



ECT1  
ECONOMICS TRIPOS PART 1

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Friday 11 June 2021

11.00am – 2.30pm + 30 minutes upload

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Paper 1

MACROECONOMICS

Answer **ALL SIX** questions from Section A and **TWO** questions from Section B.

Section A and B will each carry 50% of the total marks for this paper.

Each question carries equal weight.

Write your **Blind Grade Number** (not your name) on your answers.

Candidates are asked to note that there may be a reduction in marks for scripts with illegible handwriting.

Please note that there is no mechanism available to raise a query during the assessment. If you have queries regarding your assessment or the question paper, you should continue to the best of your ability and raise these with your College Tutor after the assessment.

**Submitting your assignment to Moodle**

You must submit your answers within the assessment window by uploading **one single** PDF file to Moodle. This file must include the completed cover sheet and **all** your typed and hand written pages with your answer.

**Assessment window**

You have **3 hours and 30 minutes** to complete the exam + 30 minutes to upload your answers.

## SECTION A

1. What is Okun's law? Is it related to cyclical or the long run (natural rate of) unemployment? Explain.
2. Suppose that the central bank requires commercial banks to hold one tenth of customers' deposits as reserves. It is also estimated that the currency deposit ratio is 0.2%.
  - (a) Calculate the money multiplier.
  - (b) What will happen to the money multiplier if individuals decide to keep more cash at home instead of depositing it into their bank accounts? Explain.
3. Can the following be negative? If yes, under what circumstances? If no, explain why.
  - (a) Nominal interest rate;
  - (b) real interest rate;
  - (c) inflation rate.
4. In the context of the AS-AD model, illustrate how the macroeconomic response to a cost-push shock would differ under rational expectations, relative to adaptive expectations.
5. In a model of global trade with perfectly flexible prices, explain whether you would typically expect to see current account deficits in richer or poorer countries.
6. By reference to the IS-MP model, explain what is meant by 'secular stagnation', and why it might imply that a higher inflation target is desirable.

## SECTION B

7. Consider the following model of economic growth. Generating output requires only one input, namely capital  $K$ . The production function is given by  $Y = AK$ , where  $A$  is a constant productivity parameter describing the amount of output produced for each unit of capital used in production. In each period, a fraction  $s$  of aggregate output is saved and a fraction of  $\delta$  of aggregate capital is lost due to depreciation. There is neither population growth, nor technological progress in this economy.
- (a) Is the production function neoclassical? Explain.
  - (b) Write the equations of motion for both aggregate capital  $K$  and for capital per capita  $k \equiv K/L$  and explain carefully what they describe.
  - (c) Does this economy have a steady state? If yes, derive steady state expressions for capital and output per capita as functions of the model parameters  $A$ ,  $s$  and  $\delta$ . If not, show why mathematically or graphically.
  - (d) Explain under what conditions this economy will grow perpetually. What is the ‘engine of growth’ in this case?
  - (e) How do the predictions of this model compare to those of the standard Solow growth model with neither population growth nor technological progress?
8. Discuss the role that the housing and mortgage markets in the US and UK played for the financial crisis and the Great Recession in 2008-09. Do you think similar mechanisms are present during the current recession caused by the COVID-19 pandemic? Explain your answer.
9. The UK government is considering the following alternative macroeconomic policy options for raising output and employment in the wake of the COVID-19 pandemic:
- (a) a direct income transfer to all households;
  - (b) an increase in infrastructure expenditure;
  - (c) an expansion of the Bank of England’s quantitative easing policy.

Critically assess the likely effects of these policies, both in the short and the long run. Which, if any, would you most recommend in the present circumstances?

10. Brittania is a small open economy with flexible prices. The quantities of goods that it exports and imports are characterised, in turn, by the following expressions:

$$X(\varepsilon, \theta) = \bar{X} \cdot \theta^{-\gamma} \cdot \varepsilon^{-\frac{\eta}{\theta}}$$

$$M(\varepsilon, \theta) = \bar{M} \cdot \theta^{-\gamma} \cdot \varepsilon^{\frac{\phi}{\theta}}$$

where  $\varepsilon$  is the real exchange rate, i.e. the price of a basket of domestic goods relative to a basket of foreign goods, and  $\theta$  is a variable that measures the strength of symmetric trade barriers between Brittania and its neighbours, with higher  $\theta$  values implying greater barriers to both imports and exports.  $\bar{X}$ ,  $\bar{M}$ ,  $\gamma$ ,  $\eta$  and  $\phi$  are all positive parameters.

- (a) Provide an economic interpretation of the role played by  $\theta$  in the expressions for exports and imports.
- (b) Write down an expression for the value of Brittania's net exports, and solve for the value of  $\varepsilon$  that implies balanced trade, in terms of  $\theta$  and the parameters.
- (c) Starting from a position of trade balance, what parameter values would imply that a depreciation increases Brittania's net exports?
- (d) Suppose that the government of Brittania takes policy decisions that imply an increase in  $\theta$ . Explain in detail what impact you would expect this to have on the volatility of Brittania's real exchange rate.

**END OF PAPER**