

ISCTE — INSTITUTO UNIVERSITÁRIO DE LISBOA

MACROECONOMICS – I

Midterm test

November 2016

Duration: 90 minutes

Group A

A1. (10 points) What are at least four of the main concerns of the study of macroeconomics?

A2. (40 points) Consider the following model of the labor market:

$$\begin{aligned}L^s &= \bar{a}w + \bar{\ell} \\L^d &= \bar{f} - \bar{g}w\end{aligned}$$

1. Identify the model's parameters.
2. Identify the endogenous variables.
3. Solve the model.
4. In the labor supply equation, if the “ $\bar{\ell}$ ” increases to some constant $\bar{\ell} > 1$, what would happen to the equilibrium wage and equilibrium labor?

Group B

(50 points) Consider the following Table and the information about the quantities produced and the prices of goods Y and X.

	2017	2018	2019
Quantity of Y	100	105	103
Quantity of X	5	3	4
Price of Y	\$5	\$5	\$5
Price of X	\$100	\$105	\$110

1. Calculate the value of nominal GDP for 2017 and 2018 years, and the growth rate for that period.

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2. Calculate the value of real GDP for the same years, using the following price indexes: Laspeyres, Paasche, and Fisher. (Formulas given below)
3. What is the growth rate of real GDP according to each one of the three indexes?
4. What are the major limitations of the conventional way of measuring real GDP, by using this type of fixed base year indexes? Explain.

Paasche Index P_t^P :

$$P_t^P = \frac{\sum_{i=1}^j Q_{i(t)} \times P_{i(t)}}{\sum_{i=1}^j Q_{i(t)} \times P_{i(0)}}$$

Laspeyres Index P_t^L :

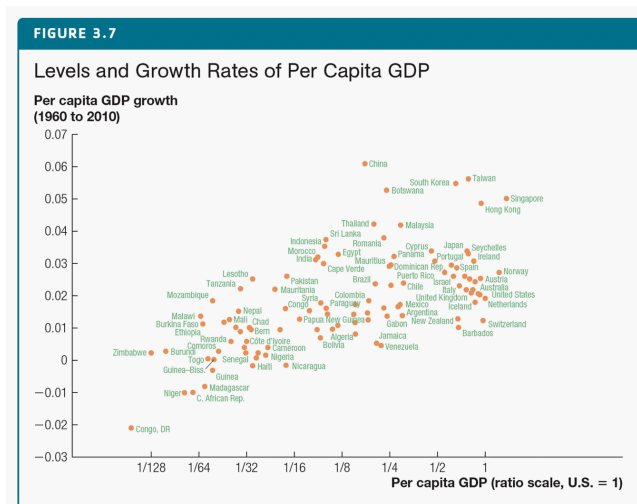
$$P_t^L = \frac{\sum_{i=1}^j Q_{i(0)} \times P_{i(t)}}{\sum_{i=1}^j Q_{i(0)} \times P_{i(0)}}$$

Fisher index P_t^F :

$$P_t^F = \sqrt{P_t^P \cdot P_t^L}$$

Group C

C1. (25 points) How would you define real economic convergence across countries? Consider the next figure from chapter 3 of our textbook. Do you consider that the information in that figure provides evidence against (or in favour) of real economic convergence since the 1960s? Explain.



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C2. (25 points) — Express the following functions in terms of growth rates:

$$(a) \quad Y_t = A_t K_t^{0.4} L_t^{0.6}$$

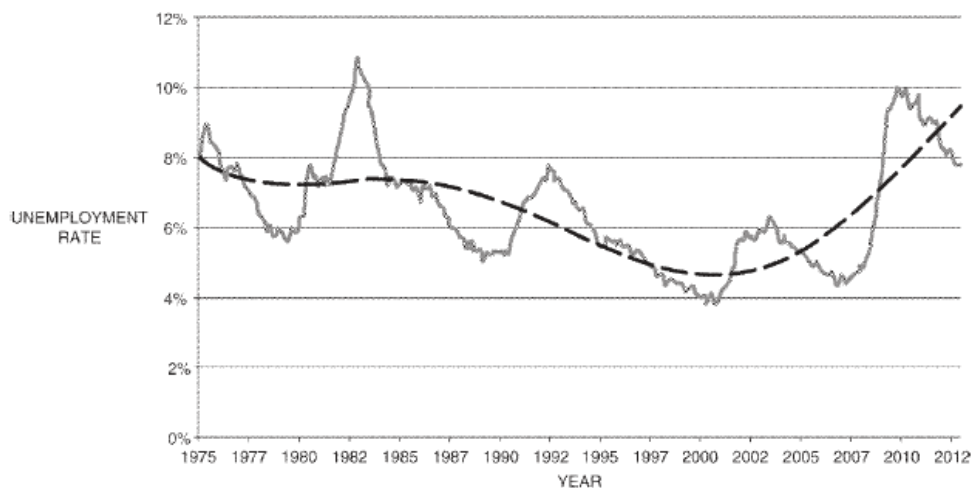
$$(b) \quad Z_t = K_t^\alpha L_t^{-\alpha}$$

$$(c) \quad X_t = 2K_t^\alpha / L_t^{-\alpha}$$

Group D (choose only 50 points from this group)

D1. (30 points). Consider Figure 7.7 below, which shows the US unemployment rate from 1975–2012.

Figure 7.7: Unemployment Rate 1975–2012



(Source: U.S. Bureau of Labor Statistics)

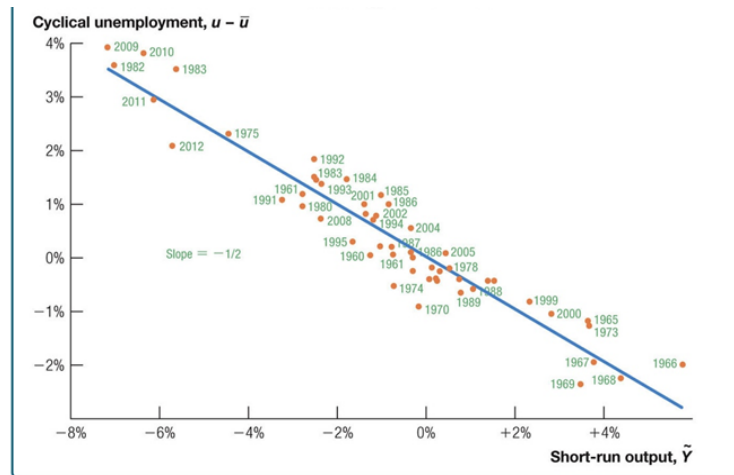
1. What does the dashed line intends to display? What types of unemployment does it represent?
2. Based solely on this data, was the period from approximately 1985–1991 an expansion or recession? Explain. What about the period 2007–2010?
3. Based on the data presented, what is your prediction for future rates of unemployment?

D2. (20 points) What is the quantity theory of money? Write down this theory in terms of growth rates. Taking into account the following figure, do you consider that this theory receives support from evidence at an international level? Explain.

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D3. (20 points) What is the Okun's Law? Consider the next figure. Does it give any support to the that law? Explain.



END OF EXAM.