S6 Economics Practice Paper (Set 1): National Income and the Multiplier, Inflation and Unemployment, Money and Banking, Fiscal Policy and the Government Budget, International Trade and Exchange Rates, Market Structure and Elasticity (100 marks)

S6 Economics | Time: 75 minutes | Total: 100 marks | 24 questions

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Section A: National Income and the Autonomous Expenditure Multiplier (16 marks)

An economy (all figures in $ million): C = 80 + 0.75Yd, I = 200, G = 150, T = 0.2Y, X = 120, M = 40 + 0.1Y. Show all working.

1. Find the equilibrium national income Y.

Y = C + I + G + X - M; Yd = 0.8Y so C = 80 + 0.6Y; Y = 510 + 0.5Y, giving Y = 1020 million.

2. Find the autonomous expenditure multiplier and the effect on Y of a 50 rise in government spending.

Multiplier = 1 / (1 - 0.5) = 2; dY = 2 x 50 = 100 million, new Y = 1120.

3. If full employment output is 1,100, find the output gap and the required change in government spending.

Gap = 1,100 - 1020 = 80; dG = 80 / 2 = 40 million (increase).

4. At the equilibrium income, find tax revenue, imports and the government budget balance.

T = 0.2 x 1020 = 204; M = 40 + 102 = 142; balance = 204 - 150 = 54 million surplus.

Section B: Consumer Price Index, Inflation and Unemployment (16 marks)

A basket has three categories with base year (2019) expenditure weights: food 40, housing 60, transport 20. Their 2023 prices are 48, 72 and 22. Labour force 3,600,000, employed 3,420,000, working age population 6,000,000.

5. Using 2019 as the base year, find the 2023 consumer price index.

CPI = 142 / 120 x 100 = 118.33.

6. Find the inflation rate from 2019 to 2023.

Inflation = (142 - 120) / 120 x 100 = 18.33%.

7. Over the same period nominal wages rise by 20%. Find the percentage change in real wages.

Real wage index = 1.20 / 1.1833 = 1.0141, a rise of 1.41%.

8. Find the unemployment rate and the labour force participation rate.

Unemployed = 180,000; rate = 180,000 / 3,600,000 x 100 = 5%; participation = 3,600,000 / 6,000,000 x 100 = 60%.

Section C: Money Supply and the Banking System (16 marks)

The banking system holds 60 million of excess reserves with a required reserve ratio of 0.125. The public holds 300 million cash, 900 million demand deposits, 1,200 million savings deposits and 800 million time deposits. Nominal interest rate 6%, inflation 3%.

9. Find the deposit multiplier and the maximum new deposits the banking system can create.

Multiplier = 1 / 0.125 = 8; new deposits = 60 x 8 = 480 million.

10. Find M1 and M3.

M1 = 300 + 900 = 1200; M3 = 1200 + 1,200 + 800 = 3200 million.

11. Find the real interest rate.

Real rate = (1.06 / 1.03 - 1) x 100 = 2.91%.

12. If the required reserve ratio falls to 0.10, recalculate the multiplier and the maximum new deposits.

Multiplier = 1 / 0.10 = 10; new deposits = 60 x 10 = 600 million.

Section D: Progressive Tax, Budget Deficit and Crowding Out (16 marks)

A taxpayer has assessable income of 480,000. Bands: first 50,000 at 2%, next 50,000 at 6%, next 50,000 at 10%, next 100,000 at 14%, the remainder at 17%. Government spending 900 billion, revenue 780 billion, GDP 3,000 billion. Government borrowing raises the interest rate from 4% to 5% and investment falls from 500 to 440 billion.

13. Find the tax payable.

1,000 + 3,000 + 5,000 + 14,000 + 39,100 = 62100.

14. Find the average tax rate and the marginal tax rate.

Average rate = 62100 / 480,000 x 100 = 12.94%; marginal rate = 17%.

15. Find the budget deficit and its ratio to GDP.

Deficit = 900 - 780 = 120 billion; share of GDP = 120 / 3,000 x 100 = 4%.

16. Find the crowding out effect on investment.

Crowding out = 500 - 440 = 60 billion.

Section E: Exchange Rates, Balance of Payments and Terms of Trade (18 marks)

A Hong Kong exporter prices a good at 780 HKD. The exchange rate moves from 7.80 HKD per USD to 7.50. Balance of payments (billion): goods exports 4,000, goods imports 4,300, services

exports 900, services imports 600, net income -50, net current transfers +20. Export price index 120, import price index 100.

17. Find the USD price before and after the exchange rate change, the percentage change, and the effect on export competitiveness.

At 7.80: 780 / 7.80 = 100 USD; at 7.50: 780 / 7.50 = 104 USD, a rise of 4%; export competitiveness falls.

18. Find the current account balance and state whether it is a surplus or deficit.

Goods -300, services +300, income -50, transfers +20: -300 + 300 - 50 + 20 = -30 billion, a deficit of 30 billion.

19. Find the terms of trade and state whether it improved or worsened against the base period.

Terms of trade = 120 / 100 x 100 = 120, a 20% improvement on the base period.

20. If the exchange rate becomes 8.10, find the HKD price of a 100 USD import and its percentage rise.

100 x 8.10 = 810 HKD, a rise of (810 - 780) / 780 x 100 = 3.85% over 780 HKD.

Section F: Price Elasticity, Tax Incidence and Market Structure (18 marks)

Price falls from 100 to 90 and quantity rises from 1,000 to 1,250. Price elasticity of demand (absolute) is 1.5, price elasticity of supply 0.5, and a per unit tax of 20 is imposed. A monopolist faces P = 100 - 2Q with constant marginal cost 20 and average cost 40. For an activity, MPC = 10 + 0.5Q, MSB = 50 - 0.5Q and marginal external cost is 4.

21. Find the price elasticity of demand, the percentage change in total revenue, and whether demand is elastic or inelastic.

Elasticity = 25 / 10 = 2.5 (elastic); revenue 100,000 to 112,500, a rise of 12.5%.

22. Find the tax burden borne by consumers and by producers.

Consumers = 20 x 0.5 / 2.0 = 5; producers = 20 - 5 = 15.

23. Find the monopolist output, price and profit.

MR = 100 - 4Q = 20 so Q = 20; P = 100 - 40 = 60; profit = (60 - 40) x 20 = 400.

24. Find the free market output, the socially optimal output and the deadweight loss.

Free market: 10 + 0.5Q = 50 - 0.5Q so Q = 40; social optimum: 14 + 0.5Q = 50 - 0.5Q so Q = 36; deadweight loss = 0.5 x 4 x 4 = 8.

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