

Concordia University
Department of Economics
ECON 203 – INTRODUCTION TO MACROECONOMICS
Winter 2012 Midterm Exam VERSION A

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STUDENT NAME: _____

STUDENT NUMBER: _____

Please read all instructions carefully.

1. This is a 60 minute-exam. The questions are worth 100 marks altogether.
2. Answers all questions.

You are allowed to use a **non-programmable** calculator. You may use either pen or pencil to provide your answers.

Part I - Multiple choice questions (3 marks per question)

1. Which of the following best defines (1) an advance in technology and (2) the impact of an advance in technology?
 - A. It refers to the ability to produce more output with more resources; it shifts the production function outward.
 - B. It refers to the ability to produce more output with a fixed quantity of resources; it shifts the production function outward.**
 - C. It refers to the ability to produce the same output with a smaller quantity of resources; it shifts the production function inward.
 - D. It refers to the ability to produce the same output with a larger quantity of resources; it shifts the production function outward.

2. Empirical data show that a strong, positive relationship exists between personal consumption expenditures and:
 - A. the real interest rate.
 - B. the level of personal disposable income.**
 - C. progressive taxes.
 - D. planned investment spending.

3. Despite some problems, higher real GDP per person does imply higher living standards because it tends to be positively associated with:
 - A. crime, pollution, and economic inequality.
 - B. better education, health and life expectancy.**
 - C. poverty, depletion of non renewable resources, and congestion.
 - D. unemployment, availability of goods and services, and better education.

4. Assume that the economy is currently in a recession phase. The self-adjustment mechanisms will lead to:
 - A. lower wages, lower factor prices, until recessionary gaps are removed.**
 - B. lower wages, greater factor prices, until recessionary gaps are removed.
 - C. higher GDP gap, lower wages and lower prices until potential GDP is reached.
 - D. lower prices, increases in the aggregate demand leading to the rightward shift of the AD curve until recessionary gaps are reduced.

5. An effective expansionary fiscal policy will:
- A. increase the structural deficit but reduce the cyclical deficit.
 - B. always result in a balanced budget once full-employment is achieved.
 - C. reduce a structural deficit.
 - D. reduce a cyclical deficit, and increase the total (actual) deficit.
6. A fall in the Canadian price level will cause:
- A. both exports and imports to decrease.
 - B. exports to decrease and imports to increase.
 - C. both exports and imports to increase.
 - D. exports to increase and imports to decrease.
7. Successive federal government As used in the income-expenditure diagram in macroeconomics, the 45 degree line:
- A. shows all the points at which spending and real income are equal.
 - B. contains only a consumption component.
 - C. represents consumption plus planned investment.
 - D. shows those income levels where the marginal propensity to save is 1.
8. budget deficits in the recent past have:
- A. increased aggregate expenditures and equilibrium income.
 - B. reduced government expenditures.
 - C. increased the public debt.
 - D. reduced the supply of government bonds.
9. Other things equal, a decrease in an economy's exports due to recession in USA will:
- A. lower the marginal propensity to import in Canada.
 - B. have no effect on equilibrium GDP in Canada, because imports will change by an offsetting amount.
 - C. decrease aggregate expenditures and decrease equilibrium GDP in Canada.
 - D. increase aggregate expenditures and increase equilibrium GDP in Canada.
10. According to the consumption function, as real disposable income increases:
- A. consumption will rise by the same amount as the increase in disposable income.
 - B. both consumption and saving will rise.
 - C. consumption falls but saving rises.
 - D. consumption rises but saving falls.

Part II – Answer all questions

Explain whether this statement is true or false. Marks are based solely on explanation. No marks will be awarded by simply stating “true” or “false” without explanation.

1. In an economy without government, if investment demand and exports are given, the slope of aggregate expenditure is determined by the consumption function.

Answer:

In an economy without a government there is government spending (G). The AE function is $C+I+X-Z$ and C and Z have an induced component

$$C=C_0+MPC*Y$$

$$Z=Z_0+MPZ*Y$$

I and X are autonomous, constant.

2. If households expect that the expenditure programs are temporary and that there will be tax-increases in future to cover the deficits, expansionary fiscal policy may not stimulate aggregate spending.

Answer:

This is the crowding out effect.

Current events

1. [...] “prices fell last month in the U.S. because companies paid less for energy, evidence that inflation remains” under control.

(U.S. WHOLESALE PRICES DECLINE, The Globe and Mail, Feb 2012)

Refer to the excerpt above to explain how the fall in energy prices decreased the prices for goods in the economy. You could also illustrate the changes graphically, using the AD-AS model.

Briefly define the different measures for inflation. (5 marks)

Answer: The cost of production decreases, shown in a shift of the AS curve to the right (an increase).

CPI and the GDP deflator are used to calculate the inflation rate.

The CPI is the average price for a basket of goods and services that the average consumer purchases in a year.

The GDP deflator is the average price of the entire domestic production.

2. “The unemployment rate for December was 7.5 per cent. [...] A plausible estimate for the unemployment rate associated with potential output is probably around 7 per cent or so. (The Conference Board of Canada’s projection for 2013 is 6.8 per cent.)

(“Don’t settle for new “natural” jobless rate of 7 per cent”, *The Globe and Mail*, Feb 2012)

Refer to the excerpt above to **explain** whether there is an output gap in Canada. What types of unemployment are included in the natural rate of unemployment?

Explain what policy action the government could take to return output and employment to its potential.

Explain what would lead to reductions in the natural rate of unemployment.

(5marks)

Answer: “The policy challenge during recessions is to stimulate demand in order to return output and employment back to potential, and this has been the priority of fiscal and monetary policy for the last three years.” The expansionary fiscal policy would be to increase G or decrease t.

The natural rate of unemployment includes structural, frictional and seasonal unemployment.

“There’s no reason for us to be satisfied with a ‘natural’ unemployment rate of 7 per cent, but long-term reductions in unemployment are less a matter of stimulating demand than of improving the functioning of the labour market.”

Quotes from the same article.

(i) **Question #3 Policies (Total=25 marks)**

The MPC for a closed economy is 0.75 and the net tax rate $t = 0.2$. Autonomous consumption is \$500, investment is \$300, and government spending is \$400.

- i. Find the equilibrium output in this economy. Show your calculations. (5 marks)

Using the multiplier equation, $Y = 2.5 \times \$1200 = \$3,000$. The multiplier is $1/[1-MPC(1-t)]$ or $1/(1 - 0.75 \times .8) = 2.5$. Autonomous spending is $\$500 + \$300 + \$400 = \1200 . Equilibrium real GDP = $2.5 \times \$1,200 = \$3,000$.

- ii. What is the value of the autonomous expenditure multiplier? (5 marks)

The multiplier is $1/[1-MPC(1-t)]$ or $1/(1 - 0.75 \times .8) = 2.5$

- iii. Provide a brief intuitive description (no rounds necessary) for why the multiplier in (ii) is larger than 1. (5 marks)

The increase in autonomous spending will generate income and more spending, which again, will generate income and increased demand.

- iv. If business pessimism about future levels of expenditure reduces investment expenditure by 50 what happens to **equilibrium real GDP** and the **government's budget balance**? (5 marks)

Y would decline by $2.5 \times \$50 = \125 to $\$2875$ and the new BB = $0.2 \times \$2,875 - \$400 = \$175$

- v. If the current income is 5% below its targeted level, what changes in government expenditures are required to achieve the potential? Use for the current level of income your result from point (iv). (5 marks)

The potential Y is $\$2875/0.95=3026.32$ and the output gap is $3026.32-2875= 151.32$. In order to close this output gap, government expenditures G should increase by $151.32/2.5= 60.52$, given that the multiplier in the economy is 2.5.

Question # 4 Unemployment (total: 25 marks)

Year	Nominal GDP (Bil \$)	GDP Deflator (1997=100)	CPI (1992=100)	Labour Force (mil)	Employment (mil)
2004	1,291	114.8	124.6	17.2	15.9
2005	1,371	118.4	127.3	17.3	16.2

Source: Bank of Canada Banking and Financial Statistics, November 2006

- i. What was the annual rate of growth in real GDP and the inflation rate in Canada in 2005? (5 marks)

The real GDP for 2004 and 2005 are:

$$(1291/114.8)*100= 1,124.6$$

$$(1371/118.4)*100= 1,579.4.$$

Therefore, the economic growth rate is $(1579.4-1124.6)/1124.6= 2.9\%$

The inflation rate is 27.3%, given that the base year CPI is 100.

- ii. Calculate the unemployment rates for 2004 and 2005. (5 marks)

$$(17.2-15.9)/17.2=7.6\% \text{ in 2004 and } (17.3-16.2)/17.3=6.4\% \text{ in 2005.}$$

- iii. Now suppose that in **2004** 0.2 mil. of the unemployed workers are so discouraged that they have given up looking for work. They decide to go back to school full-time. Find the new unemployment rate. (5 marks)

$$(17.2-15.9-0.2)/(17.2-0.2)=6.4\%$$

- iv. True or false: "Low unemployment rates imply more people are working"— **justify** your answer (5 marks)

See above. The number of employed workers does not change.

- v. Assume that the Structural Unemployment rate is 3% and Frictional Unemployment rate is 1%. Calculate the Natural rate of unemployment and the Cyclical unemployment rate for 2004 and 2005 (use your result from point (ii.) for that). (5 marks)

The natural rate of unemployment is $3+1=4\%$ (frictional+structural)

Cyclical unemployment= $7.6-4=3.6\%$ for 2004 and $6.4-4=2.4\%$ for 2005.