

Scoring rules for simple forecasting models: The case of Cyprus GDP and its sectors

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ABSTRACT

This paper is motivated by the fact that traditional forecasting criteria are often challenged during periods of events such as economic crises, great recessions, institutional changes, wars, great natural disasters and other extreme events which influence the structure of the economy in major ways. Hence we consider alternative forecasting (or scoring) criteria which consider the probabilistic forecast approach and/or are weighted by the extreme observations. The probabilistic forecast approach of formulating forecasts in the form of probability distributions over the future state of an economic indicator takes into account forecast uncertainty and it is particularly useful in evaluating the forecasting performance beyond its mean forecasts. Similarly, the alternative approach is to consider restricted forecasting criteria which weight the sample of historical extreme observations. Using these scoring criteria, we evaluate the predictive ability of the benchmark time series models, such as the Random Walk (RW) and Autoregressive (AR) models, for forecasting the key economic activity variable, the total real GDP and its components for the period 1995-2016. Our results suggest that the restricted prediction criteria favor models with longer memory compared to the corresponding unrestricted criteria. This evidence applies to the total GDP growth rate for the sample 1995-2016 and the subsample before the recent major economic crisis of 2013. This evidence also holds for all components of GDP and is also robust to different quantiles of extremes. Our empirical results suggest that in periods of economic turmoil or crises, the restricted forecasting criteria can be used to provide more accurate forecasts. These findings are useful for economic policy makers, especially in recent periods of global and local economic crises.

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