Intermediate Macroeconomic Theory I (ECON 303/2 C) Christian Sigouin

Final exam - Fall 2006

This exam is composed of three different questions for a total of 15 subquestions.

Read each question carefully. All answers must be clearly justified using **economic theory**. Clear **explanations** must be given. Calculations must be detailed. Correct but unjustified answers will not get any credit.

With a fair understanding of the material seen in class, it is possible to answer each subquestion independently of the others, using the information provided in the preceding ones. All subquestions carry equal weight. Hence, do not waste all your time trying to answer just one subquestion.

Question #1: "Giving is the business of the rich"— J. W. Von Goethe

Knowing that you are the wealthy owner of a thriving business, an old classmate asks you to read the following:

*"For African economies to grow and prosper, "capital markets are essential," says Ghanaian Minister of Finance Yaw Osafo-Maafo. "**The lack of capital** is one of Africa's major stumbling blocks." That view—presented at an April forum of hundreds of African business executives and stock market officials—is increasingly common among African leaders. (...)"*

—Africa Recovery, Vol.17 #2 (July 2003), page 12

In the context of the macroeconomic model seen in class, the Ghanaian Minister of Finance seems to suggest that increasing K_0 will necessarily foster economic growth. This is a common belief and it usually leads people to advocate foreign aid and foreign direct investment as a cure for poverty (ask former Canadian Prime Minister Jean Chrétien, for instance). This is exactly what your friend does: He asks you to donate part of your business' capital stock to Ghana in order to increase its national income. Should you do it?

a) **Explain** what is the impact of an increase in K_0 in the labour market, holding the interest rate constant.

b) **Explain** what is the impact of an increase in K_0 in the goods market, holding the interest rate constant.

c) **Explain** why the interest rate must fall following an increase in K_0.

d) **Explain** how a reduction in the interest rate affects the labour market and the goods market.

e) After some calculations, you determine that an increase in K_0 will reduce national income. How is this possible? Should you give some capital to Ghana then? **Explain** why or why not.

f) Your friend informs you that the future marginal product of capital in Ghana exceeds the sum of the interest rate and the depreciation rate. What do you suggest that Ghanaian firms do? **Explain.**

g) In which way a severe drought (the lack of rain for an long period of time) is likely to affect the Ghanaian economy? **Explain.**

Question #2 and Question #3 are on the back of this page.

Question #2: George Bushnomics

Presumably in an attempt to stimulate economic activity, the President of the United States recently urged Americans to consume more and to go on vacations. Is this sound advice?

a) Suppose that all Americans actually follow this advice and increase consumption. **Explain** why national income will fall as a result of this increase in consumption.
b) **Explain** why gross investment must fall by more than the initial increase in consumption as a result of this advice.
c) **Explain** why future consumption will fall as a result of this advice.
d) George Bush is giving this advice because he is assuming that consumers are not choosing consumption optimally. **Explain** why the President's advice makes sense in this case.

Question #3: Almost like déjà vu

Consider an economy in which there are two consumers with preferences over c_0 and c_1 described by the utility function $U(c_0, c_1) = \ln(c_0) + 0.8\ln(c_1)$. Both consumers earn 12.5 each in period 0 and 16 each in period 1. There is also a government whose objective is to spend 5 in period 0 and 12 in period 1. Taxes in period 0 are equal to 3. Both consumers as well as the government can issue or buy bonds which pay interest rate r. There are no firms and no capital stock in this economy.

a) **Explain** why $r = 0.25$ in the **competitive** equilibrium of this economy.
b) Find the aggregate demand for goods in period 0 as a function of national income, the interest rate, and government spending. Will a permanent change in government spending increase aggregate demand in this economy? **Explain.**
c) In this economy, the correlation between government spending and the interest rate is positive. Why does the government increase spending when the interest rate increases? **Explain.**
d) Suppose that in period 0, one of the consumer learns that he is very sick. Hence, there is a high chance that he may not be alive in period 1. **Explain** why the interest rate must increase in period 0 as a result of this news.