

Investors Reaction to Bad News of COVID 19 (Evidence for Food and Beverage stocks: Comparison between IDX and BIST)

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<i>Info Articles</i>	<i>Abstract</i>
<p><i>Article history:</i> Received April 29, 2021 Revised July 09, 2021 Accepted July 11, 2021 Available online July 19, 2021</p> <p><i>Keywords:</i> <i>Stock Return; Trading Volume Activity; Shares of Food and Beverage Subsector, IDX and BIST</i></p> <p>JEL Classification; D4; E2; G4</p>	<p>The study aims to examine the reaction of stock investors in the food and beverage sub-sector to the announcement of COVID-19 on the Indonesia Stock Exchange (IDX) and the Turkish Istanbul Exchange (BIST). The approach method is an Event Study by comparing the return and volume of trading activity before and after the announcement of COVID-19 on the Indonesian and Turkish Stock Exchanges. The research sample is 32 IDX stocks and 27 BIST stocks. Observation period 13 weeks before and after the announcement. The distribution of the data is the basis for the selection of hypothesis testing. The study results showed that IDX investors reacted positively to the announcement of the COVID-19 pandemic, where stock returns were higher than before. Likewise, VTA was higher after the information, although not significant. Meanwhile, on the Turkish Stock Exchange, investors' positive reactions were shown by stock returns and trading volume activity, which was significantly higher after the COVID-19 announcement than IDX, which tends to stagnate.</p>

INTRODUCTION

The world has been shocked by the attack of disease outbreaks caused by the COVID-19 virus or Novel Coronavirus (2019-nCoV). It affects the respiratory system, which may cause fever, headache, cough, and shortness of breath, leading to respiratory failure resulting in death. The animal and seafood market in Wuhan, China, is where this case first occurred. This type of virus can spread directly, transmitted from human to human, and indirectly, namely transmission through the air and surfaces of objects contaminated with the virus. The rapid spread of this virus causes the Number of infected people to increase throughout time.

The coronavirus outbreak (Covid-19) has as a global pandemic has explicitly been declared on October 11, 2020, by the World Health Organization (WHO). The Organization for Economic Co-operation and Development (OECD) reports that the economic turmoil was more significant than the global financial crisis during 2007-2009 (BBC News, 2020). The International Monetary Fund (IMF) explained that "the coronavirus

pandemic has triggered an economic downturn the world has not experienced since the Great Depression" ([Reuters Business News, 2020](#)).

Several countries have announced their first positive cases of COVID-19 in early 2020. In comparison, Indonesia announced the first positive cases of COVID-19 on March 2, 2020. Besides, Turkey also confirmed their first COVID-19 case on March 11, 2020. The spread of the COVID-19 virus has infected all parts of the world and can affect all aspects without exception.

These two countries are selected as research objects because the two countries have similarities in the capital market and the emerging market category. Also, Indonesia and Turkey have good cooperative relations, especially in the economic field. Is the basis for the IT CEPA (Indonesia Turkey Comprehensive Economic Partnership Agreement) program. This program aims to strengthen trade cooperation between Indonesia and Turkey. Thus, Indonesia and Turkey will mutually influence each other.

The outbreak of the Covid-19 virus has been considered a humanitarian crisis and economic disruption on a global scale and capable of surpassing previous catastrophic events, such as the MERS, SARS, and H1N1 outbreaks, even World War II. The Covid-19 virus outbreak can also affect many countries in the world and cause many losses. Social distancing, travel and official travel restrictions and restrictions, closing borders between countries, closing schools, offices, closing several places, limiting business operating hours, and isolating certain areas are government policies to suppress the increase in COVID-19 cases.

Several government policies have to keep workers away from their jobs, customers from producers have caused some households to with no income ([Baldwin & Mauro, 2020](#)). In addition, the COVID-19 pandemic has also brought enormous uncertainty to producers and consumers and hampering the activities of investors in the real sector and the capital market. Transaction activity on the IDX in the first quarter of 2020 decreased.

The COVID-19 pandemic can be an event that provides signals or information that can affect all kinds of sectors in a country, including the financial industry in the capital market. Exchange movements and changes can occur due to events that happen in a country. The activities that occur can take up and down indexes, changes in stock prices, and stock trading volumes. The importance of the capital market in increasing a country's economic activity causes the index movement to be more sensitive to the events directly or indirectly ([Zaqi, 2006](#)).

Event studies can investigate the effect of an event on trading activity. Observing stock price movements in the capital market when an event occurs and determining whether investors receive an unusual return on investment can use event studies. The sensitivity of the capital market dynamics is influenced by macro factors, both economic and non-economic. Events such as a pandemic can be considered good news or bad news that will affect the capital market and impact the stability of a country's economy. The COVID-19 pandemic has also caused increased uncertainty, lowered confidence, increased risk aversion, and caused market turmoil.

IDX president Inarno (2020) stated that the JCI movement and transaction value fell significantly in March 2020. The situation of uncertainty continued until the JCI touched its lowest level on Tuesday, March 24, 2020. The index fell 37.49% compared to the position at the end of last year. The decline that occurred almost touched all sectoral indices, the highest decline in stock prices in the various industrial sectors, by -40.60% (Portownews, 2020). Not much different from Indonesia in Turkey according to research with a 10-day event period conducted by (Göker et al., 2020), there was a decline in the Brokerage Houses index sector as approximately minus 12%, Insurance -%7, and Sports Index by minus 8.5%. Tourism (- 24%), and Textile Leather (- 23%).

Some previous studies relevant to and discussed event studies include (Tandiono & Esra, 2017), which analyze differences in stock returns and stock trading volumes before and after the holidays on Lq-45 Index stocks for the 2012-2016 period. The results showed that there was a lower return before the holidays than after the holidays. In contrast, the research results on trading volume show no difference in the value of trading volume both before and after the holiday. Based on the study results, the holiday affects stock returns but does not affect stock trading volume.

(Hadi & Mediyawati, 2020) analyzed the impact of the Islamic Demonstration of 212 events on abnormal returns and trading volume activity. The study results revealed a difference in the average abnormal return before and after the 212 demonstrations. Meanwhile, the volume of trading activity did not change significantly. The test results interpret that investors respond to the 212 demonstrations in increasing stock price volatility so that abnormal returns are very different after and before the 212. Thus, active trading around the date of the 212 and after the 212 tends to decline or stagnant.

A similar study was also conducted by (Göker et al., 2020) entitled "The Impact of the COVID-19 (Coronavirus) on The Borsa Istanbul Sector Index Returns: An Event Study COVID-19". This study aims to analyze the impact of the COVID-19 outbreak on the Borsa Istanbul sector index return. This research reveals the effects of the pandemic by sector. Data from 26

BIST, analyzed by event study, stated that most sectors had negative cumulative abnormal returns (CAAR). In some periods, it appears that only a few sectors have a positive CAAR. However, abnormal returns vary according to different event studies, with the highest losses in the Sports, Tourism, and Transportation sectors.

The difference between this study and previous research is that the selected event is announcing the global COVID-19 pandemic. The event is used as the basis for decision-making because it can signal the market in information. Thus, the market can react when the information is received. In addition, the selection of research objects in the form of stocks in the food and beverage sub-sector is because these stocks are basic needs that to be not much affected by the COVID-19 incident. The announcement of the event coincided with Indonesia and Turkey.

Briefly, this study aims to see how investors react to the announcement of the COVID-19 pandemic in the form of changes in return and trading volume activity before and after announcing the COVID-19 pandemic in food and beverage sub-sector companies in Indonesia and Turkey.

RESEARCH METHODS

Population and Sample

The research population is food and beverage sub-sector companies listed on the Indonesia Stock Exchange and Turkey's Borsa Istanbul. For Indonesia, as many as 32 companies and for Turkey as many as 27 companies.

The selected sample is a company with active shares and following the criteria set by the researcher. The requirements specified in determining the selection are:

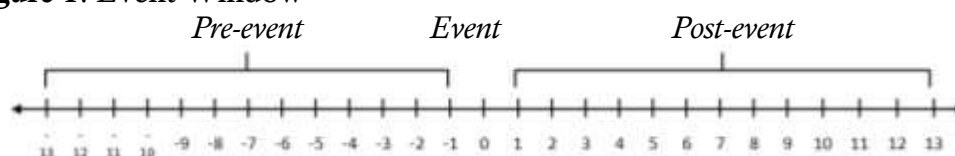
1. Companies included in the food and beverage sub-sector category on the Indonesia Stock Exchange and Borsa Istanbul.
2. Food and beverage sub-sector companies listed on the Indonesia Stock Exchange and Istanbul Borsa have shares that are actively trading during the observation period for seven months or three months before and three months after events from December 2019 to June 2020, with March 2020 as the event.
3. Companies with stock price data for the period December 2019 – June 2020.
4. Companies with stock trading volume data for the period December 2019 – June 2020.

Based on the criteria above, there were 19 companies for Indonesia and 26 companies for Turkey in the food and beverage sub-sector.

Data collection technique

The data collection method of this research is the documentation method. This documentation method collects data from the Indonesia Stock Exchange at www.idx.co.id, the Turkish Stock Exchange, or Borsa Istanbul at www.borsaistanbul.co, Yahoo! Finance, and investment. The observation period was carried out for seven months, namely -3 months (-13 weeks) before the announcement of the COVID-19 pandemic and three months (13 weeks) after the announcement of the Covid-19 pandemic. The observation period can be as follows:

Figure 1. Event Window



Operational Definition of Research Variables

Return Stock

Return stock is the difference between the stock price in period t and the stock price before period t, divided by the stock price before period t.

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \dots\dots\dots (1)$$

Where:

- $R_{i,t}$ = Stock Return i at time t
- $P_{i,t}$ = Share Price i in period t
- $P_{i,t-1}$ = Share price in i period t-1
- i = Food and Beverage Company
- t = Observation period

Average Stock Return (ARS)

$$ARS_{i,t} = \sum_{t=1}^n \frac{RS_{i,t}}{n} \dots\dots\dots (2)$$

Where:

- ARS_i = Average Return shares of issuer i in period t
- $AR_{i,t}$ = Stock return of issuer i in period t
- N = Number of observation periods

Trading Volume Activity (TVA)

$$TVA = \frac{\text{Jumlah saham diperdagangkan}}{\text{Jumlah saham beredar}} \dots\dots\dots (3)$$

TVA Average (ATVA)

$$ATVA = \sum_{t=1}^n \frac{TVA_i}{n} \dots\dots\dots (4)$$

Where:

- $ATVA$ = average *trading volume activity*
- N = number of samples
- TVA_i = *trading volume activity* on securities i

Data analysis

This study aimed to examine the reactions of stock market investors in the food and beverage subsector at IDX and BIST, based on the differences in stock returns and VTA on the two exchanges before and after announcing the COVID-19 pandemic event on the two exchanges. The conclusion to the investor's reaction is positive if the return and trading volume are significantly different and more significant after the announcement than before the information and vice versa.

Before being analyzed inferentially, the research discussion begins by presenting descriptive statistics of research variables (return and TVA) in the form of minimum, maximum, average, and standard deviation values. Furthermore, the hypothesis test is to see the difference in average and trading volume before and after the announcement of COVID-19. The selection of the difference test between the t-test or the Wilcoxon rank test is through the

Kolmogorov-Smirnov data normality test stage at a significant level (α) 5%.
The criteria for testing the normality of the data are:

P-Value > 0.05 = Data normally distributed

P-Value < 0.05 = Data is not normally distributed

Paired Sample T test for data with normal distribution; The Wilcoxon Signed Rank Test for data not normally distributed.

Hypothesis testing

Hypothesis 1 and (2)

H_0 = There is no difference in stock returns before and after announcing the global covid-19 pandemic in food and beverage sub-sector companies at IDX (BIST).

H_a = There is a difference in stock returns before and after announcing the global pandemic covid-19 in food and beverage sub-sector companies at IDX (BIST).

Hypothesis 3 and (4)

H_0 = There is no difference in ATVA before and after announcing the global covid-19 pandemic in food and beverage sub-sector companies at IDX (BIST).

H_a = There is a difference in ATVA before and after the announcement of global pandemic covid-19 in food and beverage sub-sector companies at IDX (BIST).

RESULTS AND DISCUSSION

Descriptive statistics

Tables 1 and 2 overviews the food and beverage subsector's average return activity and trading volume on the IDX and BIST.

Table 1. Stock Return and Trading Volume Activity in Indonesia

	N	Minimum	Maximum	mean	Std. Deviation
ARS Before	57	-.112	.029	-.01349	.025189
ARS After	57	-.045	.113	.00784	.024999
Atva Before	57	0.000	2,906	.19242	.606292
Atva After	57	0.900	2,563	.19909	.515395
Valid N (listwise)	57				

The table above shows that the average return value in the food and beverage sub-sector stocks at IDX before announcing was lower than after informing the COVID-19 pandemic. Stock returns were in the interval -0.11 to 0.029 with an average return of -0.013. While the standard deviation of 0.025. The stock returns in the food and beverage sector are minimal and tend to stagnate. However, after the announcement of COVID-19, the average

return increased to 0.7% per week, with the standard deviation not changing significantly.

The value of the variable above shows that investors have positively reacted to the COVID-19 pandemic because the food and beverage sector shares are the primary needs of the community. Thus, the demand for the food and beverage sector is not much affected by COVID-19. Even investors can move other stocks to this sector. Price changes are not very volatile because the real sector of the stock is not disturbed by the Covid-19 outbreak. The minimum rate of return for one of the sample stocks, which is still lower after the COVID-19 announcement than before, strengthens this argument. This conclusion still needs further statistical evidence, considering how variations in the data exist in each group and the level of error that can be tolerated or reflected in the data distribution.

The average trading volume activity was higher after the COVID-19 announcement, followed by a lower standard deviation from 0.60 to 0.51 (see table 1). This value can explain that the stock trading activity of the food and beverage sub-sector has not decreased. However, it is interesting that the trading volume range of the sample stocks is extensive. The minimum value of 0 indicates one store that is stagnant (passive) or illiquid in one of the observation periods. Based on this, unlike the stock returns above, trading volume is difficult to conclude without statistical testing. The estimation of ATVA is very weak if it only uses descriptive statistics, as presented in table 1.

Table 2. Turkey Stock Return and Trading Volume Activity

	N	Minimum	Maximum	mean	Std. Deviation
ARS Before	78	-128	.222	.01486	.057270
ARS After	78	-.095	.528	.05515	.095037
Atva Before	78	.017	195,773	14.40976	32.659715
Atva After	78	.016	145,243	18.51136	26.617612
Valid N (listwise)	78				

Investors' reaction in the food and beverage sub-sector at BIST showed a positive response to the COVID-19 pandemic event announcement. The data shows that the average return before COVID-19 was only 1.49%. However, it increased to 5.5% after the information, followed by an increase in return volatility before covid by 5.72% to 9.5%. The difference in standard deviation is quite significant, and it will interfere with conclusions about increasing returns during the COVID-19 pandemic. Therefore, growing returns that indicate a positive reaction of investors in BIST to the COVID-19 event need further statistical tests. Conditions are almost identical to IDX Investors, negative returns by one of the research samples as minimum returns are getting lower during the covid pandemic.

Trading volume was much higher (18,51136) after the announcement of COVID-19 compared to the previous 14,40976. The standard deviation of the ATVA is much lower from the original 32.66 to 26.61. The conclusion of

a positive investor response, of course, still needs to test the hypothesis, noting that one of the lowest and highest samples in the ATVA shows inconsistent data; namely, it decreased during the announcement of the COVID-19 events.

Investor Reaction Hypothesis Testing

The first step in testing the hypothesis is selecting the appropriate test equipment between the Paired Sample test (T-test) with the Wilcoxon signed ranks test through the Kosmolgorov-Smirnov test data normality test SPSS software package.

Distribution of Return Data and Trading Volume Activity: IDX VS BIST

The normality test results show that the average IDX stock return in both periods before and after the COVID-19 pandemic is normally distributed because it has a value. sig. (2-tailed) is greater than 0.05 (0.05). value. sig. (2-tailed) in the period before and after are 0.107 and 0.820, respectively. On the other hand, the ATVA is not normally distributed because the Kolmogorov-Smirnov two-tail test shows ≤ 0.05 .

Table 3. Distribution of ARS and ATVA shares in the Food and Beverage sub-sector IDX - One-Sample Kolmogorov-Smirnov Test

		ARS Before	ARS After	ATVA Before	ATVA After
N		57	57	57	57
Normal Parameters ^{a,b}	Mean	-.01349	.00784	.19242	.19909
	Std. Deviation	.025189	.024999	.606292	.515395
	Most Extreme Differences	Absolute	.160	.084	.413
	Positive	.121	.084	.413	.371
	Negative	-.160	-.068	-.375	-.350
Kolmogorov-Smirnov Z		1.210	.631	3.116	2.799
Asymp. Sig. (2-tailed)		.107	.820	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

Based on the distribution above, the return hypothesis testing uses the Paired Sample t-test, while the ATVA uses the non-parametric Wilcoxon Signed ranks test.

Table 4 presents the results of the normality of return and ATVA tests on BIST. The two-tail test of stock returns before and after the announcement of the COVID-19 pandemic was not normally distributed, where the value of Kolmogorov Smirnov-Z was 1.554 and 1.515, respectively the two-tail test $\alpha = 0.015$ and $\alpha = 0.020$. The investor reaction hypothesis is tested for the return variable using the Wilcoxon signed ranks test. Likewise, the ATVA distribution is the same as the return distribution, which is not normal, shown by the Kolmogorov Smirnov-Z value before and after the COVID-19

announcement: 2.912 and 2.151. The value $\alpha = 0.000$ or according to the purpose of rejecting H_0 or the data is not normally distributed, so that hypothesis testing uses the same approach as a return.

Table 4. Distribution of ARS and ATVA shares in the Food and Beverage sub-sector: BIST - One-Sample Kolmogorov-Smirnov Test

		ARS Before	ARS After	ATVA Before	ATVA After
N		78	78	78	78
Normal Parameters ^{a,b}	Mean	.01486	.05515	14.40976	18.51136
	Std. Deviation	.057270	.095037	32.659715	26.61761 2
Most Extreme Differences	Absolute	.177	.172	.330	.244
	Positive	.177	.172	.318	.214
	Negative	-.101	-.128	-.330	-.244
Kolmogorov-Smirnov Z		1.559	1.515	2.912	2.151
Asymp. Sig. (2-tailed)		.015	.020	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

Hypothesis test

The results of hypothesis testing for IDX investors in the food subsector are in table 5. Paired sample t test = -3.936 in $\alpha = 0.000$. The statistical value concludes a significant difference in the food and beverage sub-sector stock returns on the IDX between before and after announcing the COVID-19. The negative mean value indicates that the return before the announcement of COVID-19 is lower than after the announcement. That investor responded positively to the COVID-19 announcement by buying shares that impacted price movements and increased stock returns.

While the ATVA, through Wilcoxon Signed ranks test, did not show a significant difference between before and after COVID-19 even though the value of Z is negative. The increase in trading volume after the Covid announcement was not supported by the two-tail test Z, which had = 0.27 or 5% (accepting H_0).

Table 5. Test of Differences in Average Stock Returns Before and After the Announcement of the Covid-19 Pandemic in Indonesia - Paired Samples Test

	Mean	Paired Differences		95% Confidence Interval of the Difference		T	Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	Lower	Upper		
Pair 1 ARS Before - ARS After	-.021333	.040917	.005420	-.032190	-.010477	-3.936	56 .000

Table 6. Wilcoxon Signed Ranks Test: IDX - Test Statistics

	ATVA After - ATVA Before
Z	-1.107a
asympt. Sig. (2-tailed)	.268

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

On the Istanbul Turkey stock exchange (see table 7), the Wilcoxon signed ranks test produces a compelling statistical value so that 5% is a two-tail Z test for both return and ATVA of -3.243 -5.561, respectively, with -0.000 and 0.001, respectively.

Table 7 . Wilcoxon Signed Ranks Test: BIST - Test Statistics

	ARS After - ARS Before	ATVA After - ATVA Before
Z	-3.243a	-5.561a
asympt. Sig. (2-tailed)	.001	.000

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

A negative value in the Z statistic interprets that both price and trading volume on BIST were higher after the COVID-19 announcement than before the information. The increase in the food and beverage sub-sector stock prices shows that these stocks have a robust natural market base because demand will not experience much decline, that it will increase despite the pandemic. The relative increase in stock prices is indicated by the rise in returns followed by the increase in trading activity volume. This conclusion also confirms the same findings on the Indonesia Stock Exchange.

Discussion of Research Results

The event study in this study discusses how the reaction of capital market investors in Indonesia and Turkey responds to good news or bad news of the COVID-19 pandemic. The capital market represents demand and supply transactions of company ownership whose value is by the performance of the related company. An efficient capital market will respond to any information (social, political, or economic) correctly and quickly as a basis for expectations of the company's performance in the future, even though the event study can occur only in a relatively short term.

The excellent news is reasonable to hope for investors to increase the value of their previous wealth. On the other hand, bad news will reduce the value of shares in general. However, bad news does not always lower the value of all stocks, especially the food and beverage sector, which is not negatively affected by the Covid-19 announcement on the two exchanges, namely IDX and BIST. This condition illustrates that stock price movements reflect the response of the real sector output from the related issuer. The food or beverage sector market will not be much affected by bad news, even in a state of panic, which can lead to increased product demand to fulfill daily needs or just in case.

Bad News, in general, will harm investors and vice versa, as proven by previous researchers, namely: (Tandiono & Esra, 2017), (Hadi & Mediyawati, 2020), (Tandelilin, 2001), (Hidayah, 2019) and (Rianto, Sujito dan Rinawati, 2019). However, it is not the case for the food and beverage sector. The study results support the study of (Göker et al., 2020) for BIST and, at the same time, confirm that reactions to good news and bad news cannot be generalized for all stocks. However, it must be from the characteristics or possibilities of reserves associated with projected future company performance. Based on the hypothesis test results, there are disturbing results to conclude the IDX market reaction, especially from the ATVA test.

Trading volume should be linear with the return, i.e., when the price rises is a reflection of solid stock market demand or increased trading volume. Suppose the IDX facts are like the results of the research. In that case, the equilibrium that occurs is that many food sector stock investors in Indonesia still maintain their shares. At the same time, other shareholders tend to shift their claims to the food sector. This condition reflects that increasing demand is not followed by an increase in stock supply, which impacts rising stock prices when announcing the Covid-19 pandemic. Things that are different with BIST investors, stock returns, and linear trading volumes increased during the Covid-19 pandemic, indicating that the movement of price increases was triggered by increased demand and supply of shares in the food and beverage subsector. The argument related to this is that during the Covid-19 pandemic, rising stock prices encourage shareholders' desire to sell their shares because they expect high returns.

CONCLUSION

Based on the results of data analysis and discussion, stock investors in the food and beverage sector responded positively to the announcement of

COVID-19, which by higher returns and ATVA after announcing the COVID-19 than before announcing in both IDX and BIST. There are differences in the behavior of stock investors between IDX and BIST, mainly when observed from ATVA. In Indonesia, the increase in stock prices at the COVID-19 announcement was not followed by the rise in AVA. Meanwhile, in Turkey, the increase in stock returns is linear with the increase in AVA. The study results impact the decisions of investors in both exchanges. Bad news does not mean harming the stock prices, and stock characteristics that reflect the company's expectations of future performance expectations affect the selection of profitable stock options. IDX investors for food and beverage stocks are more likely to maintain their shares during the pandemic, while BIST investors sell to get returns during the pandemic. The balance is due to increased demand and supply. Event studies have limitations, namely observing short-term reactions to specific events, and if the observation period is extended, it is possible that other events simultaneously affect market reactions where partial effects cannot be explained. Therefore, another approach is needed fundamentally to analyze the specific or macroeconomic effect firmly on investor response.

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