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The Structure of a Machine-Built Forecasting System

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Abstract

This paper presents an automated forecasting system which provides a macroeconomic forecasting approach that some hedge funds may find useful. The paper describes the structure of an econometric forecasting system designed to produce multi-equation econometric forecasting models of national macroeconomies. The paper describes the functioning of an automatic model-building system which builds the forecasting equation for each series submitted and produces forecasts of the series without human intervention. The automatic model-building system employs information criteria and cross validation in the equation building process, and it uses Bayesian model averaging to combine forecasts of individual series. The system outperforms standard benchmarks for a variety of macroeconomic datasets. To demonstrate its use, the automatic system is used to build a fixed-income macro trading system.

Keywords: Automatic model-building system, Granger causality, information criteria, forward selection, backward deletion, cross validation, Bayesian model averaging, global macro forecasting.