

Concordia University
Department of Economics
ECON 203
Fall 2008

MIDTERM EXAMINATION AND ANSWERS

Name: _____
Student ID: _____
Mark: _____ /50 marks

C. Lau
October 16th, 2008
Time Limit: 75 minutes

Part I. Multiple Choice Questions. Circle the best answers (10 marks).

1. Historically, the largest component of GDP in Canada from the expenditure approach is
 - a. government purchases.
 - b. exports.
 - c. gross private domestic investment.
 - d. personal consumption.**

2. A good produced in 2002 and held in inventory until it is sold in 2004 would be included in which year's GDP?
 - a. Half the value in 2002 and half the value in 2004.
 - b. In 2004 GDP.
 - c. In 2002 GDP.**
 - d. Will not be measured in GDP since the sale was delayed.

3. Intermediate goods, like eggs sold by a farmer to a bakery, are
 - a. included in GDP.
 - b. included in GDP at basic price but not market price.
 - c. included in real GDP only but not nominal GDP.
 - d. are not included in GDP.**

4. The value of substitution bias under the _____ is approximately _____. Substitution bias refers to _____.
 - a. GDP deflator; 1%; the consumers buying less of a product should it becomes more expensive.
 - b. GDP deflator; 4%; the consumers buy similar products but with improved quality.
 - c. CPI; 1%; the consumers buying less of a product should it become more expensive.**
 - d. CPI; 1%; the consumers buy similar products but with improved quality.

5. Which of the following statements about inflation is true?
 - a. Inflation does not affect nominal variables.
 - b. Inflation raises the value of money.
 - c. People who have to receive future payments will benefit from periods of high and unexpected inflation.
 - d. People who have to make future payments will benefit from periods of high and unexpected inflation.**

6. If the economy is at full employment, then
 - a. the entire labour force is employed.
 - b. the unemployment rate is zero.
 - c. the unemployment rate is still positive at the natural rate.**
 - d. the unemployment is undefined at the natural rate.

7. The ADQ wants the Liberal government to spend more money on building low-income housing. If the ADQ wants the spending to have maximum effect on economic growth, which of the following consumption equations would it prefer to see?
 - a. $C=90+0.4(Y-T)$
 - b. $C=80+0.5(Y-T)$
 - c. $C=150+0.75(Y-T)$
 - d. $C=100+0.9(Y-T)$**

8. According to Okun's law, if the unemployment rate is 8.5% and the natural rate U_n is 7%, then the actual Y must be
 - a. 1.5% above the Y_p growth rate.
 - b. 1.5% below the Y_p growth rate.
 - c. 3% above the Y_p growth rate.
 - d. 3% below the Y_p growth rate (Similar to Assignment #1, Question #4).**

9. According to “lean against the wind” fiscal policies, an economic boom $Y > Y_p$ implies that the government should
- Cut tax rates and increase government spending.
 - Raise tax rates and decrease government spending (Chapter 7 class notes, page 1).**
 - Leave tax rates and government spending unchanged.
 - Leave tax rates unchanged and increase government spending.
10. If the budget balance and structural budget balance have both changed from -\$20 billion to -\$60 billion, this implies that
- The government has increased its expenditure and/or cut taxes (Reviewed on Oct 15th's class).**
 - The government has decreased its expenditure and/or raise taxes.
 - The economy has fallen into a recession.
 - a and c.

Part II: Answer all questions (Total=40 marks)

Question #1 (Total=4 marks, from Lyryx)

Suppose you are given the following data on the income and expenditure for the economy of Highland, in current prices for factors of production and outputs.

Government expenditure	820
Consumption expenditure	2,400
Investment expenditure	740
Employment income	2,800
Business income	780
Net indirect taxes	100
Imports	1,000
Investment income	180
Exports	1,100
Capital consumption allowance	200

- (i) What is the value of nominal GDP measured by the expenditure approach? Show all steps and variables (2 marks).
Ans: Nominal GDP by expenditures = C + I + G + X - Z
GDP = 2,400 + 740 + 820 + 1,100 - 1,000 = 4,060
- (ii) What is the value of nominal GDP measured by the income approach? Show all steps and variables (2 marks).
Ans: Nominal GDP by income = Net domestic income + capital consumption allowance + net indirect taxes
GDP = 3,760 + 200 + 100 = 4,060

Question #2 (Total=4 marks, from Lyryx)

Consider the following data collected from a country:

Population under 15 years of age or institutionalized	185
Not in the labour force	179
Part-time workers looking for full-time jobs	35
Unemployed	67
Total population	1152

- (i) Calculate the size of the labour force (2 marks).
Ans: The correct answer was : 788.0
To calculate the size of the labour force, we must use this formula:
Size of Labour Force = [Total Population] - [Population Under 15 or Institutionalized] - [Population Not in Labour Force]
- (ii) Calculate (to the nearest 0.1) the unemployment rate (2 marks).
Ans: The correct answer was : 8.5
To calculate the unemployment rate, we must use this formula:
Unemployment Rate = [Population Unemployed] / [Size of Labour Force], then * 100

Question #3 (Total=4 marks, from Lyryx)

Suppose an economy's real GDP is \$31,329 in year 1 and \$39,822 in year 2. Also suppose that the same economy's population is 246 in year 1 and 323 in year 2.

- (i) Calculate (to the nearest 0.1) the growth rate of the economy's real GDP (2 marks).

Ans: The correct answer was : 27.1%

To calculate the real GDP growth, we can use this formula:

$$\text{Real GDP Growth} = ([\text{Year 2 real GDP}] - [\text{Year 1 real GDP}]) / [\text{Year 1 real GDP}], \text{ then } *100$$

- (ii) Calculate (to the nearest 0.1) the growth rate of the economy's real GDP per capita (2 marks).

Ans: The correct answer was: -3.2%

To calculate the real GDP growth per capita, first, calculate the real GDP per capita for each year using the formula:

$$\text{Real GDP per capita} = [\text{real GDP}] \div [\text{population}]$$

Then, we can calculate the real GDP growth per capita with this formula:

$$\text{Real GDP Growth Per Capita} = ([\text{Year 2 real GDP per capita}] - [\text{Year 1 real GDP per capita}]) / [\text{Year 1 real GDP per capita}], \text{ then } * 100.$$

Question #4 (Total=10 marks)

Aggregate demand and aggregate supply are given by

$$\text{Aggregate demand: } AD = 160 - P$$

$$\text{Aggregate supply: } AS = P - 40$$

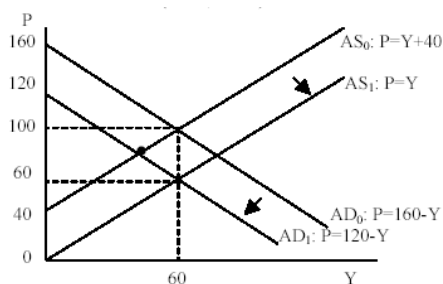
where P is the price level.

- (i) Calculate the equilibrium price level and real GDP (2 marks).

Ans: Set AD=AS, 160-P=P-40, so P=100, Y=60.

- (ii) Graph both equations and let this initial set of (P, Y) be the basis for comparison. Label the P as the base year price level and Y as Y_p or Y_0 (2 marks).

Ans: Notice that since P is on the vertical axis and Y is on the horizontal axis, we need to rearrange the equations AD: $Y=160-P$ into $P=160-Y$ and AS: $P-40$ into $P=Y+40$. The vertical intercepts are now 160 and 40, respectively. The coordinates of ● are (P=80, Y=40).



- (iii) Suppose the US demands fewer of our products. As a result, the shift of AD is in the amount of \$40 billion at every price level. What is the new AD curve? (1 mark)

Ans: AD went from $P=160-Y$ to $P=120-Y$ since it has shifted down by \$40 at every price level.

- (iv) Find the price level and real GDP in the new short run equilibrium and show these new values and curves on your graph in (ii) (2 marks).

Ans: $P=120-Y$, and $P=Y+40$, so $Y=40$ and $P=80$.

- (v) Since real GDP is below its full employment level, the high unemployment rate drives the wage rate down. As a result, the AS curve will shift downward until a new long run equilibrium is achieved. Find the price level and real GDP in the new long run equilibrium. Also show these values and curves on your graph in (ii) (2 marks).

Ans: AS needs to shift down (or increase in supply) until Y recovers back to 60. So this implies from AD: $P=120-Y$, $P=60$. From the AS equation, we know that $P(=60)=Y(=60)+\text{new intercept}$. This implies the new intercept has to equal to 0. The newly shifted AS curve has an intercept of zero.

- (vi) How much must the short run AS curve has shifted by? What is its new equation? (1 mark)

Ans: The new AS has shifted down by 40, so the new equation is AS: $P=Y$.

Question #5 (Total=20 marks)

Let the Canadian economy be described below. You are an economist in the Department of Finance, Ottawa.

- $C = 100 + 0.8 Y_d$ (Y_d is disposable income)
- $I = 125$ (investment spending)
- $G = 325$ (government purchases)
- $T = 0.25Y$ (percentage taxes)
- $X = 100$ (exports are constant)
- $Z = 0.1Y$ (imports depend positively on our own Y)

- (i) Calculate the equilibrium Y (2 marks).
Ans: $Y=C+I+G+NX = 1300$.
- (ii) Find the autonomous multiplier (2 marks).
Ans: $1/[1-MPC(1-t)+z] = 2$.
- (iii) Find the government budget balance BB , given your Y in (i) (2 marks).
Ans: $BB=tY-G$, so $BB=0$.

Consider the following news excerpt:

Oil price closes above \$86 a barrel

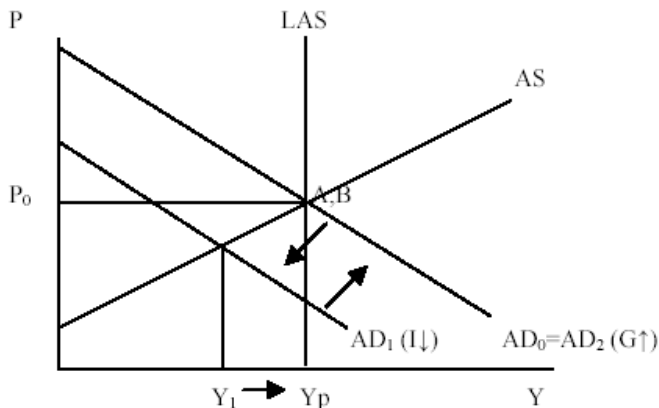
JOHN WILEN

Associated Press

October 15, 2007 at 3:45 PM EDT

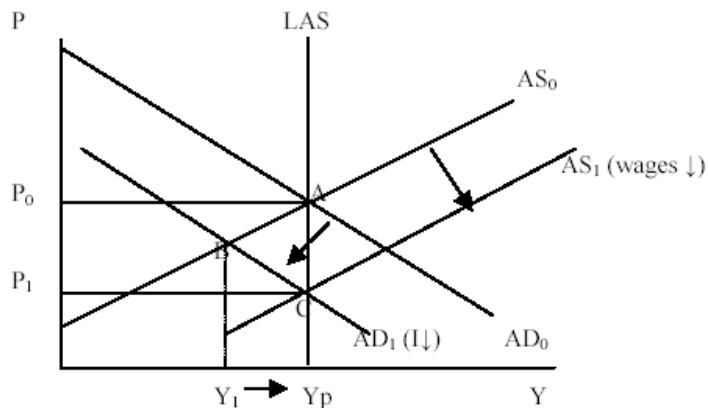
New York — Oil closed at a record price above \$86 a barrel Monday for the first time after OPEC said crude production by non-member countries is likely falling even as global demand for oil is rising. Prices were also supported by concerns that Turkish forces will pursue Kurdish rebels into Iraq, disrupting oil supplies.

- (iv) Suppose the higher oil prices translate to our investment confidence dropping from 125 to 75. Find the new Y (2 marks).
Ans: $Y=C+I+G+NX = 1200$.
- (v) Find the BB as a result of the drop in investment spending. Is this change in BB due to an increase in government spending, i.e., is the Canadian government to be blamed? (2 marks)
Ans: $BB=tY-G$, so $BB=-25$. No, G and t have not changed, it is the drop in Y that has led to $BB<0$.
- (vi) Suppose the government wants to push the economy back to the Y level in (i) but with investment spending still at $I=75$. Find the new G necessary (2 marks). Also find the new BB and discuss what caused the change in value (2 marks).
Ans: $\Delta G=50$ to offset the drop of I by 50. BB becomes -50 .
- (vii) Without further calculations, use the AD/AS/LAS diagram to demonstrate the effect of the government’s action in (vi). Be sure to include the initial drop in investment spending from (iv) in your diagram (2 marks).
Ans: (Reviewed on Oct 15th's class)



The drop in I pushes AD inward, but the rise in G is just enough to offset the drop. No change in Y and P , but deficits have \uparrow .

- (viii) Without further calculations, use the AD/AS/LAS diagram to demonstrate how the economy would adjust in the long run if the government had not increased G. Be sure to include the initial drop in investment spending from (iv) in your diagram (2 marks).
 Ans: **(Reviewed on Oct 15th's class)**



The drop in I pushes AD inward, the economy moves from A to B. The lower Y, according to Okun's law, says that unemployment will rise accordingly. The higher unemployment rate means workers are more willing to take a pay cut, which allows the firms to increase hiring. AS shifts right, and hence the economy recovers to C. This process may take a long time, though.

- (ix) Discuss one cost of increasing G and one cost of NOT increasing G. What would you have done? (2 marks)
 Ans: **Cost of increasing G is that it drives up deficits for the future; the cost of not increasing G and allowing a recession to prolong is the government may be booted out of office by voters who have lost their jobs.**

The End