ECON 222

Winter 2004 – Sections C and D

Assignment 1

Question 1

This question requires you to retrieve data from CANSIM. You will find a link to CANSIM by going to Data Sources on the 222 course webpage.

Retrieve real GDP data for Ontario (D140687) and Canada (D140669) for the years 1991-2001. Note that these figures are measured in millions of 1997 dollars. Next retrieve population data for Ontario (D28721) and Canada (D28595) for the years 1991-2001.

(a) Calculate Ontario's share of (i) Canadian real GDP, (ii) Canada's population. What is happening to Ontario's share in (i) and (ii) from 1991-2001?

(b) Calculate Ontario's real GDP per capita, Canada's real GDP per capita, and the ratio of Ontario's real GDP per capita to Canada's real GDP per capita. What is happening to this ratio from 1991-2001?

(c) Calculate the growth rates in real GDP for Ontario and Canada from 1992-2001. Which has the higher average growth rate?

(d) Calculate the growth rates in per capita real GDP for Ontario and Canada from 1992-2001. Compare average growth rates in per capita GDP.

(e) Suppose that you were asked to compare average growth rates in per capita GDP without calculating actual per capita real GDP. How could you do this? (Hint: the growth rate of a ratio is approximately equal to the difference in the growth rates of the numerator and denominator.) How does your answer compare to the one you got in part (d)?

Question 2

The following (approximate) figures are taken from Germany's national accounts for the fiscal year 2002. Figures are in billions of euros.

Y = 2110	I = 378
NX = 90	CA = 115
TR = 550	INT = 70
Government Savings = -75	
Tax Revenue as a share of GDP = 45%	

(a) What is Germany's NFP from 2002?

(b) Find Germany's total consumption expenditure (C) and total government consumption expenditure (G) for 2002.

Question 3

Suppose that an economy produces three goods with the following prices and quantities:

	Year 1		Year 2	
	p_1	q_1	p_2	q_2
wheat	1	250	1.5	200
corn	3	100	2.5	150
barley	1.5	50	2	75

(a) Find nominal output in year 1 and year 2.

(b) Find real output in year 1 and year 2 using year 1 as the base year. What is the growth rate in real output from year 1 to year 2?

(c) Find real output in year 1 and year 2 using year 2 as the base year. What is the growth rate in real output from year 1 to year 2?

(d) Using year 2 as the base year, and using the GDP deflator, what was the inflation rate in this economy from year 1 to year 2?

Question 4

Suppose that a typical production function is given by:

$$Y = AK^{0.4}N^{0.6}$$

(a) Differentiate the production function with respect to N to find the marginal product of labour MPN.

(b) Use calculus again to show that the MPN declines as the labour force (N) increases.

(c) Suppose that there is a real wage $\omega = \frac{W}{P}$ that is paid to every worker. Solve for the labour demand function by setting the MPN equal to the real wage and rearranging so that you can write N on the left hand side of the equation.

(d) Use calculus to show that less labour is demanded when the real wage ω increases.