

Economics 153

Monetary Economics

Homework 3

Fall 2006

1. Consider a monetary economy in which the demand for real balances is given by:

$$\frac{M_t}{P_t} = Y (1 + i_t)^{-\eta}.$$

The variable M_t denotes nominal money balances in period t , P_t the price level, Y output, $\eta > 0$ the interest elasticity of money demand, and i_t the nominal interest rate for assets held between periods t and $t + 1$. Assume that output, Y , and the real interest rate, r , are constant over time. Suppose that the monetary policy consists in pegging the growth rate of the money supply at the rate μ . Finally, assume that agents have rational expectations.

- (a) Find the equilibrium rate of inflation.
 - (b) Find the equilibrium level of real balances as a function of the growth rate of the money supply, μ . What is the effect of an increase in the money growth rate on real balances. Provide an intuitive explanation.
 - (c) Find the level of seignorage income as a function of the money growth rate μ .
 - (d) Suppose the government wants to maximize the level of seignorage income. At what level should it set the growth rate of the money supply.
 - (e) Suppose output, Y declines permanently. What is the effect of this change on the Inflation Laffer Curve and on the rate of money growth that maximizes seignorage income?
 - (f) Assume that the interest elasticity of money demand, η , increases, say because agents start using means of payments other than the local currency. What is the effect of an increase of the interest elasticity on the level of real balances and on the rate of monetary expansion that maximizes seignorage income.
2. Read the attached NYT article entitled ‘How Bad is Inflation in Zimbabwe?’ Then critically analyze the validity of the economic argument presented in the last two paragraphs of the May 2, 2006 article.