Monetary Policy Modeling: New Directions

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November 2013

Non-modeler´s answers to the following questions:

1) How has our view of modeling changed after the crisis?

2) On which areas should modelers at central banks focus? Is the answer different for emerging and advanced economies?

3) What is the interaction between modelers and policymakers?

How has our view of modeling changed after the crisis?

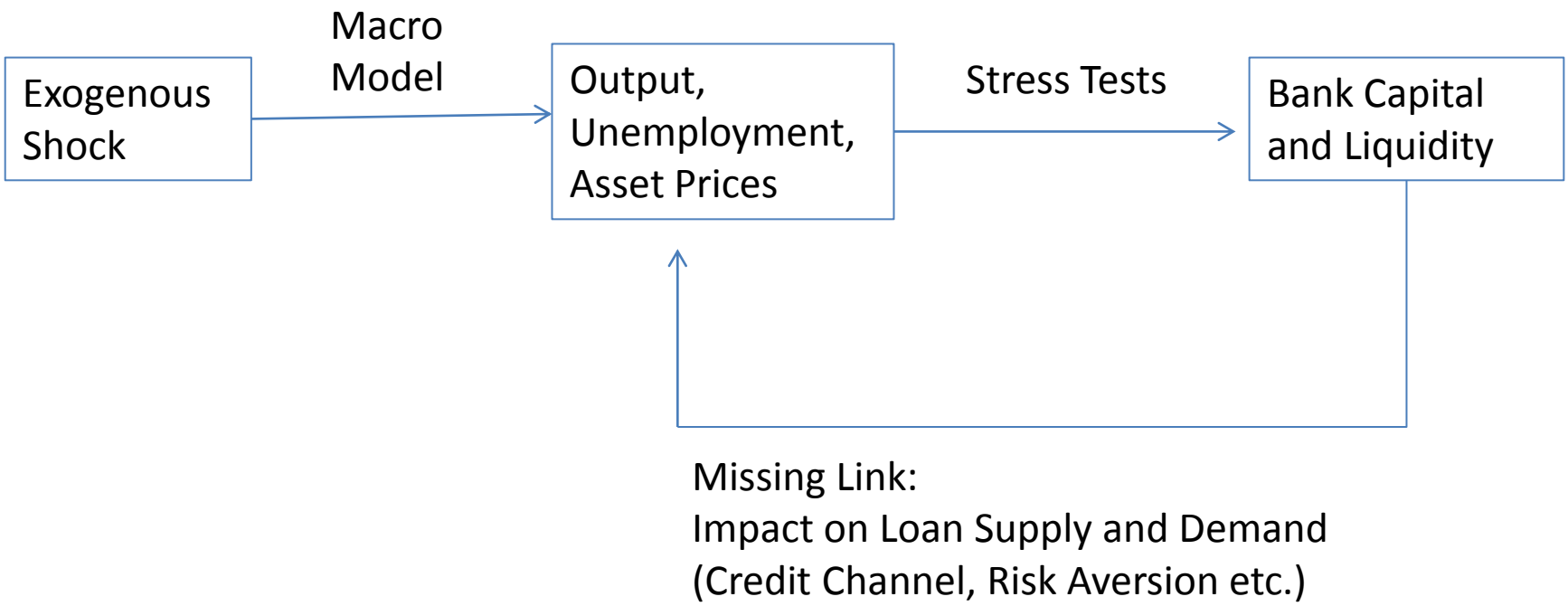
- Models continue to play an important role in the policy decision making process
- They provide consistent and disciplined frameworks for policy analysis and forecasting
- However, the crisis and its aftermath brought about some changes in our view of monetary policy models…
- …New policy targets, new transmission channels, new policy instruments…
- …Hence, less standard models than before the crisis, more “custom-made” models for specific countries and circumstances

On which areas should modelers at central banks focus? (I)

- With the emergence of new targets, channels and instruments, modelers should focus on the effects of different policy tools and their interaction in a General Equilibrium context
- E.g. Reserve requirements, Sterilized FX intervention, Dynamic Provisions etc.
- The aim should be to provide models that could be used for policy analysis under realistic conditions (not only theoretical approaches)
- The microeconomic specification of the relevant (mainly financial) channels may be crucial…
- … Ad-hoc minor changes to otherwise standard models may not always suffice to capture relevant incentives and behavior
- E.g. Different "Skin in the game" effects of Reserve Requirements and Bank Capital (Cordella and Pienknagura, 2012)

On which areas should modelers at central banks focus? (II)

- In Colombia, at least, better understanding and modeling of the feedback effects of financial instability on the macro-economy
- Stronger connection between financial stability analysis and macro modeling
- More realistic/relevant assessment of the impact of financial frictions
- For Example:



On which areas should modelers at central banks focus? (III)

- In Colombia, at least, better modeling and understanding of the "natural" levels of:
  - The real interest rate
  - The real exchange rate
  - National income
- This is key to assess the monetary and fiscal policy stance in the face of changing external conditions (rising foreign interest rates and sovereign risk premia, slower growth of relative commodity prices etc.)
- In technical jargon, we need the "flexible price" model of the economy

On which areas should modelers at central banks focus? (IV)

- In Colombia, at least, better understanding and modeling of fiscal policy and its interaction with monetary policy
- Relevant, given the importance of oil/mining shocks for the economy and, especially, for public finances...
- ... Most of the income derived from these sectors goes to foreign investors and both central and regional governments
- In Colombia there is a fiscal rule and a medium term fiscal framework that condition the Government's response to these and other shocks
- Hence, monetary policy reaction to these shocks must depend greatly on the operation of the fiscal rule

Should the areas of work for modelers differ between advanced and emerging economies?

- Yes. In fact, they may even differ across emerging economies
- For small open economies, many of them commodity exporters, differences in:
  - Financial depth
  - Capital account openness
  - Trade openness
  - Legal frameworks (e.g. financial regulation mostly inside or outside the central bank)…
- … Imply significant differences in:
  - Channels of transmission of exogenous shocks and policy responses
  - Relevant policy instruments
  - Effectiveness of policy tools

Should the areas of work for modelers differ between advanced and emerging economies?

For example:

- Impact of commodity export price shocks depends on the ownership of the investment in the commodity sector (foreign vs. local, public vs. private)
- Effectiveness of sterilized FX intervention or capital controls depends on the degree of capital openness and financial integration of the economy
- Effectiveness of reserve requirements depends on the importance of the banking system in financial intermediation and the regulation of "shadow banks"

Hence, it is natural that the focus of modelers should differ according to conditions in each country

What is the interaction between modelers and policymakers?

- In Colombia the Central Bank staff is responsible for the model-based medium term macroeconomic forecasts, risk scenarios and policy simulations that the Policy Committee (the "Board") reviews in the monetary policy decision meetings

- In particular, the staff makes the assumptions on exogenous variables and determines the risks of the forecast and their weight

- In fact, published reports include the staff's forecast, not the Board's

- Rarely Board members request alternative scenarios or revisions of assumptions

- Hence, the forecast and model management "belongs" to the staff

What is the interaction between modelers and policymakers?

- Pros:
  - Building a Board "consensus" forecast is difficult
  - Board members are freer to focus in out-of-the-model issues, which probably leads to better macroeconomic risk management (a wider range of channels, risks and possibilities is considered)

- Costs:
  - Too little involvement of policymakers with models:
    - Lack of familiarity limits usage and understanding by the Board
    - Sometimes it is difficult for the staff to communicate forecasts (what is driving the results? Is it meaningful in the juncture?)

- ...Consequently, sometimes not enough attention is paid to models and their disciplining and consistency benefits are diminished

- A closer interaction of Board members and the modelers/model operators could be helpful…

What is the interaction between modelers and policymakers?

- For example:
  - A discussion of the "historical decomposition of shocks" given the observed data would be useful to gain insight about the main shifts facing the economy, at least from the point of view of a specific model structure
  - A discussion of the <u>anticipated</u> shocks would better inform the model-based forecast and , consequently, would help improve its interpretation… Also, it could minimize the noise that may be introduced by "naïve" short term forecasts
  - A more detailed discussion of the paths for exogenous variables (e.g. foreign output and interest rates) would result in:
    - A better evaluation of their consistency with the macro scenarios considered and
    - An improved understanding of the main drivers of the forecast