

**Concordia University
Department of Economics**

ECON 203 – INTRODUCTION TO MACROECONOMICS

Summer 2013

COMMON FINAL EXAMINATION AND ANSWERS

FAMILY NAME: _____ **GIVEN NAME(S):** _____

STUDENT NUMBER: _____

Please read all instructions carefully.

1. This is a three-hour exam (180 minutes). The questions are worth 150 marks altogether. It is a good strategy to spend one minute per mark for your answers (150 minutes) and spend the remaining time (30 minutes) to review your answers.
2. This exam consists of four parts:
 - (i) Part I: 15 multiple-choice questions (30 marks);
 - (ii) Part II: Conceptual questions, transformed into 15 multiple-choice questions, (30 marks);
 - (iii) Part III: Five algebraic questions, transformed into 25 multiple-choice questions, (50 marks), and
 - (iv) Part IV: Multi-part policy questions, answer all parts (40 marks).
3. Write your name, student ID and answers to the multiple-choice questions (parts I, II and III) on the computer scan-sheet with a **PENCIL**. For Part IV, write all your answers on this exam with pen or pencil. Do not use additional booklets.
4. You are allowed to use a non-programmable calculator and a paper dictionary.
5. You are not allowed to tear any pages out of this exam.

Grades:

Parts I+II+III: _____

Part IV: _____

Total: _____

Part I: Multiple Choice Questions (Total=30 marks).

1. Suppose you have the following measure of nominal GDP by the income approach:

$$PY = W + BI + CCA + T_{IN}, \text{ where } PY = 700 + 100 + 100 + 100 = 1,000$$

Now an increase in the average wage rate in the economy increases employment income by 5 percent without any change in total employment or real GDP. What effect would this increase in employment income have on the costs of production and the GDP deflator?

- A) Increases factor costs and increases GDP deflator.
B) Decreases factor costs and increases GDP deflator.
C) Factor costs remain constant and increases GDP deflator.
D) Factor costs remain constant and decreases GDP deflator.
E) None of the answers is correct.
2. Continue with the previous question: If business raised prices to pass on these changed costs to buyers, how much would prices change, as measured by the GDP deflator?
A) Rises by 2.5%.
B) Rises by 3.5%.
C) Rises by 5%.
D) Falls by 2.5%.
E) Falls by 5%.
3. Suppose a country's population grows by 3% while its nominal GDP grows by 6% and the GDP deflator increases from 125 to 127.5, then the standard of living as measured by per capita real GDP _____.
A) Improves by 1%
B) Improves by 2%
C) Improves by 3%
D) Falls by 1%
E) Falls by 2.5%
4. Suppose the U.S. is an oil importer in the world. Recently, the price of oil has been decreasing. Which of the following is (are) likely to take place?
A) The U.S. government is more likely to narrow its fiscal deficits.
B) The inflation rate in the U.S. is likely to rise.
C) The U.S. dollar is likely to depreciate.
D) The U.S. trade deficit is likely to widen.
E) All of the answers are correct.
5. Which of the following is (are) CORRECT about the value of Y_p ?
A) Monetary policies cannot affect Y_p but fiscal policies can.
B) Input costs change in the long run to bring the short run Y back to Y_p .
C) Okun's law predicts that if $Y > Y_p$ by 5%, unemployment rate rises by 2.5%.
D) The unemployment rate associated with Y_p is the cyclical unemployment rate.
E) All of the answers are correct.
6. Other things remaining the same, if households suddenly decide to spend a higher fraction of their income on imports, then the AE function will _____ and the goods market multiplier will _____.
A) Become steeper; fall.
B) Become steeper; rise.
C) Become flatter; fall.
D) Become flatter; rise.
E) Make a parallel shift downward; fall.

7. Which of the following can increase the value of the automatic built-in stabilizers in Canada?
- A) By using a lump-sum tax system.
 - B) By balancing the government budget all the time.
 - C) By running a trade balance all the time.
 - D) By increasing the sensitivity of investment expenditure to changes in interest rates.**
 - E) None of the answers is correct.
8. Suppose the government raises its revenue by a net tax of 20 percent on income, $t = 0.2$, the marginal propensity to consume out of disposable income is 0.75, and the government has an outstanding public debt of 1,100. The autonomous expenditure is $(C_0 + I_0)$ is 400 and government expenditure is 400. What is the debt to GDP ratio?
- A) 22%.
 - B) 33%.
 - C) 44%.
 - D) 55%.**
 - E) None of the answers is correct.
9. Which of the following is (are) CORRECT about the marginal propensity to save (MPS)?
- A) It takes on negative values when income is very low.
 - B) If the MPS is high, fiscal policy is more effective in affecting GDP.
 - C) If the MPS is high, Y_p is less likely to grow in the future.
 - D) If the MPS is high, it is less likely that private sector borrowing is the main cause of trade deficits.**
 - E) All of the answers are correct.
10. Assume that Ashley deposits \$500 in currency in the Bank of Manitoba. A half-hour later, Orlando obtains a loan for \$1,000 at this bank. By how much, and in what direction, has the money supply changed?
- A) \$500; increase.
 - B) \$1,000; increase.**
 - C) \$1,500; increase.
 - D) \$500; decrease.
 - E) \$1,500; decrease.
11. Assume that the following describe a hypothetical economy: money supply = \$150 billion; quantity of money demanded for transactions = \$105 billion; quantity of money demanded as an asset = \$25 billion at 11% interest, increasing by \$5 billion for each 2-percentage point fall in the interest rate. What is the equilibrium interest rate?
- A) 1%.
 - B) 2%.
 - C) 3%.**
 - D) 4%.
 - E) 5%.
12. Consider a one-year bond with a principal or face value of \$500 and a coupon value of \$25. Which of the following statements is (are) CORRECT?
- A) If the interest rate is 10%, the present value of this bond is \$400.
 - B) If the interest rate is 12%, the present value of this bond is \$450.
 - C) If the interest rate is 15%, the present value of this bond is \$575.
 - D) If the interest rate is 20%, the present value of this bond is \$625.
 - E) None of the answers is correct.**
13. A central bank sells \$15 million of government bonds in the open market. If the banks hold reserves equal to 2% of their deposits, and the public holds cash equal to 5.5% of their deposits. What is the change in money supply?
- A) Increase of \$204 million.
 - B) Decrease of \$204 million.
 - C) Increase of \$211 million.
 - D) Decrease of \$211 million.**
 - E) Increase of \$750 million.

14. Consider the situation where you can buy a Canadian asset that pays 11% after one year, or a U.S. asset that pays 16% after one year. Both assets are equally safe, and it is certain that you would receive your invested money plus interest payments one year from now. The exchange rate between Canadian dollars and U.S. dollars is flexible, and the current e is $C\$1.3=US\1 . Using the Interest Rate Parity condition, what is the expected future exchange rate?
- A) 1.045.
 B) 1.125.
 C) 1.295.
 D) 1.345.
 E) None of the answers is correct.
15. Suppose the price of a basket of U.S. goods sells for $US\$100$, while an identical basket sells for $C\$110$. The current nominal exchange rate is e is $C\$1.2=US\1 . The Purchasing Power Parity theory predicts that there will be an increase in demand for _____, an increase in supply of _____, and eventually the $C\$$ will _____.
- A) Canadian goods; $US\$$; appreciate
 B) Canadian goods; $C\$$; depreciate
 C) U.S. goods; $US\$$; appreciate
 D) U.S. goods; $C\$$; depreciate
 E) None of the answers is correct.

Part II: Conceptual Questions (Previously True-False questions) (Total=30 marks).

For questions 16-18, refer to Concept #1: Economic fluctuations

16. In June 2013, different locations in Alberta were flooded because of heavy rainfall. The floods inflicted substantial damages to the Alberta economy. How can we describe the immediate economic effects on the Alberta economy?
- A) AD shifts to the right.
 B) Y_p shifts to the right.
 C) AS shifts to the left.
 D) Alberta's inflation rate will rise.
 E) Both C and D are correct.
17. What policy or policies should the Bank of Canada adopt in order to minimize Alberta's GDP fluctuation? For simplicity, suppose the Bank of Canada considers Alberta only, not the rest of Canada.
- A) Increase monetary base.
 B) Decrease target overnight interest rate.
 C) Conduct SPRA.
 D) Encourage banks to hold a lower reserve ratio.
 E) All of the answers are correct.
18. Suppose the damage from the flood is short term because Alberta still has its oil sands and natural resources intact. In order to assist the recovery, the Alberta provincial government has decided to increase spending on fixing roads, schools and houses. How will this fiscal policy affect Alberta? For simplicity, $BB=SBB=0$ before the flood.
- A) Its SBB will remain constant because the damage is short term.
 B) Its BB will become a negative value.
 C) Its net export is likely to improve.
 D) If the Bank of Canada helps by selling bonds, the present value of bonds will rise.
 E) All of the answers are correct.

For questions 19-21, refer to Concept #2: Exchange Rates and Arbitrage

19. Suppose in the London market, one U.S. dollar can buy 0.3 British pound, or $US\$1 = 0.3 \text{ £}$. In the Tokyo market, the conversion rate is $US\$1 = 3 \text{ Pesos}$. In the Toronto market, the conversion rate is $\text{£}1 = 12 \text{ Pesos}$. For simplicity, there is no transaction cost for currency trading. If financial traders can buy and sell currencies freely to make profits, what must be the equilibrium conversion rate in the Toronto market?
- A) $\text{£}1 = 7 \text{ Pesos}$.
 - B) $\text{£}1 = 8 \text{ Pesos}$.
 - C) $\text{£}1 = 9 \text{ Pesos}$.
 - D) $\text{£}1 = 10 \text{ Pesos}$.**
 - E) $\text{£}1 = 11 \text{ Pesos}$.
20. Suppose you have $US\$100$ and you begin your trading day in the online London market. After that, you trade in the online Toronto market. How much Pesos would you have after your Toronto trade?
- A) 360.**
 - B) 400.
 - C) 440.
 - D) 480.
 - E) 520.
21. Armed with your Pesos, you continue to trade online. How much is your profit at the end of the day?
- A) $US\$15$.
 - B) $US\$20$.**
 - C) $US\$25$.
 - D) $US\$30$.
 - E) $US\$35$.

For questions 22-24, refer to Concept #3: Exchange Rates and the Canadian Economy

22. Suppose the U.S.' demand for Canadian natural resources fall. Our Canadian dollar will ___ and our GDP will ___.
- A) Appreciate; fall
 - B) Appreciate; rise
 - C) Depreciate; fall**
 - D) Depreciate; rise
 - E) Depreciate; stay constant
23. What will happen to our current account (CA) and capital account (KA)? Let $CA=KA=0$ before this economic event.
- A) $CA>0$ and $KA>0$.
 - B) $CA>0$ and $KA<0$.
 - C) $CA<0$ and $KA>0$.**
 - D) $CA<0$ and $KA<0$.
 - E) $CA<0$ and KA remains constant.
24. In the absence of any policy intervention, how will the Canadian economy adjust to this economic event in the long run?
- A) AD will shift right.
 - B) AS will shift right.**
 - C) AD will shift left.
 - D) AS will shift left.
 - E) Y_p will shift right.

For questions 25-27, refer to Concept #4: Crowding-effects

25. Which of the following equations implies that a change in government expenditure will give rise to crowding-out effects?
- A) $I = 950 - 0.03i$.
 - B) $C = 100 + 0.75(Y-T)$.
 - C) $Md = 550 - 0.02i + 0.2Y$.
 - D) $Z = 0.25Y$.
 - E) $Sp = Y - C - T$.
26. Suppose the Canadian government increases its spending in the economy. In order to offset the crowding-out effects, which of the following policies should also be implemented?
- A) Decrease the monetary base.
 - B) Decrease the overnight target interest rate.
 - C) Increase income tax rates.
 - D) Increase marginal propensity to import.
 - E) Both C and D are correct.
27. Because of the crowding-out effects, what will happen?
- A) The goods market multiplier will decrease.
 - B) The money market multiplier will increase.
 - C) The marginal propensity to consume will decrease.
 - D) The investment expenditure will decrease.
 - E) All of the answers are correct.

For questions 28-30, refer to Concept #5: Control of Monetary Policies

28. Which component(s) in the money supply equation can the Bank of Canada fully control?
- A) Monetary base.
 - B) Prime interest rate.
 - C) Reserve ratio.
 - D) Currency or cash drain ratio.
 - E) All of the answers are correct.
29. If Canada fixes the conversion rate of the Canadian dollar to the US\$ at the rate of one-to-one, that is, $e = 1$. Which of the following statement(s) is (are) CORRECT?
- A) The competitiveness of our exports to the U.S. will also be fixed.
 - B) The fiscal policies in Canada are very effective in affecting Canadian GDP.
 - C) The monetary policies in Canada are very effective in affecting Canadian GDP.
 - D) The growth rates in Canadian GDP have to follow the direction of the U.S. growth rates.
 - E) All of the answers are correct.
30. Continue with the previous question: Suppose the world demand for Canada's exports falls. Which of the following statements is (are) CORRECT?
- A) The Canadian government can use fiscal policies to prevent this recession.
 - B) The Bank of Canada needs to cut interest rates in order to maintain the fixed exchange rate.
 - C) The recession will be sharper if the marginal propensity to consume is low.
 - D) The Canadian economy will see a sharper recession under a flexible exchange compared to that of a fixed exchange rate.
 - E) All of the answers are correct.

Part III: Analytical Questions (Total=50 marks).

For questions 31-35, refer to the following (Taylor Rule):

The Taylor rule states that a central bank can monitor inflation and GDP by following the equation given by $i = i_0 + (\pi - \pi^*) + (Y - Y_p)$. In reality, the Bank of Canada does seem to follow this rule, and set a targeted inflation rate π^* . For this question, suppose $\pi^* = 2\%$. Suppose the current inflation $\pi = \pi^*$, $Y = Y_p$ and $i_0 = 7\%$.

31. The value of i is _____.
A) 7%
B) 8%
C) 9%
D) 10%
E) 11%
32. Now suppose a drop in investment confidence leads to $Y - Y_p = -3\%$. Let us put aside inflation rates for now. According to Taylor rule, the BOC should set the new i to become _____.
A) 3%
B) 4%
C) 5%
D) 6%
E) 7%
33. Suppose $\pi = \pi^* - 1.5\Delta i$. What is the new π ?
A) 5%.
B) 5.5%.
C) 6%.
D) 6.5%.
E) 7%.
34. Suppose the Bank knew that the π would change. In order to balance between inflation and GDP targets, it has to set a new interest rate weighing both of these effects. What is the new i that the Bank should set, knowing that $\pi = \pi^* - 1.5\Delta i$? [Hint: Solve the new i as an unknown.]
A) 4.2%.
B) 4.75%.
C) 5.8%.
D) 6.35%.
E) 6.8%.
35. Compare your answers from #31 and #34: Given the change in the interest rate, the value of our current account should _____ and the value of our capital account should _____.
A) Rise; fall
B) Rise; rise
C) Fall; fall
D) Fall; rise
E) Remain constant; fall

For questions 36 to 40, refer to the following (Contrasting Fiscal and Monetary Policies):

A simplified economy is specified as below:

I. Goods market, all values of C, I, G and NX are in billions of C\$:

| | | | |
|--------------------------|----------------------|--------------------------|-----|
| Consumption expenditure: | $C = 150 + 0.8(Y-T)$ | Lump-sum constant taxes: | 330 |
| Investment expenditure: | $I = 1,200 - 420i$ | Exports: | 80 |
| Government expenditure: | $G = 330$ | Imports: | 10 |

II. Money market, all M^d values are in billions of C\$: Define interest rate i as 0.1, not 10.

| | | | |
|----------------|--------------------------|---------------|----------------------|
| Interest rate: | $i = 0.1$ (which is 10%) | Money demand: | $M^d = 720 - 2,100i$ |
|----------------|--------------------------|---------------|----------------------|

36. What is the equilibrium Y ?
A) 7,220.
B) 7,550.
C) 8,540.
D) 8,900.
E) 9,360.
37. Suppose G rises to 430 because of increased expenditure on health services. What is the new equilibrium Y ?
A) 7,500.
B) 7,720.
C) 8,900.
D) 9,040.
E) 9,850.
38. As G rises from 330 to 430, round 1 dictates that $\Delta G = \Delta Y = 100$, or 100 units of health services will be created. Suppose these health services workers spend their new income on clothing following the consumption expenditure equation given above. Clothing workers will then spend their income on food as indicated by the consumption expenditure equation. This round 3 effect implies that ____ food will be produced.
A) 25.
B) 36.
C) 49.
D) 64.
E) 80.
39. Now consider monetary policies only. Suppose the BOC wants to cut interest rate i to 0.05 or 5%, with G still at 330. What is the new value of investment expenditure?
A) 1,077.
B) 1,105.
C) 1,179.
D) 1,258.
E) 1,345.
40. Given the new, lower interest rate, and $G=330$, what is the new equilibrium Y ?
A) 7,325.
B) 7,750.
C) 9,050.
D) 10,095.
E) 11,360.

For questions 41 to 45, refer to the following (Real Exchange Rates and PPP):

Suppose that in 2002, the price levels in the United States and Canada were 100. By 2006, the price level in the United States has increased to 230, while the price level in Canada has risen to 190. Suppose the nominal exchange rate between two countries in 2002 was US\$1 = C\$1.4.

41. What is the 2002 real exchange rate, from the perspective of Canada?
A) 0.85.
B) 0.95.
C) 1.10.
D) 1.40.
E) 1.55.
42. What must be the new nominal exchange rate in 2006 if the real exchange rate had remained constant at the 2002 level (from the perspective of Canada)?
A) 0.98.
B) 1.05.
C) 1.16.
D) 1.38.
E) 1.63.
43. Suppose Canada had a fixed exchange rate system against the U.S. dollar. The initial nominal exchange rate in 2002 was fixed. Canada would have experienced a real exchange rate ____ because its real exchange rate would be equal to ____.
A) Appreciation; 1.06
B) Appreciation; 1.18
C) Appreciation; 1.32
D) Depreciation; 1.69
E) Depreciation; 1.92
44. Because the Canadian dollar is ____, Canada is likely to be under _____.
A) Undervalued; an inflationary gap
B) Undervalued; a recessionary gap
C) Overvalued; an inflationary gap
D) Overvalued; a recessionary gap
E) Correctly valued; full employment.
45. According to the Purchasing Power Parity, what is the nominal exchange rate in 2006?
A) 0.66.
B) 0.72.
C) 0.83.
D) 1.15.
E) None of the answers is correct.

For questions 46 to 50, refer to the following (Labour Market):

Suppose the economy represented by the table below had a population of 24,100 in 2015:

| Year | Real GDP (in 2010\$) | CPI (2010=100) | Labour Force | Employment |
|------|----------------------|----------------|--------------|------------|
| 2013 | 1,075 | 106 | 11,400 | 10,400 |
| 2014 | 1,182 | 113 | 12,850 | 12,100 |
| 2015 | 1,302 | 119 | 13,900 | 13,000 |

46. What was the participation rate in 2015?
A) 56.82%.
B) 57.68%.
C) 59.66%.
D) 60.28%.
E) 61.08%.
47. What was the employment rate in 2015?
A) 53.94%.
B) 57.68%.
C) 59.66%.
D) 60.28%.
E) 93.53%.
48. Suppose a recession took place in 2015 and some unemployed workers stopped looking for work. As a result, the participation rate changes to 56%. What is the new unemployment rate?
A) 3.675%.
B) 4.335%.
C) 5.495%.
D) 6.888%.
E) 9.532%.
49. What was the nominal GDP in 2013?
A) \$975.
B) \$1,019.5.
C) \$1,028.75.
D) \$1,139.5.
E) None of the answers is correct.
50. If you borrowed money from a commercial bank at the nominal interest rate of 5% in 2013 and promised to pay back in 2014, what is the real interest rate for this transaction?
A) - 1.604%.
B) - 0.888%.
C) - 0.673%.
D) 1.604%.
E) 1.888%.

For questions 51 to 53, refer to the following (Growth Accounting):

Suppose you have the following information about an economy:

Average annual growth rates from 1995 to 2005:

- (i) Potential GDP: 6.31%
- (ii) Labour force: 3%
- (iii) Capital stock: 2.4%

Share of labour income in national income: $\frac{2}{3}$.

51. What is the contribution of the labour force to the potential GDP growth?
- A) 1%.
 - B) 2%.**
 - C) 3%.
 - D) 4%.
 - E) None of the answers is correct.
52. What is the contribution of the capital stock to the potential GDP growth?
- A) 0.4%.
 - B) 0.8%.**
 - C) 1.2%.
 - D) 2.4%.
 - E) None of the answers is correct.
53. What is the growth in productivity as measured by the Solow growth residual?
- A) 2.42%.
 - B) 2.85%.
 - C) 3.16%.
 - D) 3.51%.**
 - E) None of the answers is correct.

For questions 54 and 55, refer to the following (GDP):

54. An economy has two main types of industry. One produces services and the other produces goods. The services industries produce services for households and businesses with a total market value of \$12,000. The goods industries produce goods for the use of both households and businesses with a total market value of \$14,000. The service industries spend \$1,600 on computers and paper and envelopes supplied by the goods industries. The goods industries spend \$1,400 to buy financial, insurance, advertising, and custodial supplies from the service industries. What is the final value of the goods industries?
- A) \$1,400.
 - B) \$1,600.
 - C) \$12,400.
 - D) \$12,600.**
 - E) None of the answers is correct.
55. Continue with the previous question: What is the value of GDP?
- A) \$23,000.**
 - B) \$24,500.
 - C) \$26,000.
 - D) \$29,000.
 - E) None of the answers is correct.

Part IV: Answer the following question. ANSWER ALL PARTS (Total = 40 marks).

In 2008, the credit crunch in the U.S. and E.U. banking systems has driven the world into a global recession. The credit crunch, or liquidity crisis, refers to the commercial banks lending massive amounts of money to their customers who subsequently were unable to repay their loans. As a result, the commercial banks were short of money. In this multiple-part question, we want to explore what has been happening in Canada since then. Assume that $Y=Y_p$ in 2008, immediately before this banking crisis.

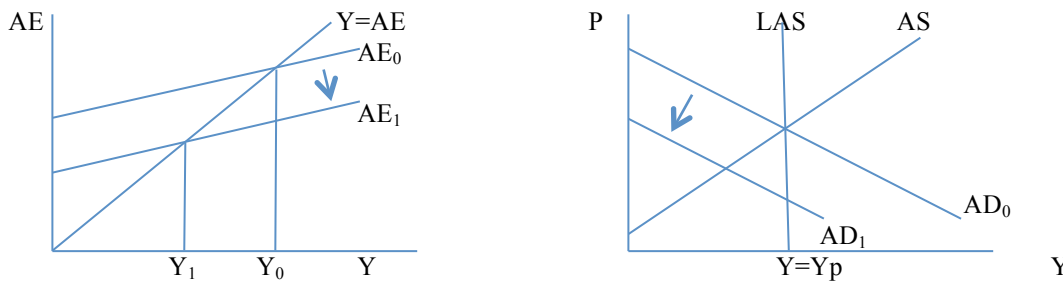
Article 1: Canadian consumer confidence hits lowest point since 2009

Kim Covert, December 22, 2011, The Financial Post

Consumer confidence is at its lowest point in 2.5 years, dropping in December across all sectors and all regions, the Conference Board of Canada reported Thursday. At 69.9, the board's consumer confidence index dropped 6.5 points from November, and is down 11.1 points from where it stood in December 2010.

(i) Article 1:

- (a) Use the $Y=AE$ and $AD/AS/LAS$ models to demonstrate and explain how the drop in consumer confidence has affected our GDP and price levels (2 marks).

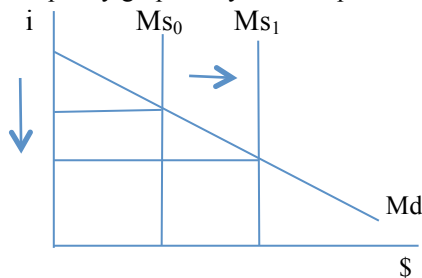


Ans: Both AE and AD shift downward due to the drop in consumer confidence. $Y < Y_p$ on impact, and the price level drops.

- (b) Write down Okun's law and explain how the actual unemployment rate and natural unemployment rate in Canada will be affected (2 marks).

Ans: $U - U_n = -0.5[\% \Delta Y - \% \Delta Y_p]$; Our actual unemployment rate will rise, and our natural rate will not be affected.

- (c) In response to (a), should the Bank of Canada sell or buy government securities in the open market? Explain and illustrate this policy graphically. Also explain in words how this monetary policy affects GDP (3 marks).



Ans: BOC should buy government securities previously issued. This will put money into the hands of the public and banks. The monetary base will increase, and money supply will increase via the money market multiplier. The increase in supply of money will decrease the price of money, which is the interest rate. This lower interest will encourage firms to spend more as investment expenditure, and GDP will rise via the goods market multiplier.

- (d) Given the monetary policy in part (c) and the fact that the Canadian government also ran larger fiscal deficits, write down the net export equation and explain whether Canada is more or less likely to run a trade deficit. Assume that $NX=0$ in 2008 (3 marks).

Ans: $NX = (Sp - I) + (T - G)$, with interest rates falling, Sp will fall and I will rise, and T-G deficits are widening, so NX is much more likely to become a large negative value. This means our NX deficit will widen.

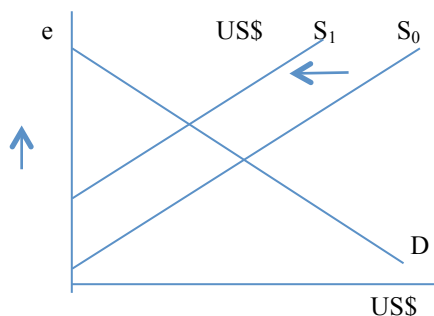
Article 2: CIBC sees loonie holding current value this year
 CTV News July 8, 2013 11:29AM EDT

Brighter days are ahead for the Canadian dollar, which has been under pressure recently amid continued weakness in the global economy, says CIBC. A new report from the bank says the loonie should stay within a couple of cents of current levels (US\$1=C\$1.05) for the rest of the year, then rebound to parity with the U.S. greenback by the end of 2014.

"As we expected, the Canadian dollar has been a casualty of disappointing global growth this year," says CIBC chief economist Avery Shenfeld.

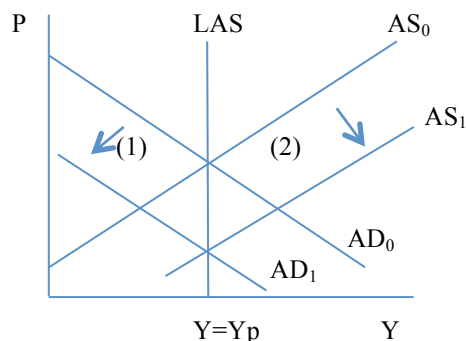
(ii) Article 2:

(a) Use the foreign exchange market to explain why the Canadian dollar depreciated against the U.S. dollar. Let e be defined as the price of US\$1 in terms of the Canadian dollar (2 marks).



Ans: The world demand for Canadian products fell, which decreases the demand for C\$. This means fewer people sell US\$ to buy C\$, so the supply of US\$ falls and shifts upward. This pushes the value of the C\$ down, or the C\$ depreciates.

(b) Use the AD/AS/LAS model to explain how the Canadian GDP in part (a) will adjust in the long run (2 marks).



Ans: AD shifts inward because of the fall in world demand for Canadian exports. This creates a recession, which leads to higher unemployment. The excess supply of workers will lead to a fall in wage rates, which in turn will decrease the production costs of firms. Eventually firms are willing to increase production due to the decrease in production costs brought about by lower wages. The economy goes back to Yp.

(c) Explain how the Bank of Canada can prevent the C\$ from depreciating by changing the target overnight interest rate (ONR). Also explain how the new ONR can be defended by the Bank of Canada (2 marks).

Ans: The BOC can increase the ONR in order to attract more foreign \$ to flow into Canada. If this happens, there will be an increase in demand for C\$ to buy Canadian financial assets. To maintain this higher ONR, the BOC needs to be prepared to perform Sale and Repurchase Agreements (SRA). This would allow the BOC to sell securities in the overnight money market, take out cash from the market, increase the cost of borrowing or interest rates, and agree to repurchase these assets once the higher interest rates have been maintained.

(d) Discuss two motives for holding money and explain how these two motives are affected by the Bank of Canada's change in the ONR (4 marks).

Ans: Two of the following: Transaction motive - hold cash to buy goods and services; Asset or speculative motive - hold cash to buy financial assets; precautionary motive - hold cash in case there is an emergency need. Regardless of which motive, if the interest rate rises, the opportunity cost of holding money rises, so the quantity demanded for money falls.

Article 3: Canadian consumers will feel the pain of Ottawa's tariff hikes

The Globe and Mail, Apr. 04 2013

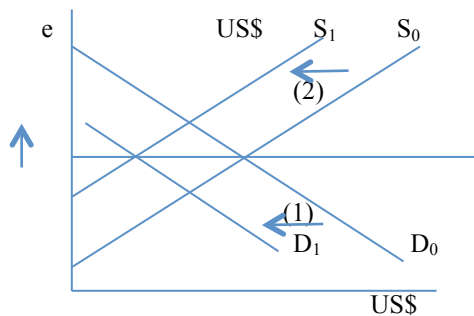
In Budget 2013, Finance Minister Jim Flaherty announced that on Jan. 1, 2015, tariffs (import taxes) will increase on 1,290 product classes from 72 countries, including China, South Korea, India and Brazil. Once implemented, the tariffs will increase the cost of imports for Canadian consumers.

(iii) Article 3:

- (a) Explain how the increase in tariff rates would affect the value of the Canadian dollar under a flexible exchange rate system, our imports, our exports and our GDP (4 marks).

Ans: Increase in tariff will decrease demand for imports, which will lead to decrease in demand for US\$ (or other currencies), which will lead to the US\$ to depreciate or the C\$ to appreciate. This in turn will decrease our exports because our C\$ is more expensive. The net change in NX is not clear, and the net change in GDP is not clear either.

- (b) Suppose Canada had a fixed exchange rate system instead, and our Canadian dollar were fixed against the U.S. dollar. Explain how the BOC would maintain our fixed exchange rate after the tariff rates have been increased. Use the foreign exchange market diagram to support your answer (4 marks).



Ans: The import taxes discourage Canadians to import, so we demand less US\$. This first shift will lead to the pressure for the C\$ to appreciate. The BOC cannot allow this to happen, so it has to take out some US\$ in the market, hence it has to buy the excess supply of US\$ in the second shift. This continues until there is no more pressure for the C\$ to appreciate.

- (c) Under which exchange rate system, flexible or fixed, is the rise in tariff rates more effective in increasing the overall Canadian GDP? Explain (2 marks).

Ans: Fixed exchange rate, because the damage to our exports via a C\$ appreciation is avoided.

Finance Minister Jim Flaherty announced in Thursday's federal budget that the government is raising the age of eligibility for Old Age Security from 65 to 67.

(iv) Article 4:

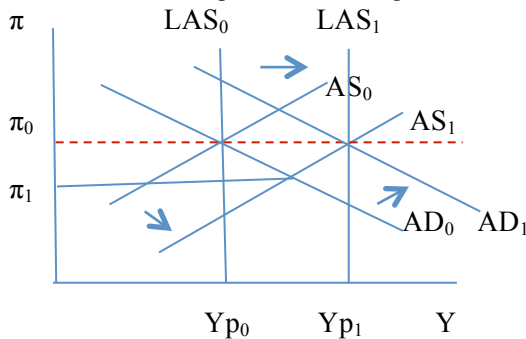
- (a) Write down the equation for total $\% \Delta Y_p$ (not per-capita) and explain which component this article is referring to (2 marks).

Ans: $\% \Delta Y_p = \% \Delta A + 1/3 \% \Delta K + 2/3 \% \Delta L$, and the article is referring to $\% \Delta L$ because of the larger labour force as people retire later.

- (b) Explain the concept of constant returns to scale and two ways in which how it can be maintained in this case (4 marks).

Ans: CRS means if inputs are scaled by a number, output will increase by the same scale. For example, if both labour and capital inputs are doubled, then output will also double. To maintain CRS, if the higher retirement age increases labour force by 10%, capital stock also has to increase by 10%. Alternatively, instead of capital stock, if technological progress improves by 10%, CRS can also be maintained.

- (c) Use the AD/AS/LAS diagram to show how this news would affect our long run inflation rate. If the Bank of Canada were to keep our current targeted inflation range of 1% to 3%, what should it do? Explain (4 marks).



Ans: Ok to have vertical axis as P level rather than the inflation rate.

The rise in “L” will shift Y_p to the right in the long run. Graphically, this is represented by the rightward shifts in the short run AS and the long run AS curves. The price level or inflation rate will fall because the economy produces more output, and inflation is likely to fall below 1%. To keep the targeted range, the BOC would have to increase money supply, cut interest rates to stimulate AD. AD shifts up.

The End...Have a Great Summer!