

Concordia University
Department of Economics
Economics 203
Fall 2006

MIDTERM EXAMINATION AND ANSWERS

Name: _____
Grade: _____/50+2 bonus marks

C. Lau

Part I: Fifteen Multiple choice questions (Total=15 marks). Please choose the best answers.

1. When comparing the magnitudes of the components of Canada's GDP under the expenditure approach, we see that Consumption is around _____% of GDP.
 - a. 20.
 - b. 40.
 - c. **60.**
 - d. 80.
 - e. None of the above.

2. Which of the following would NOT be counted in 2004's GDP?
 - a. **The value of the shares of stocks you bought in 2004.**
 - b. The 2004 salary of an accountant.
 - c. The value of a computer manufactured in 2004 but not sold in 2004.
 - d. a and c.
 - e. All of the above.

3. In the last two years, the cyclical unemployment rate in Canada has been around
 - a. 9%.
 - b. 7%.
 - c. 5%.
 - d. 3%.
 - e. **0%.**

4. A man who hates his boss and quits his job to search for another job represents an example of
 - a. Seasonal unemployment.
 - b. Structural unemployment.
 - c. **Frictional unemployment.**
 - d. Cyclical unemployment.
 - e. Immaturity unemployment.

5. The value of substitution bias under the _____ is approximately _____.
 - a. GDP deflator, 1%.
 - b. GDP deflator, 5%.
 - c. **CPI, 1%.**
 - d. CPI, 5%.
 - e. CPI, 10%.

6. If $Y < AE$, then inventory would
 - a. Increase and Y would increase.
 - b. Increase and Y would drop.
 - c. **Decrease and Y would increase.**
 - d. Decrease and Y would drop.
 - e. Decrease and Y would remain constant.

7. According to the "Canadian Economic Variables" file, the average value of "net primary income from abroad" over the past 10 years has been around __, which means that foreign workers working in Canada earn __ than Canadians working abroad.
 - a. -\$25 billion, less.
 - b. **-\$25 billion, more.**
 - c. \$100 billion, less.
 - d. \$100 billion, more.
 - e. \$200 billion, more.

8. Suppose right now our money wage or nominal wage rate is \$10 per hour, and the current CPI is 150. Our labour union believes that the CPI for next year would increase to 165. If we want to be able to afford the same goods and services that we typically buy, the new nominal wage rate that we should ask for in the coming year should be
- At least \$10.5.
 - At least \$11.**
 - At least \$11.5.
 - At least \$12.
 - At least \$15.
9. The aggregate demand curve is derived from
- Summing all micro demand curves.
 - Wealth effects in consumption.
 - Price effects in net exports.
 - b and c.**
 - All of the above.
10. The short run aggregate supply curve is
- First flat then becomes steeper as Y rises.**
 - First steep then becomes flatter as Y rises.
 - Uniformly flat, a straight line.
 - Uniformly steep, a straight line.
 - The summation of all micro supply curves.
11. In the AD/SRAS model, a rise in government expenditures will lead to
- A rise in the inflation rate and a drop in the unemployment rate.**
 - A rise in the inflation rate and a rise in the unemployment rate.
 - A drop in the inflation rate and a drop in the unemployment rate.
 - A drop in the inflation rate and a rise in the unemployment rate.
 - A drop in the inflation rate and a constant unemployment rate.
12. The AD/SRAS model shows that if the price of oil rises, the economy will experience
- A rise in the inflation rate and a drop in the unemployment rate.
 - A rise in the inflation rate and a rise in the unemployment rate.**
 - A drop in the inflation rate and a drop in the unemployment rate.
 - A drop in the inflation rate and a rise in the unemployment rate.
 - A drop in the inflation rate and a constant unemployment rate.
13. According to “The Economy in Brief” June 2006 issue, the investment spending growth of the Canadian firms in the second quarter of 2006 was mainly due to the increased spending on
- Natural resources.
 - Wages.
 - Savings.
 - Buildings and equipment.**
 - None of the above.
14. “The Economy in Brief” June 2006 issue say Canadian dollar could buy around US\$___ in the second quarter of 2006.
- 0.65
 - 0.77
 - 0.89**
 - 1
 - 1.2
15. “The Economy in Brief” June 2006 issue says that the inflation rate in Canada in the second quarter of 2006 has been around
- 0.5%.
 - 2%.**
 - 5%.
 - 5.5%.
 - 6.7%.

Part II: Four Questions (Total=35 marks)

1. GDP (6 marks)

Item	Amount (billion of \$)
Government purchases of goods and services	???
Wages paid to labor	405
Changes in Inventories	40
Indirect taxes	20
Income taxes	135
Profits	170
Export earnings	200
Subsidies	75
Consumption expenditure	40
Interest and miscellaneous investment income	20
Import payments	275
Depreciation	15
Fixed Capital Formation	140
Farmers' Income	50
Income of non-farm unincorporated business	200

- (i) Use the table above to find the value of GDP and the value of Government Expenditure (4 marks).

Ans: GDP=805, G=300.

- (ii) Identify the two categories under “Investment” in the AE approach. Provide one example for each of the categories, i.e., what are the typical things that investment expenditure would be spent on? (2 marks)

Ans: Fixed capital formation → firms buy machinery, offices, etc. (Starbucks buys espresso machines, furniture, etc.)

Changes in inventories → firms buy products to sell. (Starbucks buys coffee beans, sugar, mugs, etc. to sell).

2. Employment (8 marks)

Suppose the population of Canada is 3,210. Of all adult Canadians, 2,575 were employed, 200 were unemployed, and 300 were not in the labour force.

- (i) How many Canadians are under the age of 15? (2 marks)

Ans: Refer to the tree diagram. There are 135 kids.

- (ii) What is the unemployment rate (in percentage)? (2 marks)

Ans: $(200/2775) \times 100 = 7.2\%$

- (iii) There had been some discussions in the U.S. that given the depleting reserves in old age securities and the longer average life expectancies of the population, perhaps the age of retirement should be increased to 70. Suppose Canada is considering if it should adopt this policy. Assume that 100 of these previously retired workers would now be looking for work. Find Canada's new unemployment rate (2 marks).

Ans: $(300/2875) \times 100 = 10.43\%$. Labour force rises by 100, and unemployment also rises by 100.

- (iv) Consider the following quote from www.cbc.ca, February 7, 2003: “Canada's unemployment rate edged down to 7.4% in January [from 7.5% in December, 2002], but Stats Can said the country's steady record of impressive job creation throughout 2002 came to an abrupt end last month. Stat Can said there were 2,100 fewer jobs in January [compared to December, 2002].” Is this possible? (2 marks)

Ans: More people have given up looking for jobs than the number of jobs lost.

3. CPI and Inflation (6 marks)

There are two goods in the consumer basket. The prices of these goods, P_a and P_b (in dollars), are as follows:

Year	P_a	P_b	Consumption Quantities
2001	10	20	$Q_a = 100; Q_b = 100$
2002	12	24	$Q_a = 110; Q_b = 110$
2003	14	29	$Q_a = 120; Q_b = 120$

Assume that 2001 is the base year.

- (i) Calculate the consumer price **index** (NOT expenditures) for each of the three years (3 marks).

Ans: 2001 \rightarrow $\$1000 + \$2000 = \$3000$

2001 \rightarrow CPI=100

2002 \rightarrow $\$1200 + \$2400 = \$3600$

2002 \rightarrow CPI=120

2003 \rightarrow $\$1400 + \$2900 = \$4300$

2003 \rightarrow CPI=143.33

- (ii) Using the answers obtained in part (i), calculate the *annual* rate of inflation over the period, starting from 2001 to year 2002, and year 2002 to year 2003 (2 marks).

Ans: 2001-2 \rightarrow 20%, 2002-3 \rightarrow 19.44%.

- (iii) Suppose the Canadian borrowers borrowed \$1000 from the Canadian lenders on December 31, 2001 and promised to pay back \$1100 on December 31, 2002. Find the real interest rate (1 mark).

Ans: $10\% - 20\% = -10\%$.

4. The Short Run Model (15 marks)

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

$$\begin{aligned}C &= 100 + 0.8 Y_d && (Y_d \text{ is disposable income}) \\I &= 50 && (\text{investment spending}) \\G &= 50 && (\text{government purchases}) \\T &= 45 && (\text{net taxes}) \\EX &= 80 && (\text{exports}) \\IM &= 20 + 0.2Y && (\text{imports, notice that imports depend on } Y, \text{ not } Y_d)\end{aligned}$$

(i) What is the equilibrium output? (2 marks)

Ans: $Y=560$.

(ii) Find the EX multiplier (2 marks).

Ans: $1/(1-0.8+0.2)=2.5$.

Consider the following:

Canadian economy in for 'bumpy ride,' TD predicts

Last Updated Mon, 18 Sep 2006 14:26:38 EDT, [CBC News](#)

Canada's economy will feel the effects of a U.S. slowdown in 2007, according to a forecast from TD Economics. Canadian exporters will be hit by the cooling in U.S. growth as their largest market — exports to the U.S. account for 30 per cent of Canada's GDP — won't be buying as much. "This means the forest products and auto sectors are particularly vulnerable, as too are the provinces most dependent on U.S. trade, including Ontario, Quebec, Manitoba and New Brunswick," the report said.

(iii) Based on the article above, suppose our EX will drop to 70. Find the new Canadian GDP (2 marks).

Ans: $Y=535$.

(iv) Use three rounds to explain intuitively how the Canadian GDP will be affected. Let the first round be related to forest products, second round be clothing, third round be video rentals (3 marks).

Ans:

(v) Your boss the Minister of the Department of Finance asks you what can be done to reverse the Canadian recession. Find the change in G required to offset this recession and bring Y back to your initial answer in (i) (3 marks).

Ans: Set $Y=560$, leave G as unknown, find $G=60$.

(vi) Of course, you can suggest a tax cut instead. Find the new T so that Y goes back to (i) (3 marks).

Ans: Set $Y=560$, leave T as unknown, find $T=32.5$.

(vii) Bonus: What is the name of your boss? (2 marks)

Ans: James Flaherty.

The End

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:

Real GDP Growth = ([Year 2 real GDP] - [Year 1 real GDP]) / [Year 1 real GDP], 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:

Real GDP per capita = [real GDP] ÷ [population]

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

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

Question #4 (Total=10 marks)

Aggregate demand and aggregate supply are given by

Aggregate demand: $AD = 160 - P$

Aggregate supply: $AS = P - 40$

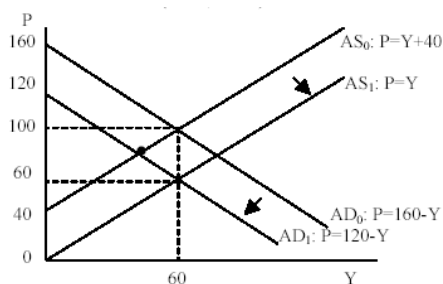
where P is the price level.

- (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

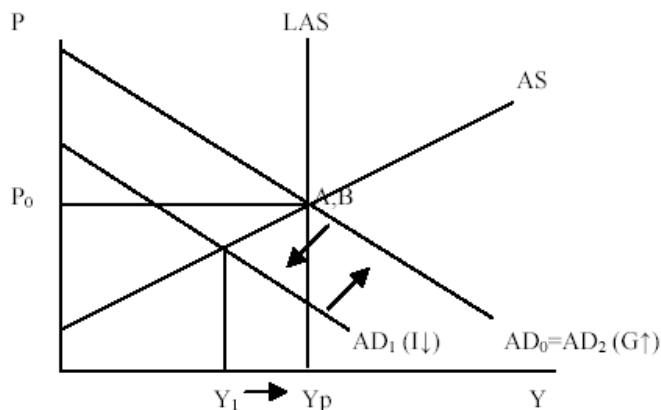
JOHN WILEN

Associated Press

October 15, 2007 at 3:45 PM EDT

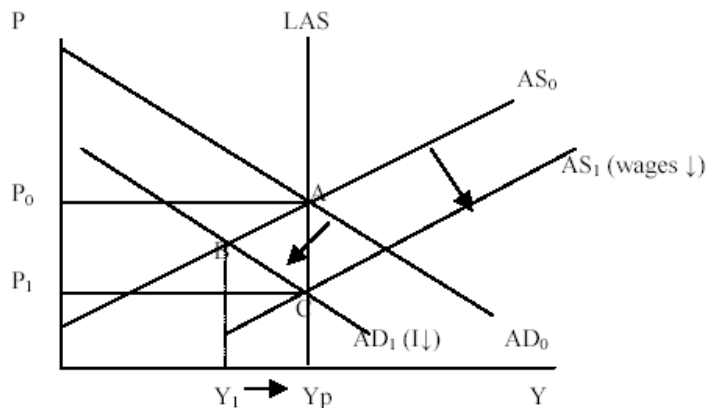
New York — Oil closed at a record price above \$86 a barrel Monday for the first time after OPEC said crude production by non-member countries is likely falling even as global demand for oil is rising. Prices were also supported by concerns that Turkish forces will pursue Kurdish rebels into Iraq, disrupting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

Concordia University
Department of Economics
ECON 203 Section C
Fall 2009

MIDTERM EXAMINATION AND ANSWERS

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

C. Lau
October 22nd, 2009
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. Net exports.
 - c. Income taxes.
 - d. Private domestic investment.
 - e. **Consumption.**

2. Which of the following statements about inflation is TRUE? (from posted past final)
 - a. Inflation does not affect nominal variables.
 - b. Inflation raises the value of real GDP and nominal GDP.
 - c. **People who have to make future payments will benefit from periods of high and unexpected inflation.**
 - d. People who earn future payments will benefit from periods of high and unexpected inflation.
 - e. Both B and C.

3. If labour force in Utopia grows by 10 per cent and employment grows by 7 percent unemployment rate will (from Tutorial #1)
 - a. **Increase by about 3 percent.**
 - b. Remain unchanged.
 - c. Fall by about 3 percent.
 - d. Rise by about 17 percent.
 - e. Cannot be determined.

4. If the natural rate of unemployment is 7% and the frictional unemployment rate is 1.5%, then the actual unemployment rate is
 - a. 5.5%.
 - b. 7%.
 - c. 8.5%.
 - d. 10%.
 - e. **Cannot be determined (Since frictional is part of natural, so the 1.5% is inside the 7%. We do not know cyclical).**

5. If $Y < AE$, then inventory would
 - a. Increase and Y would increase.
 - b. Increase and Y would drop.
 - c. **Decrease and Y would increase.**
 - d. Decrease and Y would drop.
 - e. Decrease and Y would remain constant.

6. For a given fluctuation in autonomous expenditure, economies with steeper AE functions have (from Tutorial #3)
 - a. Lower MPCs and will experience smaller business cycle fluctuations in real GDP and employment.
 - b. Lower MPCs and will experience larger business cycle fluctuations in real GDP and employment.
 - c. Higher MPCs and will experience smaller business cycle fluctuations in real GDP and employment.
 - d. **Higher MPCs and will experience larger business cycle fluctuations in real GDP and employment.**
 - e. None of the above.

7. If potential output exceeds short run equilibrium output, eventually (from Tutorial #2)
 - a. Input prices will rise and output will fall.
 - b. Both input prices and output will rise.
 - c. **Input prices will fall and output will rise.**
 - d. Both input prices and output will fall.
 - e. Lump sum taxes will fall.

8. According to Okun's law, if the unemployment rate is 8% and the natural rate U_n is 7%, then the actual Y must be (from past midterm)
 - a. 1% above the Y_p growth rate.
 - b. 1% below the Y_p growth rate.
 - c. 2% above the Y_p growth rate.
 - d. 4% below the Y_p growth rate.
 - e. **None of the above.**

9. According to “lean against the wind” fiscal policies, an economic recession $Y < Y_p$ implies that the government should **(from past midterm)**
- Cut tax rates and increase government spending.**
 - Raise tax rates and decrease government spending.
 - Leave tax rates and government spending unchanged.
 - Run a balanced budget.
 - Both C and D.
10. If the budget balance and structural budget balance have both changed from \$10 billion to \$20 billion with Y_p constant, this implies that **(from past midterm)**
- The government has increased its expenditure and/or cut taxes.
 - The government has decreased its expenditure and/or raise taxes.**
 - The economy has fallen into a recession.
 - Both A and C.
 - None of the above.

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

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

Use the following table from the year 2008 to answer the questions below:

Item:	Amount (\$ Billions)	Item:	Amount (\$ Billions)
Government purchases of goods and services	600	Consumption expenditure	1100
Wages paid to labor	1200	Interest and investment income	100
Investment expenditure	500	Import	100
Indirect taxes	700	Depreciation	250
Income taxes	150	Fixed capital formation	200
Profits	700	Farmers' income	400
Export	600	Unincorporated non-farm business income	300
Subsidies	???		

- (i) Find the value of nominal GDP. Show all steps and variables (1 mark).
Ans: $Y = C + I + G + NX = \$(1100 + 500 + 600 + 600 - 100) = \2700 .
- (ii) Find the value of subsidies. Show all steps and variables (1 mark).
Ans: $\$2700 = \$(1200 + 700 + 700 + 100 + 250 + 400 + 300 - \text{Sub})$, so $\text{Sub} = \$950$.
- (iii) Suppose that the CPI for 2005=105 and the CPI for 2008=98. Find the real GDP for 2008 to 1 decimal place (1 mark).
Ans: $\text{Real GDP} = \$2700 / 98 * 100 = \2755 (Tutorial #1, Question 4).
- (iv) Find the inflation rate between 2005 and 2008 to 1 decimal place. Is this inflation or deflation? Explain (1 mark).
Ans: $(98 - 105) / 105 * 100 = -6.7\% \rightarrow$ deflation since prices have dropped.

Question #2 Unemployment (Total=6 marks) (from Lyryx)

Consider the following data collected from a country:

Total population	1132
Population under 15 years of age	392
Not in the labour force	330
Unemployed	74
Part-time workers looking for full-time jobs	33

(i) Calculate the size of the labour force (2 marks).

Ans: LF=Population – under 15 years – not in LF = 410.

(ii) Calculate the unemployment rate to 2 decimal places (2 marks).

Ans: $74/410 \times 100 = 18.05\%$.

(iii) Refer to the CTV news article discussed in class: What was our (approximate) unemployment rate in August 2009? (1 mark). The article says that our unemployment rate has increased even though more net new jobs have been created in August. Explain why our unemployment rate has increased (1 mark).

Ans: The complete article “New jobs created but unemployment rate edges up” is linked from our course website → 8.7% (answers between 7.6% to 9% will receive 1 mark) → Increased from 8.3% due to more people entering the LF than new net job creation.

Question #3 True or False: Explain whether the following two statements are true or false. Marks are based solely on explanation. No marks will be awarded by simply stating “true” or “false” without explanation. (Total=6 marks) (from past final exam posted)

(i) The US trade deficits ($NX < 0$) are not related to its tax cuts and low private savings rates (3 marks).

Ans: False → $NX = (S - I) + (T - G)$, so if S and T drop, NX drops. If private citizens do not save enough to supply funds for private firms to borrow and the government does not collect enough taxes to cover G, the country has to borrow from somewhere. $NX < 0$ means this country borrows from other countries.

- (ii) An increase in government spending has no effect on equilibrium income (output) if it is financed by an equal increase in lump sum taxes (3 marks).

Ans: False → If G rises by 1, first round says Y rises by 1. If T drops by 1, first round says Y rises only by consumption. Since $MPC < 1$, then Y rises less than 1 (from Tutorial #4 answers posted, Question #2, part (v) (c)).

Question #4 Okun's Law and AD/AS (Total=6 marks) (from Lyryx)

Suppose we have the following data for an economy:

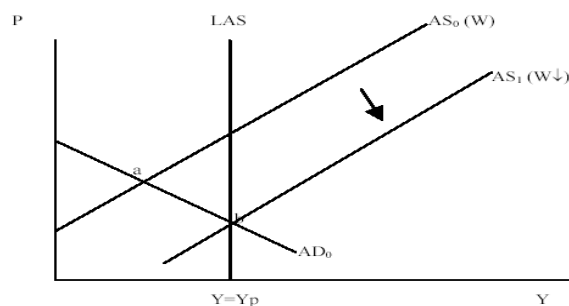
Year	Potential Output (billions 99\$)	Real GDP (billions 99\$)
1998	1,038	1,017
1999	1,069	1,030
2000	1,101	1,101
2001	1,134	1,160
2002	1,168	1,139
2003	1,203	1,130
2004	1,240	1,187

- (i) If the unemployment rate in 2000 were 7 percent, what unemployment rate would Okun's Law predict for the years 2001 and 2002, respectively? Keep your calculations and answers to 2 decimal places (2 marks).

Ans: $U_{2001} - 7\% = -0.5(\% \Delta Y - \% \Delta Y_p)$, so $\% \Delta Y = (1160 - 1101) / 1101 * 100$, and $\% \Delta Y_p = (1134 - 1101) / 1101 * 100$. So $U_{2001} = 5.82\%$. Same idea for 2002, so $U_{2002} = 8.23\%$.

- (ii) Consider your answer for 2002: Describe how the economy would adjust back to Y_p eventually. Use the AD/AS/LAS graph to illustrate your answers (4 marks).

Ans: Since 2002 unemployment rate is higher than 7%, we know $Y < Y_p$. This corresponds to point "a" in the graph. With high unemployment, wages will eventually decrease, which will cut costs for firms. This would shift AS to the right and increase production and bring Y back to Y_p at point "b".



Question #5 Policies (Total=18 marks) (From Lyryx AND Similar to past midterm posted)

Suppose the Canadian economy can be described as follows:

$$C = 60 + 0.8Y_d \text{ (} Y_d \text{ is disposable income)}$$

$$I = 60 \text{ (Investment spending)}$$

$$G = 280 \text{ (Government purchases)}$$

$$T = 0.2Y \text{ (Percentage taxes)}$$

$$X = 300 \text{ (Exports)}$$

$$Z = 0.14Y \text{ (Imports)}$$

- (i) Calculate the equilibrium Y . Also let this value of Y to be Y_p (2 marks).

Ans: $Y=1400$. See class notes for steps.

- (ii) Find the autonomous multiplier (1 mark).

Ans: 2. See class notes for equation.

- (iii) Find the government budget balance BB , given your Y in (i). Is the government running a surplus or deficit or neither? (1 mark).

Ans: $BB=280-280=0$.

U.S. consumer confidence slips: Americans remain worried about their jobs

Last Updated: Tuesday, September 29, 2009 | 11:02 AM ET [CBC News](#)

American consumers continue to sit on their wallets, according to two sets of data released Tuesday. The U.S. Conference Board reported its consumer confidence index fell in September. The index fell to 53.1 in September from 54.5 in August. That erases some of the seven-point gain for the index made from July to August. Americans grew more concerned about the economy, their job prospects and their incomes, the board said.

- (iv) Suppose the recent financial market problems have led US consumer confidence to drop, and hence Canada's exports fall from 300 to 100. Find the new Y (2 marks).

Ans: $Y=1000$, since $\Delta X=-200$, with multiplier, $\Delta Y= -400$.

- (v) Using two rounds, explain how the drop in our exports affects Y . Let the first round be related to autos and the second round related to clothing (4 marks).

Ans:

Round 1 → $\Delta \text{exports} = -200$, so $\Delta Y = -200$ in car production.

Round 2 → As the before-tax income of car workers drops by 200, their after-tax income really only drops by $0.8 \times 200 = \$160$ → their consumption drops by $0.8 \times \$160 = \128 → However, part of this drop in consumption is suffered by foreign firms since imports would drop by $0.14 \times \$200 = \28 → The net job/production loss in the clothing sector in this country is only \$100.

Note: With the multiplier of 2, we expect the power series to be $1 + 0.5 + (0.5)^2 + \dots$. Notice that from round 1 the $\Delta Y = -200$, and from round 2 the $\Delta Y = -100$, which is precisely half of the previous round.

- (vi) Find the budget balance, given your Y in (iv). Is the government running a surplus or deficit or neither? (1 mark).

Ans: $BB = 200 - 280 = -80$.

- (vii) Suppose the government wants to push the economy back to the Y level in (i) but with exports still at 100. Find the new G necessary. Also find the new budget balance BB (4 marks).

Ans: $BB = 280 - 480 = -200$, new $G = 480$ since exports have dropped by 200, G needs to rise by 200.

Ottawa could wipe out decade of debt payments

Updated Wed. Jan. 21 2009 5:50 PM ET

CTV.ca News Staff

Canada's parliamentary budget watchdog is warning that the federal government is at risk of wiping out the last 11 years of debt payments due to the massive deficits forecasted for the next five years. Parliamentary budget officer Kevin Page issued the economic and fiscal brief in advance of the highly anticipated Jan. 27 budget, in which the Conservatives are expected to table a \$40 billion deficit. Page estimates that Canada will rack up at least \$46 billion in debt over the next five years, and possibly as much as \$105 billion. Canada has paid down about \$105 billion in federal debt since 1998.

The report says that Canada is headed for a structural surplus of about \$6 billion each year for the next five years, respectively. Page also warns that "we want to maintain as close as possible a structural balance."

- (viii) The above article says we expect a budget deficit of \$40 billion in 2009 and yet it also says we are headed for a structural surplus of \$6 billion in 2009. Does the article contradict itself? Explain (3 marks).

Ans: No contradiction → \$40 billion due to recession, so tax revenue drops, hence deficit → \$6 billion by keeping Y_p quite constant or growing slowly, so tax revenue quite constant. So given government spending and tax rates, when our Y eventually recovers, we expect a structural budget surplus of \$6 billion.

The End

Concordia University
Department of Economics
ECON 203 Section 4U
Winter 2009

MIDTERM EXAMINATION AND ANSWERS

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

C. Lau
March 4th, 2009
Time Limit: 75 minutes

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

1. Under the aggregate expenditure approach, Canada's Net Export Expenditure is around _____% of our GDP.
 - a. 10.
 - b. 20.
 - c. 30.
 - d. 40.
 - e. **None of the above (It is around 2%).**

2. Assuming a nominal GDP of \$2 billion and a GDP deflator of 180, real GDP must be
 - a. \$3.4 billion.
 - b. \$3 billion.
 - c. \$2 billion.
 - d. \$1.75 billion.
 - e. **None of the above (It is $\$2/180 \times 100 = \1.11 billion).**

3. In the years 2006 and 2007, the cyclical unemployment rates in Canada had been around
 - a. 9%.
 - b. 7%.
 - c. 5%.
 - d. 3%.
 - e. **0% (Actual unemployment rate around 7%, which is our natural rate. The 7% consists of structural, frictional and seasonal unemployment).**

4. If $Y < AE$, then inventory would
 - a. Increase and Y would increase.
 - b. Increase and Y would drop.
 - c. **Decrease and Y would increase (AE too large, inventory flies off the shelves, firms increase production).**
 - d. Decrease and Y would drop.
 - e. Decrease and Y would remain constant.

5. Which of the following best describes automatic built-in stabilizers in Canada?
 - a. The size of the autonomous goods market multiplier varies inversely with the level of GDP.
 - b. Income tax collections automatically fall as GDP rises.
 - c. **Income tax collections automatically fall as GDP falls.**
 - d. Government spending automatically rises as GDP falls (G is autonomous or constant).
 - e. Both c and d.

6. The aggregate demand curve is derived from
 - a. Summing all micro demand curves.
 - b. Wealth effects in consumption.
 - c. Price effects in net exports.
 - d. **b and c (Chapter 5 notes, page 1).**
 - e. All of the above.

7. If consumption (C) is \$30,000 when income is \$22,000, and the MPS is 0.2. An increase in Y causes C to rise to \$32,000. What is the new Y?
 - a. \$22,500
 - b. \$23,500
 - c. **\$24,500 ($\$30,000 = a + 0.8(\$22,000)$, so the consumer confidence is 12,400. $C = \$32,000 = 12,400 + 0.8(Y)$. So $Y = \$24,500$).**
 - d. \$25,500
 - e. None of the above.

8. The AD/AS model shows that if the price of oil drops, the economy will experience
 - a. A rise in the inflation rate and a drop in the unemployment rate.
 - b. A rise in the inflation rate and a rise in the unemployment rate.
 - c. **A drop in the inflation rate and a drop in the unemployment rate (AS shifts right, lower P and higher Y).**
 - d. A drop in the inflation rate and a rise in the unemployment rate.
 - e. A drop in the inflation rate and a constant unemployment rate.

9. According to Okun's law, if the unemployment rate is 9% and the natural rate U_n is 7%, then the actual Y must be
- 2% above the Y_p growth rate.
 - 2% below the Y_p growth rate.
 - 4% above the Y_p growth rate.
 - 4% below the Y_p growth rate ($\Delta U=2 = -0.5(\% \Delta Y - \% \Delta Y_p)$, so $\% \Delta Y - \% \Delta Y_p = -4\%$.)**
 - None of the above.
10. Since the LAS curve is vertical, and increase in consumer confidence in the short run will lead to
- A higher equilibrium price level and GDP in the long run.
 - A higher equilibrium price level and lower GDP in the long run.
 - A higher equilibrium price level and no change in GDP in the long run (AD rises, higher P, eventually higher wages, AS shifts left).**
 - A lower equilibrium price level and higher GDP level in the long run.
 - No change in the equilibrium price level or GDP level in the long run.

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

Question #1 GDP Approaches (Total=4 marks) from Lyryx.

Suppose there is an economy that produces only four goods in one year.
 Paper: \$8,000 Books: \$16,000 Toner: \$4,500 Envelopes: \$4,000

The production of books requires the following amount of intermediate goods:
 Paper: \$4,500 Toner: \$3,500

The production of envelopes requires the following amount of intermediate goods:
 Paper: \$2,000

- Find the total GDP for the economy (2 marks).
Ans: \$22,500
- Find the value of paper sold as a final good (1 mark).
Ans: \$1,500
- Find the value of toner sold as a final good (1 mark).
Ans: \$1,000

Question #2 Conceptual Questions (Total=6 marks)

- Explain how a country's trade deficits are related to its private and public net savings. What policies can be introduced to decrease such trade deficits? (3 marks).
Ans: Chapter 7 notes $\rightarrow NX=(S-I)+(T-G)$; Increase S, cut I, cut G, raise T.
- Discuss the difference between BB and SBB and which type of deficits is more worrisome (3 marks).
Ans: BB depends on actual Y ($BB=tY-G$), SBB depends on Y_p ($SBB=tY_p-G$); SBB more worrisome since BB deficits are more likely to be temporary if driven by temporary recessions. SBB deficits are due to rise in G and drop in T.

Question #3 Unemployment (Total=6 marks)

Suppose the population of Canada is 3,210. Of all adult Canadians, 2,575 were employed, 200 were unemployed, and 300 were not in the labour force.

- How many Canadians are under the age of 15? (2 marks)
Ans: Refer to the tree diagram in Chapter 4 \rightarrow There are 135 kids.
- What is the unemployment rate (in percentage)? (2 marks)
Ans: $(200/2775)*100=7.2\%$
- There had been some discussions in the U.S. that given the depleting reserves in old age securities and the longer average life expectancies of the population, perhaps the age of retirement should be increased to 70. Suppose Canada is considering if it should adopt this policy. Assume that 100 of these previously retired workers would now be looking for work. Find Canada's new unemployment rate (2 marks).
Ans: $(300/2875)*100=10.43\%$. Labour force rises by 100, and unemployment also rises by 100.

Question #4 AD/AS (Total=4 marks)

Consider the following excerpt from The Canadian Press:

Consumer confidence falls to weakest level since '82

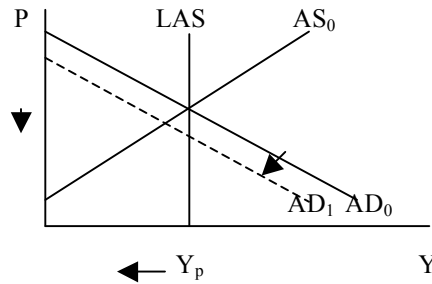
Updated Fri, Oct. 17 2008 11:03 AM ET, The Canadian Press

OTTAWA -- Consumer confidence has fallen to the lowest level in 26 years, according to the Conference Board of Canada.

The think-tank says its survey of 2,000 Canadians early this month showed a sharp drop in sentiment after three months of rising optimism.

- (i) **Based on the article above**, use the AD/AS/LAS diagram to demonstrate how the drop in consumer confidence would affect our Canadian economy. For simplicity, assume that before these changes the Canadian economy was in the short run and long run equilibrium. Discuss the effects on the inflation rate and the unemployment rate (2 marks).

Ans: AD shifts down, inflation rate lower but unemployment rate higher (since Y is lower).



- (ii) If you are working as an economist for the Department of Finance and your boss asks you to keep the actual unemployment rate at the natural rate. What two fiscal policy changes would you recommend? Explain (2 marks).

Ans: ↑G, ↓T since AD will rise as G ↑ and the tax cut will ↑C.

- (iii) If your recommendations in (ii) are not implemented, discuss how the Canadian economy would eventually adjust in the long run (2 marks).

Ans: Since unemployment is higher, layoffs eventually lead to a fall in wages, production costs fall, AS shifts right.

Question #5 Policies (Total=20 marks)

Suppose the Canadian economy can be described as follows:

$C = 200 + 0.6 Y_d$ (Y_d is disposable income)	$I = 250$	(investment spending)
$G = 275$ (government purchases)	$T = 0.25Y$	(percentage taxes)
$X = 155$ (exports are constant)	$Z = 0.25Y$	(imports depend positively on our own Y)

- (i) Calculate the equilibrium Y. Also let this value of Y to be Y_p (2 marks).
Ans: Y=1100.
- (ii) Find the autonomous multiplier (2 marks).
Ans: 1.25.
- (iii) Find the government budget balance $BB = tY - G$, given your Y in (i). Is the government running a surplus or deficit or neither? (1 mark).
Ans: BB=0.
- (iv) Suppose the recent financial market problems have led consumer confidence to drop from 200 to 140. Find the new Y (2 marks).
Ans: Y=1025.
- (v) Using three rounds, explain how the drop in consumer confidence affects Y. Let the first round be related to autos and the second round related to clothing (6 marks).

Ans: First round means our auto production will drop by 60 units. Their income will drop by 60. Second round means auto workers suffer a loss of income of 60, of which 25% or 15 would have gone to pay for taxes. They have to cut back their spending on clothing. However, they are only going to cut back their spending on clothing by 60% of 45 = 27. In addition, not all of these 27 units are suffered by Canadian clothing firms because part of these 27 units would have been imported from abroad. We would have imported $0.25(60) = 15$. Therefore, our Canadian firms suffer a loss of only $27 - 15 = 12$. Our total production of clothing drops by 12. Notice that the drop in imports is $0.25Y$, not $0.25(Y - T)$. Since Y has dropped by 60, this is why imports have fallen by 15.

- (vi) Find the government budget balance, given your Y in (iv). Is the government running a surplus or deficit or neither? (1 mark).
Ans: $BB = -18.75$.
- (vii) Suppose the government wants to push the economy back to the Y level in (i) but with consumer confidence still at 140. Find the new G necessary. Also find the new budget balance BB (4 marks).
Ans: $G=335$, $BB= -60$.
- (viii) Without further calculations, argue whether you would support the government's action from above. Name one benefit of the government's action and also one cost arising from its action (2 marks).
Ans: Cost \rightarrow digging deeper into deficits; benefit \rightarrow prevent a prolonged recession.

Concordia University
Department of Economics
ECON 203 Section 2Y
Fall 2010

MIDTERM EXAMINATION **VERSION 1** AND ANSWERS

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

C. Lau
October 21st, 2010
Time Limit: 60 minutes

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

- The nominal GDP in Canada for the year 2009 was around
 - C\$715 Billion.
 - C\$1 trillion.
 - C\$1.5 trillion (Chapter 4 lecture notes, page 1)**
 - C\$4.25 trillion.
- Which of the following statements about inflation is TRUE?
 - Inflation cannot be zero or negative.
 - Inflation raises the value of real GDP.
 - People who earn future payments will gain from periods of high and unexpected inflation.
 - People who have to make future payments will gain from periods of high and unexpected inflation (Past Midterm Fall 2008).**
- If $Y > AE$, then inventory would _____ so that eventually the market equilibrium would become _____.
 - Increase and AE would increase; $Y = C + I + G + NX$.
 - Increase and Y would decrease; $Y = C + S + T$ (Past MT Winter 2010, $Y = AE$, and also $Y = C + S + T$).**
 - Decrease and Y would increase; $Y = C + I + G + NX$.
 - Decrease and AE would decrease; $Y = C + S + T$.
- For a given fluctuation in autonomous expenditure, economies with flatter AE functions have
 - Lower MPCs and will experience smaller business cycle fluctuations in real GDP and employment (Tutorial, Past MT Fall 2009).**
 - Lower MPCs and will experience larger business cycle fluctuations in real GDP and employment.
 - Higher MPCs and will experience smaller business cycle fluctuations in real GDP and employment.
 - Higher MPCs and will experience larger business cycle fluctuations in real GDP and employment.
- If country X has a labour force of 200,000 people and 170,000 are employed, what is the unemployment rate of country X?
 - 20%.
 - 15% (Tutorial).**
 - 10%.
 - Cannot be determined without more information.
- The aggregate demand curve is:
 - Vertical if full employment exists.
 - Downward-sloping because of the interest rate, wealth and foreign trade effects (Tutorial).**
 - Downward-sloping because production costs decrease as real output increases.
 - All of the above are correct.
- Which of the following about the natural rate of unemployment is/are CORRECT?
 - Positive, and measured as around 7% for Canada (Lecture notes).**
 - (labour force – equilibrium unemployment) / labour force, then multiplied by 100.
 - The natural rate is the sum of frictional, structural, seasonal and cyclical unemployment rates.
 - All of the above are correct.
- Suppose a pessimistic outlook leads to a drop in investment confidence by 10 points. Which of the following is/are CORRECT?
 - A lump sum tax system will prevent a drop in GDP.
 - The higher the MPC, the smaller is the drop in GDP.
 - The higher the MPZ, the smaller is the drop in GDP (Past Final, Summer 2010, True/False questions).**
 - All of the above.
- If consumption (C) is \$40,000 when income is \$35,000, and the MPS is 0.2. An increase in Y causes C to rise to \$42,000. What is the new Y?
 - \$36,000
 - \$37,000
 - \$38,500.
 - None of the above ($Y = \$37,500$, Past MT Winter 2009).**

10. According to Okun's law, if the unemployment rate is 6% and the natural rate U_n is 7%, then the actual Y must be ____; if the government wants to adopt "lean against the wind" policies, it should ____.
- 2% above the Y_p growth rate; increase taxes (Past MT Fall 2009, want $Y=Y_p$, so with inflationary gap, raise taxes to cut C).
 - 2% above the Y_p growth rate; decrease taxes.
 - 2% below the Y_p growth rate; increase taxes.
 - 2% below the Y_p growth rate; decrease taxes.

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

Question #1 GDP Approaches and Inflation (Total=6 marks) (From Tutorial #1, Past MT Fall 2009)

Use the following table from the year 2009 to answer the questions below. Leave all answers to 1 decimal place, if applicable.

Item:	Amount (\$ Billions)	Item:	Amount (\$ Billions)
Government purchases of goods and services	500	Consumption expenditure	1200
Wages paid to labor	800	Interest and investment income	100
Changes in Inventory	100	Import	700
Indirect taxes	700	Depreciation	250
Profits	500	Fixed capital formation	400
Export	600	Farmers' income	100
Subsidies	???	Unincorporated non-farm business income	50

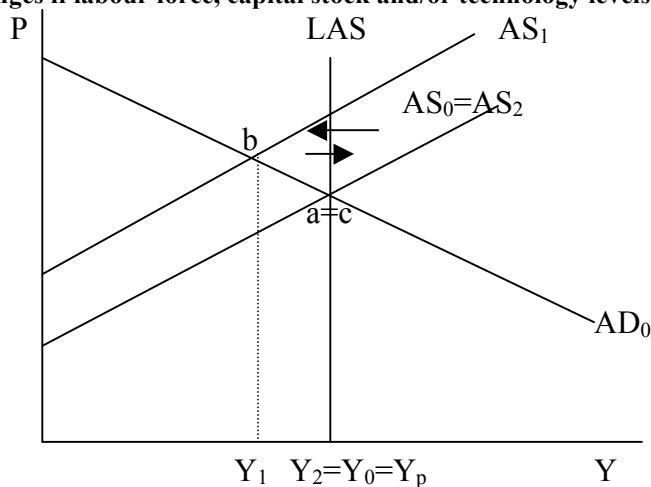
- Find the value of nominal GDP. Show all steps and variables (1 mark).
Ans: $Y = C+I+G+NX$, $C=1200$, $I=\text{fixed capital formation} + \text{changes in inventory} = 400+100$, $G=500$, $NX = 600 - 700$, so $Y=2100$. A lot of students got Investment wrong.
- Find the value of subsidies. Show all steps and variables (1 mark).
Ans: $2100 = \text{Green} - \text{subsidies}$, so $\text{sub} = 400$.
- Suppose that the CPI for 2005=110 and the CPI for 2009=105. Find the real GDP for 2009 (1 mark).
Ans: $2100/105*100 = 2000$.
- Find the inflation rate between 2005 and 2009. Is this inflation or deflation? Explain (1 mark).
Ans: $(105-110)/110*100 = -4.5\%$, deflation.
- Suppose the nominal GDP that you have found in part (i) remains constant, but Consumption = 1000 and Changes in Inventory = 300. Given this observation, would you predict that the nominal GDP is 2010 to rise or fall compared to the 2009 nominal value? Explain (2 marks).
Ans: With inventory piling up, this suggests that the firms (such as the car dealer in chapter 4 notes or Second Cup discussed in class), they know that things are not selling well. The car, bought by the dealer, is sitting in the car lot rather than being sold to customers. Firms would know they have to produce less until the inventory disappears. The GDP in 2010 is likely to drop.

Question #2 Okun's Law and AD/AS/LAS (Total=8 marks) (From Lyryx, Past MT Winter 2010)

The table below gives information for the potential output and real GDP values for a series of years for a fictitious country. Use this information to complete the following questions. (Round your answers to the nearest two decimal places.)

Year	Y_p	Real Y	$\% \Delta Y$	Unemployment Rate	Output Gap Type (Recessionary or Inflationary)
2004	970	970	-----	6	-----
2005	970	921.5	-5	8.5	Recessionary

- (i) Fill in the above table (3 marks). Use the space below to derive answers, if needed.
- (ii) Explain in words how the economy will adjust in the long run and close the output gaps you have found above, assuming that there is no government or central bank policy intervention. Also illustrate graphically using the AD/AS/LAS model (5 marks).
Ans: At "a", $Y=Y_p$, everything is fine. However, in 2005 we see a recessionary output gap $Y < Y_p$. Since this has been caused by a change in the oil price, the point "b" must be to the left of "a". AS must have shifted to the left, or the price of oil has increased to decrease short run production. At "b", $Y < Y_p$, and unemployment rate rises above U_n . This creates temporary excess labour supply or under-employment, and eventually wages have to drop in order to find jobs. This would shift AS to the right, and "b" goes to "c", which is also "a". From the firms' perspective, the rise in production costs due to the rise in the price of oil is now offset by the fall in wages. So overall, they have no incentives to produce more or less than Y_p . Temporary changes, such as price of oil, cannot lead to permanent changes in Y_p . Y_p only changes if labour force, capital stock and/or technology levels change permanently (Chapter 5).



Question #3 Conceptual Questions: Explain whether the following two statements are true or false. Marks are based solely on explanation. No marks will be awarded by simply stating "true" or "false" without explanation (Total=6 marks).

- (i) The US trade deficits ($NX < 0$) can be narrowed by raising taxes and encouraging higher investment expenditure.
Ans: See **Past MTs Fall 2009 and Winter 2010.**
- (ii) Automatic fiscal policies are less effective in stabilizing GDP if higher incomes are taxed at higher tax rates.
Ans: False → If income rises, this tends to create an inflationary gap $Y > Y_p$. Eventually, inflation will become a concern. However, if higher income levels were taxed at higher income tax rates, then after-tax income will shrink. The rise in consumption will be limited due to higher income taxes, and hence the inflationary gap will not be as big. Y fluctuates less. The same logic applies if $Y < Y_p$.

Question #4 Policies (Total=20 marks) (From Lyryx, All four Past MTs)

Suppose the Canadian economy can be described as follows:

$C = 60 + 0.8 Y_d$	(Y_d is disposable income)	$I = 340$	(investment spending)
$G = 140$	(government purchases)	$T = 0.1Y$	(percentage taxes)
$X = 160$	(exports are constant)	$Z = 0.22Y$	(imports depend positively on our own Y)

- (i) Calculate the equilibrium Y. Also let this value of Y to be Y_p (2 marks).
Ans: $Y=1400$, see notes, tutorials, lyryx and all past midterms for steps.
- (ii) Find the autonomous multiplier (2 marks).
Ans: 2.
- (iii) Find the budget balance BB, given your Y in (i). Is the government running a surplus or deficit or neither? (1 mark).
Ans: $BB = tY - G = 0$.
- (iv) Suppose the recent financial market problems have led investment confidence to drop from 340 to 140. Find the new Y (2 marks).
Ans: $\Delta I = -200$, multiplier = 2, so $\Delta Y = -400$, so new $Y=1000$.
- (v) Using two rounds, explain how the drop in investment confidence affects Y. Let the first round be related to autos and the second round related to clothing (6 marks).
**Ans: Round #1 $\rightarrow \Delta I = -200$, so $\Delta Y = -200$ in auto production (2 marks).
Round #2 \rightarrow As the before-tax income of car workers drops by 200, their after-tax income really only drops by $0.9 \times 200 = \$180 \rightarrow$ their consumption drops by $0.8 \times \$180 = \$144 \rightarrow$ However, part of this drop in consumption is suffered by foreign firms since imports would drop by $0.22 \times \$200 = \$44 \rightarrow$ The net job/production loss in the clothing sector in this country is only \$100 (4 marks).**
- (vi) Find the budget balance, given your Y in (iv). Is the government running a surplus or deficit or neither? (1 mark).
Ans: -40.
- (vii) Suppose the government wants to push the economy back to the Y level in (i) but with investment confidence still at 140. Find the new G necessary. Also find the new budget balance BB (2 marks).
Ans: $\Delta I = -200$, so $\Delta G = 200$, so new $G = 340$, new $BB = -200$.

Consider the following article:

Flaherty posts record deficit of \$55.6 billion
CTV.ca News Staff, Date: Tue. Oct. 12 2010 9:02 PM ET

The national deficits hit a record \$55.6 billion in the last fiscal year, though Finance Minister Jim Flaherty says he is confident that the government will be able to balance its budget in 2015-2016. While the fiscal update included no new spending or cost-cutting measures, Flaherty said the government is committed to ... freezing government administrative costs and restricting the growth of several federal departments.

- (viii) Based on your knowledge of BB versus SBB and the above article, answer the following:
- (a) The BB deficit in the last fiscal year was \$55.6 billion. Is the SBB likely to be larger or smaller (in absolute value) than the BB? Explain (2 marks).
Ans: We have been going through a recession recently, hence current $Y < Y_p$. Since $BB = tY - G$ and $SBB = tY_p - G$, then obviously SBB is a smaller (absolute) value than BB. That is, our current deficits of \$55.6 capture not only the given fiscal policies (tax rates and G spending), but also the drop in Y.
- (b) Why does Mr. Flaherty expect the deficit to be balanced by 2015-2016 even with a freeze in government spending? What may affect the accuracy of his calculations? Explain (2 marks).
Ans: With the same G (freeze in government spending), and no mention of tax cuts, Jim must be thinking that for the given t and G, if Y recovers or even surpasses Y_p , then BB will disappear simply due to a stronger economy and his ability to collect more total tax revenue (same t, higher Y, so higher tY). However, Y may not rise as much as he would like to see. Our Y depends on various variables such as CC, IC, US GDP, the price of oil, etc. which he or anyone can control.

Concordia University
Department of Economics
ECON 203 Section 4F
Winter 2010

MIDTERM EXAMINATION **VERSION 1** AND ANSWERS

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

C. Lau
February 18th, 2010
Time Limit: 75 minutes

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

- If $Y < AE$, then inventory would (from past midterms)
a. Increase and Y would increase. b. Increase and Y would drop.
c. Decrease and Y would increase. d. Decrease and Y would drop.
- In 2008 and 2009, the actual unemployment rate in Canada was around 8.5%. The cyclical unemployment rate was around
a. 10%. b. 8%. c. 5%. **d. 1.5%.**
- If consumption is \$25,000 when income is \$21,000, and consumption increases to \$25,900 when income increases to \$22,000, the Marginal Propensity to Save is (from sample final)
a. 0.9 b. -0.1 **c. 0.1** d. -0.2.
- If our actual unemployment rate is 10% and our natural unemployment rate is 4%, what would happen in the long run? (from past midterms)
a. Input prices will rise and output will fall. b. Both input prices and output will rise.
c. Input prices will fall and output will rise. d. Both input prices and output will fall.
- In Pluto, 100,000 people are in the labour force and the unemployment rate is 25%. As Pluto moves out of a recession and jobs increase, 20,000 discouraged workers become "encouraged" to search for jobs. The unemployment rate becomes (from sample final)
a. 20%. b. 25.75%. c. 35%. **d. None of the above.**
- Since the LAS curve is vertical, a decrease in consumer confidence in the short run ($AD \downarrow$) will eventually lead to (from past midterms)
a. A rightward shift in the AS curve, a lower equilibrium price level and a lower Y_p in the long run.
b. A rightward shift in the AS curve, a lower equilibrium price level and no change in Y_p in the long run.
c. A leftward shift in the AS curve, a lower equilibrium price level and a lower Y_p in the long run.
d. A leftward shift in the AS curve, a higher equilibrium price level and no change in Y_p in the long run.
- The simple circular flow model shows that: (from tutorial)
a. Firms hire the factors from households and produce the output consumed by households.
b. Households provide the factors to firms and buy the output produced by firms.
c. The source of household income is the producing sector and the source of firms' revenue is household spending.
d. All of the above are correct.
- Which of the following best describes automatic built-in stabilizers in Canada? (from past midterms)
a. The size of the autonomous goods market multiplier varies inversely with the level of GDP.
b. Income tax collections automatically fall as GDP falls.
c. Government spending automatically rises as GDP falls.
d. Both B and C.
- The real GDP in Canada in 2000 was \$767 billion and in 2001 it was \$659 billion. It can be concluded that
a. The price level in Canada declined between 2000 and 2001.
b. The price level in Canada rose between 2000 and 2001.
c. The quantity of goods and services produced in Canada fell between 2000 and 2001.
d. A and C.

10. Suppose right now our money wage or nominal wage rate is \$10 per hour, and the current CPI is 150. Our labour union believes that the CPI for next year would increase to 165. If we want to be able to afford the same goods and services that we typically buy, the new nominal wage rate that we should ask for in the coming year should be
- a. at least \$10.5. **b. at least \$11.** c. at least \$11.5. d. at least \$12.

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

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

Use the following table to answer the questions below:

Item:	Amount (\$ Billions)	Item:	Amount (\$ Billions)
Government purchases of goods and services	600	Consumption expenditure	700
Wages paid to labor	800	Interest and investment income	260
Investment expenditure	250	Import	100
Indirect taxes	700	Depreciation	250
Income taxes	170	Fixed capital formation	200
Profits	600	Farmers' income	200
Export	600	Unincorporated non-farm business income	200
Subsidies	???		

- (i) Use the aggregate expenditure approach to find the value of GDP (2 marks).
Ans: The following formula should be used to calculate GDP by the aggregate expenditure approach: $Y = AE = C + I + G + NX = 700 + 250 + 600 + (600 - 100) = 2,050$
- (ii) Given the GDP value from part a), use the National income approach to find the value of subsidies (2 marks).
**Ans: The correct answer was: 960.00. To calculate subsidies using the national income method we use the following formula: $GDP = NDI - [subsidies]$, $NDI = [wages] + [indirect taxes] + [profits] + [interest and investment income] + [depreciation] + [farmers' income] + [unincorporated non-farm income] = 3,010$
 So we get: $2,050 = 3,010 - [subsidies]$, And therefore: $subsidies = 960$**

Question #2 CPI and Inflation (Total=6 marks) (from iStudy, Algebraic Questions)

There are two goods in the consumer basket, product A and product B. The prices of these goods, P_a and P_b (in dollars), are stated in the table below. Assume that 2001 is the base year.

Year	P_a	P_b	Consumption	Consumption
2001	10	20	$Q_a=100$	$Q_b=100$
2002	12	24	$Q_a=110$	$Q_b=110$
2003	14	29	$Q_a=120$	$Q_b=120$

- (i) Calculate the consumer price index (NOT expenditure) for each of the three years (3 marks).
Ans: 2001 \rightarrow $\$1000 + \$2000 = \$3000$, 2001 \rightarrow $CPI=100$; 2002 \rightarrow $\$1200 + \$2400 = \$3600$, 2002 \rightarrow $CPI=120$; 2003 \rightarrow $\$1400 + \$2900 = \$4300$, 2003 \rightarrow $CPI=143.33$. Notice that CPI uses the same quantities for all time periods unless it has been revised.
- (ii) Using the answers obtained in part (i), calculate the annual rate of inflation over the period, starting from 2001 to year 2002, and year 2002 to year 2003 (2 marks).
Ans: 2001-2 \rightarrow 20%, 2002-3 \rightarrow 19.44%.
- (iii) Suppose the Canadian borrowers borrowed \$1000 from the Canadian lenders on December 31, 2001 and promised to pay back \$1100 on December 31, 2002. Find the real interest rate (1 mark).
Ans: $10\% - 20\% = -10\%$.

Question #3 True or False: Explain whether the following two statements are true or false. Marks are based solely on explanation. No marks for simply stating “true” or “false” without explanation (Total=6 marks).

(i) The US trade deficits ($NX < 0$) can be narrowed by cutting taxes and encouraging higher savings (3 marks).

Ans: False → $NX = (S - I) + (T - G)$, so if S and T drop, NX drops. If private citizens do not save enough to supply funds for private firms to borrow and the government does not collect enough taxes to cover G, the country has to borrow from somewhere. $NX < 0$ means this country borrows from other countries (directly from past midterms).

(ii) If the Canadian government wants to minimize output gap, it should always run a balanced budget $BB = 0$ (3 marks).

Ans: False → Should run “lean against the wind” policies, that is, if $Y < Y_p$, then $\uparrow G$ and/or $\downarrow T$, and if $Y > Y_p$, then $\downarrow G$ and/or $\downarrow T$ (from past midterms multiple choice question.)

Question #4 Okun’s Law and AD/AS (Total=6 marks) (from iStudy, Algebraic Questions)

Suppose g_Y is actual Y growth rate and g_{Y_p} is potential Y growth rate.

(i) Let the natural rate of unemployment in 2004 to be 6%. Fill in the table (4 answers = 2 marks).

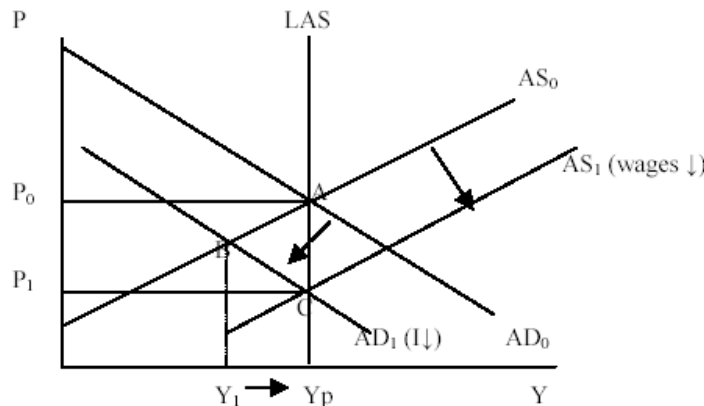
Year	Potential Real GDP	Actual Real GDP	g_{Y_p}	g_Y	Δu	U
2004	6,000	6,000	----	----	----	6
2005	6,600	6,300	10%	5%	2.5	8.5%

Ans: The g_{Y_p} is found by solving $(6,600 - 6,000) / 6,000$ then multiplied by 100, while g_Y is found by solving $(6,300 - 6,000) / 6,000$ then multiplied by 100. The value for Δu is solved with $\Delta u = -0.5 (g_Y - g_{Y_p})$, and u is $6\% + \Delta u$.

(ii) Consider your answer for 2005: In the absence of any fiscal or monetary policy intervention, explain how the economy would adjust back to Y_p eventually. Use the AD/AS/LAS graph to illustrate your answers (4 marks).

Ans: This is a recessionary gap since actual GDP growth is lower than the potential GDP growth. Suppose this is called by a drop in investment confidence. This is why unemployment has risen. This gap tend to persist because one way to eliminate this gap is for labour costs to drop, which in turn gives the firms incentives to hire more workers. However, it is very difficult for workers to agree to a wage cut, especially with union demands and minimum wage laws.

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 (see past midterm fall 08).



Question #5 Policies (Total=18 marks) (from Lyryx and past midterms)

Suppose the Canadian economy can be described as follows:

$C = 65 + 0.8Y_d$	(Y_d is disposable income)	$T = 0.1Y$	(Percentage taxes)
$I = 340$	(Investment spending)	$X = 75$	(Exports are constant)
$G = 120$	(Government purchases)	$Z = 0.22Y$	(Imports depend positively on our own Y)

- (i) Calculate the equilibrium Y (2 marks).
Ans: $Y=1200$ (See Lyryx and class notes for steps and derivations.)
- (ii) Find the autonomous multiplier (1 mark).
Ans: 2.
- (iii) Find the government budget balance BB, given your Y in (i). Is the government running a surplus or deficit or neither? (1 mark).
Ans: $BB=0$.
- (iv) Suppose the recent banking problems have shaken firms' confidence. This translates to our investment spending dropping from 340 to 140 due to a weaker investment confidence. Find the new Y (2 marks).
Ans: $Y=800$, since $\Delta I=-200$, with multiplier, $\Delta Y= -400$.
- (v) Using three rounds, explain how the drop in our exports affects Y. Let the first round be related to autos, the second round related to clothing and the third round related to food (6 marks).
**Ans: Round 1 $\rightarrow \Delta I = -200$, so $\Delta Y= -200$ in car production.
 Round 2 \rightarrow As the before-tax income of car workers drops by 200, their after-tax income really only drops by $0.9 \cdot 200 = \$180 \rightarrow$ their consumption drops by $0.8 \cdot \$180 = \$144 \rightarrow$ However, part of this drop in consumption is suffered by foreign firms since imports would drop by $0.22 \cdot \$200 = \$44 \rightarrow$ The net job/production loss in the clothing sector in this country is only \$100.
 Round 3 \rightarrow As the before-tax income of clothing workers drops by 100, their after-tax income really only drops by $0.9 \cdot 100 = \$90 \rightarrow$ their consumption drops by $0.8 \cdot \$90 = \$72 \rightarrow$ However, part of this drop in consumption is suffered by foreign firms since imports would drop by $0.22 \cdot \$100 = \$22 \rightarrow$ The net job/production loss in the food section in this country is only \$50.**
- Note: With the multiplier of 2, we expect the power series to be $1+0.5+(0.5)^2+\dots$ Notice that from round 1 the $\Delta Y=-200$, from round 2 the $\Delta Y= -100$, and from round 3 the $\Delta Y = -50$, which is half of the previous round.**
- (vi) Find the budget balance, given your Y in (iv). Is the government running a surplus or deficit or neither? (1 mark).
Ans: $BB=80-120= -40$.
- (vii) Suppose the government wants to push the economy back to the Y level in (i) but with investment still at 140. Find the new G necessary. Also find the new budget balance BB (2 marks).
Ans: $BB=120-320 = -200$, new $G=320$ since I has dropped by 200, G needs to rise by 200.

Structural deficit poses challenges for Feds: Page

CTV.ca News Staff, Updated: Wed. Jan. 13 2010 12:31 PM ET

Canada's parliamentary budget officer says Ottawa faces increasing challenges with the structural deficit it has created in the aftermath of the recession. Kevin Page told CTV's Canada AM that the country's swelling structural deficit is "very manageable" at the moment, but must be kept in check in the long term. Page predicts in his latest report that the structural deficit will reach \$18.9 billion in the 2013-14 year. "The big deficit we're seeing this year -- the \$55 billion, plus or minus -- is largely cyclical," Page said, noting the lower revenues and stimulus spending that weighed down the current fiscal year. In three years' time, most economists believe the Canadian economy will have returned to its full potential. But the country will still have a structural deficit at that stage, Page said, which poses problems.

- (viii) Use your knowledge of BB and SBB to explain the article above (3 marks).
Ans: Structural deficits refer to $SBB = tY_p - G = \$18.9$ billion. SBB would have \uparrow after the recession because currently the government is $\uparrow G$ and $\downarrow T$. The "big deficit" is $BB = tY - G = \$55$ billion, with $Y < Y_p$. However, even if Y starts to recover and increase, the higher G and lower T will still leave us with $SBB < 0$. BB is largely "cyclical" because $Y < Y_p$ is cyclical.

The End