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The Impacts of Employment-to-Population, Interest Rate Spread and Inflation on Malaysian Economic Growth: Evidence from 1991 to 2019

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Abstract

The International Monetary Fund (IMF), in its latest Global Financial Stability Report issued in October 2022, foresees that the world economy is going to be in deep recession in 2023. The main issues highlighted in the report that contribute to the global recession are the multi-decades higher-than-anticipated inflation and the hike in the interest rates. The report further highlights that the large-sized firms are facing a declining profitability due to skyrocketing cost and the increasing number of bankruptcy cases among the small and medium-sized firms because of rising borrowing cost. In the wake of this, the firms need to close down the businesses or to scale down by cutting down the number of employees. This, consequently, will affect the employment rate relative to increasing number of world population. Therefore, based on these current issues, we aim to examine the relationship and the impacts of the macroeconomic determinants on the economic growth focusing on Malaysia. Four macroeconomic determinants were selected namely employment-to-total population ratio (EPR), MYR-to-USD exchange rate (EXC), lending-borrowing interest rate spread (IRS) and consumer price index (CPI). Gross domestic product growth rate (GDPGR) was used as a proxy for the economic growth. Annual secondary data from 1991 to 2019 were gathered from the World Bank Open Data and the Department of Statistics Malaysia (DOSM) Official Portal. We based our analyses on the descriptive statistics to look at the mean, maximum-minimum and standard deviation of the data of respective variables, then we use the Pearson's correlation test to show the negative or positive correlation between the dependent variable (DV) and independent variables (IVs) and finally we employ the multiple regressions test to reveal the significant or insignificant relationships together with the positive or negative impacts of each IV on the DV. The main findings from the correlation test indicate EPR, EXC and IRS have negative correlations, where EXC has moderate correlation whilst the other two have very weak correlations with GDPGR. Meanwhile, CPI shows positive but very weak correlation with GDPGR. Meanwhile, the regressions test reveals EPR and IRS positively influence GDPGR whilst EXC and CPI have negative impacts on the Malaysian economic growth. However, only EXC is found to be significant out of the four determinants. The results imply the higher

employment creates larger productivity to the economy and the more stable monetary policy (IRS) the better contribution to economic growth. On contrary, depreciation of MYR against USD and fluctuation in price level of goods and services lead to economic instability. The findings have significant implications for policy makers, businesses and investors in their decision making. For future research, we suggest to test on other economic variables such as industrial production index, foreign direct investment and money supply together with non-economic variables such as human development index, corruption perception index and global peace index of the country. We also suggest future studies to apply other methodologies for robustness. Comparison with other countries will also make the findings more meaningful.

Keywords: Economic Growth, Employment-To-Population, Interest Rate Spread, Inflation, Exchange Rate, Malaysia.

Introduction

In 2018, Malaysia is ranked the 35th largest economy in the world and the third largest in Southeast Asia. One common indicator in determining the economic level is the gross domestic product (GDP). Since 1991 to 2019, Malaysia has seen a significant rising trend in its GDP per capita. The Department of Statistics Malaysia (DOSM) reported that Malaysian economy grew by 4.3% in 2019 compared to 4.8% in 2018. Despite this fact, the GDP growth rate (GDPGR) showed a decreasing yet fluctuating trend particularly in late 1990s to early 2000s. In 1996, Malaysia achieved its highest GDPGR up to 10%. Nonetheless, in 1998, Malaysia had faced the largest decline of 7.36% due to severe impact of Asian financial crisis. The Malaysian government, at that time, took initiatives to restore economic stability by introducing stimulus packages. In restoring the GDPGR, domestic demand was expected to provide major support to the economy with public sector spending being the major driver of domestic demand. As a result, Malaysian economy had improved ever since before plunging in the aftermath of the global financial crisis in 2007 to 2009.

Since 2002, Malaysia has recorded over 60% of employment-to-population. The lowest percentage ever recorded was in 2008 and 2009 at 58.20% and 58.22%, respectively due to the global recession specifically in late 2008. The employment-population ratio has not always been looked at for labor statistics, where specific areas are economical. Nevertheless, it has been given more attention worldwide by the economist right after the global financial crisis in 2009.

Exchange rate stability is very crucial for a country as it reduces the risk of a new tradeable sector investment. Malaysia has pegged the exchange rate at MYR3.80/USD between 1999 and 2004 right after the Asian financial crisis. In 2019, Malaysia recorded the exchange rate of MYR4.14/USD, which was higher than the rate recorded in 2017 at MYR4.30/USD. The highest exchange rate recorded was in 1995 at MYR2.50/USD. Due to fluctuation, exchange rate has been one of the common factors used to measure the level of economic growth.

Interest rate is one of the significant factors that affect the economic growth of a country. High or low interest rates would affect a country's economic growth. Very low real interest rate has led to financial disturbance in the economy and thus slowed the economic growth. Interest rate spread is the difference between interest rates charged by banks on its loans to private sector customers and interest rates paid by commercial banks for demand, time, or savings deposits. For Malaysia, the lowest interest rate spread recorded was 1.45% in 2015. Meanwhile, in 1999, the highest interest rate spread recorded was 4.44%.

Inflation reflects the annual percentage change in cost to the average consumer acquiring a set of goods and services. The inflation rates in the country have changed every year. In 2019, Malaysia recorded 0.66% inflation rate. The lowest inflation rate ever recorded over the last three decades was in 2009 at 0.58%. This lowest rate was set shortly after the highest inflation was recorded in 2008 at 5.44% due to the global financial crisis starting in 2007.

The GDP per capita of Malaysia has been escalating steadily over the last three decades in spite of slight declines in 1998, 2001 and 2009, respectively. This demonstrates the strength of the country's economic growth year by year. Theoretically, when the GDP rises, the national economy is generally thought to be doing well. On the other hand, a fall in the GDP signals a weak growth that the economy is doing poorly. Economic growth can be defined as an increase in the ability of a country or region to provide for the economic needs of the population. Apparently, a high or low GDP growth is driven by several macroeconomic factors. Hence, the pace of GDP growth is critically important in determining the economic strength of a country.

Therefore, this paper specifically discusses the relationship and impacts of the employment-to-population ratio, exchange rate of MYR/USD, interest rate spread and inflation rate on the GDP growth in Malaysia from 1991 to 2019. This study is significant as it looks into from different perspectives, namely we test the total employment to total population (EPR) ratio instead of the employment rate and we also consider the interest rate spread (IRS) instead of the interest rate per se. The next section reviews the previous literature related to this topic, and followed by the data and methodology used in this study. Then, we discuss the results and analyze the findings and conclude the paper.

Review of Literature

High GDP growth rate demonstrates the relative performance of one country over another. Higher GDP reflects better position of the economy (Divya and Devi, 2014). Macroeconomic determinants such as interest rates, inflation and exchange rates play vital roles in the economic performance (Agalega and Antwi, 2013). Economists argue that country's standard of living rise along with the economic growth. Divya and Devi (2014) noted that financial architecture tends to ensure consistent economic growth in line with the goals of its sustainability. By calculating the country's GDP, it may indicate high or low of the economic growth (Semuel and Nurina, 2015). The GDP can be of two different approaches. Expenditure approach takes into account all goods and services within a certain period of time (Andolfatto, 2005). Income approach constitutes workers compensation, rent, interest rate, business income, income tax and import level (McConnell and Brue, 2008).

Antwi et al (2013) showed positive relationship between labor force and economic growth in Ghana. Saget (2011) stated that the changes of employment rates impact the changes in GDP, where the level of employment influenced the GDP growth positively in nine out of 11 countries tested. On contrary, Sodipe and Ogunrinola (2011) found negative relationship between employment and GDP growth rate in Nigeria. According to them, a country with a large number of poor workers might need to achieve higher employment eligibility from less developed economies.

Exchange rate has major effect on boosting economic growth according to (Gala, 2008; Bhalla, 2007). The exchange rate has significant positive impact on GDP growth of Pakistan (Ramzan et al., 2013). As the local currency grows stronger, imports become cheaper and exports can be made. This causes more trade in the international market to positively affect

the economy. The exchange rates role in driving Malaysia's economic growth should not be denied in spite of its lack of importance. It acts as a catalyst to complement the economic growth factors (Kogid et al., 2010). Gadanecz and Mehrotra (2013) suggested neither high nor low official exchange rates are bad or reflecting the actual national economy because high or low exchange rates are good in different ways.

Haron et al (1997) stated financial liberalization of economic growth is influenced by fluctuations in interest rates. Obansa et al (2013) found the interest rate has less impact on the economic growth of Nigeria. Nonetheless, high interest rates can undermine investment and affect loans for the private sector in the economy. Mutinda (2014) proved the interest rate and economic growth have negative relationship. Hence, efforts taken by the government should be focused on maintaining interest rate stability. In contrast, there exists significant positive relationship between interest rate spread with (GDP growth Dotsey, 1998). The interest rate spread is functional as an indicator for both economic situation, either recession or economic boom.

Inflation diminishes the purchasing power and results in unstable economy. Jilani et al (2010) stated inflation is causing problems throughout the economy of a country. The economic growth will suffer and the government will face difficulties to run the policy smoothly in the event of high inflation (Qayyum, 2006). The rise or fall in the inflation rate reflects the economic uncertainty of a country. Low inflation rates ensure success in achieving sustainable economic growth rates (Ramzan et al., 2013). Ayyoub et al (2011) found negative relationship between inflation and economic growth in Pakistan whilst Semuel and Nurina (2015) stated no significant impact of inflation on GDP in Indonesia. Munir and Mansur (2008) revealed no linear relationship between inflation rate and economic growth of Malaysia. They argued either high or low levels of inflation could give impact on economic growth.

With the above arguments, it is clear that the results or findings are inconsistent and inconclusive form the context of different countries or economic background. Hence, the impacts of macroeconomic determinants on the economic growth are still debatable and opened to further study. In order to validate the previous findings, we aim to investigate in the case of Malaysia for the last three decades from 1991 to 2019.

Data and Methodology

This research uses annual secondary data obtained from the World Bank Open Data Website and partly through Department of Statistics Malaysia (DOSM) Official Portal and Macrotrends.net. Gross domestic product growth rate is used as dependent variable in this study while the four macroeconomic determinants, namely employment-to-population ratio, foreign exchange rate, interest rate spread, and consumer price index act as the independent variables. The data spans from 1991 to 2019 (29 years). We excluded the years 2020 and 2021 due to the pandemic COVID-19. The following Table 1 summarizes the data of this study.

Table 1
Summary of Variables

Dependent Variable (DV)	**Abbreviations**	**Unit Measurement**	**Source of data**
Gross domestic product growth rate	GDPGR	GDP growth (Annual %)	World Bank Open Data and DOSM
Independent Variable (IV)	**Abbreviations**	**Unit Measurement**	**Source of data**
Employment-to-population	EPR	Employment to population ratio, total (%) (modelled ILO estimate)	World Bank Open Data
Exchange rate	EXC	Official exchange rate (LCU MYR per USD, period average)	World Bank Open Data
Interest rate	IRS	Interest rate spread (lending rate minus deposit rate, %)	World Bank Open Data
Inflation	CPI	Inflation, consumer prices (annual %)	Macrotrends.net

First, we analyze the data using the descriptive statistics, which look at the mean, minimum, maximum, standard deviation, skewness and kurtosis of each variable. Next, we perform the correlation analysis based on the Pearson's correlation test. The correlation analysis determines whether and to what degree a relationship exists between two or more quantifiable variables. A high correlation (the coefficient of +1 or -1 or close to +1 or -1) means that two or more variables have perfect positive or negative correlation with each other while a weak correlation (equal to 0 or close to 0) means that the variables are very weakly correlated or no correlation at all. Then, we conduct the multiple regression analysis, which measures the significant or insignificant relationship between the DV and respective IV (by looking at the *p*-value at 5% significance level) and positive or negative impact the IV has on the DV (by looking at the beta coefficient values). The multiple linear regression equation of the variables that we test in this study is as follows;

$$GDPGR = \beta_0 + \beta_1 EPR + \beta_2 EXC + \beta_3 IRS + \beta_4 CPI + \varepsilon \qquad (Equation\ 1)$$

Where; the DV and IVs abbreviations are as explained in Table 1 above while the β_0 represents the intercept or constant, and the β_1, β_2, β_3 and β_4 represent the beta coefficients of respective IVs. The ε is the error term or residual value. All the above tests are performed using the *EViews 11* software.

Results and Discussion

Descriptive Analysis

The descriptive statistics (Table 2) indicate Malaysia had recorded the economic growth at 5.67% on average, the employment-to-population ratio shows an average of 60.04% and the exchange rate indicates a mean of RM3.4183/USD throughout the last 3 decades. The interest rate spread and the inflation rate stood at 2.72% and 2.66% on average, respectively. The highest GDP growth rate ever recorded by Malaysia is 10.00% with the 62.44% employment-to-population ratio. The lowest MYR/USD was 4.3004, and the largest interest

rate spread and inflation are 4.44% and 5.44%, respectively. The GDP growth has shown the largest standard deviation (3.6070) that implies highly dispersed or spread out from the average and followed by the inflation (1.3424) and employment-to-population (1.3400). The interest rate spread and exchange rate have very minimal spread, less than 1.0000. In term of data skewness, GDPGR is the most skewed, namely to the left and so is the EXC but slight left whilst the EPR, CPI and IRS are right-skewed. Nonetheless, the data is close to being symmetrical due to the results of near zero. Meanwhile, the kurtosis results show that GDPGR data is heavy-tailed whereas, the other four variables are light-tailed relative to normal distribution. This implies that GDPGR (dependent variable) has greater outliers compared to the four independent variables.

Table 2
The descriptive statistics

	GDPGR	EPR	EXC	IRS	CPI
Mean	5.674	60.042	3.418	2.719	2.663
Min.	-7.359	58.196	2.504	1.450	0.583
Max.	10.002	62.441	4.300	4.439	5.440
SD	3.607	1.340	0.558	0.855	1.342
Kurtosis	5.492	-0.762	-1.170	-0.827	-0.627
Skew.	-1.898	0.709	-0.343	0.168	0.377

Correlation Analysis

Based on Pearson's correlation results (Table 3), only inflation rate (CPI) is found to be positively correlated with the economic growth with value of 0.0856 despite a weak correlation. For the other three variables, negative correlation was noted with the exchange rate (EXC) shows moderate correlation at -0.5446 whereas, the employment-to-population (EPR) and interest rate spread (IRS) indicate weak correlation with the values of -0.0132 and -0.0596, respectively. We could imply that the higher the inflation, the higher economic growth will be for Malaysia. This is very true particularly for the companies, where higher inflation means higher prices of goods and services that lead to higher revenues and profits. As a result, the economy grows higher as well. However, for the employees and individuals, the higher inflation means higher cost of living unless the companies compensate them with higher salary and more fringe benefits that will ultimately normalize the situation. Meanwhile, MYR depreciation against USD (EXC) will cause the economic growth to slip. This could be due to higher import than export that makes selling of MYR more than buying, which contributes the MYR to stumble. The employment-to-population (EPR) has no significant correlation with economic growth whilst interest rate spread (IRS) must be taken heed in catalyzing the economic growth due to its adverse correlation.

Table 3
The Pearson's correlation coefficients

	GDPGR	EPR	EXC	IRS	CPI
GDPGR	1.0000				
EPR	-0.0132	1.0000			
EXC	-0.5446	0.2765	1.0000		
IRS	-0.0595	-0.6998	-0.0207	1.0000	
CPI	0.0856	-0.1460	-0.4200	0.0662	1.0000

Regression Analysis

The multiple regression results (Table 4) indicate employment-to-population (EPR) and interest rate spread (IRS) have positive impacts on Malaysian economic growth. The findings on EPR support the studies by Antwi, Mills, and Zhao (2013) and Saget (2011) but contradict Sodipe and Ogunrinola (2011). Meanwhile, the results on IRS are consistent with Haron, Shanmugam and Doran (1997) and Dotsey (1998) but on contrary with Mutinda (2014). The results validate that the larger changes (positive or negative) in the two variables, the larger impacts on the economic growth of the country, or vice versa.

On the other hand, exchange rate (EXC) and inflation (CPI) negatively affect the country's economic growth. These findings are in agreement with what concluded by Ramzan et al (2013); Ayyoub et al (2011) but not supporting (Kogid et al., 2010). The results suggest that when the value of MYR appreciates against USD, Malaysia economic growth will get boosted or vice versa. As for the inflation, too large increase in CPI is not good for the country because this will impede the citizens or consumers from spending. As a result, the industry or business will be in jeopardy. Consequently, the economy will be stagnant or going to collapse.

Nevertheless, out of the four macroeconomic variables or determinants, only the exchange rate (EXC) is found to have significant relationship with the economic growth at 5% significance level. Apparently, the country's policy makers need to take this determinant (EXC) seriously due to its negative impact and significant relationship with the economic growth. Among other things that could contribute to MYR appreciation are to boost the export and limit the import specifically of food and consumer products and attract more foreign direct investments (FDIs) from abroad to set up more businesses in Malaysia.

Table 4
The multiple regression results

	Coefficients	SE	t Stat	P-value
Intercept	-12.0903	41.0400	-0.2945	0.7708
EPR	0.5479	0.6700	0.8177	0.4215
EXC	-4.3369	1.2531	-3.4608	0.0020*
IRS	0.3386	1.0097	0.3353	0.7402
CPI	-0.4620	0.4907	-0.9415	0.3557

Conclusions

The economic growth of a country relies on the government's economic policies specifically the fiscal policy and monetary policy. The fiscal policy that concerns on government expenditure and taxation are the two useful tools to catalyze the economic growth. The government budget should be focused on boosting the macroeconomic

conditions besides enhancing the total demand for goods and services. The more government spends for development, the more opportunities for employment for its citizens. In addition, the tax policy plays crucial roles among the industry sector. An effective tax policy will not only improve the government income but also spur the businesses to grow besides attracting more investors into the economy. Under the fiscal policy as well, the government must control the prices of goods and services so that the inflation could be stabilized and ultimately the purchasing power could be sustained. On top of that, the monetary policy through the central bank should also be well coordinated with the fiscal policy. The interest rate policy must be set in accordance with the government aspiration in stimulating the economy. The interest rate should not be too high to encourage the private sector investment and households' spending. At the same time, the interest rate should not be too low that will shy away the investors from the market. If all the above-mentioned elements could be harmonized, then the sustainable economic growth could be achieved.

This study is unique from previous studies in several ways. We used GDP growth rate to proxy the economic growth instead of total nominal GDP or GDP per capita. Besides, we used the interest rate spread for the explanatory variable instead of the nominal or real interest rate. Therefore, for future research, we would recommend other researchers to test on other economic determinants such as gross capital formation, industrial production index and stock market index together with non-economic determinants such as the corruption perception index, human development index and global peace index against the economic growth. For robustness, we also suggest future researchers to employ multiple tests or techniques and break the test period into several sub-periods like pre, during and post financial or economic crises. Last but not least, the findings of this study will benefit several parties. The policy makers will be able to better strategize on the planning and execution of the policies. As for the investors and firms, the findings will assist them in making investment and business related decisions. The study findings also add more value to the existing literature to be used by other researchers and academicians.

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