

Applied Macroeconomics Bengt Assarsson Fall 2013

A Topics Course
Recent advances

Course outline

- Bengt Assarsson email and home page
- mail@bassarsson.com
- <http://www.bassarsson.com>
 - go to link Students
 - Syllabus (with references)
 - References (extended list of references)
 - Papers (to be downloaded)
 - Lectures (slides + notes)
 - Presentations (schedule, with reference to papers)
 - Schedule (also in department's home page)
 - News
- Studentportalen

My web site

- Applied Macro
 - [Syllabus](#)
 - [References](#)
 - [Papers](#)
 - Lectures
 - Fall 2012
 - Fall 2013
 - Presentations
 - [Subjects](#)
 - [Schedule](#)
 - [Guide for essays](#)
 - [Schedule](#)
 - [News](#)
 - [Complementary exercises](#)
 - [Essay](#)
- [Old courses](#)

Office hours

- After lectures 1 hour
- Or by appointment
- Or by email

Lectures

- 10 lectures, compulsory (max 2 times absent)
- 2 first lectures, introduction
- 7 lectures
 - Prepared presentation of paper by students, 1 hour
 - Presentation
 - Especially prepared discussants
 - All others discussants as well
 - Lecture, 2 hours
- 1 lecture, summary

Examination

- Activity in lectures
- Presentation of paper
- Discussant on paper
- Written essay
 - About 10 pages
 - Finished 17/1

Presentations, list of papers

- 7 occasions
- presenters (PowerPoint or board)
- extremely prepared discussants
- all others: prepared discussants
- One basic paper and one or two additional references for each presentation
- start 11/11

Aim of this course

- To get insights into "modern" macroeconomics and monetary policy
- Learn the difference from conventional intermediate macro
- Get close to some of the most recent research results
- Learn about the serious unsolved problems in macroeconomics
- Learn something about the difference between policy and science

Literature

- Your old intermediate macro text
 - Blanchard, Mankiw, Hall & Taylor
 - Reference list
 - Big list, for presentations, essays
 - Small list in Syllabus
 - Useful books, graduate level
 - Difficult on undergraduate level
 - Gali, Monetary policy, inflation and the business cycle, 2008, **recommended to buy**
 - Wickens, Macroeconomic theory. A dynamic general equilibrium approach, 2008
- Learn how to download literature from internet (through the library web site and Econlit(Webscohost))

Lectures, outline see Syllabus

- I Introduction IS/LM/PC or IS/MR/PC
- II Classical & Basic New Keynesian Model
- III Sticky prices in theory and practice
- IV New Keynesian Phillips curve (NKPC)
- V Monetary policy
 - Inflation measure for inflation targeters
 - Policy tradeoffs and policy rules
 - Policy in practice

*"Having looked at monetary policy from both sides now, I can testify that central banking in practice is as much art as science. Nonetheless, while practicing this dark art, I have always found the science quite useful."*²

Alan S. Blinder

I Outline for Introduction

- Repeat IS/LM/AD model
- Look at the 3 basic equations
 - IS curve
 - LM curve
 - Phillips curve
- Replace LM curve with MR curve
- Basic form of the system
- Discuss the need and merits of microfoundations

I continue...

- Conventional IS/LM/AD model: Piecemeal microfoundations, but not systematically in the model
 - For instance, in consumption function
- The new Keynesian model is based on microfoundations in the model as a whole

IS curve

$$Y \equiv C + I + G + X - \varepsilon Q$$

$$C = C(Y, r)$$

$$I = I(r)$$

$$G = \bar{G}$$

$$X = X(\varepsilon, Y^*)$$

$$Q = Q(\varepsilon, Y)$$

$$Y = Y(r) \quad \text{IS curve}$$

LM curve and AD curve

$$\frac{M}{P} = M(i, Y)$$

money demand

$$\frac{M}{P} = -ai + bY$$

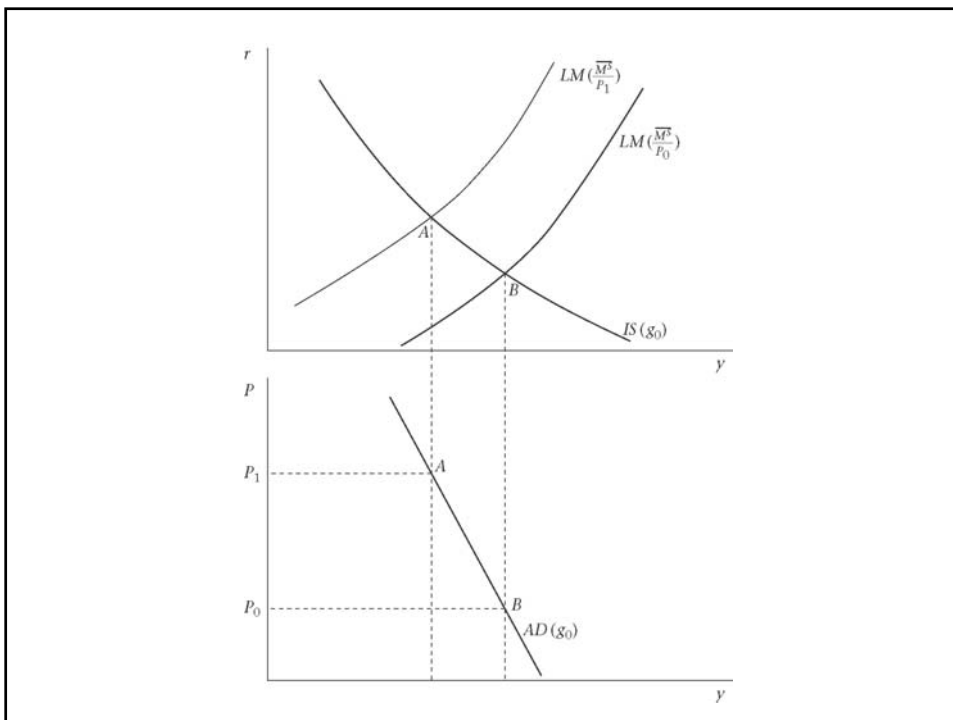
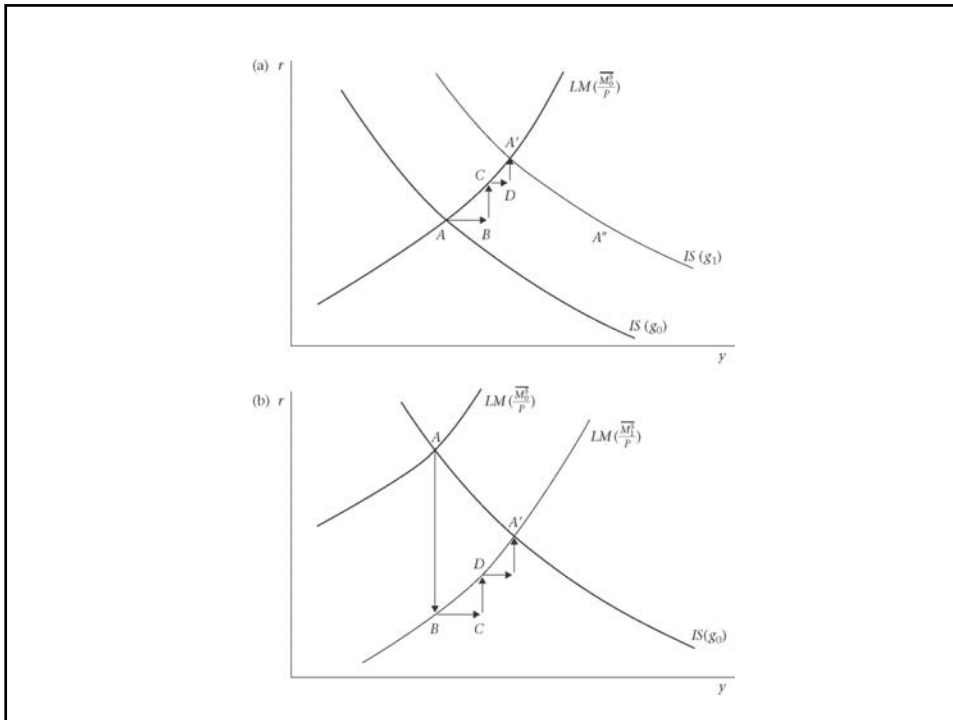
$$Y = b^{-1} \frac{M}{P} + \frac{a}{b} i$$

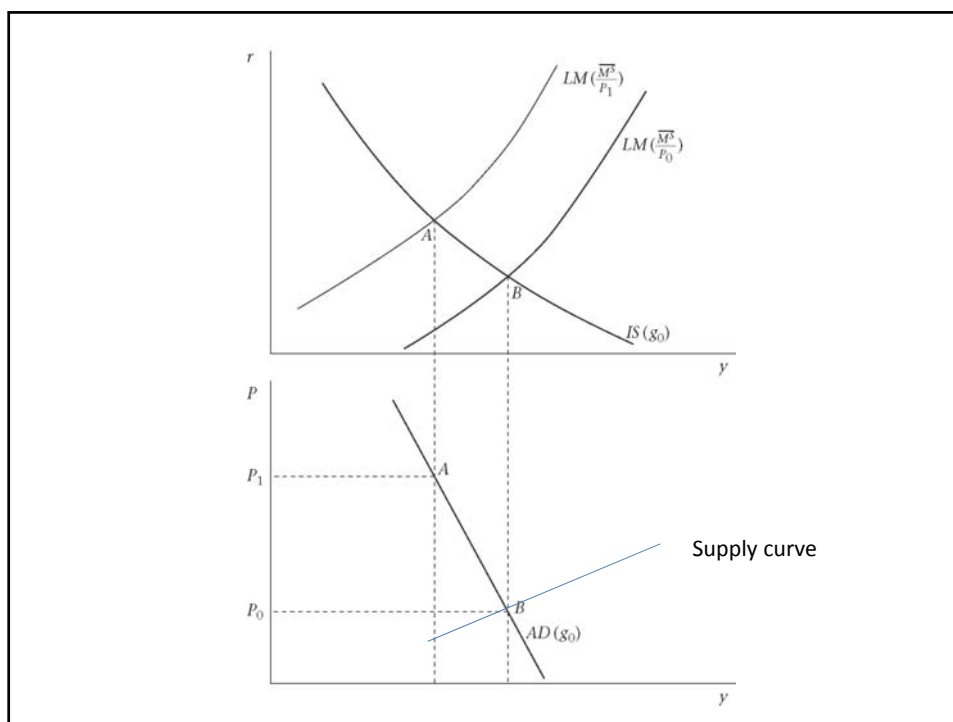
$$Y = Y(P)$$

aggregate demand

Discretionary policy

- Change G or M, fiscal and monetary policy





Phillips curve

$$\pi_t = E_{t-1}\{\pi_t\} + \gamma(Y - \bar{Y})_t + z_t$$

$$E_{t-1}\{\pi_t\} = \pi_{t-1} \quad \text{adaptive expectations}$$

$$Y = \bar{Y} \text{ \& } z_t = 0 \rightarrow \pi_t = E_{t-1}\{\pi_t\}$$

$$\pi_t = \pi_{t-1} + \gamma(Y - \bar{Y})_t$$

$$\pi_t = E_{t-1}\{\pi_t\} + \varepsilon_t \quad \text{rational expectations}$$

$$z_t \text{ \& } \varepsilon_t \text{ are random errors}$$

Misperceptions supply curve

- Friedman/Phelps, asymmetric information, adaptive expectations
- Lucas relative/aggregate price changes, signal extraction problem, rational expectations
- Expectations important, but prices flexible
- Lucas microfoundations and the Lucas critique

Lucas critique, simple example

- Parameters not invariant to shift in policy

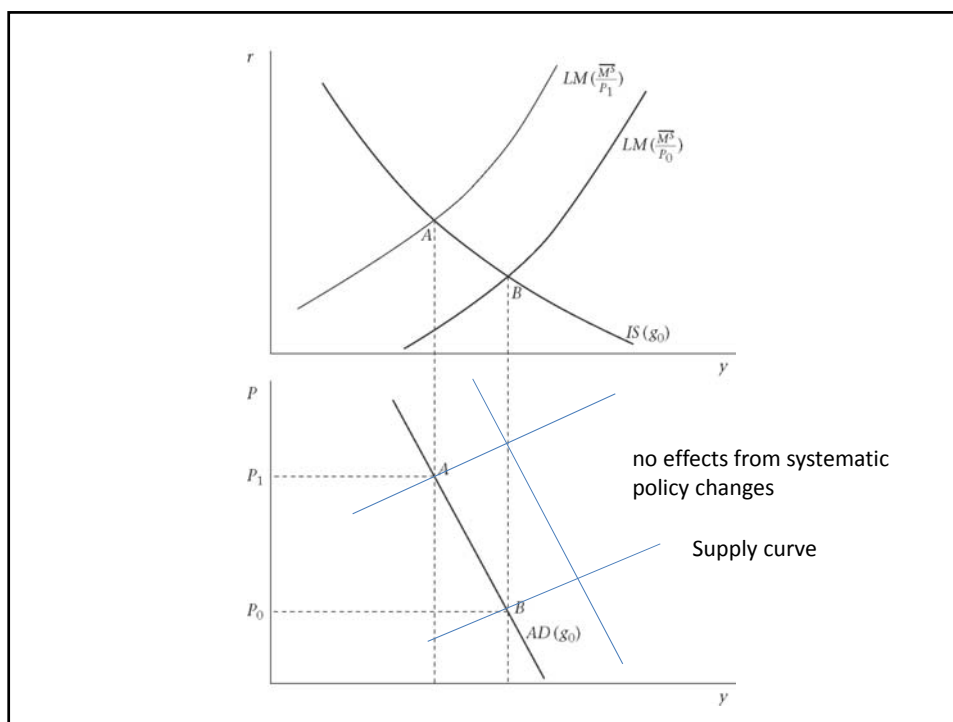
$$Y_t = \bar{Y} + \gamma \varepsilon_t \text{ Lucas supply curve } \gamma > 0$$

$$m_t = m_{t-1} + g + \varepsilon_t \Rightarrow \varepsilon_t = m_t - m_{t-1} - g \text{ money growth rule}$$

$$Y_t = \lambda_0 + \lambda_1 (m_{t-1} - m_{t-1}) \text{ for the econometrician}$$

where

$$\lambda_0 = \bar{Y} - \gamma g \text{ and } \lambda_1 = \gamma$$



3-equation model Carlin/Soskice
Svensson (1997)

$$L = (Y - Y_e)^2 + \beta(\pi - \pi^T)^2$$

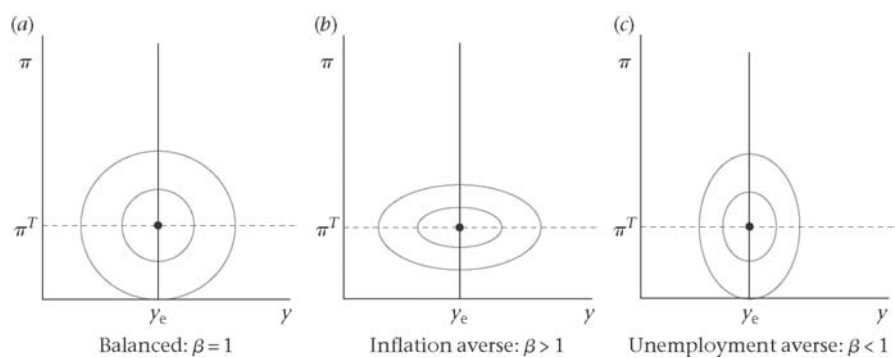
Optimizing central bank

$$L = (Y - Y_e)^2 + \beta(\pi - \pi^T)^2$$

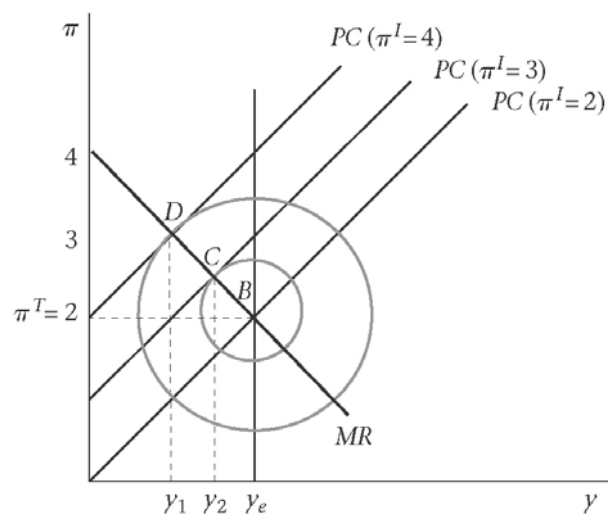
$$\pi = \pi_{-1} + \alpha(Y - Y_e)$$

$$\frac{\partial L}{\partial Y} = (Y - Y_e) + \alpha\beta(\pi_{-1} + \alpha(Y - Y_e) - \pi^T) = 0$$

$$(Y - Y_e) = -\alpha\beta(\pi - \pi^T) \quad \text{MR curve policy rule}$$



The MR curve



3-equation model

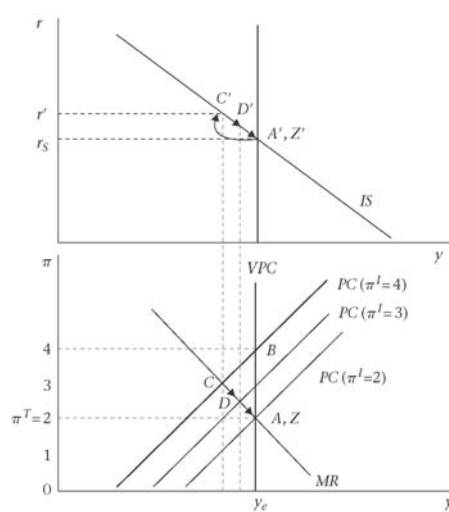
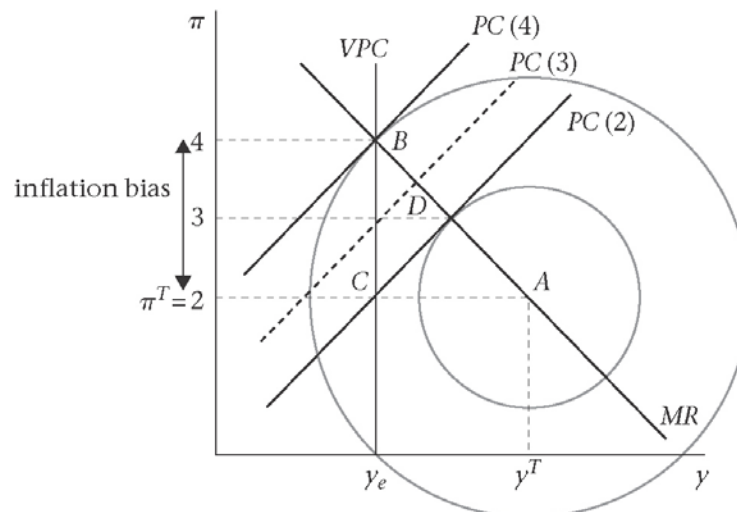


Illustration – the inflation bias



Difference from IS/LM model

- Optimizing central bank => policy rule, not discretion
- Policy rule depends on price rigidity & central bank preferences
- Policy should commit to a realistic real target

“Equilibrium without microfoundations”

- Piecemeal microfoundations
 - Consumption and investment functions with microfoundations
- Critique from new classical economists
 - Kydland & Prescott
 - Lucas, Lucas critique, parameters not invariant to policy changes
- New research program
 - RBC new classical economists
 - Keynesian search for microfoundations for sticky prices

What’s good with microfoundations?

- Micro foundations but macro data
 - Representative agent (consumer, firm), not necessarily in new models
 - Aggregation problems
- Identification
 - Deep parameters for preferences/technology hard to identify
 - Calibration, new empirical methods, compare model predictions with data
- Previous empirical studies
 - Demand systems, consumption functions
 - from macro to micro studies

Some different views

- Macroeconomics is empirical, related to policy
 - Start from observations, not from axioms
- Relationships are aggregated from micro level
- General vs partial equilibrium
 - General models must be simplified
- Coordination between different agents

New synthesis

- RBC classical model & sticky prices
 - dynamic optimization
 - rational expectations
 - policy rules
 - sticky prices