Extracting Leading Economic Indicators for the Philippine Economy using Dynamic Factor Models

by:

Maria Christina S. Simbulan

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science (Statistics)

School of Statistics

University of the Philippines

Diliman, Quezon City

March 2011

ABSTRACT

This paper presents a Dynamic Factor Model (DFM) approach to extracting Leading Economic Indicators developed by Stock and Watson (1991). DFM is applied to a vast number of financial and economic monthly data from January 2000 to December 2009. Three scenarios (models) were considered in the study, (1) DFM utilizing 31 indicators, (2) DFM utilizing the NSCB leading economic indicators and (3) DFM utilizing the indicators resulted from Principal Component Analysis applied to the entire data. The three models were evaluated vis-à-vis each other and the currently used LEIS. The results show that DFM is an effective methodology in extracting Leading Economic Indicators. DFM31VAR dominates the other models including the current LEIS by successfully predicting 80% correct turning points (from 2000-2009) of GDP compared to 69% of the current LEIS.

Keywords: Dynamic Factor Models (DFM), Leading Economic Indicator (LEI), Principal Component Analysis (PCA)