

THE EFFECT OF NATIONAL LEVEL BANKING INDICATORS ON THE INFLATION IN MALAYSIA

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Abstract

This study aims to examine the effect of national level banking indicators on the inflation in Malaysia. For this purpose, the timeseries annually data has been utilized over the period from 2001 to 2021. Inflation has been used as dependent variable, bank capital, bank liquid reserves, bank nonperforming loans, interest payments current and monetary sector credit as independent variables. Unit Root test is applied for stationarity of variables to avoid a spurious regression problem, and all variables become stationary, but some are at level, and some are at first difference, so this suggest the ARDL model for this study. This model suggests that bank capital, bank liquid reserves, bank nonperforming loans, interest payments current and monetary sector credit is statistically negatively significant effect on the inflation. The objectives of the study have been achieved. The results show that all the independent variables have different relationship towards inflation (CPI) which is negative related. Monetary policy can only be helpful in controlling inflation due to demand-pull factors. Moreover, one of the most extreme monetary measures is the issue of new currency by replacing the old one.

Keywords: Inflation; Banking Indicators; Autoregressive Distributed Lag; and Timeseries Data

1. INTRODUCTION

In general, inflation became one of the most important issues over time. Many causes have contributed to Malaysia's inflation during the last few years, it may be argued. These factors are either caused by economic considerations or by external sources other than economic ones. Inflation is defined as a prolonged increase in an economy's aggregate or general price level, implying an increase in the cost of living. Inflation is sometimes defined as the year-on-year percentage change in the value of the Consumer Price Index (CPI). Inflation is a continuing concern in all nations in sustaining cheap living costs, rapid growth, a healthy economy, and policymakers' decisions. Inflation has both beneficial and bad effects depending on a country's economic situation (Liwan & Lau, 2007). A good economy, on the other hand, has a modest degree of inflation. A rate of inflation of 2 or

3% is advantageous to an economy because it stimulates individuals to buy or borrow more because, during times of lower inflation, interest rates stay low. However, inflation has the greatest impact on consumers. High costs for everyday items make it difficult for customers to buy even the most necessities, disrupting the efficient operation of a market economy (Krugman, 1995).

During the 13th Malaysia Political, most Malaysians hoped for a cheaper cost of living, which was addressed by various election candidates. Although certain items might be subsidised, others, such as food and drinks, utilities, and real estate, are directly impacted by inflation. Rather than criticizing specific parties for rising living costs, Malaysians should grasp what drives the high cost of living, which has led to turmoil and has become the major issue in Malaysia. As a result of Malaysians' increased concern about the cost of living, the Consumer Price Index has become an essential instrument. People are attempting to minimize costs in order to increase their purchasing power. Increased income, on the other hand, will result in higher inflation. As a result, the government strives to keep inflation under control while also aiming for low or zero inflation. According to past academics, there are many debates on the precise link between inflation and macroeconomic indices (Omoke, 2010).

Money supply is one of the factors of inflation in Malaysia (Tang, 2010), and both (Akbari & Rankaduwa 2005) and (Akbari & Rankaduwa 2005) agreed that there is a positive association between money supply and inflation. Furthermore, another economic measure that is directly tied to both money supply and inflation is national income, sometimes known as GDP (Ismail, et al., 2005). Several research on the drivers of inflation have been conducted, concentrating on independent factors such as the unemployment rate, exchange rate, oil prices (Tang, 2011), and income (Akhter, et al., 1992). However, there have been few research on the link between GDP, money supply, interest rate, import goods and services, and government spending and inflation. As a result, this research will focus on the Malaysian perspective of what causes would contribute to an increase in inflation (CPI). The variables chosen are GDP, Money Supply, Interest Rate, Import Goods and Services, and Government Expenditure.

2. LITERATURE REVIEW

There have been several studies that have explored and demonstrated that Gross Domestic Product, Money Supply, Interest Rate, Import Goods and Services, and Government Expenditure all have an impact on the Consumer Price Index. According to Ahiabor, G. (2013), inflation occurs when the prices of most products and services continue to rise. When this happens, the level of living suffers. Because each dollar buys less, we must spend more to obtain the same quantity of goods and services. According to Tang (2010), inflation generates economic challenges and distortions in the operating economy, potentially halting a country's economic growth rate. Inflation is likely to occur when important economic variables such as the budget deficit and the surplus money supply fluctuate. According to Friedman and Schwartz (1982), the rate of money growth and the rate of inflation have a positive connection. In comparison to other nearby nations,

Cheng and Tan (2009) agreed that inflation in Malaysia was adequately handled throughout the recent financial crisis. Baghestani and AbuAlFoul (2010) discovered that the Federal Reserve provided correct information regarding inflation once the government forecasted it.

One of the element's influencing inflations is the interest rate. Because interest rates are for the financial industry, a firm or individual can produce money through investing and borrowing. Interest rates are typically rising. Furthermore, the currency rate might have an influence and alter the payment balance. Cristadoro and Veronese (2011) expressed this point of view by claiming that the bank rate or interest rate used by the bank to borrow funds from the Reserve Bank of India (RBI) and this approach was actively adopted. The RBI also used the cash reserve ratio, which is the proportion of demand that banks should reserve in the Reserve Bank. The reaction of the currency rate, growth, and capital inflows causes inflation shock. Meanwhile, inflation occurred because of the actual interest rate, which is low in comparison to other nations. Chaturvedi et al. (2009) duplicated the study, finding that the connection between saving rate and growth is positive. Growth is based on previous values; therefore it is unaffected by inflation, and interest rates are unaffected by saving rates. In Malaysia, interest rates are thought to influence inflation through government spending. Aurangzeb and Haq (2012), on the other hand, determined that all independent factors had a considerable influence on inflation. He confirmed that GDP is adversely associated to inflation, but the exchange rate, interest rate, budget deficit, and unemployment all positively related to inflation.

According to Vera (2010), the money supply and income distribution have conflicting claims due to inflation. Income claims over the present price from the value of output can define conflict theories. He also stated that more money supply above what is required for domestic commerce leads to increased inflation, whereas import and export are very price sensitive. Inflation is the outcome of the inconsistency between the real pay and the targeted markup. Furthermore, he says that inflation may produce conflict when the exchange rate rises since the exchange rate is dependent on the economic situation of inflation or deflation. According to the findings of a study that evaluated the cointegration of domestic inflation and domestic money supply, there is a long term link between inflation and money supply (Al-Mutairi, et al., 2020). Jalali-Naini (1997) investigates the price movement and inflation rate in the Iranian economy prior to World War II. He remarked that the increase in overall price level is mostly due to an increase in money supply. Armesh et al., (2010) verified that money supply had a positive long-term impact on inflation in another research done in Iran from 1961 to 2005 using the OLS econometric approach. According to Cheng and Tan (2002), money supply has an indirect link in the limited sense.

According to Dwyer and Hafer (1988), inflation and money growth have a positive connection. The connection between these two instruments is determined by money demand and supply. Increased money supply leads to increased money growth, which leads to increased inflation in each country. According to Poole (1994), there is a positive link between money supply and inflation rate. Both argued that the two variables had a

substantial connection, implying that as the money supply expands, so would the inflation rate. Pakko (1994) agrees with Poole (1994) on the positive link between money supply and inflation rate. They examined studies on the link between money supply and inflation rate for 13 nations using time series data. Based on his research, he concluded that a country's high inflation rate is caused by a large amount of money in the economy. According to Christensen (2001), the money supply and the inflation rate have a long-term direct or positive connection. A rise in the supply of money in a money market raises the demand for goods and services. As a result, more money chasing fewer goods and services will result in the inflationary dilemma. According to Alvarez et al. (2001), the money supply has a positive connection with the inflation rate. This is because when the Central Bank decides to expand the money supply in the market, it will almost certainly lower the interest rate at the same time. As a result, because the money supply in the market is expanding indefinitely, this circumstance will lead to an inflationary dilemma.

3. DATA AND METHODOLOGY

3.1. Theoretical Framework

Research methodology is primarily a system created for completing research study based on the requirements of the investigation's aims and objectives. By keeping these general goals in mind. This section explains the methodological technique for testing the hypotheses that have been generated, as well as the study's objective and findings. This part will also go through the proposed procedures and analyses. It comprises the study design, data collecting sources, econometric modelling, variable descriptions, econometric analysis, and the estimate technique.

3.2. Variables and Data Source

Time series annually data is used over the period 2001 to 2021 to statistically explore the relation between the specified variables. The analytical information comes from secondary sources, which are given more explanation in the below table:

Table 1: Variables and data source

Variable	Description	Source
Inflation	Inflation, consumer prices (annual %)	IMF/World Bank
Bank Capital	Bank capital to assets ratio (%)	IMF/World Bank
Bank Liquid Reserves	Bank liquid reserves to bank assets ratio (%)	IMF/World Bank
Bank Nonperforming Loans	Bank nonperforming loans to total gross loans (%)	IMF/World Bank
Interest Payments Current	Interest payments (current LCU)	IMF/World Bank
Monetary Sector Credit	Monetary Sector credit to private sector (% GDP)	IMF/World Bank

3.3. Econometric Model

The study main interest is to define and estimate a basic type of functional model of the effect of national level Banking indicators on the inflation in Malaysia. By estimating the equation 1 below is a non-linear equation used to measure the change in the effect of national level Banking indicators on the inflation in Malaysia.

Equation 1

$$I_t = a_0 + \beta_1 BC_t + \beta_2 BR_t + \beta_3 BL_t + \beta_4 IP_t + \beta_5 MS_t + \varepsilon_t \quad (1)$$

Where:

I_t = Inflation

$\beta_1 BC_t$ = Bank Capital

$\beta_2 BR_t$ = Bank Liquid Reserves

$\beta_3 BL_t$ = Bank Nonperforming Loans

$\beta_4 IP_t$ = Interest Payments Current

$\beta_5 MS_t$ = Monetary Sector Credit

ε_t = Error term

Timeseries annually datasets consist of several observations on various individuals (which ranges from $I = one \dots n$) which are observed over a time at equal intervals. t refers to time, when data is observed, $t = \text{Years (2001, 2002, 2003... 2021)}$, $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = Partial slope coefficients. The above model will used for the linear regression model to calculate the relation between dependent and independent variables.

4. EMPIRICAL RESULTS AND DISCUSSION

In this section we analysed the timeseries data to present the summary of statistics of dataset that shows and explain the characteristics of each variable in the model. Moreover, the study performed unit root test to check the stationarity in variables. This study some variables are significant at level while some are significant at first difference, so this econometrics tool suggested ARDL model for further investigation.

4.1. Descriptive Statistics

Descriptive statistics present the number of observations (N) and the summary of statistics (Mean, Median, Maximum, Minimum, and Standard Deviation) for all variables that will be used in empirical analysis. This data set includes 16 observations for all the variables.

Table 2: Descriptive Statistics

Variables	Mean	Median	Max	Min	Std. Dev.	Obs
Inflation	2.176	2.097	5.440	-1.138	1.554	16
Bank Capital	8.481	8.681	9.236	6.967	0.761	16
Bank Liquid Reserves	17.642	17.942	30.031	7.071	7.900	16
Bank	3.355	1.932	9.390	1.468	2.605	16
Interest Payments	2.11E+10	2.02E+10	3.45E+10	1.16E+10	7.69E+09	16
Monetary Sector Credit	114.210	115.646	133.863	96.748	9.700	16

Std. dev. 5 = Very Good, 4 = Good, 3 = Average, 2 = Poor, 1 = Very Poor,

The low standard deviation means data are clustered around the mean, and high standard deviation indicates data are more spread out.

4.2. Unit Root Test

This study applied unit root test tests for time series variable is non-stationary and possesses a unit root. The null hypothesis is generally defined as the presence of a unit root and the alternative hypothesis is either stationarity, trend stationarity or explosive root depending on the test used.

Table 3: Unit Root Test (Augmented Dickey Fuller)

Variable	Level		1st Difference		Decision
	Statistic	Prob	Statistic	Prob	
Inflation	-4.342939	0.0032			I(0)
Bank Capital	-3.330956	0.0319			I(0)
Bank Liquid Reserves	-1.424071	0.5487	-3.550703	0.0623	I(1)
Bank Nonperforming Loans	-6.213049	0.0001			I(0)
Interest Payments Current	4.370011	1.0000	-3.945505	0.0317	I(1)
Monetary Sector Credit	-1.195327	0.6539	-4.410446	0.0135	I(1)

“The ***, **, and * asterisks indicate the level of significance at 1%, 5%, and 10% respectively”.

The table 3 shows the results of unit root tests, to check the stationarity in the variables. The Dickey fuller test results indicate that the dependent variable inflation and independent variable bank capital and bank nonperforming loans are stationary at level I(0). By taking first difference I(1) of variables containing unit root, the problem of non-stationarity could be sort. For further investigation, now all variables become stationary, but some are at level, and some are at first difference, so this suggest the ARDL model for this study.

4.3. Autoregressive Distributed Lag Model

Autoregressive distributed lag (ARDL) models are often used to analyse dynamic relationships with time series data in a single-equation framework.

Table 4: Autoregressive Distributed Lag (ARDL)

Dependent Variable: Inflation Consumer Price				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Bank Capital	-1.731297	0.833492	-2.077160	0.0924
Bank Liquid Reserves	-0.807296	0.196798	-4.102147	0.0093
Bank Nonperforming Loans	-0.973716	0.339165	-2.870918	0.0350
Interest Payments Current	-1.65E-09	5.90E-10	-2.792743	0.0383
Monetary Sector Credit	-0.124924	0.047704	-2.618740	0.0472
C	75.37814	13.60249	5.541494	0.0026
R-squared	0.931116	Mean dependent var		2.122976
Adjusted R-squared	0.807124	S.D. dependent var		1.593860
S.E. of regression	0.699986	Akaike info criterion		2.359208
Sum squared resid	2.449902	Schwarz criterion		2.831242
Log likelihood	-7.694062	Hannan-Quinn criter.		2.354180
F-statistic	7.509501	Durbin-Watson stat		2.988074
Prob(F-statistic)	0.019461			

This model suggests that bank capital, bank liquid reserves, bank nonperforming loans, interest payments current and monetary sector credit is statistically negatively significant effect on the inflation. The objectives of the study have been achieved. The results demonstrate that all of the independent variables have a negative connection with inflation (CPI). Cheng and Tan (2002) analysed time series data from 1973 to 1997 to find that money supply, interest rate, income, private consumption, government expenditure, currency rate, trade balance, and capital inflows all have a significant role in Malaysian inflation. Another researcher who agreed with the notion is (Aurangzeb & Haq 2012), who stated that GDP, exchange rate, interest rate, budget deficit, and unemployment all have a major influence on inflation. Other variables such as the unemployment rate, exchange rate, discount rate, government revenue, export of goods and services, and private consumption should be included in future study to find the remaining elements that might explain Malaysia's inflation. Other variables, on the other hand, might influence Malaysian inflation. Other countries have employed a variety of methods to combat inflation, including monetary policy, fiscal policy, and the fiscal cliff.

CONCLUSION

In general, inflation is induced by a decrease in aggregate supply that is greater than the increase in aggregate demand. To manage aggregate demand, increase the supply of products and services while decreasing money incomes. High inflation can have a detrimental influence on a country. As the R-square value is less than 93%, there are more factors that might effect inflation in Malaysia. It demonstrates that the primary factor

banking indicators mentioned in this study are only a subset of the variables impacting inflation in Malaysia. Inflation is a major problem everywhere, and it affects not only a country's economic growth but also the CPI, labour market, investors on investment, and so on. To overcome the problem of high inflation in Malaysia, the government should try to reduce unnecessary expenditure on non-development activities. This will also put a damper on private spending, which is heavily reliant on government demand for products and services. To avert this predicament, it is advised that this policy be supported by taxes. To exert control over the country's monetary policy because it has a statistically significant negative impact on inflation. This is because it discourages the healthy habits of saving, investing, and producing. Furthermore, to bring more income into the tax net, the government should prosecute tax evaders with high fines. Such techniques are almost certainly efficient at containing inflation. To improve domestic supply, the government should lower import duties while raising export levies. Another form of direct control to combat inflation is price control and rationing.

The government attempts to maintain price control by setting a maximum price for important consumer products and services on the market. They must execute this technique for specific items such as sugar, oil, rice, and so on, so that the market price is fixed at a specific rate, and no one has the authority to adjust the price level in the market. Aside from that, the government can use monetary policy to address Malaysia's high inflation problem. One technique is through credit regulation, in which Malaysia's central bank must attempt to manage the quantity and quality of loans in our country. It does so through raising bank rates, selling securities on the open market, increasing the reserve ratio, and restricting consumer lending. As we all know, monetary policy may be ineffective in controlling inflation if it is caused by cost-push forces. Monetary policy can only assist to limit inflation caused by demand-pull variables. Furthermore, one of the most severe monetary policies is the creation of new money to replace old. In this implementation, one new note is swapped for numerous old currency notes. The value of bank deposits is therefore set. When there is an oversupply of notes and the country is experiencing hyperinflation, such a solution is implemented. Aside from that, the government should strive to develop a strategy to encourage our community to save more.

To keep this under control, the government should freeze wages, income, profits, dividends, bonuses, and so on. However, such a harsh approach can only be used for a limited time because it is likely to anger both workers and industrialists. As a result, the optimal course of action is to correlate compensation increases to increases in productivity. This will have two effects. It will regulate wages while increasing productivity and, as a result, increasing economic output. The responsibility for lowering Malaysia's inflation rate is a must, and all of us, as Malaysian citizens, should assist the government in overcoming this challenge as soon as feasible. In order to compete with emerging nations for economic growth and to realise our objective, we must aim for 2% inflation.

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