EXC 35251
Macroeconomics

Department of Economics

Start date:	25.05.2016	Time 09:00
Finish date:	25.05.2016	Time 12:00

For more information about formalities, see examination paper.

Exercise 1 (weight 25 %)

a) Define output gap and business cycle.

b) Explain how inflation and unemployment are related to the business cycle.

c) Explain the difference between fiscal policy and monetary policy.

d) Explain the Key Accounting Identity (same notation as in the compulsory textbook): (S-I) + (T-G) = (X-Z).

e) Use the equation from d) to explain the situation in a country if (S-I) = - 10 % of GDP and (T-G) = 5 %.

Answer:

a) B & W 6th edition chapter 9 and 12. Output gap: temporary deviations of GDP from its trend or equilibrium level. Business cycles: Succession of periods of rapid growth and slowdown or decline in which output fluctuates around its long run trend. When explain the terms it is positive if students use a figure like fig 10.1 Showing how actual GDP fluctuates around its trend overtime.

b) B & W 6th edition chapter 1. Inflation is procyclical: It tends to rise in periods of high growth and declines in periods of slow growth. In contrast, the unemployment rate is countercyclical: it moves against the cyclical behaviour of output, falling when output is growing rapidly and rising when output is growing more slowly or falling.

c) B & W 6th edition chapter 1. Fiscal policy: The use of the government budget to affect the volume of national spending or more generally to provide public goods and services as well as to redistribute income. Monetary policy (chapter 1 and 9): Actions taken by central banks to affect monetary and financial conditions in an economy.

d) B & W 6th edition chapter 2. S = private sector savings. I = private sectors investments. S-I = net private savings. G = public consumption. T = net taxes. G-T = government budget. X = exports. Z = imports. X-Z= trade balance or net exports. In the book it is also used CA = current account instead of the trade balance.

e) B & W 6th edition chapter 2. If S – I = - 10 % then private sector is a net borrower. If T – G = 5 % then the government is saving, but what private sector need to borrow are more than government is saving. Then the country as a hole must borrow (X-Z= - 5 % of GDP).

Exercise 2 (weight 25 %)

a) Explain the household's intertemporal budget constraint and define indifference curves in a two period's model (consumption today and consumption tomorrow).

b) Use the model from a) to discuss countries instead of households. Suppose a country has chosen a solution along the budget line, but not optimal. Explain by using the model why this is not optimal.

c) As a follow up to b): can you name countries in such a situation and give examples of reasons why they have chosen a not optimal solution.

d) Explain the quotation: "Tax smoothing is the natural counterpart to consumption smoothing of households".

Answer:
a) B & W 6th edition chapter 7 and 8. Budget line like in fig 7.1. The budget line represents all possibilities of consumption today or tomorrow. The slope is given by the real interest rate. Along the line there will be a point called the Autarky point: This is the point when a household or a country does not trade and consume its endowment. If the real interest rate change, the budget line will rotate about its endowment point (fig 8.6). Along any indifference curve, utility is constant (fig 8.1). The slope of a indifference curve is called the marginal rate of intertemporal substitution (MRIS) and shows how many units of goods tomorrow we are willing to give up for an additional unit of goods today.

b) B & W 6th edition chapter 7 and 8. The optimal point is where the slope of an indifference curve = the slope of the budget line (MRIS equals the real interest rate) (like point R in fig 8.2). Then at points to the left along the budget line, MRIS will be higher (absolute value) than the real interest rate. This is countries that decided to consume little today (save a lot today) for more back tomorrow. We explain why it is not optimal by comparing the two slopes. If MRIS > real interest rate, then the value of last unit consumption today is perceived to be more worth than what they get back from saving tomorrow. In other words households could increase their well being if they consumed more today (saved less today).

c) B & W 6th edition chapter 8. A way to place a country could be to look at their current accounts. Then we find countries like Norway and China with a surplus and USA with a deficit. B & W look into the example of China in box 8.3 (Why China Defies the Permanent Income Hypothesis). Using the model, this would be like point M in fig 8.2 (little consumption today compared with tomorrow). Reasons could be an under developed banking system, no system of social security and state owned firm. In Norway the reason could be that the government save because they expect an aging population in the future.

d) B & W 6th edition chapter 8.2.2 and 17.3.1. Consumption smoothing: Optimal choice by households to smooth out the impact of temporary disturbances to income on consumption plans by either borrowing or saving. Tax smoothing: The proposition that a government should not change tax rates in response to temporary causes of budget deficits but should borrow instead.

Exercise 3 (weight 25 %)

a) Define the monetary base and the money multiplier.

b) Use the concepts from a) to explain, how banks can "create money".

c) How can a central bank increase currency in circulation?

d) After the financial crises of 2008, many countries experienced that: "Although the central bank ran an extreme expansionary monetary policy, the money supply went down." Give examples of reason why this situation can occur.

Answer:

a) B & W 6th edition chapter 9. Monetary base is the sum of currency in the hands of the public and bank reserves. The money multiplier links the monetary base and wider monetary aggregates.

b) B & W 6th edition chapter 9.2.3. Banks create money when they from deposits grant loans. As explained in fig 9.2, an initial deposit triggers a succession of loans paid in the form of deposits. The chain of loans and deposits eventually dies out because both banks and the public keep a percentage share as reserves.

c) B & W 6th edition chapter 9. Fig 9.4. The balance sheet of a Central Bank: Increase currency in circulation by buying foreign assets (not a tool if flexible exchange rates), increase loans to banks by reducing the policy rate or buying securities (also called open market operations or quantitative easing).

d) B & W 6th edition chapter 9. If a central bank use tools as explained in c) the monetary base increase, but the money supply also depends on how the money multiplier works and further, the money multiplier depends on how much reserves banks and the public holds. Banks can hold reserves in their own vault or in the central bank. During a crisis, both banks and the public will hold more reserves. This effect will work against the increase in the monetary base and if the latter is the strongest, the total effect can be less money in circulation. B & W define different aggregates of money in the introduction to chapter 9 (M1, M2 and M3), but then don't distinguish between them – use only M for money supply = currency in circulation + Bank deposits.

Exercise 4 (weight 25 %)

a) Explain two polar cases when it comes to exchange rate regimes and give examples of countries that has chosen each type.

b) Define the curves in a Mundell-Fleming model (the IS-TR-IFM model).

c) Explain by using the model from b), why it is important to distinguish between types of exchange rate regimes when to discuss the effect of an expansionary monetary policy?

d) Explain by using the model from b) the following quotation: "fixed but adjustable exchange rates provide some limited degree of monetary effectiveness.

Answer:

a) B & W 6th edition chapter 11. Two polar cases when it comes to exchange rate regimes: Fixed exchange rates (monetary authorities maintain the value of the exchange rate at a publicly announced parity) and fully floating exchange rates (The central bank takes no direct responsibility for the value of its currency, which is set on foreign exchange markets. Examples of fixed: Many countries in Europe has pegged their currency to the euro (Denmark, Bulgaria, Bosnia and Herzegovina, Croatia, Czech Republic). Examples of floating: The Eurozone, the UK, the USA, Japan and Norway.

b) B & W 6th edition chapter 11. IS curve: for given values of exogenous variables, the combinations of nominal interest rate (i) and real output (GDP) that are consistent with goods market equilibrium. TR curve: a graphical representation of the Taylor rule, which states that central banks adjust the interest rate to reduce fluctuations in output and inflation. IFM line: International financial markets line is the line in the open economy IS-TR diagram describing the interest rate at which net capital inflows are zero.

c) B & W 6th edition chapter 11. A central bank cannot choose the interest rate in an open economy and a fixed exchange rate system. The TR curve has no meaning. The central bank must intervene in the market as long as the domestic interest rate is different from the foreign interest rate. The loss of monetary policy autonomy is a consequence of full capital mobility. This is different if a central bank let the exchange rate be set on foreign exchange markets. Then a change in the monetary policy will affect the exchange rate and then the competitiveness of the country (fig. 11.8). The conclusion from the model will be that monetary policy is a powerful instrument for adjusting business cycles in the short run.

d) B & W 6th edition chapter 11.4.5. If a central bank nominal revaluate (an increase in the external value) or devaluate, it will lead to a change in the real exchange rate (when we assume in the short run that the price levels at home and abroad are given). This will change the countries competitiveness and we explain it by shifting the IS curve (fig 11.7). Monetary effectiveness refers to the effect on production (GDP).