Market Reaction to the Covid-19 Pandemic: Evidence from Countries in the Asia Pacific

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A B S T R A K

Pandemi covid-19 menyebar dengan cepat di kawasan Asia Pasifik, menyebabkan kerugian ekonomi, memperburuk volatilitas pasar, dan mengganggu rantai ekonomi di negara-negara Asia Pasifik. Penelitian ini bertujuan untuk menganalisis perbedaan reaksi pasar modal sebelum dan sesudah pengumuman covid-19 di Kawasan Asia Pasifik. Penelitian ini menggunakan pendekatan event study dengan menggunakan variabel indeks harga saham, return, volume perdagangan, dan nilai tukar. Sampel penelitian adalah 11 bursa di negara-negara Asia Pasifik dengan teknik purposive sampling. Pengujian data menggunakan uji normalitas data dan uji beda dua rata-rata menggunakan Paired Sample T-Test untuk data berdistribusi normal dan uji Wilcoxon Singed Rank-Test untuk data yang tidak berdistribusi normal. Hasil penelitian menunjukkan bahwa (1) terdapat perbedaan indeks harga saham sebelum dan sesudah pengumuman kasus covid-19 di Indonesia, Malaysia, Singapura, Meksiko, Taiwan, Hong Kong, dan Selandia Baru. Sedangkan Thailand, Australia, Jepang, dan Korea Selatan tidak menunjukkan perbedaan. (2) ada perbedaan pengembalian selama kasus covid-19 di Malaysia dan Taiwan. Sedangkan Indonesia, Singapura, Thailand, Australia, Jepang, Korea Selatan, Selandia Baru, Meksiko, dan Hong Kong tidak menunjukkan perbedaan. (3) Terdapat perbedaan volume perdagangan saham selama kasus covid-19 di Malaysia, Australia, Meksiko, dan Hong Kong. Sedangkan Indonesia, Singapura, Thailand, Jepang, Korea Selatan, Selandia Baru, dan Taiwan tidak menunjukkan perbedaan. (4) Terdapat perbedaan nilai tukar selama kasus covid-19 di Indonesia, Malaysia, Singapura, Thailand, Australia, Korea Selatan, Selandia Baru, Taiwan, dan Hong Kong. Sedangkan di Jepang tidak menunjukkan perbedaan.

A B S T R A C T

The covid-19 pandemic spread rapidly in the Asia Pacific region, causing economic losses, exacerbating market volatility, and disrupting economic chains in Asia Pacific countries. This study aims to analyze the differences in capital market reactions before and after the announcement of covid-19 in the Asia Pacific Region. This study uses an event study approach using a variable stock price index, return, trading volume, and exchange rate. The research sample was 11 stock exchanges in Asia Pacific countries with purposive sampling techniques. Data testing using the data normality test and two average difference tests using a Paired Sample T-Test for normally distributed data and the Wilcoxon Singed Rank-Test test for data that is not normally distributed. The results showed that (1) there are differences in stock price indices before and after the announcement of covid-19 cases in Indonesia, Malaysia, Singapore, Mexico, Taiwan, Hong Kong, and New Zealand. Meanwhile, Thailand, Australia, Japan, and South Korea showed no differences. (2) there are differences in returns during covid-19 cases in Malaysia and Taiwan. While Indonesia, Singapore, Thailand, Australia, Japan, South Korea, New Zealand, Mexico, and Hong Kong showed no difference. (3) There are differences in stock trading volumes during covid-19 cases in Malaysia, Australia, Mexico, and Hong Kong. Meanwhile, Indonesia, Singapore, Thailand, Japan, South Korea, New Zealand, and Taiwan showed no difference. (4) There are differences in exchange rates during covid-19 cases in Indonesia, Malaysia, Singapore, Thailand, Australia, South Korea, New Zealand, Taiwan, and Hong Kong. While in Japan, it shows no difference.

1. INTRODUCTION

World Health Organization (WHO) declared Covid-19 as a global pandemic in March 2020. It has caused a significant negative decline in the capital markets coupled with the increasing number of

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confirmed cases which is bad news for the capital markets (Ashraf, 2020; Irfan et al., 2021; Sohrabi et al., 2020; Zhang et al., 2020). Asia Pacific Economic Corporation (APEC) recorded an economic decline of up to 2.7% compared to 2019, which grew to 3.6%. On the other hand, the Mexican peso exchange rate fell 18.4% YTD/USD. It was in the third worst place, Taiwan with a decline of 0.81%, Thailand with a weakening of 0.46%, Hong Kong dollar which weakened by 0.01%, Singapore with 0 .52%, Malaysian Ringgit with 0.88%, and the won managed to lead the strengthening of Asian currencies with the appreciation of the currency up to 0.61%.

The Covid-19 virus spread rapidly in the Asia Pacific (APEC) region, even before the WHO officially declared the coronavirus a pandemic (Q. He et al., 2020; Sani, 2022). Thailand is the second country to report Covid-19 cases after China. Then followed by Japan (January 16), South Korea (January 20), the United States, and Taiwan (January 21). In 7th place, Singapore (23 January), Vietnam (23 January), then on the same date, Hong Kong also confirmed that the COVID-19 virus had entered the country. In tenth place is Malaysia (January 25); at the same time, Australia and Canada also confirmed their first COVID-19 cases. The Philippines followed (30 January 2020), then Russia (31 January), New Zealand and Mexico (28 February), then Indonesia (2 March), Chile (3 March), Peru (6 March), Brunei Darussalam (9 March), and Papua New Guinea (20 March). Covid-19 cases have continued to increase since the first report of the virus that entered APEC member countries.

The time the virus spreads very quickly causes panic and anxiety. Governments of various countries carry out policies to reduce their country's health and economic risks. The panic caused by covid-19 has also disrupted the economic chain in the APEC country. Previous study claim that the increase in confirmed cases and deaths of entry every day in China greatly affects the return of all stocks in the capital market (Al-Awadhi et al., 2020). This is supported by research that uses observational data from 64 stock markets around the world (Ashraf, 2020). In addition, findings from a study on the relationship between the covid-19 pandemic and market risk in 12 countries revealed a considerable increase in the level of risk of global financial markets in the consequences of the disease (Zhang et al., 2020). Uncertainty in the pandemic outlook and related economic losses have also exacerbated market volatility. Previous researcher evaluated the performance markets of eight countries and explored that in addition to the unfavourable influence on stock returns, there is an overflow effect among Asian, European, and American countries (P. He et al., 2020). Then there is study that explore the short-term impact of the covid-19 outbreak in the top 21 stock markets in the countries most affected by the pandemic, whereas using the case study method has witnessed a rapid and significant decline in the profitability of this stock market due to the covid-19 pandemic (Liu et al., 2020).

Previous study argues that the financial services sector, including banks and other financial institutions, is severely affected by covid-19 due to the rise in bad debts resulting from deteriorating revenues and increased deposit withdrawals (Goodell, 2020). Other study investigated how covid-19 impacts stock market liquidity in the Middle East and North Africa (MENA), considering the market depth and tightness (Mdaghri et al., 2021). Studies show that increasing confirmed cases and deaths positively impacts market liquidity. However, there is a difference in liquidity dynamics between small-cap and large-cap. Nevertheless, the industrial and country-level results concluded a negative and significant relationship between the covid-19 epidemic and stock market liquidity. Although the impact of the covid-19 outbreak focusing on the Vietnamese market is still rarely investigated, some researchers have shown their interest in the topic.

The study findings confirm the negative relationship between an increase in the daily number of confirmed cases and stock returns. The worst affected sector is banking and corporate finance on the Vietnam stock exchange (Anh & Gan, 2020; Bukit & Nasution, 2015). Despite the negative impact, research shows that the stock market and other businesses have experienced a marked upward trend after the government implemented the Covid-19 pandemic control program. Other study uses the case study method to examine the impact of covid-19 on Vietnam's banking sector in particular and explores that Vietnamese investors had different reactions during the three waves of covid-19, reflecting the stock prices of listed banks in 2020 (Phuong, 2021).

The covid 19 pandemic has given the capital market a variety of reactions. Research findings show that the capital market reacted negatively to covid-19, which is characterised by a significant decline in stock prices (Al-Awadhi et al., 2020; Ashraf, 2020; Chowdhury & Abedin, 2020; Q. He et al., 2020; Wang et al., 2021). Meanwhile, several other findings indicate that the market reacted positively to the covid-19 pandemic, which was marked by a significant increase in stock prices (P. He et al., 2020; Höhler & Lansink, 2021) increased stock trading volume (Kasim et al., 2022; Machmuddah et al., 2020). Research findings show that the Covid-19 announcement affects the exchange rate seen from changes in the exchange rate (Benzid & Chebbi, 2020; Lestari, 2020). In addition, there is a difference in returns before and after the occurrence of covid-19 announcement events (Alam et al., 2020; Apergis & Apergis, 2022; Ashraf, 2020;

Bash, 2020). Other research findings show no significant difference in returns before and after the covid-19 announcement event (Al-Awadhi et al., 2020; Khan et al., 2020; Lestari, 2020).

Previous studies' findings regarding the capital market's varied reactions are interesting. Since the beginning of 2020, the covid-19 pandemic has become an interesting topic all over the world, which has, aroused great interest for more in-depth and comprehensive research, especially on the stock market. The impact of the covid-19 pandemic around the world on the stock market seems to remain unconvincing shortly. Such uncertainty creates a foundation for deepening the investigation of stock market reactions in response to pandemic outbreaks and disease control policies established by the Government. Although extensive studies have been conducted most of them are limited to countries such as the United States, China, France, Germany, Italy, Japan, Korea, and Spain (Al-Awadhi et al., 2020; Alfaro et al., 2020; Baig et al., 2021; Eleftheriou & Patsoulis, 2020; Gherghina et al., 2020; Liu et al., 2020; Mdaghri et al., 2021; Zhang et al., 2020). They are concentrated in more than one specific region, for example, countries in the Asia pacific. It is interesting for researchers to analyse the reaction of the capital market.

Black Swan Theory explains that the world is strongly influenced by rare events and is difficult to predict. The real implications can be seen from the market and investment reaction. This theory says that a black swan is an event or event that deviates from the ordinary and occurs without prior estimate (Taleb, 2007; Yousaf et al., 2022). The market will react to the signals, and investors will respond. Signalling theory explains that these signals are usually the basis for investors in investment decisions. The purpose of this study is to analyze the reaction of the capital market seen from differences in stock price indices, stock returns, stock trading volume, and exchange rates before and after the announcement of the Covid-19 case in countries in the Asia Pacific region, namely Indonesia, Malaysia, Singapore, Thailand, Australia, Japan, South Korea, New Zealand, Mexico, Taiwan and Hong Kong.

2. METHODS

This type of research is comparative descriptive research, which analyses the difference in a variable's state at two different times (Goodell, 2020; Mason & Brown, 2014). This study analysed the reaction of capital markets before and after the announcement of reports of covid-19 entry in each country in the Asia Pacific (APEC). This study uses an event study approach to test whether the information is contained in the announcement of covid-19 case reports in countries in the Asia Pacific.

This study's population is a country in the Asia Pacific. Sampling using purposive sampling technique, with the following criteria (1) Countries registered as APEC members, (2) APEC member countries that are listed as having stock exchanges and conducting stock trading activities, (3) APEC member countries that continue to report additional covid-19 cases actively, (4) APEC member countries that have complete stock price index, return, stock trading volume and exchange rate data. Based on these criteria, 11 countries will be studied, namely the Indonesian stock exchange (IHSG), Malaysia (KLSE), Singapore (STI), Thailand (SET), Australia (ASX), Japan (TSE), South Korea (KOSPI), New Zealand (NZX50), Mexico (BMV), Taiwan (TSEC), and Hong Kong (HKEX).

The observation period consists of an estimated period (the period before the announcement), 14 days before the announcement of the covid 19 case, the time of the event date, which is one day, and 14 days after the announcement of the covid 19 case. The total length of the observation period is 29 working days. This is to maintain the purity of investor reactions due to the announcement of reports of covid-19 cases in countries in the Asia Pacific. Thus, the current results are not the result of other issues outside the event. The data used is in the form of secondary data sourced from the official websites of stock exchanges of 11 countries in the Asia Pacific. Data collection techniques use literature studies and documentation. Data testing with data normality test and two average difference tests in this study used the Paired Sample T-Test for normally distributed data and the Wilcoxon Singed Rank-Test for data that is not normally distributed.

3. RESULTS AND DISCUSSIONS

Results

This study used normality test analysis to determine whether the distributed data was normal or not, using the Kolmogorov-Smirnova test with a significance level ($\alpha = 0.05$). The data is declared normally distributed if the Significance value is greater than 0.05. In contrast, the data is not normally distributed if the Significance value is less than 0.05. After that, conduct different tests using Paired Sample T-Test for normal distributed data and Wilcoxon Singed Rank-Test for normal non-distributed data. Normality test result is show in Table 1.

Table 1. Normality Test

Countries	Stock Price Index		Stock Returns		Stock Trading Volume		Exchange Rate	
	Kolmogorov-Smirnova		Kolmogorov-Smirnova		Kolmogorov-Smirnova		Kolmogorov-Smirnova	
	Sig. Before	Sig. After	Sig. Before	Sig. After	Sig. Before	Sig. After	Sig. Before	Sig. After
Indonesia	0.004	0.200*	0.200*	0.200*	0.000	0.200*	0.015	0.084
Malaysia	0.200*	0.200*	0.200*	0.200*	0.021	0.200*	0.121	0.200*
Singapore	0.200*	0.183	0.200*	0.200*	0.200*	0.103	0.891	0.888
Thailand	0.200*	0.016	0.025	0.146	0.200*	0.096	0.142	0.044
Australia	0.200*	0.200*	0.200*	0.102	0.000	0.200*	0.103	0.200*
Japan	0.037	0.151	0.200*	0.17	0.200*	0.200*	0.013	0.200*
South Korea	0.200*	0.200*	0.200*	0.200*	0.052	0.200*	0.177	0.200*
NewZealand	0.066	0.015	0.200*	0.200*	0.003	0.024	0.102	0.002
Mexico	0.200*	0.1859	0.0009	0.200*	0.112	0.1633	0.200*	0.0058
Taiwan	0.134	0.200*	0.200*	0.200*	0.200*	0.047	0.200*	0.068
Hongkong	0.200*	0.200*	0.200*	0.13	0.200*	0.200*	0.118	0.052

The results of the normality test are shown in Table 1. The results of the Indonesian data normality test show that the variable stock price index and exchange rate before the announcement of covid-19 cases data did not distribute normally, and after the announcement of covid-19 cases, the data were normally distributed. Variable returns before and after the announcement of covid-19 cases normally distributed data. The variable stock trading volume before the announcement of covid-19 cases had normal distribution data, and after the announcement of covid-19 cases, data did not distribute normally. The results of the data normality test for Malaysia showed that the variable volume of stock trading before the announcement of covid-19 cases was not distributed normally, while after the announcement of covid-19 distributed normally. The variables of stock price index, stock return, and exchange rate before and after the announcement of covid-19 cases are normally distributed. The results of the Singapore data normality test showed that the variables of stock price index, stock return, stock trading volume, and exchange rate before and after the announcement of covid-19 cases were normally distributed.

The results of the Normality Test of Thailand data showed that the variable stock price index and exchange rate before the announcement of covid-19 cases, data were normally distributed and after the announcement of covid-19 cases, the data were not normally distributed. The variable return of stocks before the announcement of covid-19 cases -19 data is not normally distributed, and after the announcement of covid -19 data is normally distributed. The variables of trading volume before and after the announcement of the covid-19 case data are normally distributed. Australia's normality test results showed that the variables of stock price index, stock return, and exchange rate before and after the announcement of covid-19 cases showed normal distribution data. At the same time, trading volumes before the announcement of covid-19 cases showed that data were distributed sparingly. Japan's normality test results showed the variable stock price index, the exchange rate before the announcement of covid-19 cases showed data was not normally distributed, and after the announcement of covid-19 cases, the data were normally distributed. Variable stock returns and trading volumes before and after the announcement of covid-19 cases show normal distribution data.

The results of the South Korean normality test data showed that the variables of stock price index, trading volume, return, and exchange rate before and after the announcement of covid-19 cases were normally distributed. New Zealand's normality test results showed that the variable stock price index and the exchange rate before the announcement of covid-19 cases showed normal distribution data. After the announcement of covid-19 cases, the data did not distribute normally. The variable returns of stocks before and after the announcement of covid-19 cases show normal distribution data. Stock trading volumes before and after the announcement of covid-19 cases showed that the data was not normally distributed. Mexico's normality test results showed that the variables of the stock price index and stock trading volume before and after the announcement of covid-19 cases showed normal distribution data. The stock return variable before the announcement of covid-19 cases shows that the data is not normally distributed, and after the announcement of covid-19 cases, the data is normally distributed. The Variable Exchange rate after the announcement of covid-19 cases shows that the data is not normally distributed, and before the announcement of covid-19 cases, the data is normally distributed.

The results of the Taiwan data normality test showed that the variables of stock price index, stock return, and exchange rate before and after the announcement of covid-19 cases were normally distributed data. Stock trading volumes before the announcement of covid-19 cases data did not distribute normally; after the announcement of covid-19, data were normally distributed. The Hong Kong data normality test results show that the variables of stock price index, stock return, trading volume, and exchange rate before and after the announcement of covid-19 cases are normally distributed data. Paired sample t-test and Wilcoxon signed rank-test results is show in Table 2.

Table 2. Paired Sample T-Test and Wilcoxon Signed Rank-Test

Countries	Paired Sample T-Test	Wilcoxon Signed Rank-Test
Stock price index (Before–After Covid-19)	Sig.	Sig.
Indonesia		0.001
Malaysia	0.000	
Singapore	0.000	
Thailand		0.140
Australia	0.147	
Japan		0.120
South Korea	0.434	
New Zealand		0.001
Mexico	0.000	
Taiwan	0.000	
Hongkong	0.000	
Return (Before–After Covid-19)		
Indonesia	0.243	
Malaysia	0.000	
Singapore	0.942	
Thailand		0.140
Australia	0.811	
Japan	0.487	
South Korea	0.518	
New Zealand	0.123	
Mexico		0.400
Taiwan	0.000	
Hongkong	0.945	
Stock Trading Volume (Before–After Covid-19)		
Indonesia		0.470
Malaysia		0.006
Singapore	0.104	
Thailand	0.065	
Australia		0.016
Japan	0.412	
South Korea	0.303	
New Zealand		0.109
Mexico	0.009	
Taiwan		0.187
Hongkong	0.130	
Exchange Rate (Before–After Covid-19)		
Indonesia		0.001
Malaysia	0.001	
Singapore	0.000	
Thailand		0.001
Australia	0.000	
Japan		0.683
South Korea	0.000	

Countries	Paired Sample T-Test	Wilcoxon Signed Rank-Test
Stock price index (Before–After Covid-19)	Sig.	Sig.
New Zealand		0.001
Mexico		0.001
Taiwan	0.000	
Hongkong	0.004	

The test results of the Paired Sample T-Test and the Wilcoxon Signed Rank-Test are shown in Table 2. The Paired Sample T-Test results show a difference in the stock price index before the announcement of covid-19 cases and after the announcement of covid-19 cases in Malaysia, Mexico, Taiwan, Hong Kong, and Singapore. Meanwhile, in Australia and South Korea, there was no difference in the stock price index before the announcement of covid-19 cases and after the announcement of covid-19 cases. Meanwhile, the Wilcoxon Signed Rank-Test results show a difference in the stock price index between before the announcement of covid-19 cases and after the announcement of covid-19 cases in Indonesia and New Zealand. Meanwhile, in Thailand and Japan, there is no difference in the stock price index between before the announcement of the covid-19 case and after the announcement of the covid-19 case.

Paired Sample T-Test results, stock returns show that there is a difference in returns between before the announcement of covid-19 cases and after the announcement of covid-19 cases in Malaysia and Taiwan. Meanwhile, in Indonesia, Singapore, Australia, Japan, South Korea, New Zealand, and Hong Kong, there is no difference in returns between before the announcement of covid-19 cases and after the announcement of covid-19 cases. Meanwhile, the Wilcoxon Signed Rank-Test stock return test results show no difference in returns between before the announcement of covid-19 cases and after the announcement of covid-19 cases in Thailand and Mexico.

The Paired Sample T-Test stock trading volume showed a difference in stock trading volume before the announcement of covid-19 cases and after the announcement of covid-19 cases in Mexico. There was no difference in stock trading volume before the announcement of covid-19 cases and after the announcement of covid-19 cases in Singapore, Thailand, Japan, South Korea, and Hong Kong. Meanwhile, the Wilcoxon Signed Rank-Test showed that there was no difference in stock trading volume before the announcement of covid-19 cases and after the announcement of covid-19 cases in Indonesia, New Zealand, and Taiwan, while in Malaysia and Australia, there was a difference in stock trading volume between before the announcement of covid-19 cases and after the announcement of covid-19 cases.

The Paired Sample T-Test Exchange Rate test results show a difference in the exchange rate before the announcement of covid-19 cases and after the announcement of covid-19 cases in Malaysia, Singapore, Australia, South Korea, Taiwan, and Hong Kong. Meanwhile, the Wilcoxon Signed Rank-Test Exchange Rate shows a difference in the exchange rate before the announcement of covid-19 cases with after the announcement of covid-19 cases in Indonesia, Thailand, New Zealand, and Mexico. Meanwhile, Japan shows no difference in the exchange rate before the announcement of covid-19 cases and after the announcement of covid-19 cases.

Discussion
Capital Market Reaction Based on Stock Price Index Before and After Covid-19
The test results show a difference in the stock price index before the announcement of the covid-19 case and after the report of the covid-19 case on the stock exchanges of Malaysia, Mexico, Taiwan, Hong Kong, Indonesia, Singapore, and New Zealand. The announcement of covid-19 is a non-economic event that can affect the capital market (Baek et al., 2020; Liang et al., 2022). Investors react in the short term when they are pessimistic because the number of positive covid-19 cases continues to increase, and the risk of death is high. This causes differences in stock price indexes in Malaysia, Mexico, Taiwan, Hong Kong, Indonesia, Singapore, and New Zealand. Stock prices have decreased due to the uncertain economy due to the covid-19 pandemic and great pandemic conditions (P. He et al., 2020; Wang et al., 2021). This virus has never been found before, especially since there is no vaccine, so it can cause investors to overreact, resulting in stock prices. When the number of covid-19 cases increases in a country, stock market yields decline. This means that a pandemic condition like this will make the market sentiment so that it has a significant effect on stock prices so that the difference in stock prices is significant before and after events, both economic and non-economic events, as indicated by changes in stock prices so that the covid-19 pandemic wakes up uncertainty trust in society.

These results support research which found a negative market reaction to an event indicated by a change in the stock price index in a negative direction (Al-Awadhi et al., 2020; Ashraf, 2020; Chowdhury &

Abedin, 2020; Wang et al., 2021). The increase in the number of victims of the Covid-19 virus has made investors nervous, so many shares were released for sale. The high potential for spread causes panic investors to sell shares. The Covid-19 pandemic affected the capital market and caused changes in trading times, and this was a negative signal that caused investors to be more interested in selling their shareholdings. Meanwhile, in the stock exchanges of Australia and South Korea, Thailand, and Japan, there was no difference in stock price indexes before the announcement of the Covid-19 case and after the announcement of the Covid-19 case. Strict government policies in controlling the covid-19 pandemic, the provision of cash assistance by the government and the private sector, and public discipline in implementing health protocols have made the stock market conditions in Australia and South Korea, Thailand, and Japan tend to be stable despite movements. Government policies dealing with the spread of covid-19 cases are stricter so that the spread can be controlled, and stock price indexes in these countries tend to have stable movements.

Capital Market Reaction Based on Stock Returns Before and After Covid-19

The analysis results show no difference in returns before and after the announcement of covid-19 cases in Indonesia, Singapore, Thailand, Australia, Japan, South Korea, New Zealand, Mexico, and Hong Kong. The average return reinforces this before and after the event, which is not too far away. Strict government policies in controlling the covid-19 pandemic, the provision of cash assistance by the government and the private sector, and public discipline in implementing health protocols made the stock market conditions in Indonesia, Singapore, Thailand, Australia, Japan, South Korea, New Zealand, Mexico, Hong Kong tends to be stable despite movement. Government policies dealing with the spread of covid-19 cases are stricter so that the deployment can be controlled, and stock price indexes in these countries tend to have stable movements. This is in line with research which also obtained the same results (Khan et al., 2020).

Meanwhile, the Malaysia and Taiwan stock exchanges showed differences in returns before and after the announcement of the covid-19 case. This is reinforced by the difference in the average return before and after the event. These results support research findings which show that there are differences in returns before and after the event (Alam et al., 2020; Apergis & Apergis, 2022; Ashraf, 2020; Bash, 2020). Low market returns indicate that the market reacts negatively to an event. And conversely, a high market return indicates that the market reacts positively to an event. This is supported from a theoretical point of view, namely in terms of Signaling Theory, which states that supply and demand in the stock market affect, showing a signal of optimism that management will be able not to increase returns. Stock prices in the future are about the ups and downs of market prices so that they will affect investors; this is proven. The results showed that the stock price before the covid-19 national announcement had a higher average value than the average after the covid-19 case announcement.

Capital Market Reaction Based on Stock Trading Volume Before and After Covid-19

The test results show differences in stock trading volume before and after the announcement of the COVID-19 case on the Malaysia, Australian and Mexico stock exchanges. The results of this study support research findings, which show that the market reacts positively by showing changes in stock trading volume before and after the covid-19 event (Kasim et al., 2022; Machmuddah et al., 2020). The stock transaction volume after the covid-19 national announcement has an average value greater than the average stock transaction volume value before the announcement. This shows the impact of covid-19, namely an increase in the average volume of stock transactions. This increase in share transaction volume was due to increased share buying and selling activities. This increase in the volume of stock transactions, not followed by an increase in stock prices, is attractive for investors to buy shares.

Meanwhile, the stock exchanges of Indonesia, Singapore, Thailand, Japan, South Korea, New Zealand, Hong Kong, and Taiwan showed no difference in trading volume before and after the announcement of the Covid-19 case. Strict government policies in controlling the covid-19 pandemic, the provision of cash assistance by the government and the private sector, and public discipline in implementing health protocols have made the stock market conditions in Indonesia, Singapore, Thailand, Japan, South Korea, New Zealand, Hong Kong, and Taiwan tend to be stable, even if there is movement. Government policies dealing with the spread of covid-19 cases are stricter so that the dissemination can be controlled, and stock price indexes in these countries tend to be stable.

Capital Market Reaction Based on Exchange Rate Before and After Covid-19

The test results show differences in exchange rates before and after the announcement of the Covid-19 case, namely on the stock exchanges of Indonesia, Malaysia, Singapore, Thailand, Australia, South Korea, New Zealand, Taiwan, Mexico, and Hong Kong. The country stock market in the Asia Pacific considers the announcement of the Covid-19 case as information that has an information content and is a signal for

markets and investors in making investment decisions. The signal can be in the form of good news or bad news. The covid-19 case event is considered to have information in the form of bad news, which is indicated by a negative market reaction, and good news, which is indicated by a positive market reaction. The covid-19 pandemic affects market dynamics stocks, causing stock exchanges in some countries to decline and increasing inefficiency in the stock market. This hurts the capital market and affects investors in making investment decisions.

Negative market reactions were obtained in Indonesia, Malaysia, Thailand, Australia, Japan, South Korea, New Zealand, and Taiwan. Covid-19 pandemic where this virus is a new virus that spreads very quickly, and there is no vaccine yet, resulting in extraordinary uncertainty that has an impact on stock returns. Tremendous panic or uncertainty in the market of each stock ultimately has an impact on uncertainty in the stock market. It has an impact on increasing volatility in the financial market, so it has an impact on stock returns. The covid-19 virus pandemic is also an emergency and unpredictable event. It has a large impact, described in the black swan theory, and rare and difficult-to-predict events heavily influence the world. Changes in stock prices during a pandemic can occur because consumer spending is depressed and companies lower their earnings prospects, which impact the market reassessment of company value and a large fall in share prices. Stock markets respond negatively to stock market returns declining as the number of confirmed cases increases. This study's results support previous research which showed a market reaction indicated by changes in the exchange rate before and after the event (Benzid & Chebbi, 2020).

Meanwhile, the Japanese stock exchange showed no difference in the exchange rate before and after the announcement of the covid-19 case. These results support research that also obtained the same results (Lestari, 2020). Strict government policies in controlling the covid-19 pandemic, the provision of cash assistance by the government and the private sector, and public discipline in implementing health protocols made the Japanese stock market conditions tend to be stable despite movements. The government's policy in dealing with the spread of covid-19 cases is stricter, so the movement of the stock price index tends to be stable in the country because the spread of covid-19 cases can be controlled properly.

Based on the results of the research that has been done, this research is inseparable from the limitations that come from various aspects. These limitations are: first, the population coverage of the research area is in the Asia Pacific region. The data samples that meet the criteria are from 11 countries. Second, the variables used in this research are market reactions consisting of the stock price index, stock returns, stock trading volume, and exchange rate. Third, the determination of the observation period consists of the estimation period (the period before the announcement), which is 14 days before the announcement of the covid 19 case, the time of the event (event date), which is one day, and 14 days after the announcement of the covid 19 case. The total length of the window period observation of 29 working days. Researchers provide suggestions for further research to be better. First, using other events that are predicted to affect the capital market. Second, you should be able to use different data collection techniques to get a larger number of research samples that are not included in this study. Third, research indicators and clustering sectors in the capital market are added to analyze the capital market reaction related to the covid-19 pandemic.

4. CONCLUSION

Differences in stock price index before and after the covid-19 case were found on the stock exchanges in Indonesia, Malaysia, Singapore, Mexico, Taiwan, Hong Kong and New Zealand. There was a negative market reaction to the announcement of the covid-19 case. Countries that did not show any differences in stock price indices before and after the covid-19 incident were Thailand, Australia, Japan and South Korea. In addition, differences in returns before and after the announcement of the covid-19 case were found on the Malaysia and Taiwan stock exchanges. Meanwhile, on the stock exchanges in Indonesia, Singapore, Thailand, Australia, Japan, South Korea, New Zealand, Mexico and Hong Kong, there was no difference in stock returns before and after the covid-19 announcement. Differences in stock trading volume before and after the announcement of the covid-19 case were found on the Malaysia, Australian and Mexico stock exchanges. Meanwhile, the stock exchanges for Indonesia, Singapore, Thailand, Japan, South Korea, New Zealand, Hong Kong and Taiwan showed no difference in stock trading volume before and after the announcement of the covid-19 case. Negative market reactions were obtained in Indonesia, Malaysia, Thailand, Australia, South Korea, New Zealand, Hong Kong, Singapore and Taiwan. Meanwhile, on the Japanese stock exchange, there was no difference in the exchange rate before and after the announcement of the covid-19 case.

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