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When do forecasters disagree? An assessment of German growth and inflation forecast dispersion

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Abstract

Based on a panel of German professional forecasts for 1970–2004 we analyse the dispersion of growth and inflation forecasts. Forecast dispersion varies over time and is particularly high before and during recessions. There is no clear link between forecast dispersion and the subsequent forecast error. Forecast dispersion is positively correlated with the volatility of macroeconomic variables, but not necessarily with the level of the same variables. We interpret this finding to be evidence in favour of the notion that forecasters do not share a common belief about what is an adequate model of the economy. In particular, the assessment of the effects of monetary policy seems to be the prime suspect for diverging beliefs regarding an appropriate model of the economy.

JEL classification: E32; E37; C52; C53

Keywords: Consensus forecast; Disagreement; Uncertainty; Germany

1. Introduction

While a lot of studies refer to the quality of individual forecasts or to those of a very small group of institutions,[2] there is (to our knowledge) no study which examines the forecasts of a larger group of German institutions. Furthermore, there has been no study which deals mainly with the dispersion of German macroeconomic forecasts. The present study tries to fill this gap by taking into account the predictions of all forecasters that provide forecasts for Germany for a long time span, i.e., from (at least) the early 1970s onwards. We use annual data for growth and inflation forecasts from 1970 to 2004, coming from up to 17 different forecasts. This novel data set makes it possible to test whether the dispersion of forecasts might potentially provide useful information. To this end, we analyse whether there was indeed a consensus among German forecasters.

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[2] For an overview of recent work on German business cycle forecasts see Heilemann and Stekler (2003) and the literature cited therein.

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However, the main aim of our paper is to shed light on some of the reasons for disagreement among forecasters. Several reasons may lead forecasters to disagree.[3] First, forecasters may have different knowledge about the current state of the economy at the time that the forecast is made, i.e., the "ragged edge" problem (Wallis, 1986). Second, they may rely on different assumptions on the path of variables, which are in most cases exogenous to the forecasting process, e.g., oil prices or the course of economic policy. Third, if the forecasters agree on these variables they may still disagree about the appropriate model of the economy and its adjustment dynamics. Fourth, we cannot rule out some influence of strategic behaviour of forecasters (Laster, Bennett, & Geoum, 1999). Last, some authors argue that the dispersion of forecasts might be interpreted as a measure of uncertainty of the forecast. Our data set allows us to shed light on some of these hypotheses.

First, if the bulk of the forecast dispersion reflects diverging models and interpretations of the current macroeconomic situation by the different forecasters,[4] the dispersion of inflation and growth forecasts should vary depending on the respective state of the economy. Second, we analyse the impact of macroeconomic variables and their volatilities on forecast dispersion. We expect a positive correlation between the volatility of macroeconomic variables and dispersion, since volatile macroeconomic variables may reflect underlying shocks hitting the economy.

The paper is organised as follows: Section 2 describes the data set used and tests for a consensus among forecasters. Section 3 discusses forecast dispersion and the underlying reasons for disagreement. In particular, we test whether the level/change of macroeconomic variables or the respective volatility helps to explain forecaster disagreement. Section 4 concludes.

2. Is there a consensus among German forecasters?

2.1. Data and sources

We have collected the growth and inflation forecasts of 14 institutions that made forecasts regarding the German economy. The growth forecast is the predicted growth rate of real GNP (for the time span 1983 to 1989) and of real GDP (for all other years).[5] In the case of interval forecasts the average is used. The numbers refer to West Germany up to 1992, and to the unified Germany from 1993 to present. The inflation forecast is the predicted change of the deflator of private consumption. In some cases, however, no explicit reference was given as to whether a mentioned inflation forecast referred to the consumption deflator or to the CPI. In such cases, we assumed that there was no distinction between the figures and used the published inflation forecast. The actual outcome was based on the first published ("real time") data. Table 1 lists the names of the 14 institutions and also presents the horizon of each institution's forecast. It is apparent that the forecast horizons differ among forecasters. However, the pattern of forecasts during a year is, with very minor exceptions, rather stable in Germany. Thus, while it is true that some forecast dispersion comes simply from the differing forecasting dates, this part of forecast dispersion is stable over time. This should not influence our measures of dispersion.[6]

2.2. Defining and testing for a consensus

Fig. 1 shows the time path of the dispersion of the growth and inflation forecasts. We use two measures of forecast dispersion: the standard deviation of the fore-

[3] For Germany, German unification may also be seen as an important source of forecast dispersion. However, as the data collected and analysed by Heilemann (1999) make clear, despite the enormous uncertainty over the economic situation in East Germany the dispersion of forecasts regarding East Germany was not particularly large. Thus, our decision to refer to German data from some year onwards will not affect our results concerning forecast dispersion.

[4] As one referee argued, different models and different assumptions about exogenous variables made by the forecasters might theoretically lead to the same forecast result. This is, of course, right: the case that these errors exactly cancel out might nevertheless be seen as a special case because we assume that the assumptions about exogenous variables do not differ in a systematic manner.

[5] Sometimes the forecasts refer to "growth" rather than explicitly to either GDP or GNP. In this cases we have assumed that the forecasters made no distinction between the concepts and had the same forecast for both figures.

[6] In other words: we expect all forecasts to be consistent, while the efficiency of the forecasts differs due to the differences in horizons.