**ECN-100: Homework Week 10: Hyperinflation, Okun’s Law, Economic Growth**

1) Suppose you live in an economy that is currently experiencing hyperinflation. At the start of the year (Jan 1st) , the cost of a loaf of bread is $2.00.

1. If the inflation rate is 100% a month, what will be the price of the bread at the end of 12 months (Dec 31st) ?
2. What is the total price increase in percentage terms for the year?

2) Use Okun’s Law to estimate the relationship between unemployment and inflation of the following:

1. The current US unemployment rate is around 10%, and if the natural rate of unemployment is 6%, what can we say about the output gap (or at what production capacity is the economy is operating relative to the potential output?)?
2. The current US unemployment rate is around 13%, and if the production capacity is currently at 85% of its potential output, what is the approximate natural rate of unemployment?

3) Use Rule 70 and 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?

4) 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) total factor productivity (TFP).

5) 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.