The Bank of England's forecasting platform: COMPASS, MAPS, EASE and the suite of models

Summary of Working Paper No. 471 Stephen Burgess, Emilio Fernandez-Corugedo, Charlotta Groth, Richard Harrison, Francesca Monti, Konstantinos Theodoridis and Matt Waldron

Since Autumn 2011 the Monetary Policy Committee (MPC) has used a new forecasting platform to help put together its quarterly economic forecasts. The MPC's judgement is paramount when agreeing their forecasts, but the process also relies on a range of economic models. The new forecast platform includes a central organising model (called COMPASS),(1) an enhanced suite of forecasting models and new IT tools to assist the forecast process. This paper provides detailed documentation of each of these components of the platform and has been published to elicit comments and further debate.

COMPASS is a 'New Keynesian' general equilibrium model and shares many features with similar models in use at other central banks and policy institutions. Prices and wages are assumed to be sticky, so monetary policy affects output and employment in the short to medium term. Expectations of future events, including the actions of monetary policy makers, can also affect current output and inflation. COMPASS provides the basic set of relationships that articulate core macroeconomic mechanisms and provides a disciplining framework by ensuring that forecasts are internally consistent. COMPASS itself only provides forecasts for fifteen variables: 'key' macroeconomic series such as GDP, inflation, interest rates, trade, wages and consumption.

COMPASS is smaller and simpler than previous central models used at the Bank of England. This makes it easier to estimate and to use, enabling Bank staff to produce timely updates to the MPC's forecast in the weeks ahead of an *Inflation Report*.

But it also implies some sacrifice of detailed economic structure. To compensate for that, the suite of models is very much an equal partner in the new forecasting platform. The suite contains over 50 separate models, covering a huge range of different frameworks and ways of thinking about the economy. Different models can be selected from the suite, depending on what insight is required. The suite provides the means to cross-check the projections in COMPASS, expand the forecast to cover more variables, and challenge the key judgements in the forecast.

This paper offers various illustrations of how the suite of models can be used to inform the forecast. Although COMPASS does not include an explicit role for a banking sector, there are several models in the suite that can be used to consider the impact of credit on the economy, and so explore the effects of an impaired banking sector. The forecast platform can be used to estimate the underlying shocks driving the economy and that can be a useful framework to interpret recent events. It is also possible to use the platform to explore the impact of different paths for monetary policy on the economy.

The forecasting platform is likely to evolve over time. The parameter values in COMPASS will be re-estimated on a regular basis, and the structure of the model may be modified as Bank staff learn more about its performance. The Bank's vision for the suite of models is also a dynamic one: models should be added or removed as economic modelling progresses and also as the questions facing policymakers change.

(1) The Central Organising Model for Projection Analysis and Scenario Simulation.