Introducing Financial Frictions into the Standard New Keynesian DSGE Model

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DSGE Model

• Artificial model economy which:

  – Has property that economic outcomes are clearly related to private agent objectives and constraints (not always followed in practice!)

  – Generates artificial data that resembles macro economic data of actual economies.

  – Useful as a laboratory to analyze the economic impact of policies.
    • Contributes input into discussions about key policy questions.
History of DSGE Models

• Pre-2000’s: foundations laid by Hansen-Sargent, Prescott, Lucas, many others....

• 2000-2007: transition from academic ‘toys’ to serious candidates for actual policy evaluation.
  
  – Evidence that models are available that can quantitatively address age-old puzzles about monetary policy.

  – SW demonstration that DSGE models rival a-theoretical methods in out-of-sample forecasting.

• 2008-?: renewed urgency for additional models development
  
  – Introduction of financial frictions.
  
  – Serious treatment of labor markets.
Questions:

• Classic policy questions:
  – Should monetary authority follow a simple rule, or ‘do the best that it can, given the current situation’?
  – What should the mean and variance of inflation be?
  – Which one: inflation targeting or price level targeting?
  – Should monetary policy focus just on inflation and output, or should it also respond to asset prices, credit, interest rate spreads, unemployment, etc.?

• New questions motivated by recent financial turmoil:
  – Do there exist business cycle shocks that emanate specifically from the financial sector?
  – How to rationalize the recent unconventional monetary policy?
    • Fed declared existence of ‘exigent circumstances’.
    • Started to, in effect, make loans to private business (i.e., mortgages, commercial paper, loans to AIG, Bear Stearns).
  – How much and what type of regulation?
Why *Quantitative* Modeling?

• Answers to previous questions depend on how the economy as a whole is put together.

• Hard to work out in one’s own head.

• Mathematical model allows one to balance off different forces (e.g., benefits and costs of inflation volatility) in a way that:
  
  – Is coherent.
  – Brings to bear data and experience from a great variety of sources: labor markets, financial markets, consumption behavior, etc.
Outline

• Review of the consensus New Keynesian model
  – What are its key features? Why were they put there?

• Microeconomics of the Costly State Verification model of financial frictions.

• Integration of CSV into New Keynesian model.

• Estimation results: a new shock is born.

• A policy analysis experiment.