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The accuracy of European growth and inflation forecasts

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Abstract

One-year-ahead forecasts by the OECD and by national institutes of GDP growth and inflation in 13 European countries are analysed. *RMSE* was large: 1.9% for growth and 1.6% for inflation. Six (11) OECD and ten (7) institute growth forecast records were significantly better than an average growth forecast (the current year forecast). All full record-length inflation forecasts were significantly better than both naive alternatives. There was no significant difference in accuracy between the forecasts of the OECD and the institutes. Two forecasts were found to be biased and one had autocorrelated errors. Directional forecasts were significantly better than a naive alternative in one-half of the cases. Overall, inflation forecasts were significantly more accurate than growth forecasts, and in contrast to growth forecasts, they generally improved over time. This has implications for economic policy. Positively biased revisions reveal large errors in data.
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1. Introduction¹

Macroeconomic forecasts attract the interest of the general public, for obvious reasons, but only as long as they refer to the future. Few care about old forecasts of events in the past. But if we do not know the past record of a forecaster, how are we to judge his/her last statement about the future? It should be the responsibility of all serious forecasters to regularly publish

reports with an analysis of their forecast records using adequate statistical methods. Granger (1996) suggests that point forecasts should be supplemented by confidence intervals, based on past performance.

The forecasts of large international organisations, such as the IMF and the OECD, and of some national forecasting institutes are occasionally scrutinised, see Artis (1996), Ash et al. (1998), McNees (1992), Mills and Pepper (1999) and Pons (2000) for some of the most recent reports. This study compares the accuracy of real annual output growth and inflation forecasts made by the OECD for 13 European countries and forecasts made by an institute in the country studied. Fildes and Stekler (1999)

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¹Two earlier reports from this study are Öller & Barot (1998, 1999).

have recently compared (mainly) US and UK forecasts.

The first hazard one encounters is becoming lost in dimensionality. There are many forecasters, and each forecasts many variables for several horizons. Different periods can be studied, there is a multitude of ways to assess accuracy, compare forecasters, etc. In order to keep the analysis manageable, we will study just two variables: *growth*, as measured by the annual percentage change in GDP, and *inflation*, measured by the annual percentage change in the consumption deflator. The horizon is 1 year ahead.

The next obstacle involves the very definition of accuracy. Assessing the accuracy of a forecast ex post may seem to be a simple problem: one just measures the distance between the forecast and the ‘known’ outcome. But in forecasting GDP, the outcome is not known in the sense of aiming a weapon at an immobile target. All national statistical offices first publish a preliminary figure, which can best be described as an informed guess, i.e. it is also a forecast. Successive revisions, some many years later, will reduce the share of approximation in the figure, but they never eliminate it completely. Hence, comparing forecasters according to how close they come to a published figure is also a comparison of the ‘outcome’ data. McNees (1989) describes forecasting and revising as a continuous process that starts long before the period concerned, and continues long after.

In Ash et al. (1998), forecasts made by the OECD of G7 countries and 20 macroeconomic variables are studied and tested, using forecast records from the period 1967–1987, and three forecast horizons: $\frac{1}{2}$, 1 and $1\frac{1}{2}$ years ahead. Taking ordinary differences of seasonally adjusted GDP, their main result is that what they call ‘quasi-forecasts’, i.e. forecasts for the current half-year, generally are useful, in the directional sense. When the horizon is extended to one year ahead, there still is some indication

that growth forecasts are valuable to users, but only in the case of France, the UK and the US. When the horizon is $1\frac{1}{2}$ years, only the UK forecast is better than a naive alternative. Stekler (1994) analyses three organisations that have forecasted quarterly GNP for the United States for the period 1972–1983. Direction and rough size of change are studied. Again, the main conclusion is that current quarter quasi-forecasts are useful, while the results for one-quarter-ahead forecasts are ambiguous. Note that our comparison will use *annual* figures.

The data are presented in Section 2. In Section 3, we look at root mean squared errors (*RMSE*) and we test for improvement on two naive alternatives using the Wilcoxon signed rank test of Diebold and Mariano (1995). In choosing a naive alternative, we have endeavoured to reconstruct the situation in which the forecast was made. Hence, if the naive alternative is the average growth or the previous value of the series, we have only used data that were available to the forecaster. Consequently, the current year figure will be the forecast made in the autumn of the same year. We also test for accuracy improvement over time. A *t*-test is used to determine if inflation forecasts are significantly more accurate than growth forecasts. Weak form informational efficiency, i.e. bias and/or autocorrelation, is studied in Section 4. Non-parametric measures of accuracy based on direction allow for a different assessment. In Section 5 we look at acceleration/deceleration and test against a naive variant using a standard contingency table. In Section 6 we take a brief look at revisions and Section 7 summarises and discusses the results.

2. Data

OECD annual growth and inflation forecasts have been collected from the December issue of the OECD Economic Outlook, 1971–1998. When these forecasts were made, preliminary

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