

Research Topic : Impact of Contagious Disease on Different Scale  
Field : How does COVID-19 affect Asian People's Lifestyle?  
Authors : Carmen Khew Ling Lung, Low Sher Han, Tan Hooi Yi  
Supervisor(s) : Darren Chong, Ahmad Syahmi Adnan  
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## 1 ABSTRACT

The COVID-19 pandemic has impacted the lifestyle of Asian where the government set rules in every country and the mobility of Asian has changed during the nation worldwide lockdown period. Research has shown that the cumulative number of cases for COVID-19 contributes huge impacts on the e-commerce markets. **This study aims to determine how e-commerce and spending habits of Asians are affected by the daily number of COVID-19 cases in Asia.** The use of stock price from the three leading e-commerce companies in Asia which are Sea Limited, Alibaba and JD.com reflects the growth of e-commerce during this pandemic. The high unemployment rate in Asia during lockdown have changed Asian's spending habits more on the purchasing of daily essentials during the pre and post COVID-19.

Secondary data, resources from online articles, research or analysis by other researchers and authors are used in this research to carry out analysis and data visualization using Python. Our analysis using Pearson's Correlation shows a positive correlation between the e-commerce companies stock prices; unemployment rate and the number of COVID-19 cases. The result indicates that the number of COVID-19 cases has greatly impacted the lifestyle of Asian in their spending habits and mobility. Further research is needed to identify the daily data to strengthen the reliability of the analysis.

## 2 INTRODUCTION AND STATEMENT OF PROBLEM

The outbreak of COVID-19 has resulted in a crash in every industry and change in human lifestyle. Among the top findings: 85% of people reported washing their hands or using sanitizer more often than before, and 61% reported following social distancing guidelines. 22% reported stockpiling essentials like food or water.<sup>1</sup> (Discover Magazine, 2020) The governments set new rules to govern mobility of citizens and even foreigners to ensure that there will be no huge transmission of the virus from people all around the world.

The first case of COVID-19 being reported was in China, which is an Asian country. Thus, this research will be **focusing on Asian people's lifestyle**. The new normal is slowly implemented into every daily activity such as working from home, shopping online, learning online, cancelling of public events etc. All these factors have given a clear picture that most of the daily activities change from physically to virtually. This new normal brings many advantages to us, but it also resulted in a negative side such as an increase in the unemployment rate.

One of the main ideas of our research is **how COVID-19 affects the mobility of Asian**. COVID-19 gives good initiatives in the rise of online shopping due to Movement Control Order (MCO) and Restriction Movement Control Order (RMCO) in the case of Malaysia and lockdown in different Asian countries where the citizens are cautious about going out to shop for groceries or luxuries. However, this pandemic has resulted in the banning of interstate travelling, which also affects the travel industry. This situation has caused some of the citizens unable to travel to work or even return to their hometown.

Since this pandemic has resulted in a rise in online shopping, the focus in this research will be on **how COVID-19 affects the trend of Asian people's lifestyle in e-commerce** which seems to be rising in this pandemic. This rise became more significant in the sense that online advertisements increased and as an example, Malaysia's government greatly encouraged citizens to shop online rather than physically. Nevertheless, **does this pandemic brings an increase in e-commerce?** It is a question that we will further research, so we can find out the relationship between the COVID-19 and how it affects e-commerce, one of the most frequently used platforms during the lockdown.

This research mainly investigates and analyses the main reasons behind all the data that are related to it. For example, how the restrictions during the pandemic correlate to the mobility of the citizens. Besides, we also want to find out how the pandemic affects the stock prices of companies that involve in the e-commerce sector. We are also interested to know more about **how this pandemic causes higher unemployment rate and how the spending habits of consumers changes due to the COVID-19 pandemic**.

By carrying out this research, we are able to understand the impact of COVID-19 onto the Asian's people lifestyle, how government policy causes a change in mobility of Asians, how to analyse the trend of the stock price of the e-commerce industries and what to anticipate after the pandemic is over especially towards the society.

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<sup>1</sup> Discover Magazine, 2020. *How The COVID-19 Pandemic Will Change the Way We Live*. [online] Available at: <https://www.discovermagazine.com/health/how-the-covid-19-pandemic-will-change-the-way-we-live>. [Accessed 2 July 2020].

### 3 LIMITATIONS OF STUDY

There may be some possible limitations in this study. The first limitation is the **time constraint** as we only have a one-month period to conduct this research. Therefore, we only have a short time frame to collect data. At the beginning, we collect data by using a quantitative method. When we found out that we could not get sufficient data to support our research, we have insufficient time to conduct the study using a qualitative method such as sending out surveys. Due to the COVID-19 situation, we are also hardly interviewing people as there are many restrictions. Initially, we plan to set up a prediction model to predict the future stock price of the e-commerce company we research. However, we failed to collect enough data and lack of time in setting up such a complicated model. In the next research, we will try more on the qualitative method rather than a quantitative method by sending out the survey in an earlier stage if needed.

The second limitation concerns the **limited access to data**. We lack available and reliable data due to data privacy and protection. Most of the quality data need premium membership to access so we cannot afford to access it. Besides, most of our data source is from the internet, so it is difficult to identify the reliability of each data. Due to the limitations of data, there is one part of the research that we are unable to continue, which is the part where we want to find the *correlation between COVID-19 cases and e-commerce sales*. We are unable to access or get any daily sales e-commerce data from any sources. Therefore, we use the *stock prices of three e-commerce companies to represent the sales of e-commerce*. In further research, we will need to consider the accessibility of daily data or data with sufficient data points before we start doing the research.

Next, this research is subjected to the limitations of **insufficient sample size**. To generate supportive statistical evidence and valid research result, we will need a large sample size. The larger the sample, the more precise our conclusions will be. In our case, we need to find daily data to support our research and get sufficient data points as monthly and annually data sample size is too small. We will face a problem in identifying significant relationships from the data if we use monthly or annual data. However, we hardly find daily data on the internet as most of the data and reports from related departments are either in monthly or annually basis.

In a nutshell, these are the three limitations to the generalization of our results.

#### 4 METHODOLOGY

This research aims to investigate the relationship between COVID-19 and e-commerce. The research methods we will be using are both **quantitative and qualitative research**.

For quantitative research methods, it is the **use of secondary data** collected by various people or companies and data websites will be implied in this research. The reason for choosing this method is it is a standard method to conduct an investigation. It shows the validity where most of the data used are taken from official organizations, i.e. Yahoo Finance etc. Also, there is reliability where the usability of data from websites is high. They were used by most data scientists and researchers. The data are collected from the depositories such as GitHub, ONS and Kaggle. They are raw data in the form of excel spreadsheets but there is a criterion when choosing the datasets which are the period used is within January to July for both 2019 and 2020.

For qualitative research methods, it is used for a deeper understanding of the numbers behind the data and the **resources used are from online articles, research or analysis by other researchers and authors.**<sup>2</sup> (McCombes, 2019) This method is suitable for secondary research after data analyzing and visualization. The data found are analyzed using different ways which are data visualization using Python, content analysis by categorizing and discussing the meaning behind the words, phrases, or sentences.

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<sup>2</sup> McCombes, S., 2019. *How to Write Research Methodology in Four Steps / With Examples*. [online] Scribbr. Available at: <https://www.scribbr.com/dissertation/methodology/> [Accessed 3 August 2020].

## 5 LITERATURE REVIEW

Below are some researches, which are related to our topic, done by other groups of people:

1. **(Medimorec, et al., 2020)<sup>3</sup>** investigated to what extent COVID-19 is affecting urban mobility and modes of transportation globally and then focused on the said topic in Asia, Latin America, and the Caribbean. The effects of COVID-19 on mobility is analysed by referring to the mobility data from 15<sup>th</sup> February 2020 to 2<sup>nd</sup> May 2020 and compare it to the average mobility from 3<sup>rd</sup> January 2020 to 6<sup>th</sup> February 2020. It is revealed that in general, mobility has reduced significantly since the outbreak of the pandemic, with public transport being the most affected transport mode. However, they clarified that there is no single reason that directly causes a change in mobility.
2. **(Mansour, et al., 2020)<sup>4</sup>** investigated the effect of COVID-19 in the e-commerce industry around the world by taking five of the biggest e-commerce companies around the world as a reference. The five companies are Amazon, Alibaba, Rakuten, Zalando and ASOS. The study found that the effect of COVID-19 on the global e-commerce market varies depending on the country itself. This is further elaborated by noting Amazon and ASOS are sensitive to cumulative cases of infection, Alibaba and Rakuten's share prices returns are sensitive to the number of coronavirus cases while Zalando is sensitive to the cumulative deaths.
3. **(Alber, 2020)<sup>5</sup>** studied how COVID-19 cases and deaths affect the stock market by using six worst countries that covered 67.6% of worldwide cases by 10<sup>th</sup> April 2020. These countries are China, the United States, France, Spain, Germany, and Italy. It was noted that based on the robustness check, there is a negative effect on the stock market due to COVID-19 for China, France, Germany, and Spain but the effects were not confirmed for Italy and United States. Additionally, it is known that the return of the stock market is more sensitive to the number of cases of COVID-19 compared to the number of deaths due to COVID-19. Similar sensitivity can be said for cumulative cases compared to new ones.
4. **(Elsayed and Elrhim 2020)<sup>6</sup>** investigated whether the number of cases and deaths due to COVID-19 have any effect on the stock market in Egypt by considering 17 sectors in the Egyptian Stock Exchange. The data is taken from 1<sup>st</sup> March 2020 to 10<sup>th</sup> May 2020. It is revealed from the study that the stock market is more sensitive towards the cumulative deaths compared to daily deaths due to COVID-19, as well as new cases compared to cumulative cases.

By comparing with the literature above, it is important to take note that the current study will focus on the **effects of the number of COVID-19 cases on the mobility and the e-commerce industry in Asia by using certain stock markets as reference**. We will also investigate the **unemployment & spending habits in Asia** during the pandemic.

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<sup>3</sup> Nikola M., Angela E., Emily H., Karl P., and Angel C., 2020. *Impacts of COVID-19 on Mobility*. SLOCAT [online] Available at: [https://slocat.net/wp-content/uploads/2020/05/SLOCAT\\_2020\\_COVID-19-Mobility-Analysis.pdf](https://slocat.net/wp-content/uploads/2020/05/SLOCAT_2020_COVID-19-Mobility-Analysis.pdf)

<sup>4</sup> Abdullah Elsayed & Mansour Abdelrhim, 2020. *The Effect of COVID-19 Spread on the e-commerce market: The case of the 5 largest e-commerce companies in the world*. [online] Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3621166](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3621166)

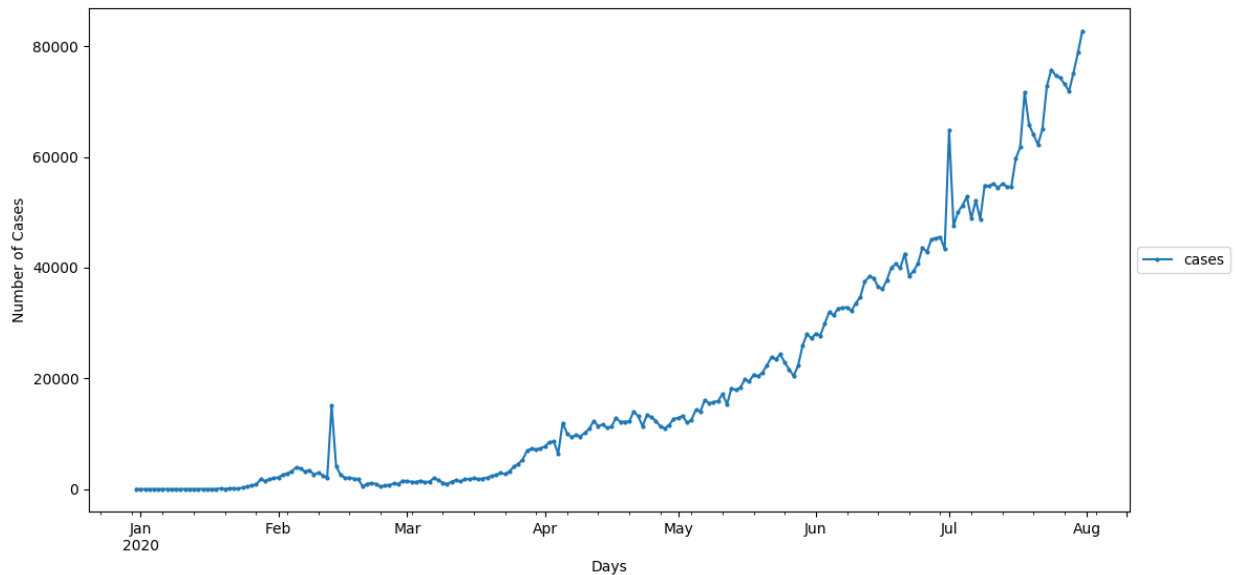
<sup>5</sup> Nader Alber, 2020. *The Effect of Coronavirus Spread on Stock Markets: The Case of the Worst 6 Countries*. [online] Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3578080](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3578080)

<sup>6</sup> Abdullah Elsayed & Mansour Abdelrhim, 2020. *The Effect Of COVID-19 Spread on Egyptian Stock Market Sectors*. [online] Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3608734](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3608734)

## 6 CASES OF COVID-19 IN ASIA

COVID-19 has impacted the lifestyle of nationwide, especially in Asia countries. Based on Figure 1.1, the number of cases of COVID-19 in Asia rises rapidly starting from the end of March until August. This would be implied that during the pre-lockdown, all the people start to move around. For example, a citizen who travelled in China and suspected to have the disease returned to his/her hometown, leading to the viruses to transmit from one region to another which results in an increase to COVID-19 cases.

Figure 1.1: COVID-19 Cases in Asia from Jan to Jul 2020





## 6.1 THE ROLE OF GOVERNMENT

From the experience of the countries such as China, South Korea, Taiwan, and Vietnam that won the battle against coronavirus, we can see that the government play a significant role in controlling this pandemic. **Many governments have announced lockdown or movement control to practice social distancing and stop the rise of COVID-19 cases.** In this section, we will discuss more on Malaysia as an example among the countries of successfully in handling and controlling this pandemic.

On 25th January 2020, the Malaysia Health Minister confirmed the first case of COVID-19 in Malaysia. Consequently, the number of cases gradually increased and accumulated to 3 digits from January to March. On 16th March 2020, Malaysia's Prime Minister Muhyiddin Yassin made an official speech and announced the Movement Control Order (MCO). This announcement symbolizes the start of the preventive measure launched by Malaysia government to fight against COVID-19. Due to the implementations of lockdown, most people experienced a switchover in their lifestyle.

### **Main positive impact of these actions**

#### *Rise of e-commerce*

The broadband usage report by the MCMC and the consumers pointed out that the MCO period sees an increase in the number of people spending more time online.<sup>7</sup> (Janio Asia, 2020) This situation gives a better opportunity for the development of e-commerce and digital marketing. Merchants can focus more on online channels to engage audiences more interactively through the internet. Most of the people shop online to buy daily essentials during the MCO period, and there is a significant change in the spending habit too.

### **Main negative impact of these actions**

#### *1. Supply chain disrupted*

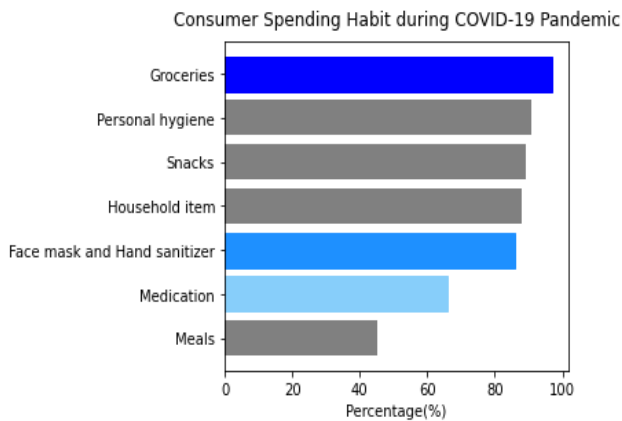
In the beginning, the supply chain disrupted because China was under the battle against COVID-19. Some of the factories have delays in production, so they fail to supply the goods to consumers. Malaysia was hit by a combo of having less demand for their goods in China due to this regulation, and they also faced a shortage of required materials.<sup>8</sup> (Janio Asia, 2020) In the mid-January, orders placed on e-commerce platforms in Malaysia were expected to delay due to the delay in shipment from China.

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<sup>7</sup> Janio Asia, 2020. *COVID-19'S IMPACT ON MALAYSIA'S ECOMMERCE MARKET*. [online] Available at: <https://janio.asia/articles/ecommerce-online-shopping-malaysia-COVID-19/> [Accessed 27 July 2020].

<sup>8</sup> Janio Asia, 2020. *COVID-19'S IMPACT ON MALAYSIA'S ECOMMERCE MARKET*. [online] Available at: <https://janio.asia/articles/ecommerce-online-shopping-malaysia-COVID-19/> [Accessed 27 July 2020].

Figure 2.1: Consumer Spending Habit during COVID-19 Pandemic



## 2. Demand related changes

During this pandemic, the demand for different goods had a drastic change, as well as for people’s spending habits. Malaysians are currently more focused on stocking up on essentials and buy more groceries. The demand for the face masks, hand sanitizers and disinfectants also have a significant rise as people need these to protect themselves from the coronavirus. Medical products such as medical gloves, vitamin C and other medical equipment also experienced the lack of demand in the earlier stage of the coronavirus outbreak.

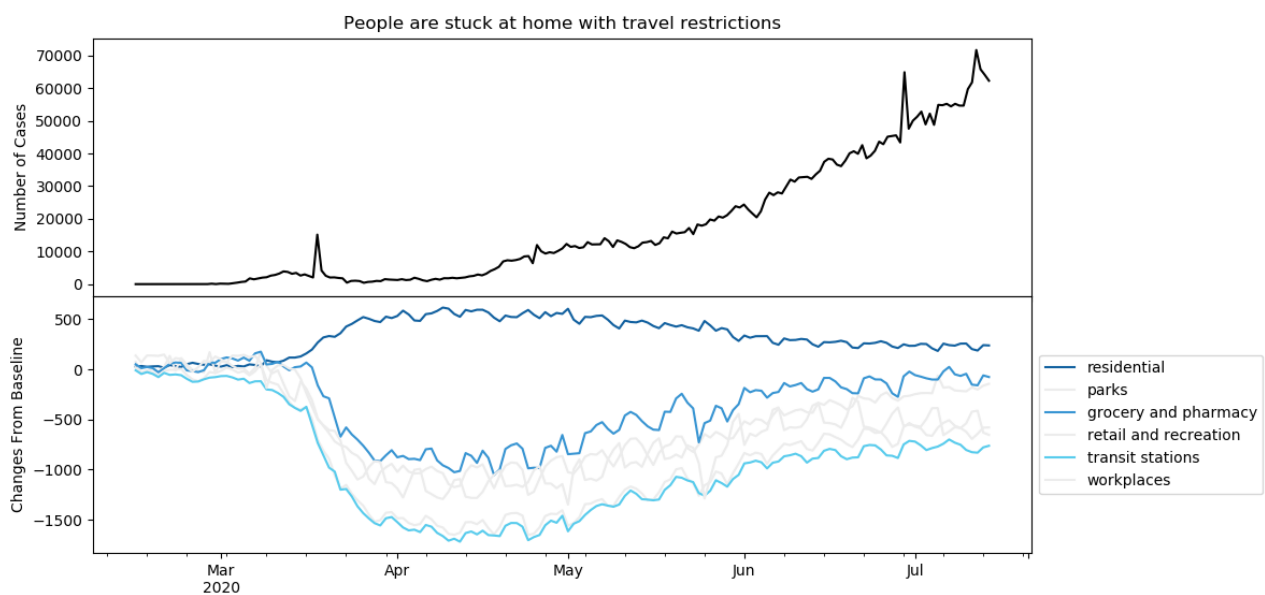
“Malaysia has been recognised as one of the most successful countries in the world in handling and controlling the COVID-19 pandemic”, said Prime Minister Tan Sri Muhyiddin Yassin.<sup>9</sup> (The Edge Market, 2020) Although Malaysia government succeeded in controlling the COVID-19 pandemic, this pandemic still brings a huge influence on our society. In brief, we still can conclude that the government plays an important role to overcome this challenge.

<sup>9</sup> The Edge Market, 2020. Malaysia recognized as one of most successful in handling Covid-19. The Edge Market, [Online] 6 Jul Available at: <https://www.theedgemarkets.com/article/malaysia-recognised-one-most-successful-handling-covid19> [Accessed 25 July 2020].

### 6.2 IMPACT OF COVID-19 ON ASIAN’S MOBILITY

The current outbreak of COVID-19 has affected global mobility in the form of various travel disruptions, restrictions, and blockages. It has changed the movement globally, especially in the Asian countries, which is the first region to implement lockdowns and standard operating procedure. According to the visualization in Figure 3.1, most of the travel destinations change during the March to June period where most Asian countries started to implement lockdown and the number of COVID-19 cases was in a situation of gradually increasing. All destinations show a decline with transit stations showing the largest negative impact follow by retail and recreation. However, the mobility to residential is the only one that shows an incline during the lockdown period. This result is mainly due to the fact that people are ‘stuck’ at home.

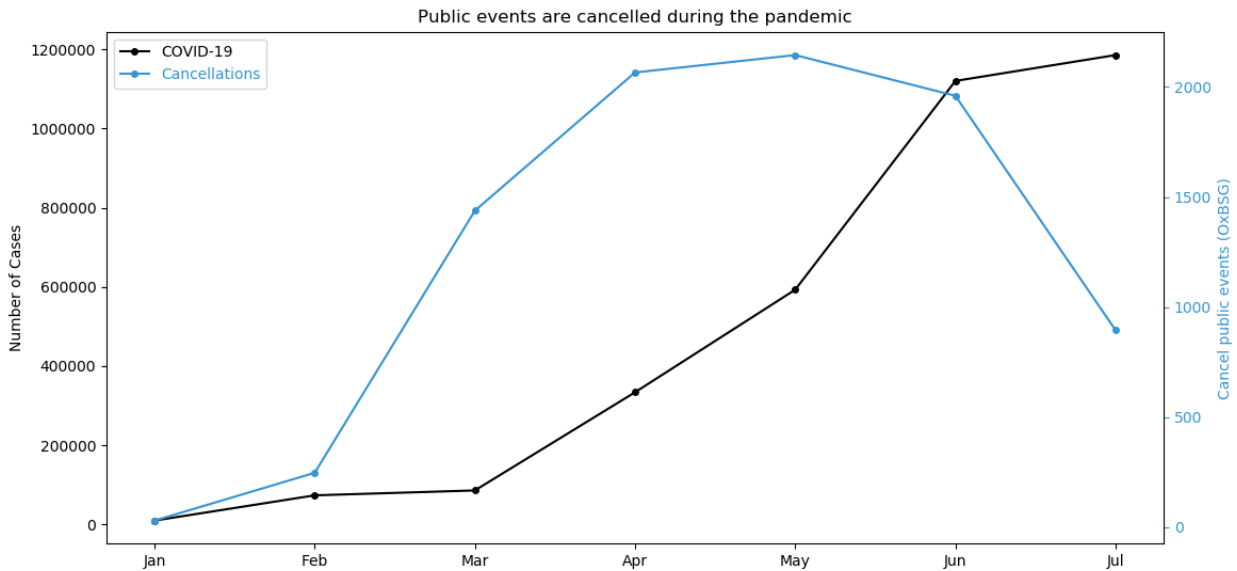
Figure 3.1: Number of Cases (top graph) vs Mobility Changes of Asian from Jan to Jul 2020



For the changes of mobility in grocery and pharmacy from baseline, which is January, there are drops in them but in a lesser percentage. Students and workers are being encouraged to study or work online during the lockdown period to prevent the spread of viruses. This also results in an increase in mobility towards residential due to travelling back to their hometown.

The most rapid drop in the destinations is transit stations as the travel restrictions are discouraging the use of public transport. Countries and cities have announced measures to restrict travel and social gatherings while emphasizing that all of us should maintain a social distance and personal hygiene to limit the spread of COVID-19.

**Figure 3.2: Number of Cases vs Monthly Cancellations of Public Events in Asia from Jan to Jul 2020**



This could be clearly visualized from Figure 3.2, there is around 2000 cancellations of public events on April 2020 which the number of COVID-19 cases were gradually increasing from the starts to end of April. An example from China which shows how the destinations to transit stations is being impacted, on trains, maximum load capacities were introduced to reduce crowding. In Guangzhou, during the first month of the outbreak, the maximum load capacity was reduced to 50%. In April this went up to 70% and since May back up to 100%.<sup>10</sup> (Institute for Transportation and Development Policy, 2020)

Although the COVID-19 pandemic had resulted in a change of mobility in Asia, but it does return to their original state when the situation was being controlled.

<sup>10</sup> Institute for Transportation and Development Policy, 2020. *How China Kept Transit Running During Covid-19*. [online] Available at: <https://www.itdp.org/2020/07/03/how-china-kept-transit-running-during-covid-19/> [Accessed 31 July 2020].

### 6.3 E-COMMERCE

The restriction in mobility is known to encourage online engagements. In fact, in Hong Kong, online engagement has increased by 8% in terms of visits (around 600 to 700) and people use their digital devices more often by 10% from February 2020 to March 2020<sup>11</sup>. (Oh, 2020)

The rise in online engagement will no doubt indirectly contribute to the rise in using e-commerce, online gaming, and other online entertainment, such as streaming websites. For e-commerce in Malaysia, it has revealed in a survey that 43% of the respondents were ready to spend more on online purchases during the first three phases of MCO<sup>12</sup>. (UOW Malaysia KDU School of Business, 2020) This survey further supported by the fact that people are willing to pay more for the value and convenience of online shopping compared to facing several procedures when entering a shopping area, such as temperature check, name registration, wearing face masks.

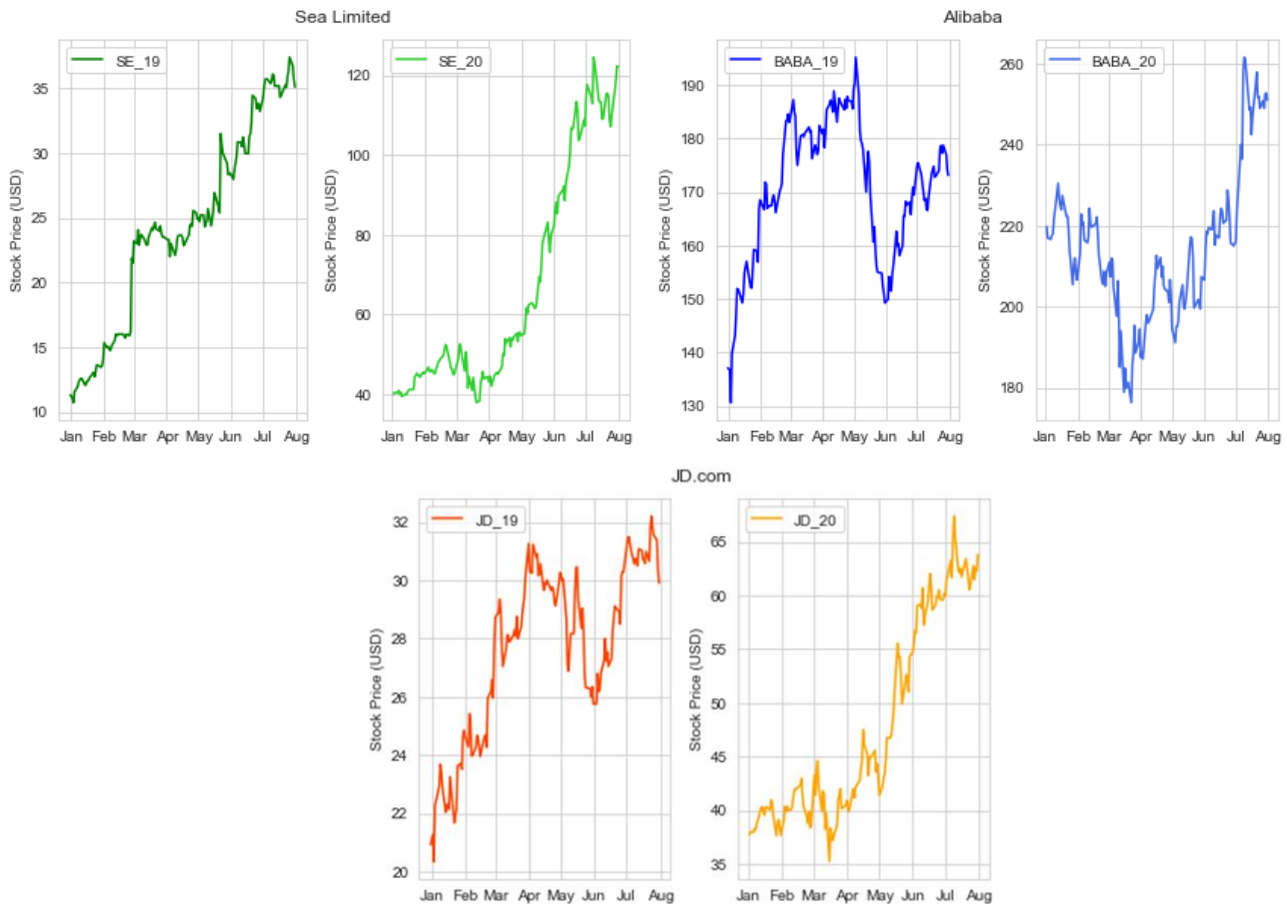
We use the stock price of companies which have some part in online engagement, especially e-commerce. Using Sea Limited, Alibaba and JD.com as references, we **investigate whether there is any correlation between the stock prices of such companies with the number of COVID-19 cases** from January 2020 to July 2020. We also analysed the stock prices in 2019 for the same period as a **control variable**.

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<sup>11</sup>Oh, 2020. *How COVID-19 has continued to impact Digital Media Consumption in APAC - March 2020*. [online] Available at: <https://www.comscore.com/Insights/Blog/How-COVID-19-has-continued-to-impact-Digital-Media-Consumption-in-APAC-March-2020> [Accessed 28 July 2020].

<sup>12</sup> UOW Malaysia KDU School of Business, 2020. *Online Shopping Is the 'New Normal' in Malaysia*. [online] Available at: <https://www.uowmkdu.edu.my/news/online-shopping-is-the-new-normal-in-malaysia/> [Accessed 28 July 2020].

Figure 4.1: Stock Price from Jan to Jul 2019 vs 2020



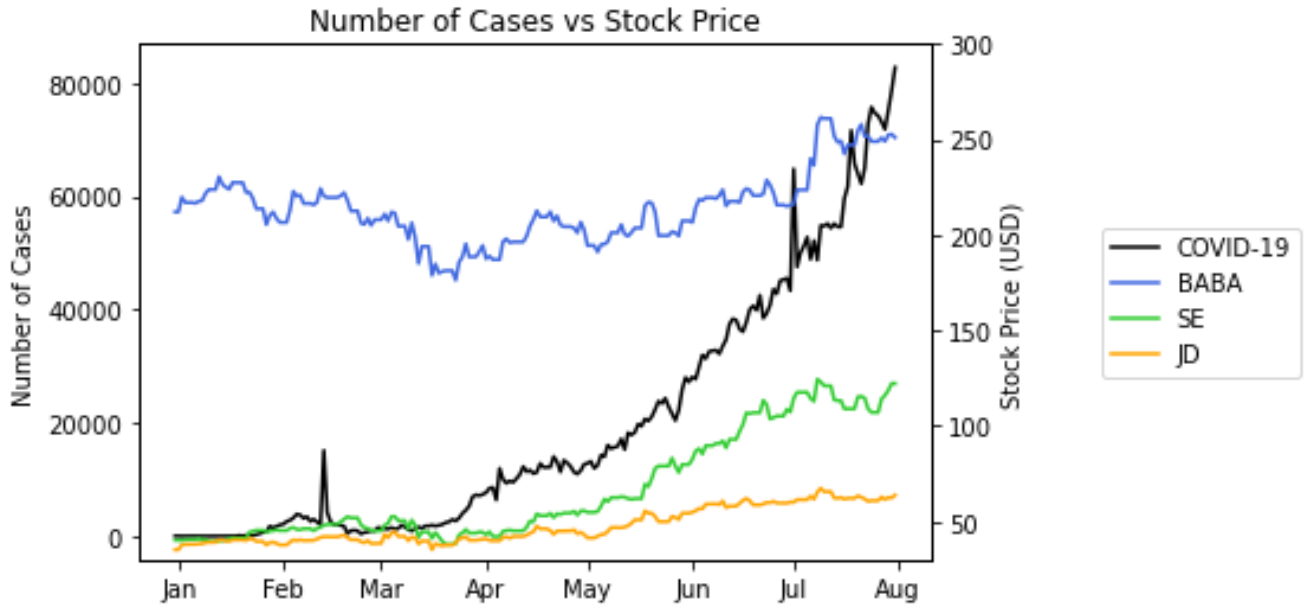
From Figure 4.1, we can see that overall, the stock prices have similar growth in 2020 when compared to 2019 with slight differences at a certain point of time.

Among the reasons that brought out the difference would be the outbreak of COVID-19. It can be seen in March 2020 that there is a drop in stock price. It is because there is a global stock market crash that happened on 9 March 2020 due to the uncertainty in the economy because of the pandemic as well as the oil price war between Russia and Saudi Arabia. This crash is also known as ‘Black Monday’. The crash did not stop at 9 March 2020 as stock prices drop again on 12 March 2020 (Black Thursday), followed by 16 March 2020. The drop in March can be further explained that this is the period where most nations in Asia began to implement lockdowns to prevent further transmission of the coronavirus, which affects the economies and supply chain.

Besides that, we can see that Alibaba experienced an inverted trend for 2019 and 2020. It is shown that there is an upside trend from January to May in 2019 and a drop after that. Conversely, the 2020 visualization shows a downside trend from January to April due to the outbreak of COVID-19 pandemic.

Regardless of the drops, the stock price rises after April as e-commerce started to become a global trend when people need to stay at home. The restricted mobility became one of the factors that drive the growth of the e-commerce industry during the pandemic.

Figure 4.2: Number of Cases vs Stock Price from Jan to Jul 2020



From the analysis of daily stock price with the respective number of cases, we see a general trend of positive correlation. We decided to further investigate this using Pearson’s correlation.

Generally, the hypotheses would be:

**H<sub>0</sub>:** There is no correlation between the stock price of Sea Limited & the number of COVID-19 cases

**H<sub>0</sub>:** There is no correlation between the stock price of Alibaba & the number of COVID-19 cases

**H<sub>0</sub>:** There is no correlation between the stock price of JD.com & the number of COVID-19 cases

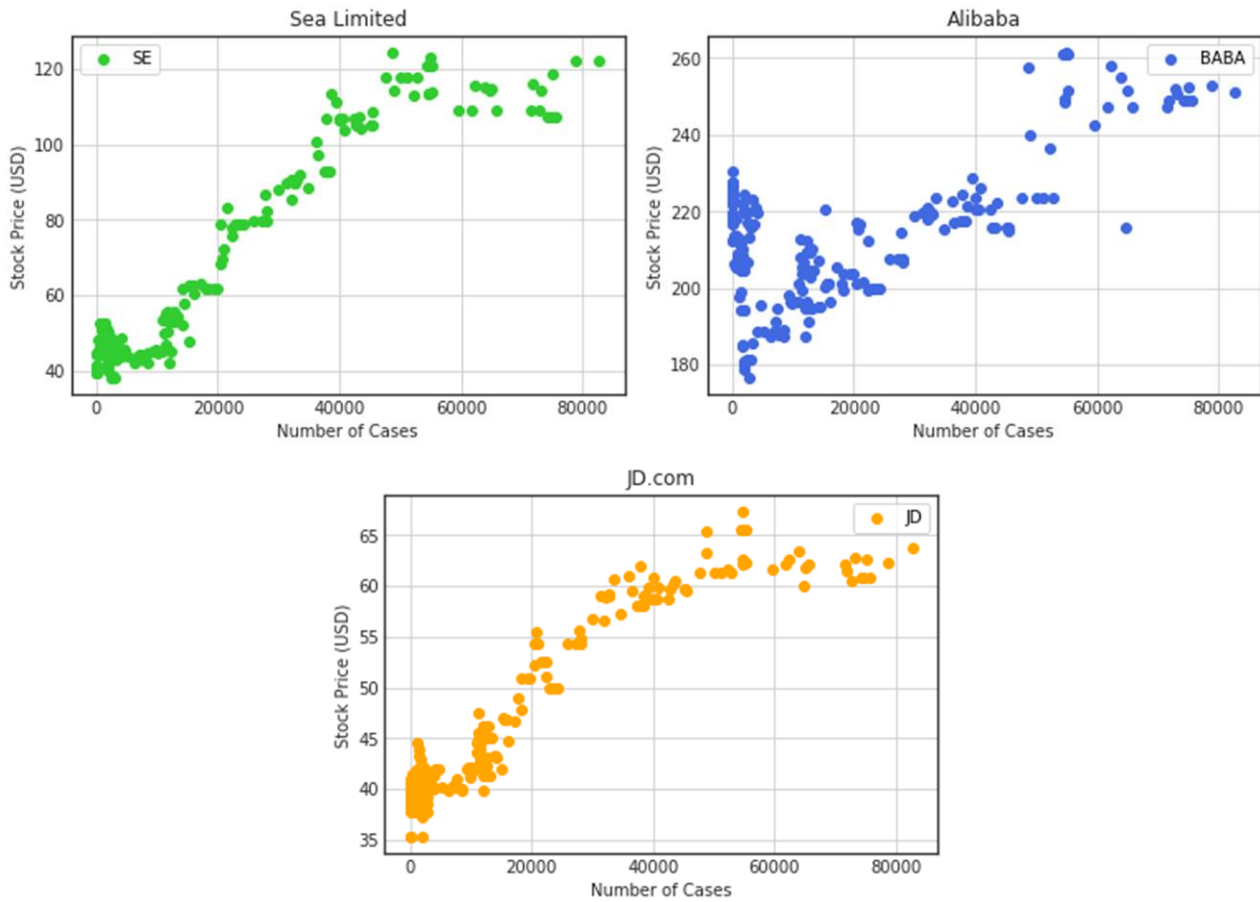
**Pearson’s Correlation**

Stock	Correlation	Is p-value > 0.05?
Sea Limited	0.953	No
Alibaba	0.684	No
JD.com	0.935	No

The above table is derived from calculation of the Pearson’s correlation between the stock prices and the number of COVID-19 cases as well as its p-value.

The Pearson’s correlation being more than 0.6 shows a strong positive correlation between the stock prices and the number of cases. This is supported by the fact that all the p-values are less than the significance level of 0.05. This can also be visualised in Figure 4.3.

Figure 4.3: Scatter Plot of Stock Prices against Number of Cases



From the correlation, we can say that when the number of cases increases, the stock prices are likely to follow through the increases. However, this is only in an overall sense. In fact, it is not to say that the stock prices will definitely increase if the number of cases is high and vice versa. The reasons behind this will be explained below.



### 6.3.1 Sea Limited

Sea Limited is a digital services company which focuses on digital entertainment (Garena), e-commerce (Shopee) and digital financial services (SeaMoney). We chose Sea Limited because its growth has been significant in South-East Asia (SEA), especially in e-commerce when Shopee was founded since 2015.

Due to this COVID-19 pandemic, we expect steady growth in Shopee as online shopping has become a convenient alternative to shopping for daily necessities. Therefore, we expect steady growth for Sea Limited during the pandemic.

Figure 5.1: Number of Cases vs Sea Limited Stock Price from Jan to Jul 2020

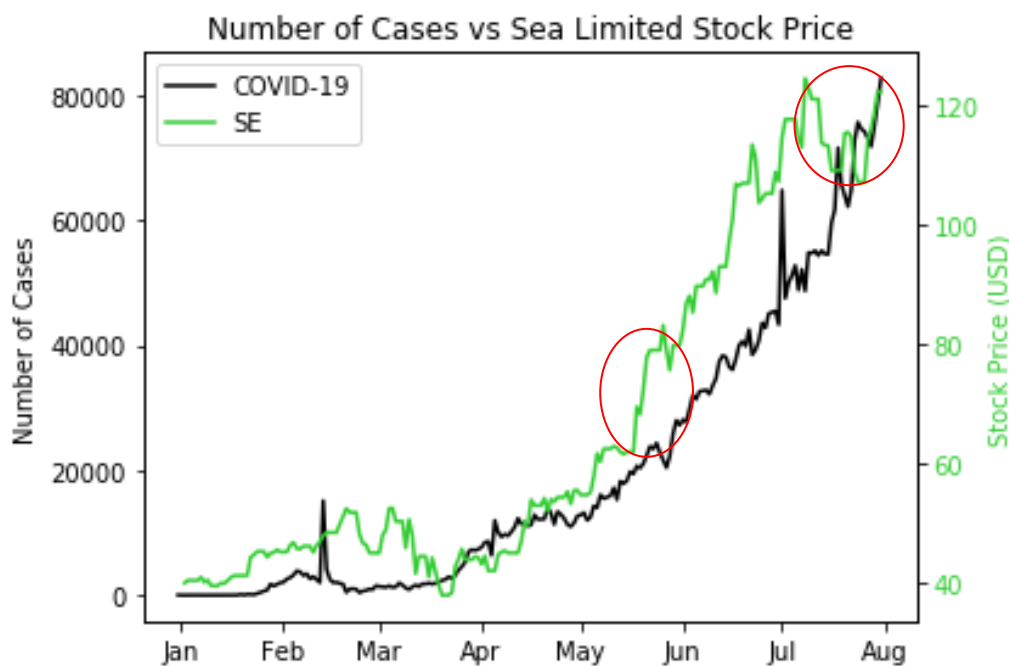
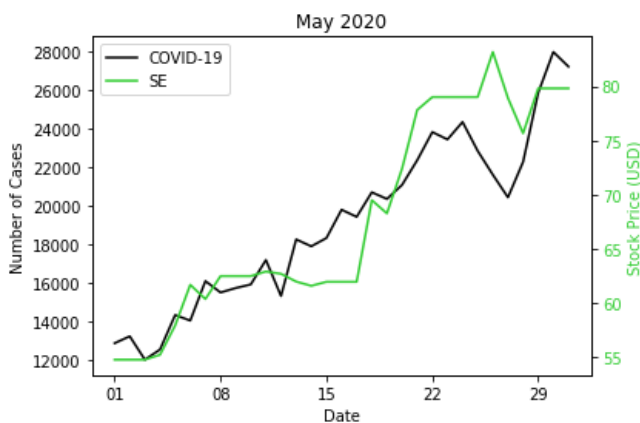


Figure 5.2: Number of Cases vs Sea Limited Stock Price in May 2020

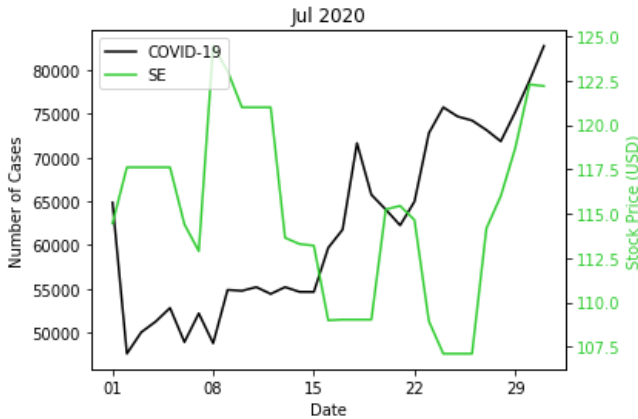


From Figure 5.2, we can see that May is one of the periods where there is a growth for Sea Limited's stock price. This growth could be possibly due to the investors' confidence in the growth of e-commerce handled by Sea Limited, where it is stated by Shopee that consumers spend an average of 20% more time on the online app in a week. This solidifies the reliance on e-commerce to access their daily necessities as well as entertainment.<sup>13</sup> (The Star, 2020) It is not surprising to see the rise since even governments like Malaysia

<sup>13</sup> The Star, 2020. *Shopee: New normal in world of retailing here to stay*, The Star Online, [Online] 19 May. Available at: <https://www.thestar.com.my/business/business-news/2020/05/19/shopee-new-normal-in-world-of-retailing-here-to-stay> [Accessed 7 August 2020].

encourage their citizens to do online shopping rather than physical shopping to reduce the risk of transmitting the coronavirus within the community. The rise in the stock price is also boosted by the still growing sales of one of Garena’s mobile app, Free Fire, which is one of the main drivers to their overall sales.

**Figure 5.3: Number of Cases vs Sea Limited Stock Price in July 2020**



The drop in July from Figure 5.3 could be due to some investors feeling that Sea Limited’s stock is being overvalued due to riding on the waves of the growing e-commerce during the pandemic. Not only that, but it is also reported on 23 July 2020 that 1.42 million Americans filed for unemployment on the week before which is a significant increment from 1.31 million on the previous week. This led to the US investors claiming their profits as they anticipated the ‘W-shaped’ unemployment curve after the reported news. (Bowman, 2020)<sup>14</sup>

<sup>14</sup> Bowman, 2020. *Why Sea Limited Stock Was Falling Today*. [online] Available at: <https://www.fool.com/investing/2020/07/23/why-sea-limited-stock-was-falling-today.aspx> [Accessed 30 July 2020].

6.3.2 Alibaba

Alibaba Group was established in 1999 from Hangzhou, China. It has grown into a global leader in the online and mobile commerce, making it the world’s largest retailer and e-commerce company. Alibaba hosts leading wholesale and retail online marketplaces such as the biggest B2B (Alibaba.com), C2C (Taobao), and B2C (Tmall) in the world.

We choose Alibaba as one of the companies to analyse because the growth of Alibaba stock price represents the confidence of the shareholders towards the e-commerce sector. The growth of the stock price shows that the Alibaba Group has a higher value during this pandemic. In Figure 6.1, we can see an overall relationship of number of COVID-19 cases and Alibaba stock price.

Figure 6.1: Number of Cases vs Alibaba Stock Price from Jan to Jul 2020

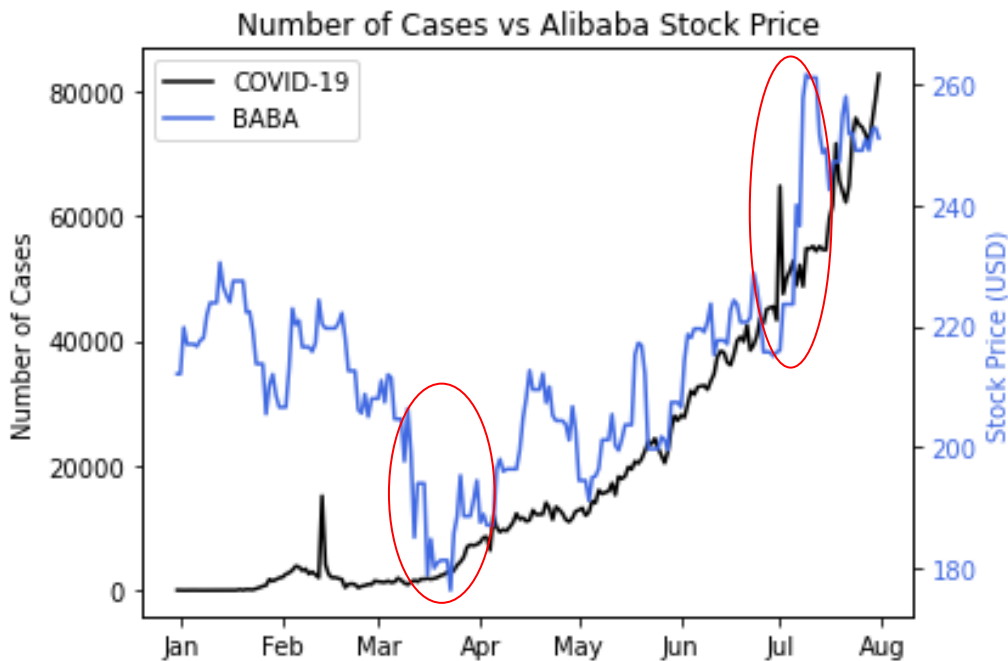
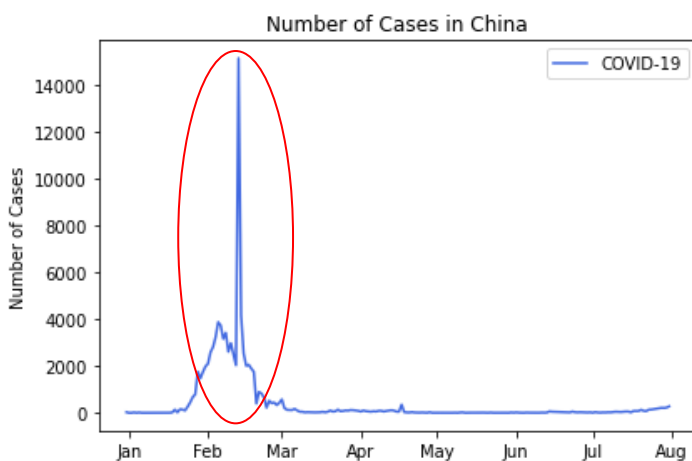
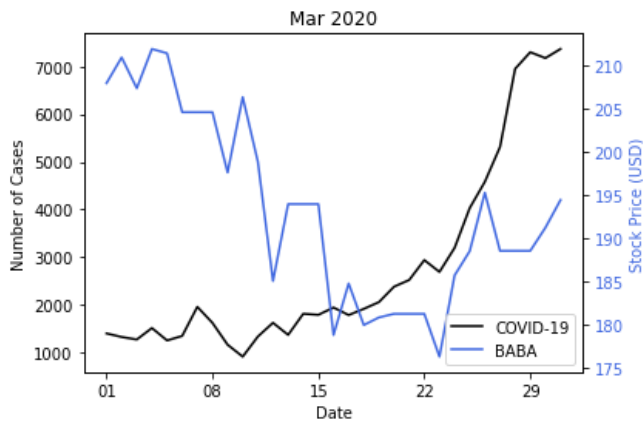


Figure 6.2: Number of Cases in China



From Figure 6.2, we can see that there is a tremendous amount of rising in cases between February and March, as the coronavirus has spread to all provinces of China by 29 January 2020. To stop the spreading of this deadly virus, China has put several cities on lockdown, starting from Wuhan on 23 January 2020. Normal business operations and economics disrupted because there are restrictions in businesses and factories. They do not have enough workforce to operate as usual, so this impacted the production of goods.

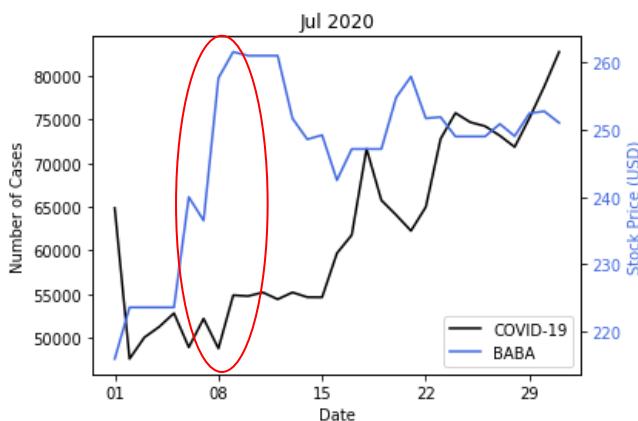
**Figure 6.3: Number of Cases vs Alibaba Stock Price in March 2020**



Companies like Alibaba faced delays in delivering packages to customers.<sup>15</sup> (Ruchi Gupta, 2020) It explains why Alibaba has caught in the mess due to the nature of its business. This mess happens especially Alibaba is in China, the epidemic centre of the coronavirus outbreak. As a result, the stock has faced tremendous pressure and has a significant drop in March.<sup>16</sup> (Ruchi Gupta, 2020) From Figure 6.3, the stock price fell to the lowest point in this month on 23 March 2020.

Starting from May, Alibaba stock price rises gradually until July:

**Figure 6.4: Number of Cases vs Alibaba Stock Price in July 2020**



A front-page editorial in the state-owned China Securities Journal said that “a healthy bull market”<sup>17</sup> (CNBC, 2020) was crucial for the country’s recovery from the COVID-19. This news has caused the Chinese stock market jumped after July 6 as it seemed to drive retail investors to buy Chinese Stocks and it lifted Alibaba by 7.3%. The tech giant followed that up with another 7% gain on July 8. Alibaba is well-positioned to thrive during this epidemic when people stay at home and start using their online shopping and cloud service. Investors get a fast-growing cloud

computing leader along with the enormous benefit from the e-commerce sector. During the company's last earnings call, CEO Daniel Zhang said, "Our scale has now reached one-sixth of China's total retail sales, which was about \$6 trillion last year, and we believe there is still a tremendous potential of growth."<sup>18</sup>

<sup>15</sup> Ruchi Gupta, 2020. *Alibaba Stock Falls, Should Investors Jump on It?* [online] Available at: <https://marketrealist.com/2020/03/alibaba-stock-falls-should-investors-jump-on-it/> [Accessed 4 August 2020].

<sup>16</sup> Ruchi Gupta, 2020. *Alibaba Stock Falls, Should Investors Jump on It?* [online] Available at: <https://marketrealist.com/2020/03/alibaba-stock-falls-should-investors-jump-on-it/> [Accessed 4 August 2020].

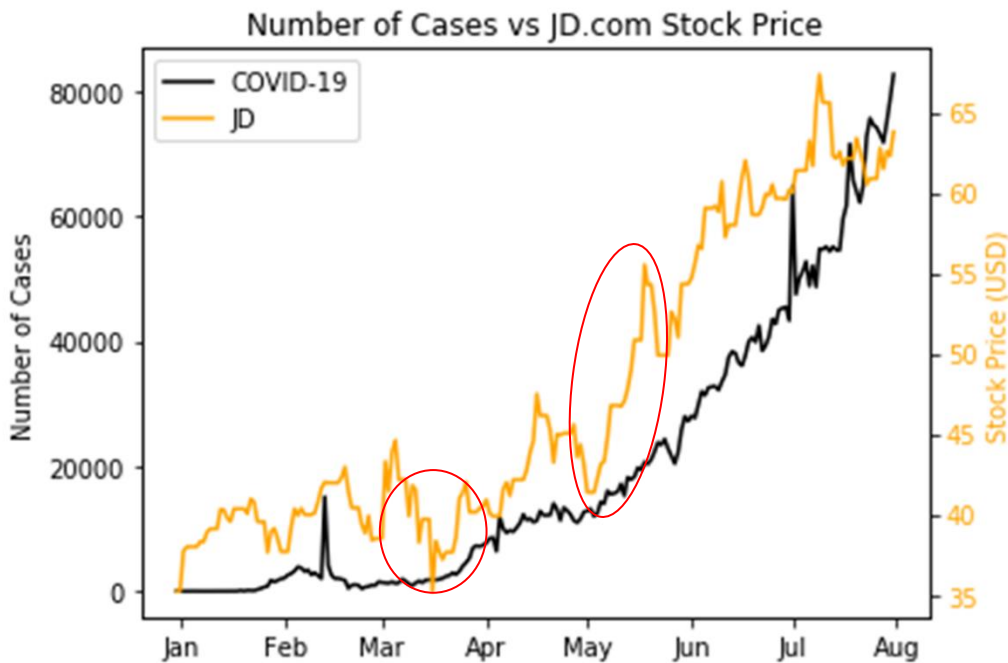
<sup>17</sup> CNBC, 2020. *China told citizens to buy stocks, boosting market – ‘We have the Fed..China has its state media’.* [online] Available at: <https://www.cnbc.com/2020/07/06/china-stocks-lead-rally-after-beijing-tells-people-to-buy—we-have-the-fed-to-juice-bull-markets-china-has-its-state-media.html> [Accessed 8 August 2020]

<sup>18</sup> John Ballard, 2020. *3 Top Cloud Computing Stocks to Buy Right Now* [online] Available at: <https://www.fool.com/investing/2020/07/09/3-top-cloud-computing-stocks-to-buy-right-now.aspx> [Accessed 8 August 2020]

6.3.3 JD.com

JD.com is China’s largest online retailer, its biggest overall retailer as well as the country’s biggest Internet company by revenue. The company is a member of the Fortune Global 500. JD.com sets the standard for online shopping through its commitment to quality, authenticity, and its vast product offering, covering everything from fresh food and apparel to electronics and cosmetics. Its unrivalled nationwide fulfilment network covers 99% of China’s population and provides standard same- and next-day delivery - a level of service and speed that is unmatched globally.<sup>19</sup> (JD.com, Inc., 2020)

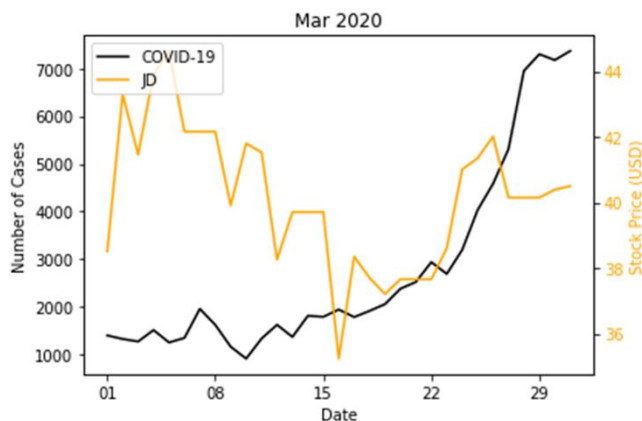
Figure 7.1: Number of Cases vs JD.com Stock Price from Jan to Jul 2020



During the COVID-19, based on Figure 7.1, around March 2020 (Figure 7.2) there is a decrease in stock price due to the drop of demand for electronics and home appliances during the shutdown periods in China. However, the stock price of JD.com increases around May 2020 (Figure 7.3) as the number of COVID-19 cases increases because JD.com was the only e-commerce that offers delivery during the harsh time.

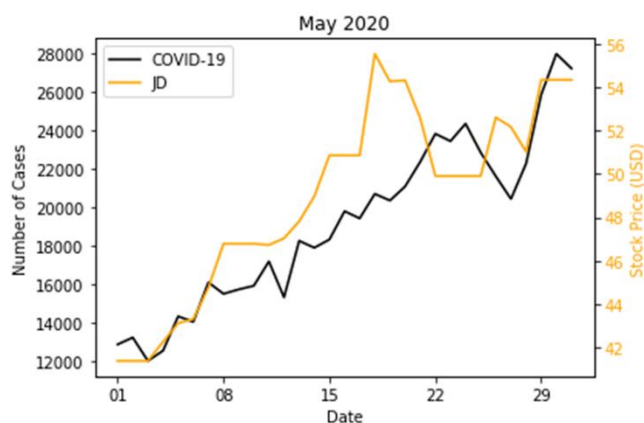
<sup>19</sup> Corporate.jd.com, 2020. JD.Com, Inc.. [online] Available at: <https://corporate.jd.com/> [Accessed 1 August 2020].

Figure 7.2: Number of Cases vs JD.com Stock Price in March 2020



JD attracts plenty of Chinese buyers who look for electronic merchandise and home appliances. It also has over 10,000 retail stores for electronic appliances. The smartphone sales in China have dropped due to the public life in China has largely shut down in response to the COVID-19 pandemic and smartphone manufacturers also seem to delay their product launches in to respond to the crisis. This leads to a huge drop in spending power of the customers and causes a decrease in the stock prices of JD in that particular China’s shutdown period.

Figure 7.3: Number of Cases vs JD.com Stock Price in May 2020



When COVID-19 broke out, JD decided to stay consistent by keeping their business operated and they always guarantee their products are in stock. They also have a same-day and next-day delivery promises during COVID-19. As such, JD’s nationwide fulfilment rate during the epidemic time remained at over 95%. Through these services in the tough time, JD’s stock price rises because it brings people to trust when it deals with each order that makes the company a real partner of its customers, partners, and society.

### Conclusion

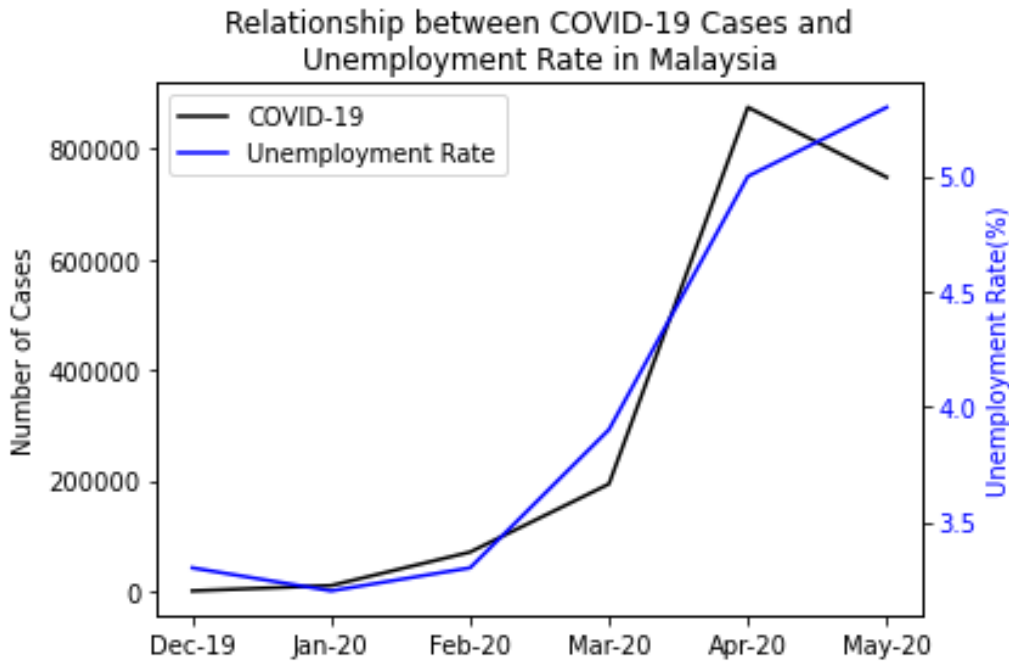
Based on the analysis regarding the comparison between stock price against the number of COVID-19 cases and the comparison of the stock price in 2019 with 2020, we can say the overall growth is similar. However, there are certainly significant differences due to the presence of the COVID-19 pandemic.

With regards to the correlation between the stock price and the number of cases, we decided to **reject** the hypotheses:  $H_1$ ,  $H_2$  and  $H_3$ . We can also conclude that **there is a positive correlation between stock prices and the number of COVID-19 cases.**

However, we would like to clarify that while there is a positive correlation between the stock price and the number of cases, **it does not mean the increasing number of cases will directly increase the stock prices.** Other factors such as investors’ mindset, supply chain and unemployment rate need to be considered when analysing the relationship between them.

6.4 SPENDING HABITS

Figure 8.1: Relationship between COVID-19 Cases and Unemployment Rate in Malaysia from Jan to Jul 2020



**Pearson’s Correlation**

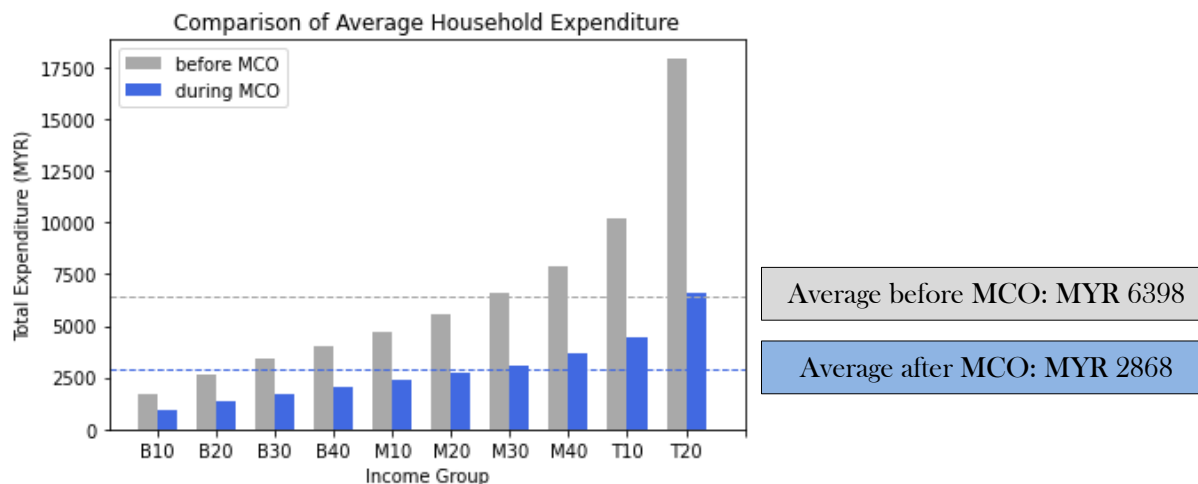
**H<sub>1</sub>:** There is no correlation between the unemployment rate and the number of COVID-19 cases.

Correlation	Is p-value > 0.05?
0.972	No

The Pearson’s Correlation being more than 0.9 shows a strong positive correlation between the unemployment and the COVID-19 cases. This is supported by the fact that the p-value is less than the significance level of 0.05. This can also be visualised in Figure 8.1. This leads us to the conclusion that we can reject our hypothesis H<sub>1</sub> and there is a positive correlation between unemployment rate and the number of COVID-19 cases.

**The main reason for the rise of the unemployment rate is due to the Movement Control Order (MCO) implemented during the outbreak of coronavirus.** All business operations suspended. This situation directly leads to the reduction of revenues in companies. When there is a reduction in revenue, most of the companies will choose to reduce their cost. Therefore, *they will cut down the number of their workers, or cut down the payment of salaries.* As a result, more and more people lose their jobs during this pandemic.

Figure 8.2: Total expenditure before and during MCO<sup>20</sup>



When the unemployment rate increases, overall spending power drops, as shown in Figure 8.2, a survey by the Department of Statistics Malaysia. This survey found that the average monthly household expenditure has fallen 55% from MYR 6,398 to MYR 2,868. It is because the lockdown has created a lot of uncertainty in Malaysians’ job securities and incomes. People tend to save money and spend less due to the uncertainties, so their spending habit has changed a lot.

People in Asia started to change the way they spend their money during the pandemic due to unemployment and travel restrictions. They are spending more on living necessities and are less likely to splurge on unnecessary items compared to pre-COVID. In the beginning stage of the COVID-19 spread, people started with panic buying as they have the anxiety that there would not be sufficient resources for them to get through the lockdowns as supported by a Kantar research, where 1 in 3 Asians has this worry. (dataSpring Editors, 2020)<sup>21</sup> However, this attitude has settled down after some time, supported by the reassurance by the countries’ leaders like Malaysia’s Prime Minister, Tan Sri Muhyiddin Yassin.

Besides that, people are more inclined to shop for groceries online rather than going to physical stores for convenience and safety. Although people can shop most of the things, they usually would pre-COVID, they still control their spending as there is the risk of unemployment due to the unstable economy during the pandemic.

It is reported that people are more prone to buying items such as healthcare supplements, sanitary products, health protection products and groceries. It is known that in Malaysia, sales of hand sanitizers grew

<sup>20</sup> Royce Tan, 2020. Consumer spending to slowly normalise post-MCO. The Star Online, [Online] 9 Apr. Available at: <https://www.thestar.com.my/business/business-news/2020/04/09/consumer-spending-to-slowly-normalise-post-mco> [Accessed 4 August 2020].

<sup>21</sup> dataSpring, 2020. 4 Major Effects of the COVID-19 Pandemic on Asian Consumers. [online] Available at: <https://www.d8aspring.com/eye-on-asia/4-major-effects-of-the-covid-19-pandemic-on-asian-consumers> [Accessed 3 August 2020].



by more than 800% (worth RM1 million or USD 237,176) of its weekly average by 26th of January 2020<sup>22</sup>. (Nielsen Spectra, 2020)

Due to a higher concern for healthcare and cleanliness, it is undeniable that the purchasing behaviour has changed due to the pandemic. Unsurprisingly, medical gloves also made it to one of the products people tend to buy and it is not just for daily usage, but the demand has been tremendously high within the medical industry all around the world, including Asia. We can see this obvious trend using Top Glove’s stock price as a small representation for the demand in medical gloves.

Figure 8.3: Number of Cases vs Top Glove Stock Price from Jan to Jul 2020

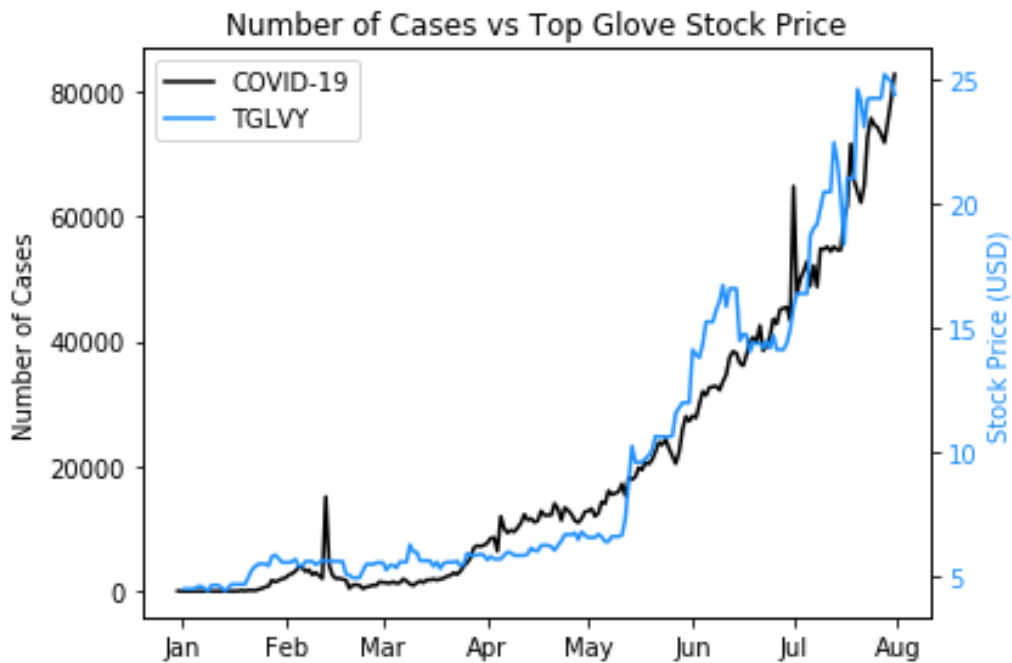
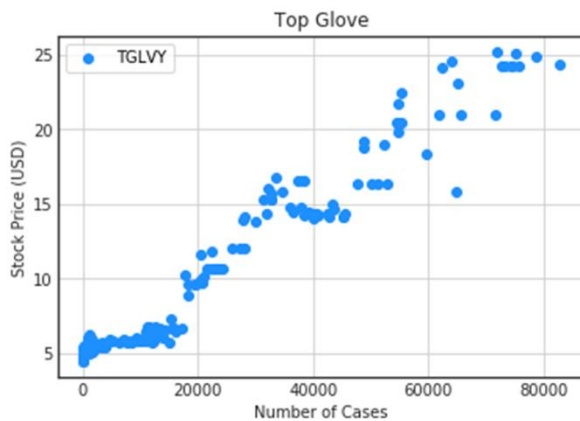


Figure 8.4: Scatter Plot of Top Glove against Number of Cases

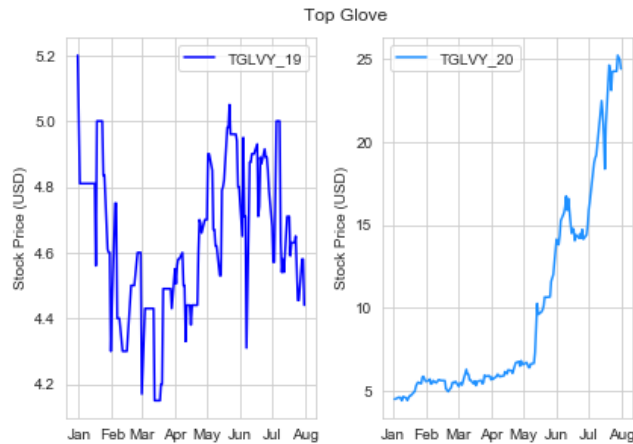


Correlation	Is p-value > 0.05?
<b>0.976</b>	No

The Pearson’s correlation is more than 0.9, supported by the fact that p-value is less than 0.5. Therefore, there is a strong positive correlation between Top Glove’s stock price and the number of COVID-19 cases.

<sup>22</sup> Nielsen, 2020. *Nielsen Investigation: “Pandemic Pantries” Pressure Supply Chain Amid COVID-19 Fears*. [online] Available at: <https://www.nielsen.com/us/en/insights/article/2020/nielsen-investigation-pandemic-pantries-pressure-supply-chain-amidst-covid-19-fears/> [Accessed 3 August 2020].

Figure 8.5: Top Glove Stock Price from Jan to Jul 2019 vs 2020



Top Glove’s stock price in 2019 and 2020 from January to July is significantly different as we see varying stock prices in 2019 and a somewhat increasing curve in 2020. In 2019, the price is changing around the same range of about USD4 to USD 5.2 but the same stock grew about 500% in 2020.

This is unsurprising as the demand for gloves in 2019 is not particularly high or low. This is because people do not normally use rubber gloves in their daily lives, as compared to the current pandemic, where there is more wariness for cleanliness. At the same time, the demand will not be significantly low as rubber gloves are crucial in the health and research industry.

Overall, we can see that Asian people’s spending habits definitely change in various aspects, including the obvious increase in gloves purchases during the pandemic.

## 7 CONCLUSION

Throughout this article, we discussed about the changes in Asian people's lifestyle due to the COVID-19 pandemic that burst out in December 2019. When this outbreak spread through the continent, the whole world started to panic. Under this situation, every country's government plays a crucial role in controlling and handling this pandemic. Therefore, we start our discussion with the government role as a background and use the Malaysia government as an example. This is because in this outbreak, the Malaysia government has done great work in controlling the rise of cases and implementing several acts to help on economic recovery after that. Among the countries that reported COVID-19 cases, Malaysia has been recognised as one of the most successful countries in handling this epidemic. Although the economy in Malaysia is affected during the Movement Control Order (MCO), but the spread of coronavirus was successfully controlled. The rising of cases starts retarding, allowing the doctors and nurses to have more time to cure the active COVID-19 patients. Malaysia has managed to control the spread of coronavirus and so do most of the countries in Asia due to the intervention of government. We conclude that government plays a dominant role in controlling this pandemic.

Next, we draw the discussion to the mobility of Asian people during this epidemic. Most of the reports and data show that the mobility of people dropped drastically as lockdown and movement control implemented to prevent the spread of coronavirus. As coronavirus can easily transmit through the air, people need to practice social distancing. People's mobility is restricted, and large-scale events are strictly prohibited. Many events are cancelled to keep social distancing during this pandemic.

Due to the outbreak of novel coronavirus, people forced to stay at home, work, or study at home. Even so, people still need daily essentials to survive. Hence, online shopping is the best choice to buy essentials and other things. Online shopping has become a trend during this COVID-19 pandemic. To investigate this trend, we choose three leading companies in the e-commerce sector which are Sea Limited, Alibaba and JD.com. After that, our hypothesis testing using Pearson's Correlation led us to the conclusion that there is a strong positive correlation (more than 0.6) between the stock prices and the number of cases. In this digitalization era, e-commerce is growing fast. Plus, the lockdown implemented during COVID-19 pandemic has become a visible hand that pushes the demand and boosts the sales of online shopping. In any case, e-commerce has significant growth during this pandemic.

Thousands of people lost their job during this COVID-19 pandemic. The world's economy has trenched, so companies start to cut down employees to survive in this harsh situation. In Malaysia, the unemployment rate has reached the highest in the past 30 years, which is 5.3% in May. However, further increases in the unemployment rate to 6% and 7% can be expected, and we need more time to return to pre-COVID level.

The rise of the unemployment rate leads to the changing in spending habit. Although people started spending money on online shopping, their spending habit has changed a lot as many uncertainties were created under this situation. Researches and surveys show that instead of luxuries item, people started stocking daily essentials such as canned food and tissue rolls. Also, the demand for the face mask, gloves, hand sanitizers and disinfectants have risen tremendously. Taking the stock price of Top Glove to represent the demand for medical gloves, we found out that it has a Pearson correlation as high as 0.976 with the COVID-19 cases. This

correlation shows us that the glove manufacturing company has a higher value during this pandemic. In brief, Asian people's spending habit has a massive changed due to this outbreak.

Coronavirus is our future. Alanna Shaikh, a specialist in global health once said, <sup>23</sup>“As long as we keep making our remote places less remote, the outbreaks are going to keep coming.” COVID-19 is not the first coronavirus no and will probably not be the last. Viruses are mutating; if people keep exploiting rural areas and make them remote places, other new or unknown diseases will spread again in the future. This is because we do not know how to track new viruses that can be carried by any wild animals.

COVID-19 pandemic has created a new norm in the society that impacts people's lifestyle. Although we are discussing and investigating Asia countries, we clearly believe that this outbreak has changed people's lifestyle globally. Bill Gates gave a TED talk in 2015 and said, <sup>24</sup>“If anything kills over 10 million people in the next few decades, it is most likely to be a highly infectious virus, rather than a war.” It was six years from now, and human are still not ready yet. If we are prepared, China will not need to build new buildings to treat their patients. Even advanced countries like China and America were not prepared to control the outbreak in time. Then how about the poor countries, such as Chad that has 3.5 doctors for 100,000 people, or the Democratic Republic of Congo that just released its last Ebola patient from treatment?

We, as humans, need to start thinking about these questions. Apart from this, countries and governments need to prepare themselves with for the next outbreak. Useful solutions are always provided, such as improving healthcare, investing in infrastructure and disease surveillance, building health systems, strengthening our supply chain and most importantly, better education. Our future generation needs to be ready. In fact, the rise in stock price will not last as long as the pandemic and the e-commerce companies need to put in the extra effort to boost their growth rather than just riding the wave that the pandemic brings. Overall, people need to be agile and cooperate to fight not only against this pandemic but also any other outbreak in the future.

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<sup>23</sup> Alanna Shaikh, 2020. *Coronavirus Is Our Future TED x SMU*. [online] Available at: <https://www.youtube.com/watch?v=Fqw-9yMV0sI> [Accessed 6 August 2020].

<sup>24</sup> Bill Gates, 2015. *The next outbreak? We are not ready*. [online] Available at: [https://www.youtube.com/watch?v=6Af6b\\_wyiwI](https://www.youtube.com/watch?v=6Af6b_wyiwI) [Accessed 6 August 2020].

## 8 APPENDICES

### Appendix 1: Introduction of COVID-19

1. According to the World Health Organization (WHO), Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered strain of coronavirus, a type of virus known to cause respiratory infections in humans. This new strain was unknown before December 2019, when an outbreak of a pneumonia of unidentified cause emerged in Wuhan, China.<sup>25</sup> (www.who.int, n.d.)
2. The transmission of COVID-19 is by direct person-to-person transmission. It is thought to occur through close-range contact, mainly via respiratory droplets; virus released in the respiratory secretions when a person with infection coughs, sneezes, or talks can infect another person if it makes direct contact with the mucous membranes. Infection might also occur if a person's hands are contaminated by droplets or by touching contaminated surfaces and then they touch their eyes, nose, or mouth. Droplets typically do not travel more than six feet (about two meters).<sup>26</sup> (www.uptodate.com, n.d.)

### Appendix 2: Preventive Measures implement by Malaysia Government

#### 1. Movement Control Order (MCO)

Seven phases of Control Order were announced:

Phase	Control Order	Start Date	End Date
1	Movement Control Order (MCO)	18 <sup>th</sup> March 2020	31 <sup>st</sup> March 2020
2	Movement Control Order (MCO)	01 <sup>st</sup> April 2020	14 <sup>th</sup> April 2020
3	Movement Control Order (MCO)	15 <sup>th</sup> April 2020	28 <sup>th</sup> April 2020
4	Movement Control Order (MCO)	29 <sup>th</sup> April 2020	03 <sup>rd</sup> May 2020
5	Conditional Movement Control Order (CMCO)	04 <sup>th</sup> May 2020	11 <sup>th</sup> May 2020
6	Conditional Movement Control Order (CMCO)	12 <sup>th</sup> May 2020	9 <sup>th</sup> June 2020
7	Recovery Movement Control Order (RMCO)	10 <sup>th</sup> June 2020	31 <sup>st</sup> August 2020

These are the main restrictions of three of the Movement Control Order (MCO):

Main Restrictions			
	MCO	CMCO	RMCO
1	General prohibition of mass movements and gatherings across the country.	Prohibition of events which involve large gatherings.	Prohibition of any activities that require crowds to gather in numbers detrimental to safe social distancing.
2	All houses of worship and business premises would be	Most economic sectors and activities are allowed to	Business operations will return as normal following

<sup>25</sup> Who, 2020. *Coronavirus disease (COVID-19) in Malaysia*. [online] Available at: [https://www.who.int/malaysia/emergencies/coronavirus-disease-\(covid-19\)-in-malaysia](https://www.who.int/malaysia/emergencies/coronavirus-disease-(covid-19)-in-malaysia). [Accessed 29 July 2020].

<sup>26</sup> UpToDate, 2020. *UpToDate*. [online] Available at: <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-epidemiology-virology-and-prevention> [Accessed 30 July 2020].

	closed, except for stores selling daily necessities.	operate following necessary SOPs.	necessary SOPs, except for pubs, nightclubs, and theme parks.
3	Sanctions covering all Malaysians travelling abroad.	Foreign travel is banned.	Foreign travel is banned.
4	Strict Border controls for foreign visitors.	Strict Border controls maintained.	Strict Border controls maintained.
5	Closure of all education institutions.	Closure of all education institutions.	Reopen of schools nationwide in phases.
6	Interstate travel is not allowed.	Interstate travel for work purposes or returning home is allowed.	Interstate travel is allowed.

## 2. Standard Operating Procedure (SOP)

Although most business operations are allowed in the CMCO and RMCO period, business still needs to follow SOPs. These are some SOPs for business/people to follow in their daily operation/life:

- Social distancing for at least 1 metre.
- Must wear a mask.
- Wash or sanitize hand frequently.
- Businesses need to prepare hand sanitizer for customers.
- Businesses need to sanitize their area at least twice per day.
- Must check the body temperature of workers every day.

According to<sup>27</sup> (Flanders Trade, n.d.), Conditional Movement Control Order (CMCO) SOPs are still in force under the Prevention and Control of Infectious Diseases Act 1988 (Act 342), and that offenders could face maximum penalties of MYR1,000 fine and six months' jail for various offences.

## 3. MySejahtera Application

According to the official website, MySejahtera is an application developed by the Government of Malaysia to assist in monitoring COVID-19 outbreak in the country by empowering users to assess their health risk against COVID-19. This application also provides the Ministry of Health (MOH) with the necessary information to plan for early and effective countermeasures.<sup>28</sup> (MySejahtera, 2020)

<sup>27</sup> Flanders Trade, n.d. *CORONA VIRUS - The situation in Malaysia*. [online] Available at: <https://www.flandersinvestmentandtrade.com/export/nieuws/corona-virus-%E2%80%93-situation-malaysia> [Accessed 27 July 2020].

<sup>28</sup> MySejahtera, 2020. *MySejahtera Official Website*. [online] Available at: [https://mysejahtera.malaysia.gov.my/intro\\_en/#team](https://mysejahtera.malaysia.gov.my/intro_en/#team)

#### 4. PRIHATIN Economic Stimulus Package

On 27th March 2020, Malaysia Prime Minister Tan Sri Muhyiddin Yassin announced Economic Stimulus Package - PRIHATIN (Pakej Rangsangan Ekonomi Prihatin Rakyat) worth MYR250 billion.<sup>29</sup> (Flanders Trade, n.d.)

On 6th April 2020, Malaysian Prime Minister Tan Sri Muhyiddin Yassin announced PRIHATIN SME Packages, an economic stimulus package aimed especially at small and medium-sized enterprises (SMEs) during the pandemic.

To date, Finance Minister Tengku Datuk Seri Zafrul Abdul Aziz mentioned PRIHATIN had helped to relieve Malaysia economic pressures in the past few months.

This package is launched to help businesses, especially SMEs to survive during this pandemic. Government provides Special Prihatin Grant(GKP) to support micro-SMEs in terms of cash flow, abolishes interest rate for Micro Credit Scheme, reduces foreign employee's levy payments and so on. Banks are also involved in this package by issuing emergency loans and reducing interest rates of repayments to help out the business.

These are the key takeaways in PRIHATIN package:

- Special Prihatin Grant (GKP) amounting to MYR 2.1bn, a Government initiative of providing an MYR3,000 worth one-off financial grant to support the micro-SMEs in terms of cash flow during the pandemic. As of 15th May 2020, over 640,000 micro-enterprises had applied for the GKP.
- Micro Credit Scheme: The Government will be abolishing the 2% interest rate for the MYR 500mil Micro Credit Scheme under Bank Simpanan Nasional. A loan under TEKUN Nasional with a maximum borrowing of MYR10,000 per SME at 0% interest.
- A 25% reduction in foreign employee's levy payments is given for work permits expiring between the period of 1st April 2020 and 31st December 2020.
- MYR13.8 billion worth wage subsidy programme.
- MYR 500 million is allocated for a discount on electricity tariffs for commercial, industrial, and agriculture sectors (Effective date: 1st April 2020 to 30th Sept 2020).

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<sup>29</sup> Flanders Trade, n.d. *CORONA VIRUS - The situation in Malaysia*. [online] Available at: <https://www.flandersinvestmentandtrade.com/export/nieuws/corona-virus-%E2%80%93-situation-malaysia> [Accessed 27 July 2020].

5. National Economic Recovery Plan – PENJANA (Pelan Jana Semula Ekonomi Negara)

On 5th June 2020, Malaysian Prime Minister Tan Sri Muhyiddin Yassin announced the Short-term National Economic Recovery Plan – PENJANA (Pelan Jana Semula Ekonomi Negara). PENJANA has 40 initiatives worth MYR35 billion, focusing on 3 key thrusts - Empower People, Propel Businesses and Stimulate the Economy. PENJANA is expected to stimulate Malaysia's economy, save over 2.4 million jobs, reduce the cash flow burden of around 10 million people and support over 300,000 companies.<sup>30</sup> (Flanders Trade, n.d.)

Appendix 3: Link of Codes

COVID-19 Cases and Mobility

[https://drive.google.com/drive/folders/1yLv\\_oAfZ0qOaMtTYvv29VifA2ntPG2lv?usp=sharing](https://drive.google.com/drive/folders/1yLv_oAfZ0qOaMtTYvv29VifA2ntPG2lv?usp=sharing)

Pearson Correlation of Stock Price and COVID-19 Cases

<https://drive.google.com/drive/folders/1z9kAoB9D2KjsrpPVzb993dqCQ44wOoB?usp=sharing>

Stock Price vs COVID-19 Cases from Jan to Jul 2020 and Comparison with 2019

<https://drive.google.com/drive/folders/146tG3JU6u7awAJIuk2KCVGYZd5qEWbwz?usp=sharing>

Monthly Stock Price Analysis

[https://drive.google.com/drive/folders/1a\\_eW5Y2HWrhQYLHQmX3irnGwh-bamI39?usp=sharing](https://drive.google.com/drive/folders/1a_eW5Y2HWrhQYLHQmX3irnGwh-bamI39?usp=sharing)

Spending Habit

<https://drive.google.com/drive/folders/1Y16Dnt9EvLrQFbqq2IHUXfP7VKXf8kIE?usp=sharing>

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<sup>30</sup> Flanders Trade, n.d. *CORONA VIRUS - The situation in Malaysia*. [online] Available at: <https://www.flandersinvestmentandtrade.com/export/nieuws/corona-virus-%E2%80%93-situation-malaysia> [Accessed 27 July 2020].



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