New Keynesian DSGE Models, Financial Frictions and Bayesian Estimation

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Why Models?

- Policy questions:
  - What kind of monetary policy will stabilize inflation?
  - Should monetary policy respond to credit growth or stock prices and, if so, by how much?
  - Should government spending and tax policy be used to stabilize the business cycle? If yes, how?
  - How should monetary policy respond to changes in interest rate spreads?
  - Should the government ever purchase privately-issued assets or make loans or equity injections to banks? If yes, when and how much?
  - What should capital requirements be and how (if at all) should they vary over the business cycle?
- The answers to all these questions are numbers.

Why Models?

- The outcome of most policy actions depends on the effects of forces that conflict. Which is stronger?

- Will exchange rate depreciation drive output up or down?
  - Demand effect drives it up.
  - Balance sheet effects drive it down.
  - Which effect is stronger?

- Will increase in government spending drive output up or down?
  - Demand effect drives output up.
  - Negative wealth effects from higher taxes and/or uncertainty about possible fiscal solvency could drive output down.
  - Which effect is stronger?

Why Models?

- What is output effect of financial regulation?
  - Reduced probability of financial crisis increases output.
  - Reduced ability by people to borrow reduces demand and, hence, output.
  - Which effect is stronger?

- What is impact on inflation of higher interest rate?
  - Demand effect slows economy, hence costs and inflation go down.
  - Working capital effect drives costs and, hence, inflation, up.
  - Which effect is stronger?

- Will a tax rise increase or reduce the deficit?
  - Holding output fixed, it reduces the deficit.
  - By slowing the economy, it raises the deficit.
  - Which effect is stronger?

Why Models?

- Answer to policy questions are numeric and require balancing different forces from very different parts of the economy.
  - Must contemplate the interaction of financial, labor, goods, currency markets, etc.
- Difficult to juggle all these things in your head.
- Can’t experiment on actual economies.
- Must do it in a quantitative model.

Why *New Keynesian* Models?

- Disturbances to output in the Great Recession appear to originate in reductions in spending by a subset of households and business.

- With price setting frictions, such disturbances naturally lead to a decline in aggregate output.

  - The models also helpful for prescribing policy responses: forward guidance, expansionary government spending, versions can be used for macro prudential, ...

- With flexible prices, demand disturbances do not result in substantial losses of output.

  - Such models predict that a large drop in the real rate of interest induces other components of demand to expand, thus preventing the waste of human and physical resources associated with a recession.