

Economics 105: Principles of Macroeconomics

Practice Final

Total time: 3 hours

Name (LAST, First):
Preferred Name:
Student Number:
Signature:

<u>INSTRUCTIONS:</u>
1. Don't open the exam until instructed to do so.
2. Put the best answer for the multiple choice questions on the MCQ answer sheet.
3. Write your answer for analytical questions in the space provided below the question.
4. Keep at least two decimal places in all calculations with non-integers.
5. Any unauthorized electronic devices must be turned off during the examination.
6. No books, notes, or unauthorized electronic devices shall be within the reach of a student during the examination.
7. During the examination, communicating with, or purposely exposing written papers to the view of, other examinees is forbidden.

Marking Scheme:

Multiple Choice Section	Short Answers	Analytical Questions	
_____/28	SA1: ____/3	AQ1: ____/8	AQ4: ____/8
	SA2: ____/3	AQ2: ____/8	AQ5: ____/8
		AQ3: ____/8	AQ6: ____/8
			Mark: ____/82

Multiple Choice Section

- 1) Read each question carefully and put the best answer (A, B, C, D, or E) on the MC answer sheet.
- 2) Don't just circle the answer on the exam paper or it will not be counted.

MULTIPLE CHOICE ANSWER SHEET					
Question	1	2	3	4	5
Answer	C	B	A	C	D
Question	6	7	8	9	10
Answer	B	C	E	C	D
Question	11	12	13	14	15
Answer	D	C	A	E	A
Question	16	17	18	19	20
Answer	C	D	B	D	A
Question	21	22	23	24	25
Answer	C	A	A	A	D
Question	26	27	28		
Answer	C	D	A		

- MC1.** Economists say: "There is no such thing as a free lunch." What does this NOT mean?
- A. Scarce resources have alternative uses.
 - B. If resources are used to make the lunch, they are not available for other purposes.
 - C. In a profit-motivated economy, lunch makers always charge for their services.
 - D. The resources used to make the lunch might have been used to make dinner.
- MC2.** Which of the following is an example of a normative statement?
- A. If the price of a product decreases, quantity demanded increases.
 - B. Reducing tax rates on the wealthy would be good for the country.
 - C. If the national saving rate were to increase, so would the rate of economic growth.
 - D. An increase in minimum wages will increase unemployment.
 - E. An increase in minimum wages will not increase unemployment.
- MC3.** Sally prepared her own meals during the first quarter of 2010, and then ate at restaurants every day in the second quarter of 2010. What is the impact on GDP of Sally's change of habit?
- A. It necessarily raises GDP.

- B. It necessarily reduces GDP.
- C. It raises GDP because the restaurant meals are more expensive.
- D. It has no impact on GDP.

- MC4.** Stephanie buys a designer dress produced by a Canadian-owned fashion shop in France. As a result, Canadian consumption increases. What happens as a result?
- A. Canadian net exports decrease, Canadian GNP increases, and French GDP is unaffected.
 - B. Canadian net exports decrease, Canadian GDP increases, and Canadian GNP is unaffected.
 - C. Canadian net exports decrease, Canadian GDP is unaffected, and Canadian GNP increases.
 - D. Canadian net exports are unaffected, Canadian GDP is unaffected, and French GDP increases.
 - E. Both Canadian GDP and French GDP increase.
- MC5.** How are intermediate goods accounted for when calculating GDP?
- A. The value of all intermediate goods is included in GDP.
 - B. The value of intermediate goods is included in GDP only if they were produced in the previous year.
 - C. The value of intermediate goods is included in GDP only if they are purchased by firms rather than households.
 - D. The value of intermediate goods is not included in GDP unless they are part of inventory.
 - E. None of the above.

Table A:

	Minutes Needed to Produce 1 kg of:	
	Wheat	Corn
Paul	15	12
Cliff	20	30

- MC6.** Refer to Table A. What is the opportunity cost of 1 kg of wheat for Cliff?
- A. 1/3 kg of corn.
 - B. 2/3 kg of corn.
 - C. 1 kg of corn.
 - D. 3/2 kg of corn.
- MC7.** Refer to Table A. What is the opportunity cost of 1 kg of corn for Paul?
- A. 1 kg of wheat.
 - B. 1/5 kg of wheat.
 - C. 4/5 kg of wheat.
 - D. 5/4 kg of wheat.
- MC8.** Refer to Table A. Assume that Cliff and Paul were both working 8 hours per day, and each was dividing their resources equally between the production of wheat and corn. Then Cliff decides to fully specialize in the product he has a comparative advantage in and Paul decides to use 20 percent of his resources to produce wheat. What would happen to the total production of corn?
- A. Increase by 0.2 kg.

- B. Increase by 1 kg.
- C. Increase by 2.4 kg.
- D. Increase by 3.4 kg.
- E. Increase by 4.0 kg.

MC9. Refer to Table A. Assume that Cliff and Paul were both working 8 hours per day, and each was dividing their resources equally between the production of wheat and corn. Then Cliff decides to fully specialize in the product he has a comparative advantage in and Paul decides to use 20 percent of his resources to produce wheat. What would happen to the total production of wheat?

- A. Increase by 0.2 kg.
- B. Increase by 1 kg.
- C. Increase by 2.4 kg.
- D. Increase by 3.4 kg.
- E. Increase by 4.0 kg.

MC10. Which of the following serves as an automatic stabilizer?

- A. the Bank of Canada
- B. the income tax system
- C. the employment insurance
- D. both B and C
- E. none of the above

MC11. Which of the following is most likely to cause frictional unemployment?

- A. workers leaving the labour force
- B. an economy in recession
- C. an increase in population
- D. changes in the composition of demand among industries or regions

MC12. According to the classical dichotomy, which of the following is influenced by monetary factors?

- A. real GDP
- B. unemployment
- C. price level
- D. the real wage rate

MC13. Which of the following best describes the effects of an open market operation undertaken by the Bank of Canada?

- A. If the Bank of Canada purchases bonds in the open market, then the money supply shifts right and the price level increases.
- B. If the Bank of Canada sells bonds in the open market, then money supply shifts right and the price level decreases.
- C. If the Bank of Canada purchases bonds, then the money supply shifts left and the price level decreases.
- D. If the Bank of Canada sells bonds, then the money supply shifts right and the price level decreases.

MC14. The money market is depicted in a diagram with the interest rate on the vertical axis. Suppose interest rate rises, but output and price level are unchanged. Then

- A. money demand will increase.
- B. money demand will decrease.
- C. money supply will increase.
- D. money supply will decrease.
- E. none of the above.

MC15. Which of the following occurs during a recession?

- A. an increase in unemployment, a decrease in real output and real income
- B. an increase in unemployment, an increase in real output and real income
- C. a decrease in unemployment, an increase in real output and real income
- D. a decrease in unemployment, a decrease in real output and real income

MC16. Starting with initial long-run equilibrium, a sudden decrease in optimism about future business conditions will have which of the following effects (in the short run)?

- A. an increase in output and a reduction in the price level
- B. an increase in both output and the price level
- C. a reduction in both output and the price level
- D. a reduction in output and an increase in the price level

MC17. A decrease in the price level will lead to which of the following effects?

- A. a decrease in the quantity of goods and services demanded
- B. a reduction in net exports to foreigners
- C. a decrease in the wealth of persons holding the fixed supply of money
- D. an increase in the value of the money that is in circulation

MC18. Which of the following is the primary advantage of mutual funds?

- A. They usually make a return that "beats the market."
- B. They allow people with small amounts of money to diversify.
- C. They provide customers with a medium of exchange.
- D. They allow investing in venture companies.

MC19. Which of the following best defines the natural rate of unemployment?

- A. It is the unemployment rate that would prevail with zero inflation.
- B. It is the rate associated with the highest possible level of GDP.
- C. It is the difference between the long-run and short-run unemployment rates.
- D. It is the amount of unemployment that the economy normally experiences.

MC20. Matt loses his job and decides to sit around at home for a few months. Assuming that other things remain the same, what happens to the unemployment rate?

- A. The unemployment rate decreases.
- B. The unemployment rate is unaffected.
- C. The unemployment rate increases.
- D. There is insufficient information.

MC21. Suppose that consumers decide to buy more computers and fewer typewriters. As a result, computer companies expand production while typewriter companies lay off workers. What is this an example of?

- A. structural unemployment created by efficiency wages
- B. cyclical unemployment created by a recession

- C. frictional unemployment created by a sectoral shift in demand for labour
- D. frictional unemployment created by a sectoral shift in supply of labour

MC22. Under which of the following conditions will there be structural unemployment?

- A. if some wages are kept above the equilibrium level
- B. if some people choose not to work at the equilibrium wage
- C. if some wages are below the equilibrium level
- D. if conditions for unemployment insurance benefits are relaxed

MC23. Mia puts money into a piggy bank so she can spend it later. Which of the following functions of money does this illustrate?

- A. store of value
- B. medium of exchange
- C. unit of account
- D. wealth

MC24. Which of the following is one of the consequences of accumulating capital?

- A. Accumulating capital requires that society sacrifice consumption in the present.
- B. Accumulating capital allows society to consume more in the present.
- C. Accumulating capital decreases saving rates.
- D. Accumulating capital increases income inequality.

MC25. What does diminishing returns to capital imply?

- A. Capital produces fewer goods as it ages.
- B. New ideas are not as useful as old ideas.
- C. Increases in the capital stock eventually decrease output.
- D. Increases in the capital stock increase output by ever smaller amounts.

MC26. A country has \$150 million of net exports and \$190 million of saving. What is net capital outflow?

- A. \$40 million
- B. -\$40 million
- C. \$150 million
- D. \$190 million

MC27. Which of the following does a trade deficit imply?

- A. saving is greater than domestic investment and $Y > C + I + G$
- B. saving is greater than domestic investment and $Y < C + I + G$
- C. saving is less than domestic investment and $Y > C + I + G$
- D. saving is less than domestic investment and $Y < C + I + G$

MC28. Suppose the real exchange rate is 3/5 pounds of Chilean beef per pound of Canadian beef, a pound of Canadian beef costs \$3, and the nominal exchange rate is 400 Chilean pesos per dollar. What does Chilean beef cost?

- A. 2000 pesos per pound
- B. 1500 pesos per pound
- C. 1200 pesos per pound
- D. 960 pesos per pound

Short Answers

SA1. (3 marks) The government spends \$3 million on national defense. Explain why aggregate demand might increase by more than \$3 million. Explain why aggregate demand might increase by less than \$3 million.

If the multiplier effect is larger than the crowding-out effect, AD will increase by more than \$3 million.

If the crowding-out effect is larger than the multiplier effect, AD will increase by less than \$3 million.

SA2. (3 marks) Suppose that velocity of money and output are constant and that the quantity theory of money and the Fisher effect both hold. What happens to inflation, real interest rate, and nominal interest rate when the money supply growth rate increases from 0 percent to 5 percent?

The inflation rate will increase from 0% to 5%. The real interest rate stays constant. The nominal interest rate will increase 5 percentage points.

Analytical Questions

AQ1. [8 marks] Residents of Fruitopia produce and consume apples and oranges. In 2011 they produce and consume 80 apples with a price of \$2 each and 50 oranges with a price of \$2.50 each. In 2012 the quantity and price are 90 and \$2.20 for apples, 60 and \$2.80 for oranges.

a. (2 marks) Using 2012 as the base year, calculate the CPI for each year?

$$\text{CPI in 2011} = \frac{90 \times \$2 + 60 \times \$2.50}{90 \times \$2.20 + 60 \times \$2.80} \times 100 = \frac{\$330}{\$366} \times 100 = 90.16$$

$$\text{CPI in 2012} = \frac{90 \times \$2.20 + 60 \times \$2.80}{90 \times \$2.20 + 60 \times \$2.80} \times 100 = \frac{\$366}{\$366} \times 100 = 100$$

b. (2 marks) Using 2012 as the base year, calculate the GDP deflator for each year?

$$\text{GDP deflator in 2011} = \frac{80 \times \$2 + 50 \times \$2.50}{80 \times \$2.20 + 50 \times \$2.80} \times 100 = \frac{\$285}{\$316} \times 100 = 90.19$$

$$\text{GDP deflator in 2012} = \frac{90 \times \$2.20 + 60 \times \$2.80}{90 \times \$2.20 + 60 \times \$2.80} \times 100 = \frac{\$366}{\$366} \times 100 = 100$$

c. (2 marks) What is the inflation rate in 2012 based on the CPI? What is the inflation rate in 2012 based on the GDP deflator?

$$\text{Based on the CPI, the inflation rate in 2012} = \frac{100 - 90.16}{90.16} \times 100\% = 10.91\%$$

$$\text{Based on the GDP deflator, the inflation rate in 2012} = \frac{100 - 90.19}{90.19} \times 100\% = 10.88\%$$

d. (2 marks) Give two reasons why the CPI and GDP deflator give different rates of inflation.

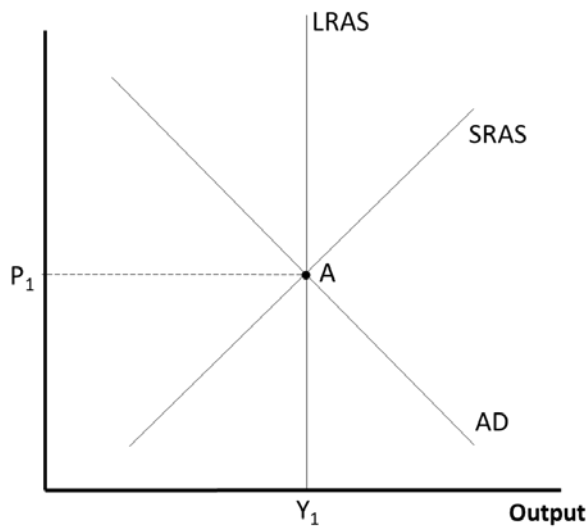
(1) GDP deflator includes goods and services produced domestically. CPI includes goods and services consumed by a typical consumer.

(2) CPI uses a fixed basket of goods and services. The GDP deflator uses a variable weight.

.....

.....

AQ2. [8 marks] In the accompanying diagram, the economy is in long-run equilibrium at point A when a stock market crash decreases households' wealth.



- a. (2 marks) Describe the initial impact of this event in the model of aggregate demand and aggregate supply by explaining which curve shifts which way.

AD will shift to the left.

- b. (2 marks) What happens to the price level and real output in the short run?

Both the price level and real output decrease.

- c. (2 marks) If policymakers wanted to move output back to the natural rate of output, what should they do?

Use expansionary fiscal policy or expansionary monetary policy.

- d. (2 marks) If policymakers did nothing at all, what would happen to the nominal wage as the economy self-corrects or adjusts back to the natural rate of output on its own?

The nominal wage will decrease.

AQ3. [8 marks] Suppose the money supply is \$500, real output is 1,000 units, and the price per unit of output is \$2. Use the quantity equation ($MV = PY$) to answer the following questions.

a. (1 mark) What is the value of money velocity?

$V = PY/M = \$2 \times 1000 / \$500 = 4$

b. (3 marks) If the money supply is increased to \$1,000, what will happen to the nominal GDP, real GDP, and price level?

The nominal GDP = \$4,000

The real GDP = 1,000

The price level = \$4

c. (2 marks) Is your answer in part (b) consistent with the classical dichotomy? Explain.

Yes. According to the classical dichotomy, money affects nominal variables proportionately and has no impact on real variables. In part (b), price and nominal GDP double, but real output remains constant.

d. (2 marks) Suppose that when the money supply is doubled from \$500 to \$1,000, real output grows by 10 percent. Now what will happen to prices? Do prices more than double, less than double, or exactly double? Why?

The quantity equation says that nominal output must change in proportion to money. Prices will rise, but since real output grows 10 percent, prices will less than double.

AQ4. [8 marks] Suppose that the nominal exchange rate between Canadian dollar and Chinese yuan is 4.80 yuan/dollar, and the price of a tennis racquet is \$50 in Canada and 200 yuan in China.

- a. (2 marks)** What is the real exchange rate between China and Canada in terms of tennis racquets?

The real exchange rate = $eP/P^* = 4.80 \times 50 / 200 = 1.20$ Chinese tennis racquets/Canadian tennis racquet.

- b. (2 marks)** Is there a profit opportunity that you could exploit with arbitrage? Where would you buy and where would you sell?

Yes, there are arbitrage opportunities. You can buy tennis racquets in China and sell them in Canada.

- c. (2 marks)** If the nominal exchange rate stayed the same, what would happen to the price of tennis racquets in Canada and China?

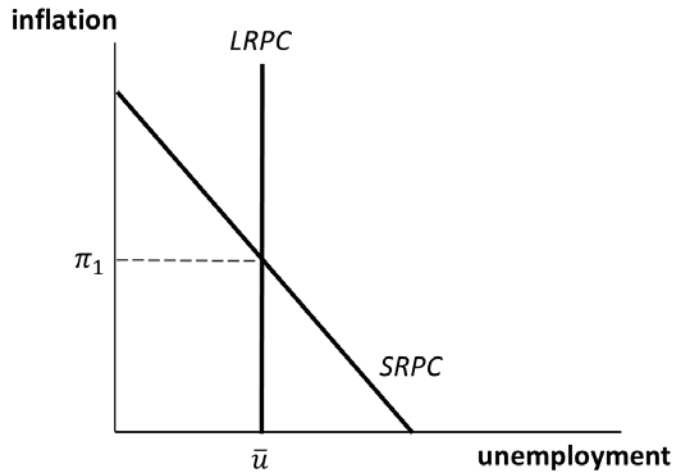
The price of tennis racquets will increase in China and decrease in Canada.

- d. (2 marks)** Suppose prices moves as you have predicted in part (c), what would happen to the real exchange rate?

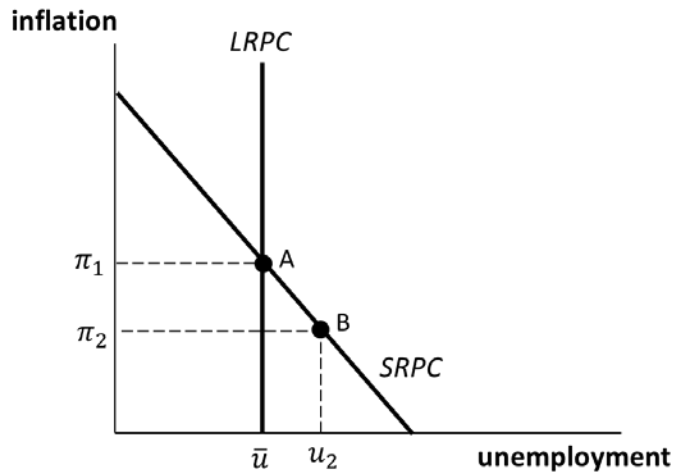
The real exchange rate will fall until it's equal to 1.

AQ5. [8 marks] Suppose that the economy is in its long-run equilibrium.

a. (2 marks) Draw the short-run and long-run Phillips curves. Label your graph clearly.



b. (3 marks) Suppose that the economy is in its long-run equilibrium and a wave of business pessimism reduces the aggregate demand. Show the effect of this shock on the short-run and long-run Phillips curves. If the central bank undertakes expansionary monetary policy, can it return the economy back to its original inflation and unemployment?

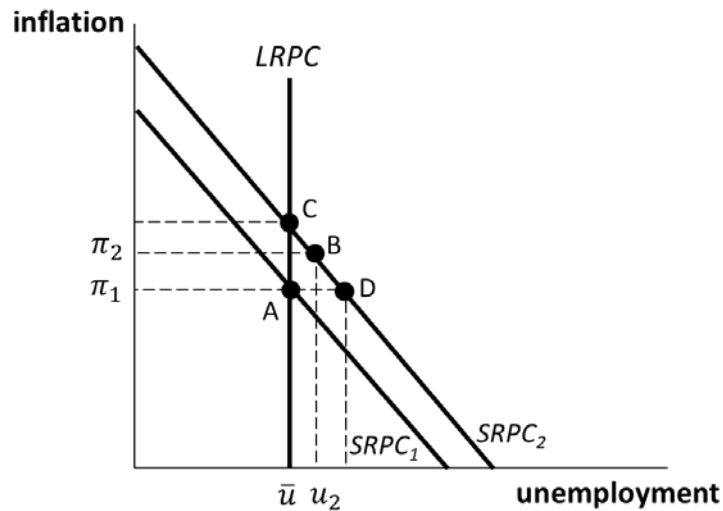


Initially, the economy is in its long-run equilibrium at point A.

A wave of business pessimism reduces the aggregate demand, moving the economy to point B.

If the central bank undertakes expansionary monetary policy, AD will increase, which will return the economy back to its original inflation and unemployment.

- c. (3 marks) Suppose that the economy is in its long-run equilibrium and then the price of imported oil increases. Show the effects of this shock on the short-run and long-run Phillips curves. If the central bank undertakes expansionary monetary policy, can it return the economy back to its original inflation and unemployment? If the central bank undertakes contractionary monetary policy, can it return the economy back to its original inflation and unemployment?



Initially, the economy is in its long-run equilibrium at point A.

An increase in the price of imported oil reduces the short-run aggregate supply, moving the economy to point B.

If the central bank undertakes expansionary monetary policy, AD will increase, which will move the economy from B to C. The unemployment returns to its original level, but the inflation is higher.

If the central bank undertakes contractionary monetary policy, AD will decrease, which will move the economy from B to D. The inflation returns to its original level, but the unemployment is higher.

AQ6. [8 marks] Suppose that the Okun's law holds and a one percentage point increase in the unemployment rate reduces the real output by 2% of the full-employment output. The Phillips curve is given by $u = 6\% - 1.5(\pi - \pi^e)$.

a. (2 marks) Based on the above Phillips curve, what is the natural rate of unemployment?

$As \pi = \pi^e, u = \bar{u}.$

$Set \pi = \pi^e \Rightarrow \bar{u} = 6\%.$

b. (2 marks) Calculate the sacrifice ratio.

$The \text{ sacrifice ratio} = 1.5 \times 2 = 3.$

c. (2 marks) Suppose $\pi = 6\%$ and $\pi^e = 2\%$. What is the unemployment rate?

$u = 6\% - 1.5(\pi - \pi^e) = 6\% - 1.5(6\% - 2\%) = 0\%.$

d. (2 marks) Refer to part (c). How much is the actual output compared to the full-employment level of output?

$Since \text{ the unemployment is 6 percentage points below the natural rate of unemployment, the actual output is } 6 \times 2 = 12 \text{ percentage points higher than the full-employment level of output.}$