ANALYSIS THE EFFECT OF OIL PRICES AND GOLD PRICES

TOWARD THE JAKARTA COMPOSITE INDEX

(PERIOD JANUARY 2009 - JUNE 2012)

By

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This thesis entitled “Analysis The Effect Of Oil Price And Gold Price Toward The Jakarta Composite Index (Period January 2009 – June 2012)” prepared and submitted by Martin Ernest in partial fulfillment of the requirements for the degree of Bachelor of Management in the Faculty of Economics has been reviewed and found to have satisfied the requirements for a thesis fit to be examined. I therefore recommend this thesis for Oral Defense.

Cikarang, Indonesia, 10th January 2013

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I declare that this entitled with “Analysis The Effect Of Oil Price And Gold Price Toward The Jakarta Composite Index (Period January 2009 – June 2012)” is the best of my knowledge and belief, an original piece of work that has not been submitted, either in whole or in part, to another university to obtain a degree.

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ABSTRACT

This study essentially to analyze the effect of oil price and gold price toward Jakarta Composite Index. Nowadays, more people are investing their money in many kind of portfolio to avoid the inflation of money. The objective of this study is to determine how big the effect of oil price and the price of gold on stock indices in Indonesia, namely Jakarta Composite Index.

The writer hopes that it will be good insight to the investor to gain a better understanding what kind of factor that can influence the Jakarta Composite Index.

This research uses quantitative research as a means to achieve its objectives. The data that used for this study are secondary data that being available through the website and also other sources from the internet. The period of the research is in between the January 2009 until June 2012.

The research is using multiple linear regression to identify the influence of oil price and gold price toward Jakarta Composite Index. Based on the multiple linear regression analysis, all of independent variable has significance influence toward Jakarta Composite Index, which are oil price and gold price has a positive impact toward Jakarta Composite Index.

Keywords: Marketing Oil Price, Gold Price, Jakarta Composite Index.
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CHAPTER I
INTRODUCTION

1.1. Research Background

Investments is one of the instrument that can be classified into two kind of groups, which are investments in real asset like building, land, machinery, etc., and investments in financial assets like stock, bond, currency deposits etc. The development of investment is reflects to the quality of economy in a country, the higher of investment will make the better level of economic in a country. Much kind of investments can be made; one of the examples is invest in the capital market. Capital market has been an important economic indicator and become a benchmark in the economic progress in a country.

Based on http://kinantiari.wordpress.com/

“Capital market has two kind of important function for a country; the first one is as a way to funding a company or to get a capital from the investors. The capital that raised from the investor is used for business development, expansion, and additional work activities. The second one is as a way for the investors to invest in the financial instrument such as stock, bonds, mutual funds, and others. Thus, the investors can put their money in accordance to its characteristics of the benefits and risk of each financial instrument.”

The capital market in Indonesia is Indonesia Stock Exchange (IDX).

Stock is one of the attractive investment alternatives in the capital market. It is characterized by the rapid development of the capital market, which is growing Jakarta Composite Index (JCI) and the value of market capitalization. Benefits to be gained investors through the capital market is a source of additional funding from capital gains (the difference between the buy and sell prices) and dividends (profits allocated to shareholders). Primary sector
comprising agriculture and mining sectors generate high returns and the index evolves to become an attractive option for investors.

Based on [www.financeroll.co.id](http://www.financeroll.co.id):

“JCI or an extension of the Jakarta Composite Index is one of the stock market in Indonesia, which used the Indonesia Stock Exchange (formerly Jakarta Stock Exchange). JCI is a stock index that continues to grow every day as JCI is the stock market continues to spin and centralized in Jakarta. JCI was first held shares trade on the 1st of April 1983. “

Many factors that can affect the price of JCI, first is the stock price. A big increase or decrease in the price of a stock does affect the JCI movement. But how much of the increase depends on the weights affect JCI shares. So the increases or decreases depend on the JCI movement large cap stocks. Based on this, and then appeared some stocks which called as the motor of JCI. One of the factors that affect stock prices is a change in the exchange rate of rupiah. Changes in exchange rates of rupiah are relatively sharp will affect investor confidence to invest their funds in the country in the form of the purchase of shares in the capital market. As a result, the performance of the stock market decline is characterized by the weakening of the Jakarta Composite Index (JCI).

Increased productivity will certainly encourage increased the company's profit, it will certainly attract investors to invest their funds to the company in the form of shares in the money market. In addition to the BI rate, energy and mining also plays a role in the movement of the Indonesian economy.

Based on [www.indonesiafinancetoday.com](http://www.indonesiafinancetoday.com):

“During 2006-2009, the mining stocks and energy dominate LQ45 as the most liquid stocks. Based on data from the stock exchanges on April 5, 2011, the value of the stock capitalization mining and energy sector reached Rp726 trillion, or 24% of total market capitalization.”
Increasing in world oil prices will push up share prices of mining companies.

Besides liquid energy, gold is one very important commodity affecting the stock market, because investing in gold is an investment option that could be considered likely risk free. Gold price is increasing from year to year attracts many enthusiasts investors to invest their money in commodities gold. Gold is available in a variety of forms, ranging from gold bars, gold coins and gold jewelry. Called as gold bar because the curve of this gold is flat, with 24 K gold (pure gold) composition 99.99% gold, 22 K Gold composition 91.7% gold and 8.3% mixture of other materials (silver), Gold 20 K composition 83.3% gold, 18 K Gold composition 75.0% gold, 16 K Gold composition 66.6% gold, 14 K Gold composition 58.5% gold and 9 K Gold composition 37.5% gold. Types of gold bar are good for invest, because the price of gold follows international standard value. Factor determining the price of gold is U.S. dollar exchange rate, the decreasing U.S. dollar exchange rate will generally lead to rising gold prices, this is due to the fall in the dollar makes gold a cheaper price in another currency that generally encourage an increase in demand for gold, especially of the jewelry industry. The second factor is the political situation of the world. “As in 2011, the gold price fell because of his fears that the euro crisis is getting worse”(www.vibiznews.com). Third factor is the supply and demand for gold. The higher of demand for gold will increase the price of gold, and if the supply for gold increase but decrease in demand of gold, it will decrease the price of gold. The fourth factor is the economic situation. About 80 percent of the total supply of gold used jewelry industry. Consumption of jewelry is a great influence on the demand side. As economic conditions improved, the need for jewelry tends to rise. However, from the statistical data visible demand for jewelry is more sensitive to fluctuations in gold prices than the increase in economic conditions. And the last factor that affects the price of gold is the interest rate. When interest rates rise, there is a great effort to keep the money on deposit than gold which does
not earn interest (non-interest-bearing). This will put pressure on the gold price. Conversely, when interest rates fall, the price of gold will tend to rise.

As mentioned above, many factors that can affect the capital markets. In general, when interest rates rise and fall of world energy prices, will cause the stock price index in the country increases. With low interest rates and energy prices are low; the company can freely develop for activities to increase the profit of the company. If the company's profit increases, then investors will be interested to invest their shares so as to push up the stock price index.

Some previous studies of gold, giving the opposite conclusion. As research conducted by Ardian Agung Witjaksono from Universitas Diponogoro, Semarang, entitled “Analisis Pengaruh Tingkat Suku Bunga SBI, Harga Minyak Dunia, Harga Emas Dunia, Kurs Rupiah, Indeks Nikkei 225, dan Indeks Dow Jones terhadap IHSG” (http://eprints.undip.ac.id/), providing results that gold gives positive results in the movement of stock indices in Indonesia and . While, Graham Smith, a research on "The Price of Gold and Stock Price Indices for the United States" (www.spdrgoldshares.com), indicates that the gold price has a negative effect on the movement of stock indices in the United States. Some of previous studies of oil prices also giving the opposite conclusion. A research conducted by Bernd Hayo and Ali M. Kutan from The William Davidson Institute at The University of Michigan Business School, entitled “The Impact of News, Oil Prices, and Global Market Developments on Russian Financial Markets” (http://wdi.umich.edu/), providing result that the Russian stock market is sensitive to oil price suggests that oil price movements may significantly destabilize Russian markets. While the result for journal research conducted by Abdul Raheman, Muhammad Khalil Sohail, Umara Noreen, BushraZulfiqar, Mehran, Irfan, Adeel from American Journal of Scientific Research, entitled “Oil Prices Fluctuations and Stock Returns- A Study on
Asia Pacific Countries"(www.eurojournals.com), providing result that there is no significant relationship between oil prices and stock returns. This causes that the factors - factors that influence to the movement of the stock index in a country have not been consistent. With this inconsistency, the researchers wanted to look at taking the title “Analysis The Effect Of Oil Prices And Gold Prices Toward The Jakarta Composite Index” (Period January 2009 – June 2012).

1.2. Problem Identification

From the background of the study above, the researcher would like to know about the effect of oil price and gold price toward Jakarta Composite Index.

1.3. Statement of Problem

Capital market in Indonesia becomes an indicator for economic condition. Jakarta Composite Index is one of the indicators in Jakarta Stock Exchange that fluctuated every time. The components of Jakarta Composite Index are trading volume of the shares and the average price of share from the company; start from agriculture, mining, basic industry and chemical, miscellaneous industry, property, consumer goods industry, infrastructure, finance, trade. From the background of the study above, the researcher would like to know about:

1. What is the effect of oil price toward Jakarta Composite Index?

2. What is the effect of gold price toward Jakarta Composite Index?

1.4. Research Objectives

The objective of this research is wanted to determine the effect of oil price and gold price toward Jakarta Composite Index in period of January 2009 – June 2012. The data of this research is collected from

1.5. **Significance of the Study**

Researcher conducted research with the hope that this research can be useful for every parties, including:

1. For the knowledge, as an information of guidance about the investment in the capital market
2. For the investor, as an additional information to set up the strategy and policy in investing in the capital market.
3. For the reader, as a references to make another research in the future about this topic.
4. For the researcher, as a new knowledge about the investment product and a requirement for bachelor degree.

1.6. **Theoretical Framework**

Capitalization of mining sector in Jakarta Composite Index is 13.9% (www.idx.co.id). The capitalization has a big impact to the movement of price of Jakarta Composite Index. Jakarta Composite Index movement influenced by several of active traded stocks. The increasing of oil price also can impact to increasing the price of Jakarta Composite Index directly, and then the price of oil has a positive impact to the Jakarta Composite Index.

Increasing price in gold will certainly encourage the investors to invest their money in gold. The price of gold tends to increase from year to year. Investing in gold will result in a better return rather than investing in stock market. Investing in gold has a low risk of loss, that will certainly attract the
investors to change their portfolio into gold, and this will decrease the price of Jakarta Composite Index because of the selling trends in stock. The price of gold has a negative impact to the Jakarta Composite Index.

As the explanation above, there are many factors that can influence the capital market. Investors should pay attention to the factors of the investment product so it can be give the better return. In this research, variables that the researcher used are the price of Jakarta Composite Index, Oil Price, and Gold Price. See figure 1.1 for the explanation of the variable.

**Figure 1.1 Theoretical Framework**

\[
Y = a + bX_1 - cX_2 + e
\]

**Y** = Jakarta Composite Index  
**X_1** = Oil Price  
**X_2** = Gold Price  
\(\text{e} = \text{Error}\)

**Source: Constructed by Researcher**
1.7. **Research Scope and Limitation**

This research has limitation as below:

1. The data of Jakarta Composite Index that will be used from the period of January 2009 – June 2012.

2. The oil price that used in this research is price of *light sweet crude oil future* with contract of at the end of month *NYMEX (New York Mercantile Exchange)* from the period January 2009 – June 2012.

3. The gold price that used in this research is average price of *gold fixing* with contract of at the end of month *NYMEX (New York Mercantile Exchange)* from the period January 2009 – June 2012.
2.1 Definition of Capital Market

Based on http://www.ideelok.com:

“Capital market is the market for long term financial instruments that can be traded, either in the form of debt and equity, both published by the government public authorities, and private companies”.

Basically, the stock market is a market for long-term financial instruments that can be traded, either in the form of debt or equity capital. If the capital market is the market for long-term securities, the money market on the other side of the market is short-term securities. Both the capital market and money market are become a part of the financial market (Darmadji, and Fakhruddin, 2001, p.1). Capital market involves various instruments which can be used for financial transactions. Capital market provides long term debt and equity finance for the government and the corporate sector. Capital market can be classified into primary and secondary markets. The primary market is a market for new shares, where as in the secondary market the existing securities are traded. Capital market institutions provide rupee loans, foreign exchange loans, consultancy services and underwriting.

Capital market laws No. 8 of 1995 provide an understanding of the capital markets that are more specific:

"Activities concerned with the public offering and trading of securities, public companies relating to the issuance of securities, as well as institutions and professions related to the stock exchange."
The main stock market is a centralized institution that brings the strength of supply and demand effects. The process of buying or selling is organized using systematic rules issued by the organizer. Each instrument to be traded on securities exchanges should fulfill the requirement of listing policy that issued by the organizer.

In the main stock market, trading system used auction market via booking system. The price is determined based on supply and demand of the stock. If there is strong order in supply side, the price will decrease, whereas, if there is strong order in demand side, the price will increase.

2.2 Functions and Roles of Capital Market

Like the money market capital market is also very important. It plays a significant role in the national economy. A developed, dynamic and vibrant capital market can immensely contribute for speedy economic growth and development.

These are the important functions and roles of the capital market (http://kalyan-city.blogspot.com):

1. **Mobilization of Savings.** Capital market is an important source for mobilizing idle savings from the economy. It mobilizes funds from people for further investments in the productive channels of an economy. In that sense it activates the ideal monetary resources and puts them in proper investments.

2. **Capital Formation.** Capital market helps in capital formation. Capital formation is net addition to the existing stock of capital in the economy. Through mobilization of ideal resources it generates savings; the mobilized savings are made available to various segments such as agriculture, industry, etc. This helps in increasing capital formation.
3. **Provision of Investment Avenue.** Capital market raises resources for longer periods of time. Thus it provides an investment avenue for people who wish to invest resources for a long period of time. It provides suitable interest rate returns also to investors. Instruments such as bonds, equities, units of mutual funds, insurance policies, etc. definitely provides diverse investment avenue for the public.

4. **Speed up Economic Growth and Development.** Capital market enhances production and productivity in the national economy. As it makes funds available for long period of time, the financial requirements of business houses are met by the capital market. It helps in research and development. This helps in, increasing production and productivity in economy by generation of employment and development of infrastructure.

5. **Proper Regulation of Funds.** Capital markets not only help in fund mobilization, but it also helps in proper allocation of these resources. It can have regulation over the resources so that it can direct funds in a qualitative manner.

6. **Service Provision.** As an important financial set up capital market provides various types of services. It includes long term and medium term loans to industry, underwriting services, consultancy services, export finance, etc. These services help the manufacturing sector in a large spectrum.

7. **Continuous Availability of Funds.** Capital market is place where the investment avenue is continuously available for long term investment. This is a liquid market as it makes fund available on continues basis. Both buyers and seller can easily buy and sell securities as they are continuously available. Basically capital market transactions are related to the stock exchanges. Thus marketability in the capital market becomes easy.
2.3 Capital Market Structure

The major players involved in the capital market and supporting institutions that are directly involved in the transaction as follows (Kasmir, 2001, pp. 183-189):

1. **Issuer.** The company will sell the securities or conduct emission in the exchange (called the investor). The issuer has a different purpose and usually stated in the general meeting of shareholders, among others:
   
   a. **Business expansion.** Capital obtained from investors will be used to expand the business, expanding markets or production capacity.
   
   b. **Improving capital structure.** Balance equity with foreign capital.
   
   c. **Changing the shareholders.** Changing from the old shareholders to new shareholders.

2. **Investors.** Investors are going to buy or invest in companies that do emissions (called investors). Before buying the securities offered, investors usually do some research and analysis. This study covers the reliability of the company, the business prospects of the issuer and other analyzes.

   The main objectives of the investors in the capital market:

   a. **Getting a dividend.** The dividend is given to the benefits to be gained in the form of interest paid by the issuer in the form of dividends.

   b. **Ownership of the company.** The more shares owned by the investors, it will make the greater operations of controlled the companies.
c. **Trade.** Shares will be sold at high prices; their hope is in stock can actually increase profits from buying and selling shares.

3. **Supporting Institutions.** The function of supporting institutions is contribute and support the operation of the capital markets, so that making it easier to both issuers and investors in a variety of activities related to capital markets. Supporting institutions that play an important role in the capital market mechanism is as follows:

   a. **Underwriters.** Institutions that guarantee stock / bond will be sold until a certain time limit and can obtain desired funds issuers.

   b. **Broker.** Intermediation in buying and selling securities. Broker becomes an intermediary between the seller (issuer) and the buyer (investor). The activities carried out by the broker include:

      i. Provide information about the issuer.

      ii. Doing the sale of securities to investors.

   c. **Trading securities (dealer),** serves as a:

      i. Traders buy and sell securities.

      ii. As an intermediary in the sale and purchase of securities.

   d. **Insurers (guarantor).** Institutions mediate between the donor confidences by the recipient trust. Institutions that are trusted by the investors to invest their funds.

   e. **Trustee.** Trust services required as a trustee of the grantor trustee (investors). Trustee includes:

      i. Assess the wealth of the issuer.
ii. Analyze the issuer's ability.

iii. Conducting oversight and development of the issuer.

iv. Provide advice to investors in matters relating to the issuer.

v. Monitor the payment of interest and principal of bonds.

vi. Act as a payment agent.

f. **Securities Company.** Specializes in the trading of securities listed on a stock exchange. Activities of securities firms:

i. As a securities dealers.

ii. Guarantor emissions.

iii. Intermediary trading in securities.

iv. As a fund manager.

g. **Investment company.** Managing securities will be profitable in accordance with the wishes of investors, consisting of two units, namely as the manager of the fund and depositors.

h. **Administrative office.** Offices that help issuers and investors in order to facilitate administration.

i. To assist issuers in order emission

ii. Carry out activities to save and transfer of shares investors

iii. Help compile a list of shareholders

iv. Prepare correspondence issuers to shareholders

v. Make the necessary reports
2.4 Jakarta Composite Index

2.4.1 Definition of Jakarta Composite Index

Jakarta Composite Index traded common shares and preferred shares on the Indonesia Stock Exchange (IDX). Jakarta Composite Index has a basis of calculation which is on August 10, 1982. Jakarta Composite Index has a constant on the number or value of shares and the shares of the first of 100 who participated in it only 13 stocks. Jakarta Composite Index has multiple components or common shares that we know the types of shares traded:

1. Agriculture
2. Mining
3. Basic Industry and Chemical
4. Miscellaneous Industry
5. Property
6. Consumer Goods Industry
7. Infrastructure
8. Finance
9. Trade

Stock Market Index is the main indicator that describes the movement of stock prices. Daily stock price index is calculated using shares by the last stock in the stock market. Two types of index used in the Jakarta stock exchange are an Individual Stock Price Index, reflects price movements of a stock and Composite Stock Price Index, reflects the overall market. The share price used in the calculation of the index on the stock is the stock price that occurred in the regular market.

Jakarta Composite Index is a value representative of the average price of all shares on the Stock Exchange by the number of shares listed.
That is why it is called Weighted Average value of the average price of the weight or number of shares.

The formula of Jakarta Composite Index is below:

\[
JakartaCompositeIndex = \left( \frac{\sum H_t}{\sum H_o} \right) \times 100\%
\]

\(\sum H_t\): Total price of all shares at the time

\(\sum H_o\): Total price of all shares on basic time

Source: [http://bluang23.wordpress.com](http://bluang23.wordpress.com)

Market capitalization is the value of all shares is calculated based on the last price in the stock market. Jakarta Composite Index movement per day is affected by the value of the shares, whether the value of the stock rises or falls remains influential in Jakarta Composite Index. But regardless of the increase in the stock also affect Jakarta Composite Index remains dependent on the weight of the stock itself. Jakarta Composite Index is significantly affected by changes in stock price movement or large-cap stocks, otherwise the index is calculated based on the weighted average market value, and price change by small capitalization stocks almost no impact on the Jakarta Composite Index. That is because the scales the weight of each stock is different, so it is not surprising that Jakarta Composite Index is determined by large-cap stocks.

2.4.2 Function of Jakarta Composite Index

“Jakarta Composite Index is a leading indicator that describes the movement of stock prices in the capital market”
Generally, all composite stock price index (composite) in various countries using the weighted average method, including in Indonesia Stock Exchange. Jakarta Composite Index has multiple functions or performance of a stock picture of them, namely:

1. **As an indicator of the market trend.** Jakarta Composite Index becomes benchmark for the investors that invest their money or capital in the stock market.

2. **As an indicator of the rate of profit.** The movement of Jakarta Composite Index becomes an indicator that the investors determine their profit, because the price of Jakarta Composite Index moves every second and minute.

3. **As a benchmark the performance of a portfolio.** Some investment funds manage their portfolios so that their performance reflects the performance of a stock market index or part of the stock market. This enabled them to track the performance of a stock market index or the stock market.

4. **Facilitate the formation of a passive portfolio strategy.** Many of investors use index as a model of portfolio. A portfolio model will follow the movement of mutual funds and exchange-traded fund index. And the strategy called as passive investment

5. **Facilitate derivative product development.** In the capital markets changes in the stock price index to be one of the elements used to calculate the leading indicators, economic indicators that precede movements in the real sector. If the leading indicator increases, the real sector will increase later.’
2.4.3 Movement of Jakarta Composite Index from January 2008 – January 2012

The price of Jakarta Composite Index is moved every time. From the Figure 2.2, at the end of year 2008, the price of Jakarta Composite Index was decreased until below of 1,500. The factor that causing the decline in price of Jakarta Composite Index was global crisis economy. In the middle of 2009, the price of Jakarta Composite index was recovered and has been increasing until 2012.

Figure 2.1 Movement of Jakarta Composite Index

![Composite Index Chart](source: www.financeyahoo.com)

2.4.4 Fundamental of Jakarta Composite Index

Since the international economy begins, the fundamental of Jakarta Composite Index is use the modern economic system. Composite stock price index has been used as an indicator of changes in the business cycle. The increasing price is started when the business cycle
start to begin and reach the highest point along with the business growth. The fundamental of Jakarta Composite Index is very important to the condition of the overall economy through indicators, start from macro indicators to the market sentiment

1. Market Event

History of stock price index has shown that major events can drive economic sectors. In 2008, Jakarta Composite Index was decreased until 51%, one of the factors that influence Jakarta Composite Index is global crisis. That effect is become a big factor that hit or push the price of Jakarta Composite Index at the beginning of 2008.

2. Economic Indicators

Fundamental Jakarta Composite Index and the economic conditions are important to the movement of the stock price index. If the conditions described by economic indicators continue to improve, then the increasing movement will usually happen in the stock market price index. Vice versa, if the economy becomes worse, the stock price index will respond with a decrease movement. In other words, the fundamental economic composite stock price index has its own power for the movement of the market and this factor should not be overlooked. If the economy is in bad shape, not necessarily reported on individual stock price movements can change the direction of the stock price index.

3. Unemployment Rates

Sector employment is an important factor in economic fundamentals because in addition to showing how much the economy can create jobs, it is also an indicator of future economic
expectations. Low unemployment will increase public spending, which bought the product or service that will ultimately increase sales companies. Meanwhile the high unemployment means that the lack of revenue, which could eventually push the company implement other efficiency policies. Usually if the unemployment rate has reached 6 or 7%, the government will issue the policy stimulus is expected to boost economic growth.

4. Retail Sales

Retail sales data that measures the amount of goods being sold each month. The data also shows how high consumers spend their money and hope for the continuation of life manufacturer. Sales can increase corporate profits and encourage the company to expand. So it can re-absorb labor. Thus, increasing in the retail sales report give better movement to the market. Especially composite stock price index, because it is a representation of the performance of many companies.

5. Oil Prices

Energy is the main engine of economic growth and oil is the most important in the economy sector because oil is easy and flexibility to be used and become the most utilized compared to other energy. Changes in the price of crude oil are often considered an important factor for understanding fluctuations in stock prices.

6. Gold Prices

Investors are showing less interest in the stock markets and investing in precious metals like gold due to increasing trend in gold prices, because investing in gold has no future loss, the price
of gold always increase. This kind of way of investing affect the stock exchange in develops countries.

The variables of oil price and gold price will be explained in the next sub-section.

2.5 Crude Oil

OPEC is Organization Petroleum Exporting Countries, was established at 10 – 14 September 1960 in Bagdad, Iraq. OPEC consists of 12 member states, Algeria, Angola, Ecuador, the Islamic Republic of Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela. OPEC headquarters is located in Vienna, Austria. OPEC members produce about 40% crude oil and 15% natural gas (World Oil Outlook, 2011, p.4).

In 1961, Indonesia became the member of OPEC, and in 2008, Indonesia leaves OPEC because of because oil production is not sufficient for a day, where the production of 1 million barrels per day, but consumption needs reached 1,350,000 barrels per day, causing Indonesia to import oil from other countries (http://rdar.wordpress.com).

In determining the price of crude oil in the international market, OPEC has a cartel model to determine the price of oil on world markets. In the cartel model of monitoring is usually done in the form, set the rules and the penalties for the members. Monitoring is done in the form of price control, output, product diversification, investment and collection of benefits.

OPEC established goals is to coordinate and integrate Petroleum policy for any member countries and ensure the stabilization of oil markets in order to secure supply, efficiency, economy and regularity of supply of petroleum to consumers, a fixed income to producers and a fair return on capital for investors in the industry oil.
The price of oil that received is the world oil price from OPEC, but the benchmark oil price in Asian countries is MOPS (Mean of Platts Singapore). MOPS is a public agency named Platts in Singapore; usually the price of oil from MOPS is bigger USD 7-15 than the world oil price.

The formula of Oil price is below:

\[
\text{Price of Oil (Rp) per liter: } \frac{(MOPS + 10\%) \times \text{Exchange Rate of Rupiah}}{158.98729493 \times \text{Liter}} + 15\%
\]

1 Barrel oil: 158.98729493 liter

Exchange Rate of Rupiah: Exchange rate of rupiah to US dollar

10%: Service cost from MOPS

15%: Tax

Source: [http://andychan007.blogspot.com](http://andychan007.blogspot.com)

The Oil exporting countries who are members of OPEC will conduct board meeting before they release the price of Oil in the international market. Crude oil price is determined by a number of demands, but OPEC has set quotas limiting the amount of oil to be traded each day. “At the end of the 2008-2009 OPEC oil quota has been cut to $ 2.2 million barrels per day” ([www.kompasiana.com](http://www.kompasiana.com)). This is because OPEC to maintain the price of oil on world markets and also to protect the interests of cartel

The price of crude oil is not stable; there are some kinds of factors that determine the price of crude oil (Rahman, 2008, pp. 3-8)

1. Supply and Demand of Oil Price

Economic levels and increasing the population of the world, causing the crude oil consumption become higher. This is because the demand of
energy required to run the economy of country and in the production processes need more oil as their fuel. While the world's oil reserves become decreased, causing the world's oil supply becomes reduced. This affects the market in recent years, causing oil price increases for fear of oil supply will not covered in the future. OPEC is expected to make a greater investment to increase oil production, but the uncertainty of the future that could make the investment run slowly, so that the world production capacity is not covered at all and will drive the price of oil become increase continuously (see Figure 2.2).

**Figure 2.2 The Oil Production and Consumption in Indonesia**

![Graph of Oil Production and Consumption in Indonesia](source: [www.bp.com](http://www.bp.com))
2. Oil Stock

Oil is a non-renewable energy resource. The number of oil stock will decreased with the increasing the number of oil used. Oil stock will affect the price of oil, especially in a short term. The stock and price of oil generally inversely proportional, if the stock of oil become low, the price of oil become increase, but if the stock of oil in high quantity, so the price of oil become decrease.

3. Geopolitics

Political accident in the producing and consuming oil countries will affect the sustainability of the production and consumption of oil in the region that would affect the oil prices (see Figure 2.3).

**Figure 2.3 The Fluctuation Price of Oil because Geopolitics Factor**
4. Weather and Disaster Factor

Oil producing countries generally have 4 seasons. In the winter and summer, it will be an obstacle to the country's oil production. Winter is very cold in desperate need more heater to produce oil, while the summers are too hot desperately need more cooling in the production room. It would be an expensive and energy in producing and processing oil. Also sometimes disasters happen in some countries that can affect the production of oil. When the disaster hit the countries, the production process will stop and the price will get higher because of out of supply from the country.

5. Exchange Rate of United States Dollar

Oil purchases are paid in dollars. However, demand of oil depends on the domestic price for consumer countries which generally changes with the dollar fluctuations. Thus, the dollar depreciation reduces the oil price in domestic currencies for countries with a floating currency, like the euro zone or Japan. The effect is neutral for countries that have a currency pegged to the dollar, like China. On average, everything else being equal, dollar depreciation generally tends to decrease the oil price in consumer countries. This leads to an increase in their real income and an increase in their oil demand. Therefore, the dollar depreciation has a positive impact on oil demand and should contribute to raise the price.

Oil companies use domestic currencies of producer countries to pay their employees, taxes and other costs. These currencies are often linked to the dollar, because of fixed-exchange rate regimes adopted by most producer countries. Thus, dollar changes probably affect the price as perceived by the producers less than the one perceived by demanders.
2.6 Gold

Gold is bought by investors primarily to hedge against inflation, economic uncertainty, and foreign exchange risk, in the belief that these metals are repositories of absolute value. Since 1968, the price of gold is used as standard worldwide is the price of gold based on the gold standard London market. This system is called the London Gold Fixing.

Based on www.goldfixing.com:

“London Gold Fixing is a procedure in which the price of gold is determined twice a day every weekday, and the price is determined by the five members of the London Gold Market Fixing Ltd.”

The five members are:

1. Bank of Nova Scottia
2. Barclays Capital
3. Deutsche Bank
4. HSBC
5. Societe Generale

Based on www.goldfixing.com, the process of determining the price is through an auction among the five members. At the beginning of each trading period, President of the London Gold Fixing Ltd will announce a specific price. Then, the five members will be reported to the dealer price. Dealer is directly related to the actual buyers of gold are traded. Positions the end of the price offered by any dealer to members of the London Gold Fixing Ltd is the net position of the result of the accumulation of demand and supply from their clients. This is where the price of gold is formed. If the request is higher than the offer, then the gold price would rise, and vice versa, if the offer is higher than demand, prices will decrease. Pricing definitely wait until get the
equilibrium. When the price is fixed, then the chairman will end the meeting and said the price is fixed.

The formula of Gold price is below:

\[
\text{Price Per Troy Ounce} = \left( \frac{\text{Exchange Rate of Rupiah}}{31.1\text{Gram}} \right) \times \text{Price Per Troy Ounce}
\]

1 Troy Ounce = 31.1 Gram

Exchange rate of rupiah: Exchange rate of rupiah to US dollar

Source: http://emas-perak.com

The process of determining the price of gold held twice a day, at 10.30 (the price of gold AM) and at 15.00 (the price of gold PM). The price of gold is determined in a foreign currency that America States Dollar, British Pound, and Euro. Generally, the Gold PM closing price is often used as a guide of price of gold around the world (www.goldfixing.com). Gold is often used as a form of savings because the relative value is always rising. (Syafputri, 2012, p. 16). Since 2004, gold has been begun climb sharply. In 2008 was when the global financial crisis, gold prices declined just serious enough, a decline of about 34%. But after that gold started to rise again. In the year 2011, gold prices scored highest price 1,920.30 U.S. dollars / Ozt. Despite the decline in 2008, gold prices did not experience significant pressure than the world's stock price. “Gold is become one of the risk-free investment” (Sunariyah, 2006, p. 22). The increase in the price of gold will encourage investors to choose to invest in gold than in the stock market. Because the risk is lower, gold can provide good results in return for the increase in price. While many investors to switch their portfolios investing in gold, this will cause the decrease in the stock price index in the country concerned as investors sell their stock.
Despite the Gold price is always going up, but there is some time that the price of Gold fall from high position. The price of gold is determined by much kind of factors, which are supply and demand of real gold in international trade, the value of the U.S. Dollar, the current global economic condition (Syafputri, 2012, pp. 20-26):

1. Supply and Demand

If the majority of investors in the world choose to make a purchase, the price of gold would be rising, and vice versa, when the majority of investors choose to sell, the price of gold will be corrected to a lower number. Along with population growth, the demand for gold has also increased. However, on the other hand increasing in demand is also closely related to the current global economic conditions. For example, central banks in many countries such as China begins to increase their savings in gold, this is due to the uncertainty of the world economy. Classical economic view says that gold is safe heaven; this means that buying gold is a low risk investment that will not fail and believed their purchasing power will not decreased by inflation or exchange rate movements. The majority of central bank estimated saving up to 18% of gold that is spread in earth. On the other hand, the majority demand of gold is for jewelry.

2. Exchange Rate of United States Dollar

Since the end of World War II, the winners were the United States and its allies made a pact to make the standard value of their currency with gold. United States promised to keep the price of 1 troy ounce of gold is equivalent to 35 U.S. Dollars, and other countries also determine the value of its currency against the U.S. dollar.

In 1971, the U.S. cannot maintain its purchasing power against gold, so that the money spent by the U.S. dollar is no longer backed by gold reserves
availability. Changes in the financial system is sufficiently fundamental directly impact the pricing of gold. When the dollar exchange rate increases, the price of gold will decline, because it takes a small amount of dollars to buy gold, whereas if the value of a dollar decline, the price of gold will increase, because it takes a big amount of dollars to buy gold.

Rise and fall of the U.S. dollar exchange rate is not a simple thing. Many factors make the value of the U.S. dollar falling and a lot of consideration to increase the return value. Dollar also likes other currencies, the higher its value when the volume circulating in the community is not too many. However, the economic system in the U.S. very closely, and the debt burden of the war in various countries, has made the central bank to make a big volume in dollars. America can print as many dollars as they wish, and this makes a lot of dollars in circulation, both within and outside the country, namely in the form of foreign currency reserves.

3. Current Global Economic Condition

a. **Condition of World Politics**

World political tensions, such as the U.S. with Iran, the U.S. to the Middle East or other tension that makes the world's political temperature rises and the resulting economic uncertainty makes the price gold rises. Market players will attract investment in the stock market, foreign exchange or bonds and prefer a safe investment which is gold. So the demand for gold goes up and the price of gold also increase because of the higher demand.

b. **Increasing the Inflation**

Every country has their own policy to determine the economic condition; generally every country will see the number of inflation in the countries. Prediction what percentage about inflation in the country
will become a reference in determining the interest rate and others. If the prediction of inflation forecast missed and instead higher then normally expected, the gold prices will increased.

c. **Financial Crisis**

When the financial crisis comes up in a country, people want to save their own wealth in gold, because if they invest in money, they will get the impact of financial crisis and the value of money can be lower than before, then the demand of gold will higher and the price of gold also become increased.
CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Method

Research method is a scientific technique to gather data for certain purposes and uses, including to invent, to develop or to prove a theory or phenomenon. Research also often described in two categories, which are Qualitative research and Quantitative research.

Since this purpose of the research is finding and analyzing about the Analysis of The Influences of Oil Prices and Gold Prices toward the Jakarta Composite Index Period January 2009 – June 2012, so the researcher use Quantitative Method by using multiple linear regression and SPSS as a useful tool to do the research.

Quantitative research tends to focus on measurement and proof. This research adopts a ‘scientific approach’. It is based on the premise that something is meaningful only if it can be observed and counted. Its key characteristics are numerical data that permits a range of statistical analysis. (Hesketh, and Laidlaw)

Quantitative research means that the research that concentrates with the analysis and numerical data and focusing on controlling the variables. Quantitative research also categorized with descriptive research, correlational research, causal-comparative research and experimental research. (Ouyang)
3.2 Research Instruments

3.2.1 Data Collection Method

Technique of data collection for this study is using secondary data, including data Jakarta Composite Index, Gold Price, and Oil price. Based on the above variables, the researcher used monthly data available on the internet with a range of January 2009 - June 2012. So the observation numbers (N) are 42.

3.2.2 Variables

1. Dependent Variable

Dependent variable used in this study is the Jakarta Composite Index taken from www.finance.yahoo.com a period from January 2009 - June 2012.

2. Independent Variable

Independent variables used in this study consist of two variables, which are:

a. Oil Prices

World oil prices are formed based on the level of supply and demand. Oil price data used in this study are based on the international oil price of West Texas Intermediate Crude Oil. The data of oil price used in this study is from www.economagic.com. The data used is the price per month is taken from the end of the month January 2009 - June 2012.
b. Gold Prices

World gold prices are formed based on the level of supply and demand. Gold price data used in this study are based on the international gold price of London Gold Fixing on the closing price (Price of Gold P.M). The data of gold price used in this study is from www.lbma.org.uk. The data used is the price per month is taken from the end of the month January 2009 - June 2012.

3.2.3 Statistical Tools

Analyze the data is to determine whether the relationship between independent variable and dependent variable. Analysis technique to process this data is using multiple linear regression and using SPSS v. 16 as a tool for data processing.

The steps for processing the data as follows:

1. Collecting the monthly data of Jakarta Composite Index, Oil Price, and Gold Price from January 2009 – June 2012, then

2. Perform classical assumption test

3. Perform the analysis of multiple linear regression in SPSS.

3.2.4 Classical Assumption Test

1. Normality Test

Normality test is to test the independent variable and the dependent variable in the regression equation output. The regression equation is good, if the data independent and dependent variable is bound to normal or near-normal distributed.
Analysis normality test is used Kolmogorov - Smirnov.

Procedure of testing normality test is:

**a. Hypotheses research:**

Ho: Residual data is not distributed K-S (normal)

Ha: Residual data is distributed K-S (not normal)

**b. Decisions:**

i. If Asymp. Sig. (2-tailed) > 0.05, then Ho will accepted, because the residual data is normal.

ii. If Asymp. Sig. (2-tailed) < 0.05, then Ho will rejected, because the residual data is not normal.

2. **Multicollinearity Test**

Multicollinearity is applied to multiple regression analysis consisting of two or more independent variables to be measured the degree of influence between the independent variables with the other independent variable.

“Multicollinearity happened if the correlation between independent variable is bigger than 0.60, and multicollinearity not happened if correlation between independent variable is lower than 0.60” (Sunyoto, 2011, p. 79).

If there is multicollinearity in the model, then the model has a large standard error of the coefficient cannot be estimated with accurate. Analysis of multicollinearity is used the output of SPSS.

Procedure of testing multicollinearity test:
a. **Hypothesis research:**

Ho: There is no multicollinearity

Ha: There is multicollinearity

b. **Decisions:**

i. If Variance Inflation Factor (VIF) is bigger than 10, then Ho will rejected, because there is multicollinearity.

ii. If Variance Inflation Factor (VIF) is lower than 10, then Ho will accepted, because there is no multicollinearity.

iii. If Tolerance is lower than 0 or bigger than 1, then Ho will rejected, because there is multicollinearity.

iv. If Tolerance is in between 0 and 1, then Ho will accepted, because there is no multicollinearity

3. **Heteroscedasticity Test**

Heteroscedasticity need to be tested to determine whether the variance of the residual of each observations has similarities or not. If the residual has similarities of variance then there is homoscedasticity, but if the residual has different of variance then there is heteroscedasticity. If there is no heteroscedasticity, then the equation of regression is good. Analysis of heteroscedasticity is used output of SPSS through scatterplot graph. Z prediction (ZPRED) is an independent variable, and S residual (SRESID) is a dependent variable.

“Homoscedasticity occur if the data processing point between ZPRED and SRESID spread below or above the point of origin
on the Y axis in the scatterplot and does not have a regular pattern, whereas Heteroscedasticity occurs when the point of the data processing between ZPRED and SRESID have a regular pattern, narrowed, widened, and bumpy on scatterplot” (Sunyoto, 2011, p. 83)

Procedure of testing heteroscedasticity test:

**a. Hypothesis research:**

Ho: There is no heteroscedasticity

Ha: There is heteroscedasticity

**b. Decisions:**

i. If the dots in the scatterplot spread and does not have a regular pattern, then Ho will accepted, because there is homoscedasticity.

ii. If the dots in the scatterplot have a regular pattern, then Ho will rejected, because there is heteroscedasticity.

4. **Autocorrelation test**

Autocorrelation is a test to examine whether there is a strong correlation between data on each variable. Autocorrelation identify if there is an error in period t with an error in the previous period t-1. If there is a correlation, then there is an autocorrelation. The equation linear regression is good, if there is no autocorrelation.

Analysis normality test is used Durbin Watson Test (DW).
Procedure of testing normality test is:

a. Hypotheses research:

Ho: There is no autocorrelation

Ha: There is autocorrelation

b. Decisions:

i. If DW in between -2 and +2, then there is no autocorrelation.
ii. If DW less than -2, then there is positive autocorrelation
ii. If DW more than +2, then there is negative autocorrelation

3.3 Multiple Linear Regression

Multiple linear regression is used to find the relationship between independent variable toward dependent variable.

“Multiple linear regression models that use two or more independent variables to predict the value of dependent variable” (Berenson, Levine, and Krehbiel, 2011, p. 666).

The relationship in the multiple linear regression can be determine from dependent variable (Y) influenced by independent variable (X₁, X₂, …, Xn). Model of the equation multiple linear regression as below:

\[ Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \epsilon \]

Y: Independent variable (Jakarta Composite Index)

\( \beta_0 \): Intercept (Value of Y when \( X_1 = 0 \))
$\beta_1$: Coefficient regression of oil price

$\beta_2$: Coefficient regression of gold price

$X_1$: Dependent variable (Oil Price)

$X_2$: Dependent variable (Gold Price)

$\text{En}$: Error (Variable influence the value of $Y$ but not include in the study)

### 3.3.1 Coefficient Determination

Coefficient determination ($R^2$) is used in statistical model analysis to assess how well the independent variables interpret the dependent variable in the model. The value of coefficient determination is $0 \leq R^2 \leq 1$.

a. If $R^2 = 0$, then there is no ability for independent variables interpret the dependent variable, so the regression model that formed cannot be used to predict $Y$.

b. If $R^2 = 1$, then there is ability for independent variables interpret the dependent variable, so the regression model that formed can be used to predict $Y$ perfectly.

### 3.3.2 F-Test

F statistical test basically shows whether all the independent variables have an influence on the dependent variable. In this research, researcher will be use the F-test in order to determine whether the Jakarta Composite Index is influenced by Oil price and Gold price.
a. Hypotheses research:

Ho: $\beta_0 = \beta_1 = \beta_2 = 0$

It means that, the dependent variable does not rely on the value of X1 and X2 or there is no significant effect of all independent variables toward dependent variable in regression model.

Ha: Not all $\beta_i = 0$

It means that, at least one of the independent variable is related or influences the dependent variable in the regression model.

b. Decisions:

i. If the level of significance $> 0.05$, then Ho will be accepted, because there is no significance relationship between independent variable to dependent variable.

ii. If the level of significance $< 0.05$, then Ho will be rejected, because there is significance relationship between independent variable to dependent variable.

3.3.3 T-Test

T statistical test basically shows whether each or individual of independent variables included have an influence on the dependent variable. In this research, researcher will be use the T-test in order to determine whether the Jakarta Composite Index is influenced by oil price and gold price and each of independent variable will be tested individually.
a. Hypotheses research:

$$H_0_1: \beta_1 = 0$$

It means that, the independent variable (oil price) is not influence the dependent variable (Jakarta Composite Index) within the regression model used in this study.

$$H_a_1: \beta_1 \neq 0$$

It means that, the independent variable (oil price) is significant influence the dependent variable (Jakarta Composite Index) within the regression model used in this study.

$$H_0_2: \beta_2 = 0$$

It means that, the independent variable (gold price) is not influence the dependent variable (Jakarta Composite Index) within the regression model used in this study.

$$H_a_2: \beta_2 \neq 0$$

It means that, the independent variable (gold price) is significant influence the dependent variable (Jakarta Composite Index) within the regression model used in this study.

b. Decisions:

i. If the significance level > 0.05, then Ho will be accepted, it means no significance effect of independent variable to dependent variable.
ii. If the significance level < 0.05, then Ho will be rejected, it means significance effect of independent variable to dependent variable.

3.4 Limitations

Data used in this research is the data Jakarta Composite Index, Oil Price, Gold Price and bounded on each end of the month with the closure of the observation period January 2009 - June 2012. The reason is because the election period to obtain more accurate results according to the situation now and the election until June 2012 due to mid-year. Selection of the final data per month to avoid the error caused panic in the markets reacted to the information so that the use of monthly data are expected to obtain accurate results.
CHAPTER IV

ANALYSIS OF DATA AND INTERPRETATION OF RESULT

4.1 Data

The data being used for this research are Oil Price, Gold Price, and the Price of Jakarta Composite Index. Those of data being used are monthly data from January 2009 until June 2012, and have been collected through sources from the internet or secondary data (see Table 4.1 - 4.3).

Table 4.1 Oil Price from Period January 2009 – June 2012

<table>
<thead>
<tr>
<th>Date</th>
<th>Oil Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2009</td>
<td>41.74</td>
</tr>
<tr>
<td>February 2009</td>
<td>39.16</td>
</tr>
<tr>
<td>March 2009</td>
<td>47.98</td>
</tr>
<tr>
<td>April 2009</td>
<td>49.79</td>
</tr>
<tr>
<td>May 2009</td>
<td>59.16</td>
</tr>
<tr>
<td>June 2009</td>
<td>69.68</td>
</tr>
<tr>
<td>July 2009</td>
<td>64.09</td>
</tr>
<tr>
<td>August 2009</td>
<td>71.06</td>
</tr>
<tr>
<td>September 2009</td>
<td>69.46</td>
</tr>
<tr>
<td>October 2009</td>
<td>75.82</td>
</tr>
<tr>
<td>November 2009</td>
<td>78.08</td>
</tr>
<tr>
<td>December 2009</td>
<td>74.30</td>
</tr>
<tr>
<td>January 2010</td>
<td>78.22</td>
</tr>
<tr>
<td>February 2010</td>
<td>76.42</td>
</tr>
<tr>
<td>March 2010</td>
<td>81.24</td>
</tr>
<tr>
<td>April 2010</td>
<td>84.48</td>
</tr>
<tr>
<td>May 2010</td>
<td>73.84</td>
</tr>
<tr>
<td>June 2010</td>
<td>75.35</td>
</tr>
<tr>
<td>July 2010</td>
<td>76.37</td>
</tr>
<tr>
<td>August 2010</td>
<td>76.82</td>
</tr>
<tr>
<td>September 2010</td>
<td>75.31</td>
</tr>
<tr>
<td>October 2010</td>
<td>81.90</td>
</tr>
<tr>
<td>November 2010</td>
<td>84.14</td>
</tr>
<tr>
<td>December 2010</td>
<td>89.04</td>
</tr>
<tr>
<td>January 2011</td>
<td>89.42</td>
</tr>
<tr>
<td>February 2011</td>
<td>89.58</td>
</tr>
<tr>
<td>March 2011</td>
<td>102.94</td>
</tr>
<tr>
<td>April 2011</td>
<td>110.04</td>
</tr>
<tr>
<td>May 2011</td>
<td>101.33</td>
</tr>
<tr>
<td>June 2011</td>
<td>96.29</td>
</tr>
<tr>
<td>July 2011</td>
<td>97.19</td>
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<tr>
<td>August 2011</td>
<td>86.33</td>
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<tr>
<td>September 2011</td>
<td>85.61</td>
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<tr>
<td>November 2011</td>
<td>97.21</td>
</tr>
<tr>
<td>December 2011</td>
<td>98.57</td>
</tr>
<tr>
<td>January 2012</td>
<td>100.24</td>
</tr>
<tr>
<td>February 2012</td>
<td>102.25</td>
</tr>
<tr>
<td>March 2012</td>
<td>106.19</td>
</tr>
<tr>
<td>Date</td>
<td>Gold Price</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>April 2012</td>
<td>103.33</td>
</tr>
<tr>
<td>May 2012</td>
<td>94.70</td>
</tr>
<tr>
<td>June 2012</td>
<td>82.41</td>
</tr>
</tbody>
</table>

Source: [http://www.economagic.com/em-cgi/data.exe/var/west-texas-crude-long](http://www.economagic.com/em-cgi/data.exe/var/west-texas-crude-long)

Table 4.2 Gold Price from Period January 2009 – June 2012

<table>
<thead>
<tr>
<th>Date</th>
<th>Gold Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2009</td>
<td>858.69</td>
</tr>
<tr>
<td>February 2009</td>
<td>943.16</td>
</tr>
<tr>
<td>March 2009</td>
<td>924.27</td>
</tr>
<tr>
<td>April 2009</td>
<td>890.20</td>
</tr>
<tr>
<td>May 2009</td>
<td>928.64</td>
</tr>
<tr>
<td>June 2009</td>
<td>945.67</td>
</tr>
<tr>
<td>July 2009</td>
<td>934.22</td>
</tr>
<tr>
<td>August 2009</td>
<td>949.37</td>
</tr>
<tr>
<td>September 2009</td>
<td>996.59</td>
</tr>
<tr>
<td>October 2009</td>
<td>1043.15</td>
</tr>
<tr>
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<tr>
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<tr>
<td>June 2010</td>
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<tr>
<td>August 2010</td>
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<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>1332.67</td>
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<td></td>
</tr>
<tr>
<td>February 2009</td>
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<td></td>
</tr>
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<td>May 2009</td>
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<td>June 2009</td>
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<td></td>
</tr>
<tr>
<td>July 2009</td>
<td>2323.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August 2009</td>
<td>2341.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September 2009</td>
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<td></td>
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<tr>
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</tr>
<tr>
<td>May 2010</td>
<td>2796.96</td>
<td></td>
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<tr>
<td>June 2010</td>
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<tr>
<td>July 2010</td>
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<td></td>
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<td>August 2010</td>
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<td></td>
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<tr>
<td>September 2010</td>
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<tr>
<td>October 2010</td>
<td>3635.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November 2010</td>
<td>3531.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 2010</td>
<td>3703.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January 2011</td>
<td>3409.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February 2011</td>
<td>3470.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 2011</td>
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<tr>
<td>April 2011</td>
<td>3819.62</td>
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</tr>
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<td>May 2011</td>
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<td>June 2011</td>
<td>3888.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 2011</td>
<td>4130.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August 2011</td>
<td>3841.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September 2011</td>
<td>3549.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October 2011</td>
<td>3790.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November 2011</td>
<td>3715.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 2011</td>
<td>3821.99</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.1 above shows the price of oil in international which is the West Texas Crude Oil. The table of oil price above contains the price from January 2009 to June 2012, with the end of price every month. The oil price above in units of dollar per barrel.

Table 4.2 above shows the price of gold in international which is The London Bullion Market Association. The table of gold price above contains the price from January 2009 to June 2012, with the price of average every month and the closing price (Gold p.m.). The gold price above in units of dollar per troy ounce.

Table 4.3 above shows the price of Jakarta Composite Index in Jakarta Stock Exchange. The table of Jakarta Composite Index price above contains the price from January 2009 to June 2012, with the closing price of every month. The Jakarta Composite Index price above in units of point.

4.2 Data Analysis

This research uses multiple regression to analyze the effect of oil price, gold price toward Jakarta Composite Index price. In order to ensure the reliability and validity of variable, the researcher will conduct the classical assumption tests, which are the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. The researcher also will use coefficient of determination to test how well the model can be used to predict future outcomes.
4.2.1 Classical Assumption Test

4.2.1.1 Normality Test

Normality test is used to determine whether the data is normally distributed or not. The regression model will be significant if the data of variable is normally distributed, thus the result of the regression could be accepted. The test of normality test is using Kolmogorov – Smirnov test. Table 4.4 shows the result of normality test by using Kolmogorov – Smirnov.

Table 4.4 Kolmogorov – Smirnov Test

<table>
<thead>
<tr>
<th></th>
<th>Oil Price</th>
<th>Gold Price</th>
<th>Jakarta Composite Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Normal Parameters*</td>
<td>Mean</td>
<td>81.5117</td>
<td>1.311E3</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.7102E1</td>
<td>2.38025E2</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td>Absolute</td>
<td>.113</td>
<td>.103</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>.063</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>-.113</td>
<td>-.103</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>.730</td>
<td>.689</td>
<td>1.102</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.661</td>
<td>.762</td>
<td>.178</td>
</tr>
</tbody>
</table>

* Test distribution is Normal.

To test the variable normally distributed or not, can be seen from the number of significance. If the significance is bigger than 0.05, then it is normally distributed. From the table 4.4, the number of Asymp. Sig. (2-tailed) is bigger than 0.05 for dependent variable and independent variable, so the result for Ho is accepted, because the data is normally distributed.
4.2.1.2 Multicollinearity Test

Multicollinearity test is a test conducted to be measured the degree of influence between independent variable toward other independent variable. There are two indicators to know the problem in the multicollinearity test, which are the value of Variance Inflation Factor and the value of Tolerance. The first is value of tolerance should bigger than 0 and lower than 1 (0<tolerance<1), and the second is value of Variance Inflation Factor should be lower than 10. Table 4.5 is show the result of the multicollinearity test.

Table 4.5 Multicollinearity Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>1</td>
<td>Constant</td>
</tr>
<tr>
<td>Oil Price</td>
<td>.307</td>
</tr>
<tr>
<td>Gold Price</td>
<td>.307</td>
</tr>
</tbody>
</table>

Table 4.5 shows the number of tolerance for oil price is 0.307, it is bigger than 0 and lower than 1, and the number of VIF is 3.257, it is lower than 10, then it means that no multicollinearity for oil price.

The number of tolerance for gold price is 0.307, it is bigger than 0 and lower than 1, and the number of VIF is 3.257, it is lower than 10, then it means that no multicollinearity for gold price.
4.2.1.3 Heteroscedasticity Test

Heteroscedasticity test is to examine whether the variance of residual of each observation has similarities or not. The researcher uses a scatterplot to test for the result of heteroscedasticity. The indicator for heteroscedasticity test is the dots in the scatterplot shows spread and does not have a regular pattern, thus the result of the pattern is homoscedasticity and can be accepted. However, if the dots in the scatterplot do not spread and have a regular pattern, thus the result is heteroscedasticity and cannot be accepted. In the Table 4.6 shows the result of heteroscedasticity test.

Table 4.6 Heteroscedasticity Test

<table>
<thead>
<tr>
<th>Scatterplot</th>
</tr>
</thead>
</table>

Dependent Variable: Jakarta Composite Index

![Scatterplot](image-url)
Table 4.6 shows the dots in the graph is spread and does not have a regular pattern. The dots also on the graph relative spread both above and below the zero axis zero axis, then it can conclude that the regression is no heteroscedasticity problem or homoscedasticity.

### 4.2.1.4 Autocorrelation Test

In testing the existence of autocorrelation, an autocorrelation test is implemented by Durbin-Watson statistic test. Durbin-Watson is a statistical test that detects the presence of autocorrelation in the residual of regression analysis. Autocorrelation is a condition that the set of data in the same variables are correlated each other. Table 4.7 shows the result of autocorrelation test in SPSS.

**Table 4.7 Autocorrelation Test**

<table>
<thead>
<tr>
<th>Durbin-Watson</th>
<th>0.848</th>
</tr>
</thead>
</table>

a. Predictors: (Constant), Gold Price, Oil Price  
b. Dependent Variable: Jakarta Composite Index

From table 4.7, the value of Durbin-Watson is 0.848. The result of Durbin-Watson statistics test shows that the value is between -2 to 2 (-2 < DW < 2). The conclusion for
autocorrelation test is the regression model has no existence of autocorrelation.

4.2.2. Coefficient of Determination

Coefficient of determination (R-square) measures the model of regression is capability to explain the variance of independent variable to dependent variable. It is used to measure the data’s accuracy in predicting future outcomes. The value of coefficient of determination (R-square) is range from 0 to 1. The bigger the coefficient determination, the bigger capability to independent variable to explain the variance of dependent variable, thus the closer coefficient correlation to 1, the independent variable is more accurate to give more information to predict the variance of dependent variable. Table 4.8 shows the coefficient of determination.

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>1</td>
<td>.923</td>
</tr>
</tbody>
</table>

Table 4.8 Model Summary (Adjusted R Square)

From the table 4.8 shows the result of the coefficient of determination of this data. The result for coefficient of determination is 0.923 or 92.3%; it indicates that the data is very reliable and almost accurate to
predict the dependent variable. Still there is a 0.077 or 7.7% of variance dependent variable that cannot be explained by the independent variable in this research model.

4.2.3 F-Test

F statistical test basically shows whether there is significant influence of all the independent variables toward dependent variable. In this research, researcher will be use the F-test in order to determine whether the Jakarta Composite Index is influenced by oil price and gold price.

Table 4.9 shows the result of F-test.

**Table 4.9 F-Test**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2.06E7</td>
<td>2</td>
<td>1.332E7</td>
<td>246.495</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>2107350.616</td>
<td>39</td>
<td>54034.631</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.675E7</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Gold Price, Oil Price
b. Dependent Variable: Jakarta Composite Index

Table 4.9 show the value of F count is 246.495, however the number of F table is 234.17025, then the result is reject Ho, because F count > F table. The value of significance of F-test is 0.000a, it means the research accepts Ha and rejects Ho. It indicates that the oil price and gold price together significantly influence Jakarta Composite Index price collectively.
4.2.4 T-Test

T statistical test basically shows whether each or individual of independent variables have an influence on the dependent variable. In this research, researcher will use the T-test in order to determine whether the Jakarta Composite Index price is influenced by oil price and gold price and each of independent variable will be tested individually.

Table 4.10 shows the result of T-test in SPSS.

Table 4.10 T-Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td></td>
<td>-823.698</td>
<td>180.842</td>
<td></td>
<td>-4.555</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Oil Price</td>
<td></td>
<td>24.929</td>
<td>3.831</td>
<td>.509</td>
<td>6.508</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Gold Price</td>
<td></td>
<td>1.443</td>
<td>.227</td>
<td>.497</td>
<td>6.346</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Jakarta Composite Index

Based on the Table 4.10, the equation of the regression as follows:

\[ JCI = -823.698 + 24.929 \text{(OP)} + 1.443 \text{(GP)} \]

\[ JCI = \text{Jakarta Composite Index} \]

\[ \text{OP} = \text{Oil Price} \]

\[ \text{GP} = \text{Gold Price} \]

The proceeding regression model might be interpreted as follows:
1. Constant

T count for constant is -4.555, from the T table with total data is 39 and level of significant is 0.05, then the value of T table is 1.6859 (from T table), then the result is accept Ho, because T count < T table.

For the level of significant, the value from SPSS is 0.000, then the result is reject Ho, because level of significant < 0.05.

The coefficient value of constant in this regression is -823.698; it means that the value of Jakarta Composite Index if the value of oil price and gold price is zero

2. Oil Price

T count for oil price is 6.508, from the T table with total data is 39 and level of significant is 0.05, then the value of T table is 1.6859 (from T table), then the result is reject Ho, because T count > T table.

For the level of significant, the value from SPSS is 0.000, then the result is reject Ho, because level of significant < 0.05.

The result is there is significant relationship of oil price towards Jakarta Composite Index.

The coefficient value of oil price in this regression is +24.929; it means that if there is increasing 1 dollar per barrel in the oil price, it will cause the increasing 24.929 point in the Jakarta Composite Index price.
3. Gold Price

T count for gold price is 6.346, from the T table with total data is 39 and level of significant is 0.05, then the value of T table is 1.6859 (from T table), then the result is reject Ho, because T count > T table.

For the level of significant, the value from SPSS is 0.000, then the result is reject Ho, because level of significant < 0.05.

The result is there is significant relationship of gold price towards Jakarta Composite Index.

The coefficient value of gold price in this regression is +1.443; it means that if there is increasing 1 troy ounce in the gold price, it will cause the increasing 1.443 point in the Jakarta Composite Index price.

4.3 Analysis

Based on the statistic result, the independent variable (oil price and gold price) significantly influence the dependent variable (Jakarta Composite Index). The analysis of those result can be followed below:

4.3.1 Jakarta Composite Index

Jakarta Composite Index is influenced by many factors, which are agriculture sector, mining sector, basic industry and chemical sector, miscellaneous industry sector, property sector, consumer goods industry sector, infrastructure sector, finance sector, and trade sector. The biggest capitalization in the Jakarta Composite Index is in mining
sector, which about 13.9% in a stock (www.idx.co.id), and about 39.7% of trading stock in Bursa Efek Indonesia (BEI). The increase and decrease price of Jakarta Composite Index also caused of state of the economy (inflation, interest rates, etc.), the amount of demand and supply stock, the political situation, and various other factors (Sunariyah in Witjaksono, 2010 p.94). The price of Jakarta Composite Index taken by the researcher in this research from period 2009 - 2012 has increased from year to year, so there are no factors in period 2009 – 2012 that make the price of Jakarta Composite Index goes down.

4.3.2 The Influence of Oil Price towards Jakarta Composite Index

World oil price has a positive effect on the price of Jakarta Composite Index. If oil prices go up, it will be a positive influence or a rise in the price of Jakarta Composite Index. This is because the research conducted from the period 2009 - 2012 world oil demand increased compared to supply. World economic growth continues to increase each year, therefore oil demand of the entire country would have climbed as well. Economic growth in Indonesia than in 2009 - 2012 increased from 4.5% to 6.4%, economic growth will certainly affect the rate of increase of Jakarta Composite Index. Jakarta Composite Index is highly dominated by the mining sector, which about 13.9% in the stock (www.idx.co.id). So, if there is an increase or decrease in price of the mining, it will directly affect the price of Jakarta Composite Index. So, if oil prices go up, then there will be a positive movement of companies engaged in the mining industry. Positive movement will make the price of Jakarta Composite Index motivated to ride well. And conversely, if the oil price goes down, it will
negatively impact to the stock, because if oil prices go down, it will directly make the industry engaged in the mining sector experienced a decline in income.

The investors will assess the performance of the company is not good because there is a decrease in the income of their industry, and lead investors to sell shares of the company which would then make the price of Jakarta Composite Index being down. The results of this study support the research conducted by Bernd Hayo and Ali M. Kutan from The William Davidson Institute at The University of Michigan Business School, which entitled, “The Impact of News, Oil Prices, and Global Market Developments on Russian Financial Markets”, and the result that the oil price movements may significantly destabilize stock market.

4.3.3 The Influence of Gold Price Towards Jakarta Composite Index

The price of gold in this study has a positive influence on the Jakarta Composite Index. This is in contrast with the existing theory; the gold price has a negative effect on a country's stock index. This means that in this study the price of gold has not been able to show strong evidence that the gold price has a negative effect on Jakarta Composite Index. In this research, the gold price has a positive impact to the Jakarta Composite Index, this is because the observation in Indonesia, period of the year 2009 - 2012, the income level of Indonesian society in general, and specifically for per capita income is increase from 4.5% - 6.4% per year (www.ekon.go.id). This means that the level of economic prosperity society Indonesia is increase
from year to year. So people would change their investment to the portfolio that has a low risk, which is gold as one of example.

Gold is often used as a form of savings, because the relative value is always rising (Syafputri, 2012, p. 16). People will change their investment portfolio to the gold, because of that, the demand of gold increase highly so it will impact to the price of gold increase from year to year. The results of this study support the research conducted by Ardian Agung Witjaksono from Diponegoro University, Semarang, which entitled, “Analisis Pengaruh Tingkat Suku Bunga SBI, Harga Minyak Dunia, Harga Emas Dunia, Kurs Rupiah, Indeks Nikkei 225, dan Indeks Dow Jones terhadap IHSG”, and the result that changes in the price of gold would have a positive influence on Jakarta Composite Index.
CHAPTER V
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Based on the findings through statistic test done, it can be shown that:

1. The price of oil has a significant relationship towards the Jakarta Composite Index price. If the oil price goes up, then the price of Jakarta Composite Index goes up, but if the oil price goes down, then the price of Jakarta Composite Index also goes down.

2. The price of gold has a positive impact to the Jakarta Composite Index. This means the study of gold price has not been able to show the strong evidence to have a negative impact towards Jakarta Composite Index as stated on the existing theory.

So the conclusions for this study are:

a. For the oil price is supported by the existing theory, which is has a positive influence towards Jakarta Composite Index.

b. For the gold price is not supported by the existing theory, which is has a positive influence towards Jakarta Composite Index, this is happen because, in the period of January 2009 – June 2012, the income level of Indonesian economy is increasing in general, so people would change the investment portfolio that has a low risk, which is investing in gold.
5.2 Recommendation

The recommendation that the researcher can give through this research:

1. Through investing, the investors should consider that the oil price has a positive influence towards Jakarta Composite Index, and the price of gold could not have strong evidence towards the Jakarta Composite Index. So investors should consider other variables that can affect the Jakarta Composite Index, like interest rate of Bank Indonesia, Dow Jones index, US dollar exchange rate, etc.

2. To next study the researchers expected to see other factors besides oil and gold which can affect the Jakarta Composite Index, and because there are many variables that affect the Jakarta Composite Index. Other factors can be used as an analysis more powerful and accurate, such as inflation, exchange rates, and interest rate that has a monthly data.

3. Also within the next period, the next researcher can be found the different result in the study research, because of during the period of the study; it can be happen much kind of factors that influence the independent variable, so it can be probably has a different impact to the dependent variable.
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Data of Gold Price


Data of Jakarta Composite Index

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Data of Oil Price