

Economics 222
Assignment 2
due June 13th

1. The money demand function for China is given by:

$$\frac{M^d}{P} = \frac{Y^{\frac{1}{3}}}{\sqrt{\phi}\sqrt{10i}}$$

where ϕ is a measure of the efficiency of payments technologies. For this question assume that $Y = 64$, $i = 0.025$ and $\phi = 16$.

- (a) If $P = 2$, what is (i) nominal money demand and (ii) real money demand?
- (b) If the money market is in equilibrium, what is the velocity of money?
- (c) What is the income elasticity of real money demand in China?
- (d) Over the course of a year the $\Delta\% \phi = 3\%$, the $\Delta\% Y = 3\%$ and both the nominal interest rate and the money stock were unchanged. What was the inflation rate?

2. Use the $IS - LM - FE$ model to determine the effects of each of the following on both the short-run and the long-run equilibrium values of output, the real interest rate, consumption, investment and the price level.

- (a) The government decreases the taxes (assume that people are myopic).
- (b) There is a surge in expected inflation.
- (c) The labor force increases due to higher immigration.

3. For this question assume that the purchasing power parity holds between the United States and Canada. The price level in United States is $P_{for} = 1.2$. The price level in Canada is $P = 0.9$.

- (a) What is the nominal exchange rate?
- (b) An economic forecaster thinks that the price levels will be $P_{for} = 1.176$ and $P = 0.927$ next year. What is the expected change in the nominal exchange rate?
- (c) The nominal interest rate in Canada is currently: $i = 0.06$. What must be the nominal interest rate in the U.S.?
- (d) What must be the expected real interest rates in Canada and in the U.S.?

4. Consider the following description of Turkmenistan, a closed economy.

$$\begin{aligned} C^d &= C_0 + 0.5(Y - T) - 144r \\ I^d &= 150 - 456r \\ G &= 200 \\ T &= 200 \\ \frac{M^d}{P} &= \frac{Y}{16 + 48r} \end{aligned}$$

Initially $M = 100$ and $\bar{Y} = 1000$.

- (a) Find the IS curve for this economy as a function of C_0 .
- (b) Initially $C_0 = 300$. Find the long-run values of r , C , I , P and V .
- (c) A drop in consumers' confidence makes $C_0 = 270$ now. What will be r , C , I and Y in the short-run?
- (d) If the government wants to use fiscal policy to reestablish the economy at its full-employment output in the short-run, what must be T (assume that G stays constant) ?
- (e) If neither the government nor the central bank intervene following the drop in consumer confidence, what will be the long-run values of r , C , I , P and V ?

5. Consider the following description of Nigeria, an open economy.

$$\begin{aligned}
 C^d &= 10 + 0.6Y - 10r \\
 I^d &= 85 - 15r \\
 G &= 20 \\
 NX &= 15 - 5e \\
 e &= 5 + r - r_{for} \\
 \frac{M^d}{P} &= Y - 20r
 \end{aligned}$$

Initially $M = 155$, $\bar{Y} = 175$, $r_{for} = 5$ and $P_{for} = 1.5$.

- (a) What are the values of r , P , e and e_{nom} ?
- (b) If the central bank increases the money supply to $M = 170.5$, what will be the impact in the long-run on r , P , e and e_{nom} ?
- (c) If the government increases its expenditures to $G = 50$, what will be the impact in the long-run on r , P , e and e_{nom} (with $M = 155$)?