**ECN-100: Homework Week 9: Economic Growth and Fiscal Policy**

1) Use Rule 70 to answer the following:

a) How many years will it take for income to double if a country’s total income grows at 2%? At 4%? 6%?

b) If a country’s income doubles in 16 years, at what rate is its income growing?

c) In 2003 per capita output in the US was about $35,000. If real income per capita is growing at 2% annual rate, what will per capita output be in 35 years? In 70 years?

d) If real income is rising at an annual rate of 4% per year and the population is growing at a rate of 1% per year, how many years will it take to double the per capita income?

2) Country A’s output per worker (Y/L) grows by 5%, while its human capital per worker (H/L) grows by 4% and its physical capital per worker (K/L) grows by 3%. An Economist estimates the aggregate production function of this economy as follows: Y/L = (K/L)0.4 x (H/L)0.6 x T.

Using Accounting for Growth, calculate:

a) the contribution (%) of physical capital to the total output per worker;

b) the contribution (%) of human capital to the total output per worker;

c) the contribution (%) of technology, or the total factor productivity (TFP).

3) Sustainability and You

1. Give three examples of environmental policies that might help to support the long-run economic growth in a country, and to have a sustainable economic growth.
2. About yourself: state three things **you** can do to support a sustainable future for our next generation.

4. Consider an economy that is initially in the long-run equilibrium where SRAS and AD intersection (the short-run macro equilibrium) is exactly on the LRAS – which means that the real output (Ye) equals the potential output (Yp). Assess the following separate events, write down with “negative/positive demand/supply shock” and each effect on the aggregate price and GDP, and what it creates (recessionary gap or inflationary gap):

1. the economy’s central bank decreases government spending
2. productivity decreases in the economy
3. consumer confidence in the economy increases
4. commodity prices fall dramatically

5) For each of the following situations identify whether it is an example of *expansionary* fiscal policy or *contractionary* fiscal policy:

1. As the economy enters a recession, income and consumption falls, government gave a tax rebate to families.
2. In light of projected deficiencies in aggregate demand, the government authorize an expenditure of $200 million in order to build a new dam
3. Fearing too rapidly expanding economy, a government adopts a budget that calls for 10% spending cuts in all government departments for the following fiscal year.
4. Budget on unemployment benefits rise 5% in response to rising unemployment

For the following problems:

$budget spent on fiscal policy x the multiplier = the change in AD (eventually on GDP);

If the fiscal policy is in the form of “Govt Spending” or “G”: use multiplier: 1/ 1- (MPCx(1-t));

If the fiscal policy is in the form of Taxes or Transfers (“T or TR”): use multiplier: MPC/ 1- (MPCx(1-t)).

6. Suppose Macroland is experiencing a recessionary gap in its economy. Its MPC is around 0.6; average tax rate is 25%.

a) The government wishes to produce at its potential output level (Yp), and the recessionary gap was estimated around $500 billion. Calculate the amount of budget needs to be allocated to conduct each of the following fiscal policy to close that gap:

(i) the government gives tax exemptions on consumers and corporations

(ii) the government authorizes new spending programs for infrastructure.

b) Calculate the change in GDP (increase or decrease, and by how much), with each of the following fiscal policy

(i) the government authorize an expenditure of $200 million in order to build a new dam

(ii) During 2008, as the economy enters a recession, income and consumption falls, government gave a tax rebate to families, in total of $500 billion.