



**Public Finances in the Economic and Monetary Union (PFEMU)**  
ISEG - School of Economics and Management

Exam, 5 January 2017 - **Duration: 2h**

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- 1. The exam has two groups. The points for each question are mentioned alongside.**
- 2. ALL the questions in group ONE need to be answered.**
- 3. Choose ONLY 2 questions from group TWO.**
- 4. Only non-graphical calculators are allowed. It is not possible to use any reading material. During the exam no clarifications can be made. It is not allowed the use of mobile phones or computers. Improper use will lead to cancellation of the exam.**

## I

1. Consider the Sargent and Wallace (1981) unpleasant monetarist arithmetic.

- a) On the basis of equation (1), and mentioning the necessary assumptions, explain the link between the per capita stock of government debt and the inflation rate. [1.50]

$$1 - \frac{P_{t-1}}{P_t} \frac{1}{1+n} = \left[ \left( \frac{R_{t-1} - n}{1+n} \right) b_t^\theta + \frac{D_t}{N_t} \right] / h \quad (1)$$

- b) Starting from equation (2) below, obtain equation (1).

$$b_t^\theta = \left( \frac{1+R_{t-1}}{1+n} \right) b_t^\theta + \frac{D_t}{N_t} - \frac{H_t - H_{t-1}}{N_t P_t} \quad (2)$$

Note:  $P_t = (1/h) \frac{H_t}{N_t}$ ;  $N_t = (1+n)N_{t-1}$ . (notation as used in the class) [1.50]

2. Take the government budget constraint, in GDP ratios,

$$b_t = \frac{(1+r_t)}{(1+y_t)} b_{t-1} + g_t - \rho_t \quad (1)$$

where,  $g$  – government spending without interest payments;  $\rho$  – government revenue;  $b$  – stock of outstanding government debt;  $r$  – real interest rate (notation as used in the class),  $y$  – real growth rate.

- a) Augment (1) in order to include seigniorage revenues and comment the result. [1.50]

- b) Start from (1) to show the factors that influence the development of the debt-to-GDP. [1.50]

3. Explain succinctly:

- a) What are the major advantages and disadvantages of using discretionary fiscal policies, notably vis-à-vis other mechanisms? [1.50]

- b) What are the pre-requisites for discretionary policies to be effective in stimulating demand? [1.50]

4. Consider the following data for the Stability Program of country A:

Country A	2017	2018	2019	2020
Nominal GDP (EUR billions)	165000	168000	172000	177500
Long-term interest rate (%)	3.5	3.2	3.0	3.0
Primary spending (EUR billions)	72000	73000	73700	74000
Total revenue (EUR billions)	75000	75100	75200	75300
Government debt (EUR billions)	190000	185000	180000	177500
Total spending (EUR billions)	78650	78920	79100	79325

a) Compute the share of interest payments in GDP in 2019 and in 2020 and assess fiscal sustainability implications in that context (and present the calculations). [1.50]

b) For the period 2018-2019 assess and comment the compliance of country A with the EU fiscal framework (budget balance ratio, debt ratio). [1.50]

## II

Answer ONLY 2 of the following 3 questions:

5. Explain, both in terms of methods and of examples, how public spending efficiency can be assessed [4.00]

6. Explain the relevance of the cyclically adjusted budget balance and of the automatic stabilisers to assess the fiscal stance, describing also how such measures can be computed. [4.00]

7. Considering the following data for country B, and, for the period 2017-2020:

Country B	2017	2018	2019	2020
Real GDP growth (%)	1.0	0.5	0.5	0.0
Total revenue (% of GDP)	45.5	45.2	45.2	45.0
Total spending (% of GDP)	47.9	47.0	46.3	45.9
Total balance (% of GDP)	-2.4	-1.7	-1.1	-0.9
Debt (% of GDP)	115.2	114.9	115.2	116.7

a) Characterise the fiscal stance. [1.50]

b) Comment on the composition of the fiscal adjustment. [1.50]

c) Comment on the success of the fiscal adjustment. [1.00]