

1. Assume that population is equal to 1. Consider the following IS-LM curve.

$$y = c(y - \tau) + \iota(\rho) + g \quad (2)$$

$$\frac{m^s}{P} = k(\rho)y \quad (3)$$

where price level P , tax revenue τ , government expenditure g and money supply m^s are given. Two equations determine GDP, y and the interest rate ρ . Suppose that

$$\begin{aligned} c(y - \tau) &= c_0 + c_1 \times (y - \tau), \\ k(\rho) &= \frac{k}{\rho}, \\ \iota(\rho) &= -a \times \rho, \end{aligned}$$

where c_0 , c_1 , k , and a are parameters.

- (a) Assume that the interest rate ρ is constant. Derive GDP y , as a function of government expenditure and tax revenue. Show that $\frac{dy}{dg} > 1$ and explain its reason.
- (b) Derive the GDP, y , and the interest rate, ρ , as the function of P , g , m^s , and τ .
- (c) What is the effect of an increase in tax revenue, τ , on GDP and the interest rate? Explain economic logic behind your answer.
- (d) What is the effect of an increase in government expenditure, g , on GDP and the interest rate? Explain economic logic behind your answer.
- (e) What is the effect of increase in money supply, m^s , on GDP and the interest rate? Explain economic logic behind your answer.
- (f) What is the limitation of IS-LM model?

2. Answer the following questions.

- (a) A sticky nominal wage is considered as one of the source of an increasing aggregate supply curve. Explain its logic.
- (b) An imperfect information can be considered as another reason for an increasing aggregate supply curve. Explain its logic.
- (c) How do two explanations change policy implications?