Why do forecasts differ?

Note of a special study for the Bank's Panel of Academic Consultants.

In association with the Social Science Research Council (SSRC), the Bank recently commissioned a study, by Professor M J Artis, of the reasons underlying divergences between forecasts produced by different forecasting bodies.

The public now has available a large number of forecasts of the UK economy, which sometimes differ fairly widely. Publication of the results in summary form leaves the reader with little means of judging the underlying points of difference. The present exercise was intended as an experiment to see how much light could be shed on the reasons for forecasting differences, and how useful to users of the forecasts any additional information would be in assessing the forecasts and in forming their own judgment as to future probabilities. The SSRC, for its part, is concerned to encourage greater critical discussion of the methods used by the various forecasting teams that receive financial support from the Council; and is contemplating setting up a centre to encourage more systematic comparative work by co-operation between the teams. The SSRC therefore wished to participate equally in the present exercise as being likely to have a useful bearing on the work of the new centre.

Although differences between forecasts are evident enough, it is not a simple task to isolate the underlying reasons, since they may be as complex as the procedures used in forecasting. The task thus involves a detailed understanding of the technicalities of the models underlying the forecasts and the assumptions and techniques used by the various teams, which are not always fully revealed in the material normally published. For these reasons it was decided to commission an expert comparative study. The study by Professor Artis compares the forecasts produced last winter by five selected independent forecasting teams: the National Institute for Economic and Social Research (NIESR), the London Business School (LBS), the Economist Intelligence Unit (EIU), the Cambridge Economic Policy Group (CEPG), and the Liverpool Research Group (LPOOL).

The principal variables for which the forecasts were compared were the increase in total output (GDP) and the rate of consumer (or retail) price inflation. Comparisons were also made of the forecast composition of changes in expenditure and the contributions of each item to the changes in output foreseen. Three of the forecasts (NIESR, LBS and EIU) predicted, with relatively minor divergences, a modest rate of output growth for 1982, coupled with somewhat similar rates of inflation; but the divergence increased, particularly with regard to the prospects for output, as the forecasting horizon extended to 1985. Two forecasts showed greater divergence: the CEPG predicted a fairly steady unbroken decline in output, whereas LPOOL showed it rising substantially; the latter was also more optimistic than other groups about the reduction in inflation.

The information available to the various forecasting teams was broadly the same. The study sought principally to determine how far divergences could be accounted for under three heads. First, did they arise because different assumptions had been made about the behaviour of economic variables which the forecasting model did not seek to explain (the exogenous variables)? Second, did they reflect differences in the structure of the models used—possibly in turn reflecting different preconceptions as to how the economy operates? Third, forecasters in using a model are inherently bound to exercise a degree of judgment. The need for judgment arises largely because models do not purport to track movements in the economy exactly. The actual data for the most recent past period, which is the starting point for predictions of the future, are always bound to diverge to a greater or less extent from the figures that would have been yielded by the model. Forecasters have to take a view about whether these divergences are likely to be reversed, or to be perpetuated, in the forecast period. Such judgments may also to a greater or less degree reflect *a priori* assumptions about the working of the economy. The study attempts to isolate these acts of judgment—not a simple or clear-cut matter—and indicate how far they account for divergences in the forecasts of the different features.

The study refers only to one set of forecasts, carried out last winter, and would need to be repeated before any general conclusions could be drawn. Nevertheless it may point to some likely causes of differences of view, and indicate useful future lines of study. Professor Artis' report, together with a summary of the main conclusions prepared in the Bank, was discussed by the Bank's Panel of Academic Consultants (of which Professor Robin Matthews is Chairman) at its meeting on 12 February, when representatives of the five forecasting teams concerned participated. Copies of the papers, revised in the light of the discussion, will be available around the middle of April from the Bank at the address given on the reverse of the contents page in this *Bulletin*.