Lecture 11
Exam Review

Macroeconomics EC2B1

Benjamin Moll

London School of Economics, Winter 2024

Plan

1. Overview
2. Some specific exam guidance
3. Each lecture in one slide and one graph
4. Q & A

This Course: Modern Macroeconomics

- Modern = as practiced in current academic research
  - $\neq$ what's in standard textbooks
- Macro with micro foundations
  - utility and profit maximization just like in EC1A1
  - ... but general equilibrium (= prices endogenous, clear markets)
- Thanks for the very useful feedback on teaching evaluations

Topics we covered

	Topic
Section 1	Welcome and Overview, Labor Demand and Supply
Section 2	A Simple Macro Model, Equilibrium and Welfare Theorems
Section 3	The Power of Substitution: Germany without Russian Gas
Section 4	Consumption, Saving, Interest Rates
Section 5	Investment and Capital Accumulation
Section 6	Business Cycle Macro and Lucas Critique
Section 7	New Keynesian Model I
Section 8	New Keynesian Model II
Section 9	The Financial Crisis, Asset Bubbles
Section 10	Unemployment (Pissarides), Inequality in Macro

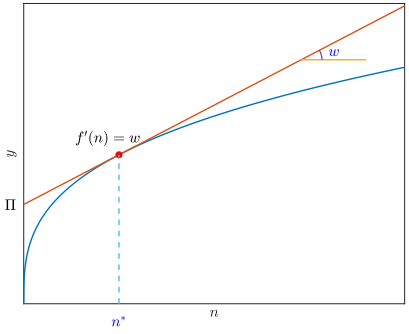
Some specific exam guidance

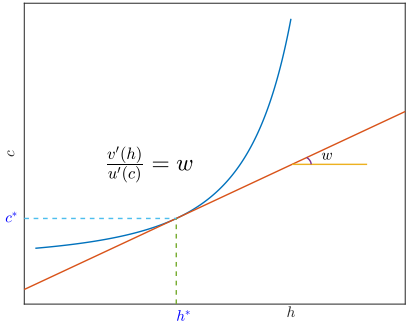
- Format same as last year: 3 questions for my part
- There will definitely be a question on the New Keynesian model
- Common exam questions: repurposing / relabeling of theory from lecture notes for other application, changing functional forms, ...
- Memorizing is often not best idea
- We're testing for your ability as an economist (whether you understand logic), not ability to do algebra
  - partial marks for algebra mistakes
  - no marks for wrong logic
- Everything in lecture notes and supplements is examinable except if specifically stated that it is not
- Will update list of material in lecture notes that is not examinable

Lecture 1

- Thoughts on methodology: interplay of models and data
- Modeling in (macro)economics
  - “the map is not the territory”
  - idea of crucial assumptions
- Toward a simple macro model
  - labor demand
  - labor supply
  - income and substitution effects

Lecture 1



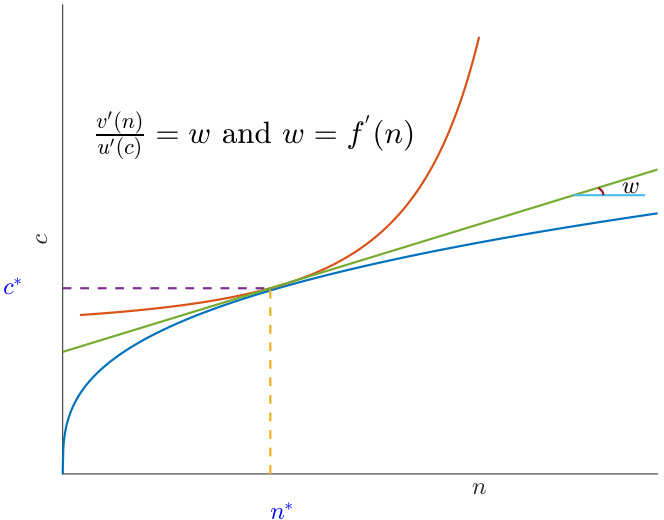


Lecture 1

- Thoughts on methodology: interplay of models and data
- Modeling in (macro)economics
  - “the map is not the territory”
  - idea of crucial assumptions
- Toward a simple macro model
  - labor demand
  - labor supply
  - income and substitution effects

Lecture 2

- Simple macro model
- Pareto efficiency (PE)
  - definition: there is no feasible allocation that makes one individual better off without making another worse off
  - limitations, e.g. distribution (one person consuming everything)
  - fictitious social planner's problem
- Competitive equilibria
- First and second welfare theorems
  - statement, assumptions
  - limitations, prevalence of "frictions"
  - important use: force you to think about rationale for policy intervention
- Application of simple macro model: long-run trends in hours worked
  - need prefs such that income effect dominates substitution effect


$\frac{v'(n)}{u'(c)} = w$ and $w = f'(n)$
w
c
c^*
n
n^*

Lecture 2: Equilibrium vs Planning Problem

- Even though the competitive equilibrium and planning problem may lead to the same allocation, they are very different animals

- Some key differences to remember when you solve these in practice

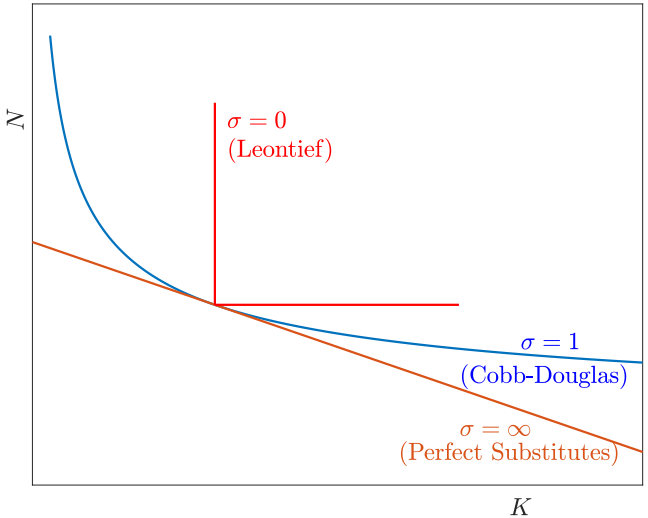
  1. equilibrium features prices, the planning problem does not
  2. equation for resource constraint plays mathematically different roles:
     - in competitive equilibrium: market clearing condition
     - in planning problem: constraint on planner's maximization problem

- A typical mistake that students make: write planning problem as planner maximizing utility subject to budget constraint (which features prices)
  - Please don't do this. If in exam: zero points on that subquestion.

Lecture 3

- The CES production function: complementarities and substitution in production
  - elasticity of substitution
  - le Chatelier principle
- Example of what you can do with simple static macro models: Germany without Russian gas

Lecture 3: Isoquants of the CES production function



Lecture 4

1. The Keynesian view of consumption
2. A two-period model of consumption
3. The permanent income hypothesis
4. Consumption, saving and interest rates in general equilibrium

Lecture 4

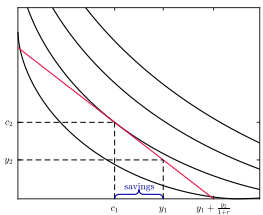
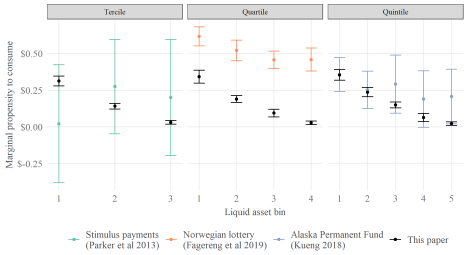


Fig. 6.2.1: The consumption-savings decision as a two-good consumption problem.

Figure 6: Marginal Propensity to Consume by Asset Buffer



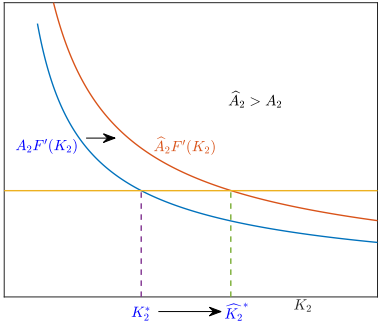
Note: This figure compares the estimates of heterogeneity by assets in the passthrough of income shocks to consumption. Parker et al. (2013), Fagereng, Holm and Natvik (2018) and Kueng (2018) use terciles, quartiles, and quintiles respectively. To enable comparability with these prior papers, we calculate the marginal propensity to consume (instead of the elasticity of consumption to income) using their respective bin cutoffs. Our paper, Parker et al. (2013), and Kueng (2018) measure the MPC on nondurables. Fagereng, Holm and Natvik (2018) measures the MPC on total consumption. See Section 3.5 for details.

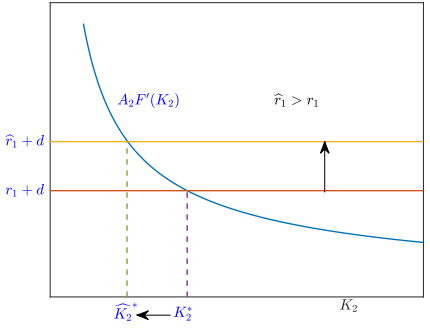
Lecture 5

1. Investment and capital accumulation in partial equilibrium

2. Dynamic general equilibrium with capital accumulation
    - baby RBC model
    - later: New Keynesian model = same model with sticky prices

Lecture 5


$\widehat{A}_2 > A_2$
$A_2F'(K_2)$
$\widehat{A}_2F'(K_2)$
$K_2^\star$
$\widehat{K}_2^*$
K_2


$A_2F'(K_2)$
$\widehat{r}_1 > r_1$
$\widehat{r}_1 + d$
$r_1 + d$
$\widehat{K}_2^*$
$K_2^\star$
K_2

Lecture 6

1. Very brief history of business cycle macro until the 1980s
2. A two-period real business cycle model = the model from lecture 5
    - aggregate productivity shocks
3. The fully-fledged Real Business Cycle model
    - logic of RBC model: impulse responses to TFP shocks
4. Criticisms of the RBC model

Lecture 6: Room for policy in the RBC model?

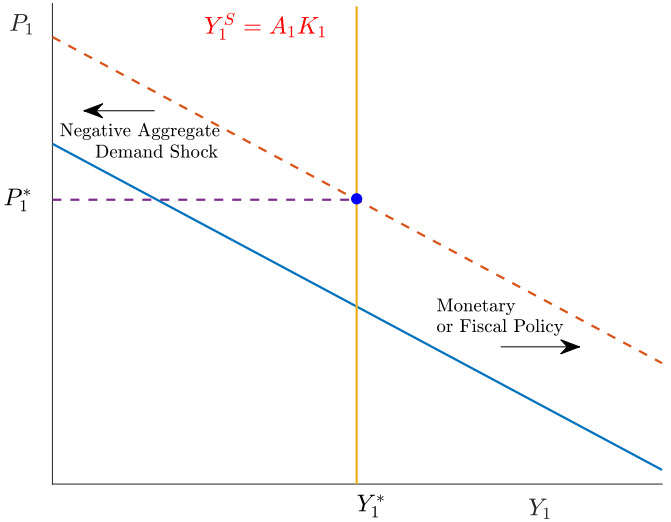
- No, because 1st welfare theorem holds
- Same logic as in baby RBC model
- In RBC model, business cycles are efficient
  - the optimal response to a changing environment
  - when productivity falls, it's a bad time to produce, so households should work and invest less
  - government intervention can only worsen the allocation
- For more discussion, see Kurlat, chapter 13.5, section "Policy Implications"
- Come back to this at end of lecture

Lecture 7

1. Introducing money and inflation into the two-period RBC model
2. Flexible prices: monetary neutrality
3. Sticky prices: monetary non-neutrality
    - aggregate demand matters

Flexible prices: summary and policy implications

- Real variables are completely separate from nominal variables ("monetary neutrality", "classical dichotomy")
- Corollary: monetary policy has no effect on any real variables
- Monetary policy affects only price level and inflation
- 1st welfare theorem still holds: policy intervention undesirable in first place
- Stabilization policy? When there is a recession (e.g. due to A_1 or $A_2 \downarrow$)
  - stabilization via fiscal policy is undesirable
  - stabilization via monetary policy is not possible (even if it were, it would be undesirable)
- Role of central bank? It can manage price level and inflation but those do not matter so may as well close down central bank


P_1
$Y_1^S = A_1 K_1$
Negative Aggregate
Demand Shock
P_1^*
Monetary
or Fiscal Policy
Y_1^*
Y_1

Lecture 8

1. Monetary policy
    - already part of model, can use as is
2. Fiscal policy
    - not in model yet, will have to extend it
3. Pecking order of monetary and fiscal policy?

Key observation: sticky prices break first welfare theorem

- sticky prices = "friction"
- $\Rightarrow$ rationalizes some sort of policy intervention

Sticky prices: summary and policy implications

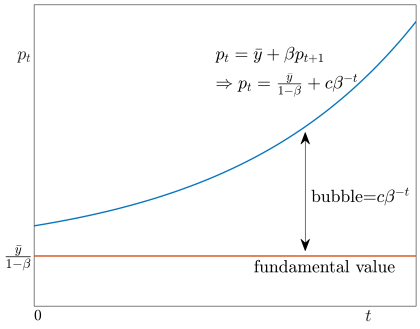
(Contrast with analogous slide for flexible prices from Lecture 7)

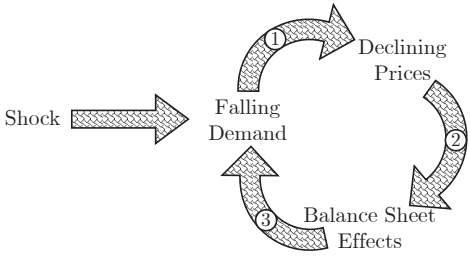
- Sticky prices break monetary neutrality and the classical dichotomy
- Corollary: monetary policy affects real variables
- 1st welfare theorem breaks: some policy intervention is desirable
- Stabilization policy? When there is a recession due to shortfall in aggregate demand
  - stabilization via fiscal policy is both possible and desirable
  - stabilization via monetary policy is both possible and desirable unless ZLB binds
  - no clear pecking order, use both depending on circumstances
- Role of central bank? control price level, stabilize recessions
  - see e.g. mandate of U.S. Fed ("dual mandate")

Lecture 9

1. The 2008 financial crisis: some facts
2. Asset bubbles
3. Financial frictions and amplification

Lecture 9

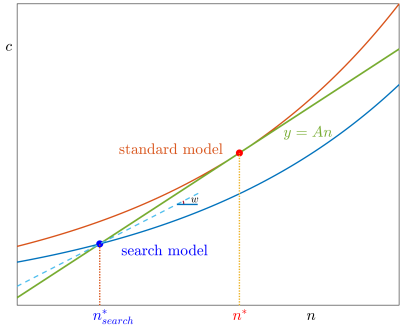

p_t
$p_t = \bar{y} + \beta p_{t+1}$
$\Rightarrow p_t = \frac{\bar{y}}{1-\beta} + c\beta^{-t}$
bubble=$c\beta^{-t}$
$\frac{\bar{y}}{1-\beta}$
fundamental value
0
t

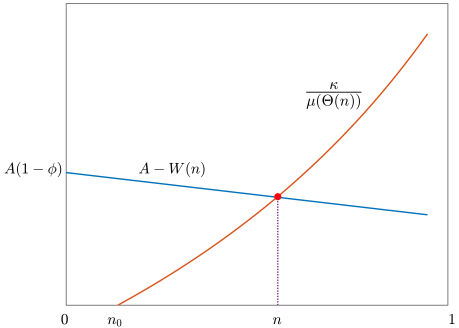

Shock
Falling Demand
1
Declining Prices
2
Balance Sheet Effects
3

Lecture 10

1. Measuring the labor market and unemployment
2. Unemployment: Diamond-Mortensen-Pissarides model
3. Inequality and heterogeneity in macro

Lecture 10


c
standard model
$y = An$
$-\vec{w}$
search model
n^*_{search}
n^*
n


$\frac{\kappa}{\mu(\Theta(n))}$
$A(1-\phi)$
$A - W(n)$
0
n_0
n
1