

# Does Overnight Policy Rate Drive Inflation?



## Summary

- ◆ Changes in the Overnight Policy Rate (OPR) can affect household spending by influencing the cost of borrowing for households. Higher OPR tends to dampen household spending, while lower rates can stimulate it. The decrease (increase) in spending can put downward (upward) pressure on prices and inflation.
- ◆ Bank Negara Malaysia's recent decision to raise the OPR as a measure to stabilize inflation has sparked intense public debate. Does the OPR directly impact inflation? Our findings using monthly data for the period January 2010 to March 2023 suggest that OPR does not have a one-to-one relation to inflation.
- ◆ Managing inflation expectation is a potential policy option for the Bank Negara Malaysia, which aims to influence the behavior of economic agents, reduce the sensitivity of inflation to external shocks, and enhance the effectiveness of monetary policy in achieving price stability.

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## Stabilizing Inflation in Curbing Cost of Living Pressure

Mitigating the burden of living expenses, particularly for low-income households, is currently a focal point of the government's policy. The prevailing cost of living pressure experienced by the majority of households in Malaysia stems from price fluctuations and inflationary trends that outpace wage growth.

While short-term measures to stabilize prices in the market can provide temporary relief, a sustainable solution lies in implementing long-term wage increases. Nevertheless, such an approach requires time for effective implementation. Consequently, the present emphasis of policy centres around utilizing stabilizing instruments that influence inflation dynamics.

Various economic policy control tools can be employed to stabilize inflation within the market. Alongside fiscal policies, such as public expenditure and taxation adjustments, the Overnight Policy Rate (OPR) stands as one of the most actively utilized monetary control measures.

Bank Negara Malaysia's recent decision to raise the OPR has sparked intense public debate. Public sentiment surrounding this issue remains divided. Some individuals argue that the OPR increase is untimely, as it amplifies the burden of household loans in the face of escalating living costs. Conversely, some hold the belief that the OPR hike is warranted to achieve inflation stability.

Before assessing the justification for the OPR increase, it is imperative to address the preliminary question: does the OPR directly impact inflation? In theory, the OPR does influence inflation dynamics, but does empirical evidence validate this relationship?

This policy brief attempts to measure empirically the extent to which OPR affects inflation in Malaysia. What are other factors that potentially contribute to the increase in the inflation rate? Our findings using monthly data for the period January 2010 to March

2023 suggest that OPR does not have a one-to-one relation to inflation. Instead, other factors are more important to be intervened if the policy priority is to stabilize the inflation rate.

## The Role of OPR in Influencing Household Spending and Inflation

The Overnight Policy Rate (OPR) refers to the interest rate set by the central bank, Bank Negara Malaysia (BNM), to influence and control the overall monetary conditions in the economy. It is the rate at which commercial banks can borrow or lend funds with other banks or financial institution for a one-day (overnight) period in order to stabilize their cash reserve and maintain a stable and liquid banking system.

OPR can have an impact on household spending through its influence on interest rates. When the central bank increases the OPR, it becomes more expensive for commercial banks to borrow funds from the other banks. As a result, commercial banks may raise the interest rates they charge on loans, including those for households and businesses.

Higher interest rates on loans can discourage households from borrowing money for various purposes, such as purchasing homes, cars, or other goods. The increased cost of borrowing makes it less affordable for households to finance major expenditures through loans. Consequently, this can lead to a decrease in household spending on big-ticket items and thus reduce the pressure on prices of goods and services.

Moreover, higher interest rates can also affect credit card interest rates and other forms of consumer credit. This can make carrying balances on credit cards or using credit lines more expensive for households. As a result, households may reduce their discretionary spending or limit their use of credit, leading to a decline in overall household spending.

On the other hand, if the central bank decreases the OPR, it can lead to lower interest rates on loans. This makes borrowing more

affordable for households, potentially stimulating consumer spending. Lower interest rates can encourage households to take advantage of favourable borrowing conditions, leading to increased spending on various goods and services. Thus, the stimulated spending as a result of OPR reduction would push-up the prices of goods and services.

Overall, changes in the OPR can affect household spending by influencing the cost of borrowing for households. Higher interest rates tend to dampen household spending, while lower interest rates can stimulate it. However, it is important to note that household spending is influenced by various factors beyond just interest rates, including income levels, consumer confidence, and economic conditions.

### Empirical Evaluation of the Inflation-OPR Nexus

To test the robustness of the relationship between OPR and inflation, we have included the control variables, namely growth in money supply, government expenditure, government budget, export growth, inflation expectation, unemployment rate, economic growth, import growth, exchange rate, oil prices, and growth in producer price index, in our model.

Our results in Table 1 show that the OPR has no significant impact on the inflation rate. The unemployment rate has a negative effect on the inflation rate; while depreciation of the exchange rate, growth in the producers' prices and economic growth has positive impact on the rate of inflation. Thus, a lower level of unemployment rate, and increase in exchange rate (currency depreciation), producer prices and economic growth contribute to inflation. A 1% increase in the exchange rate, producer price and economic growth, inflation is likely to increase by 0.95%, 0.22% and 0.18% respectively (refer Table A1 Model 2). However, a lower unemployment rate of 1% will result in an increase in inflation rate by 2.31%.

In addition, including the expected inflation in the model, show us that expected inflation

plays a major role in affecting the inflation rate. A 1% increase in the expected inflation will increase the current inflation by 0.88% (refer Model 10 in Table A1). The expected inflation refers to people expectations on the conditions of inflation in the future. With respect to OPR, the news of the increase in the OPR has been discussed in the mass media preceding to the May increase. For that reason, people have been expecting the increase in the OPR, which eventually drive them to increase their spending now, fearing the increase in prices when the central bank raises the actual OPR. This inflation expectation if left unchecked will lead to a spiral in the inflation rate.

### Policy Option to Manage Inflation Expectation

It is commonly assumed that expected inflation has a considerable influence on actual inflation, perhaps in a nearly one-to-one connection. Because of this close link, managing expectations is an important aspect of monetary policy. As a result, inflation expectations are crucial to the proper execution of monetary policy. If a central bank can anchor economic actors' long-term inflation expectations near to its inflation target, it is more likely to succeed in maintaining a low and stable inflation. This is because inflation expectations are important in the transmission of monetary policy since they affect present inflation.

People's expectations about how prices for goods and services will change in the future have a significant effect on how inflation develops. This is because expectations on price movement influence, among other things, wage demands from workers and business pricing decisions for goods and services. As a result, the central bank should constantly analyse individual and business inflation expectations. Monetary policy must be implemented in such a way that inflation expectations, particularly long-term expectations, remain consistent with the central bank's inflation targeting objective, since this promotes economic stability. The expectations of households, businesses,

professionals, and market agents are the most significant point of reference of inflation expectations.

In Malaysia, we tend to ignore inflation expectations as an important factor affecting the inflation rate. It is important to point out





that how people expect prices to develop in the future influences how they spend, borrow and invest money today. That in turn affects the economy and is therefore important for our monetary policy. If we understand people’s inflation expectations better, we can make more informed decisions.

**Table 1**

**Estimated determinants of inflation in Malaysia, January 2010 – March 2023**

Independent variables:	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Constant										
OPR										
Unemployment rate		-	-	-	-	-	-	-	-	
Exchange rate							+			
Growth in producer price		+	+	+	+	+	+	+	+	+
Economic growth		+	+	+	+	+	+	+	+	+
Money supply growth										
Growth in real wage										
Growth in government spending										
Export growth										
Brent oil price										
Government budget										
Trade balance										
Expected inflation										+

**Notes:**

-  Statistically significant at least at 10% level.
-  Statistically insignificant.
-  denotes positive impact.
-  denotes negative impact.

For detail results, please refer to Table A1.

Our analysis clearly shows that expected inflation plays an important role in affecting actual inflation in Malaysia, in fact, on a near one-to-one relationship. A 1% increase in expected inflation will increase the actual inflation rate by 0.88%. This fact would suggest that, if people expect that inflation in the next six-month will be 3.50%, then we could expect that actual inflation in the next six-month will also be around 3.50%. This implies that if buyers and business owners get used to inflation being very low or too high, they come to expect that it will stay on that way. These expectations are important. People use them to make decisions about spending, borrowing and investing. Businesses also keep these expectations in mind when setting the prices for their goods and services.

Thus, how prices change not only depends on the countless decisions that businesses and people make every day, equally important also on how they expect prices to develop in the future. Nevertheless, monitoring and measuring inflation expectations is challenging since inflation expectations cannot be measured directly. This is because they are considered unobservable variables. Indirect methods are usually implemented for their assessment, with surveys of different economic agents (consumers, households, businesses, professionals etc) being widely used. Thus, it is imperative that a new set of expectations survey be conducted in order to get a better idea of how different groups of people expect prices to change in the future.

### Modeling and Limitation

We model our inflation rate by including both the demand-pull and cost-push factors as the independent variable as follows,

$$\text{inflation}_t = \alpha_0 + \alpha_1 \text{OPR}_t + \beta_i W_{it} + \varepsilon_t$$

where  $\text{inflation}_t$  is inflation rate measured by the percentage growth in the consumer price index,  $\text{OPR}_t$  is Bank Negara's overnight policy rate and  $W_{it}$  is the other (control) factors affecting inflation rate such as unemployment rate, exchange rate, producer price, economic growth, money supply, wages, growth in government spending, export growth, oil price, government budget, trade balance and expected inflation. All variables were transformed into logarithm, and the estimated coefficients are elasticities. For all estimations presented in Table A1, we employ the standard Ordinary Least Square estimator with robust standard error due to Newey-West procedure that corrects for both autocorrelation and heteroscedasticity. The period of study is from January 2010 to March 2023.

Model 1 which is our benchmark model that indicates a one-to-one relationship, OPR has no immediate impact on the inflation rate in Malaysia. This implies that OPR in January has no impact on the inflation rate in January. Furthermore, the association between OPR and the inflation rate is very weak as R-squared is only 0.07.

How robust is this result produced by Model 1? In Model 2, we expand our benchmark model by including other factors such as the unemployment rate, exchange rate, growth in the producer price index, and economic growth (proxy using growth in Industrial Production Index). The estimated Model 2 suggests that OPR still shows no impact on the inflation rate, but other factors such as the unemployment rate, growth in the producer price index and economic growth do affect the inflation rate in Malaysia.

In Model 2, our results clearly suggest that OPR has no immediate impact on the inflation rate even when we have controlled for other pertinent determinants of the inflation rate in Malaysia. In our model, it is not OPR that contributes to the immediate increase in the inflation rate but other factors such as the unemployment rate, producer price and economic expansion that have an immediate impact on the inflation rate.

How robust is our Model 2? To test for the robustness of the relationship between OPR, unemployment rate, producer price and economic growth on inflation rate as displayed in Model 2; we have included other cost-push and demand-pull factors such as money supply (M3) growth, growth in the real wage, growth in government spending, export growth, crude oil price (Brent) growth, government budget surplus (deficit), trade balance and expected inflation as presented in Model 3 to Model 10, respectively.

As presented in Table A1, the OPR consistently shows no impact on the inflation rate, while the exchange rate consistently shows a positive impact, but only significant in Model 7 at the 10% level. The unemployment rate shows a consistently negative impact on inflation except in Model 10. Both producer price and economic growth suggest a positive impact on the inflation rate in all models estimated. These results imply that while OPR shows no immediate impact on the inflation rate, other factors such as the unemployment rate, exchange rate, producer price and economic growth have shown an immediate impact on inflation rate in Malaysia.

Nevertheless, growth in money supply (Model 3), real wages (Model 4), growth in government spending (Model 5), export growth (Model 6), Brent oil price (Model 7), government budget surplus (deficits) (Model 8) and trade balance (Model 9) has no immediate impact on inflation rate in Malaysia. Despite including all these control variables, the impact of OPR, exchange rate, growth in producer price and economic growth still do not change (robust). Our empirical results suggest that factors such as the unemployment rate, exchange rate, producer price and economic growth have an immediate impact on the inflation rate. As a matter of fact, OPR shows no immediate impact on inflation as claimed by some analysts in Malaysia.

More interesting in our empirical analysis is the results shown by Model 10. When we include expected inflation in the model, the role of the unemployment rate and exchange rate disappears. In particular, the unemployment rate has no role at all in impacting the inflation rate as compared to Models 2 to 9. Nevertheless, the inclusion of the expected inflation does not help to improve the impact of OPR on the inflation rate. However, producer price and economic growth do positively affect the inflation rate in Malaysia. Model 10 also indicate that the goodness of fit is stronger as the R-squared has increase to 0.91.

Our model of inflation rate has some limitations. We have estimated a static model of the inflation rate. A dynamic inflation model could give us a much better result. Since macroeconomic variables affect another economic variable with a lag, thus including a lagged period of the dependent variable, as well as the independent variables could enrich the results further. An autoregressive distributed lag model could appropriately define our inflation model. A P-Star approach in modelling inflation is another fruitful effort. Of course, there is an issue of endogeneity and simultaneity bias when estimating our present model. Some of the regressors such as economic growth, unemployment rate, and exchange rate could suffer from endogeneity problems. Furthermore, in most macroeconomic models, it works well with low-frequency data such as annual data. Also, many other potential economic variables can be included in the inflation model such as public consumption expenditure, taxes, loans, housing prices etc. These variables, however, are not available in on monthly basis.

Table A1

## Estimated determinants of inflation in Malaysia, January 2010 – March 2023

Independent variables:	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
constant	-0.6977 (-0.3770)	2.2653 (0.8392)	2.4916 (0.9161)	2.5340 (0.9152)	2.4443 (0.9063)	2.4084 (0.8715)	-1.9600 (-0.3804)	2.2362 (0.8282)	1.6559 (0.5581)	0.9148 (1.0949)
OPR	1.1401 (1.1158)	0.6486 (0.9267)	0.6021 (0.8431)	0.5732 (0.7924)	0.6006 (0.8525)	0.5991 (0.8325)	0.9585 (1.2013)	0.6678 (0.9418)	0.7773 (1.0546)	-0.1401 (-0.7069)
Unemployment rate		-2.3141** (-2.5236)	-2.3469** (-2.5506)	-2.3844** (-2.5962)	-2.3560** (-2.5940)	-2.3266** (-2.5488)	-1.7705* (-1.6992)	-2.2900** (-2.4899)	-2.1577** (-2.1986)	-0.4423 (-1.3481)
Exchange rate		0.9578 (1.5754)	0.9247 (1.4918)	0.9568 (1.5808)	0.9526 (1.5670)	0.9369 (1.5594)	0.9993* (1.7920)	0.9237 (1.5286)	0.8784 (1.4390)	0.0792 (0.4393)
Growth in producer price		0.2218*** (5.0933)	0.2223*** (5.1474)	0.2206*** (5.0314)	0.2215*** (5.0771)	0.2205*** (5.0594)	0.2025*** (5.0151)	0.2220*** (5.0794)	0.2218*** (5.0048)	0.0407** (2.5400)
Economic growth		0.1831*** (3.8760)	0.1843*** (4.0289)	0.1858*** (3.9285)	0.1862*** (4.0592)	0.1910*** (3.9843)	0.1753*** (3.8056)	0.1844*** (3.8928)	0.1735*** (3.6080)	0.0847*** (2.7179)
Money supply growth			-0.0311 (-0.4331)							
Growth in real wage				0.0007 (0.0297)						
Growth in government spending					-0.0125 (-1.3855)					
Export growth						-0.0102 (-0.7598)				
Brent oil price							0.4077 (1.0495)			
Government budget								-0.0027 (-0.3903)		
Trade balance									0.0267 (1.0436)	
Expected inflation										0.8786*** (18.579)
R-squared	0.065	0.590	0.593	0.592	0.595	0.593	0.601	0.591	0.592	0.912

Notes: Asterisks \*\*\*, \*\*, \* denote statistically significant at 1%, 5% and 10% level, respectively. All variables were in logarithm. All models were estimated using Ordinary Least Square (OLS) with robust standard error due to Newey-West procedure that corrects for both autocorrelation and heteroscedasticity. Expected inflation is the fitted values of inflation rates lagged one, two and three periods.

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### EU-ERA Policy Brief

EU-ERA Policy Brief offers a short note with combined analysis and policy recommendations in addressing developmental issues that are directly and indirectly affect the labor market in Malaysia. This policy brief aims to generate a forward-looking and proactive discussion among policymakers, researchers and stakeholders in identifying emerging trends, challenges, and opportunities in the economy. The orientation is toward the real-world policy challenges and opportunities, with an emphasis on providing practical recommendations that can help guide decision-making.

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