

Title: Forecasting Models for the Philippine Monthly Average Stock Price Index

Author: Arnold G. Sinsioco

Degree: Master of Statistics

Date: April 2007

Abstract:

The study involves the use of models for nonstationary time series to analyze the average monthly Philippine stock price index (PHISIX). The generalized autoregressive Conditional Heteroscedastic (GARCH) model and vector Error Correction models (VECM) are used along with the auxiliary variables that can explain the behavior of the PHISIX. Cointegration tests such as the Engle Granger method and Johansen tests are used in screening for auxiliary variables to be included in the model. Lagged effects of the auxiliary variables were investigated through the cross correlation function (CCF). In-sample and out-sample forecasts accuracy of the models were assessed by comparing it with forecasts from the Intervention and Transfer Function models. GARCH and VECM yield comparable forecasts errors and generally better than those coming from Intervention and Transfer Function models. While stationarity inducing transformations facilitate modeling of non-stationary time series, a model that explicitly accounts non-stationarity generates superior forecasts. The VECM is better than the GARCH in out-of-sample forecasts, perhaps due to absence of real volatile movement hence making GARCH inferior than VECM.