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PRESS RELEASE

Forecast with judgment and models

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Much of the macroeconometric literature of the last decade has focused on making micro-founded dynamic stochastic general equilibrium (DSGE) models a viable option for policy analysis and forecasting. One of the strong points of these models is their ability to tell theoretically consistent and economically interpretable stories about the forecasts. Despite their growing use in practice, model-based forecasts still seem to be outperformed at short horizons – and especially for the nowcast – by forecasts produced by institutional and professional forecasters, such as the Survey of Professional Forecasters or the Federal Reserve's Greenbook. The judgmental forecasters' advantage lies in the fact that they can exploit more disaggregate, softer (i.e. survey-based evidence) and timelier information and hence make more accurate assessments of the state of the economy. Therefore, judgmental forecasts remain of crucial importance in the policy-making process, despite the lack of consistent theoretical foundations. Consequently, the introduction of DSGE models into a policy and projection environment has given rise to the question of how a model's outcome could be combined with judgmental input and off-model information. This paper provides a possible answer to this question.

The aim of this study is to develop a method for combining judgmental forecasts and model-based forecasts. In particular, I suggest modelling the judgmental forecasts as optimal estimates of the variables of interest, made with a different and possibly more informative information set. I then show how they can be incorporated and accounted for in the framework of a linearised and solved DSGE model. The methodology I propose makes it possible to generate forecasts – I call them augmented forecasts – that are more accurate than the purely model-based ones, but that are still disciplined by the economic rigor of the model. Moreover, the proposed methodology enables the information content of the judgmental forecasts to be inferred from the weights that the augmented forecasts assign to them. The more information on the current state of the economy the professional forecasters are able to gather, the more the augmented forecast will tend to use professional forecasts when combining them with the predictions from the model. Conversely, it will down-weigh them if the variance of their forecast errors is too large. Finally, the proposed methodology makes it possible to interpret the forecasts through the lens of the model, by extracting the structural shocks as they are perceived by the professional forecasters.

I illustrate the proposed method with a fully real-time forecasting exercise on US quarterly data from 1982 to 2007, using predictions from the Survey of Professional Forecasters and a prototypical neo-Keynesian model for GDP growth, inflation and interest rates. The exercise confirms that we can get a much more accurate assessment of the current state of the economy with the augmented forecasts.

I also illustrate the information content of the judgmental forecasts and examine how it changes over time, by looking at the weights endogenously assigned to them in the construction of the augmented forecasts. The most striking feature is the reduction in the information content of the experts' inflation forecasts over the sample period. Finally, I give some examples of how the ability to interpret the judgmental forecasters through the lens of the model helps to answer some widely debated questions regarding the performance of the Survey of Professional Forecasters and of judgmental forecasts in general (e.g., the fact that the judgmental forecasters totally missed out the productivity boom of the mid-90s).

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