DYNAMIC MODEL OF THE NIGERIA EXTERNAL RESERVES USING STRUCTURAL MODEL

BY

OYELAMI, EMMANUEL OLATUNJI

MATRIC. NUMBER: 2008/1692

A PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELOR OF SCIENCE DEGREE IN STATISTICS, DEPARTMENT OF STATISTICS, COLLEGE OF NATURAL AND APPLIED SCIENCES, FEDERAL UNIVERSITY OF AGRICULTURE, ABEOKUTA, OGUN STATE, NIGERIA.

JULY, 2012.

ABSTRACT

The data on the Nigeria external reserves were extracted from the Central Bank of Nigeria Stistical Bulletin for the period from 1960-2010 for each month and investigated in order to fit a model for the yearly reserve pattern. The study adopted the Box-Jenkins approach of model identification, parameter estimation and diagnostic check. The result revealed that **AR(1)** is an **optimal order** for Nigeria External Reserves and also the result is basically a **random walk model** for Nigeria. The optimal order for these models evaluated for the model adequacy by the examination of the residual auto-correlation function and the overall test of model adequacy using the box-pierce statistic and the were found to be adequate.

Hence, the model equation for this study is:

$X_t = -0.22984\ X_{t-1} + \in_t$

which converges at AIC (Akaike Information Criteria) = **10499.63956** and the model was found to be valid.

Hence, this project demonstrates a dynamical modelling approach of investigating the future of the external reserves in Nigeria. The development of future external reserve models and scenarios for Nigeria, will help to optimize the external reserves in Nigeria.