

Impact of Macroeconomic Factors on Unemployment Dynamics in Sri Lanka (1980 -2023): An ARDL Bounds Testing Approach

K. Kumudhini and J. G. Sri Ranjith

Department of Economics and Statistics, Faculty of Arts, University of Peradeniya, Sri Lanka

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Introduction

Unemployment remains a persistent challenge for many developing nations, and Sri Lanka is no exception. Despite periods of moderate economic growth, the country continues to grapple with high unemployment rates particularly among youth and women. According to the Department of Census and Statistics (2024), the youth unemployment rate stands at 20.6%, with a stark gender disparity: 16.3% for males and 29.5% for females in the 15–24 age group. These statistics highlight structural weaknesses in Sri Lanka’s labour market, including limited job creation, distribution of job opportunities across male and female, different age groups, skill mismatches, and underemployment.

Macroeconomic factors such as GDP growth, inflation, educational expenditure, government activities, foreign direct investment (FDI), and labour force participation significantly shape unemployment dynamics. For example, Sri Lanka’s public investment in education is mostly below 2% of GDP, limiting the development of technical and vocational skills critical for employment. Similarly, while FDI can be a potential driver of job creation, much of it in Sri Lanka has been directed toward capital-intensive sectors like infrastructure and telecommunications, with limited employment impact.

Several empirical studies have examined the macroeconomic and structural determinants of unemployment in Sri Lanka, offering nuanced insights into the complexities of the labour market. Madushani and Madurapperuma (2023), employing the ARDL bounds testing approach for the period 1990–2020, found that GDP, FDI, and population growth significantly influenced unemployment in both the short and long run, while inflation exerted a long-run effect only. Karunarathna et al, (2023) examined the relationship

between economic growth and unemployment in Sri Lanka from 2001 to 2020 using a simple linear regression model. Economic growth rate was treated as the independent variable and unemployment rate as the dependent variable. The results showed a negative relationship, and it implies that a 1% increase in economic growth leads to a 0.072% decrease in unemployment. The study concludes that reducing unemployment is essential for promoting long-term economic growth, reducing poverty, and minimizing inequality in Sri Lanka.

This study looks at why unemployment in Sri Lanka has stayed high from 1980 to 2023, even when the economy was growing. It explores how key economic factors like GDP growth, foreign investment, labour force participation, education spending, and inflation affect unemployment in both the short and long run.

Objectives

Aim of this study is to: (i) analyze the impact of macroeconomic factors on unemployment in Sri Lanka from 1980 to 2023, (ii) examine the short-run and long-run relationship between economic growth and unemployment in Sri Lanka, and (iii) evaluate whether Okun's Law holds true in the context of the Sri Lankan economy.

Methodology

This study investigates the relationship between unemployment and economic growth in Sri Lanka using annual data from 1980 to 2023, obtained from the World Development Indicators (WDI). The selected variables include unemployment rate, GDP growth, education expenditure, foreign direct investment, labour force participation, and inflation, based on macroeconomic theory and prior empirical literature (Madushani & Madurapperuma, 2023). The Autoregressive Distributed Lag (ARDL) bounds testing approach is employed to estimate both the short-run and long-run relationships. The linear regression model is:

$$UNP_t = \beta_0 + \beta_1 GDP_t + \beta_2 EDU_t + \beta_3 FDI_t + \beta_4 LFP_t + \beta_5 INF_t + \varepsilon_t$$

Where, GDP: Gross Domestic Production, EDU: Government Education Expenditure, FDI: Foreign Direct Investment, LFP: Labour force participation and INF: Inflation.

The analysis begins with the Augmented Dickey-Fuller (ADF) test to check for stationarity of the variables. Next, the ARDL Bounds test is conducted to examine the presence of a long-run equilibrium relationship. If cointegration is confirmed, the Error Correction Model (ECM) is estimated to capture both short-run dynamics and long-run relationships, with the error correction term (ECT) indicating the speed of adjustment to equilibrium. To ensure robustness, all the diagnostic tests are applied.

Results and Discussions

Augmented Dickey Fuller test was used to determine the order of integration of the variables in the model. The results indicate that some variables are stationary at level while others are stationary at first difference. The output indicates that a lag length of four is the most suitable choice for the estimation process.

The ARDL Bounds testing approach confirms a long-run equilibrium relationship between unemployment and key macroeconomic variables in Sri Lanka. The F-statistic of 7.5695 exceeds all critical upper bounds, which is indicating a statistically significant long-run relationship among the variables. The below Table present the long run results from ARDL model.

Table 1: Long-Run Coefficients

Variable	Coefficient	Std. Error	P-Value
GDP	-1.0121	0.3716	0.0110***
LFP	0.1568	0.0724	0.0389***
FDI	-14.6510	2.7172	0.0000***
EDU	-0.0314	1.4452	0.9828
INF	-0.1268	0.1086	0.2532
C	20.4001	5.3597	0.0007***

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

According to the Bound test, GDP has a statistically significant and negative relationship with unemployment. This confirms the theoretical expectation (Okun's Law) that economic growth reduces unemployment in the long run. Okun's Law describes an inverse relationship between a country's GDP growth and its unemployment rate. It suggests that when GDP grows above its potential, unemployment tends to fall, and vice versa. Typically, a 1% increase in GDP leads to a 0.3 - 0.5% decrease in unemployment. Labour Force Participation (LFP) has a positive and significant effect on unemployment. This suggests that as more individuals enter the labour market, unemployment may rise if job creation does not match the pace of entry. This finding is supported by labour market segmentation theory and search and matching models (Pissarides, 2000), which argue that increasing labour supply does not automatically result in employment if there are frictions, mismatches, or delays in the job-matching process. Additionally, in developing economies like Sri Lanka, structural issues such as skill mismatches, informality, and limited industrial diversification can prevent new entrants from being absorbed effectively into the labour market (ILO, 2021). The negative coefficient for GDP (-1.01) supports Okun's Law, showing that economic growth helps reduce unemployment. The larger negative coefficient for FDI (-14.65) indicates that foreign investment is even more powerful than GDP growth in reducing unemployment at least in the Sri Lankan context.

Table 2: Results of Error Correction Model

Variable	Coefficient	Std. Error	P-value
D(FDI(-1))	1.1745	0.2270	0.0000***
D(FDI(-2))	0.7784	0.1650	0.0001***
D(FDI(-3))	0.4114	0.1695	0.0219***
D(UNP1(-1))	-0.2054	0.1144	0.0834*
D(FDI)	-0.2156	0.1315	0.1124
CointEq(-1)	-0.1262	0.0157	0.0000***

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

The error correction term (-0.1262, $p < 0.01$) is negative and significant, suggesting that 12.6% of deviations from the long-run equilibrium are corrected annually. Long-run estimates show that GDP (-1.0121, $p = 0.011$), FDI (-14.6510, $p < 0.001$), and labour force participation (0.1568, $p = 0.0389$) significantly influence unemployment, while education expenditure and inflation are not significant. In the short run, FDI has a positive and significant effect on unemployment across the first three lags ($p < 0.05$), reflecting temporary structural adjustments before employment benefits materialize. The model's explanatory power is strong with an R^2 of 0.71, supporting the reliability of the findings.

Conclusion and Recommendations

This study empirically examined the relationship between unemployment and key macroeconomic variables, with a particular focus on economic growth. The findings confirm a statistically significant long-run negative relationship between GDP growth and unemployment, validating Okun's Law in the Sri Lankan context where a 1% rise in GDP reduces unemployment by approximately 1.01%. The model also identified that FDI contributes to reducing unemployment over time while causing short-term disruptions. Labour force participation increases unemployment unless matched by sufficient job creation, whereas education expenditure and inflation do not show significant long-run effects. Overall, the results highlight the importance of fostering sustained economic growth and structural labour market reforms. Therefore, it is recommended that Sri Lanka prioritizes inclusive and equitable economic growth strategies that are directly linked to employment generation, coupled with targeted labour market policies to absorb increased labour force and reform education systems to better align with market demand, ensuring long-term sustainable reductions in unemployment.

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