

Economics 222
Assignment 3
due March 24th at 4pm

1. Money Demand and Velocity in Paraguay.

Informed sources indicate that the real money demand is

$$\frac{M^d}{P} = \frac{\sqrt{Y}}{6\sqrt{i}}$$

where Y is national income, i the nominal interest rate and P the price level in Paraguay for 2005. Initially $Y = 25$ and $i = 0.09$. For all subquestions assume that the money market is in equilibrium

- a) What is the velocity of money in Paraguay in 2005?
- b) If $P = 1$, what must be the money supply?
- c) The Paraguayan Central Bank expects national income to be $Y = 30$ next year and the nominal interest rate to stay at $i = 0.09$. What must be the money supply for 2006 if the Central Bank desires to have an inflation rate of $\pi = 0.02$ from 2005 to 2006?
- d) Given your answer in part c), what will be the growth rate of velocity from 2005 to 2006?

2. Emigration and Fiscal Policy in Siberia.

Due to its remoteness, Siberia can be considered as a closed economy. Recent data about its population movements indicate that the region suffered from a severe loss in its working age population from 1995 to 2005. As a consequence full employment output declined from $\bar{Y}_{1995} = 100$ to $\bar{Y}_{2005} = 90$. This question asks you to analyze the long-run implications of different fiscal policies available to Siberian officials. The economy can be described as follows:

$$\begin{aligned}C^d &= 10 + 0.6Y - 10r \\I^d &= 50 - 10r \\G &= 20\end{aligned}$$

- a) What were the equilibrium levels of the real interest rate, consumption and investment in 1995?
- b) In 2005 government officials consider changing government expenditures in order to keep investment at the same level as it was in 1995. What must the value of G be to implement this policy?
- c) The second policy under consideration is to alter government expenditures in order to maintain private consumption at its 1995 level. What must the value of G be in this case?

3. Immigration laws, tax rate on capital and the stock market.

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 the real wage, employment, output, the real interest rate, consumption, investment and the price level.

- a) Tougher immigration laws reduce the working age population.
- b) There is an increased volatility in the price of stocks and bonds.
- c) The government raises the effective tax rate on capital.
- d) Increased computerization reduces stock market brokerage costs.

4. The IS-LM model in Greenland.

Assume that Greenland is a closed economy and can be described by the following equations:

$$\begin{aligned}C^d &= 2000 - 100000r + 0.9Y - T \\I^d &= 1000 - 45000r \\M^d/P &= Y - 6000i\end{aligned}$$

and $G = T = 500$, $\pi^e = 0.03$, $\bar{Y} = 1000$ and $M^s = 2100$.

- a) Find the long-run values of r , C , I and p .
- b) If $G = T = 400$ instead, what will be the short-run values of r , C , I ? Will the long-run values for these variables differ? (Hint: How do G and T affect the IS curve?)
- c) Suppose that desired consumption changes to $C^d = 2000 - 100000r + 0.9Y - 0.5T$ and $G = T = 291.2$. Find the short-run values of r , C and I . By how much the real interest rate changes in the long-run? What will consumption be in the long-run?