

# Impact of Inflation on GDP Growth in Malaysian Economy

Fouzia Akter and Daniel S. Smith  
PRI Research Institute, Pune, India

**Abstract:-** This study intends to explore the causal relationship between inflation and economic growth in Malaysia over the period of 1961-2019. Inflation is crucial for economic growth of a country. The authors try to identify the short-run and long-run relationship between inflation and economic growth through Vector Error Correction Model and Vector Auto-regression Model, respectively. The results are like the previous studies. There exists negative association between the GDP growth and inflation in the short run but positive correlation in the long run. The Granger Causality test revealed there also exists bidirectional relationship between these two variables. The results conclude that inflation does not granger cause GDP growth. However, it also reveals that GDP growth does not cause granger to cause inflation as well. The results can be helpful for the policy makers and researchers for future study.

**Keywords:-** Inflation, GDP, Malaysia.

## I. INTRODUCTION

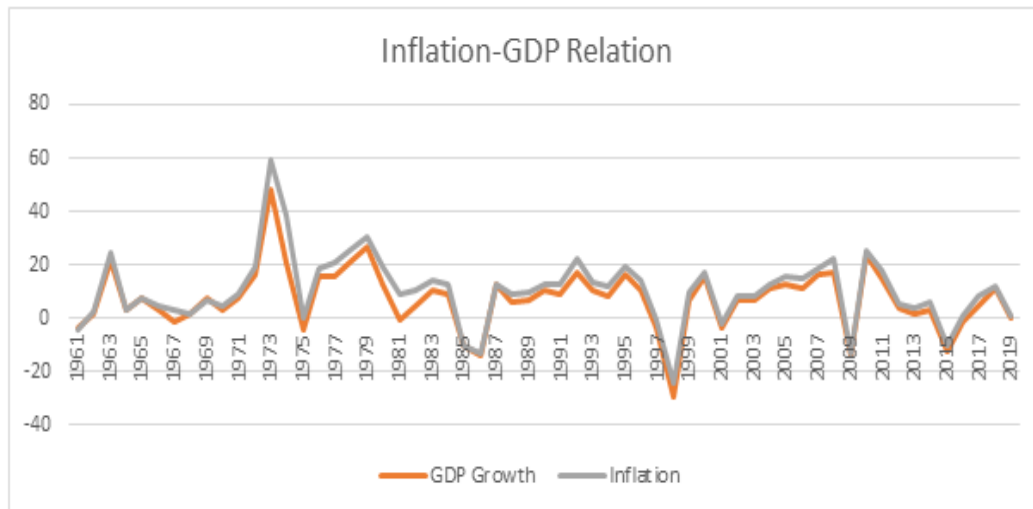
Central Banks' all over the world tries to control the inflation to ensure price stability and facilitates the sustainable economic growth. Inflation reduces the purchasing power, reduces the value of domestic currency, and make the economy unstable. Researchers have been studying to identify the relationship between these two macroeconomic variables and reach a certain conclusion. Some studies concluded that there exists positive relationship between inflation and growth. Inflation fuels growth by encouraging producers. In contrast, some research found that. Inflation hurts the economic growth through erasing the purchasing power of the currency and make the currency weak. Identifying the connection between inflation and GDP is essential for economic policymakers. Economic growth depends on savings and investment growth with the capital (Datta & Kumar, 2011). This mysterious relationship has puzzled researchers for many years. Theoretically, it is not possible to achieve growth without inflation. Inflation encourages domestic

output and create some employment. But too much inflation also hurts the economy in the long run. Thus, Phillips first hypothesizes that higher inflation positively affects economic growth by lowering unemployment rates.

The root of the argument is whether inflation is necessary for economic growth or it hurts growth. Some economists believe there is a positive relation is the time lag between input and output prices. The primary concentration here is wage lag. The relationship between inflation and economic growth is one of the most contentious issues among macroeconomists, policymakers, and central bankers worldwide. When wages do not adjust in line with inflation, firms make more money, increasing their ability to spend and produce. Inflation lowers interest rates and raises pension assets, which leads to job creation and economic development. Inflation is closely related to the money supply, and financial intermediaries, such as banks, play an essential role. Highly lucrative and liquid banks contribute more to the creation of investment opportunities, resulting in more opportunities. (Hossain & Ahamed, 2015).

## II. INFLATION HISTORY OF MALAYSIA

Malaysia's economy has been subjected to several internal and external shocks since independence. These shocks affected nearly all three sectors of the economy: industry, services, and agriculture. Malaysia has been dealing with budget deficits, trade deficits, higher prices, and reduced manufacturing capability for many years. However, the long-term balance of payments, domestic investments, agriculture production, and government spending increased. Malaysia has only seen two-digit inflation a few times, although the inflation rate has been higher than GDP growth for several years. In recent years, the GDP growth rate has exceeded the inflation rate due to expansionary economic and favorable investment policies. (Ahmed, 2021.) Covid-19 affected global GDP growth and inflation, and Malaysia was no exception.



### III. LITERATURE REVIEW

Several experiments have been undertaken to determine the relationship between the rate of inflation and economic growth. About the fact that there is no explicit agreement among any of the findings, research is underway to resolve the paradox.

Shitundu and Luvanda (2000) investigated the impact of inflation on Tanzanian economic growth and discovered that inflation is harmful to growth. Similarly, Mubarik (2005) found that in Tanzania, low and steady inflation stimulates economic growth. Attari and Javed (2013) conducted an analysis for Pakistan that spanned the years 1980 to 2010. They concluded that there is a long-run association between inflation and economic development. The inflation rate, on the other hand, has no short-run association with economic growth.

Solow and Swan (1956) identified technological advancement as the primary motivator in long-term development, and it is calculated exogenously, including inflation, in their growth model. On the other hand, Mundel (1965) and Tobin (1965) forecast a positive relationship between inflation rate and capital growth needed for economic growth. In contrast, Sidrauski (1967) discovered that an uptick in inflation had little impact on either manufacturing or economic growth.

From 1980 to 2009, Vinayagathan (2013) examined the effect of inflation on economic development in 32 Asian economies. The study concluded that sustaining 5.43 percent inflation does not harm the economy but that inflation rates above that level have an inverse association with economic growth. Jha and Dang (2012) used data from 1961 to 2009 to perform comparative studies in 31 developed and 182 developing countries, concluding that the threshold for developing countries is 10%.

Hasanov (2010) studied the relationship between real GDP growth rate, Consumer Price Index Inflation, and real Gross Fixed Capital Formation growth rate in Azerbaijan from 2001 to 2009 and discovered a non-linear relationship

between inflation and economic growth. It is close to Eggoh and Khan's results (2014).

Umaru and Zubairu (2012) applied the causality test to the Nigerian economy and discovered that GDP induced inflation rather than inflation affecting GDP. The studies further suggest that inflation has a substantial positive effect on economic activity and output. Mallik and Chowdhury (2001) discovered similar findings while observing Malaysia, Pakistan, India, and Sri Lanka. They discovered that, while mild inflation stimulates economic growth, faster growth consumes inflation by overheating the economy.

From 1972 to 2015, Hussain and Zafar (2018) investigated the relationship between money supply, inflation, government spending, and Pakistan's economic development. The researcher discovers that causality runs from Inflation to Economic Growth using the Granger Causality experiments. Barro (2013) used data from 1960 to 1990 to investigate inflation and economic development in 100 countries. He defined a negative causal chain that runs from persistently high inflation to lower real GDP growth.

Manamperi (2014) studied the short term and long-term relationship between inflation and economic growth for BRICS (Brazil, Russia, India, China, South Africa) countries from 1980 to 2012 and observed that for India, there is a long-run positive association between inflation and economic growth and the negative short-run association was observed for Brazil, Russia, China, and South Africa.

For 2005-2018, Ahamed (2021) investigated the relationship between macroeconomic variables such as inflation, domestic credit, and banking sector liquidity. According to the report, inflation has an inverse relationship with liquidity, which affects investment and production.

**IV. DATA**

The time-series data for the analysis has been collected from secondary sources for the period 1961-2019. The data has been obtained from World Development Indicators (WDI), Malaysia Bureau of Statistics (BBS), and Malaysia Bank (BB). The study period includes major reform, economic shift, regime changes, etc., to reflect the price volatility on economic growth.

**V. METHODOLOGY**

The first statistical step is to determine the stationarity of each data series in the time-series data using unit root tests. Non-stationary data includes unit roots, which may cause an erroneous association between variables. The Augmented Dickey-Fuller Test (1979) and the Phillips-Perron Unit Root Test (1988) were used in the analysis to determine the presence of unit roots. Phillips and Perron (1988) extended the Augmented Dickey-Fuller experiments to cases in which the disruption phase in the error term is serially associated. The Phillips-Perron test is designed to supplement the Augmented Dickey-Fuller test figure with a 'Correction Factor.'

The Vector Error Correction Model (VEC) was used to identify the short-run relationship between two cointegrated variables. The VEC Model analysis's focus is the one period lagged error terms from the previously estimated cointegrating equations. These lagged terms explain the short-run deviations from the long-run equilibrium. On the other hand, Vector Auto-regression (VAR) Model is used to identify the long-run dynamic relationship between model

variables. In the end, the Granger causality test has been performed to identify the causal effects.

**VI. RESULTS AND DISCUSSION**

The Augmented Dickey-Fuller Test and Phillips-Perron Unit Root Test find that the variables are stationary and automatically cointegrated. So there exists a relationship between the independent and dependent variables. The p values for both variables in ADF and PP tests are less than the significance level of 5%. As a result, we reject the null hypothesis of non-stationarity.

Table 1: Augmented Dickey-Fuller Test

Variable	Dickey-Fuller	p-value
gdp	-5.225	0.002
inf	-4.352	0.001

Table 2: Phillips-Perron Unit Root Test

Variable	Dickey-Fuller Z(alpha)	p-value
gdp	-43.251	0.001
inf	-25.142	0.010

The Vector Error Correction Model and Vector Auto-regression Model identifies the short-run and long-run relationship between inflation and economic growth. In both models, lag 2 has been selected for better efficiency. The VECM identifies that the inflation rate is negatively associated with economic growth. But the error correction term is not significant, which concludes that the relationship between inflation with economic growth is volatile.

Table 3: Vector Error Correction Model

	ECT	Intercept	gdp -1	inf -1	gdp -2	inf -2
Equation gdp	-0.5654(0.2665)*	-0.4586(1.6175)	0.0392(0.2208)	-1.423(0.6872)*	-0.1527(0.1676)	-0.2663(0.6218)
Equation inf	0.1764(0.0539)**	0.0330(0.3273)	-0.0607(0.0447)	-0.0652(0.1390)	-0.058(0.0339).	-0.2049(0.1258)

The VAR output confirms that the last year's inflation hurts GDP growth while economic growth positively affects. The GDP lag is very much significant, whereas the inflation lag is insignificant. The model also concludes that last year's GDP growth and inflation both positively affect inflation, but both prove insignificant. As growth positively

affects current inflation in the long-run, there exists the possibility of long-run causality from growth to inflation. The covariance and correlation matrix also confirms the possible relationship between inflation and economic growth.

Table 4: Vector Auto-regression Model

Estimation results for equation gdp:

	Estimate	Std. Error	t value	Pr(> t )
gdp.l1	0.3251	0.2388	1.986	0.05205
inf.l1	-0.5842	0.5253	-0.815	0.41841
const	5.2621	1.9652	3.121	0.00287

Estimation results for equation inf:

	Estimate	Std. Error	t value	Pr(> t )
gdp.l1	0.09534	0.02844	3.352	0.00146 **
inf.l1	0.35938	0.11355	3.165	0.00253 **
const	1.26342	0.45467	2.779	0.007

The granger causality test shows that inflation does not granger cause GDP growth. However, it also shows that GDP growth does not cause granger to cause inflation as

well. Movements explain the economic growth's own shock in its own variance and the other variable.

Table 5: Granger Causality Test

Model 1: $gdp \sim Lags(gdp, 1:2) + Lags(Inf, 1:2)$				Model 1: $inf \sim Lags(Inf, 1:2) + Lags(gdp, 1:2)$					
Model 2: $gdp \sim Lags(gdp, 1:2)$				Model 2: $inf \sim Lags(Inf, 1:2)$					
Res.Df	Df	F	Pr(>F)	Res.Df	Df	F	Pr(>F)		
	1	52			1	52			
2	54	-2	0.6837	0.5092	2	54	-2	4.664	0.01371 *

## VII. CONCLUSION

The research looked at the relationship between inflation and Malaysian economic development from 1961 to 2019. The report concludes that inflation hurts GDP in the short term but could positively impact the long run. While it is widely held that any inflation is often beneficial to the economy because it encourages consumers to spend and generate more production. Inflation, on the other hand, decreases buying power and raises the cost of goods for customers. As a result, an acceptable amount of inflation must be determined to sustain policymaking. Keeping the inflation rate below the threshold allows the economy to flourish at its full potential.

## REFERENCES

- Ahamed, F. (2021). Macroeconomic Impact of Covid-19: A case study on Bangladesh. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 12(1), 2021, pp. 24-29.
- Ahamed, F. (2021). Determinants of Liquidity Risk in the Commercial Banks in Bangladesh. *European Journal of Business and Management Research*, 6(1), 164-169.
- Alam, M. M., Khondker, R. K., & Molla, M. S. (2013). Current Account Dynamics, Adjustment and Capital Mobility in Bangladesh. *Global Disclosure of Economics and Business*, 2(2), 117-126.
- Attari, M. I. J., & Javed, A. Y. (2013). Inflation, economic growth and government expenditure of Pakistan: 1980-2010. *Procedia Economics and Finance*, 5, 58-67.
- Barro, R. J. (2013). Inflation and economic growth. *Annals of Economics & Finance*, 14(1).
- Datta, K. and Kumar, C. (2011). Relationship between Inflation and Economic Growth in Malaysia. *International Conference on Economics and Finance Research IPEDR*, Vol. 4, No. 2, pp. 415-16.
- Dickey, D.A. and W.A. Fuller, 1979, "Distribution of the estimators for auto-regressive time series with a Unit Root", *Journal of the American Statistical Association*, Vol.74, pp. 427-431
- Eggoh, J. C., & Khan, M. (2014). On the nonlinear relationship between inflation and economic growth. *Research in Economics*, 68(2), 133-143.
- Granger, C.W.J., 1986. "Developments in the study of cointegrated economic variables", *Oxford Bulletin of Economics and Statistics*, Vol. 48, pp.213-228.
- Hasanov, F. (2010). Relationship between Inflation and Economic Growth in Azerbaijani Economy. Is there any Threshold Effect? *Asian Journal of Business and Management Sciences*, Vol. 1, No. 1, pp. 6-7.
- Hossain, M. S., & Ahamed, F. (2015). Determinants of bank profitability: A study on the banking sector of Bangladesh. *Journal of Finance and Banking*, 13(1), 43-57.
- Hussain, M. I., & Zafar, T. (2018). The interrelationship between money supply, inflation, public expenditure and economic growth. *European Online Journal of Natural and Social Sciences*, 7(1), pp-1.
- Jha, R., and T. Dang. 2012. Inflation variability and the relationship between inflation and growth. *Macroeconomics and Finance in Emerging Market Economies* 5: 3–17.
- Manamperi, N. (2014). The short and long-run dynamics between inflation and economic growth in BRICS. *Applied Economics Letters*, 21(2), 140-145.
- Mallik, G., & Chowdhury, A. (2001). Inflation and economic growth: evidence from four south Asian countries. *Asia-Pacific Development Journal*, 8(1), 123-135.
- Minar, S. J., & Halim, A. (2020). The Rohingyas of Rakhine State: Social Evolution and History in the Light of Ethnic Nationalism. *Social Evolution and History*, 19(2), 115-144.
- Mubarik, A. (2005). Inflation and Growth. An Estimate of the Threshold Level of Inflation in Pakistan. *SBP- Research Bulletin*, Vol. 1, No. 1 pp. 35-43.
- Solow, R. (1956). 'A contribution to the theory of economic growth', *Quarterly Journal of Economics*, 70, 65
- Swan, T. (1956). 'Economic growth and capital accumulation', *Economic Record*, 32, 344-61.
- Shitundu, J. L., & Luvanda, E. G. (2000). The effect of inflation on economic growth in Tanzania. *African Journal of Finance and Management*, 9(1), 70-77.
- Umaru, A., & Zubairu, A. A. (2012). Effect of inflation on the growth and development of the Nigerian economy (An empirical analysis). *International Journal of Business and Social Science*, 3(10).
- Vinayagathan, T. (2013). Inflation and economic growth: A dynamic panel threshold analysis for Asian economies. *Journal of Asian Economics*, 26, 31-41.