MACROECONOMICS 105 FINAL EXAM 22 April 2010
COLUMBIA COLLEGE
You have three hours.
A. Multiple Choice (80 pts) Please print (neatly) A, B, C, D or E in the space provided.

1. C In macroeconomics the “output gap” is the difference between:
A. Output and employment. B. Real and nominal GDP. C. Potential real national income and actual real national income. D. Real GDP and real GNP. E. Output in the current year and output in the base year.

2. D Which of the following statements is true?
A. If the nominal interest rate is high, the real interest rate must be high. X
B. If the rate of inflation is high, the nominal rate of interest must be low. X
C. If the real interest rate is less than the nominal interest rate, there must be deflation. X
D. If the inflation rate is larger than the nominal interest rate, the real interest rate is negative. X
E. If the rate of inflation is less than the real interest rate, the nominal interest rate is negative. X

3. C Which of the following expenditures is excluded from the expenditure side when calculating GDP?
A. A government hires more workers to reduce wait times at the passport office. ✓
B. The purchase of a tattoo for Mary Smith’s ankle. ✓
C. Fertilizer purchased by Farmer Jones to increase crop yields. (Intermediate transaction)
D. Repairs for a very old (used) house. ✓
E. A new truck purchased by a furniture-delivery company. ✓

4. B Consider the consumption function in a simple macro model with no taxes. At the level of national income where APC=1, the nation’s households are:
A. Saving all of their disposable income. ✓
B. Consuming all of the disposable income. X
C. Saving a portion of their income, but saving is less than consumption. X
D. Spending more than their current income. X
E. Allocating their income equally between savings and consumption.

5. C Suppose Y=C+I, MPS=0.2, autonomous consumption=$50 and autonomous investment=$25. At the equilibrium level of national income, what is desired consumption?
A. 125 B. 375 C. 350 D. 150
E. 68.75

6. B In a macro model where prices are fixed, the marginal propensity to consume out of disposable income is 0.8, the net tax rate is 0.25 and the marginal propensity to import is 0.12, the simple multiplier is:
A. 1.471 B. 1.923 C. 2.083 D. 2.110
E. 0.481

7. B Suppose the marginal propensity to consume out of disposable income is 0.6 and the marginal propensity to import is 0.14. If the net tax rate is 0.1, then what is the marginal propensity to spend?
A. 0.3 B. 0.4 C. 0.5 D. 0.6
E. 0.46

8. A Consider the AD/AS model. An increase in government expenditures will have NO impact on equilibrium real GDP if:
A. The AS curve is vertical. ✓
B. The marginal propensity to spend is equal to zero. X
C. The AS curve is horizontal. X
D. The marginal propensity to spend is very large. X
E. The tax rate decreases when G increases.
9. Compare Point 1 with Point 2. Initially we are at equilibrium (AE=Y and AD=AS). Point 1, the price level decreases. Point 2, G increases.

A. It is possible that AE=Y equally for Point 1 and Point 2, but the AD for Point 1 is lower.
B. It is possible that AE=Y equally for Point 1 and Point 2, but the AD for Point 2 is lower.
C. It is possible that AD=AS equally for Point 1 and Point 2, but the AE for Point 1 is lower.
D. It is possible that AD=AS equally for Point 1 and Point 2, but the AE for Point 2 is lower.
E. It is possible that AD=AS and AE=Y equally for Point 1 and Point 2.

10. Suppose Canada’s economy is in a long run equilibrium with the real GDP equal to potential output. Then there is a negative supply shock. In the short run______. In the long run_____.

A. Real GDP and the price level both fall; real GDP is below its original level with a lower price level.
B. Real GDP and the price level both fall; real GDP returns to its original level but with a lower price level.
C. Real GDP falls and the price level rises; real GDP and the price level return to their original levels.
D. Real GDP and the price level both rise; real GDP is above its original level with a higher price level.
E. Real GDP rises and the price level falls; real GDP returns to its original level with a lower price level.

11. Which of the following statements about “deposit” money is true?

A. The quantity of deposit money in the Canadian economy far exceeds the quantity of fiat money in circulation.
B. The quantity of fiat money in circulation far exceeds the quantity of deposit money.
C. Deposit money is recorded as an asset on the balance sheets of a commercial bank.
D. Deposit money can legally be created solely by the Bank of Canada.
E. Deposit money is paper money or coinage that is declared by the government to be “legal tender.”

12. If the Bank of Canada enters the open market and purchases $1000 of government securities, what will be the eventual change in the money supply given a 10% target reserve ratio for commercial banks?

A. Decrease by $1000.
B. Decrease by $5000.
C. Increase by $10,000.
D. Decrease by $10,000.
E. Increase by $5000.

13. The “precautionary” demand for money arises from the:

A. Fear that interest rates will rise.
B. Uncertainty about whether some unexpected expenditure will have to be made.
C. Need to make predictable purchases of goods and services.
D. Fear that interest rates will fall.
E. Desire to avoid paying interest on credit purchases.

14. An increase in the money supply sets the monetary transmission mechanism in motion which results in a _____ in the rate of interest, a _____ in the level of desired investment, a _____ shift in the AE curve and a _____ shift in the AD curve.

A. Fall, fall, downward, leftward.
B. Rise, fall, downward, leftward.
C. Rise, fall, upward, rightward.
D. Rise, rise, downward, leftward.
E. Fall, rise, upward, rightward.

15. Inflationary pressures caused by higher expected inflation shifts the AS curve leftward:

A. Causing lower than expected unemployment.
B. Will eventually subside unless accompanied by continual increases in the money supply.
C. Causing Y to rise above Y*.
D. Will permanently increase output.
E. Which causes AD to shift rightward until the recessionary gap is closed (if the government does nothing).
16. B When Y is greater than Y*,
   A. Total unemployment is equal to structural unemployment plus frictional unemployment.
   B. Cyclical unemployment is negative.
   C. Cyclical unemployment is greater than frictional plus structural unemployment.
   D. Frictional plus structural unemployment is negative.
   E. People will be searching more than a normal amount of time for new employment.

   E Consider the budget deficit function. With an unchanged fiscal policy, an increase in the national income causes the budget deficit function.
   A. A downward rotation in (the slope changes)
   B. An upward movement along.
   C. An upward shift of.
   D. A downward shift of.
   E. A downward movement along.

18. E Country A is currently producing 90 units of wine and 10 units of cheese. To produce 10 more units of cheese it must sacrifice 30 units of wine. Country B produces 45 units of wine and 45 units of cheese. To produce 10 more units of cheese it must sacrifice 10 units of wine. What must be true?
   A. Neither country has an absolute advantage in the production of either wine or cheese.
   B. A has an absolute advantage in both wine and cheese.
   C. B has an absolute advantage in wine and A has an absolute advantage in cheese.
   D. A has a comparative advantage in wine, B has a comparative advantage in wine.
   E. B has a comparative advantage in cheese, A has a comparative advantage in wine.

19. C A tariff on imports causes:
   A. Consumer surplus for local consumers to rise more than the increase in government revenue.
   B. Producer surplus for local producers to rise more than the increase in government revenue.
   C. Consumer surplus for local consumers to decrease more than the increase in government revenue.
   D. Producer surplus for local producers to fall more than the increase in government revenue.
   E. The government revenue to increase more than the loss of the foreign exporters' producer surplus.

20. C Suppose the Chinese government fixes its exchange rate (in US$ per local currency) below its free-market equilibrium level. Its purpose would be to:
   A. Help maintain a current account deficit and thus a capital inflow to China. x
   B. Create a increased demand in international markets for the Chinese yuan. v
   C. Make Chinese exports more attractive to the rest of the world.
   D. Make it more affordable for Chinese firms to import new materials. x
   E. Make it more affordable for Chines households to buy foreign goods. x

B. Calculations and Diagrams (110 pts) SHOW WORK CLEARLY for partial credit.

1. (4 pts) Identify the following transactions that occur in Canada with a C, I, G, X, M or N for none of the above. Some may require more than one answer.

   a. A TV store sells a consumer a TV that it bought from a Japanese company three years ago. +C
   b. A Japanese company buys the Canadian TV store from American owners. -N

2. (6 pts) What is the real growth rate if GDP measured in the current dollars fell 2.3% when the deflator fell from 130.8 to 124.6?

   \[ \frac{1 - 0.023}{124.6/130.8} = \frac{0.977}{0.9526} = 1.026 \]

   \( \% \Delta P = -4.74 \)
3. (12 pts) C=40+0.9Yd, T=0.1Y, X=60, M=0.06Y, G=80, I=120

3. \( 300 + 0.75Y \) a. What is the AE equation?

3. \( (300)Y = 1200 \) b. What is the equilibrium level of \( Y \)?

3. \( 4 \) c. What is the simple multiplier?

3. \( \Delta G = \frac{300}{4} = 75 \) d. If we want \( Y \) to be 1500, what must \( \Delta G \) be?

4. (25 pts) Let \( AE = A_0 + aY - 4P \) (where \( A_0 \) and \( a \) are your answers to #3a above)

3. a. \( \frac{Y_{AD} = 1200 - 16P}{400} \) What is the equation for \( Y_{AD} \)?

3. b. \( \frac{\Phi = 600}{24} = 25 \) \( Y = 800 \) What is equilibrium \( Y \) & \( P \)?

3. c. \( \frac{\text{succession}}{\Phi = 200} \) Is there an inflationary gap or a recessionary gap? How large?

6. d. \( \frac{\Phi = 12.5}{Y_{AD} = 1200 - 16P} \) \( Y_{AS} = \frac{400 + 8P}{1000 + 16P} \) If the government does not react to this gap, and the economy adjusts by itself, what is the new \( P \), new \( Y_{AD} \) and new \( Y_{AS} \)? (Assume the slopes of \( Y_{AD} \) and \( Y_{AS} \) don’t change)

b. \( \Phi = 50 \) \( Y_{AD} = \frac{600 + 8P}{1500 - 16P} \) Suppose the government does not want the economy to adjust by itself, but wants to use fiscal policy \( (\Delta G) \) to adjust to \( Y^* \). What is the new \( P \), new \( Y_{AD} \) and new \( Y_{AS} \) (no slope change)?

3. f. \( G = 230 \) What is the new \( G \) (don’t forget the old \( G = 80 \)) that will bring this change?

5. (9 pts) Suppose the target reserve ratio for our economy is 25%. Initially, our economy has 600 of initial cash. Assume not leakages. (the public does not wish to hold cash).

a. Show the subtotal T-account at the end of the second round.

b. Show the subtotal T-account in the long run.

c. \( \left( \frac{1}{v} \right) \) What is the simple money multiplier for this economy?

6. (15 pts) Suppose \( Ms = 900, Md = 1000 - 1000r \) and \( I = 600 - 900r \).

4. \( r = 10\% \) \( \frac{I = 510}{11} \) a. What is equilibrium \( r \) & \( I \)?

4. \( r = 8\% \) \( \frac{I = 528}{\Delta I = 18} \) b. What is the new equilibrium \( r \) & \( I \) if \( \Delta M = 20 \)?

3. \( Y_{AD} = 1272 - 16P \) c. Use the same AE equation from #4a. What is the new \( Y_{AD} \) caused by \( \Delta M = 20 \)?

4. \( P = 28 \) \( Y = 824 \) d. What is the new equilibrium \( Y \) and \( P \) caused by \( \Delta M = 20 \)?

7. (14 pts) In country A, we can produce up to 60 units of wheat or up to 15 units of cheese. In country B, we can produce up to 30 units of wheat or up to 15 units of cheese. In both countries, consumers want to consume equal amounts of both wheat and cheese.

What is the percentage gain in country A from trade?

What is the percentage gain in country B from trade?
8. (7 pts) Here are the complete accounts from our country's balance of payments: Imports $150, Exports $200, Investment income earned in foreign countries by our citizens $80, Loans by our banks to foreigners $50, Sales of stocks and bonds to non-residents $40, Investment income earned by non-residents in our country $60, Purchases of stocks and bonds from non-residents $30, Loans from foreign banks to our citizens $20, Decrease in international reserves $70, Capital consumption allowance (Depreciation) $35.

\[
\begin{array}{l}
\text{Income} \quad 200 \\
\text{Exports} \quad 200 \\
\text{Investmen,} \quad 80 \\
\text{primary} \quad 80 \\
\text{Loans} \quad 50 \\
\text{Loan} \quad 20 \\
\text{invest.} \quad 70 \\
\text{Sale} \quad 40 \\
\text{Bonds} \quad 40 \\
\text{Invest} \quad 60 \\
\text{Purchase} \quad 30 \\
\text{Loans} \quad 20 \\
\text{reserves} \quad 70 \\
\end{array}
\]

a. Current Account
b. Capital Account.
c. Statistical Discrepancy.

9. (8 pts) Suppose the international demand and supply for our currency is: Qd= 800-300e, Qs=400+200e (e is US$ per each unit of our local currency).

a. What is the equilibrium e?

\[
\frac{800}{400} = .8 \quad 1 \quad \text{sell reserves}
\]

b. If the central bank wants parity (e=1) will the central bank be selling or buying foreign reserves?

Sell $100 worth

c. How many dollars' worth of foreign reserves will the central bank be selling or buying?

C. Essay (10 pts) Write no more than 250 words and your essay will benefit from explaining a well labelled diagrams.

It looks like the rest of the world has decided it is not as interested as it was just a couple of years ago in what had been our fastest growing export --- oil. How do you show this in an AD/AS diagram? This seems to mean that the Canadian economy is currently performing below what we thought was our capacity. What options does our government have to increase our prosperity? Do you favour any specific policy? Why?

![Diagram](image)