

The link between unemployment and inflation using Johansen's co-integration approach and vector error correction modelling

Sagaren Pillay*

Statistics South Africa, Pretoria, South Africa sagarenp@statssa.gov.za

In this paper bi-annual time series data on unemployment rates (from the Labour Force Survey) are expanded to quarterly rates and linked to quarterly unemployment rates (from the Quarterly Labour Force Survey). The resultant linked series and the consumer price index (CPI) series are examined using Johansen's co-integration approach and vector error correction modelling. The study finds that both the series are integrated of order one and are co-integrated. A statistically significant co-integrating relationship is found to exist between the time series of unemployment rates and the CPI. Given this significant relationship, the study models this relationship using Vector Error Correction Models (VECM), one with a restriction on the deterministic term and the other with no restriction.

A formal statistical confirmation of the existence of a unique linear and lagged relationship between inflation and unemployment for the period between September 2000 and June 2011 is presented. For the given period, the CPI was found to be an unbiased predictor of the unemployment rate. This relationship can be explored further for the development of appropriate forecasting models incorporating other study variables.

Key words: Forecasting, lagged, linear, relationship