Monetary Economics

Lecture 1: introduction

Chris Edmond

2nd Semester 2014

Contact details

- Office hours:

  ⋄ by appointment

    Business & Economics 423

- Phone: 8344-9733

- Email: cedmond@unimelb.edu.au

Books

- Main reference for Part I

  ◇ Jordi Gali (2008): *Monetary Policy, Inflation and the Business Cycle.* Princeton University Press.

- Background reading for Part II

  ◇ Gary Gorton (2010): *Slapped by the Invisible Hand.* Oxford University Press.

Assessment

Task	Due date	Weight
Problem set #1	Thurs Aug 7th	5%
Problem set #2	Thurs Aug 28nd	5%
Problem set #3	Thurs Sept 11th	5%
Problem set #4	Thurs Sept 25th	5%
Problem set #5	Thurs Oct 9th	5%
Problem set #6	Thurs Oct 23rd	5%
Midsemester exam	take-home, due Tues Oct 7th	0 or 20%
Final exam	exam block	50 or 70%

Lecture schedule

Part I: New Keynesian Monetary Economics

⋄ lectures 1–3, classical building blocks

⋄ lectures 4–7, basic new Keynesian model

⋄ lectures 8–10, monetary policy in the basic new Keynesian model

⋄ lectures 11–14, monetary/fiscal interactions, liquidity traps etc

⋄ lectures 15–16, unemployment in the new Keynesian model

Midsemester exam based on Part I

Lecture schedule

Part II: Frictions in Banking and Financial Intermediation

  ◇ lectures 17, overview of financial crisis; securitisation

  ◇ lectures 18, bank runs, old and new

  ◇ lectures 19–22, macro implications of financial frictions

  ◇ lectures 23–24, recent debates and developments, course recap

Final exam covers Part I and Part II of course

Background

- New Keynesian model builds on real business cycle (RBC) model

- RBC model, key features

    – intertemporal utility maximisation
    – rational expectations
    – complete asset markets / representative agent
    – perfect competition in goods and factor markets

- RBC model, key implications

    – business cycles are Pareto efficient
    – business cycles driven by exogenous productivity shocks (and other exogenous real shocks: terms-of-trade, government spending, etc)
    – money is neutral

- Established use of *dynamic stochastic general equilibrium* (DSGE) models and *quantitative theory*

Background

- New Keynesian model, key features

  - intertemporal utility maximisation
  - rational expectations
  - complete asset markets / representative agent
  - imperfect competition in goods and/or factor markets
  - nominal rigidities (prices are *sticky*)

- New Keynesian model, key implications

  - business cycles are inefficient
  - business cycles driven by mixture of exogenous productivity shocks and exogenous monetary policy shocks
  - money is not neutral in the short run
  - money is neutral in the long run

- New Monetarist model (why not)?

Friedman's 1968 presidential address
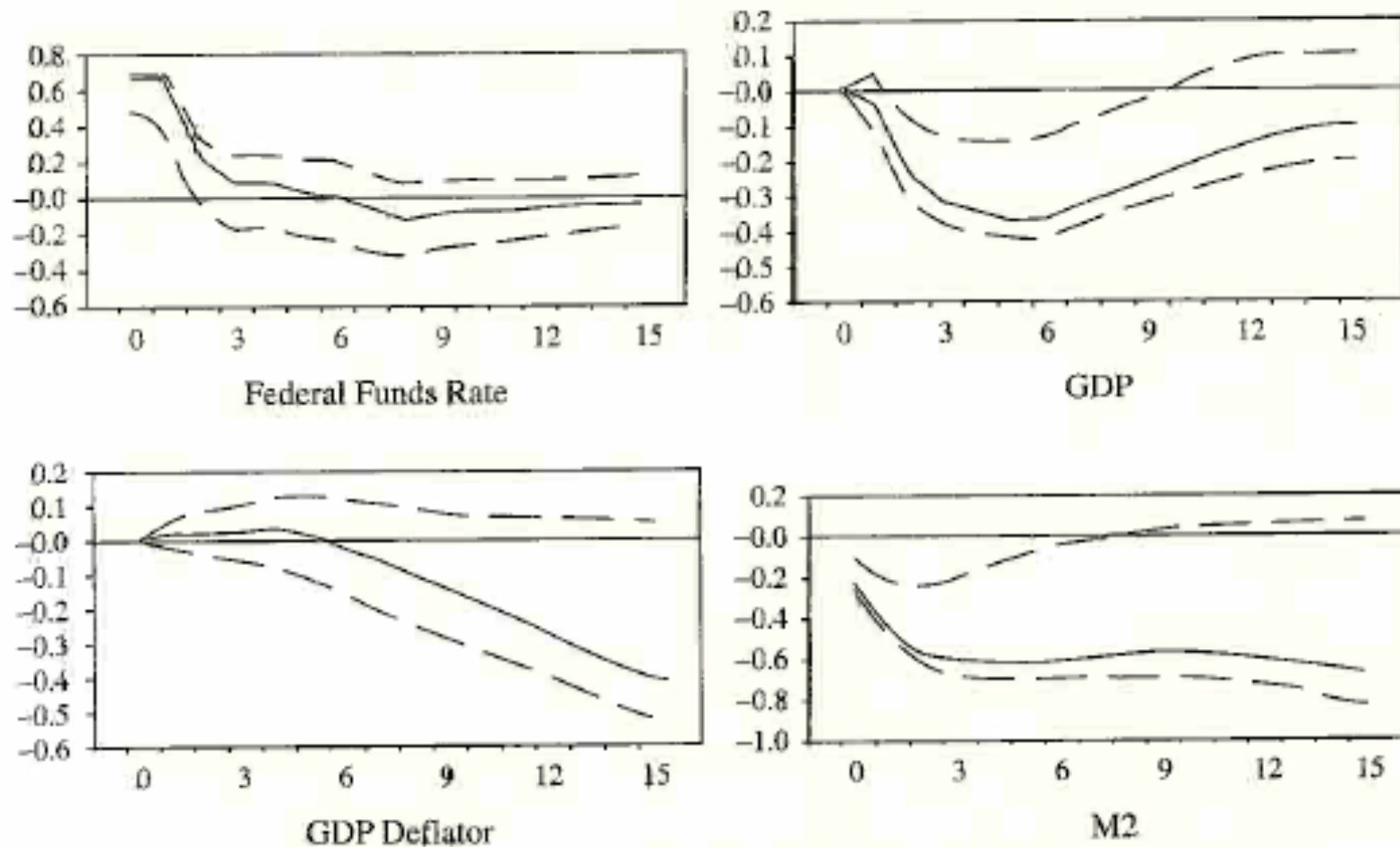
Figure 1.1   Estimated Dynamic Response to a Monetary Policy Shock

Source: Christiano, Eichenbaum, and Evans (1999).

Periods in quarters. Proportional responses to policy shock.

Sticky prices: evidence from micro data

- Conventional wisdom circa 2000

  – average duration between price changes key to nonneutrality
  – prices of individual goods & services sticky for $\approx$ 12 months

- Challenged by Bils and Klenow (JPE 2004)

  – evidence from BLS micro data, sticky for $\approx$ 4–6 months

- Rebuttal from Nakamura and Steinsson (QJE 2008)

  – including transitory sales drives Bils/Klenow result
  – excluding sales, sticky for $\approx$ 8–11 months

- Attention now turning to other moments of the micro data

  – heterogeneity across sectors, products etc
  – skew of changes etc

Rest of this class

A benchmark classical monetary model

 – reading: Gali (2008), chapter 2 sections 2.0–2.2

1- Representative household, price taking

2- Representative firm, price taking

3- Equilibrium

Households

- Household preferences over consumption and labor supply

$$U(C_t, N_t)$$

- Intertemporal preferences

$$\mathbb{E}_0 \left\{ \sum_{t=0}^{\infty} \beta^t U(C_t, N_t) \right\}, \qquad 0 < \beta < 1$$

- Flow budget constraint at every date and state

$$P_t C_t + Q_t B_t \leq B_{t-1} + W_t N_t - T_t$$

- We rule out *Ponzi games*
  (e.g., impose arbitrarily large bounds on real debt issuance)

- This is a *cashless* economy

Household intertemporal optimisation

- Lagrangian with nonnegative, stochastic, multipliers $\{\lambda_t\}$

$$L = \mathbb{E}_0 \left\{ \sum_{t=0}^{\infty} \left[\beta^t U(C_t, N_t) + \lambda_t \left(B_{t-1} + W_t N_t - T_t - P_t C_t - Q_t B_t \right) \right] \right\}$$

- First order conditions

$$C_t : \qquad \beta^t U_c(C_t, N_t) = \lambda_t P_t$$
$$N_t : \qquad -\beta^t U_n(C_t, N_t) = \lambda_t W_t$$

$$B_t : \qquad \lambda_t Q_t = \mathbb{E}_t \left\{ \lambda_{t+1} \right\}$$

These hold at every date and state

Household first order conditions

- Let

$$U_{c,t} \equiv U_c(C_t, N_t), \qquad U_{n,t} \equiv U_n(C_t, N_t)$$

- Labor supply

$$-\frac{U_{n,t}}{U_{c,t}} = \frac{W_t}{P_t}$$

- Intertemporal consumption Euler equation

$$Q_t = \mathbb{E}_t \left\{ \beta \frac{U_{c,t+1}}{U_{c,t}} \frac{P_t}{P_{t+1}} \right\}$$

Firms

- Competition in goods and factor markets

- Production function

$$Y_t = A_t F(N_t)$$

- Profits

$$P_t Y_t - W_t N_t$$

- Labor demand

$$A_t F'(N_t) = \frac{W_t}{P_t}$$

Equilibrium

- A competitive equilibrium involves

  - households optimising taking prices as given
  - firms optimising taking prices as given
  - prices such that markets clear

- Optimality conditions for labor supply and demand give

$$-\frac{U_n(C_t, N_t)}{U_c(C_t, N_t)} = \frac{W_t}{P_t} = A_t F'(N_t)$$

- Goods market clearing

$$Y_t = C_t$$

- Bond market clears if goods market clears

Next class

- Solving the classical monetary model

- Reading: Gali (2008), chapter 2 sections 2.3 and appendix 2.1