How far can we forecast? Statistical tests of the predictive content

Jörg Breitung

Abstract

Forecasts are useless whenever the forecast error variance fails to be smaller than the unconditional variance of the target variable. This paper proposes tests for the null hypothesis that the forecast becomes uninformative beyond some limiting forecast horizon $h^*$. Following Diebold and Mariano (DM, 1995) we propose a test based on the comparison of the mean-square error of the model forecast and the sample variance. It is shown however that the resulting test has a degenerate limiting distribution. We therefore suggest a simple modification of the DM test that results in a chi-squared distributed test statistic. Furthermore, a forecast encompassing test is developed that outperforms the modified DM test. In our empirical analysis we apply our tests to macroeconomic forecasts of some key variables from the survey of professional forecasters. Our results suggest that the forecasts of professional forecasters fail to provide useful forecasts beyond 2-4 quarters.

(joint with Malte Knüppel)