

# RELATIONSHIP BETWEEN WORLD OIL AND GAS PRICES WITH INFLATION, EXPORTS AND INDUSTRIAL PRODUCTION IN MALAYSIA

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## INTRODUCTION

Oil and gas industry plays an important role in the energy market and as the world's primary fuel sources in the global economy. There have been many global shocks in the price of oil and gas in recent decades that have affected the economic growth. The COVID-19 pandemic detected at the end of 2019 has triggered an unprecedented demand in the oil and gas industry, leading to a historic market collapse in oil prices. In 2020, Europe Brent Crude Oil price registered USD41.76 per barrel, while Henry Hub Natural Gas price reached USD2.04 per million BTU which recorded a decline of 35.1 per cent and 20.7 per cent respectively as compared to 2019. Malaysia as one of the key oil and gas producers in the Asia-Pacific region has experienced hardship following downturn in world oil and gas prices. In addition, the world oil and gas prices changes was seen impacted the selected Malaysian macroeconomic indicators covered in this study

## LITERATURE REVIEW

- According to Mukhtarov et al. (2019), there is a long-run relationship between inflation, oil prices and exchange rate in Azerbaijan
- Gokmenoglua et al. (2015) revealed that there is a long-run relationship between oil price changes with Turkish inflation and industrial production
- Abimanyu (2016) proved that Crude Oil Indonesia (ICP), Brent UK and WTI, is correlated with exports value independently
- Zhang et al. (2017) found a connection between natural gas prices and inflation in China
- AL-Risheq (2016) revealed that oil prices have a negative and significant impact on industrial production

## RESULTS

### Unit Root Test (ADF Test)

- Oil Price (OP), CPI, Exports (EXP) and IPI are stationary at first difference,  $I(1)$  while Gas Price (GP) is stationary at level,  $I(0)$

### Cointegration Test (ARDL Bounds Test)

- There is a long-run relationship between Oil Price with Inflation, Exports and Industrial Production
- No long-run relationship between Gas Price with Inflation, Exports and Industrial Production
- The Error Correction Model (ECM) coefficient for Oil Price indicates that 93.03% of the disequilibrium is corrected between 1 month

### Granger Causality Test

Null hypothesis / lags	2	6	12	Conclusion
CPI does not Granger cause OP OP does not Granger cause CPI	0.0268** 0.0054***	0.0215** 0.0629*	0.0781* 0.5270	Two-way
EXP does not Granger cause OP OP does not Granger cause EXP	0.0662* 0.0000***	0.1642 0.0000***	0.4818 0.0000***	Two-way
IPI does not Granger cause OP OP does not Granger cause IPI	0.0004*** 0.0000***	0.0538* 0.0000***	0.1079 0.0000***	Two-way
CPI does not Granger cause GP GP does not Granger cause CPI	0.1137 0.5585	0.5246 0.4149	0.6942 0.2836	No causality
EXP does not Granger cause GP GP does not Granger cause EXP	0.6015 0.8300	0.0446** 0.2828	0.3416 0.1957	One-way
IPI does not Granger cause GP GP does not Granger cause IPI	0.4057 0.2314	0.5287 0.3952	0.3945 0.0687	No causality

Note: \*\*\*, \*\*, and \* indicate rejection of null hypothesis at 1, 5 and 10% levels of significance, respectively.

## OBJECTIVE

To examine the relationship between World Oil and Gas Prices with Inflation (CPI), Exports and Industrial Production (IPI) in Malaysia using monthly time series data (January 2010 until March 2021)

## METHODOLOGY

- Unit Root Tests: To test for stationarity in a time series
- Co-integration Test: To investigate the long-run relationship among the variables
- Granger Causality Test: To determine the direction of causality between variables

## CONCLUSIONS

The result of the study reveals that there is a long-run relationship between world oil price with inflation, exports and industrial production in Malaysia. Meanwhile, there is no long-run relationship identified between world gas price and other variables.

Moreover, the causality test shows that there is a bidirectional causality between world oil price and inflation, exports and industrial production. This result is similar to the findings of Zulkifli (2010), Mukhtarov et al. (2019), Alekhina & Yoshino (2018), Abimanyu (2016) and Gokmenoglua et al. (2015). While for world gas price, there is no causal relationship to be found at lag 2. This finding is in line with the cointegration result since gas price does not have relationship with the variables at similar lag.

Since the world oil price affects the Malaysia's macroeconomic performances, the government might need to improve the oil reserve system to reduce vulnerability to oil shocks and to develop alternative sources of energy such as biofuels and solar power plants to reduce dependence on and consumption of oil. Monetary policy need to react to ensure the changes in oil price will not give a continuing impact on the rate of inflation.

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