

The impact of the Russian-Ukrainian war on the influence of world oil and world gold on the ASEAN-5 Indexes

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Abstract

In ASEAN are 5 stock markets which have often been studied in previous financial research. The five countries are Indonesia, Malaysia, Philippines, Thailand, Singapore. This research was tested based on the events of the Ukraine-Russia war because this war had the impact of not achieving world economic growth of no greater than 5%. The aim of this research is to examine changes in world oil prices and changes in world gold prices against the ASEAN-5 indexes. Research data comes from investing.com. Variable X1 is changes in world oil prices. Variable X2 is the change in world gold prices. Variable Y is the ASEAN-5 Index. The ASEAN-5 Index countries are Indonesia, the Philippines, Singapore, Malaysia, and Thailand. The data processing technique is panel data. The result is the best random effect. Changes in world oil prices and world gold prices influence changes in the ASEAN-5 Indexes.

Keyword: Return Oil, Return Gold, Return Indexes

JEL Classification : G15

Background

In ASEAN there are 5 stock markets which have often been studied in previous financial research. The five countries are Indonesia, Malaysia, the Philippines, Thailand, Singapore. Recent research has discussed the spillover effects between the 5 ASEAN countries and other countries.

Spillover effects are defined as large shocks to the stock market that increase the correlation in both markets and other markets. The next implication is that stock return volatility and its correlation consistently move together over time (Bensaïda et al., 2018); (Ahmed & Huo, 2019).

ASEAN-5 stock markets have had different spillover effects during different financial crises on world markets over time. Spillover returns and volatility increase when financial risks occur, where information transmission is confirmed during times of chaos (Kang et al., 2019).

Research data from 2007-2011 does not affect gold returns, but oil prices affect the IHSG (Hutapea, Margareth, & Tarigan, 2014). The Malaysian Index (KLCI) is negatively influenced by world gold prices during COVID-19 (Yau, Ching, Hwang & Kit, 2021). World oil prices have a positive relationship but gold prices have a negative relationship to the KLCI from 2016 to 2020 (Roosdi, Mustafa, Samsudin, & Razali, 2022). Gold prices have a weak relationship to the ASEAN-5 index during COVID-19 (Arisandhi, & Robiyanto, 2022).

The relationship between world oil prices and ASEAN-5 has a relationship that changes according to conditions. During normal periods, DCC-GARCH in the short term is stable, but during periods of fluctuating capital markets and commodity markets, DCC GARCH can change greatly from positive to negative in several ASEAN countries (Robiyanto, 2018)

In this study, we use the US-Ukraine war period. The data used to test the relationship between oil and gold price returns on the ASEAN-5 Indexes uses panel data. According to Robiyanto (2018), static research is not in accordance with this model, so the conditions created were during the US-Ukraine war period. The aim of this research is to examine the influence of world oil and world gold price returns on the ASEAN-5 Indexes.

Literature Review

Gold Price

Since 1968, the London gold market standard has been used as a price benchmark world gold. The system used is known as London Gold Fixing. The currency used in determining the price of gold is the dollar United States, British pounds sterling and Euro. In gold costs look at future costs and spot costs. Spot costs is the actual base value that changes with each item upgrade present, while the future costs stated by Sharpe,

Alexander and Bailey is "Future Price is the cost of purchasing and structured on the basis of a future agreement". The two costs complement each other or ultimately clearly related to that reason financial backers decide costs in the market by using prospect costs and vice versa assuming necessary financial backing put resources into the fate market, they usually take reference from market costs, to be more specific spot costs.

Oil Price

Crude oil or crude oil is one of those resources very vital at this time, due to processed products Crude oil is a source of energy. Crude oil can be processed into energy sources, such as Liquified Petroleum Gas (LPG), petrol, diesel, lubricating oil, fuel oil and others.

The world is measured using spot market prices world oil. World Oil Price Standard generally refers to West Texas Intermediates (WTI). WTI is high quality petroleum manufactured in Texas. Crude oil is the same as currency and gold which is wrong one indicator involved in economics world, as volatility follows economic and political events of a country. Fluctuating World Oil Prices can influence a capital market country.

JKSE

The Indonesian Stock Market (IDX/JKSE) is one of the stock markets with the best growth recently. Especially when stock markets in developed countries are stagnant due to a prolonged economic crisis. So it is very valuable to know more about the Indonesian Stock Market (IDX). As a first step, let's discuss the history of the Indonesian stock market.

The embryo of the Indonesian Stock Market started in 1912 in Batavia (now known as Jakarta). The Batavia Stock Market was formed by the Dutch colonial government. This stock

market is the fourth oldest stock market in Asia – after the Bombay, Hong Kong and Tokyo stock markets. So we can be proud if we look at historical factors.

The Dutch colonial government used the Batavia Stock Market to trade shares in Dutch companies located in Indonesia – especially plantation, mining and service companies. At that time the stock market was less developed. That's because the Batavia Stock Market is often closed due to political conditions. For example, during World War I and II. And also the profit margin was very limited at that time.

The Batavia stock market also experienced a great recession after the world war, making it very unattractive for investors. Then, not long after that, Indonesia became independent in 1945. But the Batavian stock market was still not attractive. That's because the Indonesian government is still busy defending and developing Indonesia. It is very natural for the government to forget about the stock market and focus more on the real market.

Then in 1952, the Indonesian government reopened the Batavian (or Indonesian) stock market. However, still, the government has not focused on the stock market because it is busy nationalizing Dutch and Japanese companies. At that time (1952 – 1977), the Indonesian Stock Market was in a phase of no growth and became very unattractive when compared to other stock markets.

Fortunately, in 1977, the Indonesian government relaunched the Indonesian stock market in a professional manner. This professional stock market is known as the Jakarta Stock Market (Jakarta Stock Exchanges/JKSE). The first shares registered were PT shares. Cibinong Cement. Furthermore, in 1983, JKSE announced the JKSE index which was later better known as IHSG (Composite Stock Price Index). IHSG is a tool for measuring the performance of the Indonesian stock market (JKSE).

However, with all this progress, until 1987, the Indonesian stock market (IDX/JKSE) was still not an investment destination. That's because there are only 24 companies listed on it which means there are too few choices for investors. And also, at that time, the level of potential profit was very unattractive because share price movements were limited to only 4%. So it is very natural that transactions are very limited.

Fortunately, as the economy grew, the Indonesian government then focused again on improving the Indonesian stock market. At that time the government announced a stimulus known as "PakDes 1987" and "PakDes 1988". These stimuli are:

1. Offers broader authority to stock market institutions
2. Simplified registration process
3. Parallel market
4. Open to foreign investors

This stimulus package was successful in improving the performance of the Indonesian stock market (IDX/JKSE) so that the Surabaya stock market was opened in 1989. Listed companies increased rapidly – also with the number of transactions. Its best performance was in 1997 when the IHSG reached 750. But then, because of the 1998 economic crisis, the IHSG fell to 300.

Then after the crisis ended, slowly but surely, the Indonesian stock market rose again and reached 800 in 2004. The Indonesian stock market then continued to grow rapidly until the 2008 global crisis. During the crisis, the JCI recorded its biggest fall. Then, after that, the Indonesian stock market grew even more spectacularly. It even set several record highs in 2011. And for 2012, the Indonesian stock market (IDX) remains one of the choices for investors from various countries.

KLCI

Bursa Malaysia is committed towards extending the Malaysian capital market's global reach by offering competitive services and infrastructure through adoption of internationally accepted standards which are globally relevant.

As part of Bursa Malaysia's strategic initiative, the Kuala Lumpur Composite Index (KLCI) was enhanced to ensure that it remains robust in measuring the national economy with growing linkage to the global economy. Bursa Malaysia together with FTSE, its index partner, have integrated the KLCI with internationally accepted index calculation methodology to provide a more investable, tradable and transparently managed indeks.

The enhanced KLCI, whilst remaining representative of the Malaysian stock market, provides a platform for a wider range of investable and appealing opportunities. The KLCI is now known as the FTSE Bursa Malaysia KLCI and the enhancements were implemented on Monday, 6 July 2009.

STI

The Straits Times Index (STI) comprises of the stocks of 30 representative companies listed on the Singapore Exchange. The index is calculated based on market-value weighted stock market index.

The Straits Times Industrials Index (STII) was replaced by The Straits Times Index. The index began trading on 31st August 1998 at 885.26 points, the same level where the STII was halt.

The index was constructed by the Singapore Press Holdings, the Singapore Exchange and Professor Tse Yiu Kuen from the Singapore Management University. The formal review of index is done at least once annually, and may also be reviewed on an ad-hoc basis when required.

PSE

The Philippine Stock Exchange (PSE: PSE) is one of two stock exchanges in the Philippines, the other being the Philippine Dealing Exchange. PSE is one of the main stock exchanges in Southeast Asia and is also the first stock market in Asia and the longest operating since 1927. PSE has two trading places, one in Makati City and another in Pasig City.

SET

The first Thai stock exchange was established in July 1962 in the form of a limited partnership. In 1963, the stock exchange was registered as a limited liability company and its name was changed to Bangkok Stock Exchange Co., Ltd. (BSE). It is generally accepted that the BSE failed due to a lack of government support and the Thai public's limited understanding of equity markets.

Although the Bangkok Stock Exchange provides a good place to trade shares, attention is still limited. Annual turnover was only THB 160 million in 1968 and THB 114 million in 1969. Trading volume continued to decline sharply to THB 46 million in 1970, and then fell again to THB 28 million in 1971. Meanwhile, debt securities turnover reached THB 87 million in 1971. In 1972, stock performance continued to be poor, with turnover reaching an all-time low of just THB 26 million. BSE finally ceased operations in the early 1970s.

In 1972, the Thai government took a further step in creating a capital market by amending "Executive Council Announcement No. 58 on Control of Commercial Enterprises Affecting Public Security and Welfare." These changes expanded government control and regulation over the operations of financial and securities companies, which until then had operated fairly freely. Then in May 1974, the long-awaited law establishing the Stock Exchange of Thailand (SET) was enacted to provide securities trading to increase savings and mobilize domestic capital. This was followed by a revision of the Revenue Code at the end of the year, allowing investment of savings in capital markets. Her Royal Highness Princess Maha Chakri Sirindhorn graciously led the inauguration ceremony of the new building of the Thai Stock Exchange Building on Jalan Ratchadaphisek, Din Daeng District on May 31 2016. Opening of the new Thai Stock Exchange Building

Methods

Penelitian ini menggunakan penelitian kuantitatif dan asosiatif. Penelitian kuantitatif adalah penelitian yang menggunakan ukuran yang jelas berupa angka. Penelitian asosiatif adalah menguji pengaruh antara variabel X dan Y. Data yang digunakan adalah data sekunder dan data panel.

Table 1 Operational Variables

| Variables | Indikator | Formula | Scalas |
|-------------------|---------------------------|-------------------------|--------|
| Return Oil (X1) | Price WTI | $\frac{P_1 - P_0}{P_0}$ | Ratio |
| Return Gold (X2) | Loco Gold London | $\frac{P_1 - P_0}{P_0}$ | Ratio |
| Stock Indexes (Y) | JKSE, KLCI, STI, PSE, SET | $\frac{P_1 - P_0}{P_0}$ | Ratio |

According to Gujarati in Ghazali (2017: 195) states that data techniques panel is by combining cross-section and time series data types. The panel data model equation is as follows

$$Y_{i,t} = \alpha + \beta_1 X_{1i,t} + \beta_2 X_{2i,t} + e_i$$

$Y_{i,t}$ = Return ASEAN-5 Indexes

$X_{1i,t}$ = Return Oil

$X_{2i,t}$ = Return Gold

i = cross section

t = time series

Data panel model divided by three that are

1. Common Effect Model

The Common Effect Model (CEM) is a panel data regression model combining time series and cross section data with a quadratic approach smallest and can use the pooled least square method.

2. Fixed Effect Model (FEM)

The fixed effect model is a panel data regression model that has different effects between individuals and individuals are unknown parameters and can be estimated using the least square dummy technique.

3. Random Effect Model (REM)

The random effect model is a panel data regression model that has the difference with the fixed effect model is that the use of the random effect model is capable saves on the use of degrees of freedom so that estimation is more efficient. Random effect model uses generalized least squares as parameter estimates.

Panel Data Regression Model Selection Test

Chow Test

Ho : Prefer common effect to fixed effect

Ha : Prefer fixed effect to common effect

Hausman Test

Ho : Prefer random effect to fixed effect

Ha : Prefer fixed effect to random effect

Lagrange Multiplier Test

Ho : Prefer common effect to random effect

Ha : Prefer random effect to common effect

Results and Discussions

This research shows the examination of data panel return oil and return gold on ASEAN-5 Indexes.

Table 2 The Common Effect on 17 Periods and 5 Cross Section

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-----------|
| GOLD (X2) | 0.231452 | 0.087503 | 2.645076 | 0.0098 |
| OIL (X1) | 0.118378 | 0.053312 | 2.220463 | 0.0291 |
| R-squared | 0.132953 | Mean dependent var | | -0.003164 |
| Adjusted R-squared | 0.122507 | S.D. dependent var | | 0.036013 |
| S.E. of regression | 0.033735 | Akaike info criterion | | -3.917313 |
| Sum squared resid | 0.094458 | Schwarz criterion | | -3.859839 |
| Log likelihood | 168.4858 | Hannan-Quinn criter. | | -3.894195 |
| Durbin-Watson stat | 2.445747 | | | |

Source: Self-processed

Table 2 shows the common effect model. X1 and X2 have significantly affected to ASIAN-5. The probability of X1 is about 0.0291. It is under 5%. The prob. of X2 is 0.0098. It is under 1%.

Table 3 The Fixed Effect on 17 Peiods and 5 Cross Section

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---------------------------------------|-------------|--------------------|-------------|-----------|
| C | -0.003197 | 0.003827 | -0.835317 | 0.4061 |
| GOLD (X2) | 0.241908 | 0.090437 | 2.674867 | 0.0091 |
| OIL (X1) | 0.110557 | 0.055367 | 1.996802 | 0.0493 |
| Effects Specification | | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.146292 | Mean dependent var | | -0.003164 |
| Adjusted R-squared | 0.080622 | S.D. dependent var | | 0.036013 |

| | | | |
|--------------------|----------|-----------------------|-----------|
| S.E. of regression | 0.034531 | Akaike info criterion | -3.815170 |
| Sum squared resid | 0.093005 | Schwarz criterion | -3.614010 |
| Log likelihood | 169.1447 | Hannan-Quinn criter. | -3.734258 |
| F-statistic | 2.227682 | Durbin-Watson stat | 2.497986 |
| Prob(F-statistic) | 0.049007 | | |

Source: eviews 9.0

Table 3 shows the fixed effect model 7 periods and 5 section. X1 has significantly impacted on Y under prob. 5%. It is about 0.0493. X2 has impacted on y under 1%. It is about 0.0091.

Table 4 The Random Effect Model on 17 Periods and 5 Cross Section

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-----------------------|-------------|--------------------|-------------|-----------|
| C | -0.003197 | 0.003827 | -0.835317 | 0.4060 |
| GOLD (X2) | 0.241908 | 0.090437 | 2.674867 | 0.0090 |
| OIL (X1) | 0.110557 | 0.055367 | 1.996802 | 0.0492 |
| Effects Specification | | | | |
| | | | S.D. | Rho |
| Cross-section random | | | 0.000000 | 0.0000 |
| Idiosyncratic random | | | 0.034531 | 1.0000 |
| Weighted Statistics | | | | |
| R-squared | 0.140590 | Mean dependent var | | -0.003164 |
| Adjusted R-squared | 0.119629 | S.D. dependent var | | 0.036013 |
| S.E. of regression | 0.033790 | Sum squared resid | | 0.093626 |
| F-statistic | 6.707136 | Durbin-Watson stat | | 2.481413 |
| Prob(F-statistic) | 0.002005 | | | |
| Unweighted Statistics | | | | |
| R-squared | 0.140590 | Mean dependent var | | -0.003164 |
| Sum squared resid | 0.093626 | Durbin-Watson stat | | 2.481413 |

Source: eviews 9.0

Table 3 shows the fixed effect model 7 periods and 5 section. X1 has significantly impacted on Y under prob. 5%. It is about 0.0492. X2 has impacted on y under 1%. It is about 0.0090.

Table 5 The Chow Test

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

| Effects Test | Statistic | d.f. | Prob. |
|--------------------------|-----------|--------|--------|
| Cross-section F | 0.130238 | (4,78) | 0.9709 |
| Cross-section Chi-square | 0.565818 | 4 | 0.9668 |

Source: eviews 9.0

Table 5 shows the chow test. Ho is accepted. It prefers common effect to fixed effect.

Table 6 The Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 0.000000 | 2 | 1.0000 |

** WARNING: estimated cross-section random effects variance is zero.

Source: eviews 9.0

Table 6 shows the hausman test. Ho is accepted meaning that it prefers random effect to fixed effect.

Table 7 The Lagrange Multiplier

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

| | Test Hypothesis | | |
|---------------|----------------------|----------------------|----------------------|
| | Cross-section | Time | Both |
| Breusch-Pagan | 1.473413 (0.2248) | 25.10423 (0.0000) | 26.57765 (0.0000) |
| Honda | -1.213842 -- | 5.010412 (0.0000) | 2.684580 (0.0036) |

| | | | |
|----------------------|-----------|----------|-----------|
| King-Wu | -1.213842 | 5.010412 | 1.155031 |
| | -- | (0.0000) | (0.1240) |
| Standardized Honda | -1.235532 | 5.535084 | -0.576110 |
| | -- | (0.0000) | -- |
| Standardized King-Wu | -1.235532 | 5.535084 | -1.645802 |
| | -- | (0.0000) | -- |
| Gourieriou, et al.* | -- | -- | 25.10423 |
| | | | (< 0.01) |

*Mixed chi-square asymptotic critical values:

| | |
|-----|-------|
| 1% | 7.289 |
| 5% | 4.321 |
| 10% | 2.952 |

Source: eviews 9.0

Table 7 shows the lagrange multiplier. Ho is rejected. It prefers random effect to common effect.

Conclusions

In conclusion, The return oil significantly affects ASEAN-5 indexes partially. The return gold significantly impacts ASEAN-5 partially. The return oil and the return gold have affected ASEAN-5 simultaneously.

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