BI

EVALUATION GUIDELINES - Written examination

EXC 35251
Macroeconomics

Department of Economics

Start date:	13.05.2019	Time 14:00
Finish date:	13.05.2019	Time 17:00

For more information about formalities, see examination paper.

The exam consists of four sub-sections. Each weighted 25 % of the total.

Exercise 1 (weight 25 %):

Explain briefly the difference between:

a) fiscal policy and monetary policy.

b) the (Keynesian) demand multiplier and the money multiplier.

c) returns to scale and marginal productivity.

d) instruments, targets and objectives of monetary policy.

c) steady state and the golden rule in a Solow model.

Guidelines:
B & W 7th edition.

a) Chapter 1. Fiscal policy: Government expenditures and taxes to affect national spending, provide public goods and redistribute income. Monetary policy: Action taken by central banks to influence on interest rates and exchange rates.

b) Chapter 9, 10, 11, 12. Demand multiplier: the effect of increases in exogenous components of aggregate demand on total aggregate demand. The higher the marginal propensity to consume, the higher the multiplier. Money multiplier: the ratio of monetary aggregates (M1, M2) to the monetary base. It is the chain of money and credit creation.

c) Chapter 3: Returns to scale is used to explain what happens to output (increasing, constant or decreasing), if all inputs (labour, capital), increase in the same proportion. Marginal productivity is used to explain the effect on output if one input increase leaving all others constant.

d) Chapter 10: Instruments are first of all the policy rate (or interbank interest rates) and the supply of bank reserves (market operations) (a third is required reserve ratio, but not commonly used today). Examples of objectives are low and stable inflation, GDP growth or high employment or combinations of these. Examples of targets are inflation, money growth or exchange rate. The distinction between targets and objectives come from the fact that none of the objectives are in direct control of the central bank.

e) Chapter 3. Steady State, fig 3.5: With labour assumed constant, the capital labour ratio stops changing when investment is equal to depreciation. Golden Rule, fig 3.9: 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.

Exercise 2 (weight 25 %)

a) Find and explain the real GDP growth rate if growth rates of nominal GDP = - 3.6 % while the GDP deflator = 1.0 %.

b) Define the equation for the circular flow of the real economy and use the equation to explain the example of trade balance (X – Z) = - 3.6 % of GDP.

c) Trade balance (X – Z) = - 3.6 % of GDP and the government budget (T - G) = - 2.2 % of GDP. Use these numbers to find the net flow of the private sector. Is private sector a borrower or a saver? Explain. What do you understand from the net flow in private sector about private households this year?

d) Find the real interest rate and explain what it means if the nominal interest rate = 1 %, the change of the nominal exchange rate = 3 % (British term), the domestic inflation rate = 2 % and the foreign inflation rate = 5 %.

e) Use numbers from d) to find the rate of change of the real exchange rate and explain what it tells about competitiveness.

f) Explain the purchasing parity condition (PPP) and discuss if the numbers given in d) is in accordance with this condition?

Guidelines:
B & W 7th edition chapter 2 and 5.

Numbers taken from Table 2.1 (B & W). Growth rates of Nominal GDP for the Euro Area was -3.6 % in 2009 while the GDP deflator was 1.0 %, the same year.

a) Real growth rate = Nominal growth rate – Inflation: - 4.6 % = - 3.6 % - 1 %. The total production (real GDP or volume) fell by 4.6 %. Nominal GDP did not fall that much because prices increased by 1 %.

Number taken from Table 2.5 (B & W), the trade balance for Italy, year 2010.

b) Equation 2.5: $Y = C + I + G + X - Z$ then $X - Z = Y - (C + I + G) = Y - A$ (absorption). If $X - Z = -3.6$ % then $Y < A$. Explaining that domestic spending on consumption and investments was more than domestic production. From this number we cannot tell if it was high consumption or high investments or both.

Numbers taken from Table 2.5 (B & W), the trade balance for Italy and Government budget, year 2010.

c) Equation 2.7: (S-I) + (T-G) = (X-Z) then net flow of private sector (S-I) = - 1.4 %. It means that private sector is a net borrower. This year both Italian private and public sector were spending more than they took in. Therefore, the country as a hole had to borrow abroad. In private sector If S = household's savings and I = net investments by companies, then S must be less than I, but we don't know if S is positive or negative. We would know the size of S if we knew disposable income and consumption because S = Disposable income – consumption by households in private sector.

d) The real interest rate = Nominal interest rate – inflation: - 1 % = 1 % - 2 %. A negative real interest rate explains that there is no real cost of borrowing money. It is a gain because inflation is higher than the nominal interest rate.

e) Equation 5.8: The rate of change of the real exchange rate = rate of change of the nominal exchange rate + domestic inflation rate – foreign inflation rate: 0 = 3 % + 2 % - 5 %. Higher nominal exchange rate (British term = foreign currency units per domestic unit) is a nominal appreciation and a loss of competitiveness, but this is offset by an inflation differential (2 % - 5 % = - 3 %). Then there is no real loss of competitiveness.

f) Chapter 5.4. The Purchasing Power Parity (PPP). It is the implication of monetary neutrality. According to PPP, the purchasing power between two countries will be the same in the long run. In other words: the real exchange rate is constant in the long run. The numbers given in the exercise is in accordance with the PPP because higher inflation foreign than domestic is offset by a nominal appreciation of the same size (3 – 3 = 0).

Exercise 3 (weight 25 %)

In this exercise you can, but are not expected to draw diagrams when answering the questions.

a) Explain what the following means: "In the labour market every individual is in one of three states".

b) In a diagram used to explain the labour market for unskilled workers: What is on the axes, who are behind the curves, and how would you explain the slopes of the curves?

c) Define the term "globalization" and use the diagram from b) to discuss the effect of the robot revolution and the inflow of unskilled workers.

d) Use the model from b) and topics from c) to discuss the puzzle: "Although the unemployment rate is extremely low, the real wage has not increased".

Guidelines:
B & W 7th edition chapter 4.

a) Fig 4.14: one of three states: employed, unemployed or out of the labour force.

b) Like fig. 4.7. Real wage on the vertical, and unskilled workers on the horizontal axis. Companies demanding unskilled workers. The curve slopes downwards in the diagram because if diminishing marginal productivity of labour, then companies will not hire more workers if not the real wage is lower. Supply side: Unskilled workers that want to supply more if the real wage increase.

c) Chapter 1 and 4. Globalization: The process of increasing internationalization of economic relations, especially with respect to trade in goods, services and financial assets and the increasing mobility of labour. Argument that "Robot revolution" will cause less demand for unskilled workers while inflow of workers will lead to more supply. Both effects will lead to lower real wage, but the effect on unemployment is unsure.

d) Here we have an answer to the unsure effect on unemployment from c). The supply side effect is the strongest meaning employment is higher (unemployment is lower).

Exercise 4 (weight 25 %)
In this exercise you can, but are not expected to draw diagrams when answering the questions.

Consider an aggregate supply (AS) and aggregate demand (AD) model:

a) Define the AS curve. What determines the slope of the AS curve and what is the difference between the short run and the long run AS curve?

b) Use the AS AD model to analyze the effect of an expansionary fiscal policy, under fixed exchange rates, in the short run.

c) In the case description in question b), what happens to the domestic interest rate?

d) What are the effects of the situation described in question b) in the long run?

e) According to Fig. 14.9 (Burda & Wyplosz), the real exchange rate between Germany and France has almost been identical since early 2000. From this information, what to derive about the development of nominal exchange rates and inflation rates between the two countries, in this period?

Guidelines:
B & W 7th edition chapter 13 and 14.

a) The aggregate supply curve is the total volume of goods and services brought to market by producers at a given inflation rate. The curve combines the Phillips curve and Okun's law. In the short run it slopes upwards in a diagram with output on the horizontal axis and inflation on the vertical axis, because we assume a trade off between inflation and output (and between inflation and unemployment according to the Phillips curve). In the long run there is no trade off. Then the aggregate supply curve is vertical at the level where unemployment is at its equilibrium rate and output at its trend growth rate.

b) Chapter 14. Fig 14.6. Under fixed exchange rates: an expansionary fiscal policy will increase GDP by the initial change multiplied by the multiplier in the short run (point B in the diagram). But higher GDP will also lead to higher inflation.

c) I we go behind the AD AS model to the IS TR IFM model (chapter 12), we find that the domestic interest rate will not change. To run a fixed exchange rate regime, the Central Bank must keep the domestic interest rate down and equal to the foreign interest rate by running an expansionary monetary policy.

d) In the long run, according to the model, the economy moves back to where it started. This leads to the recognition that fiscal policy is inherently temporary. The model describes how the economy will move through the phases: higher inflation and reduction in GDP (stagflation), lower inflation and lower GDP and lower inflation and higher GDP. Long run equilibrium conditions: 1. Inflation = underlying inflation and there is no output gap. The economy must stabilize along the long run aggregate supply line (LAS). 2. Inflation can not deviate from the foreign inflation rate if the exchange rate is to remain fixed. The economy must return to the long run aggregate demand line (LAD). 3. Government budget constraint rules out permanent fiscal expansion. The expansionary policy must be reversed. The AD curve must return to its initial position.

e) With a common currency (Euro), it follows that the inflation rate in the two countries must have been the same (the equation is explained in exercise 2).