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Capital Market Reaction to News and Policies Regarding Covid-19 in Indonesia: Event Study Method

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Abstract: This study examines the reaction of the Indonesian capital market to Covid-19-related news and policies during 2020–2021, focusing on abnormal stock returns and value fluctuations. Using an event study methodology, market reactions to significant events were analyzed. The sample comprised 603 companies listed on the Indonesia Stock Exchange, selected through purposive sampling. Abnormal returns were assessed within event windows: 21-day periods (t-10 to t+10) for Events 1, 2, and 3; 11-day periods (t-5 to t+5) for Events 4 and 6; and a 16-day period (t-10 to t+5) for Event 5. Data included the combined stock price index and daily closing prices aligned with event windows. A one-sample t-test identified significant changes in abnormal returns. The findings reveal abnormal returns and significant value fluctuations, with hypothesis testing showing varied market reactions across windows. However, no consistent reaction pattern emerged, reflecting the unpredictable nature of investor behavior during the pandemic. The results align with the semi-strong form of the Efficient Market Hypothesis (EMH), demonstrating rapid incorporation of public information but highlighting anomalies driven by uncertainty, sectoral differences, and event-specific impacts. This study contributes to understanding financial market behavior during global crises.

Keywords: Abnormal Return, Covid-19, Event Study, Indonesian Capital Market, Market Reaction

INTRODUCTION

Investment activities are a critical component of financial management. In Indonesia, the number of capital market investors increased by 89.58 percent in 2021, reaching 7.3 million Single Investor Identifications (SIDs) as of December 17, 2021 (Sukmana, 2021). This upward trend is expected to continue in 2022. According to data from the Indonesian Central Securities Depository (KSEI), the number of capital market investors rose to 7.86 million by the end of January 2022, a 5.0 percent increase from 7.45 million at the end of December 2021 (Dirgantara & Laoli, 2022). Although the number of investors continues to grow, the capital market remains highly sensitive to news and information, as evidenced by its response to the pandemic. In Indonesia, the capital market is highly sensitive to fluctuations in overall macroeconomic conditions, as well as in the global economy and capital markets, due to its development stage.

The capital market is influenced by a variety of environmental factors, both economic (such as internal and external company factors) and non-economic (such as social and political factors that threaten the survival of a country). Events that have the potential to affect the capital market often carry significant information that influences investor decision-making, such as policy announcements or geopolitical events (Agoraki et al., 2022; Lubys & Panda, 2021). Before deciding to buy, sell, or hold a stock, investors evaluate how this information may impact the company's performance in the coming years (Alsamhi et al., 2022). While changes in company performance occur gradually, stock prices often fluctuate immediately, as investors tend to react swiftly to new information.

The market is efficient if it reacts quickly and appropriately to reach a new equilibrium price that accurately reflects all available information (Hartono, 2018). The ability of the efficient market to absorb information, in this case, is also explained by the signalling theory. According to this theory, signals generated by information from both internal and external firms, such as management policies and labour demonstrations, will directly affect the price movements of related firms (Hartono, 2022). Similarly, the Efficient Market Hypothesis (EMH) posits that financial markets rapidly incorporate all available information into asset prices. Under the semi-strong form of EMH, public announcements, such as government policies or macroeconomic events, are reflected in stock prices almost immediately (Fama, 1970). This makes EMH particularly relevant for understanding how the Indonesian capital market processed information during the Covid-19 pandemic.

One of the factors that influenced prices in 2020 and 2021 was the Covid-19 pandemic that affected the Indonesia Stock Exchange and other stock exchanges around the world. The pandemic caused significant disruptions across various industries in Indonesia, leading to broader economic challenges for the country. Government announcements about Covid-19 policies often conveyed challenging news (Heyden & Heyden, 2021; Ibrahim et al., 2020), which cause the market to react negatively. Restrictions on activities, the shift to Work From Home (WFH), and, in some cases, the suspension of operations raised concerns among investors about declining company values. Analysts and investors also worried about the heightened risks of a recession and economic crisis amid the slowing economy. According to previous studies, they highlights that initial announcements of government policies can be particularly impactful, often sparking strong market reactions (Guo et al., 2020; Heyden & Heyden, 2021; Ibrahim et al., 2020; Wei & Han, 2021). To delve deeper into these dynamics, this study adopts an event study methodology, analyzing key events from 2020 to 2021 to assess their influence on the Indonesian capital market and provide a clearer understanding of market behavior during this unprecedented period.

An event study is a study that examines how stock prices behave once news or an event is made public (Hartono, 2018). In addition to the behavior of stock prices, event studies look at the information content in the form of economic value that can affect the value of the firm of an event (Hartono, 2018). Events can be categorized as either good news, which increases the value of the firm and positively affects the capital market, or bad news, which decreases the value of the firm and negatively affects the capital market. The presence of abnormal returns can be used to observe this reaction (Brown & Warner, 1985). The goal of the event study is to evaluate the correlation between an event affecting securities and the return on those securities (Kritzman, 1994).

This study seeks to investigate how the Indonesian capital market reacted to key Covid-19-related announcements during 2020–2021. By analyzing abnormal stock returns and evaluating their significance across event windows, it aims to build upon previous research to provide a clearer understanding of market behavior during this unprecedented period.

METHOD

Secondary data was used. The documentation method was used to collect the data, which involved writing down, summarizing, and copying information from online databases,

specifically finance.yahoo.com and www.idx.go.id. These facts include: 1) The daily closing price of the observation period; 2) Information from the IHSG (Composite Stock Price Index) during the observation period. In this study, company information from the Indonesia Stock Exchange (IDX) is used. Purposive sampling is used to determine the sample. The sample selection standards of the study are: 1) Listed companies in Indonesia Stock Exchange; 2) Contain complete stock price information for the period from January 2020 to August 2021. On the Indonesia Stock Exchange (IDX) website and yahoo finance website, 603 of the 812 companies listed on the Indonesia Stock Exchange in 2022 have complete stock price data from January 2020 to August 2021.

This study is quantitative and uses the event study methodology. In order to measure how the public will react to a news announcement, the information content is tested. It is hoped that the market will react when it receives the announcement if it contains information. Market reactions are indicated by changes in the prices of the securities involved (Hartono, 2022). The event study process has stages or steps (Hartono, 2018). In general, the stages of an event study are as follows: 1) Identifying the events to be studied, for which the market reaction will be seen; 2) Identifying the event and the date the event occurred; 3) Specify the length of the window; 4) Eliminates nuisance events; 5) Determine the normal return model; 6) Determine the length of the forecasting period; 7) Compute abnormal returns, average abnormal returns, and average cumulative abnormal returns; 8) Test for statistical significance.

News and Policy About Covid 19 in Indonesia

a) First Case of Covid-19 in Indonesia. On March 2, 2020, information was released about the first case of Covid 19 in Indonesia. After the first case, more people were affected by Covid 19. The Indonesian government has implemented a series of social restriction policies to stop the spreading process, which is accelerating. The government has implemented its social restriction policy five times under different names but with the same objectives, namely:
b) Large Scale Social Restrictions (PSBB - *Pembatasan Sosial Berskala Besar*). PSBB is the first round of restrictive measures taken by the government to prepare for the possible spread of the Corona virus in April 2020 (Sitoresmi, 2021). Permenkes number 9 of 2020, Guidelines for Large-Scale Social Restrictions in the Context of Accelerating Handling of Covid 19 (Baiquni, 2021) contains the rules governing this policy. All non-essential office and business operations have been suspended by the PSBB. A ban on eating in restaurants and restrictions on vehicle capacity will also be strictly enforced.
c) Enforcement of Community Activity Restrictions (PPKM - *Pemberlakuan Pembatasan Kegiatan Masyarakat*). The PSBB was replaced by the PPKM in accordance with the Minister of the Interior's Instruction No. 1 of 2021 on the Enforcement of Activity Restrictions in the Context of Controlling the Spread of Covid-19. This rule is now based on directives from the central government rather than recommendations from regional leaders (Baiquni, 2021). Thereafter, the phrase "government policy for dealing with Covid-19" was abbreviated to "PPKM Java-Bali. On January 11-25, 2021, this policy was initially implemented only in the Java-Bali region. After the Christmas and New Year holidays, there were more Covid-19 cases at that time (Sitoresmi, 2021).
d) Micro Community Activities Restrictions Enforcement (Micro PPKM - *Pemberlakuan Pembatasan Kegiatan Masyarakat*). The Instruction of the Minister of Home Affairs Number 3 of 2021 concerning the Establishment of Covid-19 Handling Posts at the Village and Kelurahan Levels in the Context of Controlling Covid-19 and Enforcing Limitations on Micro-Based Community Activities serves as the foundation for this policy. The Java-Bali PPKM was conducted almost a month before the government announced the micro PPKM, which will take effect on February 9, 2021. The two most important requirements for effective management of Covid-19 are flattening the curve and suppressing positive cases (Sitoresmi, 2021).

e) Emergency Community Activities Restrictions Enforcement (Emergency PPKM - *Pemberlakuan Pembatasan Kegiatan Masyarakat*). The designation of the government's response to Covid-19, also known as Emergency PPKM. After the Eid Al-Fitr holiday, President Joko Widodo announced the implementation of the Emergency PPKM rule as well as the discovery of a new virus variant, the Delta variant from India. It is claimed that the Emergency PPKM is more stringent than the PSBB and Micro PPKM. Initially, only Java-Bali had this policy. However, similar rules were later introduced in a number of other contexts (Sitoresmi, 2021). This policy came into effect on July 3, 2021, following an announcement by President Joko Widodo on July 1, 2021. This policy, which applies to all provinces of Java and Bali, will expire on July 20, 2021. 2020 (Baiquni, 2021). The established zone of application also determines the rules that apply.

f) Enforcement of Level 3 - 4 Restrictions on Community Activities. According to Minister of Home Affairs Instruction No. 22 of 2021 on Enforcement of Community Activity Restrictions Level 4 Corona Virus Disease 2019 in Java and Bali Regions, the government began enforcing the latest restrictions, known as PPKM Level 4-3, on July 21, 2021 (Baiquni, 2021). The next period of government policy to address Covid-19 is PPKM Level 4-3, and Emergency PPKM ends on July 20. However, only level 4 and 3 areas are subject to this regulation. Based on the guidelines established by WHO for the Covid 19 situation in a region, areas are divided into these levels (Sitoresmi, 2021).

Based on the six events observed, the research window sizes are determined as follows:

Table 1. Indonesian Government News and Policies During Pandemic Covid-19

No	News and Policies	Date	Event Window
1	The First Case of Covid 19 in Indonesia	March 02, 2020	t-10 ; t+10
2	PSBB	March 31, 2020	t-10 ; t+10
3	PPKM	January 11, 2021	t-10 ; t+10
4	Micro PPKM)	June 22, 2021	t-5 ; t+5
5	Emergency PPKM	July 03, 2021	t-10 ; t+5
6	Enforcement of Level 3 - 4 Restrictions on Community Activities	July 21, 2021	t-5 ; t+5

Source: Research Data

RESULTS AND DISCUSSION

The results of the first event, as presented in Table 2, show that the announcement of the first Covid-19 case in Indonesia led to positive abnormal returns from t-10 to t 0, reflecting initial optimism or speculative behavior by investors. However, the market shifted to negative abnormal returns on t+1 and t+2, possibly indicating a delayed recognition of the pandemic's potential risks. Subsequently, positive abnormal returns on t+3 and beyond suggest a partial recovery in market sentiment as investors reassessed the situation. For the second event, as shown in Table 3, the market exhibited a pattern of positive abnormal returns on t−10, t−8, and t−7, potentially driven by optimism or anticipation of positive developments. This was followed by a period of negative abnormal returns on t−6, t−5, and t−4, suggesting growing concerns or a reaction to unfavorable interpretations of the event. However, the market regained positive abnormal returns from t−3 to t, indicating that investors adjusted their expectations and responded favorably to subsequent information. A similar pattern emerged post-event, with negative abnormal returns on t+1 and t+2, followed by a rebound to positive abnormal returns on t+3 and thereafter.

Table 2. Hypothesis Testing Results for the First Event

Period	AAR	t-test	Sig.	Results	Period	AAR	t-test	Sig.	Results
t-10	0,003	3,077	*	positive	t+1	-0,008	-11,087	*	negative
t-9	0,001	1,089			t+2	-0,013	-12,256	*	negative
t-8	0	0			t+3	0,005	2,67	*	positive
t-7	0	0,872			t+4	0,017	14,901	*	positive

t-6	-0,001	1,724			t+5	0,013	13,997	*	positive
t-5	0,007	6,208	*	positive	t+6	0	0		
t-4	0,008	10,684	*	positive	t+7	0,013	14,14	*	positive
t-3	-0,003	-1,085			t+8	-0,005	-8,04	*	negative
t-2	0,007	5,889	*	positive	t+9	-0,004	-2,852	*	negative
t-1	0	0			t+10	0,018	14,897	*	positive
t	0,007	5,56	*	positive					

Source: Research Data

Table 3. Hypothesis Testing Results for the Second Event

Period	AAR	t-test	Sig.	Results	Period	AAR	t-test	Sig.	Results
t-10	0,015	10,817	*	positive	t+1	0,01	7,457	*	positive
t-9	0	0			t+2	-0,004	-4,602	*	negative
t-8	0,015	10,898	*	positive	t+3	-0,003	-5,538	*	negative
t-7	0,016	10,205	*	positive	t+4	-0,008	-6,926	*	negative
t-6	-0,033	-25,617	*	negative	t+5	0	0		
t-5	-0,032	-24,793	*	negative	t+6	-0,009	-7,246	*	negative
t-4	-0,025	-19,612	*	negative	t+7	0,006	4,2	*	positive
t-3	0,006	4,952	*	positive	t+8	0,017	12,275	*	positive
t-2	0	0			t+9	-0,003	-2,532	*	negative
t-1	0,005	4,742	*	positive	t+10	0,003	2,666	*	positive
t	-0,013	-11,815	*	negative					

Source: Research Data

The results of the third event test, as presented in Table 4, demonstrate that the market consistently reacted with positive abnormal returns throughout the entire window period, from t−10 to t+10. This steady pattern of positive returns suggests that the third event was perceived as optimism to the market, possibly due to its alignment with investor expectations or its potential to mitigate uncertainties during the pandemic. In contrast, the results of the fourth event test in Table 5 indicate a predominantly negative market reaction, with abnormal returns remaining negative from t−5 to t. This suggests that the event was initially interpreted as unfavorable or concerning by investors, potentially due to negative implications for the economy or specific sectors. However, starting from t+1, the market shifted to positive abnormal returns, indicating a rebound in investor sentiment. This recovery may reflect market participants adjusting to the news, re-evaluating its impact, or reacting to subsequent information that offset initial concerns.

Table 4. Hypothesis Testing Results for the Third Event

Period	AAR	t-test	Sig.	Results	Period	AAR	t-test	Sig.	Results
t-10	0,023	28,778	*	positive	t+1	0,027	28,68	*	positive
t-9	0,023	28,778	*	positive	t+2	0,033	33,769	*	positive
t-8	0,023	28,778	*	positive	t+3	0,023	27,02	*	positive
t-7	0,027	32,338	*	positive	t+4	0,022	24,869	*	positive
t-6	0,027	29,717	*	positive	t+5	0,022	27,566	*	positive
t-5	0,021	23,52	*	positive	t+6	0,023	28,749	*	positive
t-4	0,035	35,547	*	positive	t+7	0,022	27,208	*	positive
t-3	0,031	32,572	*	positive	t+8	0,013	18,181	*	positive
t-2	0,029	32,092	*	positive	t+9	0,031	35,723	*	positive
t-1	0,023	28,778	*	positive	t+10	0,03	32,327	*	positive
t	0,028	31,682	*	positive					

Source: Research Data

Table 5. Hypothesis Testing Results for the Fourth Event

Period	AAR	t-test	Sig.	Results	Period	AAR	t-test	Sig.	Results
t-5	-0,002	-4,794	*	negative	t+1	0,009	9,543	*	positive
t-4	-0,002	-3,395	*	negative	t+2	0,006	3,131	*	positive

t-3	0,000	-2,558	*	negative	t+3	-0,001	-3,732	*	negative
t-2	0,000	0,000			t+4	0,002	3,166	*	positive
t-1	-0,001	-2,927	*	negative	t+5	0,000	0,000		
t	-0,006	-12,286	*	negative					

Source: Research Data

The results of the 5th event test show fluctuating results, starting with t-10 to t-5 positive abnormal returns and t-4 to t-1 negative abnormal returns. However, from t0 to t+5, the market shows no reaction with insignificant results.

Table 6. Hypothesis Testing Results for the Fifth Event

Period	AAR	t-test	Sig.	Results	Period	AAR	t-test	Sig.	Results
t-10	0,009	10,359	*	positive	t-2	0	-4,937	*	negative
t-9	0,006	4,219	*	positive	t-1	-0,001	-2,75	*	negative
t-8	-0,001	-3,962	*	negative	t	0,002	0,797		
t-7	0,002	4,378	*	positive	t+1	0,001	0		
t-6	0	0			t+2	0,001	0,549		
t-5	0,002	4,156	*	positive	t+3	-0,001	-6,947	*	negative
t-4	-0,008	-8,168	*	negative	t+4	0,005	1,868		
t-3	-0,001	-6,314	*	negative	t+5	0,002	-1,08		

Source: Research Data

The results of the 6th event test show that from the window period t-5 to t+5 the majority of the results are insignificant, but the market reacts at t+1 with negative abnormal returns and at t+2 with positive abnormal returns.

Table 7. Hypothesis Testing Results for the Sixth Event

Period	AAR	t-test	Sig.	Results	Period	AAR	t-test	Sig.	Results
t-5	-0,002	-6,118	*	negative	t+1	-0,008	-20,436	*	negative
t-4	0,002	4,885	*	positive	t+2	0,008	8,546	*	positive
t-3	0,000	0,000			t+3	0,002	-0,448		
t-2	0,002	4,662	*	positive	t+4	0,000	0,000		
t-1	0,002	1,380			t+5	0,002	-0,769		
t	0,002	1,060							

Source: Research Data

The researchers' observations indicate that the market reacted very actively and fluctuated from 2020-2021 to the Covid-19 pandemic. This information indicates that the market did indeed experience panic and reacted in an unnatural way. The first and third events showed predominantly positive abnormal returns, indicating investor optimism or favorable interpretations of the announcements. In contrast, the fourth and fifth events exhibited more negative abnormal returns, reflecting concerns over the adverse implications of the news or policies. The second and sixth events showed mixed patterns, with negative abnormal returns during the event dates followed by recoveries, highlighting the market's initial panic and subsequent stabilization as more information became available. The sixth event, however, the market response appears to have stabilized, with notable results occurring between t-2 and t+2 from the event date. Compared to other events, the third event has some interesting aspects. The market shows a reaction with a positive abnormal return from t-10 to t+10. This is because policy announcements are made on January 11 or after the start of the year, and the market tends to react favorably at the end of the year.

On the day of the event, the fifth event produced insignificant results. This was due to the fact that the rules for t-2 were set before the event, specifically on July 1, 2021, but the implementation did not begin until July 3, 2021. This policy was prompted by an increase in the number of people affected by the latest Covid variant, called Delta. As this news was widely reported every day, investors were constantly reacting with uncertainty. However, the market

interpreted the information that the government had adopted a policy to control the increase in the number of Covid sufferers as a result of the control of uncertain conditions, which had the effect of restoring normal markets. Only when an abnormal return occurs can it be seen in the test results from t0 to t+5.

The different reactions across events highlight the importance of event-specific context in influencing market behavior. For example, announcements that are perceived as measures to mitigate the economic impact of the pandemic are more likely to generate positive reactions, as seen in events with consistent abnormal returns. In contrast, events involving stricter restrictions on activity or negative economic implications result in investor concern, leading to significant declines in returns. These results suggest that the market attributes its reactions to the nature and perceived outcomes of each event, highlighting the importance of clear policy communication.

These findings are consistent with the semi-strong form of the Efficient Market Hypothesis (EMH), which states that markets rapidly incorporate public information into asset prices. The rapid changes in abnormal returns observed in this study suggest that Covid-19-related announcements are rapidly reflected in stock prices. However, the presence of irregular patterns and overreactions in the market highlight inefficiencies and anomalies that may emerge during periods of high uncertainty. These anomalies may stem from emotional responses, incomplete information, or differing interpretations among investors.

CONCLUSION

Based on the test results and data analysis, the market reacted to the six key events during the Covid-19 pandemic in Indonesia, indicating that the news and policies announced by the government contained critical information that influenced investor behavior. During 2020–2021, government announcements triggered various market reactions, reflecting the dynamic and uncertain economic conditions during the pandemic.

The first event, the announcement of the first Covid-19 case in Indonesia, elicited positive abnormal returns from t-10 to t0, followed by negative abnormal returns on t+1 and t+2, and a return to positive abnormal reactions from t+3 onward. For the second event, the market showed a mix of positive abnormal returns on t-10, t-8, and t-7, followed by negative reactions on t-6, t-5, and t-4, then shifted back to positive abnormal returns from t-3 to t0. The third event resulted in consistent positive abnormal returns throughout the observation window from t-10 to t+10, highlighting strong investor confidence.

The fourth event showed predominantly negative abnormal returns from t-5 to t0, but the market shifted to positive abnormal returns starting at t+1. The fifth event exhibited irregular patterns, with positive abnormal returns from t-10 to t-5 and negative abnormal returns from t-4 to t-1. However, from t0 to t+5, the market showed no significant reaction. Similarly, the sixth event demonstrated largely insignificant results from t-5 to t+5, except for negative abnormal returns at t+1 and positive abnormal returns at t+2.

The findings emphasize that government announcements during the pandemic had varying impacts on the Indonesian capital market, influenced by the content and context of each event. However, this research did not analyze individual stock prices for each company. Future studies should refine sample selection criteria to exclude companies with static stock prices, as this would enhance the robustness and reliability of similar research. Such improvements can provide a deeper understanding of market dynamics during crisis periods.

This study contributes to the understanding of market behavior during global crises, particularly in emerging markets like Indonesia. The findings offer empirical evidence of how information related to Covid-19 affected stock prices and market dynamics. Future research can further explore the role of investor sentiment and behavioral biases in market reactions, particularly during times of crisis. By linking these findings to EMH, this study provides a basis for examining how markets process information under extreme conditions.

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