Journal of Contemporary Eastern Asia Vol. 20, No. 2: 63-84
DOI: 10.17477/jcea.2021.20.2.063

The Reaction of the Malaysian Stock Market to the COVID-19 Pandemic

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The present study was conducted to understand the turmoil effects of COVID-19 pandemic on the Malaysian stock market during the different periods of the Movement Control Order (MCO). The present study was based on the secondary data extracted from the DataStream and Bloomberg from 2nd January 2020 to 29th May 2020 to evaluate the effects of COVID-19 pandemic on the Malaysian stock market. The findings suggested that during the different periods of the Movement Control Order (MCO) from the 1st January to 29th May 2020, the COVID-19 pandemic adversely affected the performance of KLCI index and all sectoral indices. The weakest performance indices were energy, property, and finance while the least affected indices were healthcare, technology, telecommunications, and media. This paper provides a review of the impacts of COVID-19 pandemic on the Malaysian stock market throughout the different periods of MCO.

Keywords: COVID-19, Malaysian stock market, Sectorial indices

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* The authors are grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the paper. The authors also would like to acknowledge their gratitude for funding from the Fundamental Research Grant Scheme FRGS/1/2018/SS01/UUM/02/7) (S/O Code: 14203) provided by the Ministry of Higher Education, Malaysia.

1. Introduction

Movement Control Order (MCO), and pursuant to this Order, the movements of the people were restricted within the confines of their home. Among the Association of Southeast Asian Nations (ASEAN) countries, Malaysia had the highest number of cases. Therefore, the GoM strictly monitored the MCO to avoid the negative influences on the economy. Although the lockdown significantly helped to curb the spread of the disease, it also disrupted the economic activities in the country. COVID-19 devastatingly impacted the Malaysian stock market because many businesses and markets in Malaysia collapsed, resulting in an economic and market recession. Many people lost their jobs and businesses during the pandemic, leading to a sharp increase in the unemployment rate in Malaysia (Bakar, 2020), and a significant casualty to the stock market and ultimately the economy of Malaysia. Furthermore, almost every sector, including technology and business travel, was adversely affected by the pandemic. Apart from domestic issues, the Malaysian market has suffered largely as a result of its dependence on Chinese production and manufacturing (Hasanat, 2020). Consequently, due to the higher uncertainty due to COVID-19 and MCO, major shareholders of listed companies have disposed of their shares (Star Media, 2020).

Therefore, investigating the effects of the COVID-19 pandemic on the Malaysian stock market is vital, especially since its role in the economies remains significant. Preceding studies have only focused on the health-related aspects of SARS. For instance, the study by Liu and Cai (2003) found that SARS had a strong impact on industries like tourism, transportation, and catering in China. Meanwhile, Beutels et al. (2009) have asserted that the wholesale, retail and daily necessities industries remain safe or less affected during pandemics. With regard to COVID-19, various studies have investigated its impacts on the economy. Besides that, Weersink et al. (2020) found that in Canada, industries like dairy products, poultry and eggs suffered high losses due to COVID-19 but their losses remained low as compared to the other industries. On the other hand, Iyke (2020) explained the significant impacts of COVID-19 on the exchange rate and stock return.

The outbreak has also caused a catastrophe in Malaysia, especially the stock market, leading to a negative impact on the economy as well as the society as a whole. The decline in demand among domestic consumers demonstrates a strong impact on the entire Malaysian markets, such as The Kuala Lumpur Composite Index (KLCI), construction, consumer product, energy, finance, health care, industrial product, plantation, property, REIT, technology, telecommunications and media, transportation and logistics, and utilities. The decline of demand in the consumer industry has negatively influenced the whole industry in Malaysia (Bakar, 2020). However, the previous study on COVID-19 lacked the aspects related to the combination of different industry indices in the Malaysian market. Therefore, the purpose of this study is to investigate the impacts of COVID-19 pandemic on the different industries at the different periods of MCO in order to explore its impact mechanism, and to provide guidelines for the recovery of the industrial chain after the outbreak.

2. Literature Review

On 31 December 2019, several cases of pneumonia emerged in Hubei Province, China, and began to spread worldwide; experts called it Coronavirus Disease 2019 (COVID-19) (Abukhalifeh et al., 2020). COVID-19 is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is a single-stranded RNA virus that has high complexity in nature and rapid replications (Hadi et al., 2020). Due to its highly contagious nature, compounded by the movement of people across borders, it reached almost every corner of the world in just a few weeks after its outbreak (Sharma & Bhatta, 2020). On 11 March 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic (Public Health Emergency of International Concern) (WHO Europe, 2020). COVID-19 has shaken the world as it has caused massive changes globally and forced the entire world to radically change their lifestyle within a few days (Marahatta et al., 2020). It has also caused a massive scale of death worldwide. From 31 December 2019 to 17 August 2020, WHO reported 24,822,800 confirmed cases and 838,360 deaths globally (WHO, 2020). Since the disease is highly contagious through coughing, sneezing, and close contact with surfaces or objects contaminated with the virus, most countries have followed the guidelines set by WHO, with many countries imposing a lockdown to control its spread. The guidelines, including social distancing, self-isolation, and travel restrictions, have caused many people to lose their jobs. Similarly, many businesses have failed due to the economic losses and unavailability of workers (Nicola et al., 2020). Therefore, the COVID-19 pandemic has made long-lasting impacts on the world economy, public lifestyle, and developmental activities, resulting in a failure to achieve the Sustainable Development Goals (Khetrapal & Bhatia, 2020).

COVID-19 has spread swiftly throughout the world. To stop or at least slow down the intensity of its spread, most countries have imposed restrictions on their citizens including business lockdowns, travel bans, and school closures, as well as banning every type of public gatherings (Toda, 2020). The lockdowns have also affected the global supply chain, disrupting the global economic system (OECD, 2020). The world economic system experienced three major shocks due to the pandemic. The first shock happened due to reductions in household spending. The second shock was caused by decreases in the aggregate demand, disrupting import and export activities. The reason behind the third shock was the closure of the manufacturing sector during the lockdowns. Moreover, people and businesses adopted the "wait-and-see" strategy, which had delayed orders resulting in a loss of manufacturing units (Baldwin & Mauro, 2020).

Yilmazkuday (2020) conducted a study on the impacts of COVID-19 on the S&P 500 index using daily data from 31 December 2019 until the declaration of the pandemic in the United States (the U.S.). The study found that one death due to COVID-19 reduced the S&P index by 0.02% daily, 0.06% weekly, and 0.08% monthly. According to Fernandes (2020), on 15 March, 2020, the U.S. Federal Reserve and the Bank of England dropped their reserve rates to minimal levels between 0% and 0.25% to handle this issue. Within a few days, the European Central Bank (ECB) also released more funds for easing programs. Globally, governments tried to implement different measures to address the liquidity problems faced by small and medium

enterprises (SMEs). Governments also provided financial assistance to needy households. It is estimated that the GDP of the affected countries will shrink by up to 10% (Fernandes, 2020).

Zeren and Hizarci (2020) inspected the COVID-19 impact on several stock markets using daily data for three months from January 2020 to March 2020. They used three data sets: 1) the total number of deaths caused by COVID-19, 2) the total number of COVID-19 cases, and 3) stock indices. From the results, they found a cointegration relationship between the total COVID-19 cases with the performance of different stock markets in Spain, China, and Korea. However, in a few stock markets such as Italy, France, and Germany, no relationship was found between stock performance and COVID cases. Moreover, investors' behaviour in these countries remained unaffected by the increase in the number of COVID cases. Other researchers, such as Zeren and Hizarci (2020) and Yan et al. (2020), stated that during the pandemic some investors switched their investments to the gold market, and Yan et al. (2020) proposed that investors can invest in other stocks from three prominent sectors, namely technology, entertainment, and travel for the short term. Tashanova et al. (2020) suggested that several defensive industries such as online education, online entertainment, food and healthcare industry could be a suitable option for investment during this critical period. Li et al. (2020) concurred that healthcare could be a suitable option instead of the luxury sector, which might not be safe to invest in due to high fluctuations in uncertainty. Nia (2020) reported a significant downtrend of the Indonesian stock market and suggested making short-term investments in undervalued shares. The study also suggested that banking and consumer industries might be suitable options for Indonesian investors.

In a recent study on the Chinese stock market, Albulescu (2020) investigated the influence of COVID-19 on financial volatility. The study investigated two aspects, which are the total number of reported COVID-19 cases and the total death ratio from day 1 to day 40. The findings showed a negative link between the total number of registered COVID-19 cases and financial market volatility in China. On the other hand, the total number of registered cases outside China showed a positive relationship with financial market volatility. The study also found that a higher death ratio tended to increase financial market volatility throughout the world regardless of territory. Further, the result showed that the impact of the death ratio was higher outside China than in mainland China. For instance, with each 1% increase in the death ratio, financial market volatility increased by 11%.

In another study, Zhou et al. (2020) tested the impact of COVID-19 on multiple industries. The study revealed that COVID-19 positively influenced the performance of the healthcare industry but negatively influenced other industries such as tourism, transportation, and construction. Similarly, Ruiz Estrada et al. (2020) stated that in China, tourism, airlines, and trading were the worst hit industries by COVID-19 while the utility sector remained unharmed. With the imposed lockdowns and increased demand for medical services, electricity consumption also increased resulting in improved performance and index of the electricity sector. According to Saini (2020), at the beginning of the COVID-19 outbreak, the government of India predicted that their revenues would fall and remain in this state for at least half a year. However, their pharmaceutical sector showed good performance during the COVID-19 period.

Aravind and Manojkrishnan (2020) found in their study that branded pharmaceutical companies in India sustained well during the crisis period. However, production levels decreased due to disruptions in the supply chain for the ingredients, as most of the ingredients were sourced from China.

Watanabe (2020) conducted a comparative study where they inspected the impacts of COVID-19 and the 2011 Tohoku Earthquake on consumption patterns in Japan. They found that both events significantly affected consumption patterns. For instance, sales in the retail sector decreased by 20% even though the items purchased were almost similar. The inflation rate during the COVID-19 crisis was 0.6%, which is relatively lower than during the post-earthquake period. The author further added that COVID-19 had reduced the demand for consumer goods and services instead of their supply. However, the Tohoku Earthquake mainly affected the supply of goods or services, causing higher inflations.

In another study, Sansa (2020) compared the stock markets in China and the US in relation to COVID-19. The result revealed a positive link between the number of COVID-19 cases and the stock market indices. In line with this, Liu et al. (2020) conducted a study on 21 stock indices to examine their relationship with the COVID-19 outbreak. Their results showed that during the outbreak, investors' pessimistic sentiment led to a fall in the abnormal return of the stock indices. They further revealed that during the COVID-19 outbreak, Asian stock indices dropped more quickly than other indices. However, Asian stock markets also responded way faster than other markets. As a result, their chances of recovery were stronger than other markets at the later stage of the pandemic. Based on the above literature, it is argued that the previous studies only focused on the major indices of a particular country when investigating the impact of COVID-19. Although some researchers conducted sectorial studies, a comprehensive study with thorough analysis is still needed. Hence, this study aims to fill the knowledge gap by investigating the relationship between the COVID-19 outbreak and the performance of all sectors of the Malaysian stock market during the movement control order (MCO).

3. Research Methodology

In order to analyse the effects of COVID 19 outbreak on the Malaysian stock market, the data has been divided into several periods of MCO (Table 1). KLCI and thirteen sectoral indices were chosen to represent the Malaysian stock market. KLCI represented the main market of Malaysia whereas the sectoral indices tracked the performances of all companies listed on the main market in the different sector classification. The data used in the present study was extracted from the DataStream and Bloomberg from 2nd January to 29th May 2020.

To evaluate the effects of COVID 19 pandemic for each index at a different period, the following formula was used in our analysis:

$$hange\ of\ Index = \frac{Ending\ index\ of\ the\ stage - Beginning\ index\ of\ the\ stage}{Beginning\ index\ of\ the\ stage}$$

After computing the change of index in each period, the cumulative change of the index was computed to observe the effects of COVID-19. Besides that, to observe the similarity for each index during the pandemic, the correlation analysis was used.

Table 1

Summary of the Implementation of Movement Control Order (MCO)

Stage	Year 2020	Status
Time Zero	1 January	Beginning of the year 2020
January	2 January – 24 January	The COVID-19 pandemic began to massively spread in China.
After 1st case	25 January – 26 February	The first case was detected on 24 January 2020. The WHO country office in Malaysia has been working closely with the Ministry of Health to respond to this outbreak.
2nd wave	27 February – 17 March	The sudden spike in the confirmed cases was linked to the largest cluster, Tablighi Jamaat religious gathering in Sri Petaling, Kuala Lumpur, in late February and early March, causing the society to panic about the pandemic.
1st MCO	18 March – 31 March	On 16 March 2020, the Prime Minister announced the "Movement Control Order" to combat the spread of disease.
2nd MCO	1 April – 14 April	The Prime Minister announced an extension of MCO as the number of cases increased rapidly despite strict measures taken, such as the prohibition of mass movements, gatherings and interstate travelling.
3rd MCO	15 April – 30 April	On 10 April 2020, the Prime Minister announced a second extension of MCO as the number of cases was expected to reach its peak in mid-April.
CMCO	1 May – 29 May	On 4 May 2020, the Conditional MCO ensued, allowing certain industries to reopen under a strict Standard Operating Procedures.

Source: Government of Malaysia.

The total market capitalization and its constituents are demonstrated in Table 2. The results reported that after the KLCI, finance and consumer product were the highest market capitalization of 291.72 and 216.77 billion, respectively. The lowest market capitalization indices were the construction and technology, with a market capitalization of 24.84 and 27.01 billion, respectively.

Table 2

Details of Malaysian Stock Indices

SR. No.	Malaysian Indices	Total Market capitalization (RM billion)	Total Number of Constituents
1	KLCI	1,379.20	30
2	Construction	24.84	50
3	Consumer Product	216.77	170
4	Energy	36.58	26
5	Finance	291.72	31
6	Health Care	101.73	13
7	Industrial Product	126.01	220
8	Plantation	118.66	43
9	Property	45.67	96
10	REIT	39.76	18
11	Technology	27.01	38
12	Telecom & Media	131.28	16
13	Trans & Logistics	61.51	32
14	Utilities	124.08	12

Source: Official website of Bursa Malaysia (https://www.bursamalaysia.com/).

4. Results

Table 3 shows the total number of monthly cases and deaths in Malaysia, Thailand, Singapore, and the Philippines from 2 January 2020 to 29 May 2020 (Our World in Data, 2021). The minimum number of cases registered in Malaysia is (58) in January, and the highest number was recorded in May (199198). The minimum number of cases registered in Thailand is (96) January, while the highest number was recorded in May (87543). In Singapore, the minimum number of cases is (53) January, while the highest is in May (755615). Lastly, the Philippines recorded the minimum number of cases of (2) January and the highest in May (351128). Based on the reported number of cases, it is suggested that during the first five month of 2020, Singapore, the Philippines, and Malaysia had the highest numbers of registered cases among the ASEAN countries. Similarly, the highest number of deaths were also reported in Singapore, the Philippines, and Malaysia during the same period.

Table 3

Total Number of Monthly Cases and Deaths from 2 January to 29 May 2020

Time period	Total Cases monthly	Total deaths monthly
Panel A: Malaysia		
January	58	0
February	592	0
March	27636	264
April	145040	2393
May	199198	3213
Panel B: Thailand		
January	96	0
February	933	0
March	13480	72
April	77098	1181
May	87543	1616
Panel C: Singapore		
January	53	0
February	1795	0
March	11276	25
April	188949	282
May	755615	609
Panel D: Philippines		
January	2	0
February	80	28
March	11453	669
April	163684	10091
May	351128	22467

Source: Our World in Data (https://ourworldindata.org/coronavirus).

Changes in the indices of the Malaysian stock market are presented in Table 4, in which the different phases of COVID-19 and MCO show changes in return and cumulative changes in the 13 sector indices of the Malaysian market. The study found that from the 1st January to 29th May, the weak performance sectors of the Malaysian stock market were the energy, property and finance; they were significantly affected by the pandemic and suffering from heavy losses. Meanwhile, the basic industries were less affected. For example, the health, technology,

telecommunications and media were the least affected indices in all periods. As such, these industries were given the opportunities to develop during the pandemic.

In the same vein, the overall costs of information technology, manufacturing, mining, entertainment, sports, and transportation industries varied due to the pandemic. Furthermore, the study found that tourism, aviation, and service industries were greatly impacted by the pandemic. This result is consistent with a study by Hasanat (2020) who asserted that the domestic consumer's demand in Malaysia has dropped sharply. The economic indicators related to tourism which had a sizable contribution to the Malaysian GDP were negative.

Table 4

The Changes of Indices in the Malaysian Market

Status	**Change %**	**Cum. change**	**Change %**	**Cum. Change**	**Change %**	**Cum. Change**
Index	**KLCI**		**Construction**		**Consumer Product**	
Time Zero	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
January	-1.8527	-1.8527	0.9003	0.9003	-1.9759	-1.9759
After 1st case	-3.6381	-5.4908	-6.1795	-5.2792	-2.6101	-4.5860
2nd Wave	-16.5390	-22.0298	-31.1040	-36.3833	-20.8659	-25.4519
1st MCO	9.0298	-13.0001	7.8964	-28.4869	5.9370	-19.5150
2nd MCO	0.0000	-13.0001	12.4495	-16.0374	3.4888	-16.0261
3rd MCO	1.4404	-11.5596	2.1656	-13.8718	2.8630	-13.1631
CMCO	7.0217	-4.5379	10.8651	-3.0067	4.5121	-8.6511
Index	**Energy**		**Finance**		**Healthcare**	
Time Zero	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
January	2.7026	2.7026	-3.3123	-3.3123	8.8032	8.8032
After 1st case	-5.6345	-2.9319	-3.4241	-6.7364	-5.3612	3.4420
2nd Wave	-45.7011	-48.6330	-19.5340	-26.2704	-12.9582	-9.5162
1st MCO	8.9027	-39.7304	8.1166	-18.1538	11.8216	2.3053
2nd MCO	15.5512	-24.1792	2.6679	-15.4860	7.6817	9.9870
3rd MCO	-1.6611	-25.8403	0.4446	-15.0414	6.6246	16.6116
CMCO	10.3395	-15.5008	2.0715	-12.9699	54.8716	71.4832
Index	**Industrial Product**		**Plantation**		**Property**	
Time Zero	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
January	-2.1130	-2.1130	-4.5548	-4.5548	-2.8377	-2.8377
After 1st case	-6.3411	-8.4541	-3.0324	-7.5872	-5.2426	-8.0803
2nd Wave	-26.3219	-34.7759	-18.2107	-25.7979	-26.6774	-34.7577
1st MCO	9.5611	-25.2148	11.8379	-13.9600	4.8260	-29.9317
2nd MCO	9.0400	-16.1748	2.2830	-11.6770	4.7452	-25.1866
3rd MCO	4.3946	-11.7802	1.1833	-10.4937	3.6351	-21.5515

CMCO	9.9594	-1.8208	9.0213	-1.4724	7.5064	-14.0451
Index	**REIT**		**Technology**		**Telecom & Media**	
Time Zero	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
January	0.6759	0.6759	9.5805	9.5805	-2.1872	-2.1872
After 1st case	0.5288	1.2047	-3.7291	5.8514	-0.6872	-2.8745
2nd Wave	-15.9045	-14.6998	-27.1560	-21.3046	-19.7515	-22.6260
1st MCO	3.0136	-11.6862	14.6899	-6.6147	6.5728	-16.0531
2nd MCO	-0.4141	-12.1003	10.9332	4.3186	5.8370	-10.2161
3rd MCO	1.4422	-10.6581	9.9909	14.3095	9.5682	-0.6479
CMCO	1.7705	-8.8876	10.2196	24.5291	4.8779	4.2300
Index	**Trans & Logistics**		**Utilities**			
Time Zero	0.0000	0.0000	0.0000	0.0000		
January	-1.0918	-1.0918	-2.1331	-2.1331		
After 1st case	-4.7659	-5.8577	-1.5480	-3.6811		
2nd Wave	-23.9338	-29.7915	-17.8780	-21.5591		
1st MCO	3.6297	-26.1618	8.1364	-13.4227		
2nd MCO	7.8082	-18.3536	5.6729	-7.7498		
3rd MCO	4.9583	-13.3954	1.1039	-6.6459		
CMCO	13.8772	0.4818	10.0245	3.3786		

Notes: 1) Time Zero 1st January; 2) January 2ndJanuary - 24 January; 3) After 1st case 25 January – 26 February; 4) 2nd wave 27 February – 17 March; 5) 1st MCO 18 March – 31 March 6) 2nd MCO 1 April – 14 April; 7) 3rd MCO 15 April – 30 April; 8) CMCO 1 May – 29 May

The correlation matrix is presented in Table 5. The result showed a highly positive correlation coefficient. The plantation, consumer product, industrial product, finance and technology had the strongest correlations. The indices listed at Bursa Malaysia were strongly correlated with KLCI, including construction, consumer product, energy, finance, industrial product, plantation, property, technology, telecommunications and media, transportation and logistics, utilities and real estate investment, except for the healthcare index. The results indicated that the price movement of the healthcare sector had the least correlation with KLCI, which was further supported by Lee et al. (2020).

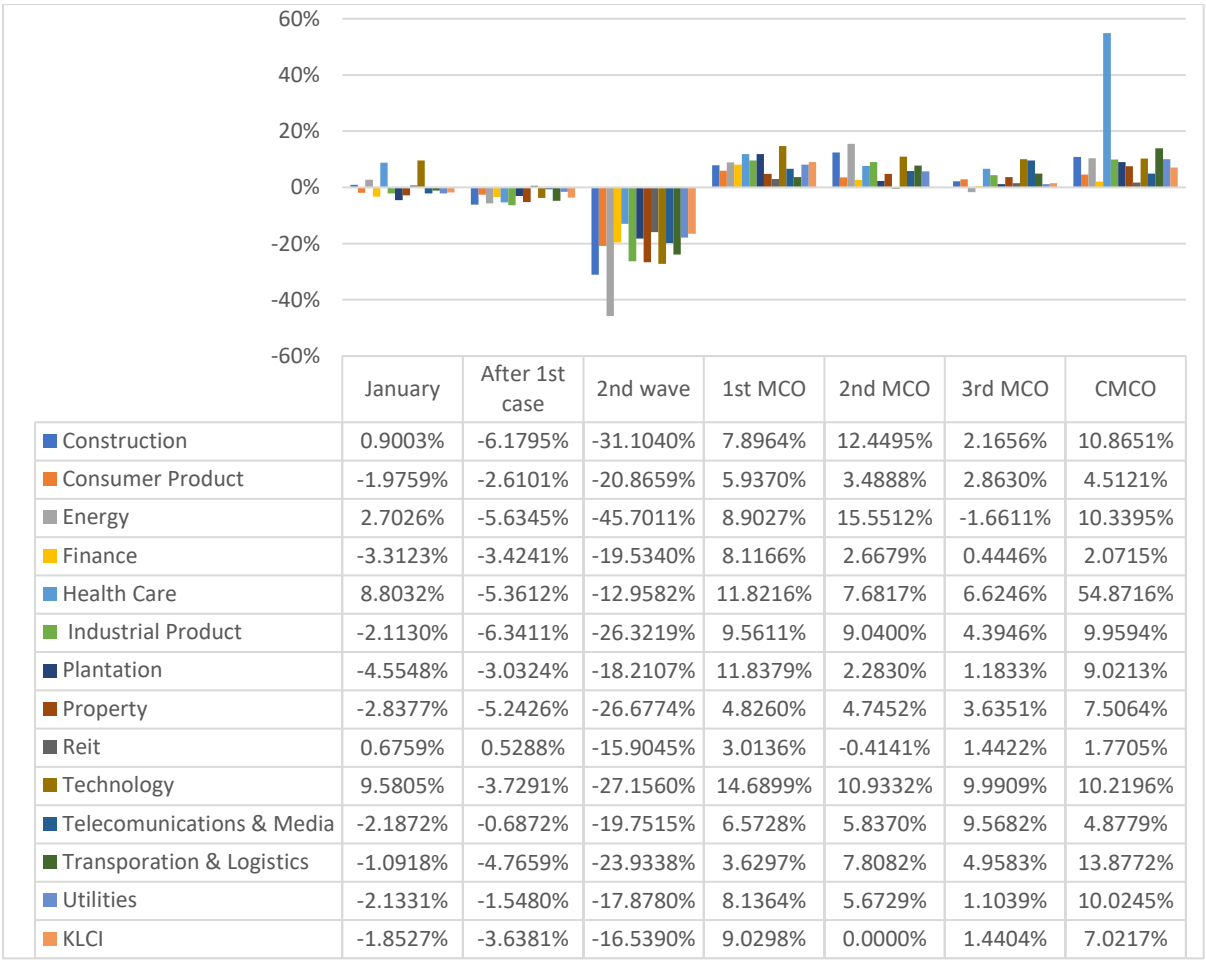
Table 5

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.000													
2	0.909	1.000												
3	0.953	0.970	1.000											
4	0.885	0.990	0.961	1.000										
5	0.961	0.944	0.982	0.938	1.000									
6	0.706	0.656	0.601	0.596	0.537	1.000								
7	0.948	0.986	0.983	0.962	0.967	0.667	1.000							
8	0.987	0.901	0.942	0.874	0.962	0.691	0.946	1.000						
9	0.942	0.981	0.992	0.963	0.957	0.668	0.990	0.929	1.000					
10	0.900	0.900	0.956	0.921	0.926	0.518	0.896	0.862	0.935	1.000				
11	0.920	0.962	0.967	0.957	0.948	0.572	0.960	0.881	0.963	0.935	1.000			
12	0.893	0.920	0.972	0.899	0.939	0.508	0.948	0.883	0.967	0.921	0.928	1.000		
13	0.905	0.970	0.950	0.940	0.893	0.773	0.970	0.894	0.980	0.874	0.918	0.919	1.000	
14	0.964	0.965	0.968	0.946	0.959	0.729	0.979	0.973	0.972	0.892	0.913	0.907	0.960	1.000

Notes: (1) KLCI (2) Construction (3) Consumer product (4) Energy (5) Finance (6) Healthcare (7) Industrial production (8) Plantation (9) Property (10) REIT (11) Technology (12) Telecommunication and media (13) Transportation and logistics (14) Utilities.

Furthermore, Figures 1 and 2 demonstrate the change of index relative to the periods of MCO and a cumulative change of index relative to the periods of MCO using KLCI as the benchmark. In January, the majority of sector indices underperformed compared to KLCI (-1.98%), especially plantation (-4.55%), finance (-3.31%), and telecommunications (-2.19%). Some indices outperformed the market: technology (9.58%), energy (2.7%) and construction (0.9%). The stock market dropped slightly after the first case of COVID-19 was detected in Malaysia. The KLCI plunged to -5.49% at that time while the cumulative losses for the industrial product took the strongest hit and plunged to -8.45%, followed by property sector (-2.84%) and plantation (-7.58%). Meanwhile, the technology outperformed the market with 5.85% of cumulative gain, followed by REIT (1.2%). The stock market started to show a drastic downward trend during the second wave of COVID-19. All sectors experienced a drastic dropped in cumulative losses, particularly the energy (-48.63%), construction (-36.38%) and industrial product (-34.78%) index.



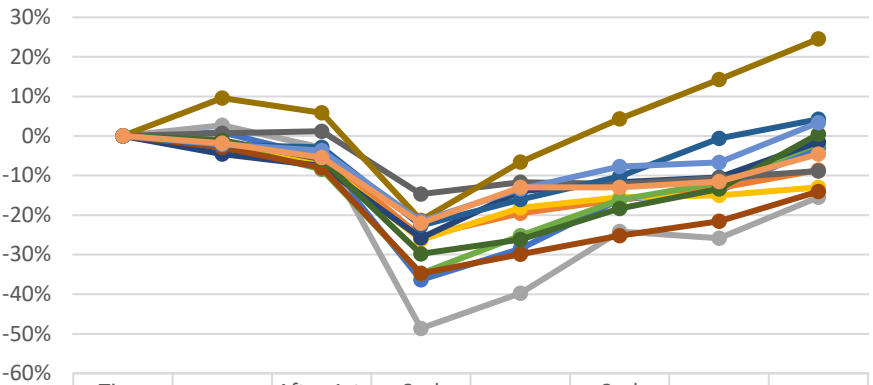
	January	After 1st case	2nd wave	1st MCO	2nd MCO	3rd MCO	CMCO
Construction	0.9003%	-6.1795%	-31.1040%	7.8964%	12.4495%	2.1656%	10.8651%
Consumer Product	-1.9759%	-2.6101%	-20.8659%	5.9370%	3.4888%	2.8630%	4.5121%
Energy	2.7026%	-5.6345%	-45.7011%	8.9027%	15.5512%	-1.6611%	10.3395%
Finance	-3.3123%	-3.4241%	-19.5340%	8.1166%	2.6679%	0.4446%	2.0715%
Health Care	8.8032%	-5.3612%	-12.9582%	11.8216%	7.6817%	6.6246%	54.8716%
Industrial Product	-2.1130%	-6.3411%	-26.3219%	9.5611%	9.0400%	4.3946%	9.9594%
Plantation	-4.5548%	-3.0324%	-18.2107%	11.8379%	2.2830%	1.1833%	9.0213%
Property	-2.8377%	-5.2426%	-26.6774%	4.8260%	4.7452%	3.6351%	7.5064%
Reit	0.6759%	0.5288%	-15.9045%	3.0136%	-0.4141%	1.4422%	1.7705%
Technology	9.5805%	-3.7291%	-27.1560%	14.6899%	10.9332%	9.9909%	10.2196%
Telecomunications & Media	-2.1872%	-0.6872%	-19.7515%	6.5728%	5.8370%	9.5682%	4.8779%
Transporation & Logistics	-1.0918%	-4.7659%	-23.9338%	3.6297%	7.8082%	4.9583%	13.8772%
Utilities	-2.1331%	-1.5480%	-17.8780%	8.1364%	5.6729%	1.1039%	10.0245%
KLCI	-1.8527%	-3.6381%	-16.5390%	9.0298%	0.0000%	1.4404%	7.0217%

Figure 1. The changes of index relative to the periods
Source: Self-computation.

On 18 March 2020, the GoM officially announced the MCO and just two days before that, the KLCI index plunged to 1281 point mainly due to market sentiment. The energy sector had the highest cumulative losses of -39.73%, followed by property (-29.93%), and construction (-28.48%). Meanwhile, the sectors least affected by the MCO were technology (-6.61%), REIT (-11.69%) and utilities (-13.42%).

During the second period of MCO, the property had the lowest cumulative return of -25.19%, followed by the energy sector (-24.18%) and transportation (-18.35%). Meanwhile, technology was the only sector with a positive return of 4.32%. Furthermore, at the third period of MCO, the stock market appeared to be relatively stable, with the KLCI going back to the prior MCO level of 1387 point. The technology sector had the highest cumulative return of 14.31% while the energy sector had the lowest return with -25.84%, followed by the property (-21.55%) and transportation (-13.40%) sector. Throughout the CMCO period, the stock market started to rebound in a variety of sectors, with the technology having the highest combined return of 24.53%, followed by telecommunication (4.23%) and utilities (3.38%). In the meantime, the energy index remained to obtain the lowest cumulative return of -15.5%, followed by property (-14.05%) and finance (-13%).

In short, based on the performance across sectors, the performance of the technology sector was the most outstanding from January to CMCO, followed by telecommunications, transportation and utilities. On the other hand, the energy sector had the lowest cumulative return since the second wave mainly due to the sudden drop of cumulative return of -48% during second wave period, followed by the property sector due to drastic drop of -35% during the second wave.



	Time Zero	January	After 1st case	2nd Wave	1st MCO	2nd MCO	3rd MCO	CMCO
Construction	0.0000%	0.9003%	-5.2792%	-36.3833%	28.4869%	16.0374%	13.8718%	-3.0067%
Consumer Product	0.0000%	-1.9759%	-4.5860%	-25.4519%	19.5150%	16.0261%	13.1631%	-8.6511%
Energy	0.0000%	2.7026%	-2.9319%	-48.6330%	39.7304%	24.1792%	25.8403%	-15.5008%
Finance	0.0000%	-3.3123%	-6.7364%	-26.2704%	18.1538%	15.4860%	15.0414%	-12.9699%
Industrial Product	0.0000%	-2.1130%	-8.4541%	-34.7759%	25.2148%	16.1748%	11.7802%	-1.8208%
Plantation	0.0000%	-4.5548%	-7.5872%	-25.7979%	13.9600%	11.6770%	10.4937%	-1.4724%
Property	0.0000%	-2.8377%	-8.0803%	-34.7577%	29.9317%	25.1866%	21.5515%	-14.0451%
Reit	0.0000%	0.6759%	1.2047%	-14.6998%	11.6862%	12.1003%	10.6581%	-8.8876%
Technology	0.0000%	9.5805%	5.8514%	-21.3046%	-6.6147%	4.3186%	14.3095%	24.5291%
Telecomunications & Media	0.0000%	-2.1872%	-2.8745%	-22.6260%	16.0531%	10.2161%	-0.6479%	4.2300%
Transporation & Logistics	0.0000%	-1.0918%	-5.8577%	-29.7915%	26.1618%	18.3536%	13.3954%	0.4818%
Utilities	0.0000%	-2.1331%	-3.6811%	-21.5591%	13.4227%	-7.7498%	-6.6459%	3.3786%
KLCI	0.0000%	-1.8527%	-5.4908%	-22.0298%	13.0001%	13.0001%	11.5596%	-4.5379%

Figure 2. The cumulative changes of index relative to periods
Source: Self-computation.

The ranking of the performance of the Malaysian stock market indices is presented in Table 6. The weakest performance indices in January were the plantation, finance and property while the highest performance indices in January were the technology, healthcare and energy. The technology index was affected the least because of the continuously increasing usage of technology, especially during the pandemic, as people were quarantined at home and working from home. Evans (2020) asserted that the overall economic functions and how people interact have shifted profoundly due to the health crisis caused by COVID-19. Therefore, in order to prevent the spread of the disease, policymakers have compelled the population to keep a social distance and stay at home. As a result, many activities are done remotely now, such as shopping, learning, and working. In such a restricted environment, technology has allowed people to continue living some sort of a normal life in almost all aspects. The information technology sector is the only sector that provides useful resources and tools to support remote activities. Additionally, this sector helps in curbing the pandemic by providing high performance computing resources for research to trace COVID-19 cases. Thus, due to the increase in sales,

the technology sector was the least affected in Malaysia. The healthcare index was immune from the recession as people were sick both before and during the pandemic. Al-Awadhi et al. (2020) found that in China during the COVID-19 crisis, the health index outperformed other industries in the stock market. The high performance of the health index could be attributed to a higher demand for medical equipment, which increased the revenues of healthcare and pharmaceutical companies. In the same vein, the demand for medical care was relatively high in Malaysia. In contrast, after the first case of COVID-19, industrial product, construction, and energy indices were highly affected.

Zhou et al. (2020) investigated the COVID-19 impact on several industries. They found that the COVID-19 cases in China negatively influenced the construction industry. Similarly, in Malaysia, the massive and ongoing outbreak of this virus have posed a serious threat with profound consequences for the economy and financial market as a whole. The financial market is predicted to collapse, with the possibility of a new global recession (Majid, 2020). The sudden enforcement of the MCO by the government put various sectors of the economy in jeopardy. According to AmBank Group Chief Economist Anthony Dass, direct damage caused by the virus can be seen in the construction sector, as many workers were laid off and others placed on unpaid leave (Murugiah, 2020). Thus, the construction index was influenced by COVID-19 as the employees were laid off, which reduced productivity.

The energy index declined because the global economy effectively shut down to combat the COVID-19 pandemic. The decline in the industrial product index was also because of the declining demand of products during the pandemic. The lesser impacted indices after the first case were REIT, telecommunications and utilities. These indices were the least impacted, yet there was still a risk to be affected. There was an excessive demand for mobile phones and communications networks during this pandemic. In line with this, the telecommunication industry's revenue also increased due to the high demand for the internet for online-based activities, such as remote working and remote learning. According to Ramelli and Wagner (2020), during the COVID-19 period the telecommunication industry's performance increased as the demand for services supporting work at home skyrocketed. Therefore, the telecommunications index supported remote working and gave people a positive experience throughout the crisis.

Table 6

Ranking of Performance for Each Stage (1 = weakest)

	January	After 1st case	2nd Wave	1st MCO	2nd MCO	3rd MCO	CMCO
KLCI	8	8	12	10	2	5	5
Construction	11	2	2	6	13	7	12
Consumer Product	7	11	7	4	5	8	3
Energy	12	3	1	9	14	1	11
Finance	2	9	9	7	4	2	2
Healthcare	13	4	14	12	9	12	14
Industrial Product	6	1	5	11	11	10	8
Plantation	1	10	10	13	3	4	7
Property	3	5	4	3	6	9	6
REIT	10	14	13	1	1	6	1
Technology	14	7	3	14	12	14	10
Telecom & Media	4	13	8	5	8	13	4
Transportation & Logistics	9	6	6	2	10	11	13
Utilities	5	12	11	8	7	3	9

Notes: 1) January, 2nd January - 24 January; 2) After 1st case, 25 January – 26 February; 3) 2nd wave, 27 February – 17 March; 4) 1st MCO, 18 March – 31 March 5) 2nd MCO, 1 April – 14 April; 6) 3rd MCO, 15 April – 30 April; 7) CMCO, 1 May – 29 May.

The second wave of the pandemic largely affected the energy, construction, and technology indices. The energy and construction were still the top 3 weakest performance indices, in addition to the technology index, that were largely caused by the COVID-19. This pandemic impacted the technology index by causing the manufacturing plants to shut down, and stalling production and supply chains. However, four indices were the least affected, including the healthcare, REIT, utilities and KLCI index in the second wave. The volatility in the market would be the norm in the future pandemic periods.

For the first MCO, the REIT, transportation and logistics, and property indices were the weakest performance index. The REIT index became one of the most affected sectors because of the impact of social distancing and business closures. The decreasing trend of transportation and logistics index was also mainly due to the restrictions of movement from the fear of contracting coronavirus; the unexpected rise in demand for online grocery has created logistical challenges. In contrast, the technology and healthcare indices were still the least affected by the COVID-19 pandemic. The plantation index stabilized because of the demand. The COVID-19 pandemic did not significantly impact the plantation sector as it was supported by the local and international demand, as well as government initiatives.

In the second MCO period, the indices highly impacted from COVID-19 were REIT, KLCI, plantation and finance. The finance index moved in line with the economy. During the MCO, the economy was negatively affected, and the decline in the economy impacted the finance index. The second MCO also showed that the plantation index was one of the highly affected indices compared to the first MCO. On the other hand, the least affected indices were the energy and construction. These were the most impacted in the second wave, but they recovered during the second MCO.

During the third MCO, the three most affected indices were energy, finance, and utilities while the three least affected were technology, telecommunications and media, and health care. The increase in telecommunications and media was due to the increasing demand as businesses moved their workforce to digital platforms, citizens worked and learned from home, and all sectors accelerated the shift to cloud-based systems. The recent CMCO showed that the indices most affected were REIT, finance, and consumer product while the least affected indices were healthcare, transportation and logistics, and construction. In conclusion, from 1st January to 29th May 2020, the weakest performance indices were energy, property, and finance while the least affected indices were healthcare, technology, and telecommunications and media are presented in Table 7.

Table 7

Weakest and Highest Performance Indices

Panel A: Weakest performance indices

Rank	January	After 1st case	2nd Wave	1st MCO	2nd MCO	3rd MCO	CMCO
1	Plantation	Industrial Product	Energy	REIT	REIT	Energy	REIT
2	Finance	Construction	Construction	Transport & Logistics	KLCI	Finance	Finance
3	Property	Energy	Technology	Property	Plantation	Utilities	Consumer Product
4					Finance		
Panel B: Highest performance indices							
1	Technology	REIT	Health Care	Technology	Energy	Technology	Health Care
2	Health Care	Telecom & Media	REIT	Plantation	Construction	Telecom & Media	Transportation & Logistics
3	Energy	Utilities	KLCI	Health Care	Technology	Health Care	Construction
4			Utilities				

Notes: 1) January, 2nd January - 24 January; 2) After 1st case, 25 January – 26 February; 3) 2nd wave, 27 February – 17 March; 4) 1st MCO, 18 March – 31 March 5) 2nd MCO, 1 April – 14 April; 6) 3rd MCO, 15 April – 30 April; 7) CMCO, 1 May – 29 May. The weakest and highest performance indices were ranked based on their performance from 1st January to 29th May, 2020.

5. Discussion

The central theme of this study is to determine the performance of the 13 sectors indices of the Malaysian stock market during the economic and financial crisis, particularly the current unprecedented COVID-19 pandemic. The findings asserted that during the period of the study, the pandemic has negatively impacted the Malaysian market. All 13 sector indices have been declining from January until it hit the lowest point during the second wave of COVID-19, mainly due to the market sentiments. During this period, many investors remained hesitant to invest due to the fear of the high unpredictability and uncertainty of market movement. At the beginning of January, all sectors' indices showed a downward trend and hit the lowest point during the second wave of COVID-19, especially the energy sector index, with -49% cumulative losses mainly due to the breakdown of the organization of the petroleum exporting countries (OPEC) during that period, resulting from the crude oil price war between Saudi Arabia and Russia. The construction index had -37% of cumulative losses and the property index had -35%.

From then onwards, in the beginning of the first MCO, all 13 sectors indices showed signs of recovery from the lowest point. However, the cumulative return of each sector index was still in the negative. The recovery of sectors indices continued throughout the second period of MCO. Notably, the technology index emerged as the only sector showing a positive cumulative gain of 4.32% whereas the other 12 sectors exhibited cumulative losses. Nevertheless, during the CMCO, all 13 sector indices slowly increased, with four sector indices showing positive cumulative gains. The technology sector showed an impressive cumulative gain of 24.5%, followed by telecommunications (4.2%), utilities (3.4%) and transport (0.5%). The reason behind the recovery of sectors indices was mainly due to the announcement of several Economic Stimulus Packages (ESP) by the GoM. The RM250 billion package was intended to relieve the pressure on people and the business sectors. Therefore, the introduction of the ESP has restored the investors' confidence in the Malaysian economy.

On the other hand, the other nine sectors showed cumulative losses, especially the energy index, with the highest cumulative losses of -15.5%, followed by property (-14.1%), and finance (-13%). Overall, with the multi-restrictions on business activities being gradually lifted and more businesses being allowed to open under a strict SOP, the economic activity has been gradually returning to normal. The KLCI index has climbed back to the prior to COVID-19 level with 1502.63 point on 25th June 2020.

The present study is helpful for macroeconomic policymakers. Therefore, they should seek aid in understanding the effects of COVID-19 pandemic on different industries. Furthermore, it is beneficial to explore the impact mechanism and to provide recommendations for the recovery of the various industrial indices following the pandemic. For future studies, a longer sample period, particularly after 29th May 2020, and other COVID-19 proxies may be used to extend the analysis. Further, the future research may extend the research by highlighting the comparison of SARC and Spanish flue with Covid-19.

References

Abukhalifeh, A. N., Chandran, K., & Faller, E. M. (2020). Understanding the Dichotomy of COVID-19 and Its Economic Impact on the Tourism Industry in South Korea. *Review of Integrative Business and Economics Research, 9*(4), 25-35.

Akira Toda, A. (2020). Susceptible-Infected-Recovered (SIR) Dynamics of COVID-19 and Economic Impact. *arXiv e-prints*, arXiv: 2003.11221.

Al-Awadhi, A. M., Alsaifi, K., Al-Awadhi, A., & Alhammadi, S. (2020). Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. *Journal of Behavioral and Experimental finance, 27*, 1-5.

Albulescu, C. (2020). Coronavirus and financial volatility: 40 days of fasting and fear. *arXiv preprint arXiv:2003.04005*.

Aravind, M., & Manojkrishnan, C. (2020). COVID 19: Effect on leading pharmaceutical stocks listed with NSE. *International Journal of Research in Pharmaceutical Sciences,1*(11), 31-36.

Baldwin, R., & Di Mauro, B. W. (2020). Economics in the time of COVID-19: A new eBook. *VOX CEPR Policy Portal*.

Beutels, P., Jia, N., Zhou, Q. Y., Smith, R., Cao, W. C., & De Vlas, S. J. (2009). The economic impact of SARS in Beijing, China. *Tropical Medicine & International Health, 14*(1), 85-91.

Fernandes, N. (2020). Economic effects of coronavirus outbreak (COVID-19) on the world economy. IESE Business School Working Paper No. WP-1240-E. *Available at SSRN 3557504*.

Hadi, A. G., Kadhom, M., Hairunisa, N., Yousif, E., & Mohammed, S. A. (2020). A Review on COVID-19: Origin, Spread, Symptoms, Treatment, and Prevention. *Biointerface Research in Applied Chemistry, 10*(6), 7234-7242.

Khetrapal, S., & Bhatia, R. (2020). Impact of COVID-19 pandemic on health system & sustainable development goal 3. *Indian Journal of Medical Research, 151*(5), 395-399.

Lee, K. Y.-M., Jais, M., & Chan, C.-W. (2020). Impact of Covid-19: Evidence from Malaysian Stock Market. *International Journal of Business and Society, 21*(2), 607.

Li, R., Zhang, R., Zhang, M., & Zhang, T. (2020). Investment analysis and strategy for COVID-19. http://dx.doi.org/10.2139/ssrn.3563300, *Available at SSRN 3563300*.

Liu, W., and Z, Cai. 2003. The analysis and prospect of China's macroeconomic situation after SARS. Red Flag Manuscript *17*,18–22.

Liu, H., Manzoor, A., Wang, C., Zhang, L., & Manzoor, Z. (2020). The COVID-19 outbreak and affected countries stock markets response. *International Journal of Environmental Research and Public Health, 17*(8), 2800.

Marahatta, S. B., Paudel, S., & Aryal, N. (2020). COVID-19 Pandemic: What can Nepal do to Curb the Potential Public Health Disaster? *Journal of Karnali Academy of Health Sciences, 3*(1), 1-13.

Majid M. Covid-19: panic and the Malaysian economy. New Straits Times; 2020 Retrieved from https://www.nst.com.my/opinion/columnists/2020/03/575187/covid-19-panic-and-malaysian-economy [Accessed 31 March 2020].

Mohammad Waliul Hasanat, A. H., Farzana Afrin Shikha, Mashrekha Anwar. (2020). The Impact of Coronavirus (Covid-19) on E-Business in Malaysia. *Asian Journal of Multidisciplinary Studies, 3*(1), 1-6.

Murugiah S. Covid-19 to place Malaysian economy into technical recession, says AmBank. The Edge Markets; 2020 Retrieved from https://www.theedgemarkets.com/article/covid19-place-malaysian-economy-technical-recession-says-ambank [Accessed 1 April 2020].

Nashirah Abu Bakar, S. R. (4 April 2020). Effect of Coronavirus disease (COVID-19) to Tourism Industry. *International Journal of Advanced Engineering Research and Science, 7*(4), 1-5.

Nia, V. M. (2020). The effect of corona outbreak on the Indonesian stock market. *American Journal of Humanities and Social Sciences Research, 4*(3), 358-370.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery, 78*(1), 185-193.

Njindan Iyke, B. (2020). The disease outbreak channel of exchange rate return predictability: Evidence from COVID-19. *Emerging Markets Finance and Trade, 56*(10), 2277-2297.

OECD (2020). Coronavirus: The world economy as risk. Retrieved from https://www.oecd.org/berlin/publikationen/Interim-Economic-Assessment-2-March-2020.pdf.

Ramelli, S., & Wagner, A. F. (2020). Feverish stock price reactions to COVID-19. *The Review of Corporate Finance Studies, 9*(3), 622-655.

Ruiz Estrada, M. A., Park, D., & Lee, M. (2020). The evaluation of the final impact of Wuhan COVID-19 on trade, tourism, transport, and electricity consumption of China. *Tourism, Transport, and Electricity Consumption of China. http://dx.doi.org/10.2139/ssrn.3551093.*

Saini, R. (2020). Impact of Corona Virus on Indian Economy. *Available at SSRN 3595300*.

Sansa, N. A. (2020). The Impact of the COVID-19 on the Financial Markets: Evidence from China and USA. *Electronic Research Journal of Social Sciences and Humanities, 2(2), 1-10*. http://dx.doi.org/10.2139/ssrn.3567901.

Sharma, S., & Bhatta, J. (2020). Public health challenges during the COVID-19 outbreak in Nepal: a commentary. *Journal of Health Research, 34*(4), 373-376.

Star Media (2020). Short position: clueless on MCO impact. Retrieved from https://www.thestar.com.my/business/business-news/2020/03/21/short-position-clueless-on-mco-impact.

Tashanova, D., Sekerbay, A., Chen, D., Luo, Y., Zhao, S., & Zhang, T. (2020). Investment opportunities and strategies in an era of Coronavirus pandemic. http://dx.doi.org/10.2139/ssrn.3567445.

Watanabe, T. (2020). The responses of consumption and prices in Japan to the COVID-19 crisis and the Tohoku Earthquake, Center on Japanese Economy and Business, Working paper series, No. 373.

Weersink, A., von Massow, M., & McDougall, B. (2020). Economic thoughts on the potential implications of COVID-19 on the Canadian dairy and poultry sectors. *Canadian Journal of Agricultural Economics, 68(1), 1-6.*

WHO. (2020). WHO Coronavirus Disease (COVID-19) Dashboard. Retrieved from https://covid19.who.int/?gclid=CjwKCAjwnK36BRBVEiwAsMT8WCnhIyx8TcMzihI0Zai1zdHO769vwSDP7JKvE0Xx0rW2sK8Cucm85BoCiYEQAvD_BwE

WHO Europe. (2020). Coronavirus disease (COVID-19) pandemic. Retrieved from https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19

Yan, B., Stuart, L., Tu, A., & Zhang, T. (2020). Analysis of the Effect of COVID-19 on the stock market and investing strategies. http://dx.doi.org/10.2139/ssrn.3563380.

Yilmazkuday, H. (2020). COVID-19 Effects on the S&P 500 index. http://dx.doi.org/10.2139/ssrn.3555433.

Zeren, F., & Hizarci, A. (2020). The impact of COVID-19 coronavirus on stock markets: evidence from selected countries. *Muhasebe ve Finans İncelemeleri Dergisi, 3*(1), 78-84.

Zhou, L., Wu, K., Liu, H., Gao, Y., & Gao, X. (2020). CIRD-F: Spread and Influence of COVID-19 in China. *Journal of Shanghai Jiaotong University (Science), 25*(2), 147-156.