EVIDENCE OF AN ASYMMETRIC IMPACT OF THE DEVALUATION OF CURRENCY ON INFLATION: MALAYSIAN EXPERIENCE BASED ON NARDL APPROACH

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Research Highlights

The research is aimed at evaluating the existence of asymmetry or otherwise of the impact of devaluation of currency on inflation in Malaysia for the period 1970 – 2017. Non-linear autoregressive distributed lag model (NARDL) was used as the evaluation econometric tool of the research. The findings of the study reveal that devaluation of currency has an inflationary impact in both short run and long run. Whereas, revaluation of currency does not have any impact neither in the short run nor in the long run. This confirms the upward flexibility of the impact of the increases in the changes in the exchange rate on inflation at the same time reaffirms its rigidity downward.

Graphical Abstract

Fig. 1. Inflation and Exchange Rate for Malaysia 2011 – 2017

Source: World Development Indicator, 2019

Research Objectives

Devaluation of currency that is being frequently conducted by most of developing nations is considered to be the sources of inflation in many nations. This argument has been proven empirically, by some scholars in some nations such researchers reported a positive impact of the devaluation of currency on inflation (Karagöz, Demirel, & Bozdağ, 2016; Ogundipe, 2013; Rossi & Leigh, 2002) On the other hand, some empirical studies reported contrary as in their findings shows that devaluation of currency has a disinflationary impact (McCarthy, 2007; Yanamandra, 2015). Based on Malaysian data observed on inflation and exchange rate for seven years period, exchange rate exhibits upward trends which reflect devaluation on local currency- Malaysian ringgit (RM) in relation to United State Dollar (USD) as depicted in Fig. 1.

The research's purpose is to investigate the existence or otherwise of the asymmetric impact of the devaluation of currency on inflation in Malaysia. This will enlighten the policymakers about the direction and consequences of devaluation and revaluation of currency in relation to USD on inflation in the country.

Methodology

The study utilizes a non-linear autoregressive distributed lag model (NARDL) in attempting to answer the question raised by the objective of the study. The NARDL has the power to separate and show the impact of devaluation and revaluation of currency separately if the difference, in terms of its impact on inflation, exists. It also provides room for mixed stationary variables, to be used in estimation in a model even if they are integrated in a different order $I(0)$ and $I(1)$ variables only. The NARDL has the power to estimate efficient coefficients even with a small sample. It is robust to endogeneity (Danlami, Hidthiir, & Hassan, 2018; Jalil, 2014).

Results

Starting with unit root test result, it shows that the research variables; inflation, devaluation of currency (change in exchange rate), money supply, Gross Domestic Product (GDP) and interest rates are of different stationary level, having the first two as stationary at level while the last three as stationary at first difference using Phillips Perron unit root test.

Bounds test was conducted, and long-run relationships were established among the variables at one percent level based on Pesaran, Shin and Smith's critical values.

The NARDL results reveal that devaluation of currency is inflationary in both the short run and the long run while the revaluation of currency has no significant impact on inflation in the two periods.

Findings

The study finds out that devaluation of currency has an inflationary impact in Malaysia in both the short run and the long run. Whereas, revaluation of currency does not have any impact, neither in the short-run nor in the long-run. The findings implored and confirmed the upward flexibility of the impact of the increase in the changes in exchange rate (devaluation of currency) on inflation at the same time affirmed it rigidity downward.

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