
THE REACTION OF INDONESIAN CAPITAL MARKET TO THE RUSSIAN INVASION ON UKRAINE (EVENT STUDY ON COMPANIES LISTED IN THE FOOD AND BEVERAGE SECTOR OF THE INDONESIA STOCK EXCHANGE)

REAKSI PASAR MODAL INDONESIA TERHADAP INVASI RUSIA KE UKRAINA (EVENT STUDY PADA PERUSAHAAN YANG TERDAFTAR DI BURSA EFEK INDONESIA SEKTOR MAKANAN DAN MINUMAN)

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Abstract: On February 24, 2022, the Russian Federation invaded Ukraine, causing a surge in world food commodity prices, especially wheat. The purpose of this research is to determine the Indonesian capital market's reaction to the Russian invasion of Ukraine, measured by abnormal return, trading volume activity, and market capitalization differences before and after the event. The observation period was conducted for 30 days before and after the event. This study is quantitative and uses comparative methods. The sampling method used is purposive sampling, which gives a research sample of 47 companies in the food and beverage sub-sector of the Indonesian Stock Exchange. The results of this study show that the Russian invasion of Ukraine did not contain information that caused the market to react, as evidenced by the lack of significant differences in abnormal return and market capitalization before and after the invasion. However, the Russian invasion of Ukraine contained information that caused market participants to react in stock trading, as evidenced by significant differences in the trading volume activity variable.

Keywords: event study, abnormal return, trading volume activity, market capitalization

Abstrak: Pada 24 Februari 2022 Federasi Rusia melakukan invasi ke Ukraina, dikarenakan invasi ini harga komoditas pangan dunia ikut melonjak. Tujuan dari penelitian ini untuk mengetahui reaksi pasar modal Indonesia atas Invasi Rusia ke Ukraina diukur dari perbedaan Abnormal Return, Trading Volume Activity, dan Market Capitalization sebelum dan sesudah peristiwa. Periode pengamatan dilakukan selama 30 hari sebelum dan 30 hari setelah peristiwa. Jenis penelitian ini adalah kuantitatif dengan menggunakan metode komparatif. Metode sampling yang digunakan adalah purposive sampling yang memberikan sample penelitian sebanyak 47 perusahaan pada sub sektor food and beverage Efek Indonesia. Hasil dari penelitian ini menunjukkan peristiwa invasi Rusia ke Ukraina tidak mengandung informasi yang membuat pasar bereaksi, hal ini dibuktikan dari tidak adanya perbedaan yang signifikan pada variabel Abnormal Return, dan Market Capitalization sebelum dan sesudah peristiwa Invasi Rusia ke Ukraina, tetapi peristiwa invasi Rusia ke Ukraina mengandung informasi yang membuat pelaku pasar bereaksi pada perdagangan saham, hal ini di buktikan dari adanya perbedaan yang signifikan pada variabel Trading Volume Activity.

Kata Kunci: studi peristiwa, abnormal return, trading volume activity, market capitalization

INTRODUCTION

Research background

The more important the existence of the capital market is to an economy of a country, the more sensitive the capital market becomes to available information (Ramadhani, 2020). This means that an event or incident can cause the market to react, especially if the event has the potential to impact the economy and global conditions. According to Sambuari, Saerang, dan Maramis (2020), this is due to the condition of a country's economy, which will affect stock prices and trading transactions in the capital market. Therefore, stock trading

activities in the capital market, which are part of economic activities, cannot be separated from the influence of an event or incident.

The capital market is highly sensitive to public information. Various events, both internal and external, such as merger and acquisition policies, insider trading, earnings announcements, changes in deregulation and economic and political regulations, as well as interest rate changes and political events, can affect abnormal returns. Market participants evaluate every announcement issued by issuers or government policies, causing changes in stock transactions. Political events have the most significant influence on the movement of a country's stock market. Investors can leverage these events to gain insights into the potential returns and associated risks of their investments.

On February 24, 2022, the Russian Federation initiated its invasion of Ukraine after moving its forces to the Ukrainian border since January 2022. This Russian invasion was triggered by Ukraine's intention to join NATO, which heightened political and global tensions since early February. The Russian attack on Ukraine has caused world food commodity prices to soar. The Russian military invasion of Ukraine has had a significant impact on production, consumption, trade patterns, and food commodity prices, which can threaten global food security. A report from Katadata.co.id revealed that Ukraine, which produced 433 million tons of wheat in 2022, was the world's 10th largest wheat producer. Although Ukraine typically exports an average of 4 million tons of grains each month, the country experienced several months of grain shipment suspension due to the blockade of Ukrainian ports by Russia.

This war has both short-term and long-term consequences on food production and exports, including hindering farmers from working in the fields, reducing agricultural labor due to conscription and population exodus, and limited access to crucial production inputs such as fertilizers. Indirect impacts of this war include skyrocketing fertilizer prices, reduced fertilizer usage, and decreased crop yields. Additionally, many countries imposed export restrictions, leading to a surge in food commodity prices in the global market and causing panic buying at individual, industry, and national levels.

The Russian invasion of Ukraine in early 2022 has resulted in significant geopolitical tensions and global economic uncertainty. Indonesia, as a developing economy, is not immune to the potential impact of this crisis. The Indonesian capital market, which includes the Indonesia Stock Exchange (IDX), is an integral component of the country's economy and plays a significant role in attracting foreign investment. The food and beverage sector is one of the largest industries in Indonesia's economy, and companies listed in this sector on the Indonesia Stock Exchange (IDX) are expected to be sensitive to any major geopolitical events. Given the potential impact of the Russia-Ukraine crisis on the global economy and financial markets, it is important to investigate the reaction of Indonesia's capital market, particularly the food and beverage sector, to this event.

Indonesia needs to be aware of the wheat crisis. According to data from the United States Department of Agriculture (USDA), wheat consumption in Indonesia has increased significantly, with an estimated 10.4 million tons consumed in the 2016/2017 period, up from 10.1 million tons in 2020/2021. In comparison, Indonesia's wheat imports reached only 6.25-7.43 million tons per year during the 2012-2015 period. Currently, wheat consumption per capita reaches 37 kg per year, equivalent to 38% of rice consumption. This represents a staggering 146% increase from 2014 when wheat consumption per capita was only 15 kg per year. With an annual growth rate of 18%, wheat consumption in Indonesia is projected to equal rice consumption by the country's Golden Jubilee in 2045.

Wheat is a fully imported food commodity. According to the Central Statistics Agency (BPS), Indonesia's wheat imports have been continuously increasing by 10-11 million tons each year since 2016. Australia and Canada are the largest wheat-producing countries that export to Indonesia, with a total supply of 29.24 million tons and 15.48 million tons between 2012 and 2020. These two countries together accounted for 54.28% of Indonesia's total wheat imports during the nine-year period. Ukraine and Russia ranked third and sixth on the list of wheat-producing countries exported to Indonesia during the same period, with a total weight of 14.16 million tons and 3.82 million tons. Their combined contribution to Indonesia's wheat imports was 22.22%. However, the conflict between Ukraine and Russia has led to Ukraine halting its wheat exports, prompting Indonesia to shift to other countries such as Australia and Argentina. In the first seven months of 2022, Indonesia imported 2.06 million tons of wheat from Australia and 1.47 million tons from Argentina, accounting for 64.1% of its total wheat imports during that period. Additionally, Indonesia imported 694 thousand tons of wheat from Canada, 594 thousand tons from Brazil, and 545 thousand tons from India, with only 5,509 tons from Ukraine.

According to Pradeksa, Darwanto, and Masyhuri (2016), various factors influence the increase in wheat imports, including income, population, wheat prices, exchange rates, and the development of wheat-based industries. A 1% increase in national income leads to a 0.253% increase in wheat imports due to increased

purchasing power for wheat products. Meanwhile, a 1% increase in population results in a 3.025% increase in wheat imports. Surprisingly, the analysis shows that a 1% increase in international wheat prices leads to a 0.491% increase in wheat imports, contrary to the theory that higher wheat prices would reduce imports. The variable of domestic rice prices does not have a significant impact on wheat imports because wheat-based foods already have their place in the consumption patterns of the society. In this case, fluctuations in international wheat prices have a greater impact on Indonesia's wheat imports than fluctuations in domestic rice prices.

Therefore, when events such as the Russian invasion of Ukraine occur, causing uncertainty in international wheat supplies, Indonesia's capital market, particularly the food and beverage sector, may respond with stock price volatility and business strategy adjustments. Food and beverage companies listed on the Indonesia Stock Exchange (IDX), especially those highly dependent on wheat imports, may face significant pressure. Market participants may react to this event by selling their stocks in response to increased business risks and market uncertainty. Additionally, companies may face increased production costs due to higher wheat prices and the need to adjust their supply chain strategies.

Research Objective

1. Is there a difference in Abnormal Return before and during the Russian invasion of Ukraine?
2. Is there a difference in Trading Volume Activity before and during the Russian invasion of Ukraine?
3. Is there a difference in Market Capitalization before and during the Russian invasion of Ukraine?

THEORITICAL FRAMEWORK

Abnormal Return

Abnormal return, also known as excess return, is a measure used in event studies to assess the market's reaction to an event when its information is publicly disclosed as an announcement. It examines the difference between the actual return of a stock or market index and the expected return during a specific period around the event. If the event contains influential information, the market will react to the event around the time it occurs. Market reactions can be observed through changes in stock trading volume and abnormal returns (Hartono, 2018).

Trading Volume Activity

Trading Volume Activity (TVA) is an indicator that can be used to assess the stock market's reaction to information based on the parameter of changes in stock trading volume activity. Changes in stock trading volume in the market reflect the trading activity of stocks on the exchange and reflect investors' investment decisions. TVA helps in understanding the level of market participation and the intensity of trading activities surrounding certain events or information releases. By analyzing trading volume activity, market observers can gain insights into investor sentiment and the market's response to new information.

Market Capitalization

Market capitalization refers to the value of a company determined by the market price of its outstanding common shares. Market capitalization is calculated by multiplying the number of outstanding shares by the current market price of a single share. An increase in market capitalization indicates investor confidence as they continue to buy the stock, driving up its price and subsequently increasing the market capitalization. Market capitalization is an important metric used to assess the size and valuation of a company in the financial markets.

Previous Research

Tambunan, Saerang, dan Wenas (2023) determined the reaction of the Indonesian capital market to the Russian invasion of Ukraine, measured by differences in abnormal returns, trading volume activity and market capitalization before and after the event. The observation period was carried out for 5 days before and 5 days after the event. This type of research is quantitative using comparative methods. The sampling method used is purposive sampling which provides a sample of 59 companies in the energy sector of the Indonesia Stock Exchange. The results of this study show that the Russian invasion of Ukraine contains information that makes the market react, this is evidenced by the significant differences in the variables of abnormal return, trading volume activity, and market capitalization before and after the Russian invasion of Ukraine.

Tanasal, Saerang, and Maramis (2021) investigated based on the lack of a common thread between the studied theories and real-world observations, as well as the different research findings. The research focuses on

two countries, Thailand and Singapore, with the aim of measuring the market response to the COVID-19 pandemic lockdown event in terms of differences in abnormal returns, trading volume activity, and market capitalization before and after the event. The observation period is 14 days before and 14 days after the event. It is a quantitative research study using a comparative method. The sample method used is purposive sampling, with a total of 50 companies in the food and beverages sector listed on the stock exchanges of Singapore and Thailand. The research findings indicate that the COVID-19 pandemic lockdown event in Singapore and Thailand contains information that affects the market. This is evidenced by the significant abnormal returns and market capitalization before and after the event, as tested by Wilcoxon and daily tests. However, the trading volume activity variable does not show significant changes before and after the event, both in the Wilcoxon and daily tests.

Samarakoon and Kodithuwakku (2021) examined the impact of the Civil War and the Easter Attack of 2019 on the Hotel and Travel sector. The market model is applied to calculate expected returns using daily data (closing prices) of stocks from a total of 41 companies listed in the Hotel and Travel sector on the Colombo Stock Exchange, while the daily All Share Price Indices (ASPI) are considered as market returns. The event timeline is determined by considering a 41-day event window and an 80-day estimation window before the event. The study concludes that terrorism is an event that can have unfavorable impacts on the value of companies in the Hotel and Travel sector. Specifically, the Hotel and Travel sector does not provide evidence of semi-strong form market efficiency. Furthermore, the Sri Lankan Hotel and Travel sector has been negatively affected by the Easter Attack of 2019, undermining the favorable economic conditions resulting from a 10-year brutal civil war.

Research Framework



Figure 1. Research Model

Sumber : Theoretical Framework, 2023

Research Hypothesis

- H1: There is a difference in Abnormal Return before and during the Russian invasion of Ukraine.
 H2: There is a difference in Trading Volume Activity before and during the Russian invasion of Ukraine.
 H3: There is a difference in Market Capitalization before and during the Russian invasion of Ukraine.

Window Period

In this research, the event under investigation is the Russian Invasion of Ukraine, where a window period of 10 days is used. This window period consists of 5 days before the Russian Invasion of Ukraine 2022 (t-5) and 5 days during the Russian Invasion of Ukraine (t+5), considering the trading days of the stock exchange to form a one-week trading week. Since the researcher is using the mean expected return method, an estimation period is required to calculate the expected return to be used in abnormal return calculations. The estimation period used is 10 days (t-6 to t-15), considering the trading days of the stock exchange, to make the total observed days to be 20 days or 1 month of trading days.

RESEARCH METHOD**Research Approach**

The type of research used is comparative research to test the differences of variables used in the study using quantitative methods, which include stock price data, stock volume, and the number of shares outstanding in the energy sector stocks of the Indonesia Stock Exchange.

Population, Sample, and Sampling Technique

The population in this study consists of all stocks listed in the Food and Beverage sector index on the Indonesia Stock Exchange, totaling 45 companies. The sampling method used in this study is purposive sampling, with the following criteria: being in the energy sector of the Indonesia Stock Exchange, not undergoing any corporate actions during the research period, being traded every day during the research period, having available data for analysis, and being a company that uses wheat as their raw material. After applying the sampling method, the number of companies in the sample is reduced to 13.

Data Types and Sources

The data used in this study is secondary data, which refers to data that has already been published to the general public. The specific data utilized in this research includes stock prices, stock volume, and the number of shares outstanding for companies in the energy sector of the Indonesia Stock Exchange. These data points are then processed to calculate abnormal returns, trading volume activity, and market capitalization.

Operational Definition of Variables1. *Abnormal Return*

$$RTN_{i,t} = R_{i,t} - E[R_{i,t}]$$

Keterangan:

$RTN_{i,t}$: *Abnormal Return* saham-i pada hari ke-t

$R_{i,t}$: *Actual Return* saham-i pada hari ke-t

$E[R_{i,t}]$: *Expected return* saham-i

2. *Trading Volume Activity*

$$TVA_{it} = \frac{\sum \text{saham i di transaksikan waktu t}}{\sum \text{saham i beredar waktu t}}$$

3. *Market Capitalization*

$$MC = \text{Share Price} \times \text{Total Share Outstanding}$$

Data Analysis Techniques

The normality test is used to determine whether a data is normally distributed or not, which is carried out by the Shapiro Wilk Non-Parametric Statistical Test. If the data is normally distributed, it will use a parametric test (Paired Sample Test) and vice versa, it will use a non-parametric test (Wilcoxon Sign Rank Test).

RESULTS AND DISCUSSION**Result****Normality Test****Tabel 2. Normality Test Shapiro-Wilk**

	Kolmogorov-Smirnov			Shapiro-Wilk		
	statistic	df	sig	statistic	df	sig
AR Before	0,243	13	0,34	,885	13	,085
AR After	0,206	13	0,137	,797	13	,006
TVA Before	0,208	13	0,129	,869	13	,051
TVA After	0,257	13	0,019	,813	13	,010
MC Before	0,281	13	0,006	,743	13	,002
MC After	0,258	13	0,18	,761	13	,002

Source: SPSS 25, 2023

Based on the results of the Shapiro-Wilk normality test in Table 2, it can be seen that the Asymp.Sig (2-tailed) values of the three research variables, Trading Volume Activity, trading volume activity, and Market Capitalization, all obtained values below the significance level of 0.05 or (sig < 0.05), indicating that the

variables used in this study are not normally distributed. Therefore, the statistical test used to compare them is the non-parametric Wilcoxon Sign Rank test.

Hypothesis Test

Table 3. Wilcoxon Sign-Rank Test

	Test Statistics ^a		
	ARbefore – ARafter	TVAbefore- TVAafter	MCbefore – MCAfter
Z	-0,245 ^b	-2,271 ^b	-0,804 ^b
Asymp. Sig. (2-tailed)	0,807	0,023	0,422

Sumber: Data Olahan SPSS 25, 2022

The results of the Wilcoxon sign-rank test showed that the abnormal return variable obtained Asymp.Sig (2 tailed) was $0.000 < 0.05$ and the Zcount value was $-2.853 < -1.96$ (Ztable). The Trading Volume Activity variable obtained by Asymp.Sig (2 tailed) is $0.000 < 0.05$ and the Zcount value is $-7.001 < -1.96$ (Ztable). In the Market Capitalization variable, Asymp.Sig (2 tailed) is $0.000 < 0.05$ and the Zcount value is $-5.087 < -1.96$ (Ztable).

Discussion

Hipotesis I

Based on the first hypothesis testing, it is shown that the test result for the difference in Abnormal Return yielded a 2-tailed Sig value of 0.807, which is greater than 0.05. Therefore, the initial hypothesis stating that there is a difference in Trading Volume Activity before and after the event is rejected. This indicates that there is no significant difference in Trading Volume Activity before and after the Invasion of Russia into Ukraine in the Food and Beverage companies listed in the Indonesia Stock Exchange. It can be interpreted that the Invasion of Russia into Ukraine did not affect the Trading Volume Activity of Food and Beverage stocks listed in the Indonesia Stock Exchange, and therefore there was no significant reaction in terms of market value since the market did not show significant fluctuations due to the absence of a significant difference in Trading Volume Activity during the observation period of 30 days before and 30 days after the event.

Hipotesis II

Based on the first hypothesis testing, it shows that the test results of the difference in Trading Volume Activity obtained a Sig (2-tailed) of 0.023 which is smaller than 0.05. Therefore, the second hypothesis which assumes the difference in Trading Volume Activity before and after the event is accepted. This means that there is no difference in Trading Volume Activity before and after the Russian invasion of Ukraine on the Food and Beverage companies listed on the Indonesia Stock Exchange. The significant difference indicates that the invasion event contains information that makes stock trading activity above normal. This can be seen in the Trading Volume Activity after Russia invaded Ukraine, where the Trading Volume Activity 30 days after the invasion tended to increase despite fluctuations. This increase indicates that the information was bad news for investors, as it caused a rise in food commodity prices that could negatively impact Food and Beverage stocks. Additionally, the rise in energy commodity prices made investors prefer to invest in the energy sector.

Hipotesis III

Based on the third hypothesis testing, it shows that the test results of the difference in market capitalization obtained a Sig (2-tailed) of 0.422 which is larger than 0.05. Therefore, the first hypothesis which assumes the difference in market capitalization before and after the event is rejected. This means that there is no difference in market capitalization before and after the Russian invasion of Ukraine on the Food and Beverage companies listed on the Indonesia Stock Exchange. It can be interpreted that the Russian invasion of Ukraine did not affect the market capitalization of Food and Beverage stocks listed on the Indonesia Stock Exchange. Therefore, there was no significant reaction in terms of market value as the market did not show any significant fluctuations due to the lack of difference in Trading Volume Activity during the observation period, which was conducted 30 days before and 30 days after the event.

CONCLUSION AND RECOMMENDATIONS**Conclusions**

Based on the research conducted, the following conclusions can be drawn:

1. The Russian invasion of Ukraine did not result in a significant difference in Abnormal Return on the Food and Beverage companies listed on the Indonesia Stock Exchange before and after the invasion. This means that the event did not contain any information that could cause the market to respond in terms of abnormal returns.
2. The Russian invasion of Ukraine resulted in a significant difference in Trading Volume Activity on the Food and Beverage companies listed on the Indonesia Stock Exchange before and after the invasion. This means that the event contained information that could cause the market to respond in terms of Trading Volume Activity.
3. The Russian invasion of Ukraine did not result in a significant difference in Market Capitalization on the Food and Beverage companies listed on the Indonesia Stock Exchange before and after the invasion. This means that the event did not contain any information that could cause the market to respond in terms of Market Capitalization.

Recommendations

1. Capital market regulators may plan and prepare maneuvers in the capital market, especially in trading securities, to be able to face events that can affect the country's economy with the aim of protecting investors from taking actions driven by panic or irrational feelings.
2. Investors may be more rational and also seek more profitable sectors to invest in according to their respective goals and risk profiles.
3. Future researchers is recommended to conduct more detailed studies on the factors that influence the increase in food commodity prices and the possibility of a food crisis occurring.

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