The Effects of Lockdown, Economic Stimulus Packages and National Recovery Plan Announcements on the Malaysian Stock Market

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Research Question: This research aims to investigate the effects of lockdown, economic stimulus packages and national recovery plan announcements during the COVID-19 pandemic on the Malaysian stock market. **Motivation:** This study will provide insight on how the efforts made by the Malaysian government to battle the pandemic through different types of announcements will affect the Malaysian stock market across different industries. **Idea:** This study posits that all events i.e., lockdown, economic stimulus packages and recovery plan announcements will significantly influence the behaviour of the Malaysian stock market. **Data:** A sample of 13 sectorial indexes are selected. The sample period taken for the study is from January 2, 2019 to October 29, 2021. **Method/Tools:** The study employs an event study methodology. Cumulative abnormal return (CAR) is used to calculate the total of all abnormal returns surrounding the announcements. The event window employed in this study is 10 days i.e. five days before (-5 to -1) and five days after (+1 to +5) the announcements. When there is an overlapping event, a shorter event window such as one/two days before and one/two days after the announcement will be examined for robustness testing. **Findings:** The results of the study show that the impact of all announcements varies across different time periods. For example, the first three Movement Control Order (MCO) 1.0, 2.0 and 3.0 announcements have significantly affected the indexes negatively, while the Total Lockdown (TL) announcement at a later period lead to a positive impact. **Contributions:** Findings of this study have important implications for policymakers and investors. Handling and managing the stock market during the pandemic requires a sensible strategy, in which officials should quickly notify the public of their intended plan without causing panic or any feeling of insecurity. For investors, these results are useful for them to manage their investment portfolio and risk.

Keywords: COVID-19, lockdown, stock market, stimulus package, recovery plan, Malaysia.
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1. Introduction

On 25th January 2020, the first three cases of COVID-19 were detected in Malaysia after the infection was confirmed among three travellers from Wuhan, China. On 16th March 2020, the Prime Minister of Malaysia held a live countrywide telecast to declare the decision of the central government in enforcing the first Movement Control Order (MCO 1.0), a countrywide lockdown order from 18th March 2020 to 31st March 2020. The Malaysian government announced another two MCOs and a Total Lockdown event afterwards. Malaysia's economy stems from both external and internal factors. In terms of external factors, as China and Singapore are the largest trading partners of Malaysia, these countries were also facing disruption to their industrial efficiency and economy brought by the COVID-19 pandemic. Any damage that affects the industrial efficiency of China could cause a severe influence on local Malaysian producers or manufacturers which greatly rely upon raw materials from China. Aside from trade, most tourists who visit Malaysia also come from China. When Malaysia's borders were closed, the airline and hotel industries had to swallow the hardest hit from the implementation of the lockdown.

On the other hand, in regards to internal factors and in view of macroeconomics, MCO 1.0 had restrained business operations and interstate travel had caused massive negative influences on the scales of consumption and business investment in the local economy. Most domestic businesses such as sole proprietors and small and medium enterprises (SMEs) which were impacted by the lockdown had to deal with the liquidity crisis related to shrinking in their earnings and cash flow problems. As a result, many businesses and individual entrepreneurs were forced to shut down and file for bankruptcy. It has been proven that the COVID-19 pandemic has influential impacts to the economy of a country (El Keshky *et al.*, 2020). Some pundits, such as Tejvan (2018), stated that when the economy is anticipated to enter a recession, the stock markets will typically show a downturn. On the other hand, Brown (2019) mentioned that when the economy is weak, it does not necessarily indicate that the stock market is weak as well. Therefore, in this research, the question is, do the events caused by the COVID-19 pandemic affect the Malaysian stock market, including all the other industrial indexes?

When this worldwide, life-threatening and infectious disease is mentioned, many pessimistic thoughts and fears cross into investors' minds. Undoubtedly, it was shown that the COVID-19 pandemic also greatly affected the stock market in Malaysia. Among the publicly traded companies, a majority of the primary shareholders disposed their stocks during the early few trading days of MCO 1.0 as a consequence of the uncertainty brought by the COVID-19 pandemic (The Star, 2020). In general, the Kuala Lumpur Composite Index (KLCI) had encountered a decreasing trend since early January 2020, and on 19th March 2020, the second day of MCO, the KLCI had reported its lowest number of 1,219.71 in the last 10 years. Airline stocks were the most downtrodden stocks in 2020, and several blue chip stocks such as consumer products and banking could not avoid the downturn. However, some stocks involved in the healthcare industry performed extremely well, especially glove manufacturers (Bloomberg, 2020). Several empirical research showed evidence that the Malaysian stock market are influenced by investor sentiments. Some researchers found that in the short run, the Malaysian stock market had positive impacts and overreact to intense internal and external events such as economic crisis, domestic political events, and the SARS outbreak which happened in 2002 (Ali, *et al.*, 2010; Ali *et al.*, 2020). On the contrary, Chia *et al.* (2020) argued that in the short run, the Malaysian stock market was impacted negatively but insignificantly by daily new confirmed COVID-19 cases and deaths. These researchers also stated that the lockdown had favourable and significant impacts on the Malaysian stock market, most likely due to the economic stimulus packages.

Since there were no further details on the effects of these events on the Malaysian stock market, this research mainly focuses on the effects of the lockdown, the economic stimulus package and the national recovery plan due to the COVID-19 pandemic on the Malaysian stock market. For now, the major gap in other published studies related to COVID-19 is the insufficiency of thorough insight on the effects of COVID-19 facing all industries in a specific market. It is noteworthy that the COVID-19 pandemic lasted for more than a year and it impacted all industries. Therefore, this research tackles the gap in knowledge by involving all the industrial indexes in Malaysia as the sample of research. These industrial indexes include (1) Consumer, (2) Construction, (3) Energy, (4) Finance, (5) Healthcare, (6) Industrial Product, (7) Plantation, (8) Property, (9) REIT, (10) Technology, (11) Telecommunication, (12) Transportation and (13) Utilities.

2. Literature Review

2.1 Infectious Virus Outbreak and Stock Market

It is undeniable that an infectious disease event could affect a wide range of economic and social consequences, which is also shown in stock market performances. Previous research on the effects of H7N9 on the stock market by Jiang *et al.* (2017), using a distributed lag non-linear model, claimed that in China, the stock market's movement, driven by investors' concern and negativity about future profits due to the epidemic, resulted in major economic damage to markets. Despite that, studies on the performances of stock markets during outbreaks of infectious diseases are still few (Ali *et al.*, 2010; Donadelli *et al.*, 2017; Jiang *et al.*, 2017). Although Hong Kong was severely affected by the SARS outbreak, there was no significant impact towards the Hang Seng Index (Siu & Wong, 2004). During the 2014 Ebola outbreak, associated with extensive media exposure, the event had affected US stock prices. Ichev and Marinč (2018) used event-study and regression-based approach and revealed that the effect on stock prices typically shows adverse effects, and domestic news coverage, on the other hand, has a substantial influence on local stock exchange, and the impact is particularly more noticeable in small-cap, more volatile equities, and less stable industries. Similarly, Nippani and Washer (2004) showed that the SARS outbreak only caused adverse impacts to the stock markets of China and Vietnam.

Several researchers used event-study approach with GARCH process to examine that in relation to the Taiwan stock market, the SARS outbreak had negative impacts only for certain industries such as hospitality, tourism, wholesalers, and retail industries. In contrast, the biotechnology industry exhibited a significant positive connection with stock returns in Taiwan during the SARS outbreak (Chen *et al.*, 2007; Chen *et al.*, 2009). The investigation by Jiang *et al.* (2017) concluded that there is a significant connection between the daily registered number of Influenza A virus H7N9 cases and the overall stock price of the Shanghai Composite Index along with the stock price related to traditional Chinese medicine and biological and biomedicine manufacturing industries in China.

2.2 COVID-19 and Stock Market

Most of the preliminary research showed the negative impacts of the COVID-19 pandemic on global stock market performance (Al-Awadhi *et al.*, 2020; Ashraf, 2020; Alfaro *et al.*, 2020; Zhang *et al.*, 2020; Liu *et al.*, 2020; He *et al.*, 2020; Hassan and Gavilanes, 2021; Kodres, 2020; Zeren and Hizarci, 2020). Due to COVID-19, the biggest negatively impacted sectors on the stock market include oil & gas, apparels, automotive, transportation, manufacturing, and hotel businesses (Schoenfeld, 2020). Several researchers suggest to invest in some defensive stocks like education, food, banking, consumer and healthcare sectors (Tashanova *et al.*, 2020; Li *et al.*, 2020; Nia, 2020). Goodell (2020) suggested not to invest

in financial industries because this industry experienced a high number of non-performing loans due to debtors' foregone earnings and a significant number of depositor withdrawals.

Several studies also reported that the lockdown and stimulus package announcements significantly affected the stock market. For example, using an event study approach, Alam *et al.* (2020) found that the lockdown announcements made by the Indian government had a positive impact on the stock market performance. A similar finding was reported by Sun *et al.* (2021) for China, Hong Kong, Korea, Japan, and U.S stock markets. On the other hand, Bouri *et al.* (2022) and Shafiullah *et al.* (2022) reported that the stock market in New Zealand and several other countries show a declining trend after stimulus package announcements were made by their governments.

As for the Malaysian stock market, researchers discovered various results on the effects of the COVID-19 pandemic. Lee *et al.* (2020) found that larger numbers of COVID-19 cases in Malaysia had negative effects on the KLCI index and all sectorial indexes performance, excluding the Real Estate Investment Trusts (REIT) index. Ramdhan *et al.* (2020) discovered that the number of COVID-19 daily cases exhibited a uniform significant positive effect on financial, consumer goods and medical services index during the lengthen lockdown period. Chia *et al.* (2020) revealed that the daily new confirmed COVID-19 cases and deaths had adverse but negligible effects on the performance of the Malaysian stock market. However, the Malaysian stock market exhibited significant and positive effects throughout the lockdown period. A more recent study by Song *et al.* (2022) reported that Malaysian stock market react negatively to the MCO annoucements especially at the beginning period.

Based on the discussion above, this study hypothesises that all announcements made by the Malaysian government during the COVID-19 pandemic i.e., lockdown, economic stimulus packages and recovery plan, have significant effects on the Bursa Malaysia and other sectorial indexes of the Malaysian stock market.

3. Data and Methodology

3.1 Data

Table 1 describes the list of indexes that were selected to assess the effects of several announcements owning to the COVID-19 pandemic on the Malaysian stock market. KLCI is used as the benchmark index to compute the abnormal returns for 13 other sectorial indexes within Malaysia. Daily closing prices of these indexes from 2nd January 2019 to 29th October 2021 were collected.

Table 1: List of indexes

Definition	Abbreviation	No. of Constituents
Kuala Lumpur Composite Index (KLCI)	KLCI	30
Kuala Lumpur Consumer Product	KLCM	168
Kuala Lumpur Construction	KLCT	52
Kuala Lumpur Energy	KLEN	31
Kuala Lumpur Finance	KLFI	31
Kuala Lumpur Healthcare	KLHC	13
Kuala Lumpur Industrial Product	KLIP	221
Kuala Lumpur Plantation	KLPL	42
Kuala Lumpur Property	KLPR	98
Kuala Lumpur REIT	KLRE	17
Kuala Lumpur Technology	KLTE	41
Kuala Lumpur Telecommunications and Media	KLTC	16
Kuala Lumpur Transportation and Logistics	KLTP	32
Kuala Lumpur Utilities	KLUT	12

The source of data used for this research are collected from the website Investing.com, an open-access website with real-time quotes, portfolio, streaming charts, livestock market data, global index prices, and so on. He *et al.* (2020) and Liu *et al.* (2020) used this website as their source of data for their studies.

Recently, numerous past research have sought to assess the impacts of the COVID-19 pandemic on stock market returns in the short run (Liu *et al.*, 2020; Zhang *et al.*, 2020). Similarly, the event of interest of this research are important announcements due to COVID-19 such as lockdown, economic stimulus packages and exit strategy news on Malaysian media. These announcements and information are likely to grab the front pages of print and electronic media throughout the globe and attract the attention of investors. Therefore, several important event dates in this study are chosen and tabulated in Table 2, Table 3 and Table 4.

Table 2: List of COVID-19 lockdown and their announcement dates

Date	Description - Lockdown	Abbreviation
16th Mar 2020	First Movement Control Order	MCO 1.0
11th Jan 2021	Second Movement Control Order	MCO 2.0
10th May 2021	Third Movement Control Order	MCO 3.0
28th May 2021	Total Lockdown	TL

Table 3: List of COVID-19 Economic Stimulus Packages (ESP) and their announcement dates

Date	ESP	Description - Economic Stimulus Package	Abbreviation
27th Feb 2020	ESP1	Bolstering Confidence, Stimulating Growth and Protecting Jobs	-
27th Mar 2020	ESP2	Prihatin Rakyat Economic Stimulus Package	PRIHATIN
06th Apr 2020	ESP3	Additional Prihatin Economic Stimulus Package	PRIHATIN PLUS
05th Jun 2020	ESP4	National Economic Recovery Plan	PENJANA
23rd Sep 2020	ESP5	Prihatin Supplementary Initiative Package	KITA PRIHATIN
18th Jan 2021	ESP6	Protection of the Economy and People of Malaysia	PERMAI
17th Mar 2021	ESP7	Strategic Programme to Empower the People and the Economy	PEMERKASA
31st May 2021	ESP8	Additional Strategic Programme to Empower the People and the Economy	PEMERKASA PLUS
28th Jun 2021	ESP9	National People's Well-Being and Economic Recovery Package	PEMULIH

Table 4: List of COVID-19 National Recovery Plan (NRP) and their announcement dates

Date	Description – National Recovery Plan	Abbreviation
15th Jun 2021	Announcement of National Recovery Plan	NRP
08th Sep 2021	Announcement of National Recovery Plan Phase 2	NRP2
29th Sep 2021	Announcement of National Recovery Plan Phase 3	NRP3
15th Oct 2021	Announcement of National Recovery Plan Phase 4	NRP4

3.2 Methodology

The empirical work in this study is on the basis of event study methodology. This study attempts to exhibit how Malaysian financial markets, especially the KLCI and its sectorial indexes, react after the announcement of lockdown, economic stimulus packages and national recovery plans due to the COVID-19 pandemic. According to Holler (2014), the suggested event window generally spans from one to eleven days and is proportionally revolved around the event day. The event window employed in this research to determine the impact of important announcement on stock indexes is 10 days, five days before (-5 to -1) and five days after (+1 to +5) the announcement of information about the important events. This event

window length was also used by Sun *et al.* (2021) in their research. Actual returns within the event window and anticipated expected returns are determined to calculate abnormal returns for all days within the event window. Investors can employ abnormal returns to inspect the comparison between a single asset portfolio performance and a benchmark index, which is often generated using the CAPM equation, whereas in this paper, Market Model is used. By employing the market return as a baseline, abnormal returns enable investors to evaluate the real magnitude of earnings and losses. When there is an overlapping event, a shorter event window such as one/two days before and one/two days after the announcement will be examined for robustness testing.[2]

The information required to determine the expected returns is provided by the estimation window. Previous research examining the sensitivity of results (e.g., the expected return on the event date) proposed that as long as the estimation window lengths surpass 100 days, outcomes are not sensitive to altering estimation window lengths (Armitage, 1995; Park, 2004). Besides, according to Liu *et al.* (2020), owning to the great degree of uncertainty in the securities market, an estimation window duration that is too long may not be correct. Therefore, the estimation window for this research is from day -105 to day -6, the day before the MCO 1.0, which is from 15th October 2019 to 06th March 2020. As the announcement of ESP1 was before MCO 1.0, the estimation window for the announcement of ESP1 is from 30th September 2019 to 19th Feb 2020. Figure 1 below illustrates an example of the timeframe for the event study in days for MCO 1.0.

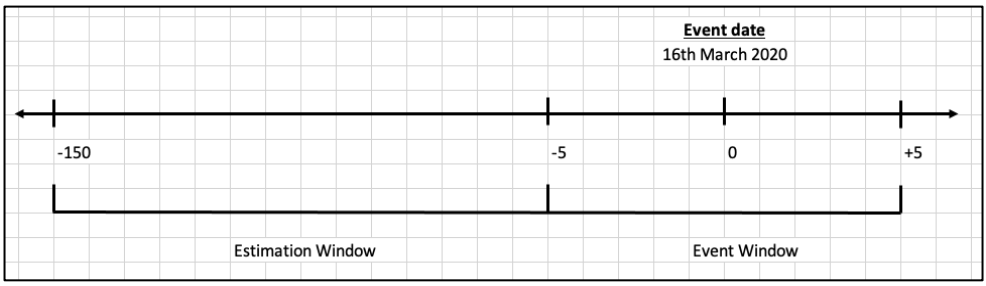

Figure 1: Event study timeframe

The daily actual return, and market return are calculated by using Equation (1):

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

where $R_{i,t}$ is the actual return for index i on day t, $P_{i,t}$ denotes the closing price for an index i on day t, and $P_{i,t-1}$ is the closing price of index i in the previous trading day. Expected returns are calculated by utilising market model, shown in Equation 2:

$$E(R_{i,t}) = \alpha_i + \beta_i (R_{m,t}) + \varepsilon_{i,t} \quad (2)$$

where $E(R_{i,t})$ is the expected return of index i and $R_{m,t}$ is the market return on day t (as the event day is day 0) within the estimated window, with $\varepsilon_{i,t}$ as the statistic disturbance. $\alpha_i + \beta_i$ are the regression estimation from an OLS using estimation window for both index and market return. To obtain α_i, insert "intercept (daily closing price of actual return from day -6 to day -

[2] The results of this robustness test are consistent with the reported findings. Details of the results can be provided by the corresponding author upon request.

105; daily closing price of market return from day -6 to day -105)" in Microsoft Excel spreadsheet; to obtain β_i, insert "slope (daily closing price of actual return from day -6 to day -105; daily closing price of market return from day -6 to day -105)" in Microsoft Excel spreadsheet. After getting the estimated coefficients, $\alpha_i + \beta_i$, the formulas below are used to compute the expected return and abnormal return (AR) using Equation 3:

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \quad (3)$$

Cumulative abnormal return (CAR) of index i over a window from t_0 to t_1 is computed using Equation (4):

$$CAR_i(t_0, t_1) = \sum_{t=t_0}^{t_1} AR_{i,t} \quad (4)$$

The significance of the coefficient of CAR on event day t_0 for a specific event window ($t_{-5} - t_5$), t-statistic or t-Test are calculated as per Equation 5:

$$\text{t-Test}_{CAR} = CAR / SE \quad (5)$$

where SE is standard error and can be obtained by inserting "steyx (daily closing price of actual return from day -6 to day -105; daily closing price of market return from day -6 to day -105)" in Microsoft Excel spreadsheet.

4. Results and Discussion

Table 5 and 6 report the CAR for both (-5,-1) and (+1,+5) event windows where Panel A is for Lockdown announcements, Panel B for ESP announcements and Panel C for NRP announcements. Based on both tables, this study concludes that lockdown announcements, especially MCO1.0, 2.0 and 3.0, have a significant negative effect on sectorial indexes of the Malaysian stock market, because investors have a negative outlook on the Malaysian stock market due to the lockdown announcements. However, TL announcement showed that most sectorial indexes have a significant positive effect, because investors thought TL would not be as strict as MCO 1.0, and the Malaysian government would not risk the country's economy again.

This study also concludes that ESP announcements have a significant positive effect on most of the industrial indexes of the Malaysian stock market. Investors have an optimistic outlook on the early stage of ESPs as they have confidence that the Malaysian government is attempting to handle the COVID-19 issue and the country's economy. However, ESP1, ESP4, ESP5, ESP6, ESP7 and ESP 9 announcements showed that most of the sectorial indexes have significant negative effects. This is because in the later stage of ESPs, investors had lost confidence in the Malaysian government in addressing the pandemic and perform profit-taking activities. In terms of ESP1, it showed a negative impact, most likely because of the spill-over effect from China when they imposed lockdown in early January and February.

Table 5: Summary of CAR (-5, -1) of all Bursa Malaysia sectorial indexes

Events	KLCM	KLCT	KLEN	KLFI	KLHC	KLIP	KLPL	KLPR	KLRE	KLTE	KLTC	KLTP	KLUT
Panel A: Announcement of Lockdown													
MCO1.0	-0.0413***	-0.0532***	-0.2080***	-0.0204***	-0.0472***	-0.0892***	-0.0484***	-0.0666***	-0.0589***	-0.0634***	-0.0104*	-0.0303***	-0.0304***
MCO2.0	-0.0199***	-0.0817***	-0.0596***	-0.0238***	0.0102	-0.0213***	0.0081	-0.0667***	-0.0268***	-0.0507***	-0.0338***	-0.0746***	-0.0476***
MCO3.0	-0.0008	-0.0052	0.0160	0.0038	-0.0498***	0.0176***	0.0332***	-0.0031	-0.0115***	-0.0468***	0.0124**	0.0187***	-0.0053
TL	0.0133***	-0.0193*	-0.0225*	0.0096***	-0.0363***	0.0068	-0.0038	-0.0012	-0.0036	0.0473***	0.0396***	0.0169**	-0.0018
Panel B: Announcement of Economic Stimulus Packages													
ESP1	-0.0208***	-0.0585***	-0.0252**	0.0058	0.1554*	-0.0303***	-0.0092	-0.0143**	-0.0024	0.0038	-0.0174***	-0.0252***	-0.0066
ESP2	0.0003	0.0129	0.0901***	0.0300***	0.0519***	0.0190***	0.0054	0.0262***	0.0901***	0.0590***	0.0231***	0.0260***	0.0269***
ESP3	0.0283***	0.0477***	0.1473***	-0.0121***	0.0014	0.0222***	0.0067	0.0001	-0.0125***	0.0593***	-0.0023	0.0389***	0.0351***
ESP4	-0.0179***	-0.0512***	0.0049	-0.0246***	-0.0483***	0.0361***	-0.0679***	0.0411***	0.0138***	-0.0658***	-0.0802***	-0.0227***	-0.0165***
ESP5	0.0128***	0.0025	0.0189	0.0035	-0.0223**	-0.0023	0.0120*	0.0004	-0.0055	-0.0262**	0.0156***	-0.0039	0.0020
ESP6	0.0209***	0.0158	0.0257**	0.0059	-0.0097	0.0305***	-0.0073	0.0205***	0.0031	0.1256***	0.0366***	0.0420***	0.0110**
ESP7	0.0184***	0.0229**	0.0243*	-0.0082**	-0.0028	0.0282***	0.0054	0.0431***	0.0030	0.0258**	0.0268***	0.0062	0.0155***
ESP8	0.0106***	0.0071	0.0027	0.0084**	-0.0251**	0.0178***	-0.0168***	0.0056	0.0026	0.0309**	0.0349***	0.0263***	0.0008
ESP9	-0.0004	-0.0047	-0.0195	0.0151***	-0.0424***	0.0006	-0.0099	-0.0116	-0.0046	-0.0232*	0.0046	0.0033	-0.0126**
Panel C: Announcement of National Recovery Plan													
NRP	0.0066*	0.0295***	0.0287**	0.0087**	-0.0140	-0.0009	-0.0197***	0.0242***	0.0132***	-0.0062	-0.0068	0.0340***	-0.0003
NRP2	0.0248***	0.0545***	0.0331**	0.0028	-0.0114	0.0288***	-0.0123*	0.0396***	0.0044	0.0343***	0.0277***	0.0173***	0.0135**
NRP3	0.0023	-0.0002	0.0516***	-0.0112***	-0.0074	0.0296***	-0.0059	-0.0025	0.0009	-0.0026	-0.0154***	-0.0036	-0.0206***
NRP4	-0.0044	0.0354***	0.0760***	0.0114***	-0.0058	0.0034	-0.0174***	0.0294***	0.0162***	-0.0244**	0.0093	0.0159**	-0.0059

Notes: *Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 6: Summary of CAR (+1, +5) of all Bursa Malaysia sectorial indexes

Events	KLCM	KLCT	KLEN	KLFI	KLHC	KLIP	KLPL	KLPR	KLRE	KLTE	KLTC	KLTP	KLUT
Panel A: Announcement of Lockdown													
MCO1.0	-0.0323***	-0.0476***	-0.1099***	-0.0279***	-0.0293***	-0.0633***	-0.0057	-0.1250***	-0.0683***	-0.0859***	-0.0586***	-0.0948***	-0.0634***
MCO2.0	0.0165***	0.0357***	0.0082	0.0034	-0.0030	0.0431***	-0.0241***	0.0316***	-0.0076**	0.1463***	0.0453***	0.0440***	0.0149***
MCO3.0	-0.0216***	-0.0475***	-0.0367***	0.0078**	0.0217**	-0.0315***	-0.0357***	-0.0101	-0.0199***	-0.0374***	-0.0249***	-0.0373***	-0.0024
TL	0.0133***	0.0139	-0.0061	0.0080**	-0.0238**	0.0144**	-0.0143**	0.0031	0.0214***	0.0303**	0.0055	0.0743***	0.0129**
Panel B: Announcement of Economic Stimulus Packages													
ESP1	-0.0229***	-0.0299***	-0.0702***	0.0076**	0.0862	-0.0027	-0.0304***	-0.0275***	0.0053	-0.0139	-0.0138**	-0.0403***	0.0045
ESP2	0.0283***	0.0477***	0.1473***	-0.0121***	0.0014	0.0222***	0.0067	0.0001	-0.0125***	0.0593***	-0.0023	0.0389***	0.0351***
ESP3	0.0016	0.0251**	-0.0586***	-0.0110***	0.0337***	0.0191***	-0.0013	0.0014	-0.0148***	-0.0040	0.0095	0.0156**	0.0026
ESP4	0.0050	0.0207**	-0.0540***	0.0403***	0.0039	-0.0046	0.0165**	-0.0197***	0.0046	0.0437***	-0.0089	-0.0159**	-0.0109**
ESP5	-0.0008	0.0173*	-0.0287**	-0.0025	0.0413***	0.0215***	-0.014**	-0.0129*	-0.0048	0.0229*	-0.0241***	-0.0064	-0.0078
ESP6	-0.0114***	-0.0240**	-0.0225*	0.0032	-0.0033	-0.0181***	0.0001	-0.0084	-0.0015	0.0294**	0.0173***	0.0044	-0.0116**
ESP7	-0.0001	0.0032	-0.0281**	-0.0021	-0.0192*	0.0132**	0.0043	-0.0085	-0.0039	0.0221*	-0.0242***	-0.0276***	-0.0159***
ESP8	0.0154***	0.0346***	0.0134	0.0208***	-0.0634***	0.0142**	-0.0159**	0.0186***	0.0309***	0.0066	0.0065	0.0771***	0.0094*
ESP9	0.0025	-0.0154	0.0227*	0.0048	-0.0410***	0.0164**	-0.0036	0.0008	-0.0052	0.0358***	0.0198***	0.0190***	0.0071
Panel C: Announcement of National Recovery Plan													
NRP	-0.0059	-0.0030	-0.0137	0.0024	-0.0116	-0.0160**	-0.0087	-0.0153**	-0.0038	-0.0077	0.0277***	-0.0020	-0.0080
NRP2	0.0129***	0.0012	0.0056	0.0079**	-0.0434***	0.0158**	-0.0094	0.0152**	-0.0115***	0.0231*	0.0071	0.0153**	0.0038
NRP3	-0.0029	-0.0087	0.0372***	-0.0107***	-0.0180*	0.0096	0.0776***	0.0097	0.0013	-0.0011	-0.0044	0.0116*	-0.0024
NRP4	0.0021	-0.0050	-0.0152	0.00862**	-0.0146	-0.0021	-0.0021	-0.0015	-0.0028	0.0107	-0.0013	0.0056	-0.0020

Notes: *Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Finally, this study reports that most other industrial indexes in the Malaysian stock market respond positively to the NRP2, NRP3 and NRP4 announcements, but negatively to the first NRP announcement. This is because during the first NRP announcement, the Malaysian government only proposed the recovery plan and did not take action, and the confirmed cases are still high. However, after the announcement of NRP2, investors realised that the Malaysian government kept their word and acted on implementing the recovery plan. Hence, this action had regained investors' confidence and they started investing in the Malaysian stock market.

The findings reported in this study have important implications for policymakers and investors. For example, government and central banks could utilise the findings of this research to effectively implement the fiscal and monetary policy during any pandemic. Besides, handling the COVID-19 situation requires a sensible strategy, in which officials should quickly notify the market on their plans without causing insecurity to it. For market players or investors, the findings are useful for them to plan for their investment portfolio and manage their risks.

5. Conclusion

The purpose of this study is to look at the immediate impacts of lockdown, economic stimulus package and national recovery plan (exit strategy) announcements due to COVID-19 on the Malaysian stock markets. This study adds to the literature by examining the different announcements made by the Malaysian government to battle the unanticipated financial market impacts of COVID-19. The results of this research, from the perspective of an investor, highlight the relevance of not just the organisation's business characteristic, but also the investment risks posed by an unexpected occurrence. In short, the results of the study exhibit that the lockdown, ESP and NRP announcements, significantly impacted the performances of all sectors in the Malaysian stock market.

The government could utilise the findings of this research to effectively implement the fiscal and monetary policies. Besides, by effectively managing existing debts, central bank authorities would enable banks to be more lenient towards businesses in economically distressed industries including construction, manufacturing, leisure, travel and tourism industries. Handling the COVID-19 situation requires a sensible strategy, in which officials should quickly notify residents of their health care system plans without causing insecurity. For investors, these results are useful for them to manage their investment portfolio and risk.

There are several limitations in this study, one of which is that the research only looked at the instant and short-term impacts of the announcement of events on Malaysian stock markets owning to the short-term event windows. This research did not explore the association between the stock market and the number of confirmed cases. Future researchers can enhance the findings by utilising a broader sample period and considering looking into additional important event announcements due to COVID-19 in Malaysia. Future studies may also consider employing Wilcoxon Signed Rank Test or other research techniques such as multiple regression model to study the impact of different announcements on individual firms as well as indexes' mean returns.

References

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*,100326. doi: 10.1016/j.jbef.2020.100326

Alam, M. N., Alam, M. S., & Chavali, K. (2020). Stock market response during COVID-19 lockdown period in India: An event study. *The Journal of Asian Finance, Economics and Business*, *7*(7), 131-137.

Ali, M., Alam, N., & Rizvi, S. A. R. (2020). Coronavirus (COVID-19) - An epidemic or pandemic for financial markets. *Journal of Behavioral and Experimental Finance*, *27*, 100341. doi:https://doi.org10.1016/j.jbef.2020.100341.

Ali, N., Nassir, A. M., Hassan, T., & Abidin, S. Z. (2010). Short run stock overreaction: Evidence from Bursa Malaysia. *International Journal of Economics and Management*, *4*(2), 319-333.

Alfaro, L., Chari, A., Greenland, A. N., & Schott, P. K. (2020). *Aggregate and firm-level stock returns during pandemics* (NBER Working Paper No. 26950). Retrieved from National Bureau of Economic Research website: https://www.nber.org/papers/w26950

Armitage, S. (1995). Event study methods and evidence on their performance. *Journal of Economic Surveys*, *9*(1), 25-52.

Ashraf, B. N. (2020). Stock markets' reaction to COVID-19: Cases or fatalities? *Research in International Business and Finance*, *54*,101249. doi: 10.1016/j.ribaf.2020.101249.

Bloomberg (2020). *Are you a robot?* Retrieved from https://www.bloomberg.com/news/articles/2020-04-21/the-pandemic-is-a-bonanza-for-malaysia-s-medical-glove-industry

Bouri, E., Naeem, M. A., Nor, S. M., Mbarki, I., & Saeed, T. (2022). Government responses to COVID-19 and industry stock returns. *Economic Research-Ekonomska Istraživanja*, *35*(1), 1967-1990.

Brown, J. (2019). *How I explain the stock market vs the economy*. Retrieved from https://www.cnbc.com/2019/04/04/what-is-the-stock-market-and-how-does-it-relate-to-the-economy.html

Chen, M. H., Jang, S. S., & Kim, W. G. (2007). The impact of the SARS outbreak on Taiwanese hotel stock performance: An event-study approach. *International Journal of Hospitality Management*, *26*(1), 200-212.

Chen, C. D., Chen, C. C., Tang, W. W., & Huang, B. Y. (2009). The positive and negative impacts of the SARS outbreak: A case of the Taiwan industries. *The Journal of Developing Areas*, *43*(1), 281-293.

Chia, R. C. J., Liew, V. K. S., & Rowland, R. (2020). Daily new Covid-19 cases, the movement control order, and Malaysian stock market returns. *International Journal of Business and Society*, *21*(2), 553-568.

Donadelli, M., Kizys, R., & Riedel, M. (2017). Dangerous infectious diseases: Bad news for main street, good news for Wall Street? *Journal of Financial Markets*, *35*, 84-103.

El Keshky, M. E. S., Basyouni, S. S., & Al Sabban, A. M. (2020). Getting through COVID-19: The pandemic's impact on the psychology of sustainability, quality of life, and the global economy - A systematic review. *Frontiers in Psychology*, *11*,585897. doi: 10.3389/fpsyg.2020.585897

Goodell, J. W. (2020). COVID-19 and finance: Agendas for future research. *Finance Research Letters*, *35*,101512. doi: https://doi.org/10.1016/j.frl.2020.101512

Hassan, S. M., & Riveros Gavilanes, J. M. (2021). First to react is the last to forgive: Evidence from the stock market impact of COVID 19. *Journal of Risk and Financial Management*, *14*(1), 26.

He, Q., Liu, J., Wang, S., & Yu, J. (2020). The impact of COVID-19 on stock markets. *Economic and Political Studies*, *8*(3), 275-288.

Holler, J. (2014). Event-study methodology and statistical significance. *Event-study Methodology and Statistical Significance*, *1*, 5-10.

Ichev, R., & Marinč, M. (2018). Stock prices and geographic proximity of information: Evidence from the Ebola outbreak. *International Review of Financial Analysis*, *56*, 153-166.

Jiang, Y., Zhang, Y., Ma, C., Wang, Q., Xu, C., Donovan, C., Ali, G., Xu, T., & Sun, W. (2017). H7N9 not only endanger human health but also hit stock marketing. *Advances in Disease Control and Prevention*, *2*(1), 1-7.

Kodres, L. (2020). Brakes or bans: Protecting financial markets during a pandemic. *Washington, DC: CEPR.*

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), 607-628.

Li, R., Zhang, R., Zhang, M., & Zhang, T. (2020). *Investment analysis and strategy for COVID-19* (SSRN Working Paper No. 3563300). Retrieved from SSRN website: https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=3563300

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.

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.

Nippani, S., & Washer, K. M. (2004). SARS: A non-event for affected countries' stock markets? *Applied Financial Economics*, *14*(15), 1105-1110.

Park, N. K. (2004). A guide to using event study methods in multi-country settings. *Strategic Management Journal*, *25*(7), 655-668.

Ramdhan, N., Mohammad, N., Mohamed Yousop, N., Ahmad, Z., Sipon, Z., & Mohd Hasan Abdullah, N. (2021). The Covid-19 Dashboard Sector Specific Impact: Malaysia Financial, Consumer Products and Health Care Services. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *11*(1), 327-337.

Schoenfeld, J. (2020). *The invisible business risk of the COVID-19 pandemic* (Tuck School of Business Working Paper No. 3567249). Retrieved from VoxEU.org – CEPR's policy portal website: https://voxeu.org/article/invisible-business-risk-covid-19-pandemic

Shafiullah, M., Khalid, U., & Chaudhry, S. M. (2022). Do stock markets play a role in determining COVID-19 economic stimulus? A cross-country analysis. *The World Economy*, *45*(2), 386-408.

Siu, A., & Wong, Y. R. (2004). Economic impact of SARS: The case of Hong Kong. *Asian Economic Papers*, *3*(1), 62-83.

Song, S. I., Janang, J. T., Yazi, E., & Morni, F. (2022). The effects of market strength, information asymmetry, and industrial characteristics on Malaysian firms' CAR during COVID-19 Pandemic. *Capital Markets Review*, *30*(1), 1-15.

Sun, Y., Bao, Q., & Lu, Z. (2021). Coronavirus (Covid-19) outbreak, investor sentiment, and medical portfolio: Evidence from China, Hong Kong, Korea, Japan, and US. *Pacific-Basin Finance Journal*, *65*,101463. doi: https://doi.org/10.1016/j.pacfin.2020.101463

Tashanova, D., Sekerbay, A., Chen, D., Luo, Y., Zhao, S., & Zhang, T. (2020). *Investment opportunities and strategies in an era of coronavirus pandemic* (SSRN Working Paper No. 3567445). Retrieved from SSRN website: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3567445

Tejvan, P. (2018). *Relationship between stock market and economy*. Retrieved from https://www.economicshelp.org/blog/541/economics/relationship-between-stock-market-and-economy/

The Star (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

Zhang, D., Hu, M., & Ji, Q. (2020). Financial markets under the global pandemic of COVID-19. *Finance Research Letters*, *36*,101528. doi: 10.32951/mufider.706159

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.