock Market*.

Khan, H., Wong, W.-K., & Du, J. (2005). Money, interest rate and stock prices: New evidence from Singapore and United States. *Department of Economics, National University of Singapore*, (0601), 2–30. Retrieved from http://nt2.fas.nus.edu.sg/ecs/pub/wp/wp0601.pdf%0AMONEY,

Khodaparasti, R. B. (2014). THE ROLE OF MACROECONOMIC VARIABLES IN THE STOCK MARKET IN IRAN. *PolishJournal of Management Studies*, *10*, 54–64.

Kilsgård, D., & Wittorf, F. (2010). *The Fama and French Three-Factor Model - Evidence from the Swedish Stock Market*.

Lintner, J. (1969). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets: A Reply. *The Review of Economics and Statistics*, *51*(2), 222. https://doi.org/10.2307/1926735

Markowitz, H. M. (1959). Portfolio selection: efficient diversification of investments. *Global Journal of Business Research*, *7*(1), 77--91.

Masuduzzaman, M. (2012). Impact of the Macroeconomic Variables on the Stock Market Returns: The Case of Germany and the United Kingdom. *Global Journal of Management and Business Research*, *12*(16), 1–13.

Miseman, M. R., Ismail, F., Ahmad, W., Akit, F. M., Mohamad, R., & Mahmood, W. M. W. (2013). The Impact of Macroeconomic Forces on the ASEAN Stock Market Movements. *World Applied Sciences Journal 23*, *23*, 61–66. https://doi.org/10.5829/idosi.wasj.2013.23.eemcge.22012

Mosley, L., & Singer, D. A. (2008). Taking stock seriously: Equity-market performance, government policy, and financial globalization. *International Studies Quarterly*, *52*(2), 405–425. https://doi.org/10.1111/j.1468-2478.2008.00507.x

Muhammad Akbar. (2012). The relationship of stock prices and macroeconomic variables revisited: Evidence from Karachi stock exchange. *African Journal of Business Management*, *6*(4), 1315–1322. https://doi.org/10.5897/ajbm11.1043

Mukherjee, T. K., & Naka, A. (1995). Dynamic Relations Between Macroeconomic Variables and the Japanese Stock Market: an Application of a Vector Error Correction Model. *Journal of Financial Research*, *18*(2), 223–237. https://doi.org/10.1111/j.1475-6803.1995.tb00563.x

Östermark, R. (1991). Empirical evidence on the capital asset pricing model (CAPM) in two Scandinavian stock exchanges. *Omega*, *19*(4), 223–234. https://doi.org/10.1016/0305-0483(91)90041-Q

Ozcan, A. (2012). The relationship between macroeconomic variables and ISE industry index. *International Journal of Economics and Financial Issues*,

2(2), 184–189.

Ratanapakorn, O., & Sharma, S. C. (2007). Dynamic analysis between the US stock returns and the macroeconomic variables. *Applied Financial Economics*, *17*(5), 1–10. https://doi.org/10.1080/09603100600638944

Ross, S. A. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory*, *13*(3), 341–360. https://doi.org/10.1016/0022-0531(76)90046-6

Sattar, M., & -, J. (2017). CAPM Vs Fama-French Three-Factor Model: An Evaluation of Effectiveness in Explaining Excess Return in Dhaka Stock Exchange. *International Journal of Business and Management*, *12*(5), 119. https://doi.org/10.5539/ijbm.v12n5p119

Shafana, M. (2014). Macroeconomic Variables Effect on Financial Sector Performance in Emerging Sri Lankan Stock Market. *International Journal of Science and Research*, *3*(10), 227–231.

Sharpe, W. F. (1964). Capital Asset Prices: a Theory of Market Equilibrium Under Conditions of Risk. *The Journal of Finance*, *19*(3), 425–442. https://doi.org/10.1111/j.1540-6261.1964.tb02865.x

Sieng, C., & Leng, G. (2005). Linkages of economic activity, stock price and monetary policy:The case of Malaysia. *The Asia Pacific Journal of Economic and Business*, *9*(1), 1–18.

Suh, D. (2009). *Stock Returns , Risk Factor Loadings , and Model Predictions : A Test of the CAPM and the Fama-French 3-factor Model College of Business and Economics Economics Department of Economics*.

talla tagne josep. (2013). Impact of Macroeconomic Variables on the Stock Market Prices of the Stockholm Stock Exchange (OMXS30). *Jonkoping International Business School*, (May), 3–48.

Wongbangpo, P., & Sharma, S. C. (2002). Stock market and macroeconomic fundamental dynamic interactions: ASEAN-5 countries. *Journal of Asian Economics*, *13*(1), 27–51. https://doi.org/10.1016/S1049-0078(01)00111-7

Zhang, J., & Wihlborg, C. (2010). Capm in up and down markets: Evidence from six European emerging markets. *Journal of Emerging Market Finance*, *9*(2), 229–255. https://doi.org/10.1177/097265271000900205