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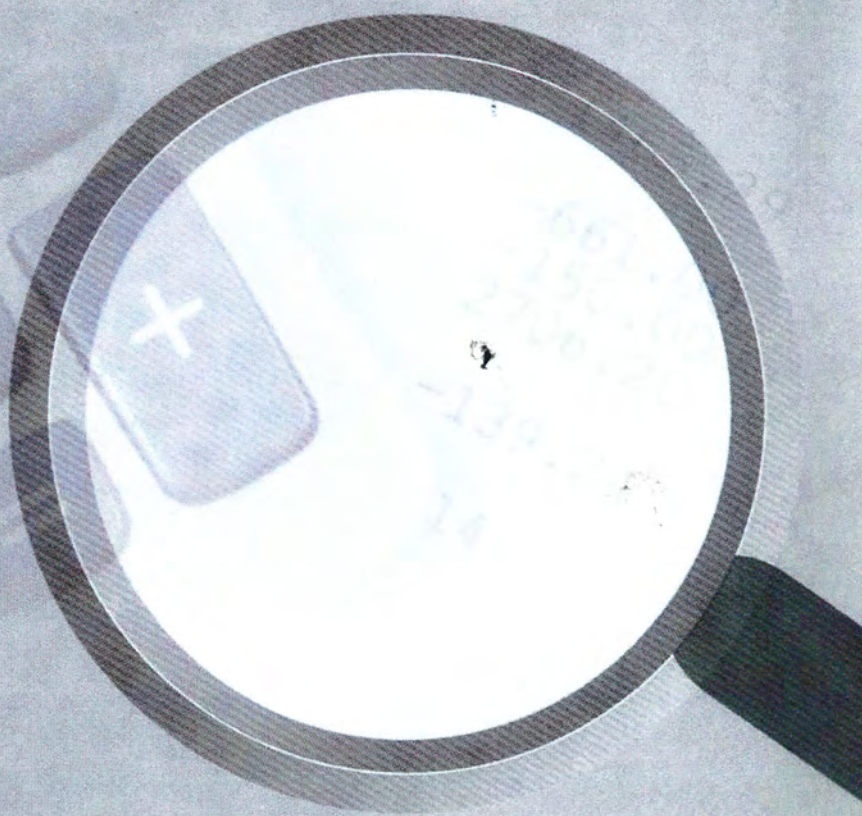

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The Changes in World Oil Prices, Monetary Factors, and Foreign Index Toward Composite Index Movement: Indonesian Case for the Period of 2005-2011

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Capital market is one of the drivers of the economy through the formation of capital investor excess as well as an indicator of a country's economy. Movement of stock price index is often influenced by many factors, derived from the company's performance, monetary factor, and changes in world oil prices. This study highlights the problem in world oil prices due to political turmoil in the Middle East. The samples are taken from the Jakarta Composite Stock Price Index (JCI), oil prices, Indonesian inflation rate, Certificate of Bank Indonesia's (CBI) rate, and the reserve assets, during the period from January 2005 to December 2011 (84 months). Using the data published by the Bank of Indonesia, reports of the Central Bureau of Statistics (Biro Pusat Statistik, BPS), and other relevant sources, the data analyzed through the Eviews 7.1. The main objective of this study is to examine the effect of oil prices, foreign stock price index, and monetary variables (inflation rate, CBI rate, country's foreign reserves, and others) toward the JCI analyzed through the error correction model (ECM). Hypothesis testing with the *F*-test for the 95% confidence level indicates that the oil price, exchange rate (Indonesian Rupiah (IDR)/United States Dollar (USD)), CBI rate, foreign exchange reserves, the Dow Jones Index, and the Taiwan stock index, both simultaneously as well as partially have a significant influence on the JCI.

Keywords: Jakarta Composite Stock Price Index (JCI), world oil prices, country's foreign reserves, Indonesian Rupiah (IDR), foreign stock prices

Introduction

Capital market is one of the drivers of the economy through the mediation of the capital formation from the excess funds parties, with the hope of increasing community participation in order to support the national financing development. Capital market is also an element that can provide an overview and assessment of the companies' condition that listed in the stock market, and it is also an indicator of a country's economy as well. The rise (bullish) or fall (bearish) of capital markets can be seen from the rise and fall of stock prices reflected through movement of the Jakarta Composite Stock Price Index (JCI). Indonesian JCI is the value used to measure the combined performance of all stocks listed on the Indonesia Stock Exchange (IDX).

Empirical study that highlights the changes in stock price index of a country is often associated with political upheavals in the Middle East, which have an impact on world oil supplies. These conditions threaten

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the birth of the economic depression if not properly anticipated from the increased or decreased supply and demand for petroleum. The threat of recession will be a reality soaring from oil prices, as happened in the years of 1974-1975 impacting from the Arab-Israeli war, followed by the Organization of Petroleum Exporting Countries (OPEC) oil embargo. The events of 1990-1991, when Iraq invaded Kuwait, triggered the Gulf War, which pushed oil prices to move higher. The controversy over the influence of oil prices tends to disrupt a country's economic situation in general and monetary situation in particular. This incident prompted the central bank to revise its interest rate, which in turn would weaken economic growth rate of countries around the world.

The direct impact of oil price changes triggers changes in operating costs, so that the profit rate of investment activities will be corrected. The increase in fuel prices has not only increased the burden of the society in general but also of the business world in particular. The increase in production cost items will usually have an impact on increasing the overall cost and influence directly the rising cost of production, which in turn will raise the sale price of the products. Multiple effects of fuel price hike triggered increasing factory overhead costs due to rising raw material costs, freight costs, and employee demands for wage increases, which ultimately prompted the company's profit to be vanishingly small.

On the other hand, the rising prices of fuel oil will incriminate burden of the public life, because it contributes to the decline of the society's purchasing power. Weaker purchasing power provides excess in all the companies' production and linearly will decrease the sales and companies' profits.

The reciprocal relationship between the rising production costs and weaker purchasing power will then weaken the economy wheel as a whole, as well as both short- and long-term investment climates. The rise in fuel prices in the short term will encourage the money market actors to raise interest rates through tight monetary policy. The impacts of these policies not only slow down investment interest but also inhibit the reduction of the unemployment rate.

The liquidity theory on interest explains that interest, as the price of money, is determined by the demand for money. Thus, if the availability of money supply is relatively low, there will be a liquidity problem, which in turn causes the stagnancy of the economic growth. Bad debts in the United States (US) in 2008 due to policy of rising mortgage interest rates from 1% to 5% for subprime mortgages, made a lot of customers unable to pay their credit. From these facts, it is clear that one of the causes of the global economic crisis is triggered by the high interest rate.

Those have a systemic impact on the economic development in Indonesia. It is demonstrated by recent weakening of business activities, delisting of several public companies in Indonesia. The weakening of corporate liquidity and weaker purchasing power then drive the companies to financial distress.

The global financial crisis in mid-year 2008 has dragged JCI fall by 50% within a relatively short period (one year) (Pasaribu, Wilson, & Manurung, 2009). The crisis that originated in the US has undermined the economy in continental Europe, Asia, and other developing countries. The JCI fell from 2,721.25 points in February 2008 to 1,241.54 in November 2008.

The decline of JCI from September to October amounted to 31.4%, leading the management of the stock exchange decided to suspend the trading from 10/8/2008 up to 10/10/2008. The IDX estimates this condition as "irregularities", because the number of shares traded on the date of 10/8/2008 was not significant. JCI recorded a worst decrease compared with other world capital markets. The stock index Hang Seng decreased by 5.44%, Nikkei 4.54%, Straits Times Index (STI) 3.84%, the Taiwan Stock Exchange Corporation (TSEC) Weighted

Index (TWII) 4.34%, and Dow Jones decreased by 5.11%. The investors had not invested, since JP Morgan Chase advised investors to avoid Indonesia debt securities. While the default and suspension of Danatama and the six firms of Bakrie Group add to a barrage of negative sentiment in the equity markets in Indonesia.

JCI may become a "leading economic indicator" to every country. The movements of the indexes are influenced by the investors' expectations over the country and global fundamental condition. Many theories and previous researches revealed that the movement of JCI is influenced by several factors which come from abroad and arise from the domestic condition (domestic monetary factors). The influence of foreign factors on JCI is one of the implications of globalization and the growing integration of capital markets around the world. The economic crisis, resulting in the fall of the US stock prices in the year 2008, affects the Asia stock market, including Indonesia, while the influence of domestic monetary factors on stock index derived from domestic events, such as the rational expectations of investors, the movement of macroeconomic variables, political events (towards Indonesian 2009 general election) and the security of a state, and the removal of fuel oil subsidies.

Naifar and Al Dohaiman (2013) concluded that the inflation rates do not have a significant effect on stock market returns, while deposit rates and world oil prices have a significant effect on stock market returns. Nugroho (2008) concluded that the interest rate, money supply, and the exchange rate affect the LQ45 index, while the inflation rate does not affect the LQ45 index. Jatiningsih and Musdholifah (2007) concluded that the inflation rates, deposit rates, exchange rates, and money supply together have a significant effect on the JCI.

Pasaribu et al. (2009) concluded that the inflation rate, Certificate of Bank Indonesia's (CBI) rate, and exchange rate (Indonesian Rupiah (IDR)/United States Dollar (USD)) have no effect on the movement of stock prices, while foreign factors (Dow Jones, Hang Seng, fed rate, and oil prices) and information flow of capital (foreign exchange reserves, the current account, and net foreign buying) have a significant influence on the movement of JCI.

Mauliono (2009) concluded that foreign factors (Dow Jones Index, Hang Seng, Kuala Lumpur Stock Exchange (KLSE), and crude oil prices) and domestic factors (CBI rate and inflation) affect the JCI.

Zhang and Chen (2011) concluded that world oil prices have a positive effect on China's stock returns, but the effect is minor. Prior to the financial crisis, stock returns are slightly (negatively) affected by oil prices and by the USD/Euro (Mollick & Assefa, 2013).

Moreover, the uniqueness of the Indonesian stock market (BEI) is that the Jakarta Composite Indexes movements are influenced by the foreign investors, since the foreign stock investors have bigger funds so that they can dictate the movements of the stock prices and the composite indexes as well (Frensidy, 2009).

The question is whether the rise in fuel oil affects stock index movements?

(1) Does the world oil price change affect the foreign exchange reserves, inflation, CBI, and currency rate (IDR/USD)?

(2) Is there any impact of changes in foreign exchange reserves, inflation rates, CBI, and the exchange rate of USD on the JCI?

(3) How big is the effect of foreign exchange reserves and inflation on the JCI?

(4) How big is the influence of CBI and USD exchange rate on changes in the JCI?

(5) To which extent the oil price changes, foreign stock indexes, foreign exchange reserves, inflation, CBI, and USD exchange rate influence the movement of the JCI?

(6) Of the seven independent variables, which variable has the most dominant influence on the JCI?

Research Objectives

The research objectives of this study are as follows:

(1) To examine if the world oil price has an impact on the inflation rate, CBI, and USD exchange rate;

(2) To explore whether there is a reciprocal relationship among the foreign exchange reserves, inflation rates, CBI, and USD exchange rate;

(3) To examine whether changes in foreign exchange reserves, stock index, and foreign exchange rate have an impact on the JCI;

(4) To explore the impact of exchange rate changes on the JCI;

(5) To determine the variable that has the most dominant influence on the JCI.

Relevant Researches

On the free trade era, countries focus on the role of the stock market due to a strategic role in strengthening economic resilience. Since the liberalization of the market, the occurrence of capital flight is not only due to the falling value of the currency and inflation in the country, but rather due to the unavailability of profitable investments, so that profitable portfolio of the stocks of other countries is the alternative. Indeed, realizing that Indonesian capital market is an emerging market, the development is very susceptible to changes in macroeconomic conditions. The economic crisis of late 1997 was the beginning of the collapse of the pillars of the national economy, characterized by the decline in public confidence in the banking, the impact on the depreciation of the rupiah against the USD and led to the collapse of the JCI on Indonesia capital market.

JCI as a reflection of the generally capital market activities and the price of all stocks listed on the IDX reflects the country's economy and foreign investors' activities providing liquidity.

Volatility of the stock price on the stock exchange is influenced by many factors. Findings from a number of empirical researches show that the public company's stock prices are directly related to the macro economy, including exchange rates and interest rates. Many examiners in the literatures examined the relationship between exchange rates and stock market reaction.

Fills, Degiannakis, and Floros (2011) found that although time-varying correlation does not differ for oil-importing and oil-exporting economies, the correlation increases positively (negatively) in respond to important aggregate demand-side (precautionary demand) oil price shocks which are caused due to global business cycle's fluctuations or world turmoil (i.e., wars). Supply-side oil price shocks do not influence the relationship of the two markets. The lagged correlation results show that oil prices exercise a negative effect on all stock markets, regardless the origin of the oil price shock. The only exception is the 2008 global financial crisis where the lagged oil prices exhibit a positive correlation with stock markets. Finally, the authors conclude that in periods of significant economic turmoil, the oil market is not a "safe haven" for offering protection against stock market losses. Lin (2012) concluded that the co-movement between exchange rates and stock prices becomes stronger during crisis periods, consistent with contagion or spillover between asset prices, when compared with tranquil periods. Furthermore, most of the spillovers during crisis periods can be attributed to the channel running from stock price shocks to the exchange rate, suggesting that governments should stimulate economic growth and stock markets to attract capital inflow, thereby preventing a currency crisis. However, the industry causality analysis shows that the co-movement is not stronger for export-oriented industries in all periods, such as industrials and technology industries, thus implying that co-movement between exchange rates

and stock prices in the Asian emerging markets is generally driven by capital account balance rather than that of trade. Suryadi (2006) found that the oil price rose from $25/barrel to $35/barrel in 1999, leading to the global economic downturn in years of 2000-2001. These high prices have led to persistence of high levels of unemployment and pose budget deficit problems in many countries, especially in countries whose economies are more dependent on oil imports and the energy dense.

The rise in oil prices resulted in the transfer of income from oil-importing countries to oil-exporting countries through a shift in "terms of trade". The magnitude of the direct impact through this channel depends upon: (1) the cost of oil in the national income; (2) the degree of dependence on imported oil; and (3) the ability of end-users to reduce their consumption and switching from oil to other energy sources.

The higher the oil price increase and the longer the high prices were maintained, the bigger the impact on macroeconomic. For net-exporting countries, oil price increases can directly raise the real national income through export earnings, even the part of this gain is reduced because of the recession in trading partners, which decreases the amount of export. The impact of adjustment on income will directly increase because of real wage rigidity, the price, and the structure of the economy.

High oil prices will lead to the increase of expenditures for oil demand, so that expenditures for other goods/services will be reduced. If the rise in oil prices is channeled to the price of products produced, there will be inflationary pressures. Effect on domestic prices and inflation will increase input costs. Inflation will also lower the demand for non-oil goods and reduce investment in net oil importing country. Normally, the government policy responds to inflation by raising interest rates or monetary tightening.

The relationship among the domestic monetary factors, the foreign stocks price indexes, and JCI is described as follows:

(1) Royfaizal, Lee, and Mohamed (2007) investigated the influence of the US stock market on the markets in the Association of Southeast Asian Nations (ASEAN) at -5 +3 (Malaysia, the Philippines, Indonesia, Thailand, Singapore, Japan, Korea, and China) from January 1, 1990 to May 31, 2007. The result was that the US stock price market influenced the market in ASEAN at -5 +3 at the time before and during a crisis;

(2) Doğrul and Soytas (2010) found that the real price of oil and interest rate improve the forecasts of unemployment in the long run. This finding supports the hypothesis that labor is a substitute factor of production for capital and energy;

(3) Endri (2009) concluded that the inflation rates, deposit rates, exchange rates, and money supply simultaneously had a significant impact on the return of JCI in the period of January 2003-October 2008;

(4) Mansur (2009) had examined the influence of global stock index toward the JCI in the years of 2000-2002. Results found that global stock indices together give a significant effect on the JCI. But on an individual basis, only Korea Composite Stock Price Index (KOSPI), Nikkei 225, Australian Stock Exchange (ASX), and TWII affected the JCI;

(5) Mauliono (2009) concluded that, overall, during the period from January 2004 to May 2009, external factors, represented by the Dow Jones Index, KOSPI, Hang Seng, KLSE, and the oil price, were more dominant in influencing the movement of the JCI by 93.84%, while the internal factors by only 6.12%;

(6) Frensidy (2009) conducted a study about the analysis of the influence of foreign buy-sell, exchange, and the Hang Seng index toward the JCI with Garch models in the period from January 2006 to October 2007. The results obtained that the net flow of foreign funds, the exchange rate (USD), and the Hang Seng index significantly affected the JCI.

Framework of Thinking

The framework of thinking will be presented in Figure 1. Figure 1 shows the influence of domestic monetary factors (inflation, exchange rate IDR/USD, CBI, and foreign exchange reserves) and foreign factors (Dow Jones Index, TWII, and crude oil prices) on the JCI monthly on the stock exchange for the period from January 2005 to December 2011.

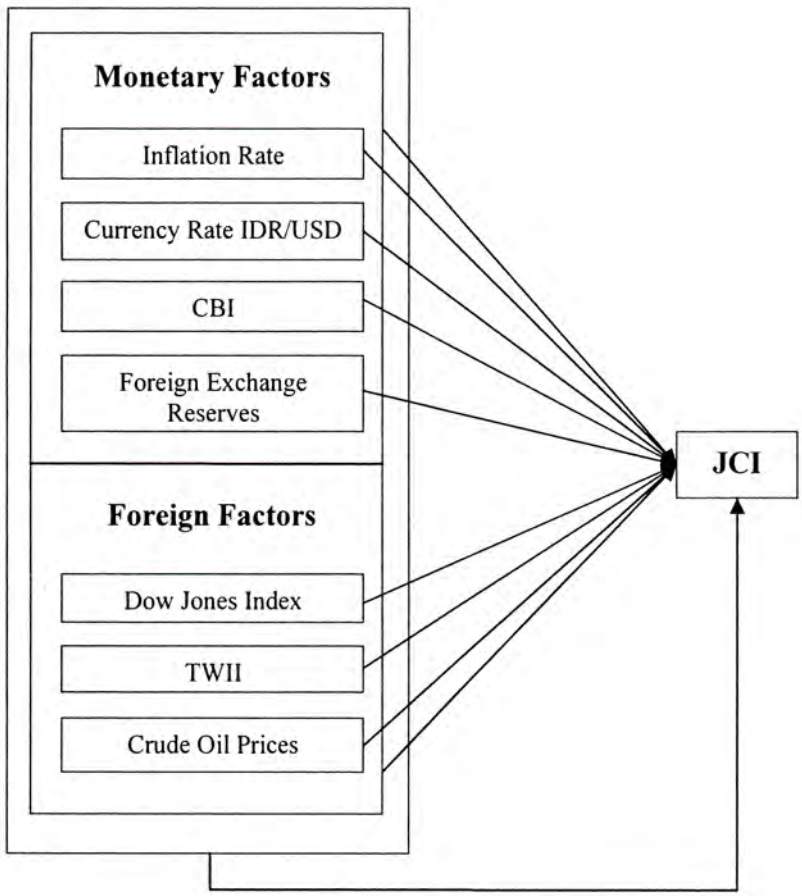

Figure 1. Framework of thinking.

Hypotheses

The authors design the following hypotheses:

H_1: Inflation rate partially and simultaneously affects the JCI.

H_2: Currency IDR/USD partially and simultaneously affects the JCI.

H_3: CBI partially and simultaneously affects the JCI.

H_4: Foreign exchange reserves partially and simultaneously affect the JCI.

H_5: The Dow Jones Index partially and simultaneously affects the JCI.

H_6: TWII partially and simultaneously affects the JCI.

H_7: The crude oil price partially and simultaneously affects the JCI.

H_8: Monetary factors and foreign factors simultaneously affect the JCI.

Analysis Method

The multiple-linear regression as the analytical method for estimating the research model is used to determine the effect of the independent variables: crude oil prices, inflation rate, CBI, foreign exchange reserves, and the currency IDR/USD on the JCI for the period from January 2005 to December 2011, using error correction model (ECM):

$$D\ln JCI_t = \delta_t + \delta_1 D\ln COP_t + \delta_2 D\ln FOREX_t + \delta_3 D\ln IDR_{1t} + \delta_4 D\ln INF_t$$
$$+\delta_5 D\ln CBI_t + \delta_6 D\ln DJI_t + \delta_7 D\ln TWII_t + \delta_8 \ln COP_{t-1}$$
$$+\delta_9 \ln FOREX_{t-1} + \delta_{10} \ln IDR_{t-1} + ... + \delta_{15} ECT$$

where:

JCI = Jakarta Composite Index;

COP = Crude oil price;

FOREX = Foreign exchange reserves;

IDR = Rupiahs/USD;

INF = Inflation rate;

CBI = Certificate of Bank Indonesia;

DJI = Dow Jones Index;

TWII = Taiwan Composite Index.

Table 1

Test With ECM

Variable	Coefficient	Std. error	*t*-statistic	Prob.
DCOP	0.173091	0.036029	4.804178	0.0000
DFOREX	0.714358	0.029047	24.59317	0.0000
DIDR	0.374557	0.142625	2.626169	0.0105
DINF	0.002729	0.005803	0.470215	0.6396
DCBI	-0.458568	0.058585	-7.827407	0.0000
DDJI	0.432261	0.090773	4.762006	0.0000
DTWII	0.388551	0.075388	5.153998	0.0000
RESID01	0.741328	0.081576	9.087569	0.0000
Constant	-11.50903	1.959839	-5.872435	0.0000
R-squared	0.986022	Mean dependent var.		7.636579
Adjusted *R*-squared	0.984468	S.D. dependent var.		0.414900
S.E. of regression	0.051707	Akaike information criterion		-2.981996
Sum squared resid.	0.192502	Schwarz criterion		-2.715946
Log likelihood	129.7709	Hannan-Quinn criter.		-2.875254
F-statistic	634.8491	Durbin-Watson stat.		1.642647
Prob. (*F*-statistic)	0.000000			

Notes. Dependent variable: *DJCI*; Method: Least squares; Date: 02/20/12; Time: 20:49; Sample (adjusted): 2005M04/2011M12; Included observations: 81 after adjustments.

Tests are conducted with ECM model between the dependent variable and independent variables in first difference, coupled with the "ECM" in the lag period one.

Table 1 estimates the dynamic model ECM and obtains the regression function as follows:

$$\Delta JCI = -11.509 + 0.1731\Delta COP + 0.7144\Delta FOREX + 0.3746\Delta IDR + 0.0027\Delta DINF$$
$$-0.4586\Delta CBI + 0.4323\Delta DJI + 0.3886\Delta TWII + 0.7413u - 1$$

Using ECM estimation, the dynamic model shows that the coefficient on the variable error correction term (*RESID01*) is significant at the level of 1%. The ECM model can be used in estimating the factors that affect stock index during the study period.

The value of adjustment coefficient is 0.7413, which is about 74.13% discrepancy between the actual stock indexes. To find out whether the estimate is reliable, further tests will be done in the form of econometric tests. The test is intended to determine whether the interpretation of the parameters is theoretically meaningful and statistically significant.

Table 2

Heteroskedasticity Test: Breusch-Pagan-Godfrey

Variable	Coefficient	Std. error	*t*-statistic	Prob.
Constant	0.066254	0.138919	0.476924	0.6349
DCOP	0.003592	0.002554	1.406498	0.1639
DFOREX	-0.003475	0.002059	-1.687717	0.0958
DIDR	0.000112	0.010110	0.011106	0.9912
DINF		0.000411	-0.171003	0.8647
DCBI	0.001674	0.004153	0.403125	0.6881
DDJI	-0.013813	0.006434	-2.146836	0.0352
DTWII	0.009610	0.005344	1.798387	0.0763
RESID01	-0.002742	0.005782	-0.474246	0.6368
R-squared	0.119260	Mean dependent var.		0.002377
Adjusted *R*-squared	0.021400	S.D. dependent var.		0.003705
S.E. of regression	0.003665	Akaike information criterion		-8.275454
Sum squared resid.	0.000967	Schwarz criterion		-8.009405
Log likelihood	344.1559	Hannan-Quinn criter.		-8.168712
F-statistic	1.218678	Durbin-Watson stat.		1.727553
Prob. *F* (8.72)	0.300637			
Obs.**R*-squared	9.660050	Prob. Chi-square (8)	0.2897	
Scaled explained SS	9.160638	Prob. Chi-square (8)	0.3289	

Notes. Dependent variable: *RESID*^2; Method: Least squares; Date: 02/20/12; Time: 20:58; Sample (adjusted): 2005M04/2011M12; Included observations: 81 after adjustments.

The coefficient of determination (*R*-squared) shown in Table 2 is 0.119260. Chi-squares are calculated with the value of 9.660050 obtained from the information Obs.**R*-squared, while the critical value of Chi-squares (χ^2) at α = 5% with *df* = 80 is 31.4104. The calculated value of Chi-squares (χ^2) is less than the critical value of Chi-squares (χ^2), indicating that there is no problem with heteroscedasticity. The model containing heteroscedasticity can also be seen from the probability of Chi-squares of 0.2897 greater than the value of α of 0.05. The null hypothesis could be accepted or the data do not contain heteroscedasticity.

Table 3 shows that the value of the coefficient of determination (*R*-squared) is 0.052763. Calculated χ^2 value of 4.273816 is obtained from the Obs.**R*-squared, while the critical value of Chi-squares (χ^2) at α = 5% with *df* = 80 is 15.5073. The calculated χ^2 value is less than the critical χ^2 or H_0 is accepted, the model contains no autocorrelation problem. The probability of Chi-squares is 0.1180 at lags 2; thus, the null hypothesis is

accepted, since the significance level α is 11.80%, greater than 5%. This analysis indicates that the above model does not contain autocorrelation.

Table 3

Breusch-Godfrey Serial Correlation Lagrange Multiplier (LM) Test

F-statistic	1.949577	Prob. *F* (2.70)		0.1500
Obs.**R*-squared	4.273816	Prob. Chi-square (2)		0.1180
Variable	Coefficient	Std. error	*t*-statistic	Prob.
DCOP	-0.001789	0.035595	-0.050259	0.9601
DFOREX	0.000809	0.028689	0.028192	0.9776
DIDR	0.030616	0.141954	0.215674	0.8299
DINF	-0.000967	0.005819	-0.166211	0.8685
DCBI	0.004730	0.058019	0.081522	0.9353
DDJI	0.006191	0.089765	0.068972	0.9452
DTWII	0.008281	0.074789	0.110718	0.9122
RESID01	-0.172897	0.133965	-1.290613	0.2011
Constant	-0.415482	1.948983	-0.213179	0.8318
RESID (-1)	0.326634	0.165797	1.970083	0.0528
RESID (-2)	0.078413	0.152793	0.513200	0.6094
R-squared	0.052763	Mean dependent var.		2.63E-15
Adjusted *R*-squared	-0.082556	S.D. dependent var.		0.049054
S.E. of regression	0.051039	Akaike info criterion		-2.986820
Sum squared resid.	0.182345	Schwarz criterion		-2.661648
Log likelihood	131.9662	Hannan-Quinn criter.		-2.856356
F-statistic	0.389915	Durbin-Watson stat.		1.943441
Prob. (*F*-statistic)	0.947015			

Notes. Dependent variable: *RESID*; Method: Least squares; Date: 02/20/12; Time: 20:57; Sample (adjusted): 2005M04/2011M12; Included observations: 81 after adjustments; Pre-sample missing value lagged residuals set to zero.

Conclusions

When investing, an investor should not only consider one type of stocks, but they should also consider other types of stocks and market conditions at that time. Since systematic risks include risks arising from economic conditions or the risk of macroeconomic effects and the macroeconomic factors influenced by domestic monetary factors, they influence stock index, consisting of inflation, exchange rate USD, the CBI rate, and foreign exchange reserves. The study also analyzed the effect of overseas stock, like Dow Jones, TWII, and crude oil prices against the JCI.

Partially, inflation does not affect the JCI. This is consistent with of Jatiningsih and Musdholifah (2007) who concluded that inflation partially gives effect to the Company Service Price Index (CSPI). His finding concluded that the rate of inflation, deposit rates, and exchange rates partially and simultaneously affect the JCI. The findings of Suryadi (2006) are also consistent with the findings of Naifar and Al Dohaiman (2013) and Pasaribu et al. (2009) who concluded that the domestic monetary factor, foreign exchange, exchange rate USD partially and simultaneously affect the JCI. While inflation does not affect the JCI, because speculators who transact in the stock market do not pay attention to the level of inflation. There are limitations to obtaining information about Consumer Price Index (CPI) that is calculated by the Central Bureau of Statistics's (Biro Pusat Statistik, BPS) existence-engineered inflation data (suppressed inflation), and CPI only counts the price

of goods purchased by final consumers, while the price of raw materials and intermediate goods is not included in the calculation of CPI. This is not consistent with Naifar and Al Dohaiman (2013) who stated that the dependence structure between inflation rates and crude oil prices is asymmetric and orients toward the upper side during the recent financial crisis. The inflation will raise the production cost, which will lead to declining corporate profits and smaller dividends and will have an impact on the stock price performance.

Instead, Zhang and Chen (2011) concluded that world oil prices have a positive effect on stock returns, but the effect is minor. This is not consistent with the previous studies. The increase in oil prices will inhibit the rate of economic expansion, but the fact that inflation is limited will strengthen economic resilience if the growth process is quite stable. In the study period, Indonesian economy is good and stable so that the oil price does not affect the JCI. Consistent with Manurung (2008), there is an influence of commodity prices on the JCI. The JCI movement is much encouraged by the capitalization of the mining stock traded, while the mining stock is associated to the oil price. So, the rise in world oil prices will push up the price of the companies' stock and in turn would push up the JCI.

Partially, the exchange rate USD/IDR affects the JCI. This is consistent with Pasaribu et al. (2009). The exchange rate is affected by the demand for money. This approach emphasizes the positive relationship between the stock prices and the exchange rate. The fluctuations in stock prices will influence the exchange rate fluctuations. The increase of the stock price would reduce the demand as well as demand for money, and this will make the interest rates to fall. The decline of the rupiah against the dollar currency will impact the rising costs of imported raw materials and equipment needed, making the companies' production costs greater. The weakening of the rupiah against the USD has a negative effect on the national economy, which ultimately degrades the performance of stocks in the market capital. This is consistent with Mansur (2009), the exchange rate USD has a negative influence on the JCI by 51.55%, if the depreciation of the rupee against the USD tends to weaken the stock index and the vice versa. This is consistent with the traditional approach stating that exchange rate movements will affect the international competitiveness and the balance of payments. This influence will ultimately impact the company's cash flow and share price. Investments in foreign currency can provide benefits to investors because of the rising exchange rates. When rupiah depreciates, the investors will tend to shift their investments into foreign currency, and this then affect the capital market activity and will impact the JCI.

CBI rate partially and negatively affects the JCI, indicating that the declines in CBI interest rates will push up the stock index. During the study period, Indonesia's economic growth cannot be separated from policies that encourage the CBI rate cuts at regular intervals to boost lending by commercial banks. Investors who will invest in Indonesia's capital markets should pay attention to the CBI rate, since it affects the JCI. This is consistent with Kim and Nguyen (2009) who showed that the unexpected interest rates rises have a negative effect on stock index on the IDX. The interest rate as the fund cost will increase the cost borne by the company as the interest rate increases, so that it will reduce the corporate profits. Decline in profits will decrease the corporate ability to pay dividends, and it affects company's stock price. High interest rates will trigger investors' interests in the investments that offer better returns. If the investor does sell-off action and the demand sum is little, it would decrease the JCI. Consistent with Mansur (2009), the CBI interest rate does not have a significant influence on the JCI. This happens, because in the study period, there were many alternatives to invest. The sentiment factor is derived from the political, economic, and domestic security as well as investment policy factors, for example, the national security due to the conflict in Aceh, Ambon, and Papua and

Mariot bombing. In the political area, there is a change of national leadership. In the economic area, the process of privatization restructions has an impact on JCI movements.

Foreign reserves partially or simultaneously affect the JCI. When short-term capital flows out of the country on a large scale in a short time, the stock market and money market will slump. The depletion of the amount of foreign exchange reserves will reduce investors' confidence in Indonesia's economy, which will further negatively impact the trading of shares in the capital market. This is consistent with Pasaribu et al. (2009), the factors of capital flows (foreign exchange reserves, current account, net foreign buying) have a significant effect on the JCI.

The Dow Jones Index partially affects the JCI. It can be seen that the US is one of Indonesia's main export destinations, so that the changes in the US economy, reflected in the Dow Jones, would affect the economy of Indonesia through the JCI. Due to financial crisis in the US, Indonesia's exports declined, so with the Indonesia's economy and those were reflected in the JCI. There are habits of domestic investors to make strategic use of foreign investor behavior as a reference, so that when foreign investors sell shares, domestic investors also went along to sell the shares. As a result, share prices fell dramatically. This is consistent with the finding of Ramli and Andreas (2011) that the Dow Jones Index has a significant and positive impact on the JCI.

TWII partially and simultaneously affects the JCI. The relative stability of Taiwan's capital market situation does not provide a big impact on capital markets in Indonesia, so that the behavior of the Indonesian capital market is not entirely dependent on the Taiwan stock market. This is consistent with Johan (2007), the stock market returns in Taiwan and the US often affect the JCI. Similarly, this is also consistent with Mansur (2009) that the TWII has a significant effect on the JCI. The process of globalization has allowed investors from other countries such as Taiwan to invest in Indonesia. Therefore, changes in one market will influence the stock markets of other countries. Equity investment in Indonesia is an alternative for shareholders in Taiwan. This is due to the location of the capital market in Indonesia affordable by investor interest in Taiwan.

The results of the *F*-test showed that domestic monetary factors (inflation, exchange rate of dollar, the CBI rate, and foreign exchange reserves) and the prices of foreign stocks (Dow Jones Index, the TWII, and crude oil prices) jointly affect stock index during the period from January 2005 to December 2011. This is consistent with Pasaribu et al. (2009) that the macroeconomic factor and the foreign factor influence the JCI. The movement of stock index of a country cannot be separated from the macroeconomic conditions. If the economy improved, there will be more foreign capital entry or incurred capital inflows, which will affect the stock price index. While the foreign factor is one of the implications of the liberation and the increasingly integrated form of capital markets around the world. This implied that the developed countries' stock market would affect emerging markets. The results of the *F*-test show that the restriction of domestic macroeconomic factors (inflation, exchange rate IDR/USD, CBI interest rate, and foreign exchange reserves) affects the JCI. So likewise, the foreign factors (Dow Jones Index, TWII, and crude oil prices) also affect the JCI.

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