

## MACRO MODELS, ECONOMIC FORECASTS AND THEIR USE: SOME REFLECTIONS

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The purpose of this note is to:

- \* discuss some points both in defence of large-scale macro models and against them. The aim is, as far as possible, to appraise them from a Christian perspective;
- \* offer some reflections on the use and wisdom of forecasting.

By way of background, this note outlines briefly who produces macro economic forecasts, in this case for the UK, and why.

The points below are very provisional. I remain uncertain of the possibilities of a distinctive Christian view on aspects of forecasting and macro models. In addition, a number of the points below are actually criticisms of the economic theory underlying macro models and not of models per se.<sup>(1)</sup>

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<sup>(1)</sup> I am grateful to my colleague, Dr Paul Fisher, for this and other comments. Given the provisional nature of this note, I would very much welcome further comments. These should be sent to Andrew Brookes, Forecasting and Assessment Group, Economics Division, Bank of England. The usual institutional disclaimer applies.

## **Who produces forecasts?**

The producers of economic forecasts in the UK can broadly be divided into three categories.

### **The financial community**

The objectives of City firms in sponsoring this activity are first, publicity for the firm, believing that credible economic analysis which embodies forecasts of the near future will influence institutional finance. Second, to enable the institutions concerned to take financial positions which depend on the economic outcome. As a part of this, City forecasts act as a form of check on Government forecasts.

### **Academic/consultant forecasts**

This group of 'independent' forecasters are led by the National Institute, the London Business School (publicised via the Sunday Times) and Oxford Economic Forecasting (Independent on Sunday). The Liverpool quarterly economic publication (Patrick Minford) would also fall into this category, as would the ITEM Club - a consortia based around the Treasury model and used periodically by the BBC - and forecasts by the Henley Centre. These forecasts are either publications for sale; involve consortia on which subscribers sit in order to influence the forecasts; or involve the purchase of the model along with the base forecast. The orientation varies from the reasonably academic, with much interest in the policy debate, to straightforward commercial operations.

## The 'Authorities'

Both HM Treasury and the Bank of England produce economic forecasts. The Treasury publish these twice a year at the time of the Budget and the Autumn Statement. The Bank of England do not. (One possible distinction between the City forecasters and the Bank of England is that the City are attempting to predict the actual future. The Bank of England forecasters are predicating their forecast on different policy assumptions and simply seek to explore the consequences of these.)

Broadly speaking all forecasts are made with a combination of the model, which provides an economic framework and at least adds the numbers up, plus 'judgment'. Models vary from fully fledged multi-equation macro models to simply spreadsheets.

Judgement is used in taking account of information not formally embodied in the model, it may be too recent for formal inclusion or be anecdotal. In addition, software developments mean that any forecast can be produced on any model. As a result, judgement is actually being used in all areas of a forecast, even if this is no more than ticking up a zero residual. The role of judgment will be most prominent in areas on where models are not performing well.

## Macro economic models

The context of both defence and criticism of models is their use as an aid to policy discussion and for forecasting the macro economy.

One can defend models in a number of ways.

- \* They oblige economists to get involved with the data. While the ideal of testability and rejection is naive - witness the very different form which models of the UK economy take - for construction of a model it has to be specified. This makes it relatively clear where disagreements lie. The discipline of actually writing down the way in which you believe the world works and trying to match this with the data can be interpreted as being consistent with the (not specifically) Christian desire not to have delusions about economic relationships. In addition, having to specify and estimate models is a necessary, if not sufficient, condition for debate between economists.
  
- \* Macro models add up. Profiles for output and employment will perforce tell you about productivity, one example of a large number of plausibility checks. The more substantive issue of consistency concerns counterparts. For example, the government deficit, the current account and the financial balances of the private sector have got to add up. 'Implausible' projections for one of these cannot be altered in isolation.

There is nothing particularly 'Christian' about the above, fairly minimalist, defence. Criticism of models, on a non-technical level, can perhaps be more distinctively Christian.

### **Criticism of macro economic models**

- 1 Economic models take a mechanical view of economic behaviour. There is no sense of responsibility, morality or reflection on behaviour. Agents are billiard balls in a mechanical world. By contrast, economic life, both for individuals and communities, is actually a moral event, and is shaped by moral norms and conscience.
  
- 2 Macro models are individualistic, a straight consequence of the utility maximising representative agent taken from theory. This encourages modellers to see economic problems as, in some sense, individualistic. God has, however, put us in communities which face economic problems. There is no analysis of family behaviour, environmental issues or charity donations in the average macro model.

This point also goes for institutions, where one representative, maximising company is the company sector. In reality, companies vary greatly in the priorities given to research and development, shareholders, the long term, etc. There is no discretion for firms in the macro model.

There are two issues here. First, the utility maximisation of individual agents. To criticise this, is to attack the bulk of economic theory. Macro models have simply inherited it. Second, and more specific to macro models, is the problem of aggregation. All consumers become one consumer in a macro model. No account is taken of distribution. An addition pound to the richest is, implicitly, ascribed the same weight as a pound to the poorest.

- 3 Models are based on the assumption that parameters are reasonably stable over time (or, via time-varying parameters, coefficients change steadily). A Christian view allows for behaviour to change; repentance and consequent observation of the Jubilee would be difficult to pick up in a consumption function for 700BC. (A defense of modelling would point out that hysteresis and non-linearities are attempts to do just this. Second, short-comings of this type are a mandate for better modelling, not ditching it.)
  
- 4 Economic models imply that matters are outside our control. Results simply drop out of the working of the economic system in a mechanical way. However, the economy is ours, the result of our decisions and we should not view economic events simply as phenomena which we observe - outturns which we have to live with. We have to own the results of our actions.

- 5 Models characterise the economy by transactions. The economic real world is actually dominated by relationships. (An enthusiast for time series would say that you could embody relationships, eg the wage bargain, in a time-series equation.)
- 6 Macro models lift economic life out of the context of other aspects of society. Economic phenomena in models have economic causes and economic consequences. (Though an economist should take account of 'non-economic' factors - eg family break up resulting in changing demand in the housing market.) This autonomy naturally leads on to material well-being as the aim of economic life - not justice, peace or sufficient consumption - but the maximisation of consumption. GDP or inflation becomes the measure of all things. There are no non-material measures of the quality of life.

One might argue that this is a general problem of quantification, and is not unique to macro models. For example, social welfare functions exist in theory but cannot be quantified.

### **Two views of modelling**

Two sides of the debate (not that it is a very active debate) could probably be summarised as follows. View one says that models are a fair way of isolating aspects of economic life. The issue is therefore of abstraction. Abstracting in the way that

macro model do, albeit partial and open to the above criticisms, is still useful and helps in the setting of policy and analysis of future scenarios. View two might argue that the problems listed above are simply too great and that the materialistic underpinnings of models is implicitly imperialistic. Over lunch macro modellers and forecasters would accept that the models are a very partial view of the way the world works. In reality, modellers (and their customers) behave and write as if models are the true explanation of economic life. (Again, these criticisms should really be aimed at the whole body of economic theory and practise, not simply macro models.)

### **THE USE OF FORECASTS**

The City faces the following problems when producing forecasts.

- \* Economists can be pushed into saying something for the sake of it, "yet another publication deadline is here".
- \* They can be tempted to talk 'their own book', expressing opinions which reflect the firm's best interests.
- \* Encourage what is basically financial betting on real issues that matter, such as unemployment.

For the Treasury, the output of forecasts has a number of functions, in wage bargaining, revenue prediction and expenditure planning. Forecasts still play a rôle, arguably small, in the setting of policy.



## Pointers on forecasting

- 1 Be humble/provisional about what we know. We do indeed see dimly - and you do not need much theology to tell you that.
- 2 The future cannot be known with certainty. Man has planned but the outturn belongs to the Lord. (Or, as a colleague put it from a different theological perspective, unforeseen events dominate the out-turn).
- 3 Since you do not fully know the consequences of actions, at a policy level one should firstly do what is 'right'. Sometimes judgment has to be of the means, since the end is unknown. (Though we should note that thinking about consequences and planning are biblical.)
- 4 Exercise integrity. 'Announcement effects' may be the forecasters' biggest temptation.

## CONCLUSION

To conclude, let us simply observe the conversation between two Christians. One we might caricature as the radical. He has read a little bit of philosophy, uses expressions like 'world view' and 'over-arching paradigm' a lot. The economic practitioner, also a Christian, is less given to such all-embracing expressions. His employers pay him to think about Gross Domestic Product and inflation in the coming year.

- Radical: "The philosophical/world view of your profession is implicitly non-Christian. There are implicit values embodied in your models. The Christian challenge is to make these faiths explicit, to show that they are not value free descriptions of the world."
- Practitioner: "That's fine, but my problem is trying to understand consumption in 1990 and 1991. Oh and by the way, recessions are bad, people suffer and therefore forecasting is worthwhile if it can reduce the possibility of recession."
- Radical: "The pattern of consumption is a good example. You, Practitioner, treat people as if they are billiard balls responding to financial stimuli. You have taken economics out of the rest of life and made it autonomous. Only transactions matter in your world."
- Practitioner: "Fine but what are the specific problems with that? You have to abstract to analyse."
- Radical: "It's imperialistic. You are accepting, and in effect propagating, the view that economic life is the over-arching canopy to people's lives."
- Practitioner: "Fine again. But the savings ratio in the short run matters. What can your critique tell me about that?"

Radical: "Let's discuss family patterns of consumption, community-based consumption, the importance of marriage and all sorts of other patterns that your models miss out on in their narrow emphasis on personal disposable income."

Practitioner: "I will accept anything that I can convince my colleagues of. What I want to know is if it will work on the right-hand side of an equation trying to explain consumption over the past two years."

Radical: "But this emphasis on billions of pounds is reductionist both for economic life in general and for consumption in particular. You've taken no account of the quality of life."

Practitioner: "Yes, but the recession is actually about the volume of consumption falling. A sudden burst upwards in the quality of consumption will not end the recession. Anyway, where is the data for all your nice theories?"

Radical: "The fact that there is no good data demonstrates that the overarching paradigm of the nominal value of consumption dominates both statisticians and economists ..."

At this point the practitioner disgruntled yet disturbed, leaves. On returning to the office is re-estimates his consumption equation. Tries church attendance on the right-hand side. Fails and goes back to using interest rates.