

Exploring the Impact of Inflation, Real Interest rate, Unemployment on Economic Growth in Sri Lanka

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Introduction

Economic growth is a fundamental goal of any developing nation, as it translates into rising living standards, job opportunities, and national prosperity. While Sri Lanka is a developing nation, that grappling with the challenges of post-conflict reconstruction, debt pressures, and external shocks, realizing steady which daunting the sustainable growth. Among the many important macroeconomic indicators, unemployment, real interest rate, and inflation have crucial role in economic growth (Selvnayagam and Mustafa, 2019). Fischer (1981) argued that major costs of inflation arises uncertainty of consumption, savings, borrowing, and investment decisions. IMF (1984) emphasize that interest rates affect economic growth by affecting saving and investment decisions. Patel and Makwana (2024) states that unemployment generates poverty, income inequality, lack of investment, and depletion in human capital. Therefore, relationships among these variables and economic growth need to be further examined.

Objectives

Major objective of this study is to determine the iredationship between the economic growth, and unemployment, real interest rate and inflation in Sri Lanka during the period 1980- 2023.

Methodology

This study employed the secondary data from the World Development Indicators (WDI). In this study economic growth is the dependent variable, while inflation, real interest rate and unemployment are independent

variables. E-Views used as the analytical tool to estimate these variables. Autoregressive Distributed Lag (ARDL) model was used to examine the dynamic relationship between a dependent variable along with its explanatory variables. To investigate relationships between the variables, the following regression model was utilized.

$$GDP_t = \beta_0 + \beta_1 INF_t + \beta_1 INT_t + \beta_3 UNP_t + \varepsilon_t$$

The unit root test was applied to check the stationary of the data by using the Augmented Dickey-Fuller (ADF) and ARDL Bounds test was conducted to assess the presence of a long run cointegration. The Error Correction Representation (ECM) of the ARDL model is used to identify both short-run dynamics and long-run adjustment of the model. Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMSQ) are used to check the stability of the model.

Results and discussions

Table 1: Results Augmented Dickey-Fuller (ADF) Test

Variable	ADF Test Statistics				
	Level		1 st Difference		
	Intercept	Trend & intercept	Intercept	Trend & Intercept	Stationary
GDP	0.8282	0.8777	0.0000***	0.0000***	I(1)
UNP	0.6512	0.9908	0.0004***	0.0014***	I(1)
RIR	0.2278	0.0000***	0.0000***	0.0001***	I(0) I(1)
INF	0.0000***	0.0004***	0.0000***	0.0000***	I(0) I(1)

Source: Author's calculation based on WDI Data Data

Note: *, **, and *** represents variables are stationary at 10%, 5%, and 1% level of significance respectively.

Above table depicts that GDP, UNP and RIR are non-stationary at level but become stationary at first difference when we included intercept only in the model, whereas INF is stationary at levels. The results of the ARDL Bounds test are given in Table 2.

Table 2: Results of ARDL Model and Long-Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	P-Value
INF (Inflation)	-0.152410**	0.058163	-2.620389	0.0132
RIR (Real Interest Rate)	-0.891811**	0.255059	-3.496872	0.0020
UNP (Unemployment)	-0.327390**	0.151218	-2.164021	0.0381
C (Constant)	10.04494***	1.915683	5.244358	0.0000

Source: Author's calculation based on WDI Data

Note: *, ** and *** represents the variables are statistically significant at 10%, 5% and 1% level of significant respectively.

From the regression results, it is evident that all three variables negatively and significantly influence on economic growth. Inflation has a moderate but significant negative impact ($p = 0.0132$) suggesting that higher inflation tends to decrease economic performance due to higher uncertainty and loss of purchasing power. The real interest rate has the most significant negative impact ($p=0.0020$) implying that higher borrowing rates discourage consumption and investment and hence suppress growth. Unemployment also negatively influences significantly ($p = 0.0381$) pointing to the loss of productive labour and reduced aggregate demand.

Table 3: Results of ARDL Version of Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	P-Value
D(RIR)	-0.123353	0.100756	-1.224273	0.2295
D(RIR(-1))	0.279415***	0.093818	2.978267	0.0054
D(UNP)	-1.153626***	0.517354	-2.229825	0.0002
D(UNP(-1))	1.175228**	0.570547	2.059825	0.0474
CoinEq(-1)	-0.825328***	0.115554	-7.142344	0.0000

Source: Author's calculation based on WDI Data

Note: *, ** and *** represents the variables are statistically significant at 10%, 5% and 1% level of significant respectively

According to Table 3, current change in real interest rate is statistically insignificant ($p = 0.2295$), indicating a delayed effect. The lagged real interest rate shows a positive and statistically significant effect on economic growth ($p = 0.0054$), suggesting that past changes in interest rates influence current economic activity. Changes in unemployment show mixed effects. The current change in unemployment has a negative and highly significant

impact on growth ($p = 0.0002$), while the lagged change in unemployment shows a positive and significant effect ($p=0.0474$), potentially reflecting delayed labour market adjustments. The error correction term (-0.825328) is strongly significant ($p = 0.0000$) and negative. It reveals that there is a long-run relationship, and the system corrects itself back to equilibrium. R -squared is 0.712, which is about 71% of the variation in GDP changes that is explained by this model.

Residual diagnostics confirmed the statistical appropriateness of the ARDL model. Using the Breusch–Pagan–Godfrey test found no evidence of heteroskedasticity, while the Breusch–Godfrey LM test confirmed the absence of serial correlation and the Jarque–Bera test confirmed the normality of residuals. These results suggest that the model satisfies the important assumptions of regression, hence providing reliable parameter estimates. Stability tests pursued via the CUSUM and CUSUM of Squares test indicated that the model was stable below the 5% critical limits.

Conclusion and Policy Recommendations

This study empirically confirmed Sri Lankan economic growth responses to inflation, unemployment, and real interest rates using ARDL model structure. These regression estimates clearly show that all three variables inflation, real interest rate, and unemployment have statistically significant detrimental impacts on economic growth. Precisely, economic output is slowed by inflation, possibly by cost-of-living pressures and risk aversion towards investing. Real interest rates also considerably offset growth by high lending rates, reducing private sector investment as well as consumption spending. This study recommends that due to unemployment seems to offset growth, keeping the available labour supply idle while maintaining lower level of household income and spending.

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