

Modeling inflation in Sri Lanka using time series and econometric approaches

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Inflation is the most important macro economic variable often used to measure the economic growth of a country. It is the rise of the general level of prices of goods and services in an economy over a period of time. In Sri Lanka, it is expressed as the percentage change of the Colombo Consumer Price Index (CCPI).

Modeling can be done either using time series approach or econometric approach. Time series approach predicts inflation through modeling the past annual inflation figures only; while econometric approach considers the impact of other economic factors on annual inflation rates. In time series approach an ARIMA(1,1,1) model was fitted to the annual inflation rates of 1953 to 2001 using MINITAB since it is the best model to forecast future inflation rates. The fitted values and the actual figures were approximately similar and the actual values were within the upper limits and lower limits.

Econometric approach was conducted by fitting a cointegration equation and vector error correction model (VECM) for the annual inflation rates of 1977 to 2004 using EViews. Since the data series were cointegrated, the ordinary least square (OLS) model was inappropriate. The cointegration equation revealed long run relationship of inflation. Money supply and exchange rate played a significant role of the long run relationship. A vector error correction model implied a short run relationship of inflation. The R-squared value of VECM model showed that real gross domestic product, money supply and exchange rate explain 86.83% of the variance of inflation. It implied that the impact of percentage changes at past years of money supply, exchange rate and real gross domestic product affected the current level of inflation, highly. Both exchange rate and money supply have significant impacts on long run and short run relationships of inflation.

Keywords: Inflation, Time series, ARIMA, Econometrics, Cointegration, Vector Error Correction Model