

9. AGGREGATE DEMAND AND INCOME IN THE SHORT TERM

Question 9.1.

Define the following concepts:

- a) monetary contraction;
- b) monetary expansion;
- c) the opportunity cost of holding money;
- d) money supply;
- e) money demand
- f) the nominal interest rate;
- g) real interest rate;
- h) monetary policy.

Question 9.2.

In a particular economy, the demand for money is given by

$M_d = P \cdot (0,5 \cdot Y - 4000 \cdot i)$, with the usual notation.

- a) Explain why the demand for money depends positively on Y , the real product.
- b) Explain why the demand for money depends negatively on i , the nominal interest rate.
- c) What happens to money demand (nominal) when, ceteris paribus, the price level (P) increases? Write the expression of the demand for liquidity (purchasing power of the currency) and interpret it.

Question 9.3

Considering the expression of the demand for money from the previous exercise, suppose that $P = 1$ and $Y = 1000$ m.u.

- a) Calculate the value of the money supply by the central bank if the nominal interest rate is set at 5% / year ($i = 0.05$ / year). Plot this solution in the plan (M_d, i).
- b) Suppose that the central bank intends that the market nominal interest rate increases by 3 percentage points / year. What should be the new value of the money supply? Is this a monetary expansion or a monetary contraction? Represent these changes in the graph that you drew earlier.
- c) Assume that the central bank intends that the nominal interest rate remains fixed at 8% / year. How much should vary the money supply in a scenario where real output increases by 3% / year and the inflation is 2% / year?
- d) Represent graphically the evolution presented in the preceding paragraph in the plan (M_d, i).

Question 9.4.

Using appropriate graphs, explain:

- a) How the central bank can determine the nominal interest rate;
- b) Why the central bank cannot set the nominal interest rate and the money supply in an independent manner.

Question 9.5.

Explain the relationship between the nominal interest rate and the real interest rate. Under what conditions we can assume that the central bank determines the real interest rate?

Question 9.6.

Consider a closed economy described by the following equations for the market of goods and services, with the usual notation:

$$C = 250 + 0,75.(Y - T),$$

$$I = 2500 - 10000.r,$$

$$T = 1000 \text{ m.u.},$$

$$G = 1000 \text{ m.u.},$$



- a) Calculate the short-run equilibrium product, assuming that the central bank can fix the real interest rate at 5% / year ($r = 0.05$ / year).
- b) Suppose that the potential output (or full employment output) is equal to 11000 m.u. What is the value of the output gap? Is it an expansionary or a recessive gap?
- c) Propose a monetary policy that eliminates the gap calculated in the previous paragraph. Is it a monetary expansion or a monetary contraction?
- d) Plot the initial situation and the solution proposed in the previous paragraph in the space (Y, D).
- e) How otherwise might have been eliminated the output gap? Indicate an alternative economic policy (and quantify it) to move the economy to full employment.

10. AGGREGATE DEMAND AND AGGREGATE SUPPLY - AN INTRODUCTION

Question 10.1.

Define the following concepts:

- a) aggregate demand curve;
- b) the aggregate supply curve;
- c) short-run equilibrium;
- d) long-run equilibrium;
- e) demand shock
- f) supply shock.

Question 10.2.

The main weakness of the basic Keynesian model is that it does not explain the determination of:

- a) the product;
- b) the aggregate demand;
- c) the unemployment;
- d) the price level.

Question 10.3.

The slope of the curve of aggregate demand c in the space (Y, P) is:

- a) negative;
- b) positive;
- c) null;
- d) infinite.

Question 10.4.

Which of the following events does not shift the aggregate demand curve?

- a) an increase in autonomous consumption;
- b) an increase in taxes;
- c) an increase in potential output;
- d) an increase in net exports;
- e) a change in the monetary policy followed by the central bank.

Question 10.5.

The slope of the aggregate supply curve in the space (Y, P) is:

- a) variable;
- b) negative;
- c) positive;
- d) zero;
- e) infinite.

Question 10.6.

Which of these events is a potential cause of an increased price level?

- a) excessive aggregate demand;
- b) aggregate supply shock;
- c) potential output shock;
- d) any of the events mentioned.

Question 10.7.

An increase in spending on Defense makes:

- a) The AD curve to shift to the right;
- b) AD curve to shift to the left;
- c) AS curve to shift to the right;
- d) AS curve to shift to the left;
- e) both AD and AS shift to the right.

Question 10.8.

The Sunderland economy needs a budget consolidation resulting from the large increase in public debt levels. Thus, its government undertook a tax increase and a public spending decrease.

- a) What are the macroeconomic consequences of these measures in the short term? Explain appropriately, using a graphical representation of aggregate demand and aggregate supply.
- b) How will the Sunderland economy adjust in the medium and long term? Explain suitably and carry out a graphic illustration.

Question 10.9.

Using the model of aggregate demand and supply (AD / AS):

- a) Describe and illustrate graphically the situation of an economy in which there is a short-run equilibrium with an effective unemployment rate higher than the natural rate of unemployment.
- b) Starting from the situation described in the previous paragraph, explain how a restrictive fiscal policy to reduce the high budget deficit in this economy, leads, *ceteris paribus*, to an increase in unemployment. Illustrate graphically.
- c) Explain and illustrate graphically how the economy would tend to evolve in the absence of any economic policy measures.

Question 10.10.

Using the model of aggregate demand and aggregate supply (AD / AS):

- a) Describe and illustrate graphically the situation of an economy in which the short-run equilibrium is verified and at the same time there are strong inflationary pressures (actual product is higher than potential output).
- b) Starting from the situation described in the previous paragraph, show how a contractionary monetary policy can eliminate those inflationary pressures. Illustrate graphically.

c) Explain and illustrate graphically how the economy would tend to evolve in the absence of any economic policy measures.

Question 10.11.

"The tendency of the economy to self-correction makes the use of active stabilization policies unnecessary." Is this statement true? Explain your answer.

Question 10:12.

What would be the perspective of Keynes on the self-adjustment economic mechanisms when he wrote that "in the long run we are all dead"?

Question 10.13.

Consider the following data for an economy similar to the Portuguese economy in the years 2011 and 2012:

Y_{2011}	Y_{p2011}	P_{2011}	G_{2012}
155,064	159,285	1,102	32,153

where Y is GDP at market prices, Y_p is the potential output, G is public consumption (all measured at 10^9 euros base year 2005) and P is the domestic expenditure deflator.

The following aggregate functions for the year 2012 are known:

$$Y_{2012} = 139,661 + 0,275 \cdot G_{2012} + \frac{2.18}{P_{2012}}$$

$$P_{2012} = P_{2011} \cdot [1 + 0,0016 \cdot (Y_{2012} - 157,184)] + 0,0148$$

- Identify, and economically justify, each of the functions presented above and represent them graphically in the usual space.
- Calculate the equilibrium product and the equilibrium price index for 2012.
- Identify the value of potential output for 2012. What can you conclude about the type of cyclical gap observed? Economically justify all the calculations.
- How can we compare cyclical gap of the product in 2012 with the cyclical gap in previous year?
- Based on the results of c), proposes a fiscal policy that had allowed this economy to minimize the output gap in 2012. Quantify that policy.
- What other policies could have been used as alternatives to the policy proposed in the previous paragraph? Use an appropriate graphical representation to illustrate your answer.