UNIVERSITI TEKNOLOGI MARA

Voice of Academia

Academic Series of Universiti Teknologi MARA Kedah

VoA
2023
Volume 19 Issue II

DR MAHADZIR BIN ISMAIL,
UiTM KEDAH BRANCH

DR MOHD NOR SYAHRIR ABDULLAH,
UNIVERSITI MALAYA

DR MOHD ZOOL HILMIE BIN MOHAMED SAWAL,
UiTM KEDAH BRANCH

DR MUHAMAD KHAIRUL ANUAR BIN ZULKEPLI,
UiTM KEDAH BRANCH

DR NAZNI BIN NOORDIN,
UiTM KEDAH BRANCH

DR NOR ARDYANTI BINTI AHMAD,
UiTM KEDAH BRANCH

DR NOR AZRINA BINTI MOHD YUSOF @ GHANI,
UiTM KEDAH BRANCH

DR NUR AIDA BINTI KIPLI,
UiTM SARAWAK BRANCH

DR NUR SYAZWANIE BINTI MANSOR,
UiTM KEDAH BRANCH

DR REEZLIN ABD RAHMAN,
PENGARAH KOLEJ KOMUNITI BALING KEDAH

DR SITI NORFAZLINA BINTI YUSOFF,
UiTM KEDAH BRANCH

DR SHATINA SAAD,
UITM SHAH ALAM

LANGUAGE REVIEWER

AISHAH BT MUSA,
APB UiTM KEDAH BRANCH

AZLAN BIN ABDUL RAHMAN,
APB UiTM KEDAH BRANCH

AZRUL SHAHIMY BIN MOHD YUSOF,
APB UiTM KEDAH BRANCH

BAWANI A/P SELVARAJ,
APB UiTM KEDAH BRANCH

DR NUR SYAZWANIE BINTI MANSOR,
APB UITM KEDAH BRANCH

DR WAN IRHAM BIN ISHAK,
APB UiTM KEDAH BRANCH

HAWA SYAMSINA MD SUPIE,
UiTM SHAH ALAM

HO CHUI CHUI,
APB UiTM KEDAH BRANCH

JUWAIRIAH OSMAN,
UNIVERSITI MALAYA

MAS AIDA BINTI ABD RAHIM,
APB UiTM KEDAH BRANCH

MUHAMMAD ZAKI RAMLI,
PROOFREADERS UNITED

NOR ASLAH BINTI ADZMI,
APB UiTM KEDAH BRANCH

NORLIZAWATI BINTI MD TAHIR,
APB UiTM KEDAH BRANCH

NURAZILA BT ABDUL AZIZ,
APB UiTM KEDAH BRANCH

NURUL SYAFIQAH BINTI SAM,
PEGAWAI PERKHIDMATAN PENDIDIKAN PULAU PINANG
PROFESSIONAL EDITOR: TAKIERA ENTERPRISE
PROFESSIONAL EDITOR: PUSTAKA MADANI

SHAFINAH BINTI MD SALLEH,
APB UiTM KEDAH BRANCH

SAMSIAH BINTI BIDIN,
APB UiTM KEDAH BRANCH

e-ISSN: 2682-7840

© Voice of Academia is jointly published by the Universiti Teknologi MARA Caawangan Kedah, Malaysia and Penerbit UiTM (UiTM Press), Universiti Teknologi MARA Malaysia, Shah Alam, Selangor.

TABLE of CONTENTS

Voice of Academia
Academic Series of Universiti Teknologi MARA Kedah

Voice of Academia Vol.19 Issue (2) 2023

Voice of Academia

e-ISSN: 2682-7840

INVESTIGATING THE IMPACT OF MACROECONOMIC VARIABLES ON KLCI MALAYSIA'S STOCK MARKET RETURN: THREE DECADES OF OBSERVATION

Aqilah Syafiqah Abd Aziz[1], Farah Farisha Akhdar Ahmad[2], Melissa Nur Hazirah Masrom[3], Ahmad Syahmi Ahmad Fadzil[4] & Nur Fatihah Shaari[5]

[1,2,3,4,5,6]*Faculty of Business and Management, Universiti Teknologi MARA, Segamat, Johor*

ARTICLE INFO

Article history:

Received Feb 2022
Accepted Jan 2023
Published June 2023

Keywords:

Malaysia's Stock Market Return, Inflation Rate, Gross Domestic Product, Exchange Rate & Interest Rate

Corresponding Author:
2020977049@student.uitm.edu.my

ABSTRACT

Macroeconomic variables are primary indicators that represent the current state of the economy. Understanding the relationship between macroeconomic variables and the stock market return is crucial as the variables have a systematic influence on the stock market return. The incident of The Black Monday, The Wall Street Crash of 1929, the Asian Financial Crisis (AFC), and the Global Financial Crisis (GFC) are examples of how the domestic and worldwide economies are affected by the stock market. Therefore, investors will appraise these macroeconomic indicators when evaluating stocks to maximize their market returns and predict price movement. Therefore, this research evaluates the selected macroeconomic variables on Malaysia's stock market return. The selected variables of interest are gross domestic product (GDP), inflation rate (INF), interest rate (IR), and exchange rate (ER). This study analyzed 30 years of data dated from 1991-2021 on an annual basis taken from World Bank Open Data's website. The data obtained were analyzed through EViews Version 12. Accordingly, descriptive and regression analyses were conducted and discussed. This study is hopeful to provide some insight to policymakers concerning the variables and Malaysia's stock market return.

1. Introduction

This research focuses on the influence of four macroeconomic variables, which are Gross Domestic Product (GDP), Inflation Rate (INF), Interest Rate (IR), and Exchange Rate (ER) on the Financial Times Stock Exchange (FTSE) Bursa Malaysia Kuala Lumpur Composite Index (KLCI). The Minister of Finance, YB Tengku Datuk Seri Utama Zafrul Tengku Abdul Aziz, said in a media statement that Malaysia's GDP would increase by 3% in the first nine months of 2021. With this recovery momentum, Malaysia's GDP is on track to grow between 3% and 4% in 2021, and between 5.5% and 6.5% in 2022, in line with International Monetary Fund (IMF) and World Bank projections of 6.0% and 5.8%, respectively (Ministry of Finance Malaysia, 2021). Next, Malaysia's inflation rate increased to 2.9% in October 2021 from the previous year, as measured by the Consumer Price Index (CPI), owing to increases in transportation costs as well as prices in other segments such as housing, water, electricity, gas, and other fuels (The Star Online, 2021). Furthermore, Bank Negara Malaysia (BNM) has kept daily interest rates at a record low of 1.75% to support a strong recovery as the economy gradually recovered amid high COVID19 vaccination rates. Lastly, The USDMYR rose 0.0005%, or 0.01%, to 4.2155 on 10th December 2021 from 4.2150 in the past trading session (Trading Economics, 2021). According to Economics (2021), the FKLCI declined 134 points or 8.25% since the beginning of 2021 and has lost about 3.7% through 2021 (Kok, 2021).

Macroeconomic variables significantly affect Malaysia's stock market, followed by changes in stock prices. The impact will determine whether the stock market expects a higher or lower return during the investment. As a result, given the asymmetry market, it is critical to evaluate and analyze macroeconomic indicators and stock prices (Dhaoui, Goutte, and Guesmi, 2018). There are various critical factors in forecasting stock return and a country's economic growth as they are much on the stock market. The incident of The Black Monday, The Wall Street Crash of 1929, the Asian Financial Crisis (AFC), and the Global Financial Crisis (GFC) are examples of how the domestic and also worldwide economies are affected by the stock market. Bursa Malaysia's performance declined in 1997 due to the AFC and GFC as affected by the macroeconomic variables. Furthermore, due to the recent COVID-19 pandemic, the Malaysia Stock market recorded a substantial decline, with the KLCI dropping sharply from 1602.50 to 1219.72 from January to March 2020 (Lee, Jais & Chan, 2020). This collapse resulted in uncertainty and massive losses for stock market investors and incurred large cost debt. These declines in value will cause investors to be concerned about observing the changes in the stock market to avoid any losses and make the right decision. Therefore, this study aimed to investigate whether macroeconomic factors influence Malaysian stock market returns. This study will aid financial analysts and investors in developing reliable variables that can be used to assess the risk of holding financial assets.

2. Literature Review

Stock Market Return

Stock market return can be defined as changes in the value of an asset or investment, which can be positive or negative (MoneySense Editors, 2021). The stock market return is generally generated through capital gains and dividends by the investors. Malaysia uses KLCI as an indicator to measure Malaysia's market condition and stock market performance. Malaysian Finance Minister Tengku Zafrul Aziz presented on 1st November 2021 the 2022 government budget. He stated that the benchmark FTSE (The Financial Times Stock Exchange) Bursa Malaysia KLCI index has declined to 2.2%, the lowest the stock market has ever formed. The inefficiency of the Malaysian stock market is also confirmed. Malaysia will suffer severe consequences if the stock market does not take other measures to strengthen the economy. So, the stock market serves important purposes that help investors and speculators to increase their business or provide capital for their companies. Other

than that, the government and private sectors can assure the efficiency of the country's policy through the stock market.

Inflation Rate

Inflation can be defined as a general indicator of to rise in prices or an increase in the cost of living (Fernando, 2022). Inflation can be measured using the most widely used proxy, the consumer price index (CPI) (Fund, 2021). According to Amadeo (2020), inflation can occur for two reasons which are demand inflation and cost inflation. Kalam (2020) argues in his study that inflation is expected to have a positive and significant impact on the performance of the Malaysian stock market. It is further supported by a study by Ridzuan, Aiman, & Norehan (2020) on the impact of macroeconomic variables on the Malaysian stock 23 market, showing that inflation is positively correlated with the stock market with an estimated elasticity of 0.28. However, a study by Chauque and Rayappan (2018) shows that inflation is negatively correlated with the performance of the Malaysian stock market.

Gross Domestic Product

Gross domestic product (GDP) will represent the overall monetary or market significance of all final goods produced and services provided inside national boundaries beyond a period (Nam & Geetha, 2020). MSCI Barra Research Bulletin (2010) then claimed that nations with better protracted real GDP growth also have more significant real stock market gains. Along the same lines, the research by Nam & Geetha (2020) proved that Malaysia's gross domestic product has negative bond consequences. Based on Kalam (2020) found that some countries had lower annualized stock market returns while having more excellent long-term GDP growth rates. Apart from that, Kalam (2020) carried out descriptive statistical research, which showed that the GDP has the most significant mean, indicating that Malaysia has a robust economic growth rate and the guts to impact stock market growth.

Exchange Rate

The exchange rate is the currency one country exchanges with another (Chen, 2022). National governments decide the official exchange rate based on the rate set in a legalized currency market. It is sometimes referred to as the price one country pays concerning another country's currency (Kalam, 2020). According to several studies, there is no long-term interrelationship between stock prices and exchange rates. Asmy et al. (2009) concluded that stock prices and exchange rates have no long-term correlation. These could be owing to the various collection of variables utilized in the analysis and the different methods used. On the other hand, Chauque & Rayappan (2018) stated that the currency rate and the stock market are essential factors affecting many nations' economic growth.

Interest Rate

The interest rate can be defined as the percentage of the principal that a lender charges a borrower (Banton, 2022). It is a crucial macroeconomic variable that influences economic growth directly. Although increasing interest rates drive up the price of stock firms in the stock exchange return, interest rates have a negative relationship with Malaysia's stock market return. Interest rates impact macroeconomics because they provide investors with the necessary information to invest in the capital market. Therefore, the price of a stock market share will rise concerning rising interest rates (Kalam, 2020). Using daily data, Joseph and Vezos (2006) found that stock returns are susceptible to fluctuations in interest rates and exchange rates. According to Moya-Martnez, Ferrer-Lapena, and Escribano-Sotos (2015), interest rate changes might substantially affect non-

financial companies' value. Higher interest rates tend to boost a firm's cost of capital. Hence, stock prices are affected negatively.

3. Methodology

Data Collection

World Bank Open Data has been used as the primary source of quantitative data on the variables. This research has used 30 years of data for each macroeconomic variable from 1991 until 2021. The website was used to retrieve data on macroeconomic variables, which are inflation, gross domestic product (GDP), interest rates, and exchange rates. It was also used to find data from the study's dependent variable representing the performance of the Malaysian stock market. Other than that, we also use EViews, a software that offers analytical tools.

Dependent Variables

The dependent variable for this research is KLCI Malaysia's stock market return. The stock market in Malaysia seems to overreact to financial crises, which is incompatible with the uncertain form of Efficient Market Theory (Ang, Goetzmann & Schaefer, 2011) because investors can benefit by buying losers in an overvalued market and selling it next.

Independent Variables

The four independent variables used in this study are gross domestic product (GDP), inflation rate, exchange rate, and interest rate. Table 1.0 below depicts the measurements.

Table 1
Independent Variables Measurement

Variables	Measurement
Gross Domestic Product (GDP)	GDP = C + I + G + (X-M) GDP = Consumption + Investment + Government Spending + (Exports-Imports)
Inflation Rate	$\frac{(CPI_{X+1} - CPI_X)}{CPI_X}$
Real Effective Exchange Rate	REER = Nominal Exchange Rate × $\frac{\text{Domestic Price}}{\text{Foreign Price}}$
Interest Rate	$\frac{I}{PT} = R$

Research Framework

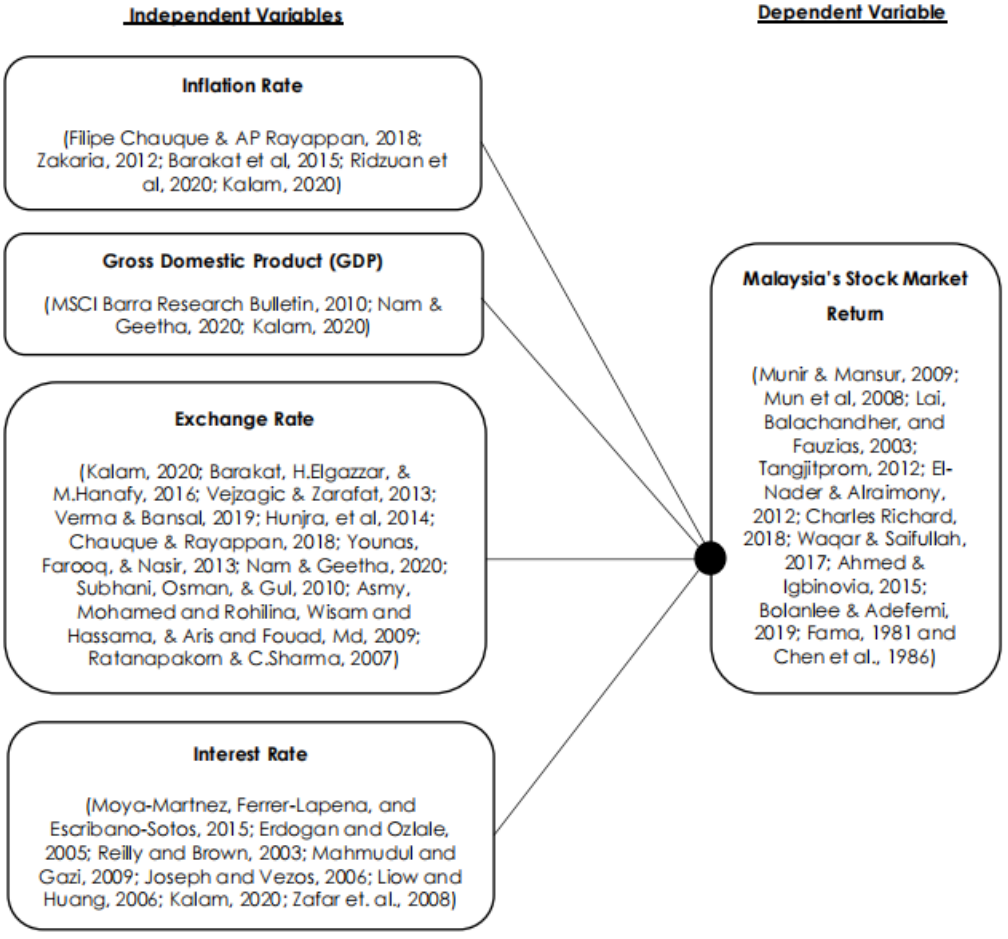

Figure 1. Conceptual Framework (along with cited evidence on the relationships)

Hypotheses Development

Inflation Rate

H0: There is no significant relationship between the inflation rate and Malaysia's stock market return.
H1: There is a significant relationship between the inflation rate and Malaysia's stock market return.

Gross Domestic Product (GDP)

H0: There is no significant relationship exists between gross domestic product (GDP) and Malaysia's stock market return.
H1: There is a significant relationship between gross domestic product (GDP) and Malaysia's stock market return.

Interest Rate

H0: There is no significant relationship between interest rate and Malaysia's stock market return.
H1: There is a significant relationship between interest rate and Malaysia's stock market return.

Exchange Rate

H0: There is no significant relationship between the exchange rate and Malaysia's stock market return.
H1: There is a significant relationship between the exchange rate and Malaysia's stock market return.

4. Results

In this chapter, the data collected were analyzed by using statistical tools to report results on descriptive analysis, correlation analysis, and regression analysis. Besides, a multicollinearity test was used to associate the degree strength of the independent and dependent variables.

Descriptive Analysis

Table 2 presents the descriptive analysis of the data used in this research. Descriptive analysis is a form of data analysis that quantitatively describes, examines, or summarises the key elements of a data set. The mean for the exchange rate is higher, while the smallest mean is inflation. The maximum is the exchange rate, while the minimum is the interest rate. This study found that the inflation variable has the slightest standard deviation. In contrast, the most significant standard deviation is the exchange rate variable. The stock market return has positively skewed as the distribution tailed off to the right. At the same time, the exchange rate is the most negatively skewed, as the distribution's tail is off to the left. The kurtosis of stock market return has peak data as its kurtosis is more than three, showing less dispersion. In contrast, the exchange rate has the smallest flatness of data as it is less than three, showing a wide degree of dispersion.

Table 2
Descriptive Analysis

	Exchange Rate	GDP	Inflation	Interest Rate	Stock Market
Mean	100.6897	5.2373	2.5345	3.3135	5.0565
Median	97.9617	5.5848	2.4771	3.3507	3.7700
Maximum	124.8821	10.0027	5.4408	11.7824	64.7200
Minimum	83.2494	-7.3594	-1.1387	-3.9034	-34.5600
Std. Dev.	12.5653	4.0517	1.4655	3.6249	20.3001
Skewness	0.7207	-1.6001	-0.0672	-0.0058	0.5744
Kurtosis	2.4149	5.6534	2.9799	2.7813	4.2818

Jarque-Bera	3.1258	22.3214	0.0239	0.0619	3.8271
Probability	0.2095	0.0000	0.9881	0.9695	0.1476
Observation	31	31	31	31	31

Multicollinearity Test

When the independent variables in a regression model are tightly related, this is known as multicollinearity. The Variance Inflation Factor (VIF) was then used to determine which independent variables strongly correlate. For example, suppose the centred VIF score is more significant than 5. In that case, the independent variable is significantly related to each other. Therefore, the variable should be excluded from the model according to the VIF rule of thumb (Frost, 2017). Based on Table 3.0, it can be seen that all independent variables have low centred VIF, which is less than five, which are exchange rate (3.0644), GDP (1.8910), inflation (1.6034), and interest rate (1.8423). It indicates that all independent variables are not significantly related and did not have a multicollinearity problem. As a result, there are no independent variables excluded in this research..

Table 3
Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	665.7134	128.1390	
Exchange Rate	0.1042	206.3968	3.0644
GDP	0.6184	5.1559	1.8910
Inflation	4.0076	6.5588	1.6034
Interest Rate	0.7527	3.4329	1.8423

Regression Analysis

Regression analysis is a mathematical method of determining which independent variables affect the dependent variable. According to the table above, the R^2 value of 0.6612 indicates that all the independent variables (GDP, inflation, exchange rate, interest rate) explain 66.12% of the variance in dependent variables (stock market return). Meanwhile, the adjusted R^2 value is 0.6092. It indicates that 60.92% of the variation in the dependent variable (stock market return) can be explained by one of the independent variables, which is the exchange rate in the model. Furthermore, the F-statistics value is 12.6907, and the p-value of the F-statistic is 0.0000, which shows that the sample data provide sufficient evidence to conclude that the regression model fits the data better than the model without independent variables. Based on Table 5.0, the variable used in the analysis (interest rate, inflation, and exchange rate) is highly significant at a 1% significance level. In comparison, GDP is significant at a 10% significant level. Results show that all independent variables in this study are significant, and it is the evidence to reject the null hypothesis.

Table 5
Regression Analysis

Variable	Coefficient	Standard Error
C	-69.8253	25.8014
GDP	1.4412*	0.7864
INTEREST_RATE	-4.1999***	0.8676

INFLATION	-6.2891***	2.0019
EXCHANGE_RATE	0.9652***	0.3228
Number of observations	31	
R-squared	0.6612	
Adjusted R-squared	0.6092	
Log-likelihood	-120.0276	
F-statistic	12.6907	

Note: *** significant at 1%, **significant at 5%, *significant at 10%

$$Y_i = \alpha + \beta_1 INF_i + \beta_2 GDP_i + \beta_3 ER_i + \beta_4 IR_i + \epsilon t$$

Stock market return = -6.2891INF + 1.4412GDP + 0.9652ER – 4.1999IR

5. Discussion

Relationship between inflation rate and Malaysia's stock market return

In this research study, inflation was found to have a significant and positive relationship with the dependent variable, which is Malaysia's stock market return. It indicated that inflation has a strong relationship with influencing the movement of stock market returns in Malaysia. This finding is similar to a past study by Kalam (2020) and Ridzuan, Aiman, & Norehan (2020). They found that inflation positively and significantly affects the stock market return. It implied that in both studies, inflation positively correlates with Malaysia's stock market return. In a study by Filipe Chauque & AP Rayappan (2018), it was found that inflation has a significant negative relationship with Malaysia's stock market return, which indicates that inflation and stock market return in Malaysia are negatively correlated. Thus, the null hypothesis is rejected, and hypothesis 1 is accepted as an independent inflation variable.

Relationship between gross domestic product and Malaysia's stock market return

The gross domestic product (GDP) independent variable is significant in this analysis, indicating a relationship between Malaysia's stock market return and GDP. It means that the goal of determining the impact of GDP on Malaysia's stock market return is accomplished. The findings are supported by prior research by MSCI Barra Research Bulletin (2010) and Nam & Geetha (2020), which spotted a significant and negative relationship between gross domestic product (GDP) and Malaysia's stock market return. It also complies with a study by Kalam (2020), which found a significant and positive relationship between gross domestic product (GDP) and Malaysia's stock market return. Therefore, the null hypothesis is rejected since there is a significant relationship between GDP and Malaysia's stock market return.

Relationship between exchange rate and Malaysia's stock market return

In this study, it is confirmed that the exchange rate has a significant relationship with Malaysia's stock return which acts as a dependent variable. It is shown that the exchange rate strongly influences the movement of stock market returns in Malaysia. This significant relationship is contradicted by research conducted by Zakaria & Shamsuddin (2012) and Asmy, Mohamed and Rohilina, Wisam and Hassama, & Aris and Fouad, Md. (2009). They found that the exchange rate does not have a significant relationship with Malaysia's stock market return because of non-institutional stakeholders' dominance and the issues of asymmetric information between shareholders. However, it is supported by research from Kalam (2020) and Vejzagic & Zarafat (2013) that explains exchange rate has a positive and significant relationship with the stock market return.

Therefore, the null hypothesis is rejected by the independent variable of the exchange rate, which is that there is a significant relationship between the exchange rate and Malaysia's stock market return.

Relationship between interest rate and Malaysia's stock market return

According to this study, the independent variables of interest rate have a significant negative relationship with Malaysia's stock market return. Therefore, it indicates that interest rate has a negative relationship to the impact on Malaysia's stock market return. The result of this finding connotes the studies by Alam & Uddin (2009), Moya-Martnez, Ferrer-Lapena, and Escribano-Sotos (2015), Erdogan and Ozlale (2005), Reilly and Brown (2003), Mahmudul and Gazi (2009), Joseph and Vezos (2006) and Kalam (2020). They found that the interest rate has a strong negative relationship with the changes in stock market return. Hence, interest rates and Malaysia's stock market return are negatively correlated. On the other hand, according to the findings from Zafar et al. (2008), the one who found that the interest rate has a positive and insignificant relationship with the stock market return. Therefore, the null hypothesis is rejected by the independent variables of interest rate, which is that there is a significant relationship between interest rate and Malaysia's stock market return.

6. Conclusion and Recommendations

The macroeconomic variables included in this research are Inflation, Gross Domestic Product (GDP), Exchange Rate, and Interest Rate. No macroeconomic variables are excluded from this research since all variables are not significantly related to each other from the result of the multicollinearity test. Inflation, GDP, exchange rate, and interest rate are part of critical macroeconomic variables that will impact the stock market return. For instance, based on the quantitative and qualitative analysis of the independent variables in response to the dependent variables, it can be concluded that all the independent variables used are significant in stock market return. Variable GDP is significant at a 10% level, and the other three variables are highly significant at a 1% level. Interest rates and inflation have a negative relationship with the stock market. In contrast, GDP and exchange rate have a positive relationship. A study by Kalam (2020) stated that currency devaluation occurs when liquidity declines, affecting capital outflows and lowering interest rates.

The first recommendation is to study more macroeconomic variables not included in this research, such as the balance of payment (BOP), economic growth, and unemployment rate. The variables included in this research explain 66.12% of Malaysia's stock market return variation, while other macroeconomic variables will interpret the remaining 33.88%. Next, it is recommended to do further study on other countries' stock market returns in order to expand the findings on this topic. The third recommendation is to control the inflation rate. The government must be essential in controlling and reducing the inflation rate. One of the ways that the government can do this is by controlling the price of goods and services to prevent any further rise in the prices. Unfortunately, the increasing prices of goods and services increased inflation. In December 2021, the consumer price index (CPI) increased by 0.5%. Overall, inflation in Malaysia increased by a whopping 7% in 2021, the highest rate in 40 years (Zilber, 2022). Therefore, it is recommended that the government should play its role in controlling the prices of the goods and services, maybe by setting up a ceiling price for necessary goods to prevent the goods from being sold at too high a price.

Acknowledgement

We would like to thank our previous group members Nurfatihah Mohd Isa and Nurul Aina Fatiha Azahar for contributing their ideas and efforts in completing part of this study.

References

Alam, M. M., & Uddin, M. G. S. (2009). Relationship between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries. *International Journal of Business and Management, 4(3),* 43-51.

Al-hajj, E., Al-Mulali, U., & Solarin, S. (2018). Oil price shocks and stock returns nexus for Malaysia: Fresh evidence. Elsevier, 624-637.

Amadeo, K. (2020, 17th September). Inflation, How It's Measured and Managed. Retrieved from The Balance website: https://www.thebalance.com/what-is-inflation-how-it-s-measured-and-managed-330617

Ang, A., Goetzmann, W. N., & Schaefer, S. M. (2011). The efficient market theory and evidence: implications for active investment management. Now Publishers Inc.

Bank of England. (2021, 9th August). What is GDP? Retrieved 1st December, 2021, from Bankofengland.co.uk website: https://www.bankofengland.co.uk/knowledgebank/what-is-gdp

Banton, C. (2022). Interest Rate Definition. Retrieved July 6, 2022, from Investopedia website: https://www.investopedia.com/terms/i/interestrate.asp

Barakat, M. R., Elgazzar, S. H., & Hanafy, K. M. (2015). Impact of Macroeconomic Variables on Stock Markets: Evidence from Emerging Markets. *International Journal of Economics and Finance*, 8(1), 195. https://doi.org/10.5539/ijef.v8n1p195

Bevans, R. (2020, 14th December). An introduction to T-tests. *Scribbr*. Retrieved 1st December, 2021, from https://www.scribbr.com/statistics/t-test/.

Bhandari, P. (2020, 9th July). An introduction to descriptive statistics. *Scribbr.* Retrieved 1st December, 2021, from https://www.scribbr.com/statistics/descriptive-statistics/.

Bragg, S. (2021, 11th April). AccountingTools. Retrieved 1st December, 2021, from AccountingTools website: https://www.accountingtools.com/articles/2017/5/8/market-interest-rate

Bulletin, M. B. (2010). Is There a Link Between GDP Growth. *MSCI Barra Research Bulletin*.

Che Rosid, C., Mohamed Nasser, F., & Baharuddin, N. (2017). Relation between Macroeconomic Variables and ASEAN Stock Index. *Terengganu International Finance and Economics Journal*, 7-13.

Chen, J. (2021). Exchange Rate Definition. Retrieved 1st December, 2021, from Investopedia website: https://www.investopedia.com/terms/e/exchangerate.asp

Contributor, T. T. (2020, 22nd December). What are mean, median, mode and range? SearchDataCenter. Retrieved 1st December, 2021, from https://searchdatacenter.techtarget.com/definition/statistical-mean-median-mode-and-range.

Corporate Finance Institute. (2018, 11th February). Stock Market. Retrieved 1st December, 2021, from Corporate Finance Institute website: https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/stock-market/

Corporate Finance Institute. (2020, 11th February). Regression Analysis. Retrieved 1st December, 2021, from Corporate Finance Institute website: https://corporatefinanceinstitute.com/resources/knowledge/finance/regression-analysis/

Corporate Finance Institute. (2020, 21st April). Multiple Linear Regression. Retrieved 1st December, 2021, from Corporate Finance Institute website: https://corporatefinanceinstitute.com/resources/knowledge/other/multiple-linear-regression/

Corporate Finance Institute. (2020, 30th June). Nonlinear Regression. Retrieved 1st December, 2021, from Corporate Finance Institute website: https://corporatefinanceinstitute.com/resources/knowledge/other/nonlinear-regression/

Dhaoui, A., Goutte, S., & Guesmi, K. (2018). The asymmetric responses of stock markets. *Journal of Economic Integration, 33(1)*, 1096-1140.

EconomyWatch. (2010, 23rd November). Stock Market Returns - Economy Watch. Retrieved 1st December, 2021, from Economy Watch website: https://www.economywatch.com/2010/11/23/stock-market-returns

Erdogan, E., & Ozlale, U. (2005). Effects of Macroeconomic Dynamics on Stock Returns: Case of Turkish Stock Exchange Market. *Journal of Economic Corporation, 26*(2), 69-90.

Eurostate. (2018). Glossary:Inflation - Statistics Explained. Retrieved 1st December, 2021, from Europa.eu website: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Inflation

Fernando, J. (2022). What Is Inflation? Retrieved July 16, 2022, from Investopedia website: https://www.investopedia.com/terms/i/inflation.asp

Filipe Chauque, D. F., & AP Rayappan, P. (2018). The Impact of Macroeconomic Variables on Stock Market Performance: A Case of Malaysia. *Edelweiss Applied Science and Technology*, *2*(1), 100–104. https://doi.org/10.33805/2576.8484.122

Frost, J. (2017, 2nd April). Multicollinearity in Regression Analysis: Problems, Detection, and Solutions. Retrieved 19th December, 2021, from Statistics By Jim website: https://statisticsbyjim.com/regression/multicollinearity-in-regression-analysis/

Frost, J. (2021, 8th September). Choosing the correct type of regression analysis. Statistics By Jim. Retrieved 1st December, 2021, from https://statisticsbyjim.com/regression/choosing-regression-analysis/.

Frost, J. (2021, 8th September). How to interpret the F-test of overall significance in regression analysis. Statistics By Jim. Retrieved 1st December, 2021, from https://statisticsbyjim.com/regression/interpret-f-test-overall-significance-regression/.

Hiang Liow, K., Faishal Ibrahim, M., & Huang, Q. (2006). Macroeconomic risk influences on the property stock market. *Journal of Property Investment & Finance*, *24*(4), 295–323. https://doi.org/10.1108/14635780610674507

Hypothesis in Research: Definition, Types and Importance! - Public Health Notes. (2020, 21st April). Retrieved 21st October, 2021, from Public Health Notes website: https://www.publichealthnotes.com/hypothesis-in-research-definition-types-and-importance/

Introduction to literature reviews. (2020, 20th November). Retrieved 29th October, 2021, from Research & Learning Online website: https://www.monash.edu/rlo/graduate-research-writing/write-the-thesis/introduction-literature-reviews

Joseph, N.LVezos, P. (2006), "The Sensitivity of US Bank's Stock Returns to Interest Rate and Exchange Rate Changes' ', *Managerial Finance*, Vol.32, Issue 2, pp. 182-199.

Kalam, K. (2020). The Effects of Macroeconomic Variables on Stock Market Returns: Evidence from Malaysia's Stock Market Return Performance. *Journal of World Business*, *55*(8), 1–13.

Kilpatrick, J. (1978). Variables and Methodologies in Research on Problem Solving. Mathematics Education Reports, 1-53.

Kok, C. (2021, 31st December). Stock market an underperformer last year. Retrieved 11th January, 2022, from The Star website: https://www.thestar.com.my/business/business-news/2022/01/01/stock-market-an-underperformer-last-year

Lee, K. Y. M., Jais, M., & Chan, C. W. (2020). Impact of covid-19: Evidence from Malaysian stock market. *International Journal of Business and Society, 21(2),* 607-628.

Macroeconomic Variables (2021). Retrieved 21st October, 2021, from Auburn.edu website: http://webhome.auburn.edu/~gadzeat/macro-variables.htm

Malaysia Interest Rate | 2022 Data | 2023 Forecast | 2004-2021 Historical | Calendar. (2022). Retrieved 13th January, 2022, from Tradingeconomics.com website: https://tradingeconomics.com/malaysia/interest-rate

Malaysia Stock Market (FBM KLCI) | 2021 Data | 2022 Forecast | 1982-2020 Historical. (2021). Retrieved 21st October, 2021, from Tradingeconomics.com website: https://tradingeconomics.com/malaysia/stock-market

Ministry of Finance Malaysia. (2021, 12th November). Third Quarter 2021 GDP Performance: Malaysia's Full Year Economic Growth Expected To Remain Positive. Retrieved 10th December, 2021, from Kementerian Kewangan Malaysia website: https://www.mof.gov.my/portal/en/news/press-release/third-quarter-2021-gdp-performance-malaysia-s-full-year-economic-growth-expected-to-remain-positive

MoneySense Editors. (2021, November 11). What are stock market returns? - MoneySense. Retrieved July 31, 2022, from MoneySense website: https://www.moneysense.ca/glossary/what-are-stock-market-

returns/#:~:text=A%20stock%20market%20return%20is,a%20loss%20on%20the%20investment.

Moya-Martínez, P., Ferer-Lapena, R., & Escribano-Sotos, F. (2015). Interest rate changes and stock returns in Spain: A wavelet analysis. *BRQ Business Research Quaterly,* (18), 95-110.

Murthy, U., Anthony, P., & Vighnesvaran, R. (2017). Factors Affecting Kuala Lumpur Composite Index (KLCI) Market Return in Malaysia. *International Journal of Business Management*, 122-127.

Nam, T. W., & Geetha, C. (2020). The Unrestricted Macroeconomic Variables Effect on Stock Market Malaysia. *Malaysian Journal of Business and Economics*, 245-269.

Narkhede, S. (2018, 6th June). Understanding descriptive statistics. Medium. Retrieved 1st December, 2021, from https://towardsdatascience.com/understanding-descriptive-statistics-c9c2b0641291.

Rawat, Ayush Singh. "What Is Descriptive Analysis?- Types and Advantages: Analytics Steps." *What Is Descriptive Analysis?- Types and Advantages | Analytics Steps*, https://www.analyticssteps.com/blogs/overview-descriptive-analysis.

Reilly, F. K., & Brown, K. C. (2003). Investment analysis and portfolio management (7th ed.). South-Western Cengage Learning, Mason Ohio, USA.

Research Hypothesis. (2011). Retrieved 21st October, 2021, from Sagepub.com website: https://methods.sagepub.com/reference/encyclopedia-of-survey-research-methods/n472.xml

Research Paper Purpose Statement Examples. (2021). Retrieved 26th October, 2021, from Yourdictionary.com website: https://examples.yourdictionary.com/research-paper-purpose-statement-examples.html

Ridzuan, A., Aiman, M., & Norehan, H. (2020). The Impact of Macroeconomics Variables toward the Stock Market in Malaysia. *International Journal of Academic Research in Accounting*, *10*(1), 360–367. https://doi.org/10.6007/IJARAFMS

Rozanna Latiff. (2021, 3rd November). Malaysia c.bank holds key rate steady to support economic recovery. Retrieved 10th December, 2021, from Reuters website: https://www.reuters.com/business/cop/malaysias-cbank-keeps-key-rate-steady-175-2021-11-03/

Samithamby Senthilnathan. (2019, 9th July). Usefulness of Correlation Analysis. Retrieved 10th January, 2022, from ResearchGate website: https://www.researchgate.net/publication/334308527_Usefulness_of_Correlation_Analysis

Singh, G. (2018, 15th January). Analysis of variance (ANOVA): Introduction, types & techniques. *Analytics Vidhya*. Retrieved 1st December, 2021, from https://www.analyticsvidhya.com/blog/2018/01/anova-analysis-of-variance/.

Tan, V. (2021, 30th November). Price hike of vegetables in Malaysia due to weather, labour shortage and production costs, say farmers. Retrieved 16th January, 2022, from CNA website: https://www.channelnewsasia.com/asia/malaysia-vegetable-price-hikes-2345001

The Star Online. (2021, 26th November). Malaysia registers 2.9% inflation in October. Retrieved 10th December, 2021, from The Star website: https://www.thestar.com.my/business/business-news/2021/11/26/malaysia-registers-29-inflation-in-october

Thomas H. Davenport and Jinho Kim. (2021, 8th December). A refresher on regression analysis. *Harvard Business Review*. Retrieved 10th January, 2022, from https://hbr.org/2015/11/a-refresher-on-regression-analysis.

Trading Economics. (2021). Malaysia Stock Market (FBM KLCI) | 2021 Data | 2022 Forecast | 1982-2020 Historical. Retrieved 1st December, 2021, from Tradingeconomics.com website: https://tradingeconomics.com/malaysia/stock-market

Trading Economics. (2021). Malaysia - Stock Market Return (%, Year-on-year). Retrieved 10th December, 2021, from Tradingeconomics.com website: https://tradingeconomics.com/malaysia/stock-market-return-percent-year-on-year-wb-data.html

Trading Economics. (2021). Malaysian Ringgit | 2021 Data | 2022 Forecast | 1992-2020 Historical | Quote | Chart. Retrieved 10th December, 2021, from Tradingeconomics.com website: https://tradingeconomics.com/malaysia/currency

Wan Azizi, W., Abdul Karim, Z., & Mohd Azlan Shah Zaidi. (2016). IMPACT OF MACROECONOMIC VARIABLES AND ECONOMIC FREEDOM. *International Journal of Accounting & Business Management,* 53-64.

What is the conceptual framework in research? (2019, 11th October). Retrieved 21st October, 2021, from Editage Insights website: https://www.editage.com/insights/what-conceptual-framework-research

Zafar, N., Urooj, S.F. & Durrani, T.K. 2008. Interest rate volatility and stock returns and volatility. *European Journal of Economics*, *Finance and Administrative Sciences*, 14, pp. 135- 140.

Zakaria, Z. (2012). Empirical evidence on the relationship between stock market volatility and macroeconomic volatility in Malaysia. *Journal of Business Studies Quarterly*, *4*(2).

Zilber, A. (2022, 13th January). Wholesale prices rose nearly 10% in 2021, biggest increase since 2010. Retrieved 16th January, 2022, from New York Post website: https://nypost.com/2022/01/13/wholesale-prices-rose-9-7-in-2021/

UNIVERSITI TEKNOLOGI MARA

ISSN: : 1985-5079