

## ANALYZING ECONOMIC DOWNTURN WITH THE GLOBAL PANDEMIC TIMELINE IN ORDER TO IMPROVE THE SUSTAINABILITY OF B40 AND M40 GROUPS

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**Abstract:** Rational speculative bubbles are a factor that has often led to the collapse of the economy. In this study, the size of rational speculative bubble from the first cycle to the fifth cycle are identified by using a generalised Johansen-Ledoit-Sornette Model. This study also discussed the effects of the burst of the rational speculative bubble also known as the financial bubble. Then, the economic performance of the countries that pioneered the world economy will be analysed along with the stock prices, the performance of Gross Domestic Product (GDP) and the timeline of the global pandemic. Lastly, this paper discussed the effects of the existence of financial bubble and the presence of pandemics towards the sustainability of the living standards for the B40 and M40 household groups in Malaysia.

Keywords: Rational speculative bubble, stock market price, B40, M40.

### Introduction

According to Kose *et al.* (2020), the world was shocked when the world economic downturn occurred in 1975, 1982, 1991 and 2009. In each fall, the growth of gross domestic product (GDP) declined. The global economic downturn was due to the weakness of other economic and financial system indicators such as the presence of financial bubbles in financial markets. This recession affected the economic and financial systems globally, especially in developing countries such as Malaysia.

Borhan *et al.* (2018) defined the rational speculative bubble as an exponential increase of asset prices exceeding its fundamental or

intrinsic value. So, this study will discuss on the impact of the spread of the global pandemic on the rational speculative bubble and subsequently the impact of these two factors on the economic growth. Also, the effects of the pandemic especially Coronavirus disease (COVID-19) which has been and is still plaguing the world (August 2021) were also discussed.

According to Qiu *et al.* (2017), in general, a pandemic is part of is an epidemic of a disease that spreads infectiously from one person to the next. Pandemics are capable of having a major negative impact on human health, economic growth and the welfare of society on a global scale. Table 1 shows the worldwide pandemic which took place throughout 2009 to 2021.

Table 1: The timeline of global pandemic during the year 2009 to 2021

Event	Date	Disease
2002-04 SARS outbreak	2002-2004	Severe acute respiratory syndrome/SARS
2009 swine flu pandemic	2009-2010	Influenza A virus subtype H1N1
2012 Middle East respiratory syndrome coronavirus outbreak	2012	Middle East respiratory syndrome/MERS-CoV
2015-16 Zika virus epidemic	2015-2016	Zika virus
COVID-19 pandemic	2019-present	Coronavirus disease 2019/COVID-19

Table 1 shows the relationship between the pandemic and stock market prices and the economic growth of developed countries that drive the world economy. The table will be used to discuss the impact of the pandemic and the bursting of the financial bubble in 2021 on the gross domestic product (GDP) and the sustainability of living standards in Malaysia, especially for people in the the B40 and M40 income groups.

**Methodology**

In this study, a generalised Johansen-Ledoit-Sornette model was used in order to find the size of the rational speculative bubble in stock market for the years 1965 to 2021 (from first to the fifth cycle). The generalised Johansen-Ledoit-Sornette model is shown in Equation 1 below.

$$p(t) = p_1 + \exp(A + B(t_c - t)^\beta \{1 + C \cos(\omega \log(t_c - t) + \varphi)\}) \tag{1}$$

From Equation 1,  $p(t)$  is the price of an asset at time  $t$ .  $A$ ,  $B$  and  $C$  are the linear parameter while parameter  $t_c$ ,  $\beta$ ,  $\varphi$  and  $\omega$  are the nonlinear parameter. A further explanation on the generalised Johansen-Ledoit\_Sornette model was discussed in a previous study entitled “Forecasting on the Collapse of Rational Speculative bubble in Hang Seng, Nikkei 225 and S&P 500 in 2018”.

This study focuses only on the discussion on the impact of the pandemic and the breakdown of the financial bubble on GDP growth as it

relates to the impact of these two factors on the Malaysian economy and subsequently on the sustainability of the B40 and M40 income groups.

**Effects of Pandemic and Rational Speculative Bubble on GDP**

So, this study continued by analysed the results of the size of rational speculative bubble from the first cycle to the fifth cycle (refer Table 2), the graph of the stock market from the year 2009 to 2021 (refer Figure 1) and the graph of the Malaysian Gross Domestic Product (GDP) for the same years (refer Figure 2).

The results in Table 2 are the results of a study by Halim *et al.* (2019). First cycle to the fifth cycle are financial cycles that have been split when data is obtained from the Yahoo Finance website.

The division of these financial cycles is done according to the history of economic recessions that have ever occurred in the world and each cycle represents 10 years of data or more. This is because, according to Islam and Verick (2010), an economic downturn occurs every 10 years.

Table 2, Figure 1 and Figure 2 will be compared with Table 1 in the introduction. As this study wants to analyse the impact of the recession and the pandemic towards the growth of the Malaysian GDP and its effects on the sustainability of living standards in tthe country, especially for the B40 and M40 income groups. What are the effects of the global pandemic on the local economy? And how are the living

Table 2 : The size of rational speculative bubbles from first cycle to fifth cycle

Cycle	First (1965-1975) (Size, MAPE (%))	Second (1976-1986) (Size, MAPE (%))	Third (1987-1997) (Size, MAPE (%))	Fourth (1998-2008) (Size, MAPE (%))	Fifth (2009-2021) (Size, MAPE (%))
S&P 500	113.91,12.35	190.37,1.39	871.27,1.48	1521.47,9.3	49246.53, 0.051
Nikkei 225	2967.68,2.87	11375.95,2.05	17896.69,1.22	20090.86,8.86	37838.40, 0.021
Hang Seng	1003.75,3.83	1588.92,2.94	15223.79,0.3	17145.86,3.14	5721.82, 0.0225

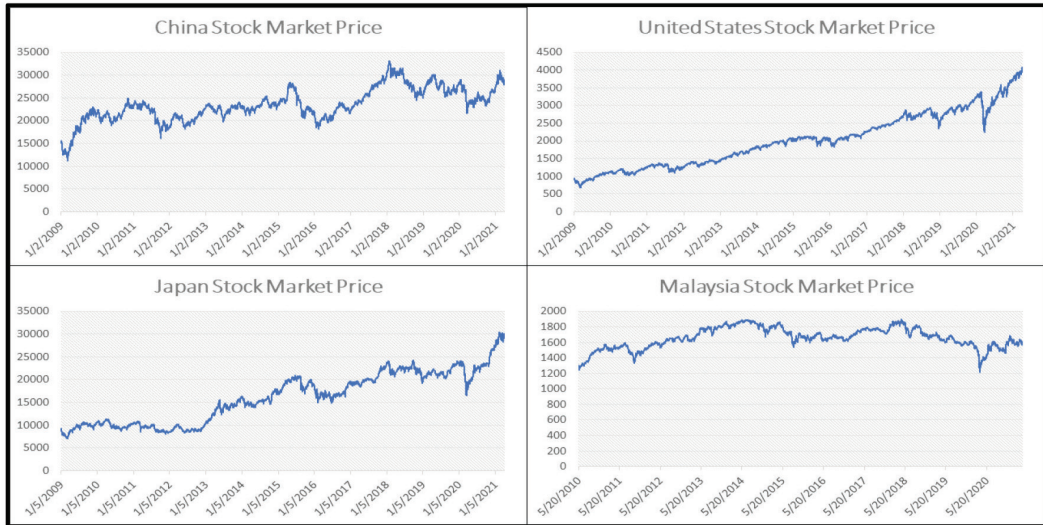


Figure 1: The graphs of stock market prices

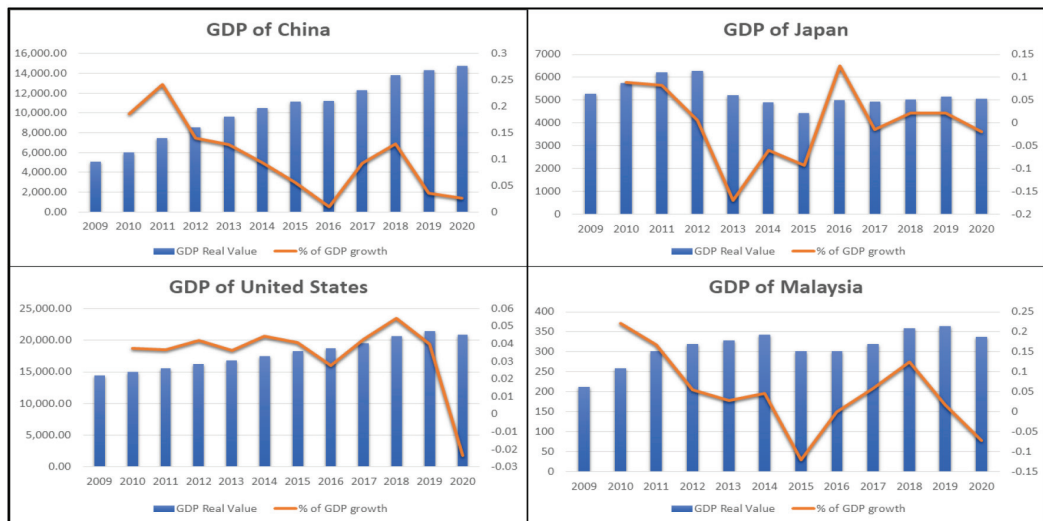


Figure 2: The graph of the performance of GDP

standards of B40 and M40 income groups are affected by the pandemic and the economic downturn?

As shown in Table 1 (in the introduction), the timeline of the global pandemic and a comparison to the GDP growth graphs in Figure 1 with the graphs of stock market prices in Figure 2, details how badly it hit the GDP growth and the stock prices of the country. The pandemic might not have a big impact on stock market prices but it still had a negative impact

on the local and international economic growth (GDP growth).

From Table 2, it can be seen that the size of the rational speculative bubble constantly doubles from one cycle to the next. According to Miller (2008), the economic downturn that occurred in 2008 was an economic downturn with the same magnitude as the Great Depression that occurred in 1929. The economic downturn that occurred in 2008 was the economic downturn in its fourth cycle.

Judging from the size of a rational speculative bubble of the fourth cycle and compared with the size of the rational speculative bubble for the fifth cycle, the size of the bubbles for the fifth cycle is greater than the fourth cycle. This indicates that the impact of the fall for the fifth cycle was worse than the economic downturn in 2008.

Figure 2 shows the percentage of the GDP growth is decreasing especially during the global pandemic. From 2009 to 2010, when Influenza A Virus subtype H1N1 made waves globally, the stock prices that year decreased slightly and the percentage of the GDP growth for Malaysia, Japan and United States fell. In 2012, when the MERS-CoV virus began to spread across the world, the stock market prices for affected countries slowly decreased and the percentage of GDP growth for affected countries was worsened especially in China. Even as other countries GDP growth started to increase in 2013, the growth of GDP in China still continued to drop.

The onset of the Zika virus tested world economies again in 2015 and 2016. Both the global stock market prices and the global growth of countries GDP's decreased. When economic activity began to pick up, at the end of 2019, the emergence of the Coronavirus (COVID-19) began to slow economic growth again causing economic growth to decline very drastically, this pandemic conditions still persist today at the time of writing this research paper. The same goes for the stock market prices, which nose-dived in 2019.

Analysis shows that the presence of a pandemic is able to cripple the economy of a country even indirectly and worsen situations that are already deteriorating. This pandemic may not be related to the financial bubble but its presence may lead to the economic bubble bursting which is capable of weakening the economy.

### ***The Sustainability of B40 and M40 Groups during Economic Downturn***

According to Radzi *et al.* (2020), household income in Malaysia is divided into three groups, namely, B40, M40 and T20. Group B40 is a group of households with an average income below RM3,860.00. The M40 group is a group of households whose average income is between RM3,860.00 and RM8,319.00. Finally, the T20 group is a group of households whose average income exceeds RM8,319.00 a month.

Figure 1 shows the development of the Malaysian stock market, namely the FTSE Bursa Malaysia Kuala Lumpur Composite Index (FBM KLCI) and the GDP growth for the country in Figure 2 from 2009 to 2021.

The data taken covers the fifth cycle data because the fifth cycle is the latest cycle and the COVID-19 pandemic occurred in this cycle. This section discusses the effects of the pandemic and the bursting of the financial bubble on the sustainability of living standards in Malaysia especially for people in the B40 and M40 income groups.

From the graph of stock market prices on the FBM KLCI and the performance on GDP growth of Malaysia shows the impact experienced by a developing country such as Malaysia during economic downturns and health crises.

Of course, Malaysia is having a tough time. In Figure 1, the index price graph of the the FBM KLCI, shows that the fall experienced by Malaysia is worse because the value of the fall in 2020 was worse than the fundamental (intrinsic) value on the FBM KLCI at the beginning of the fifth cycle in 2009. In terms of the performance of the GDP, the decline in economic growth for Malaysia is seen to be more drastic than that of other developed countries.

According to a report released by the Department of Statistics Malaysia (Opote, 2020), the employment performance of small-and-medium Enterprises (SMEs) decreased from 7.32 million people (2019) to 7.25 million people (2020). A decrease of 0.9% which is 65 thousand lost sources of income due to the



pandemic and subsequent movement control order enforced by the government as a means to control the spread of COVID-19 pandemic.

The presence of the COVID-19 virus in Malaysia has forced small companies to close due to the losses incurred and the inability to pay employees' salaries. Some large companies have had to downsize and lay off several workers to survive in this harsh economic climate. Self-employed people have lost their sources of income, which has made people more stressed in the face of this economic downturn and pandemic compared to other cycles. This situation has led to growing unemployment rates, increasing crime rates and an upward shift in the poverty line on a global scale. What this means is that the pandemic has a much worse impact on developing countries, like Malaysia than on developed countries.

The local Malaysian newspapers reported that an estimated one million M40 clusters have the potential to become B40 clusters. The report was prepared after obtaining views from Universiti Utara Malaysia Economics Lecturer, Associate Professor Dr. Irwan Shah Zainal Abidin, opined that if the situation of economic instability continues, it would create a 'new poor'. The press report was based on the opinion of Associate Professor Dr. Irwan Shah Zainal Abidin and was supported by the Senior Lecturer of the School of Business and Economics, Universiti Putra Malaysia, Dr. Muhammad Daaniyall Abd Rahman (Alias, 2021; Awani, 2021; Hairom, 2021).

The bursting of a rational speculative bubble is inevitably disruptive to the sustainability of living standards of the B40 and M40 income groups in Malaysia. When an economic downturn is followed by healthcare issues like the COVID-19 pandemic the B40 and M40 households were the most affected.

## Conclusion

Solutions that protect the sustainability of both the B40 and M40 income groups affected by the economic downturns and pandemics need to be

considered. These solutions need to be studied and refined so that these B40 and M40 groups are able to sustain their lives and livelihoods and alleviate the burden of debt and extreme financial issues. Extreme financial problems with the focus of commitment are feared to affect the sustainability of the country if problems such as crime or suicides increase.

In the nutshell, the study of the economic situation is important especially for developing countries like Malaysia. The presence of a pandemic is not something that can be anticipated or controlled. However, at the beginning of the presence of the pandemic was able to give an idea of the economic situation that would prevail. The presence of a pandemic is not something to be taken lightly, as it is something new (such as COVID-19), of which the origin of its occurrence is unknown. The attitude of always being vigilant and taking action as early as possible should be studied and made the implemented in a country's system.

The same goes for the rational speculative bubble that is no stranger to the world economic system. Although it has long emerged in the world economic system, there is still no specific method to eradicate this financial bubble in the economic system. The solutions provided, are mostly just to minimise the impact.

Yet if the culmination of this rational speculative bubble collides with a global pandemic, it will surely further weaken the world economic system. The economic downturn will be longer before the world entering the economic recovery phase.

So, methods to minimize the impact of the economic downturn need to be reformed especially when faced with a combined situation between a rational speculative bubble and a global pandemic. This is so that when this situation occurs again in the next cycle, the sustainability of the society especially of those in the B40 and M40 income groups can be protected and they do not need to feel oppressed.

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