**Monetary and Financial Economics**
Instituto Superior de Economia e Gestão

Exam – 5 July 2017 **- Duration: 2h**

---

1. **The exam has three groups. The points for each question are mentioned alongside.**

2. **The answers to the questions of each group have to be made in different sheets.**

3. **Only non-graphical calculators are allowed. It is not allowed the use of mobile phones or computers. Improper use will lead to cancellation of the exam.**

4. **It is not possible to use any reading material. During the exam no clarifications can be made.**

# I

**1.**

**a)** Explain the concepts of actual value and future value, and clarify how both are affected by decreases and increases of the interest rates and of the maturity of the investment. [1.50]

**b)** Comment the following statement: "The monetary aggregate M2 corresponds to the immediate means of payment". [1.00]

**2.** Consider the following information regarding two financial assets:

| Asset 1 | | Asset 2 | |
|---|---|---|---|
| Probability | Return (%) | Probability | Return (%) |
| 0,200 | 10 | 0,200 | 8 |
| 0,300 | 12 | 0,300 | 7 |
| 0,500 | 14 | 0,500 | 6 |

**a)** Compute the expected rates of return and the risks measured by the standard deviation, of each asset. [1.50]

**b)** Determine analytically and graphically the Investment Opportunity Set and the Efficient Frontier constituted by the two assets. [1.50]

**3.** Assuming the existence of a market portfolio and a risk-free asset, derive analytically the general expression for the Capital Market Line. [1.50]

# II

**4.** Consider a bond with a face value of EUR 100 and coupon interest rate of 2%. Determine the price at which one should sell the bond that was bought at EUR 80, in order to attain a return of 5%, keeping the bond for one year.
[1.00]

**5.** Taking into account the functioning of the bond market, explain the effect of a decrease in the expected inflation rate on the interest rate and illustrate graphically. [2.00]

**6.**

**a)** In the context of the Gordon model, present two reasons that justify the fact that a decrease in interest rates tend to increase the prices of stocks. [2.00]

**b)** Considering your knowledge of the exchange rate market, explain what will happen to the currency of a certain country if there is an increase in the preference for national goods, everything else constant. [1.00]

## III

**7.** Consider that the ECB wants to provide liquidity to the market in the amount of 150 billion EUR, via a reversible auction operation, and that it receives the following proposals (billion EUR) from the counterparts:

| Interest rate % | Bank A | Bank B | Bank C |
|---|---|---|---|
| 0.04 | 0 | 0 | 10 |
| 0.03 | 10 | 0 | 5 |
| 0.02 | 20 | 5 | 5 |
| 0.01 | 15 | 20 | 15 |
| 0.00 | 25 | 30 | 20 |
| -0.01 | 30 | 20 | 20 |
| -0.02 | 10 | 10 | 10 |

**a)** What is the marginal auction rate? [1.00]

**b)** What is the allotment rate? [1.00]

**c)** Determine the amount of funding that will be given to bank A. [2.00]

**d)** In what way a non-anticipated increase in the public's preference for circulation can affect the expected result on money supply from this provision of liquidity? [1.00]

**8.** Comment the following statement: Friedman's money demand theory does not ignore the interest rate but concludes that its influence is not very important for money demand. [2.00]