

PPOL-649 Macroeconomics: Problem Set 2

Due April 5, 2017

Main Assumptions:

- A closed economy with a total labor force equal to 1,100,000 units of ordinary labor.
 - Out of any given after tax income, individuals will choose to consume 80 percent and save the remaining 20 percent.
 - The wage unit is \$10 per hour of ordinary work and the market structure is such that entrepreneurs will be willing to offer a given volume of employment only if the sum of their expected profits is equal to 40 percent of total income (total income $Y = \text{Wages} + \text{Profits}$, $\text{Profits} = 0.4 * Y$, therefore $\text{Wages} = 0.6 * Y$).
 - The government is running a balanced budget with expenditure=taxes=\$500,000
 - There are 5 potential investment projects whose replacement costs and expected stream of profits are given in the attached spreadsheet (all figures are in 000s of \$)
1. Calculate the expected yield of each project (18 points)
 2. Draw the schedule of the marginal efficiency of capital (7 points)
 3. What would be the total volume of investment which is likely to be undertaken if the interest rate is equal to 5 percent? (5 points)
 4. What would be the level of output if this volume of investment is realized? (5 points)
 5. How much employment would be supported by this level of investment (in thousands of units of ordinary work) (5 points)
 6. What would be the rate of unemployment? (5 points)
 7. Assuming that the demand for money is given by $M = 0.6 * Y - 10,000 * r$ (where Y is income and r is the interest rate, 0.05 in this case), how much money needs to be available to make the above equilibrium possible)? (5 points)
 8. If the monetary authorities were to succeed in nudging down the level of the interest rate to 3.5 percent, by how much will the unemployment situation improve? (10 points)
 9. Discuss the downside risks to this outlook, i.e., what might happen that would prevent the achievement of this improvement in the labor market prospects (remember the “several slips between the cup and the lip). (10 points)
 10. As the unemployment rate is still very high, the government adopts a fiscal stimulus package, whereby it decides to borrow to finance \$200,000 of extra spending. How much more will the unemployment situation improve? (10 points)
 11. Now assume that the stance of monetary and fiscal policies is kept unchanged (interest rate equal to 3.5 percent and government spending equal \$700,000, with taxes unchanged

at \$500,000), while market competition weakens with entrepreneurs now willing to offer a given volume of employment only if they could expect to make profits equal 43 percent of total income. With entrepreneurs capturing a larger share of total income, the marginal propensity to consume is likely to drop, and let us assume that it drops only slightly to 0.79. What impact will these drifts have on the labor market? (10 points)

12. If you were in charge of this economy, what policies will you advocate and why? (you may want to quantify one or two scenarios to gauge the impact of some quantifiable policies). (10 points)

Recommendation:

To minimize risks of mistakes you may want to set up a spreadsheet (as per sheet 2 of the spreadsheet that has the data on the various investment projects, attached).