

Q1 [12%] (i) Find GDP and public deficit in the economy described by the following equations:

$$C = 30 + \frac{3}{4}Y_d \quad T = 10 + \frac{1}{4}Y \quad TR = 10 \quad G = 40 \quad EX = 10 \quad IM = \frac{1}{8}Y_d.$$

(ii) Find the change in GDP in the economy described in (i) if the tax rate duplicates.

(iii) Find the change in GDP in the economy described in (i) if public spending is cut by half.

(iv) Find the GDP in the economy described in (i) that makes the public deficit zero.

(v) Optional [5%]: find GDP in the economy described in (i) if $T = 10 + \frac{1}{4}C$.

Q2 [12%] Economies A and B are identical except that the exchange rate in A is fixed but flexible in B (there are other economies, apart from A and B).

(i) If the same expansionary monetary policy is conducted in A and B, in which economy the change in GDP is larger? In which one the change in the interest rate? In which one the change in the inflation rate? Justify the answers illustrating the arguments with graphical representations of the models used.

(ii) If the same contractionary fiscal policy is conducted in A and B, in which economy the change in GDP is larger? In which one the change in the interest rate? In which one the change in the inflation rate? Justify the answers illustrating the arguments with graphical representations of the models used.

Q3 [12%] The president p of the central bank is mandated to control the inflation rate by regulating the amount of money in the economy. President p believes that the inflation rate is 'excessive'.

(i) If she chooses to use as monetary policy tool the reserve ratio, how should it be modified? And if she chooses open market operations as the policy tool? Justify the answers illustrating the arguments with graphical representations of the models used.

(ii) The president p' of the government believes that the inflation rate is right. Explain, using also graphical representations of the models used, how the tax rate had to be modified to neutralize the effect on the inflation of any of the policy choices in (i) by p . What if p' uses transfers instead of the tax rate?

Q4 [8%] (i) Find cash and the money multiplier if the monetary base is 1000, the money stock is 4000 and the reserve ratio r is $1/10$. (ii) What change in r neutralizes the effect on the money stock of an expansionary open market operation worth 100?