EVALUATION GUIDELINES - Written examination

EXC 35251
Macroeconomics

Department of Economics

Start date:	24.05.2017	Time 09:00
Finish date:	24.05.2017	Time 12:00

For more information about formalities, see examination paper.

Exercise 1 (weight 25 %) Multiple choice:

(i) Consider an economy where the GDP is equal to 1326, depreciation of real capital is 185, private consumption is 741, public consumption is 257, net investments in real capital is 124, and import is 593.

Export is then given by

a) 607

b) 19

c) 610

d) 612

Correct answer is d).

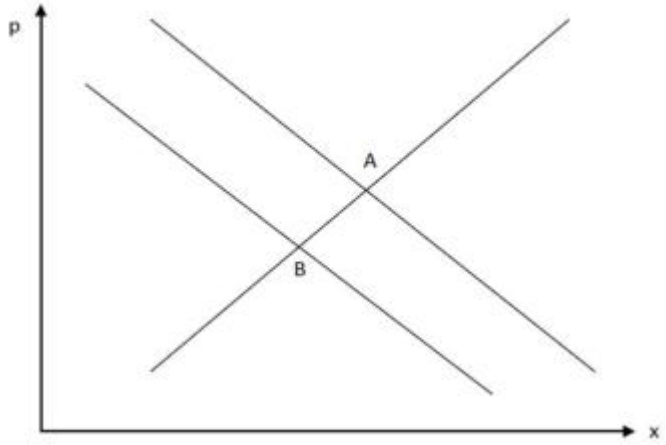
(ii) Which of the following statements are **false**:

a) If the government is borrowing by issuing public debt and the current account is balanced then private sector must be saving.
b) If both government budget and current account are in balance, then the economy's capital stock is ultimately financed by savings of resident households.
c) If both government and current account is in surplus then private sector must be saving.
d) If private sector is a net borrower and the government budget is in balance, then the country must be running a current account deficit.

Correct answer is c).

(iii) The diagram below (fig a) represents a market characterized by perfect competition. Now, assume that the diagram is a representation of two different equilibria in the labour market, where p refers to the wage rate and x refers to units of labor.

Fig a



Assume that A is the old equilibrium and that B is the new equilibrium. What can explain the transition from the old to the new equilibrium?

a) There has taken place a decrease in labour supply, for example due to trade unions demanding higher wages.

b) There has taken place a decrease in labour demand, for example due to a negative shock to labor productivity.

c) There has taken place an increase in labour demand, for example due to a positive shock to labor productivity.

d) There has taken place an increase in labour supply, for example because households assign a lower value to leisure relative to consumption.

Correct answer is b).

(iv) The real exchange rate

a) depends on the nominal exchange rate, house prices and inflation abroad.
b) depends on the nominal exchange rate, domestic inflation and inflation abroad.
c) is independent of the nominal exchange rate due to money neutrality.
d) does not depend on inflation due to money neutrality.

Correct answer is b).

Exercise 2 (weight 25 %)

a) What is a production function?
b) In the Solow model, what are the assumptions of the production function?
c) What is the Steady State and the Golden Rule in a Solow model?

d) Use the Solow model to explain what will happen if a country increase their savings rate.

e) What does the Solow model predict about growth in rich countries (high GDP per capita) compared to poor countries (low GDP per capita) and what is it called?

Answer: B & W 6th edition chapter 3 and 4.

a) A production function is a theoretical relationship linking aggregate output to inputs of factors of production.

b) Assumptions: Diminishing marginal productivity: Output (Y) grows with capital (K), but the principle of declining marginal productivity implies that the curve becomes flatter as K increases. Constant returns to scale: A doubling of all inputs leads to a doubling of output.

c) Steady State is when the capital – labour ratio stops changing. Then investments is equal to depreciation. Golden Rule: the proposition that per capita consumption is maximized in a growing economy at the point at which the marginal product of capital is equal to the growth rate.

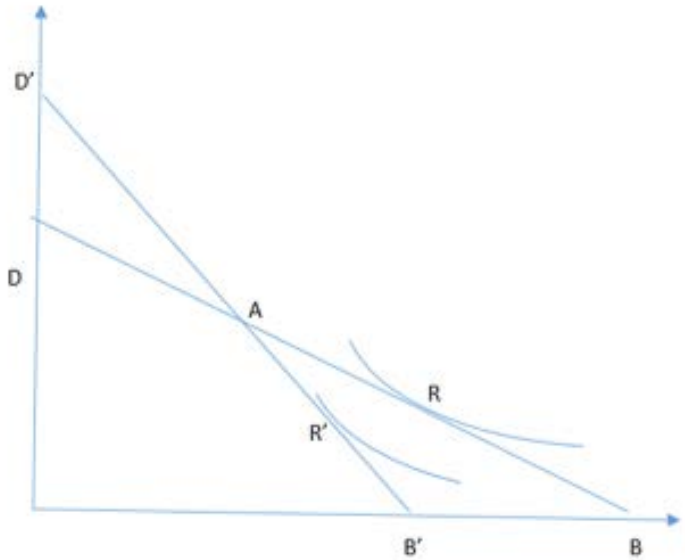
d) If a country increase their savings rate, they will get a temporary boost. Once the new steady state has been reached, no further growth effect can be expected from a higher savings rate. Increased savings does not affect long run growth.

e) The Solow model predicts that poorer countries should grow faster than richer ones. It is called the Convergence hypothesis: The more distant a country's GDP is from its steady state, the faster it will grow in subsequent years. This is also explained by using the term: Catching up.

Exercise 3 (weight 25 %)

The diagram (fig b) represents the household's intertemporal budget constraint in a two period's model.

Fig b



a) Name the axes and define the line going from D to B.

b) Define point A.

c) Explain point R.

d) Explain the change of the slope of the line from DB to D'B'.

e) Explain the change from point R to point R'.

f) Suppose a household has chosen a point along line DB but not point R. Explain by using the diagram why this is not optimal.

g) If you use the diagram to discuss countries instead of households. How can you place countries at points along the line DB?

Answer:

B & W 6th edition chapter 7 and 8. The diagram like fig 8.6.

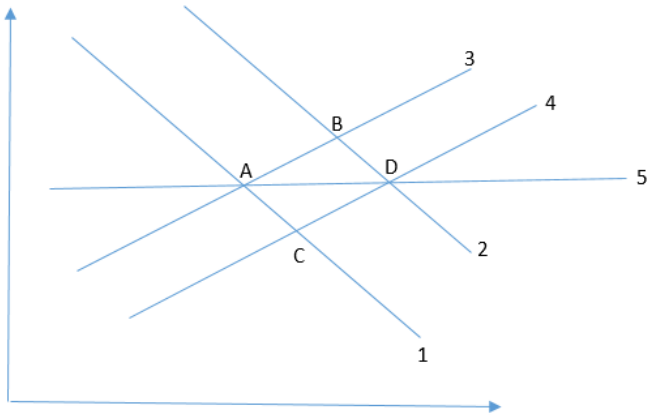
a) Horizontal axis consumption today and vertical axis consumption tomorrow. Line DB represents all possibilities of consumption today and tomorrow given a real interest rate.
b) Point A is the autarky point. This is the point when a household or a country does not trade and consume its endowment.
c) Point R is the optimal point where the slope of the budget line (the real interest rate) equals the slope of the indifference curve (the marginal rate of intertemporal substitution (MRIS)).
d) The change is due to an increase in the interest rate. The budget line becomes steeper and rotates about the endowment point A.
e) The consumer in this case is a borrower who tends to consume less today because the interest rate at which resources are brought forward has increased.
f) Points to the left indicates less consumption today than possible. This is not optimal because MRIS > the real interest rate. The value of last unit consumption today is perceived to be more worth than what they get back from savings tomorrow.
g) A way to place a country could be to look at their current accounts. Then you find countries like Norway and China with a surplus (points to the left from point R) and USA with a deficit (points to the right from point R).

Exercise 4 (weight 25 %)

a) Explain the Keynesian multiplier.
b) Define the Taylor rule and explain how it is used differently in the short run compared to the long run.

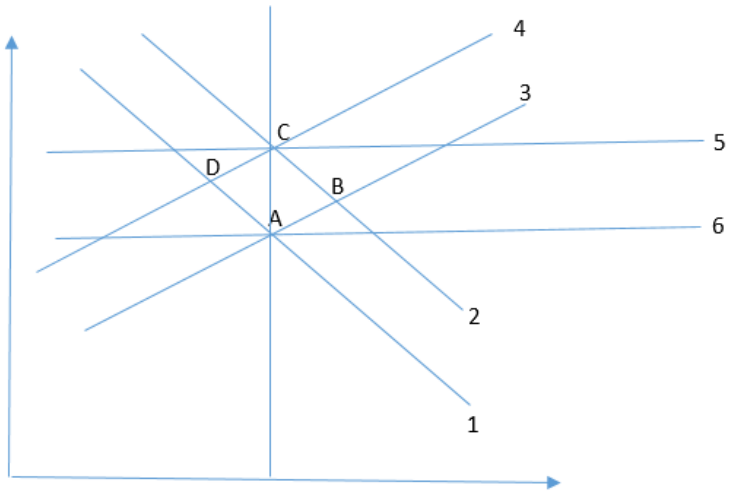
c) Explain by using a Mundell-Fleming model (the IS-TR-IFM model) the effect of an expansionary monetary policy under flexible exchange rates. Refer to fig 1 if desired.

Fig 1



d) Explain by using the AD-AS framework the effect of an expansionary monetary policy under flexible exchange rates. Refer to fig 2 if desired.

Fig 2



Answer:

a) B & W 6th edition chapter 10.2.4 The Keynesian multiplier. The multiplier effect corresponds to the fundamental insight provided by the circular flow diagram in chapter 2. Each individual's spending is someone else's income. By raising incomes, an exogenous increase in demand generates additional desired demand, which means more spending and income, a never ending process, although at each stage, the effect becomes smaller, and eventually dies out. The circular flow diagram showed where these leakages occur: taxes, savings, and imports each capture a portion of any additional income.

b) B & W 6th edition chapter 10.4.1. The Taylor rule states that the central bank increases the interest rate relative to the neutral level if the inflation rate rises relative to its target rate (inflation gap), or if output rises relative to its trend level (output gap). In the short run prices are assumed to be constant. Then the central bank increases the interest rate whenever output increases relative to potential output (output gap).

c) B & W 6th edition chapter 11.5.1. Fig 11.8. When the exchange rate is floating monetary policy becomes powerful when it comes to affecting GDP. This is because the exchange rate becomes endogenous. Its movements affects the economy's competitiveness and therefor the position of the IS curve. In fig 1: start from point A, line 1 (IS), line 3 (TR) and line 5 (IFM). Shifting TR right (line 4). Point C both equilibrium in the goods and money market, but not in international financial markets. At point C, the lower interest rate triggers capital outflows and the exchange rate depreciates. The resulting gain in competitiveness raises demand for domestic goods and the IS curve shifts to the right (line 2). New equilibrium point D.

d) B & W 6th edition chapter 13.3.6. Monetary policy. Fig 13.13. The long run result of an expansionary monetary policy is the dichotomy principle that the real side of the economy is left unaffected. The only change in the long run is higher inflation. In fig 2 this is the move from point A to point C. In the short run the AD curve shift from 1 to 2 (point B), but in point B the actual rate of inflation exceeds the underlying rate. Over time underlying inflation begins to track actual inflation (line 3, short run AS, shift left to line 4). New long run equilibrium point C. Line 6 shifting to line 5 is the new long run aggregate demand curve (LAD). It shifts because the underlying inflation increase.