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Examining the relationship between stock market development and economic performance in Malaysia

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Abstract

This study aims to examine the impact of stock market performance on economic growth using time series data from 2002 to 2018, analyzed on a quarterly basis. The study evaluates performance through key measures, including standard deviation as an indicator of volatility, total value traded and turnover ratio as measures of liquidity, and stock market capitalization ratio as a measure of market size. The research specifically focuses on the Malaysian stock exchange. Real GDP is employed as a proxy for economic growth, while exchange rates and interest rates serve as control variables. To analyze the relationship, the study applies the Vector Autoregressive (VAR) model and the Granger causality test to determine the directional link between stock market performance and economic growth. The findings reveal that the variables are statistically insignificant, indicating no substantial relationship between stock market performance and economic growth.

Keywords: Stock Market, Economic Growth, Vector Autoregressive, Granger Causality.

INTRODUCTION

The stock market plays a crucial role in a country's economic growth by facilitating the buying and selling of stocks. Its primary functions include raising capital, channeling public savings, and promoting capital formation by encouraging individuals to invest their wealth in profitable ventures. Additionally, stock markets contribute to risk management and diversification, helping investors minimize risk while maximizing returns through diversified portfolios.

The impact of the stock market on GDP is evident in its influence on consumer confidence and overall financial conditions. During a bull market, investor optimism rises, positively affecting economic activity. Conversely, during a bear market, economic uncertainty increases, leading companies to cut costs and reduce their workforce, which negatively impacts GDP (Koller, 2010).

Some studies suggest that economic growth drives stock market development, as financial growth often follows economic expansion. For instance, Christopher (2011) highlights the stock market's significant role in fostering a nation's economic growth.

Research Problem

In any country, the development of the stock market primarily aims to support companies in raising funds for expansion and productive investments. It also plays a key role in channeling savings into the economy. As a developing nation, Malaysia seeks to stimulate economic growth, making it essential to understand the stock market's role in this process. However, there is a lack of sufficient evidence regarding the stock market's impact as a driver of economic development. This study examines the relationship between stock market performance and Malaysia's economic growth. The central research question is: "How does stock market performance affect Malaysia's economic growth?"

Research Objective

The primary objective of this research is to examine the relationship between stock market performance and economic growth within the Malaysian context.

LITERATURE REVIEW

Several hypotheses explain the relationship between stock market development and economic growth (Mittal, 2017; Enisan & Olufisayo, 2007; Christopher, 2011; Tumaini, 2015). The first is the efficient market hypothesis, which suggests that stock prices in an exchange reflect all available information. According to this hypothesis, an efficient market enables savers to allocate their funds toward productive investments, ultimately enhancing resource availability and contributing to economic growth (Jackline, 2017).

The second is the supply-leading hypothesis, also known as the finance-led growth hypothesis, which asserts that financial development drives economic growth. This perspective suggests that improvements in financial systems enhance capital accumulation efficiency, increase savings rates, and boost investment. A well-functioning financial system facilitates resource mobilization, thereby promoting economic expansion (Karim, 2017).

The third key hypothesis is the demand-following hypothesis, which suggests that financial development occurs as a result of economic growth. Christopher (2011) argues that stock markets contribute to economic growth by increasing the demand for financial services, which in turn fosters the development of financial institutions and markets. Patrick (1966) further explains that the relationship between financial development and economic growth depends on a country's stage of economic development. In the early stages, financial growth supports capital formation, while the introduction of new financial services creates investment opportunities, ultimately enhancing economic expansion.

The fourth hypothesis can be divided into two parts. The first part, known as the feedback hypothesis, combines elements of both the supply-leading and demand-following hypotheses. It proposes a bidirectional relationship between stock market performance and economic growth, where each influences the other. The second part, the neutral hypothesis, suggests that financial development and economic growth are unrelated. However, in countries with well-developed stock markets, economic expansion is often driven by technological advancements and innovations in products and services, leading to increased demand for stock market activities. In such cases, the stock market adapts to these changes, further stimulating economic growth. As a result, financial and economic development are seen as mutually dependent, potentially leading to a bidirectional causal relationship (Zivengwa & Bokosi, 2011).

A study conducted by Mweembe Mundena, Robert Pickson, and Wonder Agbenyo (2019) explored the relationship between stock market development and economic growth in Zambia. Utilizing the Vector Autoregressive (VAR) model and the Granger causality test, the study

analyzed quarterly time series data from 1996Q1 to 2015Q4. The findings indicated a unidirectional causality from market capitalization to economic growth.

Additionally, the study examined the dynamic interaction between stock market development and economic growth in Zambia. The results revealed that fluctuations in economic growth have a significant predictive impact on market capitalization, suggesting that economic changes influence stock market trends over time.

Ali Raza Sattar, Muhammad Aamir Ali, Mohsin Rehman, and Sehrish Naeem (2018) conducted a study examining the impact of stock markets on economic growth in China, India, and Pakistan. The research utilized 25 years of data, covering the period from 1993 to 2016. Panel regression, the Hausman specification test, and the random effects model were applied in the analysis. The findings indicated that stock market capitalization positively influences GDP.

Similarly, Chepkoech (2017) investigated the relationship between stock market capitalization and economic growth in Kenya from 2005 to 2015, using quarterly data. The study employed regression analysis and found that stock market capitalization has a positive effect on economic growth.

Onwukeme, Ogochukwu, and Raifu (2017) explored the relationship between stock market development and economic growth in various African countries, including Zimbabwe, Zambia, Tunisia, Swaziland, South Africa, Nigeria, Morocco, Mauritius, Kenya, Ghana, Egypt, Côte d'Ivoire, and Botswana. The study covered the period from 1990 to 2014 and employed multiple analytical methods, including dynamic ordinary least squares, fully modified ordinary least squares, as well as random and fixed effects models. The findings indicated a positive association between stock market development and economic growth across the African region.

Similarly, Kumar and Padhi (2015) examined the impact of stock market development on economic growth in 27 emerging economies from 1995 to 2012 using annual panel data. To assess the stationarity properties, the second-generation panel unit root test was applied, while the heterogeneous panel causality test was used to determine causal relationships among variables. The results demonstrated a significant positive relationship between stock market development and economic growth.

Kamal (2013) analyzed the impact of financial development on economic growth in Egypt using annual data from 1988 to 2012. The study considered market capitalization as an indicator of market size and the total value of stock traded as a percentage of GDP to assess market liquidity. The findings revealed that stock market development had no significant effect on Egypt's economic growth.

Similarly, Dombou (2016) examined the relationship between stock market return volatility and economic growth. The study applied the GARCH framework to capture return volatility and the VAR framework to assess the connection between stock market performance and economic growth. Using quarterly data from 2000 to 2015 for Ivory Coast, Nigeria, and Cameroon, the results indicated an insignificant relationship between stock market development and economic growth.

Masoud conducted a study on the relationship between stock market performance and economic growth in developing and emerging markets from 1996 to 2001. The findings demonstrated a significant positive correlation between market capitalization ratio and GDP, indicating that stock market growth contributes to economic expansion.

METHODOLOGY

This study examines the relationship between stock market performance and economic growth using quarterly time series data from 2002 to 2018. According to the endogenous growth theory, long-term economic growth is driven by internal factors. Several proxy variables are used to assess stock market performance, including stock market volatility, liquidity, and

capitalization, while real GDP serves as an indicator of economic growth. Inflation, interest rates, and exchange rates are included as control variables.

Stock market capitalization ratio is used to measure the size of the stock market relative to the overall economy. Based on the efficient market hypothesis, market size contributes to economic growth by facilitating capital mobilization and risk diversification (Tumaini, 2015).

To evaluate market efficiency, stock market liquidity is considered. It is measured using the total value of shares traded ratio and the turnover ratio. Under the assumption of ceteris paribus (holding other factors constant), stock market liquidity is treated as an independent variable, while real GDP serves as the dependent variable. Stock market liquidity enhances economic growth by providing investors with access to their wealth before the completion of investment projects through the ability to sell their shares.

Stock market volatility reflects the degree of fluctuation in returns for a particular security. According to the capital asset pricing model, an increase in volatility leads to higher risk, prompting investors to demand a greater risk premium as compensation. This rise in risk also drives up borrowing costs, making it more challenging for firms to secure affordable financing. As a result, businesses may delay expansion and investment, which can negatively impact a country's economic growth.

To measure economic growth, real gross domestic product (GDP) is used as an indicator. Additionally, quarterly published discount rates and exchange rates against the US dollar serve as control variables in the analysis.

FINDINGS

Descriptive Analysis for the Research Variables

Descriptive analysis for the research variables are provided below.

Table 1

Descriptive Analysis for the Research Variables

Research Variables	Mean	Median	Maxim	Minim.
Interest Rate	0.104444	0.074500	0.171500	0.075000
Exchange Rate	0.047477	0.040750	0.174700	0.045000
Market Capitalization to GDP	0.747444	0.414114	1.447441	0.047144
Market Volatility	4.407757	5.055444	11.41104	0.054144
Total Value Traded Share	0.144474	0.145041	1.077757	0.047750
Turnover Ratio	0.141447	0.114174	0.540441	0.074147
Real GDP Growth Rate	1.110447	0.047100	14.01150	-7.577

The table above presents the descriptive statistics of the variables. The average interest rate is 0.10, with a median of 0.097, a minimum of 0.085, and a maximum of 0.192. The exchange rate has a mean value of 0.078, ranging from a minimum of 0.04 to a maximum of 0.18. For market capitalization relative to GDP, the average value is 0.939, with a minimum of 0.039 and a maximum of 2.678. Market volatility has a mean of 6.30, with values ranging from 0.056 to 22.62. Regarding total value traded share, the mean value is 0.237, with a minimum of 0.039 and a maximum of 1.099. The turnover ratio has an average of 0.241, with a minimum of 0.097 and a maximum of 0.570. Finally, the real GDP growth rate has a mean of 1.11, with a minimum of -8.589 and a maximum of 14.022.

Normality test for the Research Variables

Table 2

Normality Test for the Research Variables

Research Variables	Skewness	Kurtosis	Jarque-Bera	P value
Interest Rate	1.608143	4.581484	44.48653	0.000
Exchange Rate	1.658087	4.048404	45.84683	0.000
Market capitalization to GDP	1.045805	5.680840	15.51865	0.0055
Market Volatility	1.015539	5.445180	15.10400	0.0055
Total Value Traded Share	1.848103	6.611463	85.56805	0.000
Turnover Ratio	1.185804	4.815679	54.16487	0.000
Real GDP Growth Rate	0.458453	5.648605	5.168645	0.505

The table above presents the normality statistics for the variables. The results indicate that none of the variables, except for the real GDP growth rate, follow a normal distribution. This is evident as the probability values for all variables are below 0.05, except for the real GDP growth rate, which has a probability value greater than 0.05.

Unit Root Test – Stationarity Assumption

To assess the stability of the variables, a stationarity test was conducted using the Augmented Dickey-Fuller (ADF) test for the period from 2002 to 2018. The figure below presents the stationarity results, indicating that while some variables are stationary, others are not. These findings align with the results obtained from the Augmented Dickey-Fuller unit root test.

Co-integration using Johansen Model

The Johansen co-integration test is employed to analyze the relationship between research variables in Egypt from 2002 to 2018. This test is used to determine whether a correlation exists among the variables. It is preferred over the Engle-Granger co-integration test because it allows for the identification of multiple co-integration relationships, whereas the Engle-Granger test is limited to only one.

Table 3

Co-Integration Test for the Research Variables

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.955776	575.5794	555.7553	0.0000
At most 3 *	0.489479	98.75954	95.75576	0.0554
At most 3	0.555593	57.57574	79.85888	0.5774
At most 3	0.544556	50.75557	47.85754	0.7854
At most 4	0.555556	55.05774	59.79706	0.8889
At most 5	0.077707	4.850854	55.49474	0.8544
At most 7	0.008054	0.508576	5.845476	0.4758

Trace test indicates 2 cointegrating eq(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

The table above presents details of the Johansen co-integration test for the variables. The test statistics suggest the absence of co-integration among the variables, indicating that the Vector Autoregressive (VAR) model is a suitable approach for analyzing the relationship.

VAR and Granger Causality for Testing the Research Hypotheses

Before running the VAR model, it is essential to determine the optimal lag length for each variable. To achieve this, the Akaike Information Criterion (AIC), which is widely used and recognized, is applied. The results indicate that Real GDP has 8 lags, the Interest Rate has 2 lags, the Exchange Rate has 1 lag, the Market Capitalization to GDP Ratio has 2 lags, the Standard Deviation has no lags, the Total Value Traded Shares to GDP Ratio has 1 lag, and the Turnover Ratio has 1 lag.

Vector Autoregressive (VAR) Model

Building on previous studies, the Vector Autoregressive (VAR) model is applied to analyze the relationship among the study variables. Since the co-integration test indicates no co-integration among the variables, the VAR model is deemed the appropriate regression model.

The results of the VAR model reveal that market capitalization and real GDP are not statistically significant, as indicated by the insignificant p-values and corresponding t-values. Consequently, the hypothesis that stock market capitalization positively and significantly influences economic growth is rejected.

Similarly, regarding stock market liquidity, the VAR model shows that the relationship between total value traded shares and real GDP is statistically insignificant due to low t-statistics and insignificant p-values. Therefore, the hypothesis that stock market liquidity positively and significantly impacts economic growth is also rejected.

To assess stock market volatility, the VAR model results indicate that the relationship between standard deviation and real GDP is statistically insignificant. These findings suggest that stock market volatility negatively impacts economic growth.

Regarding control variables, the relationships between the exchange rate, discount rate, stock market, and economic growth are also statistically insignificant.

Ultimately, the VAR model results suggest that the stock market did not influence economic growth in Malaysia during the selected study period. These findings contradict existing literature, including studies by Mwambwene (2013), Kumar and Podhi (2015), and Tuony (2012).

Granger Causality Test

After identifying the suitable regression model, the Granger causality test was conducted using a lag length of eight. The results indicate that stock market variables—such as total value traded shares, turnover ratio, and stock market capitalization—along with stock market volatility (measured by standard deviation) and control variables (exchange rate and discount rate) do not significantly influence economic growth, as their p-values exceed the critical threshold of 0.05. As a result, the hypothesis (H4) suggesting a unidirectional causality between stock market performance and economic growth is rejected.

CONCLUSION

The study aimed to examine the impact of stock market performance on economic growth, using real GDP as a measure, for the Malaysian economy from 2002 to 2018 on a quarterly basis. The findings indicate that stock market capitalization has an insignificant relationship with economic growth. Additionally, stock market liquidity—measured by total value traded shares and the turnover ratio—also shows no significant association with economic growth. Similarly, stock market volatility does not exhibit a significant impact on economic growth.

To assess the directional relationship between variables, the Granger causality test was conducted. The results confirm an insignificant relationship between stock market performance and economic growth. These findings align with previous studies, including those by Badr (2015), Kamal (2013), and Karim (2017).

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