Macro/Finance DSGE Models

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Background

- I taught this course in 2009.
  - Amazed at how different my lectures will be this time!
- Last time's focus: New Keynesian DSGE models.
- Why New Keynesian models?
  - Attractive because they seemed good for thinking about what happens after demand shocks.

Why care about demand shocks?

- Empirical evidence that monetary policy matters
  - Centuries of informal observations expressed in, e.g., David Hume's 1756 essay, 'On Money'.
  - Evidence that countries which first left the Gold standard, escaped the Great Depression earlier.
  - Research experience that culminated in Friedman's 1968 presidential address to the AEA.

- Discovery that 'reasonable' New Keynesian models compatible with all this 'evidence', had a dramatic impact.
  - Central banks around the world use the models routinely.

- DSGE models made useful contributions to discussions about fiscal multipliers recently.
  - Work at the International Monetary Fund by Doug Laxton.

- The financial crisis of 2008 greatly amplified interest in NK models, because every story starts with a shock to demand side of the economy.

What's Next?

- The 'Demand Shock' that led to the financial crisis appeared to emanate from the financial sector.
  - With some exceptions, macroeconomists had ignored the financial sector.
  - Deposit insurance seemed to put an end to bank runs.
  - Financial crises that did occur, did not seem to have an unmanageable effect on the economy (e.g., 1987 stock market crash, 'dot-com' crash of early 2000's).
- DSGE modelers, economists generally, policymakers, all ignored the possibility of an economic collapse due to a financial meltdown.

What went wrong?

- The failure to forecast the Financial Crisis and subsequent Great Recession was epic.
- Why did it happen?
  - There is not a complete consensus.
- Initial view: 'Big Short'.
  - Lending standards dropped terribly.
  - Collapse was inevitable.
  - No doubt this was part of it, though recent evidence suggests that mortgages were not ex-ante as bad as 'Big Short' suggested.
- Growing consensus: Bank run (Bernanke, Gorton).
  - By 2005, shadow banking system huge.
  - Outside protective umbrella of deposit insurance and central bank backstops.
  - System lends long and borrows short: vulnerable to run.
    - Run in summer of 2007, then again in 2008.
    - Bear-Stearns, Lehman brothers.

What went wrong?

- Fundamentally a failure of observation:
  - Did not notice how the shadow banking system had metastasized into something of similar magnitude as the conventional banking system.
- Also clear: must integrate finance better into our macro models.
  - We need to know how to think about what happened in 2008.
  - Bringing in finance is what this course is about!
- I will explain why much (not all!) analysis is built on the platform of the NK model

Outline

- Prominent example of the sort of model that can help us think about 2008 financial crisis.
  - Rollover crisis model Gertler-Kiyotaki, Gertler-Kiyotaki-Prestipino.
  - For this, need to first understand the model of Gertler-Karadi.
- Other models of financial frictions:
  - Costly state verification model useful for understanding normal business fluctuations.
  - Collateral constraint models.
    - Example of resurgence of interest in heterogeneous agent models.