

FORECASTING GDP USING MIXED FREQUENCY MODELS

by

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Abstract

Frequency mismatch has been a problem in econometrics for quite some time. Many monthly economic and financial indicators are normally aggregated to match quarterly macroeconomic series such as GDP when analyzed in a statistical model. However, temporal aggregation, although widely accepted, is prone to information loss. To address this issue, mixed frequency modeling was employed by using state space models with time-varying parameters. Quarter-on-quarter growth rate of GDP estimates were first treated as a monthly series with missing observation. Using Kalman filter algorithm, state space models were estimated with eleven monthly economic indicators as exogenous variables. A one-step-ahead predicted value for GDP growth rates was generated and as more indicators were included in the equation, the predicted values came closer to the actual data. Further evaluation revealed that among the group competing models, using growth rates of PSEi, exchange rate, CPI, real money supply, WPI and merchandise exports generated the most desirable forecasts based on RMSE and MAE.

Keywords: Multi-frequency models, state space model, Kalman filter, GDP forecast