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Abstract

This research wants to investigate the effect of COVID-19 towards stock market performance. COVID-19 is new disease that caused by strain of coronavirus, a type of virus known to cause respiratory infections in human's body. This virus started its outbreak in December 2019 does not only affect the healthcare of people but also the economics of the emerging country such as Malaysia. Thus, the COVID-19 pandemic also shows its impact on the global stock market return. This occurrence is created when the number of COVID-19 cases in Malaysia increased which led to the government of Malaysia announced a movement control order (MCO). The outbreak forced the shutdown the operation of business and daily activities, then affected the stock market. The consequences of infectious are considerable and have been directly affecting stock markets return worldwide. The main aim of this study is to focus more on the performance of healthcare index by using the healthcare index return as the dependent variable. While the independent variables used in this study are COVID-19 cases, COVID-19 death cases, financial market volatility VIX index and money supply. The method use in this study are multiple linear regression. This study using the secondary data and daily data with the sample period covered from 24 January 2020 to 23 November 2020. The findings shows that all independent variable have the significant relationship with the healthcare index return. For further studies, researchers can extend the research by making a performance comparison between pre and post pandemic effect towards healthcare index return.

Keywords: Covid-19, Stock Market, Healthcare Index, Movement Control Order (MCO), Pandemic.

Introduction

The number of COVID-19 cases in Malaysia increased rapidly to by the end of February 2020. In March 2020, the cases increased to 2,626 cases on 31 March 2020. Due to the outbreak, the government of Malaysia announced a movement control order (MCO) to

prevent the spread of this infectious disease. In response to the severity of the COVID-19 impact on business and major events, including education sector is unprecedented (Kelvin, 2020). Under the so-called Movement Control Order (MCO), all private and government offices, business premises, and places of worship, except those of these that were considered essential services, were closed. Therefore, this had affected the productivity of Malaysian economy and development.

The Malaysian stock market return has also taken a hit from the COVID19 pandemic. On March 27, 2020, the Bursa had sunk to its lowest numbers in a decade, having fallen 20.52% since the start of the year (Chia et al., 2020). Meanwhile, the outbreak effects the stock market return performance likely to have minimal impact on the Malaysian healthcare sector in the near term. Nevertheless, for the long term, healthcare is predicted to be on rising as the awareness from the outbreak should be positive for the sector (Affin, 2020).

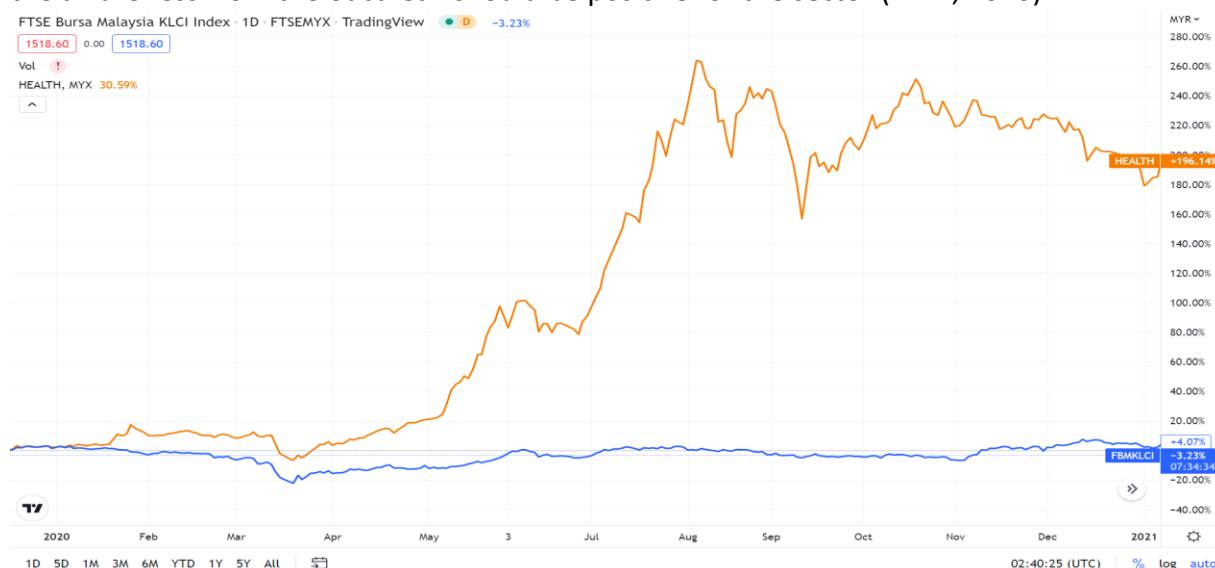


Figure 1: Movement of KLCI Index and Healthcare Index (01 Jan 2020 – 23 Nov 2020)

Source: www.tradingview.com

Figure 1 shows the movement of the Kuala Lumpur Composite Index (KLCI) and Healthcare Index over the period from 1 January 2020 to 23 November 2020. Generally, the KLCI has experienced a downtrend since the beginning of January 2020, Malaysia's benchmark FTSE Bursa Malaysia KLCI index had dropped 2.69% at market close on 24 February 2020 which is second day of MCO period. Since, the KLCI Index had drop during the pandemic, the investors see the opportunities in healthcare sector. The outperformance of Healthcare Index brought a huge increase in demand for healthcare products, which is the investors are concerns about the potential for strong earnings growth in healthcare sector. The challenges brought by the COVID-19 pandemic have affected nearly every aspect that related to the healthcare sector such as, hospital financial, healthcare product and clinical operations.

Coronavirus also known as COVID-19 lead to pandemic which is the serious world healthcare crisis. The infection of COVID-19 diseases spread very fast, it caused the long-term effect and changes the performance of world stock market. The COVID-19 pandemic has also affected the world healthcare stock market, which includes Malaysia. In fact, the world stock markets decline on 24 February 2020 due to a changes and impact of increasing in the number of COVID-19 outbreak cases (Hong et al., 2021). The worldwide stock markets on 28 February 2020, saw their highest declines of some percent in the world's indices since the 2008 financial

crisis. The declines signaled the beginning of the COVID-19 recession, which is the most impact in global stock markets in financial stock market history.

In addition, the COVID-19 outbreak affected the supply and demand curve throughout the world and heavily impacted the Malaysian economic system. The economic slowdown is also due to domestic factors such as the movement control measures put in place because of COVID-19. While, the closure of businesses and services, as well as the impacts on travel and the controls put over movement, will have outsized impacts on the levels of domestic consumption and business investment. The problem identified in this research is attempted to investigate how the COVID-19 outbreak affected healthcare sector in the Malaysian stock market return such as COVID-19 cases, COVID-19 death cases, financial market volatility VIX index and Money Supply. In prior research, few research on the effect of Covid-19 outbreak towards stock market return has been done.

Therefore, this study investigates the impact of COVID-19 outbreak effect towards stock market performance. This study main is to examine how the COVID-19 outbreak affected the healthcare sector in the Malaysian stock market. The COVID-19 situation may create the investors opportunities to increase the profit in healthcare sector. The pandemic has also solidified the conviction of investors in the healthcare theme, as it has brought to light the supply-demand gaps that underscore opportunities in the healthcare sector.

Literature Review

The number of COVID-19 cases in Malaysia increased. In response to the severity of the COVID-19 impact on business is unprecedented. The COVID-19 pandemic impacted the supply and demand curve around the world and impacted the Malaysian economic system. Lee, Jais, and Chan (2020) conducted a study in examined the effects of the COVID-19 pandemic towards performance of the Malaysian stock market. The study is using daily data starting from 31st December 2019 to 18 April 2020. The regression analysis is carried by including the Kuala Lumpur Composite Index (KLCI) and 13 sectorial. The result indicate that the COVID-19 have a significant factor which impact the performance of stock market. On the other hand, Yilmazkuday (2020) examines the effects of the COVID-19 in the U.S on the S&P 500 Index. The study analyzes daily data covering the period between January 21st, 2020, and August 6th, 2020. The empirical findings suggest that having 1% increase in cumulative COVID-19 cases, resulting 0.01% of a cumulative reduction in the S&P 500 Index. Recent research by Zeren and Hizarci (2020) examine the Coronavirus epidemic effects on stock markets. This research using daily data covered between 23 January 2020 and 13 March 2020. The result found that the total cases show significant relationship with SSE, KOSPI and IBEX35 and have insignificant relationship with FTSE MIB, CAC40, DAX30.

COVID-19 Cases and Stock Market

Research conducted by Zhou et al (2020), revealed the impacts of COVID-19 on several of industries. The result indicates that, the number of COVID-19 cases in China has positive relationship with performance of healthcare industry. Another recent study carried out by Lee et al (2020) identifying the impacts of the COVID-19 on the performance of the Malaysian stock market with the data covering from December 2019 to April 2020. The finding of this study show that the number of COVID-19 cases has positive significantly affected the performance Malaysian stock market. Chia et al (2020) also identify the relationship between Malaysian stock market returns and variables related to the Coronavirus pandemic. The sample period for the study is from the January 2020 to April 2020. The result of the study

demonstrates that the number of new COVID-19 cases shown a significant impact on the market returns. In addition, Zeren and Hizarci (2020) also investigated the impacts of COVID-19 on stock markets by using the sample period data from January 2020 to March 2020. The study used the Covid-19 daily total death and Covid-19 daily total cases as the independent variables while stock markets as dependent variable. The result shows that there is a significant relationship between daily total case and stock markets in China and Italy. Al-Awadhi et al (2020) examined the relationship between contagious infectious impact towards the stock market. The research analyzing the stocks of both Hang Seng Index and Shanghai Stock Exchange Composite Index during the outbreak in China. The result indicates that the stock returns are insignificant towards the daily confirmed cases.

COVID-19 Death Cases and Stock Market

Lee, Jais, and Chan (2020) examined the impacts of the COVID-19 cases in Malaysia, China, and USA on the performance of the Malaysian stock market. Data were collected using daily data December 2019 to April 2020. The finding of the study shows deaths in China has a positive relationship with the performance of Malaysian stock market. Another study conducted by Zeren and Hizarci (2020) identify the relationship between Covid-19 death and Covid-19 cases with stock markets. The result indicates that the death number does not affect the stock markets return for the other countries. However, the result show positive relationship between daily total death case and all country stock markets which is China, South Korea, and Italy. Another research conducted by Zhou et al (2020) studying the impacts of economic towards COVID-19 on several industries. The research predicts the tendency of the outbreak and analyze the influence of official policies. The result show that the death rate remains significant towards stock market performance. Just and Krzysztof (2020) also examine the relationship between United State stock market returns and three indicators of the market. The study, therefore, show significant relationship between effects of number COVID-19 deaths in stock market return. Albulescu (2020) examined the impacts of COVID-19 on the financial volatility of China's stock market for the 40 days after the international monitoring of COVID-19 began. The results of this study demonstrated that a higher numbers of death cases had a positive relationship financial market volatility. Based on the previous research finding, shows that there is a significant relationship between the Covid-19 death case with the stock market.

Financial Market Volatility and Stock Market

Lee et al (2020) identifying the impacts of the COVID-19 on the performance of the Malaysian stock market. This research measuring the stock market using the volatility index and data collected covered from December 2019 to April 2020. The result of the study shows, the stock market has significantly affected towards the financial market volatility index. The previous studies carried by Just and Krzysztof (2020) investigate the impact of volatility and S&P500 index returns. Where the stock market indicators had huge decline in the S&P500 index return during the outbreak. There shows a positive relationship between returns and volatility index. A recent study by Erdem (2020) the author studies the freedom and stock market performance during pandemic. The result shows positive significant relationship effects between volatilities and stock market return. In addition, Albulescu (2020) investigate the impacts of COVID-19 pandemic on the financial volatility of stock market. The sample of research consist of the countries affected by the virus during the analyzed period. The finding

show that number of COVID-19 cases had a positive relationship with the financial market volatility.

Money Supply and Stock Market

The previous research conducted by Jeat and Hassan (2019) examined the impact of the economic factors on stock market. This study used Exchange Rate, Inflation Rate and Money Supply as the independent variable whether this variable have the relationship with the stock market return. This study found that there is a positive relationship between money Supply with Malaysia stock market. In addition, a study carried by Khan and Zaman (2012) in identifying the relationship between the money supply with the stock market. The finding of the study shows a significant relationship between two variables as the result shows that increased money supply, the higher stock market return indicating better stock market performance. Moreover, Chia and Lim (2015) examine response of Malaysian stock market return. The price of the shares has been impacting by the money supply in the stock market return in long term. The research, show that there is a positive relationship between the money supply and stock market return. A recent study carried out by Abdelbaki (2013) examined the relationship between macroeconomic variables and Bahraini stock market. According to the study, increase the money supply would affect the stock market. As the result, this indicates that the money supply has significant relationship with stock market return. Lee et al (2020) conducted a study in investigating the relationship between the stock market indices with macroeconomic variable. The finding of this study show that money supply has a positive stock market index.

Methodology

This study focuses on examine the effect of Covid-19 towards stock market. Cases of Malaysia Healthcare Index return. The independent variables use in this research are COVID- 19 cases, COVID-19 death cases, financial market volatility VIX index and Money Supply. While the dependent variable is healthcare index return. The sampling period used in this study is from 24th January 2020 to 23rd November 2020 and daily data is used to be analyzed. The number of observations consist of 181 days. The phases of sample period divided into three which are Enhanced Movement Control Order (EMCO) starting from 18 March 2020 to 3 May 2020, Conditional Movement Control Order (CMCO) from 4 May 2020 to 9 June 2020 and Recovery Movement Control Order (RMCO) which from 10 June 2020 to 31 December 2020. The information is collected from secondary data such as investing.com and official WHO website. The data collected are tested using statistical tools which is E-view 11 programming.

Multiple Linear Regression

Multiple linear regression is using to determine the one dependent variable and more than one independent variables. Thus, the equation of multiple linear regression is shown below:

$$Y_i = C + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad (1)$$

Y_1 is the dependent variable which is healthcare index. β_1 is the coefficient for determine the healthcare index return, ε is an error term.

X_1 : COVID-19 cases

X_2 : COVID-19 death cases

X3: financial market volatility VIX index

X4: Money supply

Results and Discussions

This study investigates the relationship of COVID-19 outbreak towards healthcare index return. The independent variables used in this study were covid-19 cases, covid-19 death cases, VIX index and money supply while the dependent variable was healthcare index.

Descriptive Analysis

Table 1

Descriptive Statistics of Selected Factors affecting Healthcare Index in Malaysia

	Healthcare Index	Covid-19 Cases	Covid-19 Death Cases	VIX Index	Money Supply
Mean	2802.176	200.5801	1.254144	33.49387	0.052464
Median	2937.620	39.00000	0.000000	28.95000	0.053000
Maximum	4456.090	1290.000	12.00000	82.69000	0.064000
Minimum	1142.400	0.000000	0.000000	21.60000	0.037000
Std.Dev.	1156.909	330.7915	2.103317	12.05273	0.009160
Skewness	-0.139554	1.816632	2.259471	1.912741	-0.231482
Kurtosis	1.344751	4.953607	8.668871	6.496371	1.863931

Table 1 displays the descriptive statistic for the entire variable that used in this study which are healthcare index return, COVID-19 cases, COVID-19 death cases, financial market volatility VIX index and money supply. As shown in the table above, the mean value for healthcare index returns is 2802.176. while for COVID-19 cases, COVID-19 death cases, financial market volatility VIX index and money supply have a mean value of 200.5801, 1.254144, 33.49387 and 0.052464 respectively. The maximum value for healthcare index return is 4456.090 meanwhile the maximum value for COVID-19 cases, COVID-19 death cases, VIX index, and money supply are 1290.000, 12.00000, 82.69000 and 0.064000. Healthcare index has the highest standard deviation with the value of 1156.909 while money supply has the lowest standard deviation with the value of 0.009160. Furthermore, the skewness has a positive value for covid-19 cases, covid-19 death cases and VIX index except for healthcare index and money supply that show a negative value. There are rightly skewed.

Correlation Analysis

Table 2

Correlation Analysis

	Healthcare Index	COVID-19 Cases	COVID-19 Death Cases	VIX Index	Money Supply
Healthcare Index	1.000000				
COVID-19 Cases	0.434493	1.000000			
COVID-19 Death Cases	0.114663	0.626065	1.000000		
VIX Index	-0.681578	-0.1223464	0.091089	1.000000	
Money Supply	0.858307	0.248337	0.119855	-0.621823	1.000000

Table 2 depicts the relationship between independent and dependent variables. The table above shows the COVID-19 cases indicates a positively correlated with healthcare index return which is 0.434493. Next, the COVID-19 death cases have a weak positively correlated with healthcare index return which is 0.114663 while the financial market volatility VIX index have a negatively correlated with healthcare index return which is -0.681578. Lastly, money supply has strong positively correlated with healthcare index return which is 0.858307. Overall, it shows that the correlation matrix of COVID-19 cases, COVID-19 death cases and Money supply have positive relationship with healthcare index return. While, financial market volatility VIX index has negative relationship with healthcare index return.

Multiple Regression Analysis

A regression analysis was performed, and the results are summarized in table 3 and in equation (2) below:

Table 3

Multiple Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-993.4460	350.1663	-2.837069	0.0051
COVID-19 CASES	1.208107	0.138334	8.733273	0.0000
COVID-19 DEATH CASES	-88.43109	21.70664	-4.073919	0.0001
VIX INDEX	-20.70656	3.770805	-5.491283	0.0000
MONEY SUPPLY	83061.53	4968.336	16.71818	0.0000
R-squared	0.843151	Mean dependent var		2802.176
Adjusted R-squares	0.839586	S.D dependent var		1156.909
S.E of regression	463.3614	Akaike info criterion		15.14213
Sum square resid	377878871	Schwarz criterion		15.23048
Log likelihood	-1365.363	Hannan- Quinn criter		15.17795
F-statistic	236.5247	Durbin-Watson stat		0.310171
Prob(F-statistic)	0.000000			

The table above shows the effect of Covid-19 outbreak towards Malaysian stock market return, case of healthcare index return. As a result, the finding of regression analysis can be transformed into an econometric equation as follows:

$$Y_1 = -993.4460 + 1.208107 (\text{Covid-19 Cases}) - 88.43109(\text{Covid-19 death cases}) - 20.70656 (\text{VIX index}) + 83061.53 (\text{Money supply}) + \epsilon_i$$

(2)

All the independent variable were significant when the p-value is less than 5 % significance level. The coefficient for Covid-19 cases is 1.208107 and money supply is 83061.53. A positive value indicates a positive relationship with healthcare index return. This value means a change in Covid-19 cases by one per cent, healthcare index return will also increase by 1.208107 assuming other variables constant. While for money supply, increase in value by one per cent,

healthcare index return will also increase by 83061.53 assuming other variables remain constant. Furthermore, for Covid-19 death cases and VIX index, it shows a negative relationship. The value means, when Covid-19 death cases increase in value by 1%, the healthcare index return will decrease by -88.43109. Meanwhile, for VIX index, when the value increase by 1%, the healthcare index return will decrease by - 20.70656. The F-test for this study is 236.5247 with the p-value of 0.00000, less than 5% significance level. Therefore, it indicates that the model is fit. In addition, the coefficient of determination (R²) is 0.843151. It shows that 84.3151% of the total variation in the healthcare index return can be explain by the total variation in independent variables which are Covid-19 cases, Covid-19 death cases, VIX index and Money supply. Therefore another 15.6849 can be explain by other factors.

Conclusion

This study contributes to investigate how the COVID-19 outbreak affected healthcare index return which are Covid-19 cases, Covid-19 death cases, VIX index and Money supply. The results revealed that the number of Covid-19 cases has a significant relationship affected towards healthcare index return. The results have been supported with previous finding by Zhou et al (2020); Lee et al (2020); Chia et al (2020); Zeren and Hizarci (2020) state that there is positive significantly affected between COVID-19 cases and the performance of stock market return.

Furthermore, this study identify that the COVID-19 death cases have a significant relationship between healthcare index return. The result is supported by Lee et al (2020); ZEREN and HIZARCI (2020); Zhou et al (2020); Just and Krzysztof (2020); Albulescu (2020) where the previous study state that there is positive significant relationship between the COVID-19 outbreak death and the performance of stock index return.

In addition, the result in this study shows the significant relationship between VIX index and healthcare index return. The results have been supported with previous finding by Lee et al (2020); Just and Krzysztof (2020); Albulescu (2020); Chiah and Zhong (2020); Erdem (2020) which the result outcome is shows positive significant relationship effects between financial market volatility index and stock market return.

Lastly, the result for Money supply there is significant relationship between healthcare index return. This result supported by Jeat and Hassan (2019); Khan and Zaman (2012); Chia and Lim (2015); Abdelbaki (2013); Lee et al (2020) which is the result shows there positive relationship between the money supply and stock market.

In conclusion, this research has archived the objective of study which is to examine the relationship between independent variable which are COVID-19 cases, COVID-19 death cases, financial market volatility VIX index and Money supply has significant relationship between healthcare index return.

Contributions

This study empirically showed the significant impact of covid-19 outbreak towards healthcare index return. During Covid-19 outbreaks in 2020, the stock market globally received a bad impact excepts for healthcare sector especially in Malaysia stock market. The healthcare sector moves in the opposite direction when the finding shows the covid-19 cases have a positive relationship with healthcare index return. This is because the pandemic also has solidified the conviction of investors in the healthcare theme, as it has brought to light the supply-demand gaps that underscore opportunities in the healthcare sector.

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