

**Concordia University  
Department of Economics**

**ECON 203 – INTRODUCTION TO MACROECONOMICS**

**Summer 2015**

**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. Which of the following is CORRECT?  
A) GDP per capita captures the change in income inequality or income distribution within an economy.  
B) Compared to the GDP deflator, the Consumer Price Index overestimates the actual increase in the cost of living.  
C) The higher the amount of tax evasion, the higher is the value of this economy's nominal GDP.  
D) The higher the amount of capital consumption allowance, the lower is the value of this economy's nominal GDP.  
E) None of the answers is correct.
2. Which of the following is CORRECT?  
A) Unanticipated inflation benefits lenders.  
B) A real interest rate cannot be lower than zero.  
C) The natural unemployment rate in Canada is around 12%.  
D) A lower price level or inflation rate is always associated with an economic recession.  
E) In Canada, consumption accounts for the largest share of aggregate expenditure.
3. If Japan's GDP is lower than its GNP, then...  
A) Japan's net exports must be positive.  
B) Japan's net exports must be negative.  
C) Japan's balance of payments must be negative.  
D) Japanese workers working outside of Japan earn more income than foreigners working in Japan.  
E) Japanese workers working outside of Japan earn less income than foreigners working in Japan.
4. Which of the following is CORRECT?  
A) Nominal wage changes shift both the short run aggregate supply (AS) and the long run aggregate supply (LAS).  
B) Technological changes shift the AS but not the LAS.  
C) The AS is upward-sloping while the LAS is horizontal.  
D) Real input costs are constant along the LAS but not along the AS.  
E) The natural unemployment rate is reflected by the AS but not the LAS.
5. Suppose that planned spending for consumer goods (AE) is greater than the level of total output produced by the economy, then:  
A) The resulting reductions in inventories will cause producers to increase their level of output and GDP will rise.  
B) An unplanned build-up in inventories that will result in a rise in GDP.  
C) A decline in GDP because planned spending is less than actual spending.  
D) Either an increase or decrease in GDP, depending on the relative size of the marginal propensity to consume.  
E) None of the answers is correct.
6. In a closed economy, 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 2,100. The autonomous expenditure is  $(C_0 + I_0)$  is 800 and government expenditure is 600. What is the debt to GDP ratio?  
A) 15%.  
B) 30%.  
C) 45%.  
D) 60%.  
E) 75%.
7. Equilibrium income in an open economy with government occurs when...  
A) Net Exports = 0.  
B) Private saving equals investment.  
C) Private saving equals investment, and tax revenue equals government spending.  
D) Private savings minus investment plus tax revenue minus government spending equals zero.  
E) None of the answers is correct.

8. If consumption (C) is \$80,000 when income is \$100,000, and C decreases to \$60,000 when income is \$75,000, then the marginal propensity to save is equal to:  
 A) 0.1.  
**B) 0.2.**  
 C) -0.1.  
 D) -0.2.  
 E) None of the answers is correct.
9. Which of the following statements is (are) CORRECT?  
**A) If the economy's  $(Sp + T) - (G + I)$  is positive, it means that the economy's net export is positive.**  
 B) At low levels of income, marginal propensity to save (MPS) is negative.  
 C) A positive capital account means that the economy is a net lender in the international financial market.  
 D) If a country wants to narrow its trade deficits, it should cut taxes.  
 E) All of the answers are correct.
10. If the money supply curve is vertical, this implies that the central bank wants to control the \_\_\_\_; if the money supply curve is horizontal, this implies that the central bank wants to control the \_\_\_\_.  
**A) Monetary base; interest rate**  
 B) Monetary base; money multiplier  
 C) Interest rate; monetary base  
 D) Interest rate; money multiplier  
 E) Money multiplier; monetary base
11. If funds in the overnight loans market are trading above the overnight target rate, then the Bank of Canada will conduct an \_\_\_\_ to \_\_\_\_.  
 A) SRA; increase the money supply  
 B) SRA; decrease the money supply  
 C) SPRA; decrease the money supply  
**D) SPRA; increase the money supply**  
 E) Open market operation; sell bonds
12. In the short run, the outcome of rising energy prices and higher consumer confidence is that  
 A) The price level will always decrease.  
 B) The price level may increase, decrease or remain the same.  
 C) Output will always decrease.  
**D) Output may increase or decrease or remain the same.**  
 E) Both B and C are correct.
13. A central bank sells \$50 million of government bonds in the open market. If banks hold reserves equal to 10% of their deposits and the public holds cash equal to 15% of its deposits, what is the change in the money supply?  
**A) Decrease of \$230 million.**  
 B) Increase of \$230 million.  
 C) Decrease of \$575 million.  
 D) Increase of \$575 million.  
 E) Increase of \$1,150 million.
14. Fiscal policies are more effective than monetary policies in affecting GDP under a \_\_\_\_ exchange rate system because of the \_\_\_\_.  
 A) Fixed; goods market multiplier effects  
 B) Flexible; goods market multiplier effects  
**C) Fixed; monetary policies coordination required to maintain a fixed exchange rate**  
 D) Flexible; monetary policies coordination required to maintain a fully flexible exchange rate  
 E) None of the answers is correct.

15. Consider the situation where you can buy a Canadian asset that pays 10% after one year, or a U.S. asset that pays 8% 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 rate is C\$1.2=US\$1. Using the Interest Rate Parity condition, what is the expected future exchange rate?
- A) 1.176.
  - B) 1.224.**
  - C) 1.440.
  - D) 1.500.
  - E) 1.625.

**Part II: Conceptual Questions (Total=30 marks).**

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

16. In July 2015, over 100 wildfires have spread throughout Saskatchewan and destroyed a massive amount of natural resources. Suppose this destruction affects the Saskatchewan economy in the short run and also in the long run, given that trees and soil could take decades to recover. If we only focus on the Saskatchewan economy, ignoring the rest of Canada for now, what will happen in Saskatchewan?
- A) Its AD curve will shift to the right.
  - B) Its AS and LAS curves will shift to the right.
  - C) Its AD curve will not shift but will move along the same curve towards to right.
  - D) Its AS and LAS curves will shift to the left.**
  - E) Only the LAS curve will shift to the left.
17. Continue with the previous question: The inflation rate in Saskatchewan is likely to \_\_\_\_ and its actual unemployment rate is likely to \_\_\_\_.
- A) Rise; rise**
  - B) Rise; fall
  - C) Fall; rise
  - D) Fall; fall
  - E) Stay constant; rise
18. Continue with the previous question: If the government does not change tax rates or government expenditure in response to this crisis, what will happen to Saskatchewan's fiscal budget? Let its budget balance (BB) and structural budget balance (SBB) equal to zero prior to these wildfires.
- A) Both BB and SBB will remain at zero.
  - B) Both BB and SBB will become negative.**
  - C) Both BB and SBB will become positive.
  - D) Its BB will become negative but SBB will remain at zero.
  - E) Its BB will remain at zero but SBB will become negative.

**For questions 19-21, refer to Concept #2: Flexible and Fixed Exchange Rates**

19. Suppose Canada has a flexible exchange rate system. Our Canadian dollar floats against the US dollar. If the US Federal Reserve Banks (central banks) raise US interest rates, this implies that our Canadian dollar is likely to \_\_\_\_ against the US dollar and our net export is likely to \_\_\_\_.
- A) Appreciate; improve
  - B) Appreciate; deteriorate
  - C) Depreciate; improve**
  - D) Depreciate; deteriorate
  - E) None of the answers is correct.
20. Continue with the previous question: Now suppose Canada has a fixed exchange rate against the US dollar. As the US interest rates rise, the Bank of Canada has to \_\_\_\_ Canadian dollar, our money supply will \_\_\_\_.
- A) Buy; rise
  - B) Buy; fall**
  - C) Sell; rise
  - D) Sell; fall
  - E) Sell; remain constant
21. Continue with the previous question: Canada still has a fixed exchange rate against the US dollar. Let this fixed rate be  $US\$1=C\$1.2$ . Financial traders will believe that the Bank of Canada has the ability to ensure that all Canadian dollars are fully convertible into US dollars at the fixed rate if the Canadian \_\_\_\_.
- A) Monetary base is large
  - B) Reserve ratio is small
  - C) Currency drain ratio is small
  - D) Holdings of US dollar reserves is large**
  - E) All of the answers are correct.

**For questions 22-24, refer to Concept #3: Lump Sum Tax versus Percentage Income Tax**

22. Which of the following is (are) CORRECT?
- A) A lump sum tax is administratively more costly to implement and collect than a percentage tax.
  - B) A lump sum tax creates smaller economic fluctuations than a percentage tax when there is an autonomous shock.
  - C) A lump sum tax creates smaller fluctuations in tax revenue for the government than a percentage tax when there is an autonomous shock.**
  - D) A lump sum tax affects the size of the goods market multiplier while a percentage tax does not.
  - E) All of the answers are correct.
23. An increase in the lump sum tax \_\_\_\_ the AE curve and a higher percentage tax \_\_\_\_ the AE curve.
- A) Shifts; shifts
  - B) Shifts; increases the slope of
  - C) Shifts; decreases the slope of**
  - D) Increases the slope of; shifts
  - E) Decreases the slope of; shifts
24. Continue with the previous question: In an economic boom driven by an increase in consumer confidence, a lump sum tax will \_\_\_\_ the government \_\_\_\_, while a percentage tax will \_\_\_\_ the government \_\_\_\_\_. For simplicity, keep the level of government expenditure constant under both tax systems.
- A) Not affect; budget balance; improve; budget balance**
  - B) Not affect; structural budget balance; improve; structural budget balance
  - C) Improve; budget balance; improve; budget balance
  - D) Improve; structural budget balance; improve; structural budget balance
  - E) Improve; structural budget balance; not affect; structural budget balance

**For questions 25-27, refer to Concept #4: Long Run GDP Growth**

25. The Canadian Conservative government recently increased the maximum contribution to the Tax-Free Savings Accounts (TFSA) from \$5,500 to \$10,000 per year. The purpose of the TFSA is to encourage Canadians to have higher private savings. In the long run, this policy will affect \_\_, shift the LAS to the \_\_, and \_\_ the price level.  
A) Capital accumulation; right; decrease  
B) Capital accumulation; right; increase  
C) Labour supply; right; decrease  
D) Labour supply; left; increase  
E) Labour supply; left; decrease
26. Continue with the previous question: In the long run equilibrium, per-capita real GDP will \_\_\_\_ and the price level will \_\_\_\_\_.  
A) Rise; rise  
B) Rise; fall  
C) Fall; rise  
D) Fall; fall  
E) Remain constant; rise
27. Continue with the previous question: In the long run equilibrium, the \_\_\_\_\_ unemployment rate(s) will be \_\_\_\_\_.  
A) Actual; lower  
B) Actual; higher  
C) Natural; lower  
D) Natural; higher  
E) Natural; equal to zero

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

28. Since 2013, the Bank of Japan has been pushing down the value of the Japanese yen. It can accomplish this by...  
A) Cutting interest rates.  
B) Buying bonds in the open market.  
C) Encouraging a lower cash drain ratio.  
D) Abolishing any mandatory minimum reserve ratios for commercial banks.  
E) All of the answers are correct.
29. Continue with the previous question: In the short run, the yen depreciation is likely to stimulate the Japanese economy. If this yen depreciation stimulation were to be as effective as possible, Japan should have a \_\_\_\_\_ marginal propensity to import and its money demand should be \_\_\_\_\_ to income.  
A) High; very sensitive  
B) High; very insensitive  
C) Low; very sensitive  
D) Low; very insensitive  
E) Low; equal
30. Continue with the previous question: In the long run, what is (are) likely to happen as the yen depreciates?  
A) Japan may have a lower price level.  
B) Japan may have a balance of payments deficit.  
C) Japan may have a higher potential GDP.  
D) Japan may experience a real exchange rate appreciation.  
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  $i = i_0 + (\pi - \pi^*) + (Y - Y_p)$ . To start, suppose  $\pi^* = 2\%$ ,  $\pi = \pi^*$ ,  $Y = Y_p$  and  $i_0 = 10\%$ .

31. The initial value of  $i$  is \_\_\_\_.
- A) 8%
  - B) 9%
  - C) 10%**
  - D) 11%
  - E) 12%
32. Now suppose a drop in investment confidence leads to  $(Y - Y_p) = -5\%$ . According to the Taylor rule, and putting aside inflation rates for now, the central bank should set a new  $i$  of \_\_\_\_\_. If  $\pi = \pi^* - \Delta i$ , the new inflation rate will be equal to \_\_\_\_\_.
- A) 4%; 9.5%
  - B) 5%; 7%**
  - C) 6%; 10.5%
  - D) 7%; 11%
  - E) 8%; 11.5%
33. Suppose the central bank knew that  $\pi$  would change. To balance between its inflation and GDP targets, what interest rate should the central bank set, knowing that  $\pi = \pi^* - \Delta i$ ? [Hint: Solve the new  $i$  as an unknown.]
- A) 4.5%.
  - B) 5.5%.
  - C) 6.5%.
  - D) 7.5%.**
  - E) 8.5%.
34. Compare your answers from #31 and #33: Given the change in the interest rate, we can predict a(n) \_\_\_\_ in the bond prices, a(n) \_\_\_\_ in the money supply and a(n) \_\_\_\_ in its currency.
- A) Increase; decrease; depreciation
  - B) Increase; decrease; appreciation
  - C) Increase; increase; depreciation**
  - D) Increase; increase; appreciation
  - E) Decrease; decrease; appreciation
35. Compare your answers from #31 and #33: Given the change in the interest rate, we can predict that this economy will experience a(n) \_\_\_\_ in its net exports and its potential  $Y_p$  will \_\_\_\_.
- A) Improvement; remain constant**
  - B) Improvement; rise
  - C) Deterioration; remain constant
  - D) Deterioration; rise
  - E) Deterioration; 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:	$C = 110 + 0.8(Y-T)$	Lump-sum constant taxes:	560
Investment expenditure:	$I = 1,000 - 4,000i$	Exports:	70
Government expenditure:	$G = 560$	Imports:	50

II. Money market, all  $M^d$  values are in billions of C\$: Define interest rate  $i$  as 0.025, not 2.5.

Interest rate:	$i = 0.025$ (which is 2.5%)	Money demand:	$M^d = 1,500 - 20,300i$
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36. What is the equilibrium  $Y$ ?
- A) 228.4.
  - B) 5,510.
  - C) 5,710.**
  - D) 10,190.
  - E) 13,000.
37. The Conference Board of Canada has recently announced that consumer confidence in Canada dropped. Let the drop in consumer confidence to be equal to 10 points, from 110 to 100, so now  $C = 100 + 0.8(Y-T)$ . What is the new equilibrium  $Y$ ?
- A) 178.4.
  - B) 4,460.
  - C) 4,710.
  - D) 5,660.**
  - E) 10,090.
38. As  $C$  falls from 110 to 100, round 1 dictates that  $\Delta C = \Delta Y = 10$ , or 10 units of health services will be destroyed. Suppose these health services workers cut their spending on clothing following the consumption expenditure equation given above. Clothing workers will then cut their spending on food as indicated by the consumption expenditure equation. This round 3 effect implies that \_\_\_\_ food will be destroyed.
- A) 6.4.**
  - B) 8.
  - C) 10.
  - D) 12.5.
  - E) 50.
39. Suppose the Bank of Canada (BOC) is trying to reverse this adverse effect on the economy. For simplicity, it is not concerned about inflation for now. The BOC can cut the targeted interest rate in order to stimulate investment spending ( $I$ ). What is the new interest rate if the BOC wants the  $Y$  to return to its initial level found in #36?
- A) 1.55%.
  - B) 1.80%.
  - C) 1.95%.
  - D) 2.10%.
  - E) 2.25%.**
40. Continue with the previous question: In the process, money supply has changed from \_\_\_\_ to \_\_\_\_.
- A) 992.5; 1,043.25**
  - B) 1,000; 1,100.
  - C) 1,245.5; 1,333.3
  - D) 2,010; 2,025
  - E) 2,225.75; 2,333.3

**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 Argentina were 100. By 2006, the price level in the United States has increased to 250, while the price level in Argentina has risen to 240. Suppose the nominal exchange rate between the two countries in 2002 was  $US\$1 = AR\$1.9$ .

41. What must be the new nominal exchange rate in 2006 if the real exchange rate had remained constant at the 2002 level (from Argentina's perspective)?  
A) 0.526.  
B) 0.960.  
C) 1.042.  
**D) 1.824.**  
E) 1.979.
42. Suppose Argentina had a fixed exchange rate system against the US dollar from 2002 to 2006. The nominal exchange rate was fixed at the 2002 level. In 2006, Argentina would have experienced a real exchange rate \_\_\_\_ because its real exchange rate would be equal to \_\_\_\_.  
A) Appreciation; 1.675  
B) Appreciation; 1.755  
C) Appreciation; 1.824  
D) Depreciation; 1.954  
**E) Depreciation; 1.979**
43. Continue with the previous question: Because the Argentinean dollar is \_\_\_\_\_, Argentina is likely to be experiencing \_\_\_\_\_.  
A) Overvalued; an inflationary gap  
B) Overvalued; a recessionary gap  
**C) Undervalued; an inflationary gap**  
D) Undervalued; a recessionary gap  
E) Correctly valued; full employment
44. Continue with the previous question: If the Argentinean federal government wants to close the output gap, it should run a budget \_\_\_\_\_ and encourage \_\_\_\_\_.  
A) Deficit; higher private savings  
**B) Surplus; higher private savings**  
C) Balance; lower private savings  
D) Deficit; lower private savings  
E) Surplus; lower private savings
45. If the Purchasing Power Parity theory were to hold, the nominal exchange rate in 2006 should be equal to \_\_\_\_.  
A) 0.850  
**B) 0.960**  
C) 1.044  
D) 1.450  
E) 1.900

**For questions 46 to 48, refer to the following (Labour Market):**

Suppose the economy represented by the table below had a population of 25,100 (in thousands) in 2017:

Year	Labour Force (in thousands)	Employment (in thousands)
2017	15,850	15,050

46. What is the participation rate in the economy in the year 2017?  
A) 63.15%.  
B) 68.22%.  
C) 72.22%.  
D) 75.75%.  
E) 81.23%.
47. What is the employment rate in the economy in the year 2017?  
A) 36.85%.  
B) 59.96%.  
C) 63.15%.  
D) 72.22%.  
E) 81.23%.
48. Suppose in the year 2017 there is a mild recession. As a result, the recession discouraged some unemployed workers and they stop looking for work. The new participation rate becomes 62.55%. The new unemployment rate becomes \_\_\_\_ and the employment rate \_\_\_\_.  
A) 3.65%; rises  
B) 3.65%; falls  
C) 4.14%; rises  
D) 4.14%; falls  
E) 4.14%; remains constant

**For questions 49 to 50, refer to the following (Value-Added):**

Suppose there is an economy that produces only four goods in one year.

Paper: \$8,000                  Books: \$16,000                  Toner: \$3,500                  Envelopes: \$5,000

The production of books requires the following amount of intermediate goods:

Paper: \$3,500                  Toner: \$1,500

The production of envelopes requires the following amount of intermediate goods:

Paper: \$2,500

49. What is the total GDP for the economy?  
A) \$21,000.  
B) \$23,000.  
C) \$25,000.  
D) \$28,000.  
E) \$30,000.
50. What is the value of toner sold as a final good?  
A) \$1,000.  
B) \$2,000.  
C) \$3,000.  
D) \$4,000.  
E) \$5,000.

**For questions 51 to 53, refer to the following (Money Multiplier)**

Answer the following based on the balanced sheet of a bank. Assume the desired reserve ratio is 33.3333%, and the cash drain ratio = 0.

Assets		Liabilities	
Reserves	\$80,000	Deposits	\$180,000
Loans	\$100,000		

51. What is the amount of excess reserves?  
A) \$1,000.  
B) \$5,000.  
C) \$10,000.  
D) \$15,000.  
E) \$20,000.
52. By what amount can this bank safely expand its loans?  
A) \$3,000.  
B) \$10,000.  
C) \$15,000.  
D) \$20,000.  
E) None of the answers is correct.
53. By expanding its loans by the amount in #52, and assume that all other banks have the same practice as this bank, how much money would be created in the system?  
A) \$1,666.67.  
B) \$3,333.33.  
C) \$5,000.  
D) \$6,666.67.  
E) None of the answers is correct.

**For questions 54 to 55, refer to the following (CPI):**

Suppose that in 1991 the total output in a single-good economy was 14,950 chickens. Also suppose that in 1991 each chicken was priced at \$14. Finally, assume that in 1995 the price per chicken was \$15 and that 25,560 were purchased. For each of the following parts, assume that 1991 is the base year.

54. What was the GDP deflator for the year 1995?  
A) 107.14.  
B) 155.56.  
C) 165.45.  
D) 170.97.  
E) 183.18.
55. What was the percentage growth in real GDP between 1991 and 1995?  
A) 7.15%.  
B) 45.56%.  
C) 52.22%.  
D) 66.45%.  
E) 70.97%.

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

In 2015, the debt problems in Greece and the sluggish economic growth in China have weakened the world's aggregate demand for goods and services. For simplicity, let  $Y=Y_p$  in 2014.

*Harper says Canadian economy in 'downturn' due to negative global trends*

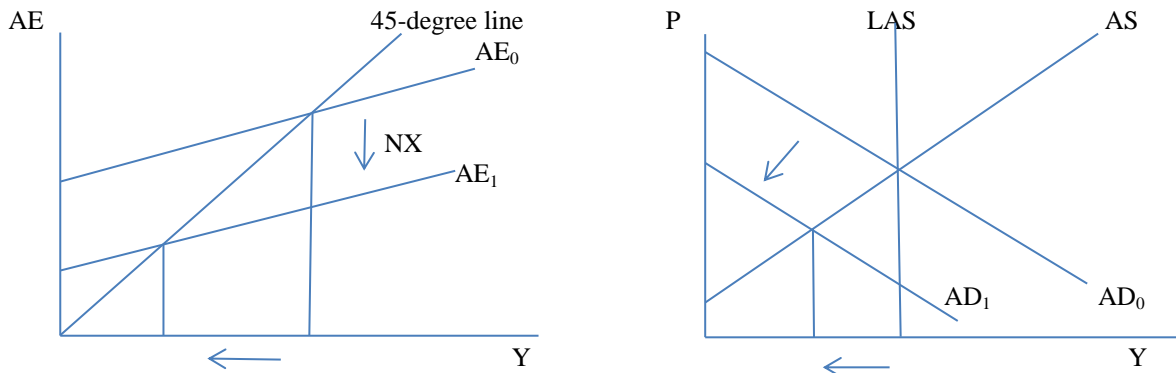
The Canadian Press, July 11, 2015

Prime Minister Stephen Harper says the government will react with "strong fiscal discipline" to the "downturn" in the Canadian economy, which he blamed on the recent downward trends in the global economy.

Harper says Canada's economy has been negatively affected by the "crisis downturn" in Europe, a "significant slowdown and some other related economic problems" in China and "very negative first-quarter growth" in the U.S.

He added that the federal government will not "spiral ourselves into deficit" [by increasing government expenditure or cutting taxes].

- (i) Article 1: Suppose more than 85% of our exports are sold to the US, Europe and China.  
 (a) Use the  $Y=AE$  and  $AD/AS/LAS$  diagrams to demonstrate how the Canadian economy is being driven into a "downturn". Also explain in words (4 marks).



**Ans: Our exports will fall, so NX fall, AE falls and AD falls. We are driven into a recession.**

- (b) Circle the correct answers: If we would like the downturn to be minimized, we would like our marginal propensity to consume (MPC) to be (**high, low**), and our marginal propensity to import (MPM) to be (**high, low**) (2 marks).

**Explanation: With MPC low, this means for every \$1 drop in exports, our C falls by a bit, and hence our Y also falls by only a bit. With MPM high, for every \$1 drop in Y, our imports fall a lot. Therefore, imports absorb a large portion of the fall in AE, which costs jobs in other countries, rather than in Canada.**

- (c) Our Prime Minister also indicated that the federal government will not "spiral ourselves into deficit". Is he referring to the budget balance (BB) equation or the structural budget balance (SBB) equation? Also explain whether he believes this economic downturn is a short run or long run problem (4 marks).

**Ans: SBB, as BB will indeed spiral into deficits because  $t=\text{constant}$  and  $G=\text{constant}$ , and with  $BB=tY-G$ , Y will fall and BB will worsen. However, this AD shock is a short run problem, therefore it will not affect SBB, which is defined as  $SBB=tY_p-G$ , so all three components ( $t, Y_p, G$ ) all remain constant.**

**Article 2: Canada in recession, rate cut likely – TD**

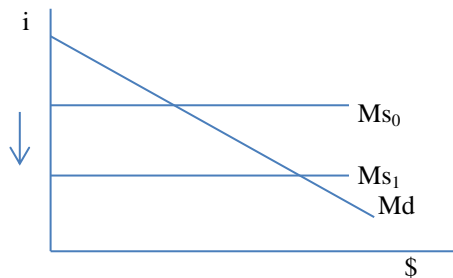
July 6th 2015, <http://www.thestar.com/business/economy/2015/07/06/canada-in-recession-rate-cut-likely-td.html>

Toronto-Dominion (TD) is the latest major bank to declare a recession in Canada, saying the “balance of probabilities” has tipped in favour of another quarter-point rate cut next week. “It is likely the economy was in recession in the first half of the year,” thanks to the damage from a collapse in [export] prices that has persisted since 2014, senior economist Randall Bartlett said in a note to investors Monday.

Echoing a report from Bank of America Merrill Lynch on July 1, Bartlett said the Bank of Canada will probably cut its 0.75 per cent key interest rate at its July 15 meeting and maintain the historically low rate until mid-2017. That will probably keep Canada’s exchange rate below 80 U.S. cents (or US\$1=C\$1.25) through this year, he added.

(ii) Article 2:

- (a) Use the money demand/money supply diagram ( $M^s$  horizontal) to illustrate how the Bank of Canada (BOC)’s cut in the target overnight interest rate will affect the money supply and money demand. For monetary policies to be effective in stimulating GDP, would the BOC want to see the money demand independent of GDP or positively related to GDP? Explain (3 marks).



**Ans: The BOC has to cut targeted  $i$ ; the BOC would want  $M_d$  to be independent of  $Y$  so that  $M_d$  does not shift. If people demand more money as their income rises,  $M_d$  will shift up and the actual  $i$  will rise. This will decrease Investment, and hence decrease  $Y$ .**

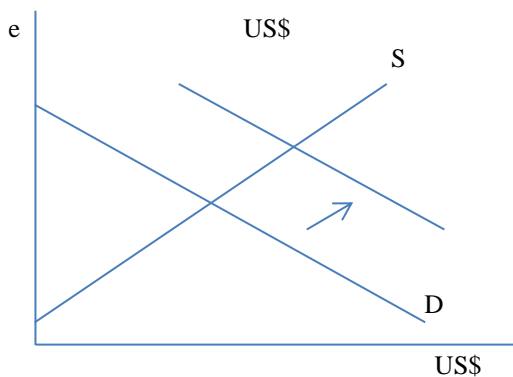
- (b) Continue with part (a): Explain the type of open market operation it should engage in and the effects on the bond market (3 marks).

**Ans: Buy bonds, bond prices rise as this will increase demand for bonds, and interest rates will fall.**

- (c) Continue with part (a): Define SPRA and SRA. Which tool is the BOC more likely to use in order to defend this rate cut? Explain (3 marks)?

**Ans: To maintain this lower ONR, BOC may have to intervene in the overnight money market to keep  $i$  from rising. The BOC can conduct SPRA, special purchase and resale agreements, by buying assets from commercial banks for one night, inject them with money, and then sell them back the assets the following day. SRA stands for sale and repurchase agreements, which corresponds to the BOC selling bonds to banks and buying them back the next day. This is equivalent to decreasing money supply and raising interest rates.**

- (d) Use the foreign exchange diagram to explain why such a rate cut will likely lead to a depreciation in the Canadian dollar. Also explain in words (3 marks).

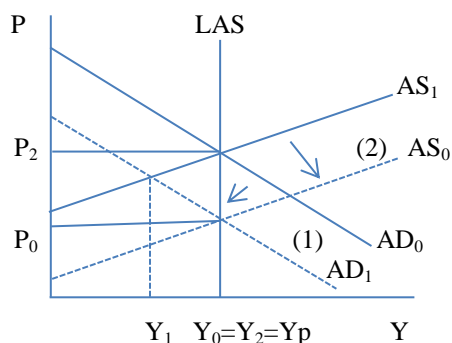


**Ans: As our ONR falls, our financial assets offer a lower rate of return compared to foreign (US) assets. With  $i_c < i_{us}$ , this will increase our demand US\$ to buy US assets. Demand for US\$ shifts up, causing a depreciation in the C\$.**

**Note: Some students may have the supply of US\$ shifting leftward, which is fine. This shift reinforces the rise in  $e$ .**

- (e) If neither the federal government nor the BOC responds to this downturn, use the AD/AS/LAS diagram to explain how the Canadian economy will adjust in the long run (4 marks).

**Ans: With NX falling and AD shifting inward, the recession means wages will ↓ eventually. The lower wages lead the AS to shift right (down), back to  $Y_p$ .**



**Article 3: Canadian dollar (loonie) slump hikes cost of U.S. imported goods**

A. Saltzman, CBC News, Jan 13, 2015

From Acuras to iPhone apps, suits to sweet potatoes, Canadians are going to be paying more for imported goods, thanks to the loonie's fall against the U.S. dollar.

"It's down roughly 10 per cent from a year ago. That's a very deep decline in a relatively short period of time." says Douglas Porter, chief economist and managing director of BMO Financial Group.

"The losers, pretty clear cut: It is consumers. Basically, we have to pay more for anything that's imported or priced in U.S. dollars," says Porter.

- (iii) Article 3:

- (a) Use the real exchange rate definition to explain why some economists argue that the nominal depreciation of the Canadian dollar will not stimulate the Canadian economy in the long run. Also explain how the short run AS curve will be affected (4 marks).

**Ans:  $E = eP_{US}/P_C$ ; with increase in money supply (fall in interest rate) and the subsequent stimulation in  $Y$  (via higher NX and investment spending or even consumer spending), the price level is likely to rise. As  $P_C$  rises together with  $e$ , the net effect on  $E$  is not clear. Depending on the relative magnitude of  $P_C$  increase versus  $e$  increase,  $E$  can rise, fall or remain constant.**

**Also, as the  $P_C$  rises, workers see this rise in the cost of living, and they will demand a higher nominal wage at some point. This rise in  $W$  will shift the short run AS to the left, given that the higher  $W$  means a higher level of production costs for the firms.**

- (b) Suppose currently the nominal exchange rate  $e=1.1$ , that is, C\$1.1=US\$1, and the Consumer Price Index (CPI) in Canada is 132 and the CPI in the US is 110. Using the Purchasing Power Theory, find the new equilibrium  $e$  and explain **in detailed steps** how this new equilibrium value is reached (4 marks).

**Ans: PPP says  $eP_{US}=P_C$ , and for now,  $1.1*110 < 132$ . The  $e=1.1$  is not the equilibrium exchange rate. It is cheaper for Canadians to shop in the US as it costs C\$121 to buy a basket of goods and services rather than C\$132. More Canadians will shop in the US, and fewer Canadians will shop in Canada. This means we demand more US\$ by selling C\$. The rise in demand for US\$ will make US\$ more expensive, or C\$ cheaper. The US\$ will appreciate or the C\$ will depreciate. The  $e=1.1$  will rise to 1.2 so that  $1.2*110=132$ .**

**Article 4: Canada's coming economic headache: A serious shortage of skilled workers**

C. Clancy, The Canadian Press | June 25, 2014 10:57 AM ET

A shortage of skilled workers will be one of Canada's greatest future economic challenges, Employment Minister Jason Kenney told a skills summit Wednesday. Our supply of skilled workers grows too slowly to meet industries' rising demand.

Skills Canada has estimated that one more million skilled trade workers will be needed by 2020, Kenney pointed out.

"We know we have these huge investments and opportunities, particularly in a huge swath of northern Canada, through the massive multibillion-dollar investments in the extractive industries that will require tens, if not hundreds, of thousands of skilled workers who are not currently available," Kenney said.

(iv) Article 4:

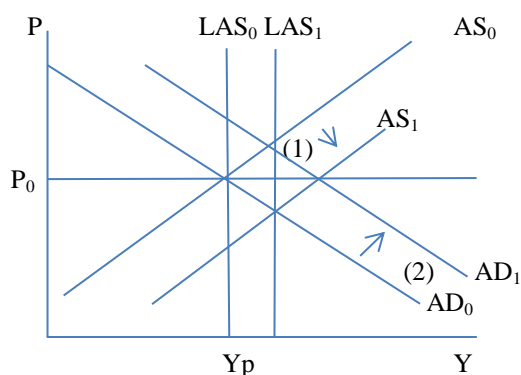
- (a) Write down the equation for total  $\% \Delta Y_p$  (not per-capita) and explain which two components this article is referring to (2 marks).

**Ans:  $\% \Delta Y_p = \% \Delta A + \% \Delta N + \% \Delta K$ , and the article says K is rising a lot but N is only rising by a bit.**

- (b) Discuss two policies that our Canadian government can implement such that our per-capita GDP will remain constant (2 marks).

**Ans: For per-capita GDP to remain constant, K and N have to rise by the same scale (via the concept of constant returns to scale). Policies: increase official retirement age to increase N; encourage more immigrants to come to Canada to increase N; encourage more people to join the labour force; etc.**

- (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 (2 marks).



**Ans: After AS and LAS shift to the right due to higher K and higher N, the price level will fall due to overall higher supply of goods and services. In order to maintain the same inflation rate (or price level), the BOC has to encourage higher AD by cutting interest rates and/or buying bonds. AD will shift up to maintain the same price level or inflation rate.**

The End... Have a Great Remaining Summer!