



FIRST MID-TERM EXAMINATION

Professor: David Gray

Student Name: KEY

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Student #:

You may not consult with any written documents whatsoever (including other students' papers), and no conversation is permitted while the examination is in progress. Please remove all hats. The use of smart-phones and programmable calculators is strictly forbidden. Turn off all cellular telephones. There are a total of 50 points.

1. Respond to all of the following 4 questions (4 points). I mentioned the answers to all of them in class a number of times.

a) What is the approximate current rate of unemployment in Canada?

7.1 % (I accepted 6.5 to 7.5 %)

b) What is the approximate rate of real GDP growth in Canada that would be desirable and realistic? I mentioned this in class a number of times.

2-3 % annually

c) What is the approximate current level of nominal, current dollar GDP in Canada?

\$ 2,000,000,000,000 (\$ 2 trillion)

d) What is the approximate annual rate of price inflation?

1-2 % annually

2. In the exercise on national accounting, the estimated value of GDP using the expenditure approach is equal, in theory, to the value produced by using the factor incomes approach. Why is this the case? (3 points)

Because every transaction has a dual identity as expenditure and as income. \$ 1 spent by one economic agent represents \$ 1 of income earned by other agents, and vice versa. It must therefore be the case that after we sum up all of the expenditures and all of the incomes, aggregate income = aggregate expenditure.

3. This problem is very similar to the one that appeared on the examination that is posted on the courseweb, but it is not the same. (10 points)

Consider the following fictional transactions that took place in the economy of the land of make believe last year. The figures are denominated in billions of \$

Wages, salaries, and other labour income	824
Consumption expenditure	891
Profits of corporations and government enterprises	231
gross investment expenditure	309
government purchases	375
income from farms and unincorporated businesses	93
net exports	25
saving	550
depreciation	208
interest and miscellaneous investment income	81
government transfer payments	333
indirect taxes	163

a) Calculate the GDP level using the expenditure approach, and explain your work. It is insufficient to write only numbers.

Consumption spending + investment spending + government purchases of goods and services + net exports = C + I + G + NX = 891 + 309 + 375 + 25 = 1,600

(This question was a total gimme)

b) Calculate the GDP level using the factor incomes approach, and explain your work. It is insufficient to write only numbers.

Factor incomes + indirect taxes + depreciation = (824 + 231 + 93 + 81) + 163 + 208 = 1,600

The quantities in parentheses are the components of factor incomes)

c) Which of these quantities are the total injections into the circular flow?

Government purchases, investment spending, and net exports (technically, consumption spending is not considered to be an injection because much of it is thought to be inherent to the circular flow, but I accepted that answer nonetheless).

4. (16 points) Identify and give the significance of the following four points. You must furnish explanations as to how the topic fits into what we have studied. In other words, why did I bother to bring it up at all? Usually three sentences will suffice.

a) human capital

See page 146 of the textbook. It reflects the skills, knowledge, training, education, ability, and experience embodied in the labour force. The higher the stock of human capital, the higher the overall capital stock of the economy, and the higher the productivity levels.

b) unmeasured quality change in the context of the CPI (consumer price index)

see page 128 in the textbook. An observed increase in the price for a good or a service could reflect an improvement in quality, a pure price increase, or a combination of both. We only want to capture the latter element. In order to measure the rate of pure price increases, one has to keep quality constant. Unless we adjust for that factor, the CPI will tend to overstate the true inflation rate. Some of you might have confused this point with substitution bias in the context of the CPI.

c) economic models (what is their purpose?)

See page 24 of the textbook. They are designed to show the workings of the economy. They typically consist of equations that link one economic variable to another economic variable or to a set of them. As such, they indicate how variable X is tied to variable Y. They often serve to make predictions: if variable X changes, how does variable Y change, if at all? Many students defined this term by including the word 'model' in their definition. When one defines a term, one cannot use that same word in the definition.

d) primary similarity and primary difference between microeconomics and macroeconomics

The similarity is that both are centered around equilibrium price and quantity variables within an environment of scarcity, as the analysis for both disciplines is usually carried out within a market framework. The difference lies in the scope of the types of questions that are dealt with. Macroeconomics deals with global

economic variables, while microeconomics deals with the behavior of industries, firms, and consumers.

5. (4 points) Suppose that the base year for the consumer price index (CPI) is 1992 (which was once the case). The value of this price index in November of 2001 was 115.8.

a) How does one interpret the value in November of 2001?

A basket of goods and services that costed \$ 100 to buy in 1992 costed \$ 115.80 to buy in 2001 for a cumulative increase of 15.8 % over that 9-year period.

b) If the rate of inflation from between November 2002 and November 2001 was + 3, what was the level of the price index in November of 2002? Show your work.

$$[(CPI \text{ in } 2002 / CPI \text{ in } 2001) - 1] * 100 = 3$$

$$[(X / 115.8) - 1] * 100 = 3 \text{ solve for } X$$

$$X - 115.8 = 3 / 0.86$$

$$0.86 x - 99.3 = 3$$

$$X = 119.3$$

A shortcut is to multiply 115.8 by 1.03.

6. (8 points) Consider the following historical data on GDP. You must show your work in order to receive any credit. The base year for the deflator is 2002.

year	Nominal GDP (in billions)	real GDP (in billions)	GDP deflator
1980	314.4	625.0	blank
1985	458.7	716.4	67.8

I apologize for the error that was present on the questionnaire, which could have been avoided had I proofread more carefully. This error had no bearing on the answers to the questions that I asked, but it did have the effect of confusing people before I announced the correction. I extended the time by 7 minutes in efforts to mitigate that issue. If you left the exam room before I made the announcement, you should come and see me with your exam paper.

a) What was the value of the deflator for the year 1980? I have left it blank.

$$\text{Real GDP} = \text{nominal GDP} / \text{deflator} * 1000$$

(def)* 625 = 31,440 so deflator = 50.3

- b) What was the growth rate of the GDP deflator between 1985 and 2002? How do we interpret this figure in economic terms?

% change in the deflator = [(deflator in 2002 / deflator in 1985) – 1] * 100 = (100 / 67.8 – 1) * 100 = % 47.5

- c) What was the growth rate of real GDP between 1980 and 1985? Explain what this means in economic terms.

% change in real GDP = [(value in 1985 / value in 1980) – 1] * 100 = (716.4 / 625 – 1) * 100 = % 14.6 The value of economic activity rose by 14.6 % over this period.

- d) The growth rate of nominal GDP is higher than the growth rate of real GDP. Explain why this is the case.

It was not necessary to calculate the rate of growth in nominal GDP over this period. We can apply the identity that the % change in real GDP = % change in nominal GDP minus the inflation rate. Note that since positive inflation did occur over this period, it must be the case that % change in nominal GDP > % change in real GDP. In this case, % change in nominal GDP = (about) 47.5 % + 14.6 %.

7. (3 points) The production process involves a high level of non-market activity. What repercussions does this have for the use of the official GDP accounts (produced by Statistics Canada) as an indicator of economic welfare? Does it cause an overstatement or an understatement, and why?

I promised you that this question – or one much like it - would be on the examination. See page 115. The omission of non-market activity from the national accounts causes the national accounts to understate the true level of economic welfare. You had to define non-market activity, which is productive activity that is not traded on the market, and thus has no dollar value attached to it. Non-market activity is typically legal production that promotes human well-being, such as volunteer work of household production, but it is not traded in markets.

8. (2 points) The national accounts report was released recently for November of 2015. This report contained details regarding GDP for that month. Was the result fairly strong, fairly weak, or very weak? You do not have to give the exact figure, but you should identify the primary indicator as well as its direction.

It was fairly strong, but only over a one month time horizon (the period between October

and November of 2015). It rose by 0.3 %. (You did not have to pinpoint the exact figure.)