STATISTICAL ANALYSIS OF COMPOSITE CONSUMER PRICE INDEX (1998-2007)

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ABSTRACT

The study of Consumer Price Index of all item has drawn from a wealth of theoretical and empirical literature from industrialized, emerging market and developing economies. In an attempt to understand the dynamics of Consumer Price Index in Nigeria, a combination of historical, descriptive and empirical methodologies have been employed. The study uses available data series of 1998-2007. The preliminary investigation in this study is based on historical and descriptive analysis. It assessed the stylized fact of the cyclical movement in the consumer price index (CPI) and nexus between key macro economic variables.

The models developed in this study are: Trend models, Autoregressive Integrated Moving Average (ARIMA) models, Structural models and the Monetarist Models (money gap and open economy models). These models are applied to different variants of the Consumer Price Index over the past twenty five years and are estimated to cover both long run steady state relationships and short run dynamics and the analysis is Box and Jenkins model on time series.

Consumer Price Index exhibits strong seasonal factors, irregular variation, and cyclical factors and or times trends. The trend and ARIMA models are estimated using ordinary least squares. The ARIMA models are estimated using ordinary least squares. The ARIMA models are estimated with the aim of obtaining a parsimonious representation of the process generating inflation and to be able to adequately forecast in future values based on such information given that inflation flows an ARIMA process. The money gap models are estimated adopting simple dynamic framework incorporating inflation expectation and lag values for money gap, while the open economy models are estimated using an error correction mechanism.

The analysis of finding from this study is based on the different analytical techniques adopted. It further shows that consumer price inflation can be tracked by changes in money stock in the short run. Overfitting was performed where different models were fitted for these data before ARIMA (1,0,0) which has the smallest AIC. The statistical package used for this project work is S-PLUS 6.1.2.