Queen Mary
University of London

January Examination Period 2024

ECN102 World Economy *Duration: 2 hours*

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Answer ALL questions

Calculators are permitted in this examination. Please state on your answer book the name and type of machine used.

Complete all rough workings in the answer book and cross through any work that is not to be assessed.

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Examiner: Professor Rachel Male

Answer all questions.

Question 1. [20 marks]

Consider the following statements and explain if they are True or False.

a) 'A poor economy can escape a Malthusian poverty trap by increasing the rate of population growth.'

[5 marks]

b) 'Output (Y) in an economy is produced according to a Cobb-Douglas production function: $Y_t = A_t K_t^{\alpha} L_t^{1-\alpha}$, where A is total factor productivity, K is physical capital, L is labour, and $\alpha = 0.3$. To achieve a 5% growth rate (g_Y), when capital is accumulating at 3.5% per annum and the labour supply is growing at 2% per annum, requires total factor productivity to be growing by 2.55% per annum.'

[5 marks]

c) 'With 13.8% of the population in extreme poverty, poverty reduction in Guinea will require a policy that can both reduce inequality and increase the rate of economic growth. For Bolivia, where 3.1% of the population are in extreme poverty, a policy focused on stimulating economic growth will be sufficient for poverty reduction.'

[5 marks]

Table 1. Selected data for Guinea and Bolivia (World Bank, 2023)

	Guinea	Bolivia
GDP per capita, PPP (constant 2017 international $)	2604.1	7679.9
Gini index	29.6	43.6
Population growth (annual %)	2.5	1.3
Poverty headcount ratio, $2.15 a day (2017 PPP) (% of population)	13.8	3.1

d) 'Economies with large shadow economies, such as Peru and Nigeria, will have overstated GDP figures when compared to neighbouring economies with fewer informal transactions.'

[5 marks]

Question 2. [20 marks]

Consider the following information about UK productivity from the Financial Times (2023):

> *" UK productivity has barely grown since the financial crisis, according to new official figures […]*
> *Total factor productivity — a measure of how efficiently resources are used in the economy — was last year only 1.7 per cent above the level recorded in 2007, when the country was heading into the credit crunch. It was also just a fraction of the pace recorded in the 16 years up to 2007, when productivity increased 27 per cent, according to the figures published on Thursday by the Office for National Statistics. […]*
> *Many advanced economies have experienced a productivity slowdown since the financial crisis, but the trend has been particularly pronounced in the UK. Separate data by the OECD show that between 2007 and 2022 labour productivity grew less in the UK than in the US and was below the OECD average."*

a) Use the Solow model to explain how a one-off increase in total factor productivity (A) enables an economy to grow. Draw a diagram to support your answer.

[8 marks]

b) Draw a growth path diagram to compare the growth of GDP per capita (y_t) in the UK and the US over the period 2007 and 2022. Assume the only difference in the trend rate of growth is due to the differences in productivity, with all other things being equal. Will the differences in productivity cause the two economies to converge or diverge? Why?

[8 marks]

c) Why are productivity improvements more important for economic growth in capital rich economies, such as the UK and the US, than in capital poor economies?

[4 marks]

Question 3. [20 marks]

a) Consider the information in Table 2:

Table 2: Hours of Labour per unit of Output

Good	Country	
	Australia	**New Zealand**
Butter	16	10
Wine	12	15

If Australia and New Zealand engage in international trade, how will this effect world output of wine and butter? Briefly explain your answer and calculate the gain (in units) from trade.

[6 marks]

b) Trade openness in Ireland is 239.4% compared with 43.98% in Australia (Penn World Tables, 2021). What is trade openness and why is the value higher in Ireland than Australia?

[4 marks]

Answer the questions below based on the information in Figure 1:

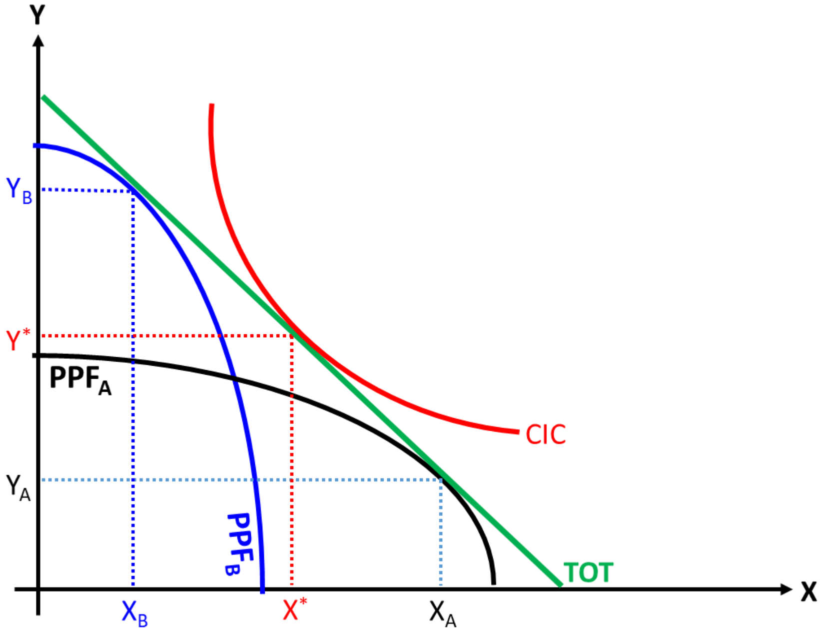

Figure 1: Trade between Argentina (A) and Bolivia (B) for wheat flour (X) and fertilizer (Y). (Production of wheat flour (X) is labour intensive and fertilizer (Y) is capital intensive.)

c) Explain the pattern of trade between Argentina and Bolivia, identifying the comparative advantage good, and the pattern of imports and exports.

[6 marks]

d) What will be the effect of the trade between Argentina and Bolivia on the price that consumers in Bolivia pay for wheat flour? Briefly explain why.

[4 marks]

Question 4. [20 marks]

a) The Seychelles is an example of a tourism dependent economy, with international tourism receipts accounting for around 25% of GDP. If a US resident takes a holiday in the Seychelles and pays for a flight and hotel accommodation, how is this recorded in the balance of payments for both countries?

[5 marks]

b) If, whilst on holiday in the Seychelles, the US resident receives cash dividends for shares held in a US company, how will this be recorded in the balance of payments?

[5 marks]

c) "*The Seychellois rupee appreciated 33% in 2022, to 14.4 per US dollar, on higher tourism*" (African Economic Outlook, 2023). Draw the demand and supply curves for the Seychellois rupee against the US $, and explain why the Seychellois rupee appreciated against the US dollar during 2022. (Both the US and the Seychelles have floating exchange rate regimes.)

[10 marks]

Question 5. [20 marks]

In an attempt to control rising inflation rates, many central banks have increased interest rates. This is shown in Table 3.

Table 3: Inflation rate and central bank interest rate 2023, by country.
Inflation rate and central bank interest rate in developed and emerging countries in January 2022 and August 2023 (compared to the same month of the previous year).

	Inflation (%)		Interest rate (%)	
	Jan-22	Aug-23	Jan-22	Aug-23
Australia	3.50	5.20	0.10	4.10
Brazil	10.40	4.61	9.20	13.25
Canada	5.10	4.00	0.50	5.00
China	0.90	0.10	3.70	3.45
Euro Area	5.10	5.20	0.00	4.25
France	2.90	4.90	0.00	4.25
Germany	4.90	6.10	0.00	4.25
India	6.00	6.83	4.00	6.50
Japan	0.50	3.20	-0.10	-0.10
Russia	8.70	5.20	8.50	12.00
Sweden	3.90	7.50	0.00	3.75
United Kingdom	5.50	6.70	0.25	5.25
United States	7.50	3.70	0.08	5.38

Source: Statista (2023)

a) What type of policy response is an increase in the interest rate by the central bank?

[3 marks]

b) Use the IS-LM-BP model to explain why this is an effective policy response to target inflation in an economy with a floating exchange rate regime.

[8 marks]

c) How will the increase in the interest rate by the central bank affect the rate of GDP growth in the economy?

[3 marks]

d) Would you advise a country with a fixed-exchange rate regime to follow a similar policy of raising interest rates to target inflation? Explain your answer using the IS-LM-BP model.

[6 marks]

End of Examination/ R Male