International Journal of Social Science and Human Research

ISSN (print): 2644-0679, ISSN (online): 2644-0695

Volume 07 Issue 03 March 2024

DOI: 10.47191/ijsshr/v7-i03-05**,** Impact factor- 7.876

Page No: 1526-1537

Impact Analysis of Inflation and Unemployment on Economic Growth in Malaysia: A Study from 2000 to 2020

Lubocheng

Universiti Kebangsaan Malaysia

ABSTRACT: This paper analyses the relationship between inflation, unemployment, and economic growth in Malaysia: 2000-2020. Advanced econometric models are used to explore how these macroeconomic variables interact and influence each other within the Malaysian context. The study employs One mixture method approach, combining quantitative and qualitative analyses to provide a comprehensive understanding. The study presents insights into the Malaysian economy, highlighting the relationship between inflation, unemployment, and economic growth. The findings are essential for policymakers and economists, providing evidence-based guidance for effective economic strategies. The study contributes to the knowledge of Malaysian economics and can serve as a model for analyzing similar relationships in other developing economies.

KEYWORDS: Inflation, Unemployment, interest rate and Economic Growth.

INTRODUCTION

Inflation with unemployment has been considered a severe underdevelopment determinant in any country, including Malaysia. Despite its vast human and natural resources, Malaysia's economy is not impressive. Low income per capita, high inflation, and high unemployment are only a few of the social and economic problems hindering Malaysia's economy. Economic recoveries continue, recessions and depressions. Unemployment is not only seen as a massive waste of a country's human resources. Still, it can also result in lower output conditions and welfare losses, resulting in lower incomes and welfare for citizens. Among the development goals of many countries, solving the unemployment problem has occupied a very prominent position in developing countries. The economy is not doing well. The ongoing economic crisis and its associated problems. If the demand for labour is greater than the supply, Excess demand puts upward pressure on wage rates, leading to high inflation in the country. In this scenario, workers will easily find jobs, and unemployment will remain low.

Conversely, if the labour supply exceeds the demand for labour, there is an oversupply of labour. Hold down wages, which will lower the country's inflation rate. At the same time, with an oversupply of labour, it is also difficult for workers to find jobs, and unemployment will be high. Price stability is an important policy; the goal of any country's central bank can be controlled to achieve the inflation rate. Central banks formulate and implement monetary policy to keep inflation as low as possible. However, assuming an inverse relationship between inflation and unemployment, it is possible to achieve low inflation when or if unemployment is high. This places a heavy burden on central banks as they try to strike a balance between inflation that is low and high unemployment, or vice versa. High unemployment is one of the most intractable domestic problems—any country's economic and political problems. High unemployment could spark political unrest, with leaders opposing central bank measures to stabilize prices, exacerbating joblessness. In other words, central banks and political leaders may have. Dissenting views on proposed price stability policies may prevent policymakers from taking decisive economic measures. The purpose of this study was to examine whether there was a trade-off. The relationship between unemployment, inflation and economic growth in Malaysia is studied, and several econometric techniques are employed. This paper consists of six parts after this introduction.

LITERATURE REVIEW

This report investigates the impact of unemployment and inflation on economic growth in Nigeria between 1981 and 2014. (Abdulsalam Ademola 2016) This period was selected because the Nigerian economy underwent significant changes, including fluctuations in crucial economic indicators such as

GDP, inflation, and unemployment. The study reveals that the primary factors affecting inflation in Nigeria are money supply, actual output, foreign inflation, and exchange rate changes. Furthermore, a negative correlation has been found between unemployment and inflation.

The study employed the ordinary least squares method (OLS) for data analysis, supplemented by various diagnostic testing techniques to ensure the reliability and accuracy of the results. The findings of this methodological framework reveal an unexpected positive correlation between unemployment and inflation with Nigeria's economic growth. In Nigeria's specific economic environment, it is suggested that unemployment and inflation may not hinder economic growth. However, it is unclear how inflation's negative impact on employed labour affects inclusive economic growth, and further research is needed.

This research paper examines the impact of interest, unemployment, and inflation rates on economic growth in five ASEAN countries (Malaysia, Indonesia, Thailand, Singapore, and the Philippines) from 1995 to 2018. The study utilized secondary panel data from the World Bank database and applied various analytical methods, including descriptive analysis, unit root test, Johansen Cointegration test, Granger causality test, dynamic OLS and fully modified OLS (FMOLS). The findings of the statistical analysis indicate that there is a strong and consistent communication over the long term between the interest rate, the inflation rate, and the rate of economic growth. Having said that, there is no statistically meaningful relationship between GDP growth and the unemployment rate. According to the research, inflation has significant consequences on GDP growth over the long term.
Furthermore, it highlights that interest rates, unemployment rates, and inflation rates significantly influence economic growth in Asian countries. These findings have important implications for policymakers in promoting economic growth and stability. Therefore, policymakers should consider these factors when making decisions to promote economic stability and growth.

The study utilizes secondary data from the Association of Southeast Asian Nations. It employs various statistical and econometric methods to investigate the correlation between interest rates, unemployment rates, inflation rates, and GDP growth. While this combination of research methods offers a comprehensive analysis, each approach has limitations. For instance, secondary panel data may have quality issues. Descriptive analysis alone cannot establish causality. Johansen cointegration tests assume linear relationships and are sensitive to model settings. The Granger causality test can only indicate the direction of information flow between time series. While attempting to address slight sample bias and series-related issues, dynamic OLS and fully modified OLS are constrained by model settings and potential endogeneity problems. Furthermore, it is essential to note that cross-country data analysis may not fully consider the structural and macroeconomic policy differences between countries. This limitation may impact the research's validity and the conclusions' reliability.

The study indicates that Malaysia's economic growth was impacted by its inflation, interest, and unemployment rates between 2010 and 2018. Inflation, interest, and unemployment rates are significant indicators affecting a country's economic growth. High inflation and interest rates negatively impact overall economic performance, constraining economic growth. (Priscilla Dorothy Anak Impin and Sook Ching Kok, 2021). The study suggests that a 2% acceleration in Malaysia's gross domestic product (GDP) is required to reduce unemployment by 1%. This is twice the expected GDP growth. Malaysia's unemployment rate has remained relatively encouraging, ranging between 2.9% and 7.4% from 1980 to 2018.
According to the research, interest rates, inflation, and unemployment affect Malaysia's gross domestic product, or GDP. The relationship between inflation and economic growth has not been adequately discussed, particularly for developing Asian countries like Malaysia. As demonstrated by dynamic threshold analysis, high inflation and interest rates can harm overall economic performance.

This research aims to provide a better understanding of the impact that inflation rates, interest rates, and unemployment rates have on Malaysia's economic growth. The study's results can help policymakers formulate more effective policies that promote economic growth. Additionally, the research's insights into current economic conditions can give society a better understanding of how macroeconomic indicators affect the country's economic growth, providing a clear perspective for future research. The research has shown that inflation rates positively impact Malaysia's economic growth in the long term, while accurate interest rates have a negative impact. This positive effect may be due to moderate inflation boosting economic activity. At the same time, the negative impact of accurate actual interest rates may be attributed to their adverse effect on overall economic performance. It appears to be a negative relationship between unemployment and short-term economic growth, according to the research. The Toda-Yamamoto causality test was used to ascertain that the unemployment rate and economic growth are caused by one another, but only in one direction. Specifically, the results show that only LGDP (economic growth) has a one-way causality with LURATE (unemployment rate). This means that economic growth causes changes in the unemployment rate and not vice versa.
The Toda-Yamamoto causality test helps analyze time series data, but it has some limitations. Its validity heavily depends on the accuracy of the model setting, including all relevant variables and correct relationship settings. Any omissions or errors may result in biased results. Additionally, this test is mainly suitable for stable time series data and may not be sensitive enough for structural changes or instability data. Furthermore, determining the direction of causation can be challenging, particularly in cases where there are intricate interactions between variables. The Toda-Yamamoto test is also susceptible to Type I and Type II errors, which can result in erroneous causal conclusions. Finally, caution should be exercised when drawing conclusions using the Toda-Yamamoto test, as different conclusions may be drawn compared to other methods, such as the Granger causality test. The TodaYamamoto test and other analytical methods are recommended to support research results—additionally, it is essential to consider other tools and

methods for thorough analysis. In academic writing, clear and concise language is essential to ensure the reader can easily understand the information.

Two economic studies were conducted to analyze the impact of interest rates, unemployment, and inflation rates on economic growth in different regions. The first study, conducted in Nigeria between 1981 and 2014, used ordinary least squares and various diagnostic tests to determine the correlation between unemployment, inflation rates, and economic growth. Surprisingly, the study found that unemployment and inflation positively correlate with economic growth in Nigeria. The second study, conducted in five ASEAN countries from 1995 to 2018, used secondary panel data and various analytical methods to conclude that the inflation rate significantly impacts long-term economic growth. Additionally, this section discusses a study on Malaysia that demonstrates the importance of inflation rates, interest rates, and unemployment rates as indicators affecting the country's economic growth. The study employs different statistical and econometric methods to investigate the correlation between these variables and GDP growth.

Each study offers distinct perspectives on the correlation between economic factors and growth, presenting diverse approaches and results that apply to various geographical contexts and periods.

METHODOLOGY

Variable	Measurement
Dependent variable	
GDP growth	GDP growth per year
Independent variable	
Inflation rate	Inflation, consumer prices (annual %) -Malaysia, United Arab Emirates
Unemployment rate	unemployment rate (%)
Interest rate	Real interest rate (%) – Malaysia

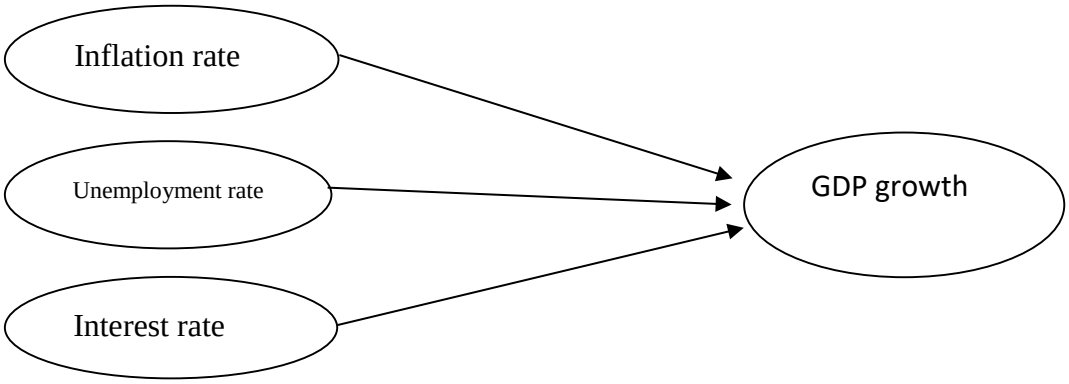


Figure 1. A research framework

MODEL SPECIFICATION

The growth model of Malaysia's Gross Domestic Product (GDP) can be expressed based on this theoretical framework:

GDP = f (UNEMP, INTR, INFO)

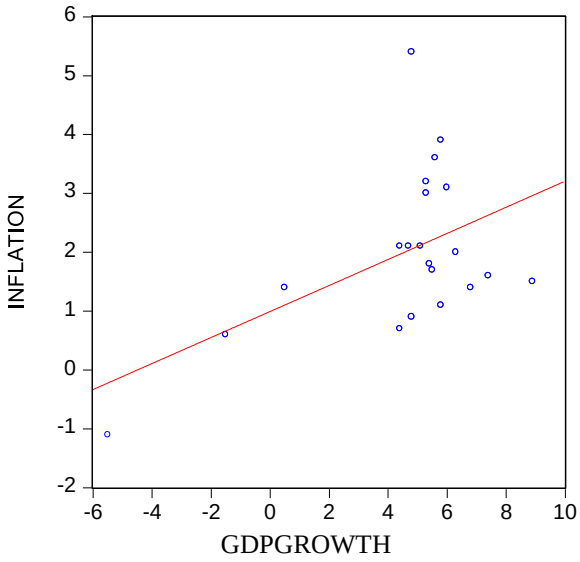
Where:
GDP=Gross Domestic Product
UNEMP= Unemployment Rate
INTR=Interest Rate
INFR=Inflation Rate
The equation represents a linear relationship:

RGDP =a0 + a1UNEMP + a2 INTR + a3INFR + Ut

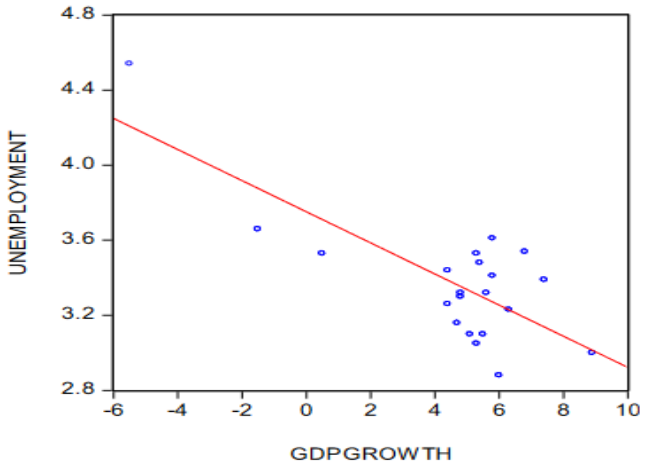
The equation includes the regression constant a0 and associated elasticity values a1, a2, and a3. It is unclear whether the error term is subject to regular random consumption.

To mitigate or eliminate the effects of heteroscedasticity or skewness of the distribution, we convert all variables, which are measured in different units, to natural logarithms. To mitigate or eliminate the effects of heteroscedasticity or skewness of the distribution, we convert all variables, which are measured in different units, to natural logarithms. Wooldridge (2009, p. 191) suggests that taking the logarithm can help achieve this. Additionally, logging can narrow down the scope of variables, sometimes significantly. We use the panel data method to estimate the crime model.

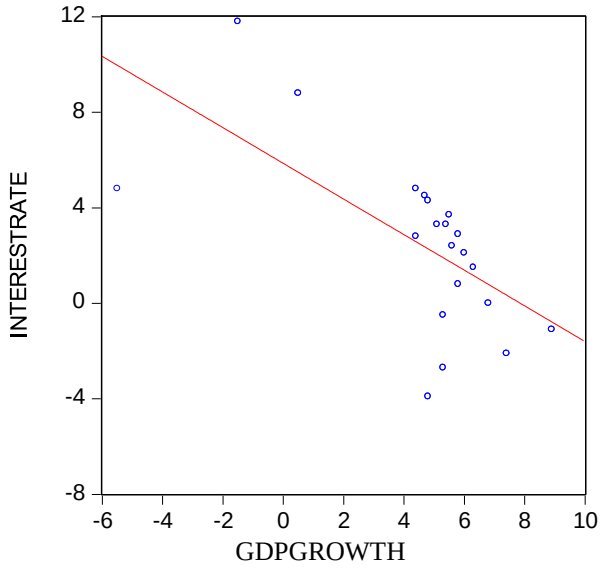
Graphic analysis :



The graph illustrates the correlation between GDP growth and inflation rates. It shows a positive relationship between the two variables, indicating that when a country's GDP growth rate increases, the inflation rate also tends to rise. In EViews, a statistical software for time series analysis, various methods can be used to analyze this relationship further. They require the construction of regression models for testing causation between variables and calculating correlation GDPGROWTH coefficients to assess the strength and direction of the relationship between two variables. The red line represents the line of goodness of fit, which is typically obtained using OLS to estimate the average effect of one variable on another. The graph shows a positive correlation between GDP growth and inflation, which means that rising inflation is usually associated with rising GDP growth.



This scatter plot illustrates the way GDP growth connects towards unemployment. It shows a negative correlation between the two variables, indicating that as GDP growth rises, unemployment tends to fall. The chart represents the average change in the unemployment rate for every one-unit change in the GDP growth rate in each sample of data. The graph shows that most data points are distributed around the line, but some are significantly distant. This could suggest that other factors influence the change in the unemployment rate or that the correlation between GDP growth and unemployment is weak in specific years.



The correlation between unemployment and interest rates is shown in the scatter plot. It suggests a negative correlation between interest rates and GDP growth, indicating that interest rates tend to decrease as GDP growth rates increase. This aligns with general macroeconomic logic, as central banks may lower interest rates to prevent overheating when economic growth picks up.

Table 1: Variable Summary Statistics

Sample: 2000-2020

	GDPGROWTH	INFLATION	INTEREST RATE	UNEMPLOYMENT
Mean	4.561	2.004	2.452	3.373
Median	5.300	1.800	2.800	3.320
Maximum	8.900	5.400	11.800	4.540
Minimum	-5.500	-1.100	-3.900	2.880
Std. Dev.	3.152	1.377	3.663	0.340
Skewness	-1.925	0.320	0.561	1.781
Kurtosis	6.559	3.776	3.614	7.666
Jarque-Bera	24.058	0.885	1.432724	30.159
Probability	0.000006	0.642	0.488526	0.000000
Sum	95.800	42.100	51.50000	70.850
Sum Sq. Dev.	198.749	37.949	268.3524	2.320
Observations	21	21	21	21

The GDP growth rate during the sample period had an average annual growth rate of about 4.56%, with a mean of 4.561%. The median growth rate was 5.3%, indicating that half of the years experienced growth rates above 5.3% and the other half below. The maximum growth rate was 8.9%, and the minimum was -5.5%, representing the peak and trough of economic growth over the 20 years. The standard deviation of 3.152% shows how much the annual GDP growth rate data fluctuates around the mean.

A Skewness value of -1.925 indicates that the data distribution is skewed to the left, meaning there are more years in which economic growth is below average. The Kurtosis value of 6.559 is much higher than 3, indicating that the data distribution has sharper peaks and thicker tails relative to the normal distribution, resulting in more frequent extreme values. The inflation rate is not mentioned in the previous statements. The data shows that inflation averaged about 2% per year over the sample period, with extreme fluctuations ranging from a minimum of -1.100% to a maximum of 5.400%.

The median value of 1.800% indicates a relatively even distribution of data. The standard deviation of 1.377% suggests relatively small annual fluctuations in the inflation rate.

A skewness value of 0.320 suggests that the data distribution is slightly skewed to the right of the normal distribution. The kurtosis value of 3.776 is close to 3, indicating that the inflation rate distribution is similar to the kurtosis of the normal distribution.

Table 2: Unit Root Test

	Unit root test					
	PP (PHILLIPS-PERRON)			ADF (AUGMENTED DICKEY-FULLER)		
	At Level	At First Difference	At Second Difference	At Level	At First Difference	At Second Difference
GDP Growth	-3.951760	-6.808809	-15.58319	-3.891893	-6.422891	-4.261127
Unemployment rate	-1.829102	-2.545791	-2.941437	-1.829102	-2.899877	-3.450611
Inflation Rate	-3.538369	-8.660275	-21.53025	-3.546837	-7.331576	-4.336674
Interest Rate	-5.952441	-16.54336	-23.81933	-5.970345	-6.488606	-5.641413

This table presents the results of testing each variable at the original level and the first and second difference levels. A negative value indicates more substantial evidence for rejecting the hypothesis of a unit root, which implies that the sequence is stationary. The critical values for significance levels of 10%, 5%, and 1% are typically -2.58, -2.88, and -3.44, respectively.

At the initial level of GDP growth, the statistical values of the PP and ADF tests are -3.951760 and 6.422891, respectively. This indicates that at a significance level of 1%, we can reject the null hypothesis that there is a unit root, meaning that the GDP growth series is stable at the original level.

The PP test statistic is -6.808090 for the first difference, and the ADF test statistic is not reported. This supports the idea that the sequence is stationary after the first difference.

The statistical values for the PP test (-15.58319) and the ADF test (-4.621127) for the second difference are much lower than the usual rejection critical value, indicating that the data is stationary after the second-order difference.

At the initial unemployment level, the PP test's statistical value is -1.829102, which is insufficient to reject the unit root hypothesis at the standard significance level. This suggests that the original data may be non-stationary. When taking the first difference, the statistical value of the PP test is -2.545791, and that of the ADF test is -2.899877. These values indicate that, at a significance level of 5%, the sequence becomes stationary after the first difference.

The statistical values of the PP and ADF tests for second-order difference are -2.941437 and -3.450611, respectively. This indicates that the sequence is stationary at the significance level of 1%.

The inflation rate data exhibit a similar pattern, with the raw data being non-stationary without differences. The results of the PP and ADF tests for the first and second differences show that the sequence is stationary after the difference.

The time series data for interest rates also exhibits non-stationarity at the raw level. However, after the first and second differences, the T-statistic of the test indicates that the sequence reaches a stationary state.

The T-statistic value of the unit root test for all variables increases significantly in absolute terms after either the first or second difference and is significant at the 5% level, indicating that the series after the difference is stationary. This indicates that the original sequence contains one or more unit roots, which can be removed through differencing, resulting in a stationary sequence.

Table 3: Correlation analysis

Covariance Analysis: Ordinary
Sample: 2000 2020.
Included observations: 21

Correlation Probability	UNEMPLOYMENT	INFLATION	INTEREST RATE	GDPGROWTH
UNEMPLOYMENT	1.000000 -----			
INFLATION	-0.529575 0.0136	1.000000 -----		
INTEREST RATE	0.272584 0.2319	-0.581828 0.0057	1.000000 -----	
GDPGROWTH	-0.767277 0.0000	0.505874 0.0193	-0.642876 0.0017	1.000000 -----

The link between unemployment and inflation rates is modest, with a negative coefficient of -0.529575. This association is statistically significant (P-value = 0.0136). Typically, a P-value less than
0.05 is a considered significant. One weak positive correlation of 0.272584 exists between unemployment and interest rates. However, the unemployment rate and GDP growth correlation are not statistically significant (p = 0.2319, n = [insert sample size]). The correlation between these two variables is emphatically opposite direction, as indicated by the correlation coefficient of -0.767277.

The correlation between inflation and interest rates is moderate and negative (r = -0.581828, p = 0.0000). The correlation coefficient between the inflation rate and GDP growth is 0.505874, indicating a moderately strong positive correlation (p = 0.0057). Similarly, the correlation coefficient between interest rates and GDP growth is -0.642876, indicating a strong negative correlation (p = 0.0193). It is worth noting that the correlation between interest rates and GDP growth is statistically significant (p = 0.0017). The correlation matrix is a tool used to analyse the relationship between variables in terms of their degree and direction of linear correlation. The correlation coefficient that is perfectly negative is denoted by -1, a perfectly balanced positive correlation by 1, and no correlation by 0. The values of the correlation of the parameters range from -1 to 1. The P-value indicates the statistical significance of the correlation, where a P-value of less than 0.05 suggests that the correlation between observed variables is unlikely to be due to chance. In Malaysia's economy from 2000 to 2020, the correlation matrix provides an overview of the interrelationships among unemployment, inflation, interest rates, and GDP growth. The data suggests a strong negative correlation between the unemployment rate and GDP growth, indicating that economic growth is generally associated with decreased unemployment during this period.
Moreover, the negative correlation between interest rates, GDP growth, and inflation may reflect the central banks' regulatory role in economic activities. Economic growth and inflation may prompt central banks to raise interest rates to avoid overheating and, conversely, lower interest rates to stimulate the economy. These findings align with classical economic theory and macroeconomic policy expectations.

Table 4: Linear regression analysis

Dependent Variable: GDP GROWTH
Method is Least Squares
Sample: 2000-2020
Included observations: 21.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATION	-0.470512	0.334626	-1.406083	0.1777
UNEMPLOYMENT	-6.681767	1.143966	-5.840878	0.0000
INTEREST RATE	-0.486846	0.110944	-4.388191	0.0004
C	29.24211	4.275811	6.838962	0.0000
R-squared 0.813611		Mean dependent var 4.561905		

Adjusted R-squared	0.780719	S.D. dependent var	3.152376
S.E. of regression	1.476177	Akaike info criterion	3.786432
Sum squared resid	37.04468	Schwarz criterion	3.985389
Log-likelihood	-35.75753	Hannan-Quinn criter.	3.829611
F-statistic	24.73573	Durbin-Watson stat	1.184086
Prob(F-statistic)	0.000002		

The chart displays a linear regression model that analyses the effect of the independent variables inflation, unemployment, and interest rates on the dependent variable GDP growth rate. The regression model employs the Least Squares Method, with a sample observation from 2000 to 2020 and 21 observations.
The regression results indicate that the inflation rate has a coefficient of -0.470512 on GDP growth.
However, its statistic is -1.406083, and the corresponding P-value is 0.1777, suggesting that the impact of the inflation rate on GDP growth at the 5% level of significance, is not significant.

The correlation between the unemployment rate and GDP growth is significant, as indicated by the coefficient of -6.681767, T-statistic of -5.840878, and almost 0 P-value.
Similarly, the impact of interest rate on GDP growth is also significant, with a coefficient of -0.486846, a T-statistic of -4.388191, and a P-value of 0.0004. The regression model shows that the intercept term (constant term C) is statistically significant with a coefficient of 29.24211 (standard error = 4.275811, t statistic = 6.838962, p-value = 0.0000). The coefficient of determination (R-squared) is 0.813611, indicating that the model explains 81.36% of the variation in the dependent variable (GDP growth rate). The Adjusted R-squared value is 0.780719, slightly lower than the R-squared value. Even after accounting for adjusting degrees of freedom, the model still has a strong explanatory power.
The regression's standard error (SE) is 1.476177, indicating how well the model fits the sample data. The F statistic is 24.73573, and its corresponding probability (Prob(f-statistic)) is almost 0 (0.000002), suggesting that a minimum of one predictor in the model exhibits statistical significant in predicting the dependent variable GDP growth rate.
Furthermore, the Durbin-Watson statistic of 2.184086 is close to the ideal value of 2, indicating the absence of autocorrelation between the residual terms of the model.
Based on the format of the second figure, we can conclude that although the coefficient of the
The inflation rate is negative, its impact is not statistically significant ($p > 0.05$), and we cannot reject the assumption that it does not affect GDP growth. The impact of unemployment on GDP growth is negative and significant, with a large coefficient indicating that an increase in unemployment will significantly reduce GDP growth. Similarly, interest rates significantly adversely affect GDP growth, possibly due to their inhibitory effect on investment and economic activity, leading to a slowdown in
GDP growth.

Table 5: Inspection and correction
Dependent Variable: GDP GROWTH
Method: Stepwise Regression
Sample: 2000 2020
Selection method: Stepwise forwards
Stopping criterion: p-value forwards/backwards = 0.05/0.05

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
INFLATION	-0.470512	0.334626	-1.406083	0.1777
C	29.24211	4.275811	6.838962	0.0000
UNEMPLOYMENT	-6.681767	1.143966	-5.840878	0.0000
INTEREST RATE	-0.486846	0.110944	-4.388191	0.0004
R-squared	0.813611	Mean dependent var		4.561905
Adjusted R-squared	0.780719	S.D. dependent var		3.152376
S.E. of regression	1.476177	Akaike info criterion		3.786432

Sum squared resid	37.04468	Schwarz criterion	3.985389
Log-likelihood	-35.75753	Hannan-Quinn criter	3.829611
F-statistic	24.73573	Durbin-Watson stat	1.184086
Prob(F-statistic)	0.000002		
S election Summary			
Added UNEMPLOYMENT			
Added INTEREST RATE			

Note: p-values and subsequent tests do not account for stepwise selection

VIF TEST

Variance Inflation Factors
Sample: 2000 2020
Included observations: 21.

Variable	Coefficient Variance	Uncentered VIF	Centred VIF
INFLATION	0.111974	6.287035	1.950061
C	18.28256	176.1892	NA
UNEMPLOYMENT	1.308659	144.9457	1.393454
INTEREST RATE	0.012309	2.229188	1.515793

VIF Test parameter
0<VIF<10 There is no multicollinearity between the independent variables.
10<VIF<100 There is more multicollinearity among independent variables.
VIF>100 The independent variables exhibit a significant degree of multicollinearity.

The high uncentered VIF values indicate that the variables within the model design may be related. Although the centred VIF values are within acceptable limits, the uncentered VIF for the constant term is exceptionally high, suggesting a significant amount of variability explained by the model variables. When the model variables move together, they can explain a significant portion of the variance in the constant term. This may not be a concern for collinearity, but it could have implications for the interpretability of the model coefficients.
It is important to note that a high VIF for the constant term does not affect the predictive capacity or validity of the model. However, it may indicate that one or more explanatory variables explain a significant portion of the data variance. In regression models, the constant term is intended to capture any systematic variation in the dependent variable that is not explained by the explanatory variables.

Furthermore, the low VIFs for unemployment and interest rates, which are close to 1 after centring, suggest that these variables do not significantly increase the variance of the estimated regression coefficients beyond what would be expected if they were uncorrelated with the other variables in the model. This means that they maintain their explanatory power without unduly influencing each other.

Based on these findings, it can be concluded that the model is well-specified in terms of multicollinearity. The included explanatory variables provide distinct and valuable information for understanding the dependent variable, which in this case is GDP growth. However, it is essential to exercise caution when interpreting regression results due to potential model assumptions and pitfalls such as omitted variable bias, measurement errors, or non-linear relationships between variables.

Table 6: Heteroscedasticity test -white

F-statistic	2.927673	Prob. F (9,11)	0.0484
Obs*R-squared	14.81510	Prob. Chi-Square (9)	0.0961
Scaled explained SS	7.491553	Prob. Chi-Square (9)	0.5861

The F-statistic value, which tests the null hypothesis of no heteroscedasticity against the alternative hypothesis of heteroscedasticity, is 2.92763. The corresponding p-value is used to determine whether to reject the null hypothesis. With a p-value of 0.0484, we can reject the null hypothesis and conclude that there is evidence of heteroscedasticity in the model, given that the p-value is less than 0.05 at a 5% significance level. The observed R-squared value of 14.8150 is derived from the regression of squared residuals from the original regression on the independent variables. This statistic is also used in testing for heteroscedasticity. The probability of Chi-Square (9) is not provided. The p-value associated with the observed R-squared statistic has been converted into a Chi-Square distribution with 9 degrees of freedom. The value is 0.0961, close to the 10% significance level. This suggests some evidence of heteroscedasticity, although weaker than the evidence suggested by the F-test since this p-value is higher than 0.05 but less than 0.1. The scaled explained sum of squares is 7.491553. This is another statistic used in the context of White's test to assess heteroscedasticity. Prob. Chi-Square (9): This p-value is associated with the scaled explained sum of squares, with a value of 0.5861. This is much higher than 0.05, indicating that according to this measure, there is no evidence of heteroscedasticity at conventional significance levels. In summary, the table presents mixed results from White's test for heteroscedasticity. The F-statistic shows significance at a 5% level, while the Chi-Square probabilities provide a more detailed analysis. Specifically, the Obs*R-squared statistic suggests possible heteroscedasticity at a 10% significance level, while the Scaled explained SS statistic indicates no heteroscedasticity.

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Sample: 2000 2020

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-233.2657	108.1809	-2.156256	0.0541
INFLATION^2	-0.395105	0.473665	-0.834145	0.4219
INFLATION*UNEMPLOYMENT	-6.722690	3.177121	-2.115969	0.0580
INFLATION*INTERESTRATE	-0.248455	0.269730	-0.921126	0.3767
INFLATION	24.87164	10.73300	2.317306	**0.0408**
UNEMPLOYMENT^2	-17.04509	8.136571	-2.094874	0.0601
UNEMPLOYMENT*INTERESTRATE	1.478720	0.886522	1.668002	0.1235
UNEMPLOYMENT	126.6733	59.78798	2.118708	0.0577
INTERESTRATE^2	-0.101901	0.048827	-2.086999	0.0610

INTEREST RATE	-4.238104	2.811545	-1.507393	0.1599

R-squared	0.705481	Mean dependent var	1.764033
Adjusted R-squared	0.464511	S.D. dependent var	2.245537
S.E. of regression	1.643219	Akaike info criterion	4.136945
Sum squared resid	29.70185	Schwarz criterion	4.634336
Log-likelihood	33.4379 2	Hannan-Quinn criter.	4.244891
F-statistic	2.927673	Durbin-Watson stat	1.724960
Prob(F-statistic)	0.048367		

Note: Less 0.05 input model ls(w=w2) GDPGROW INFLATION UNEMPLOYMENT INTERESTRATE C The model mode has been selected automatically
By default, EViews scales weights according to the inverse standard deviation.

Retest :

F-statistic	2.619765	Prob. F(9,11)	**0.0674**
Obs*R-squared	14.31943	Prob. Chi-Square(9)	0.1114
Scaled explained SS	16.59996	Prob. Chi-Square(9)	0.0554

After processing, the P value corresponding to Obs*R is more significant than 0.05, indicating that there is no heteroscedasticity at the significant level of 0.05

RESULTS AND DISCUSSION

The examination of Malaysia's economic data from 2000 to 2020 indicates a nuanced relationship between unemployment, inflation, and economic expansion. During this period, there has been a considerable range in inflation rates; at first, they were modest and consistent with times of economic stability. Inflation did, however, rise in the mid-2000s, most likely due to global commodity price increases and rising domestic demand. As a result, strict monetary policy and fiscal constraints were implemented, which helped stabilize inflation in the following successful years.

Unemployment rates during this period demonstrated an inverse association with economic growth.

Higher economic performance and decreased unemployment rates were the hallmarks of the early 2000s. However, economic downturns—like the world financial crisis in 2008—also resulted in higher employment percentages.

Malaysia's economy has held up well despite the world economy's difficulties. The country has regularly shown moderate to high GDP growth rates, which may be ascribed to its diverse economy and robust export industry. However, development has been uneven, influenced by foreign economic shocks and varied domestic policy decisions. The correlation study may show an intricate link between Malaysia's economic growth, unemployment, and inflation. Slower economic growth was linked to high price increases, indicating that inflation harmed the economy. On the other hand, times of reduced inflation were usually better for economic expansion. This tendency emphasizes the need for competent inflation management to foster favourable economic growth conditions.

As expected from Okun's Law, the connection between unemployment and economic growth is the opposite. This underscores the idea that economic development usually results in job creation and reduced unemployment rates. The Malaysian government has played an essential reducing unemployment through different programs, notably during economic downturns, contributing to employment stability. However, the study had a few limitations. The essay concerns the direct links between inflation,

unemployment, and economic growth, perhaps missing other contributing elements such as international trade dynamics, political adjustments, and technical improvements. Future research could benefit from involving these variables to create a more complete knowledge of 5Malaysia's economic environment.

ACKNOWLEDGEMENT

We have many people to thank for their support and guidance in completing this paper.

First, I would like to sincerely thank my mentor, Lai Wei Sieng, for his valuable guidance, suggested feedback and constant encouragement. His expertise and understanding have been a great source of inspiration and learning for me. I would also like to thank UNIVERSITI KEBANGSAAN MALAYSIA for its archive and for providing the necessary resources to facilitate my research. This paper would not have been possible without the help and support of all the people mentioned here, to whom I express my deepest gratitude.

REFERENCES

1) Anak Impin, P. D., & Kok, S. C. (2021). The effect of inflation rate, interest rate and unemployment rate on Malaysia's economic growth. Malaysian Journal of Business and Economics (MJBE), 8(1), 125140.
2) Ademola, A., & Badiru, A. (2016). The impact of unemployment and inflation on economic growth in Nigeria (1981–2014). International Journal of Business and Economic Sciences Applied Research, 9(1).
3) Chand, K., Tiwari, R., & Phuyal, M. (2017). Economic growth and unemployment rate: An empirical study of Indian economy. *Pragati: Journal of Indian Economy*, *4*(2), 130-137.
4) Furuoka, F., & Munir, Q. (2014). Unemployment and inflation in Malaysia: Evidence from error correction model. Malaysian Journal of Business and Economics (MJBE), 1(1).
5) Irpan, H. M., Saad, R. M., & Ibrahim, N. (2016). Investigating the relationship between the unemployment rate and GDP growth in Malaysia. *International Information Institute (Tokyo). Information*, *19*(9B), 4057.
6) Mohseni, M., & Jouzaryan, F. (2016). Examining the effects of inflation and unemployment on economic growth in Iran (1996-2012). Procedia Economics and Finance, 36, 381-389.
7) Panigrahi, S., Azizan, N., Sorooshian, S., & Thoudam, P. (2020). Effects of Inflation, Interest, and Unemployment Rates on Economic Growth: Evidence from ASEAN Countries. *ABAC Journal*, *40*(2).
8) Real interest rate (%) - Malaysia | Data. (n.d.). Data.worldbank.org. https://data.worldbank.org/indicator/FR.INR.RINR?end=2020&locations=MY&start=2000
9) Statista. (2018). *Malaysia - unemployment rate 1998-2018 | Statista*. Statista; Statista. https://www.statista.com/statistics/319019/unemployment-rate-in-malaysia/
10) The World Bank. (2021). *GDP growth (annual %) - Malaysia*. Worldbank.org. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=MY
11) World Bank Open Data. (n.d.). World Bank Open Data. https://data.worldbank.org.cn/indicator/FP.CPI.TOTL.ZG?locations=MY
12) Yelwa, M., David, O. O., & Awe, E. O. (2015). Analysis of the relationship between inflation, unemployment and economic growth in Nigeria: 1987-2012. *Applied economics and finance*, *2*(3), 102-109.