UNIVERSITY OF OTTAWA
DEPARTMENT OF ECONOMICS
ECO 1102 D
INTRODUCTION TO MACROECONOMICS

MID-TERM EXAMINATION

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Student Name:

Student #: KEY

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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 80 points.

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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?

7.0 % - I accepted plus or minus 1 %

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.

3 – 4 % I accepted plus or minus 1 %

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

1.8 trillion $ - I accepted answers that were close.

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

1.0 % - I accepted plus or minus 1 %

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? (4 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.

Wages paid to labour	300,000
Consumption expenditure	350,000
Corporate profits	100,000
gross investment expenditure	150,000
government purchases	130,000
income from unincorporated businesses	50,000
exports	120,000
saving	135,000
imports	140,000
depreciation	50,000
interest and miscellaneous investment income	30,000
government transfer payments	400,000
indirect taxes	80,000

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

GDP == C + I + G + X – IM = 350,000 + 150,000 + 130,000 + 120,000 – 140,000 = $ 610,000 (see the table for the full labels for the abbreviations).

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

GDP == factor incomes + indirect taxes – subsidies + depreciation charge (capital consumption allowance) = 300,000 + 100,000 + 50,000 + 30,000 + 80,000 + 50,000 = $ 610,000 (factor incomes are wages paid to labour + corporate profits + income from unincorporated businesses + interest and miscellaneous investment income)

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

Government spending and exports. Technically, consumption spending is not considered to be an injection (since it does not originate from outside of the circular flow), but I accepted that item as well.

4. (24 points) Identify and give the significance of the following six 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.

Each of these was worth 3 points – 1 for the definition, and 2 for the significance. I went over all of them slowly and explicitly in class. Some of them appeared on last year's test.

a) indirect taxes (hint: in the context of national accounting)

Indirect taxes are not levied on particular individuals; they are levied anonymously on the act of buying. Examples are the PST, the GST (now combined into the HST), and excise taxes. The significance is that this is an important component in the factor incomes approach to national accounting (note that I gave you this big hint.) Real GDP = total factor incomes at market prices plus indirect taxes plus depreciation. It is the gap between national income at factor cost and net domestic product.

b) 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.

c) 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 rather than a pure price increase. 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.

d) 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) research and development activities

See page 157 of the textbook. Research and development activities are critical for innovation, which in turn is critical for technological advancement, which in turn increases productivity, which in turn raises living standards. **Governments can play a positive role in promoting it.**

f) primary similarity and primary difference between microeconomics and macroeconomics

The similarity is that both are centered around equilibrium price and quantity variables, 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. I went over this in class.

5. (5 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 cost $ 100 to obtain in 1992 cost $ 115.80 in 2001, which amounts to an increase of 15.8 %.

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.

((x / 115.8) – 1) * 100 = + 3 %, so x / 115.8 – 1 = 0.03, or x / 115.8 = 1.03 or x = 119.3

6. (14 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 1997.

year	Nominal GDP (in billions)	GDP deflator
1984	449.6	71.8
2002	1155	107.5

What confused a few people is that there was no row for 1997, which is the base year. If there were a row for 1997, the value of the deflator would be 100. This question should not have come as any surprise.

a) What was the growth rate of nominal GDP between 1984 and 2002?

((1155 / 449.6) – 1) * 100 = 157 % The base year is irrelevant.

b) What was the growth rate of the GDP deflator between 1984 and 2002?

((107.5 / 71.8) – 1) * 100 = 49.7 % The base year is irrelevant, provided that we are using the same base year for both 1984 and 2002.

c) What was real GDP in 2002 measured in 1997 prices?

Real GDP = nominal GDP / deflator in 2002 = 1155 / 107.5 * 100 = 1074

d) What was real GDP in 1984 measured in 1997 prices?

Real GDP = nominal GDP / deflator in 1984 * 100 = 449.6 / 71.8 * 100 = 626

e) What was the growth rate of real GDP between 1984 and 2002?

((1074 / 626) – 1) * 100 = 71.6 % The base year is irrelevant, provided that we are using the same base year for real GDP in both 1984 and 2002

f) Was the growth rate of nominal GDP higher or lower than the growth rate of real GDP? Explain why.

It was much higher for the nominal GDP because growth in nominal GDP includes both the effects of inflation and growing volume of economic activity.

g) Why is the value of the deflator lower than 100 in 1984?

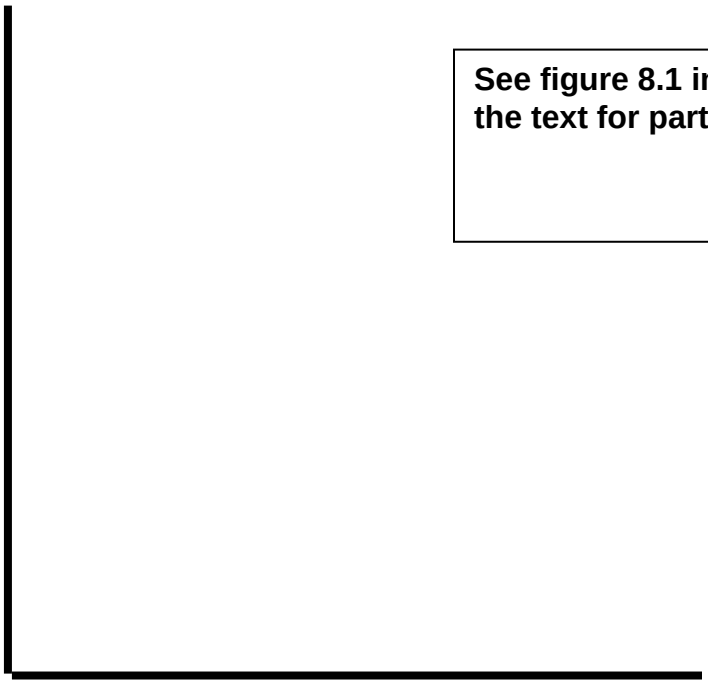
Because inflation occurred continually between 1984 and 1997, which was the base year. By construction of the deflator, its value in 1997 = 100. If there is inflation in the years leading up to it, the deflator has to be lower in those prior years.

7. (7 points) a) On the axes that are provided below, depict the loanable funds market in equilibrium. Label all axes and curves.

See pages 182-183 in the textbook, and figure 8.3.

For part b), as tax incentives for investment spending are enriched, investment spending becomes more financially attractive. The demand for loanable funds that are required to finance this spending shifts to the right. At each possible interest rate, there is now a greater quantity demanded of loanable funds. At the old equilibrium interest rate, this shift places upward pressure on the interest rate. We arrive at a higher equilibrium rate of interest and a higher equilibrium quantity (a flow) of funds. In order to receive full credit, you had to explain your work.

b) On the same figure, show what happens in this market tax incentives for investment spending are enriched. Indicate which curves, if any, shift, and explain how the loanable funds market adjusts. Describe the new equilibrium. Explain your work here.



8. Describe in very general terms the macroeconomic performance in Canada in the decade between 2000 and 2010. Two substantive sentences will suffice. (3 points)

There was moderate to strong growth in real GDP from 2000 to 2008, followed by a very deep recession from 2008 until 2009. The recession officially ended in mid-2009, but the labour market has not fully recovered. Inflation was moderate over the entire period.

9. (4 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 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, but it is not traded in markets

10. (5 points) These questions pertain to the supplemental reading that I assigned. They are designed not to be picky, but rather to discriminate between those of who did do this reading and those of you who did not.

a) In reference to the report released by the Institute for Competitiveness and Prosperity called "Beyond the Recovery", what is the so-called 'prosperity gap', and what development regarding it motivates the report?

It is the difference between real GDP per capita in Canada and real GDP per capita in the USA. Real GDP per capita is an important indicator of living standards, but not the only indicator. A troubling development is that this gap has widened considerably over the past 30 years, with living standards on this side of the border being considerably lower.

b) The national accounts report was released recently for November of 2013. 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, with a moderate but positive the rate of growth of real GDP.