ECON 317 - Money, Banking, and Financial Institutions

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Macroeconomic Equilibrium and Short Term

Exercise 1

A new electronic chip leads to a wave of computer purchases by companies.

(a) Which component of GDP (consumption / investment / government spending) will be affected by these additional expenditures?

(b) Will the IS curve be affected? Yes/No? Explain. If yes, is it contractionary or expansionary? Explain.

(c) Will the LM curve be affected? Yes/No? Explain. If yes, is it contractionary or expansionary? Explain.

(d) What will be the short-term effect on GDP Y? On the interest rate r? On consumption $C = c(Y - T)$? Explain.

Exercise 2

(a) Suppose the government increases taxes while keeping its spending constant. Will this create a deficit or a surplus? Explain.

(b) In the IS-LM model framework, how is this represented graphically? What is the effect on GDP Y? On the interest rate r? Explain.

(c) The Bank of Canada wants to implement a monetary policy to offset the effect on GDP due to the fiscal policy in 2b. What is this policy? Explain using the IS-LM model. What would be the effect on the interest rate? Explain.

Exercise 3

Aggregate consumption is such that $C = 100 + 0.8 \times (Y - T)$. Aggregate investment is such that $I(r) = 100 - 10r$, where the real interest rate r is expressed as a percentage. Government spending and taxes are $G_1 = T_1 = 100$.

(a) Use the GDP equation to find the equation of the IS curve, i.e., a relationship between income Y and the interest rate r, valid in the goods and services market. Verify that this induces a negative relationship between income and the interest rate.

(b) The demand for money in real terms is $L(Y,r) = Y - 50(r + \pi^e)$, where rates are expressed as percentages. Expected inflation $\pi^e = 0\%$. The money supply $M_1 = 2000$ dollars and the price level $P = 2$ dollars. Express the equation of the LM curve, i.e., a relationship between income Y and the interest rate r, which balances the money market. Verify that this induces a positive relationship between income and the interest rate.

(c) To go further (optional): Calculate the equilibrium income and real interest rate.

(d) Suppose the government increases its spending from $G_1 = 100$ to $G_2 = 200$, while keeping taxes fixed (so $T_2 = 100$). Represent the effect of this policy in the IS-LM diagram. Qualitatively (i.e., without calculation), does income increase/decrease? Why? Does the real interest rate increase/decrease? Why?

(e) Now suppose the constitution requires the government to maintain a balanced budget. Government spending increases from $G_1 = 100$ to $G_3 = 200$ and taxes are increased from $T_1 = 100$ to $T_3 = 200$. After reproducing the graph from question (d), graphically represent the effect of the new fiscal policy on this graph and compare the effect of the two policies. Which of the two policies is more effective (i.e., allows for greater production)? Explain why.

Exercise 4

Assuming taxes and investment remain unchanged on the one hand and the propensity to consume is 80

(a) What does the fiscal multiplier measure?

(b) Calculate this fiscal multiplier.

(c) Why does your result differ from what would have been obtained in the IS-LM model framework? Explain.

(d) Illustrate this difference in results with the IS-LM diagram.