**COVID-19 Outbreak Impact on Stock Return in Indonesia and Malaysia**

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**Abstract**

The COVID-19 outbreak drastically impacts the worldwide economy including the stock returns. This study uses Indonesia and Malaysia cases with a total of 141.585 and 219.381 observations in 2020. The measurement of COVID-19 of this study uses daily new confirmed cases and daily death cases from each country. To test the hypothesis, an unbalanced panel and multiple regression are used to test the crowded data. The results show different results for each country. In Indonesia, we found that the COVID-19 outbreak is a strong negative effect on stock return, in contrast, Malaysia found it to be less influence. Furthermore, the effect of Monday and Friday was used to test any impact of the day during the pandemic on stock return. Surprisingly, the effect of Friday affects different from Monday. The weekend effect still occurs in a pandemic situation and the investor mood sentiment to Indonesia’s stock market. This could be one of the aspects for investors consider when making investment decisions during a pandemic.

**Keywords:** COVID-19; stock return; day effect

**JEL Classification:** G11, G15



1. **Introduction**

The COVID-19 outbreak remains a major global issue. The Wuhan City Health Commission reported the first case of pneumonia identified as Coronavirus in November 2019 and WHO declared Coronavirus disease (COVID-19) as a global pandemic on March 11, 2020 (Nurcahyono, Hanum, & Sukesti, 2021). The spread of COVID-19 has been very fast, someone who has been infected can be easily infected by others by saliva. Then, it attacks the respiratory system and develops into a disease that is quite serious, especially for the elderly and those with chronic medical problems (Herwany, Febrian, Anwar, & Gunardi, 2021). In addition, recent research has found that a new variant of COVID-19 has mutated to become more rapidly spreading in infecting people and is feared to have more serious consequences (Wise, 2020). (Iacobucci, 2021) argued the new variant of the virus is associated with an increased risk of death.

Since the WHO (World Health Organization) has declared COVID-19 a global health emergency, the world economy has been drastically depressed (Xu, 2021). Sales are declining, consumers are changing their behavior, production is falling, companies are in serious financial trouble, and unemployment is rising worldwide. The pressures faced by small businesses cause forced closures that are temporary or even permanent, causing many individuals to lose their jobs and end up going bankrupt (Cheng, 2020).

Moreover, the first lockdown or quarantine policy was implemented in Indonesia on April 10, 2020, when the case of positive confirmation reached out of 3.000 cases and 300 people died (Nurcahyono et al., 2021). Strict regulations from the government, such as quarantines and lockdowns signal an increase in cases that are getting worse (Xu, 2021). Because most firms are prohibited from remaining fully functioning during the quarantine, they prefer to reduce labor costs by firing employees (Mazur, Dang, & Vega, 2021). This affects and slows down the economic cycle in Indonesia, especially in the fields of transportation, tourism, in-store sales, and others.

On the other side, the first positive case was confirmed in Malaysia on January 25, 2020 (Shah et al., 2020). It spread quickly to infected people in Malaysia. This can be seen as on March 31, 2020, a total of 2766 confirmed cases was reported to the Ministry of Health (Shah et al., 2020). The issue of economic topics also occurs in Malaysia. On March 18, 2020, the Malaysian government implemented the first lockdown decision. This was precipitated by a 73.9% growth rate of cases each day (Chia, Liew, & Rowland, 2020). As a result of this policy, most firms demand employees work from home, and some workers are forced to quit working.

The COVID-19 epidemic has caused massive social distress as well as significant economic disruption. The COVID-19 outbreak affected the economy in various sectors, including the impact of stock prices, lockdowns, and travel restrictions, resulting in economic instability in the country (Shah et al., 2020). A previous study found that news and event can affect stock markets and the dynamics of the price (Al-Awadhi, Alsaifi, Al-Awadhi, & Alhammadi, 2020; Dilla, Sari, & Achsani, 2020; Herwany et al., 2021).

Malaysia’s Bursa having fallen 20.52% since the start of the year, sunk to its lowest numbers in a decade (Chia et al., 2020). COVID-19 outbreak also impacts a major effect on stock return in Indonesia’s market. Indonesian Composite Stock Price Index (IHSG) drop to IDR 3,900 or -35.8% in March 2020 from the beginning of 2020 (IDX, 2020). This also occurred to Global markets have dropped by at least 25% from their highs the previous month by the end of March 2020 (Ciner, 2021). The drop in stock prices in March 2020 was one of the world's largest stock market collapses in history (Mazur et al., 2021).

Source: Proceed data, 2021

**Figure 1. Timeline of COVID-19 outbreak in Indonesia and Malaysia**

1. **Theoretical Framework and Hypothesis**

According to panel data, Ashraf (2020) found stock markets responded negatively to the increase of COVID-19 cases. Al-Awadhi et al. (2020) also found a negative effect between the COVID-19 outbreak and stock returns in China. Furthermore, Xu (2021) found COVID-19 outbreak negatively affects the stock market in Canada and US. However, (Narayan, Phan, & Liu, 2021) found a positive effect of the COVID-19 pandemic via specific government policies on stock market returns. They suggest that policies mitigate the spread of COVID-19 and subdue public panics. A previous study by (Robin, 2021) founds that the COVID-19 harms the stock market returns in Indonesia, despite the fact that tight government regulations are in place. Thus, we developed the hypothesis as:

H1: Daily confirmed cases have a negative effect on stock returns

**The Effect of Day**

This study uses the presence of Monday and Friday to deter any negative effects that occur during the pandemic. Because Mondays and Fridays are the days of the week for which the psychological literature offers the most specific predictions, the major study focuses just on these two days. According to the psychological literature, investor mood rises on Thursdays and Fridays and drops on Mondays (Birru, 2018). Smirlock & Starks (1986) proves that the average return on Monday was notably negative. The average return on Monday was significantly lower than other daily returns (Mishra, 1999). Meanwhile, various study proves that Friday affects higher return on stock returns due to weekend mood (Birru, 2018). However, events are still the main influence that can shake the stock market. The study by Robin (2021) proved that investors lose their investment in stocks every day including Friday during the pandemic situation. Therefore, the hypothesis developed as follows:

H2: The moderating effect of Monday have a negative effect on stock returns

H3: The moderating effect of Friday also affect stock returns negatively

1. **Research Methods**

This study aims to examine the relationship of the COVID-19 outbreak to stock returns in Indonesia and Malaysia. The data of companies included in the Indonesia Stock Exchange (IDX) and Bursa Malaysia (MYX) over the period from the COVID-19 was confirmed (March and January respectively) until December 2020. Data were obtained from Yahoo Finance which includes the stock prices and trading volume with 141.585 observations and 725 stocks for Indonesia also 219.381 observations and 968 stocks for Malaysia. We also obtained the exchange rates of IDR and MYR to USD from Bank Indonesia and Bursa Negara Malaysia respectively. Lastly, we obtained the COVID-19 include of daily confirmed cases and daily death cases data from Our World in Data.

This study unbalanced panel data to avoid a drastically reduced number of samples (Robin, 2021). (Baltagi, 2021) suggest that panel data regression reduces estimation bias and multicollinearity, controls for individual heterogeneity, and identifies the time-varying relationship between dependent and independent variables.

**Variables Measurement**

COVID-19 was measured by daily confirmed cases $(New Cases\_{t-1})$ and daily death cases $(Death Cases\_{t-1})$. Both were measured by the daily data and lagged one day (t-1) (Narayan et al., 2021; Robin, 2021). The stock return was measured by simple return formulas from daily stock prices, as follows: $Return\_{t}=\frac{Price\_{t}-Price\_{t-1}}{Price\_{t-1}}$ .

The control variable of this study consist of trading volume $(Volume\_{t-1})$, previous stock returns $(Return\_{t-1})$, the exchange rate$ (Rate\_{t-1})$, Monday$ (Monday\_{t})$, and Friday$ (Friday\_{t})$. All the control variables are lagged one day. Linsmeier, Thornton, Venkatachalam, & Welker (2002) research found that trading volume is related to the changes in market prices. The trading volume uses to control the stock return movement during the pandemic. Campbell, Grossman, & Wang (1993) indicates that trading volume can be the basis for an investor to see the trend of stock returns through the magnitude of demand based on trading volume. Similar factor, Ajayi, Friedman, & Mehdian (1998), suggest exchange rate and stock may be related because of some underlying economic variables.

The estimated stock returns for this study were developed as:

🡺$Return\_{i,t}=a\_{0}+α\_{1}New Cases\_{i,t-1}+βX\_{i,t-1}+μ\_{t}+εit$ (1)

$Return\_{i,t}$ is representing as a stock return of i at day t, while $X\_{i,t-1}$ represent the control variables that include trading volume, previous stock return, exchange rate, Monday, and Friday. While $ε$ is the error of the term i and t.

1. **Analysis and Discussion**

The summary of the data is shown in Table 1. All the variables (exclude Monday and Friday) are winsorized at 1% and 99%. It can be seen the average return on Indonesian stock is very low (0,15%) meanwhile Malaysian stock market shows a high deviation level. The average new case and death cases for both countries show a huge difference. The maximum number of daily death cases in Malaysia are 10 peoples meanwhile compared to Indonesia reach 215 peoples died. From this statement can be assumed COVID-19 was more infected in Indonesia and caused a slow cycle of its stock return.

**Table 1. Summary statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | N | Mean | Min | Max | Std. Dev |
| Indonesia’s |
| Returnt | 141585 | 0,00154 | -0,06977 | 0,21212 | 0,04003 |
| New Casest-1 | 140864 | 2396,15800 | 0 | 7903 | 2013,36400 |
| Death Casest-1 | 140874 | 72,61236 | 0 | 215 | 49,24890 |
| Volumet-1 | 114181 | 1.36e+07 | 100 | 2.76e+08 | 4.08e+07 |
| Returnt-1 | 140797 | 0,00143 | -0,06987 | 0,20567 | 0,03869 |
| Ratet-1 | 140874 | 14749,04 | 14014 | 16556 | 598,29560 |
| Mondayt | 140159 | 0,20720 | 0 | 1 | 0,40530 |
| Fridayt | 140159 | 0,18186 | 0 | 1 | 0,38573 |
| Malaysia’s |
| Returnt | 218113 | 3,07671 | -0,99006 | 100 | 13,34438 |
| New Casest-1 | 218411 | 337,16660 | 0 | 2062 | 539,90520 |
| Death Casest-1 | 218411 | 1,40999 | 0 | 10 | 2,09228 |
| Volumet-1 | 188823 | 5797585 | 1000 | 1.14e+08 | 1.61e+07 |
| Returnt-1 | 218411 | 2,63321 | -0,98990 | 97,75 | 11,99586 |
| Ratet-1 | 218411 | 4,30428 | 4,11250 | 4,92 | 0,19010 |
| Mondayt | 218411 | 0,18941 | 0 | 1 | 0,39184 |
| Fridayt | 218411 | 0,19385 | 0 | 1 | 0,39531 |

 Winsorized at 1% and 99%

Source: Proceed data, 2021

**COVID-19 on Indonesia and Malaysia Stock Return**

 Table 2 reports the result of the COVID-19 outbreak on the Indonesia Stock Exchange and Bursa Malaysia market. The coefficient -0.000 indicates there is a strong negative effect of COVID-19 on Indonesia’s stock return. The results prove that stock returns in Indonesia are highly sensitive to the increase in the number of confirmed cases of COVID-19. Investor sentiment was driven by the emergence of infectious diseases (e.g., SARS, Influenza A (H1N1), polio, and Ebola) (Chia et al., 2020). COVID-19 cases are similar to SARS and MERS cases, in that outbreaks of infectious diseases can cause significant losses to the economies of affected countries (Chia et al., 2020).

Meanwhile, it was less influential in Malaysia’s stock market. The substantially varied number of instances from the two nations exemplifies this dramatic variance. Malaysia has fewer COVID-19 cases than Indonesia, which might also imply that COVID-19 has less of an impact on Malaysian stock returns. These findings are in line with Chia et al. (2020) that found COVID-19 through daily death measurement had no significant impact on Malaysia stock return.

**Table 2. Daily confirmed cases on stock return**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| Indonesia’s |  |
| New Casest-1 | -0.0001\*\*\* | -0.0001\*\*\* | -0.0001\*\*\* | -0.0001\*\*\* | -0.0001\*\*\* | -0.0001\*\*\* |
|  | (-4.73) | (-5.01) | (-5.02) | (-4.45) | (-4.91) | (-2.84) |
| Volumet-1 |  | 0.0001\*\* | 0.0001\*\* | 0.0001\*\* | 0.0001\*\*\* | 0.0001\*\*\* |
|  |  | (2.41) | (2.57) | (2.56) | (2.62) | (2.63) |
| Returnt-1 |  |  | -0.0078 | -0.0081\* | -0.0081\* | -0.0084\* |
|  |  |  | (-1.64) | (-1.72) | (-1.72) | (-1.77) |
| Ratet-1 |  |  |  | 0.0001\*\*\* | 0.0001\*\*\* | 0.0001\*\*\* |
|  |  |  |  | (12.90) | (12.78) | (12.77) |
| Fridayt |  |  |  |  | 0.0001 |  |
|  |  |  |  |  | (0.34) |  |
| Mondayt |  |  |  |  |  | 0.0018\*\*\* |
|  |  |  |  |  |  | (5.26) |
| Constant | -0.0031\*\*\* | -0.0038\*\*\* | -0.0038\*\*\* | -0.1020\*\*\* | -0.1015\*\*\* | -0.1015\*\*\* |
|  | (-7.35) | (-7.11) | (-7.20) | (-13.57) | (-13.46) | (-13.51) |
| Control for: |  |  |  |  |  |  |
| Month-FE | YES | YES | YES | YES | YES | YES |
| N | 140.862 | 114.176 | 114.169 | 114.169 | 113.582 | 113.582 |
| Adjusted R2 | 0.0029 | 0.0034 | 0.0035 | 0.0059 | 0.0058 | 0.0061 |
|  |  |  |  |  |  |  |
| Malaysia’s |  |
| New Casest-1 | 0.0001 | -0.0000 | -0.0000 | 0.0000 | 0.0000 | 0.0000 |
|  | (0.38) | (-0.00) | (-0.08) | (0.01) | (0.03) | (0.04) |
| Volumet-1 |  | 0.0001\*\*\* | 0.0001\*\*\* | 0.0001\*\*\* | 0.0001\*\*\* | 0.0001\*\*\* |
|  |  | (6.38) | (6.02) | (6.02) | (6.02) | (6.02) |
| Returnt-1 |  |  | 0.0517\*\*\* | 0.0517\*\*\* | 0.0517\*\*\* | 0.0517\*\*\* |
|  |  |  | (11.40) | (11.40) | (11.40) | (11.40) |
| Ratet-1 |  |  |  | -0.3271 | -0.3232 | -0.3313 |
|  |  |  |  | (-1.28) | (-1.26) | (-1.29) |
| Fridayt |  |  |  |  | -0.0846 |  |
|  |  |  |  |  | (-1.04) |  |
| Mondayt |  |  |  |  |  | -0.0310 |
|  |  |  |  |  |  | (-0.38) |
| Constant | 2.4175\*\*\* | 2.6365\*\*\* | 2.5298\*\*\* | 4.1119\*\*\* | 4.0937\*\*\* | 4.1322\*\*\* |
|  | (11.43) | (10.84) | (10.40) | (3.26) | (3.25) | (3.28) |
| Control for: |  |  |  |  |  |  |
| Month-FE | YES | YES | YES | YES | YES | YES |
| N | 217.143 | 187.605 | 187.605 | 187.605 | 187.605 | 187.605 |
| Adjusted R2 | 0.0002 | 0.0004 | 0.0026 | 0.0026 | 0.0026 | 0.0026 |

\* Significance level at 1%, \*\* at 5%, \*\*\* at 1%

Source: Proceed data, 2021

**Moderating Effect of day**

Table 3 shows the moderating results of the day. The results show that the moderating effect of Monday and Friday can affect stock returns even during the pandemic in Indonesia. As expected, Monday affects negatively on stock return in infectious diseases events. Therefore, H2 was accepted. Meanwhile, the effect of Friday affects positively stock returns even during the pandemic. This finding was in contrast with our H3. It can be supported by previous literature that the mood of the day can affect the investor sentiment even a major event was happening. Smirlock & Starks (1986) said the weekend effect is extensive. This statement was in line with their findings that return on Monday was affected by Friday average returns. It can be shown the effect of the day (Monday and Friday) can’t affect Malaysia’s stock returns in the pandemic.

**Table 3. Moderating effect of day**

|  |  |  |
| --- | --- | --- |
|  | Indonesia | Malaysia |
|  | Monday | Friday | Monday | Friday |
| New Casest-1 | -0.0001\*\*\* | -0.0001\*\*\* | 0.0001 | -0.0001 |
|  | (-4.43) | (-7.48) | (0.24) | (-0.12) |
| Mondayt | 0.0058\*\*\* |  | 0.0154 |  |
|  | (10.90) |  | (0.16) |  |
| New Casest-1 X Mondayt | -0.0000\*\*\* |  | -0.0001 |  |
|  | (-10.55) |  | (-0.88) |  |
| Fridayt |  | -0.0052\*\*\* |  | -0.1356 |
|  |  | (-8.93) |  | (-1.43) |
| New Casest-1 X Fridayt |  | 0.0001\*\*\* |  | 0.0002 |
|  |  | (11.88) |  | (0.95) |
| Volumet-1 | 0.0001\*\*\* | 0.0001\*\*\* | 0.0001\*\*\* | 0.0001\*\*\* |
|  | (2.71) | (2.67) | (6.03) | (6.02) |
| Returnt-1 | -0.0088\* | -0.0081\* | 0.0517\*\*\* | 0.0517\*\*\* |
|  | (-1.86) | (-1.71) | (11.40) | (11.40) |
| Ratet-1 | 0.0001\*\*\* | 0.0001\*\*\* | -0.3285 | -0.2905 |
|  | (12.40) | (13.50) | (-1.28) | (-1.13) |
| Constant | -0.0998\*\*\* | -0.1056\*\*\* | 4.1190\*\*\* | 3.9356\*\*\* |
|  | (-13.27) | (-14.06) | (3.27) | (3.11) |
| Control for: |  |  |  |  |
| Month-FE | YES | YES | YES | YES |
| N | 113582 | 113582 | 187605 | 187605 |
| Adjusted R2 | 0.0072 | 0.0073 | 0.0026 | 0.0026 |
|  |  |  |  |  |

\* Significance level at 1%, \*\* at 5%, \*\*\* at 1%

Source: Proceed data, 2021

**Robustness tests of COVID-19**

Table 4 represents the robustness test of COVID-19 proxy using daily death cases. The objective of the test is to avoid the bias measurement variable of COVID-19. The previous empirical test uses a daily confirmed test as COVID-19 measurement, to test the robustness we replace daily confirmed cases (New Casest-1) with daily death cases (Death Casest-1) as shown in Table 4. The results prove there is no bias with different proxy to test the relation of COVID-19 on stock returns in Indonesia. This strengthens our findings that the increase of COVID-19 influences negatively on stock return (case in Indonesia).

**Table 4. Robustness test**

|  |  |
| --- | --- |
|  | (1) |
| Death Casest-1 | -0.0001\*\*\* |
|  | (-13.02) |
| Volumet-1 | 0.0001\*\*\* |
|  | (2.67) |
| Returnt-1 | -0.0083\* |
|  | (-1.76) |
| Ratet-1 | 0.0001\*\*\* |
|  | (13.38) |
| Mondayt | 0.0017\*\*\* |
|  | (5.49) |
| Constant | -0.1059\*\*\* |
|  | (-14.09) |
| Control for: |  |
| Month-FE | YES |
| N | 113.585 |
| Adjusted R2 | 0.0074 |
| Source: Proceed data, 2021 |  |

1. **Conclusion**

This study discusses the effect of COVID-19 on stock return cases taken from Indonesia and Malaysia. We found different results in both countries. Compared to Indonesia, the COVID-19 cases in Malaysia are lower. COVID-19 seems less influence on Malaysia’s stock return. In contrast, Indonesia’s stock return is strongly related to the increase of COVID-19 cases. If COVID-19 cases are increasing, it will decrease the stock return in Indonesia. The robustness test to avoid bias measurement and the results show the same output.

To test the effect of the day through stock return during the pandemic, we are using the moderate effect of Monday and Friday. A previous study found the effect of weekend and investor mood can affect the stock return on Monday and Friday. But there is a study that argued whatever the day is still affects negatively on a stock return during pandemic diseases. The result of this study found that Monday affects negatively on stock return, but Friday is the opposite. Even in pandemic diseases the weekend effect still considers the investor sentiment.

1. **Limitations**

This study is using two countries to compare the COVID-19 on stock return. Each country may have different infected cases and may affect the results in contrast. Comparing two countries with similar COVID-19 cases or similar graphs will minimize bias in the results. Choosing a country with almost identical infected cases can provide more reliable findings to compare.

This study does not use the company sector classification. A classification by firm sector can give clearer and more accurate comparative findings. By looking at the differences between sectors, it can provide clearer knowledge and input because not all sectors can be evenly matched. During a pandemic, the transportation and health sectors, for example, will provide quite different outcomes. Because in plain view, the transportation sector will have a negative impact because of the government's prohibition on traveling, while the health sector will have a positive impact because health issues are being emphasized during the pandemic.

1. **SUGGESTIONS**

Based on the results of research, discussion, and conclusions, we can provide recommendations to investors and interested parties for effective re-evaluation. During a pandemic, the results are mixed due to regional differences, cases and sentiments will be different. Negative market sentiment regarding COVID-19 cases in Indonesia in 2020 makes it a suggestion for investors to think and evaluate carefully. Whether this is the right moment to invest when the market price is discounting or withdrawing from investing this year, the decision will be returned to investors.

This study contributes to stock returns literature. The Coronavirus disease (COVID-19) hurt the capital market in Indonesia. Also, this study helps to support study about the day effect still occur in the pandemic event, Monday found to be negative effect market while Friday affects positively due to weekend mood of investors. It is expected that this study will attract future researchers who will be able to conduct more research on the topics covered. Additional studies are expected to enable a broader analysis of the state of the market during a pandemic or other event in a country.

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