

Econ 252 - International Finance

Problem Set 2

Due Date: Wednesday Oct 17. Due at the **beginning** of the class. 100 points

1. (10 pts) Give a brief definition (one or two sentences) for each of the following:

- Public deficit
- Ricardian Equivalence
- Distortionary taxes
- Liquidity of an asset

2. (20 pts) Let the investment and saving curves be $I=80-2r$ and $S=6r$ (r measured in percentage).

- Assume the economy is closed, calculate the equilibrium levels of the interest rate, savings, investment and current account. [10 pts]
- How would your answers to a) change if the country is a small open economy and the international interest rate is 8% and 12%? Give the new solutions for interest rate, saving, investment, and the current account, and obtain a function for the current account in terms of interest rate. [10 pts]

3. (20 pts) For a small open economy starting with a current account equal to zero, state the effect on saving, investment and current account of the following changes (illustrate using the Metzler Diagram and other relevant graphs).

- An increase in investment during the first period only (assume depreciation is 100%). [10 pts]
- Permanent increase in the international interest rate. [10 pts]

4) (20 pts) In a two-period economy, suppose that household's preferences are such that they choose $c_1 = 0.8c_2$. Household endowment income is given by $Q_1 = 400$, $Q_2 = 165$. Taxes are $T_1 = 80$, $T_2 = 55$ and government expenditures are given by $G_1 = 30$ and $G_2 = x$. The interest rate is 25%.

- Assume the government has no debt at the beginning of the first period. Setup the intertemporal government budget constraint and find the value of x (i.e. the government expenditures in the second period). [10 pts]
- Find the public sector saving, households' saving and total saving in each period. [10 pts]

5) (20 pts) Consider a two-period economy in which money reduces transaction costs, with per-unit costs given by $S(V) = bV^\gamma$ where $V=C/m$, $\gamma = 2$ and $b = 0.5$. Utility is of the form $U(C_1, C_2) = \log(C_1) + \log(C_2)/(1+\delta)$ with $\delta = r$. The **real** interest rate is 10%, inflation between periods 1 and 2 is 5% and $P_1=1$. For simplicity, there are no taxes or government expenditures, no investment, and the initial NFA position is zero. Household endowment income is given by $Q_1 = 5$ and $Q_2 = 5.5$. Find the optimal household choices for C_1 , C_2 , m_1 , m_2 , b_1 (i.e. the NFA position), the current account for period 1 and the trade balance for period 1. [20 pts]

6) (10 pts) Take the same economy as in problem 5 but now add investment and production. The production function is given by $Q=2K^{1/2}$. Initial capital $K_1 = 20$ and the depreciation rate is 10%. The **nominal** interest rate is 15.5% and $P_1=1$. Assume initial bond position is zero and there are no taxes. Assume inflation is still equal to 5%. Find the non-financial wealth, the financial wealth (i.e. m_1 and m_2) and the consumption choices C_1 and C_2 . (Hint: Keep in mind the Fisherian separation result) [10 pts]