Information Management and Business Review (ISSN 2220-3796)
Vol. 16, No. 1, pp. 86-104, March 2024

The Impact of Stock Market Development on Economic Growth a Case of Malaysia

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Abstract: The stock market is important among many financial markets. Stock Market Development is one of the enabling factors for Economic Growth. The recession crisis occurred a few times and badly affected Malaysia's Economic Growth (GDP) and Stock Market Development (SMD). Also, during the recent pandemic of COVID-19, there was a different reaction by investors and individuals overall towards the economy in Malaysia. There were inconsistent trends when the global recession in 2008 happened and COVID-19 started to spread in Malaysia for both SMD and GDP. This study aims to determine the relationship between SMD and GDP in Malaysia. Using Market Capitalization (MCAP) (as a proxy to (SMD)), Exchange Rate (EXC) and Trade Openness (TRADE) as independent variables and GDP as the dependent variable. Data from 1981 to 2020 is analyzed using Granger causality, and the ARDL method along with applying the Endogenous Growth theory. The findings of the ARDL long-run test suggested that SMD and TRADE have a positive and statistically insignificant relationship with GDP. EXC has a negative and statistically significant relationship with GDP. Granger causality test suggested a bidirectional relationship between EXC and TRADE with GDP. There is a unidirectional causality between SMD and GDP where GDP Granger causes SMD. To improve market regulation, The government should ensure the stock market is well-regulated and transparent, boost investor confidence, and increase market investment. Encouraging trade openness and exports can also help increase exchange rates and boost ringgit's demand.

Keywords: *Stock Market Development, Market Capitalization, Economic Growth, ARDL, Granger Causality.*

1. Introduction

The capital market is an important factor enabling economic growth. Capital markets are a subset of the financial system that acts as an engine of growth in modern economies (Nathaniel, Omojolaibi, & Ezeh, 2020). Financial development promotes economic development either through bank-based financial development, market-oriented financial development, or both. In different countries, economic development occurs in one or both directions (Md. Qamruzzaman & Wei, 2018). Stock markets are important among many financial markets for three main reasons: the liquidity they provide to financial assets, the important capital flows they channel, and the fact that they are very useful sources of information for investors (Prats and Sandoval, 2020)). Apart from the rational productive use of wasted money, the stock market provides a channel for international investment and the inflow of foreign funds to develop initiatives that benefit citizens (Owolabi and Motilewa, 2015) as cited in (Nathaniel, Omojolaibi, & Ezeh, 2020). The purpose of this study is to examine the impact of stock market development on economic growth in Malaysia. The stock market is an indicator of the economy and financial condition. It reflects the mood of the country and investors.

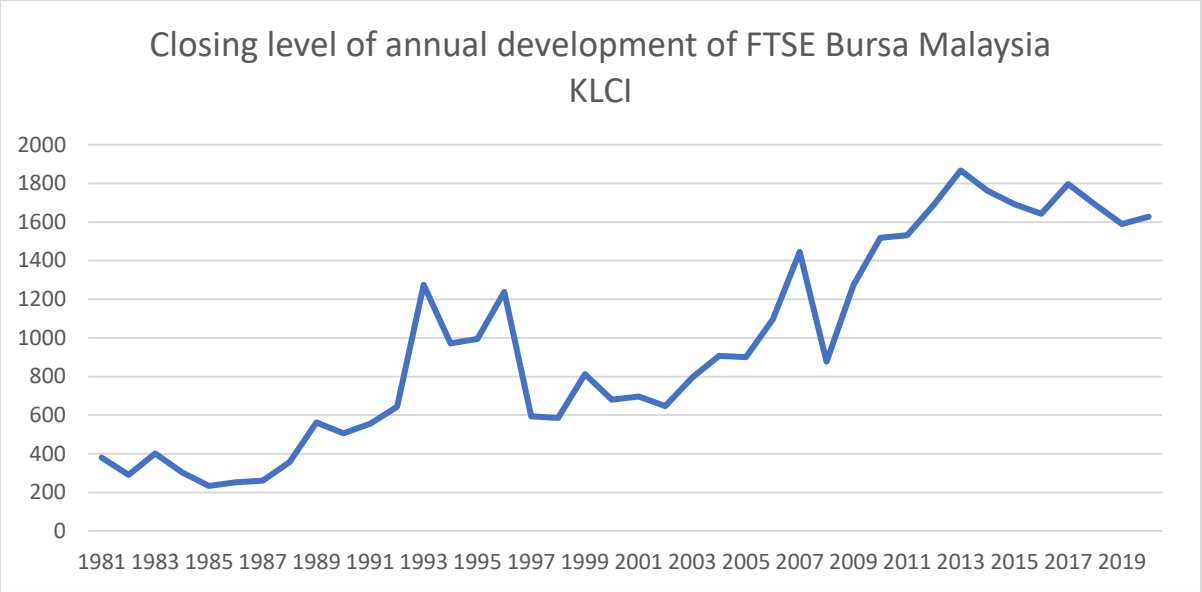
Therefore, stock market development is a key part of economic growth. The term stock market refers to several exchanges where shares of listed companies can be bought and sold. Such financial activities take place through regulated exchanges and for-sale markets that follow certain rules (Chen, 2023). On the other hand, Gross Domestic Product (GDP) is useful for economists and investors because it provides information about the size and performance of the economy. Economic growth has a significant impact on almost all market sectors. Economic growth is defined as an increase in the production of economic goods and services from one period to another. This can be expressed in nominal or real (inflation-adjusted) terms (The Investopedia Team, 2023). Malaysia is a developing country and one of the world's most open economies, with trade as a percentage of GDP averaging more than 130 percent since 2010 (The World Bank, 2022). The name of the Malaysian stock market is FTSE Bursa Malaysia KLCI, also known as FBM KLCI. Bursa Malaysia is Malaysia's capital market and first-line regulator responsible for ensuring a fair and orderly market for securities and derivatives trading through its facilities (Bursa Malaysia Berhad, 2023).

Background of Study: Endogenous growth theory is used in this research because many previous studies explain well the relationship between stock market development and economic growth. Pradhan et al. (2015) highlighted the importance of stock market development in promoting long-term economic growth as it facilitates efficient intertemporal resource allocation, capital accumulation, and technological innovation. For endogenous growth models, Owusu (2016) argued that the relationship between financial development, investment, and economic growth focuses on financial markets, saving, investment, and economic growth. Economic Growth (GDP) will be used as the dependent variable, while Stock Market Development (SMD), Exchange Rate (EXC), and Trade (TRADE) as independent variables in this study. Malaysia experienced a recession for the first time in 1985. And in 1997 and 2008 the recession happened again. The Malaysian economy went into a recession in 1985, and it shrank by 6.7% in 1998. By almost all measures, the recession in 1997 was worse than the one it went through in 1985. With a moderate 10 percent decline, the recession that year only lasted one year. In the period from July 1997 to mid-January 1998, the value of shares dropped by almost US $225 billion. The financial crisis quickly affected the real economy, as shown by business closures, layoffs that resulted in high unemployment, and rising inflation rates (Ariff & Abubakar, 1999).

Excessive bank lending, especially in the form of mortgages, began in the United States in 2008-2009. the main cause of the global financial crisis. Banks repackaged those debts and sold them to investors. When the housing bubble burst, it caused borrowers to default, weakened the US banking system, and eventually forced several institutions into liquidation. Malaysia has been adversely affected by its trade and financial channels. Malaysia, a country heavily dependent on trade, has been hit hard in terms of investment and trade. In 2009, the economy of Malaysia fell into a recession, contracting 1.7% (Lee, 2020). When Malaysia and Singapore separated in 1964, the Malaysia Stock Exchange was officially established. In addition, the broader SEMS exchange was led by the Malaysian and Singaporean exchanges. With the end of currency exchange between Malaysia and Singapore in 1973, the SEMS was split into the Kuala Lumpur Stock Exchange (KLSEB) and the Singapore Stock Exchange (SES) (Bursa Malaysia Berhad, 2023). However, Malaysian companies continued to be included in the SES and vice versa. In 1994, the Kuala Lumpur Stock Exchange (KLSE) took over the operations of KLSEB and number 039; the Stock Exchange. In 2004, Bursa Malaysia was the name of the demutualized platform formerly known as KLSE (Lee, Kogid, & Lily, 2020). According to Prats and Sandoval (2020) (Prats & Sandoval, 2020), there is evidence that GDP and stock market value are causally related in both directions. Ho (2018) suggests that the stock market promotes growth in both the long and short term.

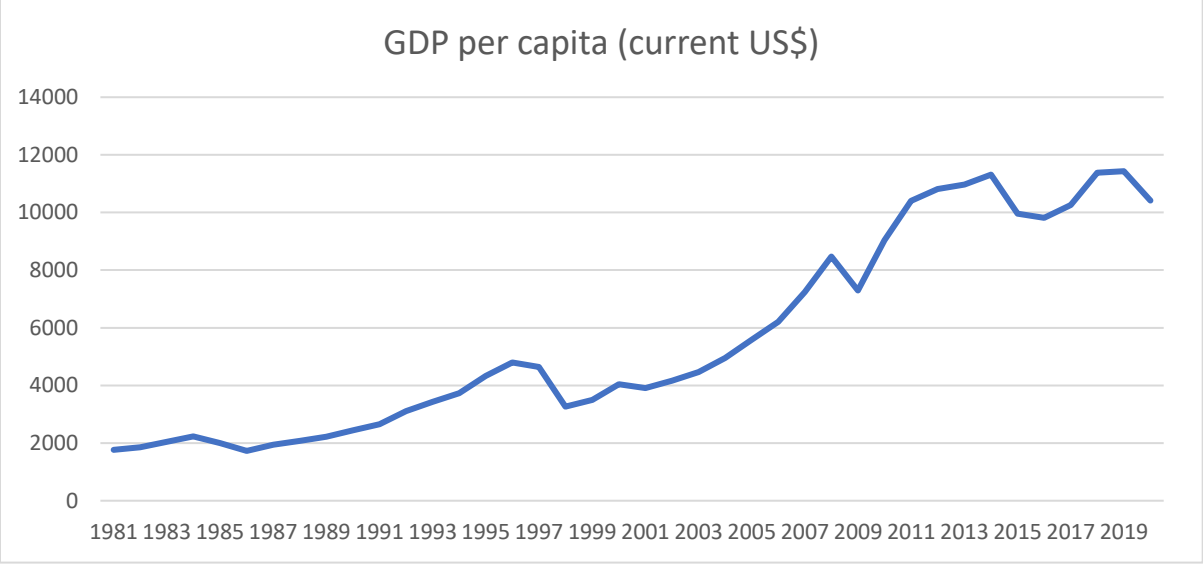
Problem Statement: The recession crisis in 1985, 1997, and 2008 has affected the Economic Growth (GDP) and Stock Market Development (SMD) in Malaysia badly. In general, rising market capitalization/Stock Market Development (SMD) may signal increased investor confidence and capital availability, which may lead to increased levels of investment, entrepreneurship, and innovation, thereby promoting Economic Growth (GDP). According to Levine (1997) countries with developed stock markets have faster economic growth and higher levels of investment than countries with less developed stock markets. However, there were different reactions by investors and individuals overall in the economy in other words, there was an inconsistent trend between Stock Market Development (SMD) and Economic Growth (GDP) when the global recession in 2008 happened and when the Coronavirus disease (COVID-19) started to spread. Both variables move in a different direction when generally the trend between Stock Market Development (SMD) and Economic Growth (GDP) should be moving in the same direction. An increase in market capitalization/Stock Market Development (SMD) will lead to an increase in Economic Growth (GDP). But in the case when the global recession in 2008, the trend of Stock Market Development (SMD) decreased while the trend of Economic Growth (GDP) increased. Meanwhile, in the case when the Coronavirus disease (COVID-19) started to spread, the trend of Stock Market Development (SMD) increased while the trend of Economic Growth (GDP) decreased. This study will focus on determining the impacts of Stock Market Development (SMD) and Economic Growth (GDP). The effect of the recession crisis and the recent pandemic can be seen in the trend charts below.

Figure 1: The Trend Chart of Stock Market Development in Malaysia from 1981 to 2020



Source: Wikipedia, Meridian Securities Markets, Electronic Commerce Inc.: World Stock Exchange Fact Book (FTSE Bursa Malaysia KLCI, 2023).

Figure 2: The Trend Chart of Economic Growth in Malaysia from 1981 to 2020



Source: (The World Bank, 2022).

Looking at the trend charts above, Figure 1 shows the trend chart of stock market development in Malaysia from 1981 to 2020 using the data closing level of annual development of FTSE Bursa Malaysia KLCI. The source of data is Wikipedia. However, the actual data was sourced from Meridian Securities Markets, Electronic Commerce Inc.: World Stock Exchange Fact Book. The closing level of annual development of FTSE Bursa Malaysia KLCI data is used in portraying the trend of Stock Market Development (SMD) in Malaysia. We can see the trend in the year 1985 hit the lowest closing level at 233.48. In 1997, there was a sharp downtrend from the closing level in 1996 from 1,237.96 to 594.44. In 1998, the closing level got worse to 586.13. This recession is the worst so far. Nevertheless, the global recession in 2008 also affected the economy of Malaysia pretty badly. There was also a sharp downtrend just like the recession that happened in 1997, but not as bad as the 1997 recession. The closing level in 2007 was 1,445.03 and the sharp downtrend made the closing level in 2008 into 876,75. But gladly, this 2008 recession recovered quickly. In the next year, in 2009 and 2010 the closing

level climbed fast to 1,272.78 and 1,518.91 respectively. Figure 2 shows the trend chart of Economic Growth in Malaysia from 1981 to 2020. The data was sourced from World Bank data. The GDP per capita is used to show the economic growth trend.

Just like the trend chart for the Stock Market Development (SMD), the trend for Economic Growth was also affected by the recession in the years 1985, 1997, and 2008. In the 1985 recession, the GDP per capita slightly decreased from $2234.26 in 1984 to $2000.15 in 1985. The recession continued into 1986 when the GDP per capita decreased to $1728.68. After that, starting from 1987, the trend stably increases until the next recession. The recession in 1997 was a catch in the trend where there was a downtrend from $4798.61 in 1996 to $4,637. 87 in 1997. The recession effect continued in 1998 when the trend decreased to $3263.33. The trend for Economic Growth during the recession in 2008 reacted differently than the trend for Stock Market Development (SMD). Unlike the sharp downtrend shown by the Stock Market Development (SMD) trend, the Economic Growth trend went uptrend from $7243.46 in 2007 to $8474.59 in 2008. The effect of the global recession in 2008 was kind of delayed. In 2009, the GDP per capita decreased to $7292.50 and quickly recovered the year after. The trend chart for both Stock Market Development (SMD) and Economic Growth did not react the same when the Coronavirus disease (COVID-19) started to spread. The first case of COVID-19 detected in Malaysia was on the 25th of January 2020. The price level for the Stock Market Development increased from 1,588.76 in 2019 to 1,627 in 2020. Oppositely, the Economic Growth trend decreased from $11432.83 in 2019 to $10412.35 in 2020.

Research Questions

RQ1: What are the impacts of Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE) on Economic Growth (GDP) in Malaysia?

RQ2: Is there a significant and causal relationship between Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE) with Economic Growth (GDP) in Malaysia?

Research Objectives

RO1: To determine the impacts of Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE) on Economic Growth (GDP) in Malaysia.

RO2: To examine the significant and causal relationship between Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE) with Economic Growth (GDP) in Malaysia.

Scope of Study: This study will focus on the impact of Stock Market Development (SMD) on Economic Growth (GDP). The dependent variable is Economic Growth (GDP). The independent variables are Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE). This study uses 40 years of data for each variable which is from 1981 to 2020. The theory that will be used in this study is the Endogenous Growth Theory. This study focuses on Malaysia, so we are applying a time-series econometric technique to regress the data using E-Views.

Limitation of Study: There may be some possible limitations in this study. The first limitation is this study uses E-Views Student Version Lite as a medium to regress the data. The E-Views Student Version Lite is the only regression medium available for the student for free. A regression medium like Stata is a paid medium. As a student, we could not afford to purchase the service. There are a few restrictions in using E-Views Student Version Lite such as excluded features, capacity restrictions, and saving and output restrictions. The second limitation is the limited access to the information. The data that will be used in this study are not so up to date because of the not-yet-updated data in the World Bank data. Up until January 2023, the last updated date for the Stock Market Development (SMD) data was on 22/12/2022. The data for the Stock Market Development (SMD) variable is only available until the year 2020 on the World Bank data. This study may also have been limited by the size of the sample. The data provided by the World Bank data for the variable of market capitalization (proxy of SMD) is only available from 1981 to 2020 which is for only 40 years. Notice that this study sample size is also 40 years. This is due to the limited data for the market capitalization provided in the World Bank database.

Significance of Study: The significance of this study is that this study can benefit future researchers when they study the related effects of stock market development on economic growth. Since the main purpose of this

paper is to find out the relationship between economic growth and stock market value in Malaysia, the time series method is used in this study. Focus on Malaysia. There are many studies of stock market development (SMD) in the economics and finance literature, but most of them use cross-country data. The use of panel data does assist in gaining a broader perspective on an issue, but it lacks specificity. This study exists to fill the small gap because few studies on the relationship between Economic Growth (GDP) and Stock Market Development (SMD) have been studied specifically for Malaysia. Furthermore, this research will explore not only the relationship between Stock Market Development (SMD) on Economic Growth (GDP) but also the relationship between the other independent variables, Exchange Rate (EXC) and Trade Openness (TRADE) on Economic Growth (GDP). Moreover, because this study is related to Stock Market Development (SMD) and Economic Growth (GDP), this study might benefit the investor and trader. Specifically Malaysian investors and traders are using FTSE Bursa Malaysia KLCI (FBM KLCI) as their main trading medium. They can use the result of this study as a piece of additional knowledge to be used while making decisions before buying or selling the potential stock.

As outlined in Chapter 1, this chapter is about the introduction of this study. Mentioning that the capital market is a vital enabling factor for economic growth and how important is a stock market among many financial markets. This introduction part also includes the background of the study, problem statement, research questions, research objectives, the scope of the study, limitations of the study, and the significance of the study.

2. Literature Review

The purpose of this study's literature review is to examine how Malaysia's Stock Market Development (SMD) impacts Economic Growth (GDP). In this literature review, prior studies and researchers were referenced to back up the theory that the independent variables and the dependent variable are significantly related.

Theoretical Literature

Endogenous Growth Theory: This study applies the Endogenous Growth theory. According to the Endogenous Growth theory, economic growth is driven by a country's investment in human capital, innovation, and technological advancements (Romer (1986, 1990); Lucas, 1988) as cited in Bawazir, Kumar, Celik, Abdulla, & Aktan, 2020). Endogenous Growth theory is used in some of the prior research studies. Araoye et al. (2018) in the late 1980s and early 1990s, economists Paul Romer and Robert Lucas Jr. developed a theory of endogenous growth that included a mathematical rationale for technological improvement. According to the theory of endogenous growth, the rate of investment has a favorable effect on economic growth (GDP). Using this variable and stock market returns, Yartey and Adjasi (2007) and Adenuga (2010) as cited by Naik and Padhi (2015) found that investment rate contributes positively to economic growth (GDP). This theory is used in this study to determine whether stock market development (SMD) affects economic growth (GDP) in Malaysia, where both stock market development (SMD) and economic growth (GDP) were inconsistent. there was a global economic recession in 2008 and the spread of the Corona Virus Disease (COVID-19).

Empirical Literature

Stock Market Development (SMD) and Economic Growth (GDP): Revisiting Stock Market Development and Economic Growth Nexus: The moderating role of foreign capital inflows and exchange rates that focuses on Malaysia, was the title of a research article by Hoque & Yakob (2017). This study re-examines the relationship between stock market development (SMD) and economic growth (GDP). The authors examine the effect of foreign capital flows and exchange rates on the relationship between stock market development (SMD) and economic growth (GDP) in Malaysia from 1981 to 2016. According to the Granger causality test results, there are sometimes unidirectional effects. Stock Market Development (SMD) and Malaysia Economic Growth (GDP). This study finds a long-run relationship between stock market development (SMD) and economic growth (GDP) using a cointegration test.

However, the ARDL model finds that in the short and long run, the stock market increases Malaysia's economic growth (GDP), which is consistent with the Granger causality test. Naik and Padhi (2015) investigated the relationship between stock market development (SMD) and economic growth (GDP) in emerging economies

using a dynamic panel. The study used annual data from 27 emerging economies from 1995 to 2012. Naik and Padhi employed a second-generation panel unit root test to test the stationary properties of the data series and employed a dynamic panel "system GMM" estimator because there was an endogeneity problem that existed in their model. To examine the direction of causality among the variables, the authors use a heterogeneous panel causality test. The research results show that the growth of stock market development (SMD) has a significant impact on economic growth (GDP).

Unidirectional causality was also found linking stock market development (SMD) to economic growth (GDP). This finding supports the temporal concept. In addition to stock market development (SMD), economic growth (GDP) is significantly influenced by macroeconomic variables such as the investment rate, trade openness, and exchange rates. Pradhan et al. (2018) investigated the dynamics of Bond Market Development, Stock Market Development (SMD), and Economic Growth (GDP) in the G-20 countries. The study explores whether there are Granger causal relationships between Bond Market Development, Stock Market Development (SMD), Economic Growth (GDP), and two additional macroeconomic variables, namely the Inflation Rate and the Real Interest Rate. This paper uses a panel data collection of G-20 countries from 1991 to 2016. It uses a panel vector autoregression model to determine the nature of the Granger causality between these five variables. The study provides empirical evidence that bond and stock market developments are related to economic growth (GDP), inflation, and real interest rates. The panel Granger causality test shows, among other things, that long-term economic growth is caused by bond market development, stock market development (SMD), economic growth (GDP), inflation and real interest.

The short-run Granger causality results, on the other hand, showed a wide range of short-run adjustment dynamics between these five variables, including the possibility of feedback in several cases. Causality between Stock Market Development (SMD) and Economic Growth (GDP): Econometric Evidence from Bangladesh is the title of Mamun et al. (2018) research paper. This study examines time-series evidence on the impact of stock market development (SMD) on Bangladesh's economic growth (GDP) from 1993 to 2016. Using an ARDL bounds testing approach, the authors find that stock market performance (SMD) directly affects economic growth (GDP) in both the short and long term, along with financial depth, interest rate spread, and real effective exchange rate. Between 1990 and 2020, Thaddeus et al. (2021) explored the short and long-run causal relationship between Stock Market Development (SMD) and Economic Growth (GDP) in Sub-Saharan Africa. This study uses an autoregressive distributed lag model and Granger causality and cointegration to examine the long-run and short-run causality between stock market development (SMD) and economic growth (GDP) in sub-Saharan Africa.

The results revealed that stock market development (SMD) had a positive and significant effect on long-term economic growth (GDP) in sub-Saharan Africa between 1990 and 2020 and a negative insignificant effect on short-term economic growth (GDP). Stock market liquidity, as measured by the total value of traded shares and the exchange rate, had a negative and significant impact on Sub-Saharan Africa's economic growth (GDP) between 1990 and 2020. Pradhan et al. (2020) analyzed the interrelationships between financial sector reforms (banking, stock market, and insurance industries) and European Economic Growth (GDP). In particular, the study investigated whether there is a Granger causality between banking competitiveness, stock market development (SMD), insurance market development, and economic growth (GDP). The study used panel data covering European countries from 1996 to 2016. Survey results. indicates that all variables are integrated. The results show Granger causality between network variables, including short-run bidirectional causality between stock market development (SMD) and insurance market development. There is substantial evidence of Granger causality from bank competition, insurance market development, and stock market development (SMD) to economic growth (GDP) in the long run.

Nathaniel, Omojolaibi and Ezeh (2020) examined the impact of stock market development (SMD) on economic growth (GDP) in Nigeria. The study covers the years 1980-2016. Joint integration uses the ARDL approach. Research and evidence suggest that stock market development (SMD) increases economic growth (GDP) in the short run, but the growth effect of stock market development (SMD) in the long run is insignificant. In the short run, the effects of stock market development (SMD), stock market value, and market conditions on economic growth (GDP) are all significant, although trade openness is not. Hoque et al. (2018) examined the endogeneity of FDI, economic growth (GDP), and stock market development (SMD) and the moderating role of political

instability in the relationship between these three variables. To test the hypotheses, the research uses selected data on macroeconomic variables from 1993 to 2016 using the Auto Regressive Distributed Lag (ARDL) method and the hierarchical regression method. This study shows the short- and long-term relationship between economic growth (GDP), foreign direct investment, and stock market development (SMD).

In the long run, there is only a unidirectional relationship between economic growth (GDP), foreign direct investment, and stock market development (SMD). However, there is a bidirectional relationship between Economic Growth (GDP) and Stock Market Development (SMD) in the short run. Pan and Mishra (2017) investigated the effects of the Stock Market's link with real Economic Growth (GDP) on the Chinese economy, which is the world's fastest growing and largest emerging economy. The methodology used in this study involves unit root testing in the presence of structural breaks and the Autoregressive distributed lag (ARDL) model, as well as employing the data from the global financial crisis from 2007 to 2012. According to the findings, the global financial crisis from 2007 to 2012 had a significant influence on both the real and financial sectors in China. Md. Qamruzzaman and Wei (2018) studied Financial Innovation, Stock Market Development, and Economic Growth: An ARDL Model Application. They examine the relationships between economic growth (GDP), financial innovation, and stock market development (SMD) in Bangladesh between 1980 and 2016.

The study used the autoregressive distributed lagged bounds (ARDL) test method for long-term evaluation. promote co-integration. In addition, a Granger causality test with an error correction term is used to determine the trend-causal relationship between the variables under study. The results of ARDL's related test method study show that there is a long-term relationship between financial innovation, stock market development (SMD), and economic growth (GDP). In addition, the Granger causality test results show bidirectional causality between financial innovation and economic growth (GDP) and stock market development (SMD) and economic growth (GDP) in both the long and short run. More on the relationship between Stock Market Development (SMD) and Economic Growth (GDP), Prats and Sandoval (2020) discovered that there is evidence of a causal relationship between Stock Market Development (SMD) and Economic Growth (GDP) in both directions. According to Ho (2018), Stock Market Development (SMD) promotes Economic Growth (GDP) in both the short and long run. Stock Market Development (SMD) has a positive significant impact on Economic Growth (GDP). according to Lazarov, Miteva-Kacarski, & Nikoloski (2016), Sattar, Ali, Rehman, & Naeem (2018), Adaramola & Popoola (2019), Nguyen & Bui (2019) and Osaseri & Osamwonyi (2019). According to Fuinhas et al. (2019) Stock Market Development (SMD) has a long-term impact on Economic Growth (GDP). According to Nguyen et al. (2020), SME Stock Market Development (SMD) and/or innovation have small but positive effects on short-run Economic Growth (GDP). Hossin and Islam (2019) discovered unidirectional causality between Stock Market Development (SMD) and Economic Growth (GDP). There is also a negative relationship between Stock Market Development (SMD) and Economic Growth (GDP). According to Owusu (2016) research, Stock Market Development (SMD) harms Economic Growth (GDP) in Nigeria in the long run.

Exchange Rate (EXC) and Economic Growth (GDP): Since the collapse of the Bretton Woods Agreement in 1973, economists have long studied the impact of exchange rate volatility on the economy (Bahmani-Oskooee et al., 2016; Chi, 2018; Fall, 2019; Qureshi and Tsangarides, 2012; Romelli et al., 2018; Tunc et al., 2018) as cited in Lawal, et al., (2022). For Economic Growth (GDP), the Exchange Rate (EXC) is critical. The rise and fall of the Exchange Rate (EXC) have an impact on both global and local Economic Growth (GDP). As a result, domestic currency appreciation can have a positive or negative impact on economic growth (Arthur & Addai, 2022). In a study titled The Dynamic Interactions of Economic Growth, Foreign Direct Investment, and Exchange Rate in Ghana, the relationship between the Exchange Rate (EXC) and Economic Growth (GDP) in Nigeria and Ghana has been studied. The authors concluded that the exchange rate (EXC) has a positive and significant impact on economic growth (GDP) in the long and short term (Arthur & Addai, 2022).

A study by Hoque and Yakob (2017) that looks into the effects of Stock Market Development (SMD) on Economic Growth (GDP), as well as the moderating role of Foreign Capital Inflows and Exchange Rate (EXC) claims that the Exchange Rate (EXC), Foreign Investment, and Economic Growth (GDP) are all closely linked. According to Rodik (2008) as cited in Hoque and Yakob (2017), a decline in exchange rates (EXC) promotes economic growth (GDP) in developing countries. On the other hand, high inflation (EXC) is associated with slow economic growth (GDP). A regression test was conducted and the results showed that stock market development (SMD) has a significant effect on economic growth (GDP). On the other hand, the inflow of foreign

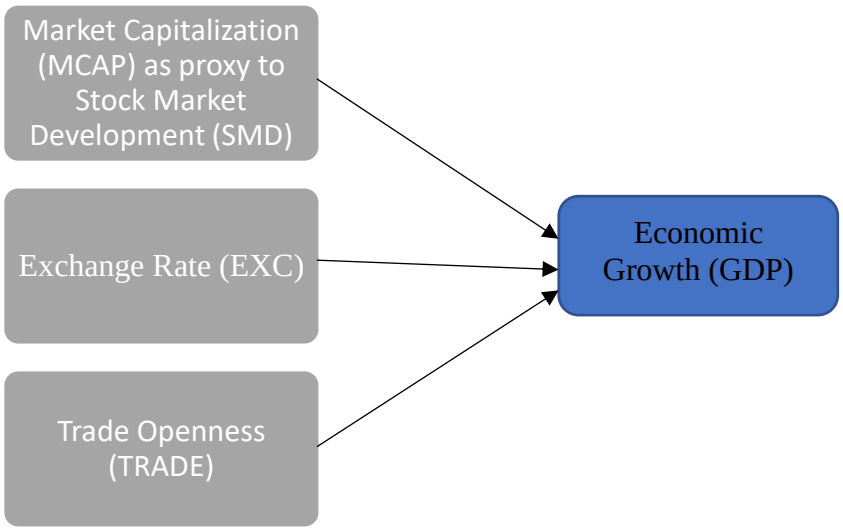
currency affects economic growth (GDP) and at the same time reduces the relationship between stock market development (SMD) and economic growth (GDP). Likewise, the Exchange Rate (EXC) has a negative impact on Economic Growth (GDP) (Hoque & Yakob, 2017).

Trade Openness (TRADE) and Economic Growth (GDP): Trade Openness (TRADE) has been argued to potentially long-term economic growth (GDP) through several channels, including access to technology and knowledge, financial inclusion of globalization, efficient and effective allocation of resources, access to diverse markets, improvement in domestic factor productivity, the attractiveness of foreign capital, and finally international cooperation (Louardy & Moussamir, 2022). Louardy and Moussamir (2022) found that Morocco's openness to international trade (TRADE) has a positive effect on economic growth (GDP) in the short term. However, the long-term effects are negative, especially considering the existence of a bidirectional causal relationship between two variables: economic growth (GDP) and international trade (TRADE). To explore the results, the authors apply statistical and econometric tests based on the ARDL bounds test for cointegration and the Toda-Yamamoto causality test.

In a research paper titled Economic Growth, Exchange Rate, and Remittance Nexus: Evidence from Africa by (Lawal, et al., 2022). The authors examined the relationships between economic growth (GDP), exchange rate (EXC), remittances, trade openness (TRADE), and agricultural production in 10 African countries from 1980 to 2018. Results of the Granger causality test include the gross domestic product (GDP), exchange rate (EXC), trade openness, agriculture, and remittances. Nguyen (2022) uses vector autoregressive models to examine the relationship between economic growth (GDP), foreign direct investment (FDI), trade openness (TRADE), and unemployment in five South Asian countries from 1998 to 2017. Research shows a long-run relationship between economic growth (GDP), foreign direct investment, trade openness (TRADE), and unemployment in South Asia.

Theoretical Framework

Figure 3: The Relationship Between a Dependent Variable and Independent Variables



This theoretical framework, (Figure 3) shows the relationship between a dependent variable with independent variables. Economic Growth (GDP) is the dependent variable, while Market Capitalization (MCAP) is a proxy for Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE) as independent variables. The three independent variables all have an impact on the dependent variable, Economic Growth (GDP).

The Endogenous Growth theory was well explained by past researchers. The empirical part explains the relationship between each independent variable with the dependent variable by past researchers.

3. Methodology

The methodology in this study allows readers to assess the study's overall validity and reliability. This chapter will go over model specification, tests for this study, regression equation, coefficient of determination, and regression coefficient analysis. When the results are positive and significant, the research objectives can be attained. If the results are perfectly positive, they can be used to tackle the problem of economic growth and come up with numerous solutions to boost Malaysia's economic growth.

Econometrics Model: To identify the relationship between Economic Growth and Market Capitalization (MCAP), Exchange Rate (EXC), and Trade Openness (TRADE) on Economic Growth (GDP), the statistical method uses multiple regression analysis with ordinary least squares. The equation of estimation of models:

$$Y = \beta_0 + \beta_1 \chi_t + \beta_2 \chi_t + \beta_3 \chi_t + \mathcal{E}_t \quad \ldots(1)$$

$$LNGDP_t = \beta_0 + \beta_1 LNMCAP_t + \beta_2 LNEXC_t + \beta_3 LNTRADE_t + \mathcal{E}_t \quad \ldots(2)$$

Where:
β_0 = Constant term
$\beta_1, \beta_2, \beta_3$ = Regression coefficients
$LNGDP_t$ = Log Gross Domestic Product for t period (Dependent Variable)
$LNMCAP_t$ = Log Market Capitalization for t period [as a proxy of Stock Market Development (SMD)]
$LNEXC_t$ = Log Exchange Rate for t period
$LNTRADE_t$ = Log Trade Openness for t period
$\mathcal{E}_t$ = Error term for t period
To eliminate the effect of the outlier, all variables were transformed to logarithmic form because logarithmic values have a lower tendency to fluctuate over time and to achieve linearity and reduce the problem of heteroscedasticity (Gujarati & Porter, 2009).

Measurement of the Variables and Sources of Data: The data type that will be used in this study is secondary data. The source of data of this study is all collected and extracted from a credible data provider that is World Bank data for the period between 1981 to 2020. The total observation in this study consisted of 40 observations for each variable. The Market Capitalization (MCAP) is used as a proxy for Stock Market Development (SMD). According to Md. Shakhaowat Hossin and Md. Shafiul Islam (2019), and Thaddeus, et al. (2021), these authors use The Market Capitalization (MCAP) as the proxy of Stock Market Development (SMD).

Table 1: The Measurement of Dependent Variable and Independent Variables

Bil	Mnemonic	Definition and Measurement	Sources
Dependent Variables	Economic Growth (GDP)	"GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for the depreciation of fabricated assets or for the depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used." (GDP (current US$))	World Bank data
Independent Variables			
	Market Capitalization (MCAP) as a	"Market capitalization (also known as market value) is the share price times the number of shares outstanding (including their several classes) for listed domestic	World Bank data

	proxy to Stock Market Development (SMD)	companies. Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded. Data are end of year values converted to U.S. dollars using corresponding year-end foreign exchange rates." (Market capitalization of listed domestic companies (current US$))	
	Exchange Rate (EXC)	Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). (Official exchange rate (LCU per US$, period average))	World Bank data
	Trade Openness (TRADE)	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. (Trade (% of GDP))	World Bank data

Hypothesis Development: This research paper will look into the corresponding theory and will accordingly identify the impact of Stock Market Development (SMD) on Economic Growth (GDP) in Malaysia, additionally with the other two independent variables, Exchange Rates (EXC) and Trade Openness (TRADE), that are believed to have an impact on Economic Growth (GDP) as well. This study will test the assumption of the Endogenous Growth Theory in determining the relationship between Stock Market Development (SMD) and Economic Growth (GDP) in Malaysia. Past studies have indicated that the investment ratio, according to the Endogenous Growth theory, has a positive effect on economic growth (GDP). Yartey and Adjasi (2007) and Adenuga (2010) as cited in Naik and Padhi (2015) discovered that the investment ratio positively promotes Economic Growth (GDP) using this variable of Stock Market Development (SMD).

Hypothesis 1:

H_1: there is no significant relationship between Stock Market Development (SMD) and Economic Growth (GDP) in Malaysia.

H_2: there is a significant relationship between Stock Market Development (SMD) and Economic Growth (GDP) in Malaysia.

Hypothesis 2:

H_1: there is no significant relationship between Exchange Rates (EXC) and Economic Growth (GDP) in Malaysia.

H_2: there is a significant relationship between Exchange Rates (EXC) and Economic Growth (GDP) in Malaysia.

Hypothesis 3:

H_1: there is no significant relationship between Trade Openness (TRADE) and Economic Growth (GDP) in Malaysia.

H_2: there is a significant relationship between Trade Openness (TRADE) and Economic Growth (GDP) in Malaysia.

Research Design: This research paper studies the impact of Stock Market Development (SMD) on Economic Growth (GDP) in Malaysia using quantitative analysis. This quantitative analysis is used to examine the data and test the study's hypotheses. This research mainly relied on secondary data from the World Bank data. This paper used time-series data to measure all independent variables data such as Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE), and a dependent variable, Economic Growth (GDP) from 1981-2020 (40years). The time-series data was used because this study only focuses on one country that is Malaysia. This study used E-views to test the data and determine the result using the Autoregressive distributed lag (ARDL) method and Granger Causality test.

Statistical Analysis

Unit Root Test

H_1 : δ = 0 (There is a unit root or the data is nonstationary.)
H_2: δ ≠ 0 (There is no unit root or the data is stationary.)

Autoregressive Distributed Lag (ARDL)
H_1 = ג1 + ג2 + ג3 = 0 (No co-integration exists)
H_2 = ג1 + ג2 + ג3 ≠ 0 (Co-integration exist)
The ARDL models can be expressed as below, following the study of Pesaran et al. (2001) as cited in Raza, Jawaid, Afshan, & Karim, 2015).

$$\Delta GDP_t = \Psi_0 + \Psi_1 \sum_{i=1}^{p} \Delta GDP_{t-1} + \Psi_2 \sum_{i=1}^{p} \Delta MCAP_{t-1} + \Psi_3 \sum_{i=1}^{p} \Delta EXC_{t-1} + \Psi_4 \sum_{i=1}^{p} \Delta TRADE_{t-1} + \gamma_1 GDP_{t-1} + \gamma_2 MCAP_{t-1} + \gamma_3 EXC_{t-1} + \gamma_4 TRADE_{t-1} + \varepsilon_t \quad \ldots(3)$$

Where Ψ_0 is the constant and ε_t is the white noise error term; the error correction dynamics is denoted by a summation sign, while the second part of the equation corresponds to a long-run relationship.

The following model will be used to estimate the long-run coefficients:

$$the\ the\ GDP_t = \lambda_0 + \lambda_1 \sum_{i=1}^{p} GDP_{t-1} + \lambda_2 \sum_{i=1}^{p} MCAP_{t-1} + \lambda_3 \sum_{i=1}^{p} EXC_{t-1} + \lambda_4 \sum_{i=1}^{p} TRADE_{t-1} + \varepsilon_t \quad \ldots(4)$$

Where λ_0 is the constant and ε_t is the white noise error term.

To estimate the short-run coefficients by using the following model:

$$\Delta GDP_t = \phi_0 + \phi_1 \sum_{i=1}^{p} \Delta GDP_{t-1} + \phi_2 \sum_{i=1}^{p} \Delta MCAP_{t-1} + \phi_3 \sum_{i=1}^{p} \Delta EXC_{t-1} + \phi_4 \sum_{i=1}^{p} \Delta TRADE_{t-1} + nEC_t + \varepsilon_t \quad \ldots(5)$$

The error correction model shows the speed of adjustment needed to restore the long-run equilibrium following a short-run shock. Here, n is the coefficient of error correction term in the model that indicates the speed of adjustment.

Diagnostic Test

Normality Test
H_1: The residual is normally distributed.
H_2: The residual is not normally distributed.

Serial Correlation
H_1: The residual has no serial correlation.
H_2: The residual has a serial correlation.

Heteroscedasticity
H_1: Homoscedasticity is present (the residuals are distributed with equal variance)
H_2: Heteroscedasticity is present (the residuals are not distributed with equal variance).

Stability Test

Granger Causality Test

The methodology used in this study was discussed in terms of the measurement of the data, the definition of the data, the source of the data, the hypothesis development, the research design, and the method of estimation. Firstly, the unit root test was performed. Secondly, the ARDL method was performed. Thirdly, the diagnostic test as well as the stability test were performed. Lastly, the Granger Causality test was performed.

4. Results and Discussion

The results and discussion chapter presents the findings of the research study and provides an in-depth analysis of the data collected. It gives a general idea of the crucial results of the study and offers insights into the underlying meaning and importance of these findings. The discussion part relates the outcomes to previous research, emphasizing similarities and disparities in the results. The chapter concludes with a brief overview of the most important outcomes and their significance to the field of study. The results obtained by the tests like unit root, ARDL method, and Granger Causality will be discussed below.

Unit Root Test: Before proceeding to run the ARDL co-integration bound test, using the ADF, a unit root test was performed to determine the level of stationary for each variable.

Table 2: The Stationarity Results using Unit Root Test (ADF)

Variables	ADF At Level [I(0)] Prob.	First Difference [I(1)] Prob.	Conclusion
LNGDP	0.7506	0.0001	I(1)
LNMCAP	0.4992	0.0000	I(1)
LNEXC	0.6354	0.0002	I(1)
TRADE	0.6224	0.0038	I(1)

According to the results of the unit root Augmented Dickey-Fuller (ADF) test in Table 2, Economic Growth (GDP), Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE) were at a non-stationary level and significant after the first difference stationary. All variables are stationary at first difference or integrated of order I(1). Hence, the Unit Root Test result shows that all the variables are stationary at the first difference, The ARDL approach can be applied as the method would only apply to a mixture of I(0) and I(1) data or with only purely I(0) and purely I(1) data (Pesaran et al., 2001) as cited in (Raza, Jawaid, Afshan & Karim, 2015).

Autoregressive Distributed Lag (ARDL): ARDL method is widely used in the analysis of time series data and is effective in modelling the interdependence of variables in both the short run and the long run. Since the result of the Unit Root test shows stationary at first difference or integrated of order I(1) for all variables, the ARDL method can proceed. Below are the results of the tests of the ARDL method.

Long Run Cointegration

Table 3: ARDL Bound Test Results

Computed F-statistic 23.6411 k=3, n=35	Critical Value Lower Bound	Upper Bound
1% significance level	2.37	3.2
5% significance level	2.79	3.67
10% significance level	3.65	4.66

To obtain the Long Run Cointegration, the Bound Test is used. The results of Table 3 show that the co-integration bound test revealed the computed F-statistics value of 23.6411, which exceeded the upper bound

critical value of 3.67 at a 5% significance level. The comparisons indicated that the null hypothesis of no co-integration was rejected. The bound test rejects the null hypothesis of no co-integration if the F-statistic is greater than the critical value of both the I(0) and I(1) regressors and does not reject it otherwise (Belloumi, 2014). Thus, the relationship of long-run cointegration existed between the variables in the model, namely the dependent variable of Economic Growth (GDP) and its independent variables of Stock Market Development (SMD), Exchange Rate (EXC), and Trade Openness (TRADE).

Long Run Coefficient

Table 4: ARDL Long Run Test Results

ARDL (1, 4, 0, 1) **Dependent Variable: DLNGDP**			
Variable	**Coefficient**	**Std. Error**	**Probability**
DLNMCAP	0.1104	0.1019	0.2894
DLNEXC	-1.2481	0.3616	0.0020
DTRADE	0.0029	0.0018	0.1135
C	0.0753	0.0161	0.0001

Based on Table 4, the result indicates that the proxy of Stock Market Development (SMD), Market Capitalization (MCAP) has a positive and statistically insignificant (at 0.05 level of significance) relationship with Economic Growth (GDP) in the long run. One percent increase in Market Capitalization (MCAP), will increase Economic Growth (GDP) by 0.1104% in the long run. Since MCAP has an insignificant relationship with GDP, this study does not support the Endogenous Growth theory that Stock Market Development (SMD) spurs Economic Growth (GDP). While Market Capitalization (MCAP) may have a positive effect on the economy, this effect is not large enough to be considered meaningful. This result has the same outcome with a study by Nathaniel et al., (2020), the result of long-run ARDL shows that Stock Market Development (SMD) has a positive but insignificant relationship with Economic Growth (GDP) in Nigeria. The authors conclude that in Nigeria, Stock Market Development (SMD) cannot be relied on to promote Economic Growth (GDP) in the long run.

These outcomes are not a shocking event, because as we look back at Figure 1 and Figure 2 of the trend chart of Stock Market Development and Economic Growth in Malaysia from 1981 to 2020, there were inconsistent trends in the movement between both variables. First, when the global recession in 2008 happened, the trend of Stock Market Development (SMD) decreased while the trend of Economic Growth (GDP) increased. When Market Capitalization (MCAP), a proxy of Stock Market Development (SMD) declines, it may indicate decreased investor confidence and capital availability, which can harm investment, entrepreneurship, and innovation, resulting in lower levels of economic growth (Demirgüç-Kunt & Levine, 1996). Second, when the Coronavirus disease (COVID-19) started to spread, the trend of Stock Market Development (SMD) increased while the trend of Economic Growth (GDP) decreased. A sudden increase in Market Capitalization (MCAP), a proxy of Stock Market Development (SMD), can indicate excessive speculation, which can lead to market volatility and economic instability. According to a study conducted by Demirgüç-Kunt and Levine (1996), while a well-developed stock market can boost economic growth in the short run, it can also cause financial instability and reduce economic growth in the long run if proper financial regulations and institutions are not in place.

Based on the table above, the only variable that impacts Economic Growth (GDP) is Exchange Rate (EXC). Exchange Rate (EXC) has a negative and statistically significant (at 0.05 level of significance) relationship with Economic Growth (GDP) in the long run. This indicates that the Exchange Rate (EXC) would affect Economic Growth (GDP) in the long run. One percent increase in Exchange Rate (EXC), will decrease Economic Growth (GDP) by 1.2481% in the long run. This result aligns with the past study by Hoque & Yakob (2017). The authors conclude that the Exchange Rate (EXC) has a negative and statistically significant impact on Economic Growth (GDP) in the long run. Exchange Rate (EXC) can have a positive or negative impact on Economic Growth (GDP) (Arthur & Addai, 2022). Trade Openness (TRADE) has a similar result to Stock Market Development (SMD) on Economic Growth (GDP). Trade Openness (TRADE) has a positive and statistically insignificant (at 0.05 level of significance) relationship with Economic Growth (GDP) in the long run. One percent increase in Trade Openness (TRADE), will increase Economic Growth (GDP) by 0.0029% in the long run. Although the impact is positive, since the result is insignificant, it is not large enough to be considered meaningful.

Short Run ECM Model

Table 5: Estimation of Short-Run ECM Model

ARDL (1, 4, 0, 1) Regressor	Coefficient	Prob.
CointEq(-1)	-0.8873	0.0000
MCAP	0.0223	0.3473
TRADE	0.0011	0.1732
R-squared	0.9035	
Durbin-Watson	2.1452	

Table 5 shows that the coefficient ECM for this model in the short run was negative relationship and statistically significant at 0.05 level of significance. In a dynamic model, the error correction term (ect(-1)) measures the rate at which adjustments are made to restore equilibrium. If the error correction term has a significant negative estimate, long-run equilibrium can be achieved. Its estimate is -0.8873, which corresponds to a 1.1-year change in deviations toward long-run equilibrium.

Diagnostic Test: For the diagnostic test for ARDL, serial correlation, heteroscedasticity, and normality tests were performed.

Table 6: Diagnostic Test for ARDL Result

Diagnostic Test	Chi-Square (p-value)	Findings
Breusch-Godfrey Serial Correlation LM	0.1253	No serial correlation problem
Heteroscedasticity Breusch-Pagan-Godfrey	0.4235	No heteroscedasticity problem
Jarque-Bera test for normality	0.0036	Model errors are not normally distributed

Based on Table 6, the results show that this model has no serial correlation as it is more than 0.05 (0.1253 > 0.05), we are unable to reject the null hypothesis of no serial correlation. Next, for the Heteroscedasticity Test, as the p-value is more than 0.05 (0.4235 > 0.05), we are unable to reject the null hypothesis of no heteroscedasticity. Thus, this model has no heteroscedasticity or that this model is homoscedasticity. As the p-value is more than 0.05, we are unable to reject the null hypothesis. So, we can conclude that the model errors are normally distributed. For the normality test, as the p-value is less than 0.05 (0.0036 < 0.05), we reject the null hypothesis. So, we can conclude that the model errors are not normally distributed.

Stability Test: To ensure the stability of the model, the CUSUM Test and CUSUM Square Test were performed for the long-run stability test.

Figure 4: Plot of Cumulative Sum of Recursive Residuals

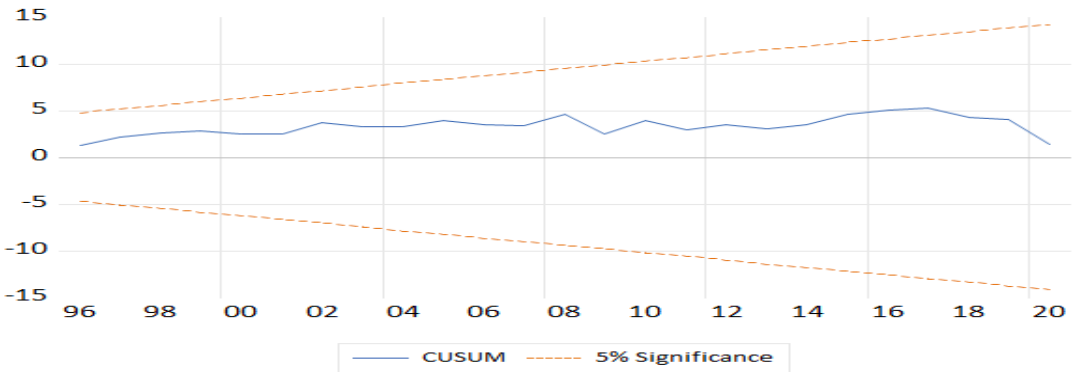


Figure 5: Plot of Cumulative Sum of Squares of Recursive Residuals

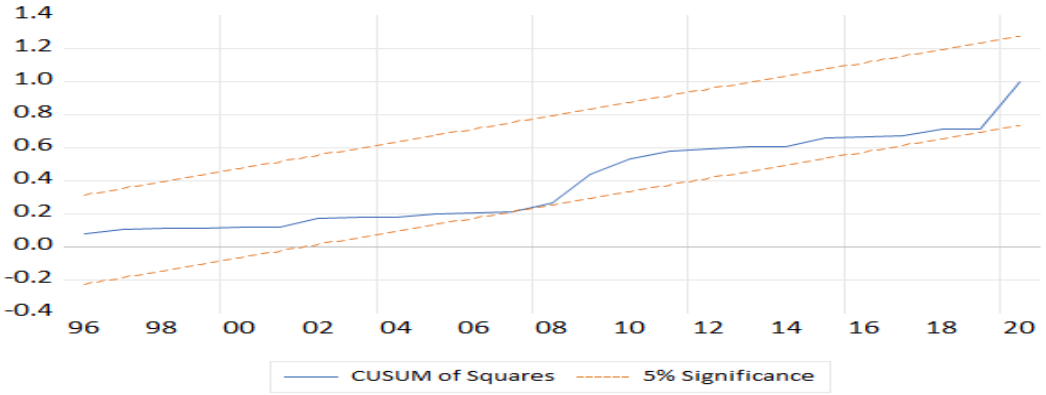


Figure 4 shows the plot of CUSUM and Figure 5 shows the plot of CUSUMQ. The CUSUM (cumulative sum) and CUSUMQ (cumulative sum of squares) from the recursive estimation of the model also indicate that the model is stable since the residuals are within the critical bounds at the 5% significance level.

Granger Causality Test: The Granger Causality test is a statistical method for determining the relationship between two time series variables. The test is based on the Granger causality concept, which states that a variable X is said to Granger-cause another variable Y if the information in X improves the prediction of Y beyond what can be achieved using only the information in Y. Below is the result of the Granger causality test.

Table 7: Granger Causality Test Results

Null Hypothesis	Obs	F-Statistic	Prob.	Decision	Conclusion
DLNGDP does not Granger Cause DLNEXC	37	0.8092	0.4541	Reject	Bidirectional causality
DLNEXC does not Granger Cause DLNGDP		1.4029	0.2606	Reject	
DLNMCAP does not Granger Cause DLNEXC	37	6.4554	0.0044	Accept	Unidirectional causality (EXC Granger cause MCAP)
DLNEXC does not Granger Cause DLNMCAP		0.1650	0.8486	Reject	
DTRADE does not Granger Cause DLEXC	37	0.4825	0.6217	Reject	Bidirectional causality
DLEXC does not Granger Cause DTRADE		0.6054	0.5520	Reject	
DLNMCAP does not Granger Cause DLNGDP	37	11.6148	0.0002	Accept	Unidirectional causality (GDP Granger cause MCAP)
DLNGDP does not Granger Cause DLNMCAP		0.4276	0.6558	Reject	
DTRADE does not Granger Cause DLNGDP	37	1.0660	0.3563	Reject	Bidirectional causality
DLNGDP does not Granger Cause DTRADE		0.3898	0.6803	Reject	
DTRADE does not Granger Cause DLNMCAP	37	0.7253	0.4920	Reject	Bidirectional causality
DLNMCAP does not Granger Cause DTRADE		0.0931	0.9114	Reject	

Based on the result in Table 7 obtained for the Granger causality test, there is a bidirectional relationship between Exchange Rates (EXC), Trade Openness (TRADE), and Economic Growth (GDP). The p-values were all more than 0.05 level of significance, thus we reject the null hypothesis. This indicates that Exchange Rates (EXC) and Trade Openness (TRADE) Granger cause Economic Growth (GDP) and vice versa. This means that there is

evidence to suggest that the past values of Exchange Rates (EXC) and Trade Openness (TRADE) do provide additional information in predicting the current value of Economic Growth (GDP). There is evidence to suggest that the past values of Economic Growth (GDP) provide additional information in predicting the current value of Exchange Rates (EXC) and Trade Openness (TRADE).

Lastly, there is a unidirectional causality between Market Capitalization (MCAP) and Economic Growth (GDP). In this case, Economic Growth (GDP) Granger causes Market Capitalization (MCAP), while Market Capitalization (MCAP) does not Granger cause Economic Growth (GDP). The p-value of MCAP Granger cause GDP is 0.6558 which is more than 0.05 level of significance (0.6558 > 0.05), thus we reject the null hypothesis. This means that there is evidence to suggest that the past values of Economic Growth (GDP) provide additional information in predicting the current value of Market Capitalization (MCAP).

Table 2 shows the stationarity results using the Unit Root Test (ADF). The MCAP, EXC, and TRADE variables are stationary at first difference or integrated of order I(1). Table 3 shows the ARDL bound test result. The result indicates that the relationship of long-run cointegration existed between the variables in the model. Table 4 shows the result of the ARDL long-run test. The result reveals that MCAP and TRADE have a positive and statistically insignificant relationship with GDP. Meanwhile, EXC has a negative and statistically significant relationship with GDP. Next, Table 5 shows the results of the short-run ECM model. The result implied the coefficient ECM for this model in the short run was a negative relationship and statistically significant. To achieve a long-run equilibrium, this model needed a 1.1-year change in deviations. Table 6 shows the result of a diagnostic test which indicates that there are no serial correlation problems and no heteroscedasticity problem and that the model errors are not normally distributed. Next, Figures 4 and 5 for the stability test showed that the model is stable since the residuals are within the critical bounds at the 5% significance level. Lastly in Table 7, there is a bidirectional relationship between EXC, TRADE, and GDP. As well as a unidirectional causality between MCAP and GDP where GDP Granger causes MCAP.

5. Conclusion and Recommendation

Conclusion: This study explored the impact of stock market development on economic growth in Malaysia and adopted the Endogenous Growth theory which many past studies have explained well about the relationship between Stock Market Development (SMD) and Economic Growth (GDP). The independent variables used in this study are Market Capitalization (MCAP) as a proxy for Stock Market Development (SMD), Exchange Rate (EXC), and Trade (TRADE). While the dependent variable is Economic Growth (GDP). Using a time series of 40 years of data (1981 to 2020), this study used the Autoregressive distributed lag (ARDL) method and Granger causality test to obtain the results. The result of the ARDL long-run test suggested that Stock Market Development (SMD) and Trade Openness (TRADE) have a positive and statistically insignificant relationship with Economic Growth (GDP). Meanwhile, Exchange Rates (EXC) have a negative and statistically significant relationship with Economic Growth (GDP). The results of the short-run ECM model suggested that the model in this study is a negative relationship and statistically significant where to achieve a long-run equilibrium, this model needed a 1.1-year change in deviations. The negative estimate indicates that the long-run equilibrium can be achieved. Lastly, the result of the Granger causality test suggested that there is a bidirectional relationship between Exchange Rates (EXC), Trade Openness (TRADE), and Economic Growth (GDP). As well as there is also a unidirectional causality between Stock Market Development (SMD) and Economic Growth (GDP) where Economic Growth (GDP) Granger causes Stock Market Development (SMD).

Suggestions and Policy Implication: The relationship between stock market development and economic growth is generally regarded as positive, implying that a well-developed stock market can both support and promote economic growth. Although this model is unable to prove that there is an impact between stock market development on economic growth, the sign of the coefficient, in the long run, turns out to be positive. Hence, the government should take necessary steps to improve the stock market development to promote economic growth. A well-functioning stock market provides businesses with long-term financing, allowing them to invest in new projects, expand operations, and create jobs. This, in turn, has the potential to boost economic growth. The Malaysian government should improve market regulation by making sure the stock market is well-regulated and transparent can help to boost investor confidence and increase market investment. This can be accomplished by strengthening market surveillance and enforcement mechanisms, increasing disclosure and

transparency requirements, and holding market participants accountable for any wrongdoings. Furthermore, a well-developed stock market can improve individuals' and households' access to capital, allowing them to invest in the stock market and potentially increase their wealth.

This can result in increased consumer spending and a boost to the economy. This model suggests that exchange rates have a negative and statistically significant relationship with economic growth. A negative relationship between exchange rates and economic growth can occur when a country's currency depreciates, making imports more expensive. This can result in inflation, reducing consumer purchasing power and potentially slowing economic growth. A weaker currency may also discourage foreign investment, reducing economic growth. Hence, the government must take proper action to increase the exchange rates in Malaysia. By implementing a monetary policy, the Malaysian central bank can adjust monetary policy to influence the exchange rate. Raising interest rates, for example, can increase demand for the Malaysian ringgit, causing the currency to strengthen. To increase the exchange rates in Malaysia, the Malaysian government should encourage trade openness with other countries and increase exports, which can help the ringgit's demand. This can be accomplished by lowering trade barriers, negotiating free trade agreements, and marketing the country as a good place to invest.

Limitations and Directions for Future Research: This study has had limited access to the information on the data of a variable namely market capitalization. The data is only available up until 2020. It is disappointing that this research could not obtain up-to-date data to be used in the regression. Hoping in the future the data can be updated frequently and up to date, so that, for future research, researchers can use up-to-date data to publish an up-to-date paper. Next, this study may have not captured other factors that influence economic growth, but future research should include other variables that could also be the factors that influence economic growth. It is important to look into these other variables as they can comprehensively understand how economic growth can be influenced. This research may include examining a broader range of elements such as the impact of social progress and technological advances on economic growth. Additionally, researchers should consider exploring emerging markets and economies to truly understand how economic growth is affected by different trends. By including this other variable that could also be the factor that influences economic growth, researchers will be able to gain a better perspective into the overall impact of economic growth on future generations.

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