

## Dissecting Market and Business Responses of LQ45 Stocks amidst Crisis: An Event Study of COVID-19 Policies with A Mixed-Method Approach

Aditya Firza Pratama <sup>1</sup>✉ Erman Arif Sumirat <sup>2</sup> Sylviana Maya Damayanti <sup>3</sup>

✉ <sup>1,2,3</sup> *Institut Teknologi Bandung, Bandung, Indonesia*

### Abstract

This study examines how LQ45 companies in Indonesia's capital market responded to government interventions during the COVID-19 crisis, with a focus on the implementation of Large-Scale Social Restrictions (PSBB) and the transition to the New Normal. Employing a mixed-method approach, the study combines event study analysis to examine market reactions and qualitative interviews to explore the internal corporate strategies behind the anomalies of issuers' stock performance. The findings reveal that market resilience and rebound are closely intertwined with macro-policy timing and simultaneously with the internal agility of firms, particularly in managing financial flexibility, operational adaptability, and strategic communication. Quantitative results from an event study reveal significant differences in several indicators regarding before-and-after policy events. At the same time, qualitative insights highlight how firms leveraged crisis moments to adapt and innovate, such as accelerating digital transformation, reinforcing leadership credibility, and institutionalizing organizational learning. Hence, this study contributes to both academic discourse and practical applications by identifying how internal managerial responses shape market dynamics during systemic uncertainty.

**Keywords:** *Event study; Market reaction; Abnormal return; PSBB, COVID-19, Financial agility, Organizational resilience; LQ45*

Copyright (c) 2025 Aditya Firza Pratama

---

✉ Corresponding author :

Email Address: [aditya\\_firza@sbm-itb.ac.id](mailto:aditya_firza@sbm-itb.ac.id)

## INTRODUCTION

At the end of 2019 and the beginning of 2020, global capital markets began to face uncertainty triggered by signs of economic slowdown in various developed countries. (He et al., 2021; Maneenop & Kotcharin, 2020). This situation was then exacerbated by the emergence of the COVID-19 pandemic, which is not only a health problem but also causes global economic disruption. Indonesia has also felt the impact of the worldwide economy, including in the capital market sector.

The COVID-19 pandemic, which was first detected in Wuhan, China, in late 2019, has rapidly spread worldwide, including Indonesia (He et al., 2021). The World

Health Organization (WHO) officially declared COVID-19 a global pandemic in March 2020. The spread of this virus has disrupted almost all economic sectors, both in developed and developing countries (Şenol & Zeren, 2020). As a result, economic activity slowed sharply, consumption and production ceased, and people's mobility was drastically limited through the lockdown policy or large-scale social restrictions (PSBB) implemented via PP No. 21 of 2020 concerning the implementation of PSBB.

The capital market's reaction to the COVID-19 pandemic is significant and can be measured by the volatility of stock indices. In Indonesia, the JCI experienced a sharp decline at the beginning of the pandemic, in line with the fall of major world indices such as the Dow Jones, S&P 500, and Nikkei (Şenol & Zeren, 2020; Susandini & Adiyanto, 2021). Investors responded to this situation with panic, as reflected in the massive sell-off of stocks across various sectors, particularly those directly related to economic activity, such as transportation, tourism, and manufacturing. From the perspective of the efficient market hypothesis, the correlation between the COVID-19 pandemic and the capital market's reaction is evident in how the market responds to daily case developments, government policies, and economic recovery efforts. (Malkiel, 2011; Tıřan, 2015). Also, the company's business management and operational strategies play a role in the market's reaction during the crisis period and the government's economic recovery efforts. As a result, although it reached its lowest point in March 2020, with several triggers of automatic trading (auto rejection) due to the plunge in stock prices, along with the adaptive policies of the government and industry, the formation of a new balance on the market's reaction to the decline in the JCI continued to rebound and overall the capital market recovered.

However, when viewed from the perspective of behavioral finance theory, the downward and upward trends are responses from market players to the emergence of uncertainty and certainty in the direction of economic growth and positive and negative sentiment, resulting in speculative and emotional actions. Then, from the perspective of crisis management theory, along with the implementation of policies to control the spread of the virus, the market began to show signs of recovery (market recovery) even though the implications of government policies have a two-way continuum point, namely positive or negative sentiment towards the reaction of the capital market. Overall, the theoretical reviews show that market reactions to crises are complex and multidimensional. EMH highlights how information is distributed and processed by rational investors, while behavioral finance explains the involvement of psychology and cognitive biases in decision-making. As crisis management theory emphasizes, the importance of policy responses and communication in shaping market perceptions during disruptions is crucial. The combination of these three approaches forms a relevant framework for understanding the dynamics of the Indonesian capital market during and after the COVID-19 pandemic, as will be explained further in the conceptual structure of this study.

In the literature, various previous studies have examined the impact of the COVID-19 health crisis on the capital market and other economic impacts. For example, research by Bouzgarrou et al. (2023) explores how the COVID-19 Pandemic influences macroeconomic reactions. In addition to creating a supply-demand shock, this reaction has a long-term impact, suggesting that the capital market reacts more to bad news than to good news. Another study that takes a broader scope via cross-country analysis states that there are several countries whose capital market reactions

are overreacting, such as the US, China, and Australia and underreacting in the Indian Stock Market, indicating a variety of impacts due to various fundamental factors, such as economic activity, government policies, and culture (Ashraf, 2020; Jin et al., 2022; Mishra & Mishra, 2021; Rizvi et al., 2021). At a more substantive level, some studies also focus on specific scopes or sectors, such as consumer goods (Machmuddah et al., 2020) and mining (Liu et al., 2024; Sunardi et al., 2023). Some correlate it with triggers in the news media, such as the reaction of the capital market in a specific country (Yu & Xiao, 2024). Additionally, there is a substantial body of previous literature that examines the reaction of capital markets in each particular country in response to significant triggers, such as the death of a prominent figure (Udeaja & Isah, 2022), the pre- and post-outbreak period (Makni, 2023), and macroeconomic indicators (Baek et al., 2020).

In the scope of government policy, studies from Rizvi et al. (2021) show that capital markets in several ASEAN countries react differently to the fiscal and monetary policies of each country amidst the COVID-19 pandemic period, which is also confirmed by findings from Deng et al. (2022) This compares the explicit impact of interest rate policies during the pandemic in several countries. However, the literature is limited in its depth in examining how domestic policies, such as PSBB and the transition to the new normal era, affect the capital market in developing countries, including Indonesia. Additionally, a gap exists in the previous literature, which is limited to the contribution of temporal insight into the influence of government policies across countries and has not comprehensively explained how government policies affect the volatility of major indices, such as the LQ45, during a crisis period. Second, there is a lack of research exploring the differences in market reactions to the implementation of significant national policies, such as the national PSBB policy and the new normal, as efforts to control the pandemic (Rizvi et al., 2021; Deng et al., 2022). Third, the impact of key government policies during the pandemic on high-performing indices, such as the LQ45 index, has not been fully explored, leaving room for research to delve deeper into these dynamics, particularly regarding orientation, analysis, and investment decision-making processes. Therefore, this study aims to fill this gap by identifying how the Indonesian capital market reacts to the main index in the Indonesian capital market, namely the LQ45 Index, to the COVID-19 Pandemic, especially in the period before and after the National PSBB policy was implemented and the national economic recovery period, during the New Normal policy.

## METHODOLOGY

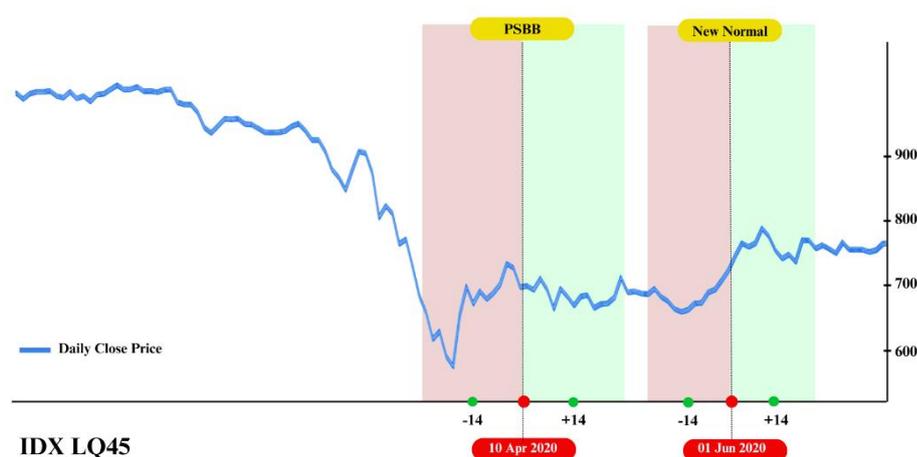
Building on the work of Dilshad (2013) and Rafter et al. (2017), this study employs the event study method as its primary approach to investigate whether policy-based crisis events can significantly impact a company's stock returns or financial performance. Drawing reasoning from EMH, asset prices directly reflect all available information. In other words, if the market is efficient, any new relevant information will be immediately reflected in stock prices. Then, the formed volatility reflects the high level of uncertainty and speculation in the market, so positive, sideways, and upward trends result from cognitive bias, herding behaviour, and other forms of behaviour perceived by investors during this period of uncertainty. From the BFT perspective, the form of government intervention can trigger market

reactions both positively and negatively because it is economically related to a country's economic activity. Therefore, to capture the variety of correlations, an event study enables researchers to test the argument or hypothesis by analyzing whether stock prices react quickly and accurately to events with economic implications.

The population in this study consists of companies listed on the IDX, particularly those in the LQ45 Index, as of the first semester of 2020, which serves as the event study period. Furthermore, the LQ45 index is significant because it plays a strategic role in shaping the performance of the Indonesian capital market, specifically the IHSG. However, the LQ45 index has a periodic evaluative mechanism due to considerations of high-performing issuers and high liquidity. Therefore, this research sample employs the purposive sampling method, using the following criteria.

1. Companies listed on the IDX were also included in the LQ45 index during the research period.
2. Companies with complete daily stock price data, trading volume, and trading frequency for a specified period.
3. Companies that did not experience suspension during the observation period

With this set of criteria, this study seeks to ensure that the sample is relevant to achieve the previously set analysis objectives. Furthermore, this study employs a quantitative approach, utilizing secondary data obtained from BEI as its primary source. Secondary data were chosen because they offer advantages in accessibility, time efficiency, and high reliability compared to primary data (Fisher & Chaffee, 2018). Apart from BEI, referring to the duration of the event study analysis from Kimbrough et al. (2024), the data used also comes from websites such as Yahoo Finance, which includes daily stock prices, trading volumes, and daily trading frequencies during two events with 28 days (14 days before and 14 days after), as shown in **Figure 1** below.



**Figure 1.** Daily closing price of IDX LQ45 from an Event Study perspective

Based on the conceptual explanation above, the following table presents the operational definitions and formulas for each capital market reaction variable used in this study. These definitions (see **Table 1**) provide a standardized framework for

measuring abstract concepts, such as abnormal return, trading volume activity, trading frequency, price-to-earnings ratio (PER), and price-to-book value (PBV). By translating each variable into observable indicators and precise formulas, this approach ensures consistency across data collection and analysis, supporting the validity and reliability of the study's findings.

**Table 1. Operational Variables**

No.	Variable (Definition)	Formula
1	<p><b>Abnormal Return</b> (The difference between actual and market return, indicating market reaction to events.)</p> <p>Source: Yu &amp; Xiao (2024); Chen et al. (2007); Ismanto (2020); Putri &amp; Martin (2021)</p>	<p>1) Calculate the actual return of each stock</p> $R_{it} = \frac{P_t - P_{t-1}}{P_{t-1}} \quad (1)$ <p>Information: R<sub>it</sub> = Actual return of stock i on day t P<sub>t</sub> = Share price on day t P<sub>t-1</sub> = Stock price on day t-1</p> <p>2) Calculating market returns</p> $R_{mt} = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}} \quad (2)$ <p>Information: R<sub>mt</sub> = Actual stock return on day t IHSG<sub>t</sub> = Daily IHSG on day t IHSG<sub>t-1</sub> = Daily IHSG on day t-1</p> <p>3) Calculate the abnormal return of each share</p> $AR_{it} = R_{it} - R_{mt} \quad (3)$ <p>Information: AR<sub>it</sub> = Abnormal return of stock i on day t R<sub>it</sub> = Actual return of stock i on day t R<sub>mt</sub> = Market return on day t-1</p>
2	<p><b>Trading Volume Activity</b> (The ratio of traded shares to total outstanding shares, indicating trading activity and liquidity)</p> <p>Source: Sunardi et al. (2023); Putri &amp; Martin (2021); Novilia et al. (2022)</p>	$TVA_{it} = \text{Traded Shares-t} / \text{Outstanding Shares-t}$
3	<p><b>Trading Frequency</b> (The number of times a stock is traded within an observation period, indicating investor interest)</p> <p>Source: Novilia et al. (2022)</p>	$\text{Trading Frequency} = \text{Total Trade Frequency} / \text{Observation Days}$
4	<p><b>Price to Earnings Ratio</b> (The ratio of closing price to earnings per share, reflecting market valuation relative to company earnings)</p> <p>Source: Mangku et al. (2024)</p>	$PER = \text{Closing Price-t} / \text{EPS}$
5	<p><b>Price to Book Value</b> (The ratio of market price per share to book value per share, indicating market expectations relative to net asset value)</p> <p>Source: Tampakoudis et al. (2022)</p>	$PBV = \text{Market Price per Share} / \text{Book Value per Share}$

Source: Compiled by the authors (2025)

## RESULT AND DISCUSSION

**Table 2** presents a description of the number of samples used for secondary data analysis, including the selection stages based on the criteria determined in this study's methodology. Sample selection refers to companies that have consistent characteristics, especially those listed sequentially in two LQ45 index evaluation periods throughout 2019. From the results of this selection, 27 companies were obtained as the primary analysis units. Furthermore, the testing process was conducted using a pooled data approach, which involved multiplying the number of final sample companies (27 entities) by the 28-day observation period, resulting in a total of 756 observations analyzed in this study.

**Table 2.** Sample Criteria Selection and Result

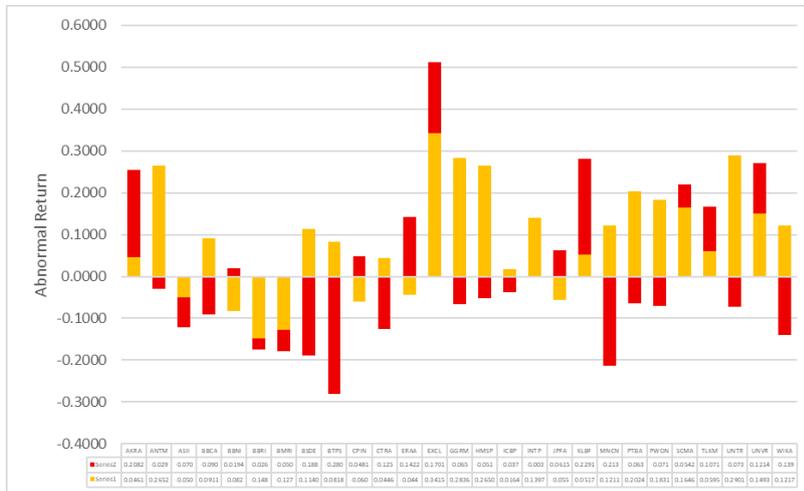
Criteria	Total
Number of companies listed on the LQ45 during 2019-2020	48
Number of companies not listed on the LQ45 consecutively for two evaluation periods in 2019-2020	(6)
Number of companies listed on the LQ45 consecutively for two evaluation periods in 2019-2020	42
Number of companies for which quarterly financial report data is not available	(6)
Number of companies for which quarterly financial report data is publicly available	36
Companies using currencies other than the rupiah	(6)
Companies using the rupiah currency	30
Companies with incomplete data related to the variables analyzed	(2)
Companies with complete data for each variable analyzed	28
Companies that experienced losses during the observation period	(1)
Companies that meet the criteria	27
Total observations (number of companies multiplied by 28, as the days analyzed for the event study)	756

*Sumber: Processed Secondary Data (2025)*

Because it employs a mixed-methods approach, the following sample consists of an informant selected based on the results of the initial quantitative analysis. The informant was determined from 27 entities that had been previously analyzed, where each of these issuers was later identified through descriptive statistical results. The identification refers to the grouping of issuers that are resilient during PSBB and which rebound the fastest when the New Normal policy emerges, in terms of abnormal returns. Because fluctuations in abnormal returns during that period reflect the market's direct and indirect reactions to the company's internal strategy in dealing with the crisis, this grouping is significant. In other words, issuers that exhibit positive abnormal return values or considerable recovery after a period of stress are considered entities that have succeeded in building resilience (during PSBB) or adapting their business quickly (during the New Normal). Therefore, the selection of qualitative informants in this study considers the company's strategic position in influencing market perception based on empirical data. In other words, with a ranking-based elimination approach that refers to the difference in movement that is most resilient during PSBB and the fastest rebound during the New Normal policy, the issuer identification process and confirmation of the collected correspondence are interconnected and explain in depth the logic and managerial strategies that drive market reactions as reflected in the fluctuations in abnormal returns.

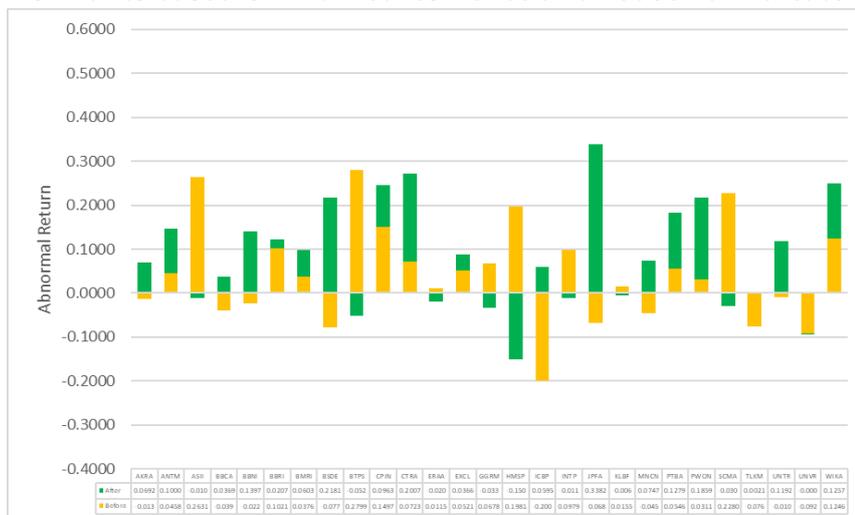
In more detail, **Figure 2** presents the abnormal return trend of 27 issuers during the PSBB period, illustrating that the majority of issuers experienced negative abnormal returns (red) or limited recovery (orange). This pattern illustrates high market uncertainty and pressure on issuer performance due to restrictions on

mobility and economic activity. Based on the figure below, only a small number of companies, such as CPIN and SCMA, were able to maintain positive abnormal returns, which implicitly indicates relatively strong business resilience to the pandemic shock. Additionally, this graph serves as an initial basis for identifying companies with resilient characteristics during the initial crisis.



**Figure 2.** Abnormal Return Trend during PSBB Period  
Source: Processed Secondary Data (2025)

**Figure 3** illustrates the dynamics of abnormal returns following the implementation of the New Normal policy. In general, the graph shows an increase in abnormal returns for several issuers (green), including EXCL, KLBF, and UNVR. This indicates market optimism regarding the company's recovery strategy. On the other hand, several issuers still exhibit decreases or even negative abnormal returns, despite having entered the transition period. This difference highlights the importance of qualitative data mining in understanding the internal strategic factors that contribute to differences in rebound rates among issuers. Thus, these two graphs serve as a reference in compiling a logical basis for the purposive selection of qualitative informants based on market resilience and rebound indicators.



**Figure 3.** Abnormal Return Trend during New Normal Period  
Source: Processed Secondary Data (2025)

As previously explained, the qualitative approach in this study aims to delve deeper into the company's internal perspective, building on the previous quantitative findings. In this case, the results of testing the difference in average abnormal returns before and after the implementation of the PSBB and New Normal policies serve as the initial basis for identifying issuers that exhibit patterns of resilience and rapid stock price recovery (rebound). Furthermore, the selection of informants is based on the results of secondary data processing (**Table 3**), which shows the highest ranking and mean difference value among the 27 issuer samples, particularly in terms of abnormal return movement, in the LQ45. Issuers that consistently rank in the top 20 in both policy episodes are considered to have striking resilience and recovery capabilities, making them worthy of further qualitative confirmation. In addition, **Table 3** presents the resilience and rebound rankings of each issuer, based on the analysis of the difference in average abnormal returns. With this identification process, researchers use it as a reference to further carry out the data collection process, ensuring the correspondence of quantitative findings. On the other hand, with 16 issuers consistently in the top 20, both during the PSBB period and the New Normal policy, researchers also infer that this list of issuers is a representation based on archival data related to how an issuer can survive and perform even during a crisis.

**Table 3. Issuer Resilience and Rebound Ratings Based on Abnormal Returns**

Sectors	Issuers Code	$\Delta$ AR in the PSBB Period	Ranking	$\Delta$ AR in the New Normal Period	Ranking
Basic Material	ANTM	-0.29504	21	0.05419	14
	INTP	-0.14303	14	-0.10899	23
Consumer Cyclicals	ASII	-0.01983	10	-0.27380	25
	CPIN	0.10818	6	-0.05340	20
	ERAA	0.18628	1	-0.03164	19
	JPFA	0.11706	5	0.40700	1
	MNCN	-0.33410	24	0.12021	8
	SCMA	-0.11036	13	-0.25829	24
Consumer Non-cyclicals	GGRM	-0.34923	25	-0.10166	22
	HMSP	-0.31690	23	-0.34842	27
	ICBP	-0.05409	12	0.25954	3
	KLBF	0.17742	2	-0.02156	18
	UNVR	-0.02786	11	0.09193	9
Energy	AKRA	0.16213	3	0.08308	10
	PTBA	-0.26608	20	0.07326	13
Financials	BBCA	-0.18117	17	0.07661	12
	BBNI	0.10173	7	0.16250	4
	BBRI	0.12144	4	-0.08147	21
	BMRI	0.07733	8	0.02273	15
	BTPS	-0.36273	26	-0.33200	26
Industrial	UNTR	-0.36343	27	0.12917	6
Infrastructure	TLKM	0.04765	9	0.07848	11
	WIKA	-0.26072	19	0.00111	16
Property & real estate	BSDE	-0.30259	22	0.29535	2
	CTRA	-0.17058	15	0.12832	7
	PWON	-0.25450	18	0.15487	5
Technology	EXCL	-0.17136	16	-0.01547	17

Note: Identification of resilience and rebound based on the consistency of issuers in the top 20;    : Issuer with inconsistent position being in the top 20, both in the studied events

Source: Processed Secondary Data (2025)

## Statistical Descriptive

Descriptive statistics during the PSBB policy period show extreme dynamics in valuation indicators and market reactions. In more detail (see **Table 4**), the

average PER is 163.7891 with a high standard deviation (742.1279), reflecting the volatility of market profitability. Meanwhile, PBV has an average of 2.81 and a moderate spread, indicating that the market assessment of the issuer's book value is relatively stable. The AR value was recorded as negative on average (-0.0155), reflecting market pressure during the phase of social activity restrictions. On the other hand, the average TVA and FS showed values of 0.0802 and 9,903.35, respectively, indicating a decrease in market activity and liquidity. Overall, the PSBB period was marked by tremendous pressure on stock performance, both in terms of valuation and market perception.

**Table 4. Descriptive Statistics Results for the PSBB Policy Period**

Variables	Minimum	Maximum	Mean	Std. Deviation
B_PER	-489.9590	3836.9917	163.7891	742.1279
A_PER	-988.3103	169.4822	8.3291	204.3106
B_PBV	0.1188	38.3127	2.8098	7.2173
A_PBV	0.1470	43.7293	3.0919	8.2595
B_AR	-0.1482	0.3415	0.0912	0.1336
A_AR	-0.2809	0.2291	-0.0155	0.1254
B_TVA	.0067	0.7415	0.0802	0.1451
A_TVA	.0031	0.7007	0.0755	0.1487
B_FS	2209.79	42316.71	9903.35	8617.50
A_FS	2811.43	28207.00	7598.93	5791.53
Valid N	27			
B = Before; A = After; PER = Price-Earnings Ratio; PBV = Price to Book Value; AR = Abnormal Return; TVA = Trading Volume Activity; TF = Trading Frequency				

Source: Processed Secondary Data (2025)

Based on **Table 5**, during the New Normal policy phase, significant changes in market indicators emerged, indicating signs of recovery. Upon closer examination, the average PER dropped sharply to 1.14 before the incident and even recorded a negative value after the incident (-9.63), indicating a significant correction in the company's profit expectations. In contrast, the PBV value increased from 2.78 to 2.99, indicating a recovery in investor confidence in the company's asset value. In terms of reactive variables, the average AR risen from 0.0438 to 0.0628, indicating a more positive shift in market perception. Additionally, trading activity exhibited a recovery trend, as indicated by the increases in TVA (from 0.0717 to 0.0878) and FS (from 8,720.13 to 9,987.40). However, the high standard deviation indicates that the rebound process is not uniform across companies. Thus, the New Normal period presents an opportunity for market recovery, albeit at varying levels among issuers.

**Table 5. Descriptive Statistics Results for the New Normal Policy Period**

Variables	Minimum	Maximum	Mean	Std. Deviation
B_PER	-854.9100	148.3342	1.1418	174.0728
A_PER	-1049.5119	168.0649	-9.630	212.7977
B_PBV	0.1463	33.5679	2.7825	6.3768
A_PBV	0.1592	34.8673	2.9938	6.5951
B_AR	-0.2001	0.2799	0.0438	0.1134
A_AR	-0.1503	0.3382	0.0628	0.1007
B_TVA	0.0064	0.4556	0.0717	0.0963
A_TVA	0.0052	0.4591	0.0878	0.1107
B_FS	2093.21	42424.86	8720.1259	7985.7873
A_FS	2830.43	38832.64	9987.3967	8132.3739
Valid N	27			
B = Before; A = After; PER = Price-Earnings Ratio; PBV = Price to Book Value; AR = Abnormal Return; TVA = Trading Volume Activity; TF = Trading Frequency				

Source: Processed Secondary Data (2025)

## Difference Test Results

Before testing the hypothesis with a difference test, a normality test must be conducted first to determine the appropriate type of difference test. Additionally, this test is used to identify any residual in the variables studied that are normally distributed. Since the final sample size is less than 30, the author then refers to Ghasemi & Zahediasl (2012) and Yap & Sim (2011), who suggest using the "Shapiro-Wilk" type of normality test when the sample size is relatively small. Therefore, the researcher then used the Shapiro-Wilk test to assess normality, with a significance level of 5% (0.05). In principle, a variable is declared normally distributed if the Asymp. Sig (2-tailed) value exceeds 0.05; conversely, if the value is below 0.05, the variable is considered abnormal (Gujarati, 2021). As shown in **Table 6**, the results of the normality test in this study are presented below.

**Table 6** Normality Test Results via Shapiro-Wilk Test

Event Study Period	Variables	Minimum	Sig.
PSBB	B_PER	0.279	0.000
	A_PER	0.373	0.000
	B_PBV	0.330	0.000
	A_PBV	0.323	0.000
	B_AR	0.973	0.695
	A_AR	0.976	0.766
	B_TVA	0.482	0.000
	A_TVA	0.486	0.000
	B_FS	0.717	0.000
	A_FS	0.756	0.000
New Normal	PER_B	0.342	0.000
	PER_A	0.333	0.000
	PBV_B	0.379	0.000
	PBV_A	0.385	0.000
	AR_B	0.973	0.677
	AR_A	0.964	0.464
	TVA_B	0.628	0.000
	TVA_A	0.709	0.000
	FS_B	0.666	0.000
	FS_A	0.778	0.000
Valid N		27	

Source: Processed Secondary Data (2025)

Based on the results of the normality test shown in **Table 6** above, it can be interpreted that the majority of variables in both the PSBB and New Normal periods exhibit a significance value below 0.05, indicating that the data is not normally distributed. Therefore, the Wilcoxon Signed-Rank Test, as a non-parametric difference test, is more appropriate to use to test the significance of the difference in values before and after the PSBB and New Normal policies.

Then, based on the results of the Wilcoxon Signed-Rank Test on the five main variables (shown in **Table 7**), it is known that there are significant differences in most indicators after the implementation of the PSBB policy. First, the PBV variable shows a substantial difference with a p-value of 0.046, indicating significance at the 5% level. The majority of issuers in the sample studied experienced an increase in PBV value after the PSBB. This means that despite market pressure, the perception of the company's value has increased relatively, which may reflect market optimism towards the long-term fundamentals of specific companies, especially this opportunity identified by rational investors. On the other hand, for PER, the test results show no significant difference, namely with a p-value of 0.792. The number of issuers experiencing an increase and decrease in PER tends to be balanced (14 up and

13 down), which indicates that, in terms of profit-based valuation, the market reaction has not provided a consistent direction.

Furthermore, interesting results emerged from the abnormal return variable, which showed a significant difference at the 1% level ( $p = 0.012$ ) between the periods before and after PSBB. As many as 18 out of 27 issuers experienced a decrease in abnormal returns, indicating that this social restriction policy was responded negatively by the majority of investors in the short term. This reaction can be interpreted as a form of market concern about restrictions on economic activity and the associated uncertainty. The same applies to the trading volume activity variable. However, the significance value ( $p = 0.052$ ) is not far from the conventional threshold of 5%. The tendency of the majority of issuers who experienced a decrease in transaction volume (21 issuers) suggests a decline in investor participation, possibly due to increased caution in uncertain market conditions.

Finally, the stock frequency also showed significant results ( $p = 0.001$ ), with a dominant decrease in transaction frequency in most issuers (22 out of 27). This statistical pattern strengthens the conclusion that market activity tends to slow down quantitatively after the implementation of the PSBB policy. In this context, a significant implication that can be drawn is that large-scale social restriction policies have a direct impact on fundamental indicators and value perception, also suppressing stock trading activity. Thus, besides technical price trends, market reactions are also reflected in the dynamics of market player participation, which has a drastic decline during periods of uncertainty, such as a pandemic.

**Table 7. Wilcoxon Signed-Rank Test Results in PSBB Period**

Variable	Negative Ranks (N)	Positive Ranks (N)	Z	(Asymp.sig) <sup>sig-level</sup>	Hypotheses Conclusion
AR_A - AR_B	18	9	-2.523	(0.012)**	H1a (supported)
TVA_A - TVA_B	21	6	-1.946	(0.052)*	H2a (supported)
FS_A - FS_B	22	5	-3.291	(0.001)***	H3a (supported)
PER_A - PER_B	13	14	-0.264	(0.792) <sup>ns</sup>	H4a (not supported)
PBV_A - PBV_B	8	19	-1.994	(0.046)**	H5a (supported)

**Note:** n: 27; \*\*\*(1.00%); \*\*(5.00%); \*(10.00%); NS(Not Significant)

*Source:* Processed Secondary Data (2025)

In the second event study period, known as the New Normal, the PER variable experienced a significant change, with a p-value of 0.000 at a 1% significance level. Specifically, 24 out of 27 issuers showed an increase, as shown in **Table 8**. In other words, the majority of companies experienced an improvement in profit expectations after the easing of pandemic policies. Furthermore, investor perceptions of profit growth potential seemed to improve drastically. Similar results were observed, with the PBV variable also showing a significant difference ( $p = 0.000$ ), as 25 issuers experienced an increase in their PBV value. Thus, this trend change indicates that the market is starting to appreciate the company's book value again, reflecting positive sentiment towards its long-term fundamentals, which were previously depressed during the crisis. Therefore, although not all indicators show a significant recovery, the spike in transaction volume and valuations such as PER and PBV can be used as a signal that the market is starting to move out of the pressure of the crisis and towards a healthier normalization of financial activity.

**Table 8. Wilcoxon Signed-Rank Test Results in New Normal Period**

Variable	Negative Ranks (N)	Positive Ranks (N)	Z	(Asymp.sig) <sup>sig-level</sup>	Hypotheses Conclusion
AR_A - AR_B	11	16	-0.913	(0.361)**	H1b (supported)
TVA_A - TVA_B	12	15	-2.0242	(0.041) <sup>ns</sup>	H2b (not supported)
FS_A - FS_B	12	15	-1.1532	(0.248) <sup>ns</sup>	H3b (not supported)
PER_A - PER_B	3	24	-3.411	(0.000)***	H4b (supported)
PBV_A - PBV_B	2	25	-3.724	(0.000)***	H5b (supported)

**Note:** n: 27; \*\*\*(1.00%); \*\*(5.00%); \*(10.00%); NS(Not Significant)

*Source:* Processed Secondary Data (2025)

## Findings Corresponding

### *Corporate Financial Agility*

A company's ability to demonstrate financial agility during a crisis is highly dependent on the robustness of its financial structure and the precision of its cost and liquidity management strategies. In the context of the COVID-19 pandemic, many companies repositioned their financial plan by focusing on comprehensive efficiency measures targeting the most significant operational expense components. As noted by various informants during interviews:

*"According to the roadmap, because the purchasing roadmap increased, we still maintained efficiency, for example, in direct labor or plant capacity"* (INF-02; INF-03; INF-07).

*"...for operations, we also conducted R&D, particularly related to digitalisation, which was part of our long-term plan, although it wasn't intended to be executed in 2020..."* (INF-02; INF-05; INF-06).

Furthermore, such adjustments were not simply a matter of cutting expenditures. Still, they were implemented through strategic approaches such as renegotiating long-term contracts, reallocating production volumes, and optimising cost distribution across units with relatively lower value-added during the crisis. By maintaining this level of efficiency, companies were able to sustain operations without having to rely on risky debt expansion in uncertain market conditions. Moreover, working capital management became a central concern in ensuring business continuity. Some companies opted to shift their liquidity strategies by making advance payments to key partners or by strengthening inventory reserves to avoid supply chain disruptions. Although this strategy resulted in increased working capital, it remained manageable due to the strong internal cash positions. As stated in the transcripts, *"we actually had a strong level of cash, so even with increased inventory levels... we were still able to manage it"* (INF-02; INF-04; INF-05; INF-07). During the PSBB period, access to external financing was generally limited, making internal cash flexibility and reliability a key determinant in managing volatility. Referring to the study by Nason & Patel (2016), the principle of "cash is king" is not merely a conservative cliché. Still, a critical strategic tool, especially since crises are inherently unpredictable, and cash preservation must always be a top priority.

Cost-saving strategies were also applied selectively. Instead of making blanket cuts, companies adjusted expenditures that did not directly affect production capacity or distribution chain resilience. For instance, reducing physical promotional expenses, limiting business travel, or digitalising marketing activities were examples of achieving efficiency without undermining the core value chain. In some cases, the

decision not to lay off employees or reduce production levels during the crisis proved to be a sustainability strategy that fostered long-term internal loyalty and a positive corporate image. As stated by one informant, "*we did not proceed with layoffs or terminations... because in fact, our demand actually increased*" (INF-01; INF-02; INF-03; INF-06). Ultimately, corporate financial agility is not merely about controlling expenses—it involves the company's ability to reassess financial strategy scenarios, balance risks, and identify new opportunities within uncertain conditions, converting them into structural advantages in the company's evolving business landscape.

#### *Operational Adaptability and Business Innovation*

Operationally, companies demonstrated a high level of adaptability to ensure the continuity of business processes amidst the systemic disruptions caused by the pandemic. In heavy industries such as mining and energy, adjustments were made through work reorganization, the implementation of strict health protocols, and the strengthening of internal digital systems that were previously not considered strategic priorities. As explained in an interview session, "in an emergency, we ended up executing a system that previously wasn't running. For example, we had a CISEA—collaboration system of enterprise architecture—that used to be inactive, and finally it started working" (INF-01). This indicates that the crisis accelerated the pace of work processes and digitalization that had been delayed for a long time. Beyond the administrative layer, companies also adapted inventory management, including the cannibalisation of old equipment for spare parts, shortening procurement cycles, and distributing spare parts across operational areas. In short, innovation during a crisis is not limited to new products, but also involves driving process-based efficiency.

In a different context, the non-cyclical consumer industry, which faced higher technical complexity, became a key pillar of national recovery. Companies in critical sectors, such as pharmaceuticals, continually adapt their operations by modifying manufacturing lines, implementing protective equipment protocols, and accelerating the shift in business models to support national resilience. As revealed in one interview, "we established what is called local assembly, which originally we were in a trading-based business model, but now we are shifting" (INF-02). This transformation enabled the company to transition from being an importer to a local provider that was more responsive to government policies, particularly those related to the Domestic Component Level (TKDN). Innovatively, companies also developed COVID-19-related products and strengthened vaccine research and development through international collaboration. Furthermore, the innovation process was carried out in a participatory manner, with a bottom-up approach, where employees were given space to design ideas that were later reviewed by technical experts and central management. In essence, a company's adaptability demonstrates that innovation is not merely a technocratic agenda but is born from inclusive and agile internal dynamics.

Overall, these findings highlight that the intensity of adaptation and innovation is greatly influenced by an industry's strategic position within the crisis ecosystem. However, a common thread emerges among successful companies across sectors: the ability to align operational needs with the speed of internal innovation. As highlighted in several other interview quotes:

*"Within two months, we launched a new COVID-based product... We launched it immediately once the distribution permit was issued" (INF-02).*

*"... we are trying to be more innovative so that we can be more reliable in dealing with changes during this pandemic..." (INF-03; INF-07)*

*"... the situation forced us, so we could say this was a reactive result, but actually there is a positive side – we were forced to think harder..." (INF-01; INF-04; INF-05).*

*"...internal competition forums, which were then finalised with supervision from technical experts and central management..." (INF-03; INF-06; INF-07)*

This implies that the crisis was utilised not merely for survival, but to accelerate the process from ideation to commercialisation. Ultimately, adaptive and innovative operational strategies have become a key pillar of corporate resilience, not only in responding to the crisis but also in building new competitive advantages in the post-crisis landscape.

### *Organizational Resilience Framework*

Organizational resilience during a crisis is not solely determined by financial strength, but rather by the systemic harmony between leadership, business structure, and the characteristics of the industry sector in which it operates. Cross-sector findings reveal a consistent pattern: companies that can maintain "balance" within their internal systems tend to demonstrate stronger endurance in facing national or global-scale crises. This balance encompasses three key aspects: adaptive strategic leadership, functional and complementary business structures, and an industry sector that remains socially and economically relevant during times of crisis. These elements are interconnected and form a resilient foundation that is not easily shaken by short-term shocks.

From the leadership perspective, resilient organizations are typically led by figures who are not only strategically visionary but also capable of building collective trust in the face of adversity. As emphasized by several cross-industry informants, *"when the leader truly believes we can get through this, has a clear vision, mission, and strategy to overcome it"* (INF-02; INF-05; INF-06). Leadership that embodies values of efficiency and role modeling also strengthens organizational cohesion, as reflected in another statement: *"the leader leads by example; they visibly practice efficiency and truly set the tone"* (INF-02; INF-04; INF-07). This type of leadership also functions operationally, stimulating inter-divisional synergy to remain solid and practical. Another comment illustrates such consistency in collaboration: *"We continue to synergize, and everyone must understand their respective roles and functions"* (INF-01; INF-03; INF-04; INF-06)

Furthermore, a flexible and complementary organizational structure becomes a critical pillar in maintaining business performance during a crisis. Many companies have streamlined their organizational structures to be more functional, enabling faster decision-making and improved adaptability to rapidly changing environments. As one informant noted, *"we reduced structural layers, combining many divisions into more functional teams."* (INF-02; INF-03; INF-04; INF-05; INF-07) Such a structure enables organizations to maintain productivity while minimizing coordination costs and accelerating their response to market dynamics. Additionally, companies with diversified business portfolios or relatively balanced revenue contributions across business lines tend to have greater room to maneuver. When

one division is negatively impacted, another, more resilient division can act as a buffer to maintain overall operational and revenue stability. Hence, resilience strategy is not merely about passive defense, but also about the organization's ability to design adaptive internal structures with strong cross-functional integration.

#### *Strategic Communication Alignment*

In systemic crises, such as the COVID-19 pandemic, corporate communication has evolved from mere administrative compliance to a central pillar of market perception management. Companies demonstrating resilience tend to position transparency not only as a formal obligation but as a strategic tool to safeguard credibility and build long-term trust. Communication is no longer confined to the delivery of financial data; instead, it is contextualized with explanations of strategic decisions and rational projections for the future. By conveying honest and logical narratives about the challenges faced, companies effectively reduce speculative space and maintain investors' psychological stability. As expressed by several informants, *"...even small things at that time were very appreciated... we tried not to cut anything even though the medium was no longer face-to-face."* (INF-02; INF-03; INF-04; INF-07)

Furthermore, the effectiveness of corporate communication during a crisis is determined by its ability to understand and respond to the diverse needs of its audience. Differential communication strategies become essential when companies must deliver messages to institutional investors, who focus on long-term fundamentals, and to retail investors, who tend to respond to narratives of recovery and sentiment. In practice, narratives are tailored to emphasize liquidity and operational efficiency for institutions, while highlighting digital innovation and strategic expansion for the general public. This approach ensures that messages are well-targeted, as noted in the interview: *"...we could still deliver the information in a way that it was received properly, even without physical meetings."* (INF-02; INF-03; INF-06) Beyond content format, communication media have also undergone significant transformation. When physical meetings became limited, companies adaptively and innovatively utilized digital platforms. *"...everything was already online... for instance, back then Zoom couldn't even support that many rooms at once."* (INF-02; INF-03; INF-04; INF-05)

Ultimately, strategic communication that is delivered authentically, adaptively, and consistently proves more valuable than rigid normative approaches. For investors, courage and clarity in presenting business direction matter more than short-term numerical certainty. As stated in another transcript, *"...we showed that we were willing to take the risk of making that journey just to see you (investors)."* (INF-02; INF-03; INF-04; INF-05; INF-07) Such statements reveal that communication is not merely about information, but a genuine reflection of the company's commitment to its stakeholders. In this context, communication strategy has organically become an integral part of corporate resilience architecture, playing a vital role in supporting stock value stability and building long-term credibility amid market uncertainty.

## CONCLUSION

This study concludes that the resilience and rapid recovery of corporate stock performance during a crisis, particularly throughout the PSBB period and the transition to the New Normal policy, are shaped by internally structured and consistently executed corporate strategies. These findings reinforce the view that companies capable of maintaining financial agility, operational adaptability, and

relevant innovation during crises are more likely to generate positive investor perceptions and achieve faster market rebounds. Therefore, market resilience is a product of managerial governance that is both responsive and reflective in diverse challenges and obstacles, even under crisis pressure, as demonstrated in this study.

The mixed-methods approach employed in this research has successfully uncovered the relationship between quantitative indicators and strategic managerial dimensions, such as financial efficiency, operational flexibility, visionary leadership, adaptive corporate communication, and the institutionalization of organizational learning. This study provides a more comprehensive understanding that the corporate strategies enacted during a crisis have a tangible role in shaping market resilience. Consequently, LQ45 companies and capital market authorities are encouraged to treat crises as systemic reflection points and a springboard for restructuring business architecture and developing a measurable long-term resilience system.

## References:

- Abbas, J., Wang, D., Su, Z., & Ziapour, A. (2021). The role of social media in the advent of COVID-19 pandemic: Crisis management, mental health challenges and implications. *Risk Management and Healthcare Policy*, 1917–1932.
- Acuña-Coll, N., & Sánchez-Silva, M. (2024). *Impact of Extreme Events on the Financial Performance of Infrastructure Projects*. 167–176.
- Aggarwal, S., Nawn, S., & Dugar, A. (2021). What caused global stock market meltdown during the COVID pandemic—Lockdown stringency or investor panic? *Finance Research Letters*, 38, 101827.
- Arioglu, E., & Tuan, K. (2015). Auditor rotation at Borsa İstanbul firms: An event study. *Journal of Economics Finance and Accounting*, 2(3).
- Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, 54, 101249.
- Baek, S., Mohanty, S. K., & Glamboosky, M. (2020). COVID-19 and stock market volatility: An industry level analysis. *Finance Research Letters*, 37, 101748.
- Baker, S. R., Bloom, N., Davis, S. J., Kost, K., Sammon, M., & Viratyosin, T. (2020). The unprecedented stock market reaction to COVID-19. *The Review of Asset Pricing Studies*, 10(4), 742–758.
- Bartov, E., Marra, A., & Momenté, F. (2021). Corporate social responsibility and the market reaction to negative events: Evidence from inadvertent and fraudulent restatement announcements. *The Accounting Review*, 96(2), 81–106.
- Binder, J. (1998). The event study methodology since 1969. *Review of Quantitative Finance and Accounting*, 11, 111–137.
- Bouzgarrou, H., Ffiti, Z., Louhichi, W., & Yousfi, M. (2023). What can we learn about the market reaction to macroeconomic surprise? Evidence from the COVID-19 crisis. *Research in International Business and Finance*, 64, 101876.
- Chang, H.-W., Chiang, Y.-C., Ke, M.-C., Wang, M.-H., & Nguyen, T.-T. (2023). Market efficiency of Asian stock markets during the financial crisis and non-financial crisis periods. *International Review of Economics & Finance*, 83, 312–329.
- Chen, M.-H., Jang, S. S., & Kim, W. G. (2007). The impact of the SARS outbreak on Taiwanese hotel stock performance: An event-study approach. *International Journal of Hospitality Management*, 26(1), 200–212.
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.

- De Bondt, W. (2020). Investor and market overreaction: A retrospective. *Review of Behavioral Finance*, 12(1), 11–20.
- Deng, T., Xu, T., & Lee, Y. J. (2022). Policy responses to COVID-19 and stock market reactions—An international evidence. *Journal of Economics and Business*, 119, 106043.
- Dilshad, M. N. (2013). Profitability analysis of mergers and acquisitions: An event study approach. *Business and Economic Research*, 3(1).
- Erdemlioglu, D., Petitjean, M., & Vargas, N. (2021). Market instability and technical trading at high frequency: Evidence from NASDAQ stocks. *Economic Modelling*, 102, 105592.
- Fama, E. F. (1970). Efficient capital markets. *Journal of Finance*, 25(2), 383–417.
- Fetters, M. D., & Molina-Azorin, J. F. (2017). The journal of mixed methods research starts a new decade: The mixed methods research integration trilogy and its dimensions. *Journal of Mixed Methods Research*, 11(3), 291–307.
- Fischer, S., & Merton, R. C. (1984). *Macroeconomics and finance: The role of the stock market*. 21, 57–108.
- Fisher, G. G., & Chaffee, D. S. (2018). Research using archival data. In *Advanced research methods for applied psychology* (pp. 76–84). Routledge.
- Fromlet, H. (2001). Behavioral finance-theory and practical application: Systematic analysis of departures from the homo oeconomicus paradigm are essential for realistic financial research and analysis. *Business Economics*, 63–69.
- Garrido-Moreno, A., Martín-Rojas, R., & García-Morales, V. J. (2024). The key role of innovation and organizational resilience in improving business performance: A mixed-methods approach. *International Journal of Information Management*, 77, 102777.
- Gayduk, R., & Nadtochiy, S. (2018). Liquidity effects of trading frequency. *Mathematical Finance*, 28(3), 839–876.
- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, 10(2), 486.
- Graham, B. (2016). *The Intelligent Investor*.
- Graham, J., & Loke, H. (2022). Theory rewritten: Business continuity and crisis management in the wake of the Covid-19 pandemic. *Journal of Contingencies and Crisis Management*, 30(3), 231–233.
- Guetterman, T. C., Fetters, M. D., & Creswell, J. W. (2015). Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *The Annals of Family Medicine*, 13(6), 554–561.
- Gujarati, D. N. (2021). *Essentials of econometrics*. Sage Publications.
- Hartono, J. (2024). *Teori dan praktik portofolio dengan excel*. Penerbit Salemba.
- He, P., Sun, Y., Zhang, Y., & Li, T. (2021). COVID-19's impact on stock prices across different sectors—An event study based on the Chinese stock market. In *Research on Pandemics* (pp. 66–80). Routledge.
- Ismanto, J. (2020). Reaksi Reaksi Pasar Modal Terhadap Pengumuman PSBB DKI Jakarta Jilid II:(Event Study Lq-45 Terdaftar BEI). *Jurnal Edueco*, 3(2), 51–66.
- Jin, C., Lu, X., & Zhang, Y. (2022). Market reaction, COVID-19 pandemic and return distribution. *Finance Research Letters*, 47, 102701.
- Khajar, I. (2016). Analisis stock split terhadap harga saham dan volume perdagangan saham indeks Lq-45 periode 2010–2016. *Jurnal Keuangan Dan Perbankan*, 20(3), 395–406.
- Kim, S. Y., & Upneja, A. (2021). Majority voting ensemble with a decision trees for business failure prediction during economic downturns. *Journal of Innovation & Knowledge*, 6(2), 112–123.
- Kimbrough, M. D., Paharia, N., Wang, X., & Wei, S. (2024). The brand value of earnings: An event study of consumer responses to earnings announcements. *The Accounting Review*, 99(3), 259–285.
- Kleinbaum, D., Kupper, L., Muller, K., & Nizam, A. (2008). *Applied regression analysis and other multivariable methods*. Belmont, CA: Thomson Learning.

- Koubaa, Y., & Slim, S. (2019). The relationship between trading activity and stock market volatility: Does the volume threshold matter? *Economic Modelling*, 82, 168–184.
- Lalonde, C., & Roux-Dufort, C. (2013). Challenges in teaching crisis management: Connecting theories, skills, and reflexivity. *Journal of Management Education*, 37(1), 21–50.
- Larasati, D., & Kelen, L. H. S. (2021). Apakah Pembatasan Sosial Berskala Besar (PSBB) Berdampak Terhadap Average Abnormal Return?(Studi Pada Pasar Modal Indonesia). *Jurnal Ilmu Manajemen Dan Bisnis*, 12(1), 1–8.
- Liu, Z., Chen, S., Zhong, H., & Ding, Z. (2024). Coal price shocks, investor sentiment, and stock market returns. *Energy Economics*, 135, 107619.
- Loosemore, M. (1999). A grounded theory of construction crisis management. *Construction Management & Economics*, 17(1), 9–19.
- Machmuddah, Z., Utomo, S. D., Suhartono, E., Ali, S., & Ali Ghulam, W. (2020). Stock market reaction to COVID-19: Evidence in customer goods sector with the implication for open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 99.
- Mahirun, M. (2023). Determinants of LQ45 Stock Return in Indonesia. *Scientific Papers of the University of Pardubice. Series D. Faculty of Economics and Administration*, 31(2).
- Mailangkay, F. A., Mangantar, M., & Tulung, J. E. (2021). Reaksi Pasar Modal Terhadap Penerapan Kebijakan PSBB Pada Industri Perhotelan Yang Terdaftar Di Bursa Efek Indonesia. *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis Dan Akuntansi*, 9(3).
- Makni, M. S. (2023). Analyzing the impact of COVID-19 on the performance of listed firms in Saudi market. *Technological Forecasting and Social Change*, 187, 122171.
- Malkiel, B. G. (2011). *The efficient-market hypothesis and the financial crisis*. Rethinking finance: perspectives on the crisis (Proceedings of a conference). Russel Sage Foundation.
- Maneenop, S., & Kotcharin, S. (2020). The impacts of COVID-19 on the global airline industry: An event study approach. *Journal of Air Transport Management*, 89, 101920.
- Mangku, I. K., Susanti, F. E., & Wahyudi, D. (2024). The Market Evaluation Dynamics of Non-Bank Companies' Financial Performance in the LQ45 Index on the Indonesia Stock Exchange: A Ten-Year Perspective of Companies with Corporate Social Responsibility. *Grenze International Journal of Engineering & Technology (GIJET)*, 10.
- Meier, S., Gonzalez, M. R., & Kunze, F. (2021). The global financial crisis, the EMU sovereign debt crisis and international financial regulation: Lessons from a systematic literature review. *International Review of Law and Economics*, 65, 105945.
- Miller, C. N., Roll, R., & Taylor, W. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417.
- Mishra, P. K., & Mishra, S. K. (2021). COVID-19 pandemic and stock market reaction: Empirical insights from 15 Asian countries. *Transnational Corporations Review*, 13(2), 139–155.
- Miyazaki, T. (2010). The effects of fiscal policy in the 1990s in Japan: A VAR analysis with event studies. *Japan and the World Economy*, 22(2), 80–87.
- Morris, R. D., Kang, H., & Jie, J. (2016). The determinants and value relevance of banks' discretionary loan loss provisions during the financial crisis. *Journal of Contemporary Accounting & Economics*, 12(2), 176–190.
- Niawaradila, B., Wiyono, G., & Maulida, A. (2021). Pengaruh frekuensi perdagangan, volume perdagangan, dan kapitalisasi pasar terhadap return saham perusahaan manufaktur yang terdaftar di BEI periode 2016-2019. *Ecobisma (Jurnal Ekonomi, Bisnis Dan Manajemen)*, 8(1), 122–138.
- Nourbakhsh, Z., & Habibi, N. (2023). Combining LSTM and CNN methods and fundamental analysis for stock price trend prediction. *Multimedia Tools and Applications*, 82(12), 17769–17799.
- Novick, M. R. (1966). The axioms and principal results of classical test theory. *Journal of Mathematical Psychology*, 3(1), 1–18.

- Novilia, R., Yuliansyah, Y., & Widiyanti, A. (2022). Reaksi Pasar Modal Terhadap Pandemi Covid-19 Di Indonesia. *Review of Applied Accounting Research (RAAR)*, 2(1), 36–48.
- Offe, C. (1976). "CRISIS OF CRISIS MANAGEMENT": ELEMENTS OF A POLITICAL CRISIS THEORY. *International Journal of Politics*, 6(3), 29–67.
- Pandey, D. K., & Kumari, V. (2021). Event study on the reaction of the developed and emerging stock markets to the 2019-nCoV outbreak. *International Review of Economics & Finance*, 71, 467–483.
- Prabowosunu, M. A., Siregar, R. Y., Melati, R., Hadrian, D., & Ronaldo, R. R. (2024). Identifying Risk-Taking Behavior and Prudent Asset Allocation in Pension Funds in Indonesia. *Economics and Finance in Indonesia*, 70(1), 2.
- Prasetyo, D., Murnisari, R., & Putra, I. S. (2024). Reaksi Pasar Modal di Sektor Consumer Non Cyclical Sebelum dan Sesudah Diumumkan Pandemi Covid-19. *Wacana Equilibrium (Jurnal Pemikiran Penelitian Ekonomi)*, 12(01), 43–57.
- Pratiwi, P., & Wulandari, P. (2020). *Institutional Ownership and Stock Performance Around Index Rebalancing: Evidence From LQ45 Index*. 543–552.
- Putri, N. A. C., & Martin, A. (2021). Event study: Reaksi pasar modal sebelum dan sesudah adanya covid-19 (studi pada perusahaan non-perbankan yang terdaftar di BEI sebagai anggota LQ45). *AKURAT | Jurnal Ilmiah Akuntansi FE UNIBBA*, 12(3), 64–73.
- Rafter, N., Hickey, A., Conroy, R. M., Condell, S., O'Connor, P., Vaughan, D., Walsh, G., & Williams, D. J. (2017). The Irish National Adverse Events Study (INAES): The frequency and nature of adverse events in Irish hospitals – A retrospective record review study. *BMJ Quality & Safety*, 26(2), 111–119.
- Rizvi, S. A. R., Juhro, S. M., & Narayan, P. K. (2021). Understanding market reaction to COVID-19 monetary and fiscal stimulus in major ASEAN countries. *Bulletin of Monetary Economics and Banking*, 24(3), 313–334.
- Şenol, Z., & Zeren, F. (2020). Coronavirus (COVID-19) and stock markets: The effects of the pandemic on the global economy. *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi*, 7(4), 1–16.
- Stark, A., McConnell, A., & Drennan, L. T. (2014). *Risk and crisis management in the public sector*. Routledge.
- Stoker, J. I., Garretsen, H., & Soudis, D. (2019). Tightening the leash after a threat: A multi-level event study on leadership behavior following the financial crisis. *The Leadership Quarterly*, 30(2), 199–214.
- Sukesti, F., Ghozali, I., Fuad, F., KHARIS ALMASYHARI, A., & Nurcahyono, N. (2021). Factors affecting the stock price: The role of firm performance. *The Journal of Asian Finance, Economics and Business*, 8(2), 165–173.
- Sunardi, S., Noviolla, C., Supramono, S., & Hermanto, Y. B. (2023). Stock market reaction to government policy on determining coal selling price. *Heliyon*, 9(2).
- Suominen, M. (2001). Trading volume and information revelation in stock market. *Journal of Financial and Quantitative Analysis*, 36(4), 545–565.
- Susandini, A., & Adiyanto, M. R. (2021). Aktivitas Perdagangan Saham Di Indonesia Pasca Pengumuman Covid-19. *Jurnal Administrasi Kantor*, 9, 235–250.
- Sutanapong, C., & Louangrath, P. (2015). Descriptive and inferential statistics. *International Journal of Research & Methodology in Social Science*, 1(1), 22–35.
- Tampakoudis, I., Noulas, A., & Kiosses, N. (2022). The market reaction to syndicated loan announcements before and during the COVID-19 pandemic and the role of corporate governance. *Research in International Business and Finance*, 60, 101602.
- Tiğan, A. G. (2015). The efficient market hypothesis: Review of specialized literature and empirical research. *Procedia Economics and Finance*, 32, 442–449.
- Tsai, I.-C. (2017). The source of global stock market risk: A viewpoint of economic policy uncertainty. *Economic Modelling*, 60, 122–131.

- Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty*, 5, 297–323.
- Udeaja, E. A., & Isah, K. O. (2022). Stock markets' reaction to COVID-19: Analyses of countries with high incidence of cases/deaths in Africa. *Scientific African*, 15, e01076.
- Wadhvani, S. B. (1999). The US stock market and the global economic crisis. *National Institute Economic Review*, 167, 86–105.
- Walsman, M. C. (2022). Operational adaptation and innovation during COVID-19: Lessons learned from consulting and a road map for the future. *Service Science*, 14(2), 195–212.
- Wijayanto, A. (2016). Pengaruh Frekuensi Perdagangan Saham, Volume Perdagangan Saham, Kapitalisasi Pasar dan Jumlah Hari Perdagangan terhadap Return Saham (Studi pada Saham Perusahaan Dagang Eceran yang Terdaftar dalam Indeks Saham Syariah Indonesia Sebelum Sampai Sesudah Bul. *Management Analysis Journal*, 5(1).
- Wodak, R. (2021). Crisis communication and crisis management during COVID-19. *Global Discourse*, 11(3), 329–353.
- Yap, B. W., & Sim, C. H. (2011). Comparisons of various types of normality tests. *Journal of Statistical Computation and Simulation*, 81(12), 2141–2155.
- Yousaf, I., Patel, R., & Yarovaya, L. (2022). The reaction of G20+ stock markets to the Russia-Ukraine conflict "black-swan" event: Evidence from event study approach. *Journal of Behavioral and Experimental Finance*, 35, 100723.
- Yu, X., & Xiao, K. (2024). How does Chinese stock market react to breaking news about COVID-19? Evidence from event study. *Heliyon*, 10(10).
- Yunus Kasim, M., Muslimin, & Dwijaya, I. K. B. (2022). Market reaction to the Covid-19 pandemic: Events study at stocks listed on LQ45 index. *Cogent Business & Management*, 9(1), 2024979.