

Econ 102/Lecture 100

Answers

Exam II

Form 1

March 17, 2005

Section	Day	Time	Location	GSI
101	F	2:30-4	205 DENN	Jooyong
102	F	11:30-1	373 Lorch	Jooyong
103	F	1-2:30	373 Lorch	Sue
104	M	4-5:30	351 DENN	Joanne
105	M	2:30-4	330 DENN	Joanne
107	F	1-2:30	110 DENN	Sue
108	M	8:30-10	373 Lorch	Seb

- Do NOT open this exam booklet until instructed to do so!
- Please take a moment to complete the identification information on the scantron. Indicate your NAME, discussion SECTION number, FORM number, and UM ID number. THIS, and showing up in the correct exam room are WORTH TWO POINTS ON THE EXAM!
- The exam has 100 points and is designed to take about 60 minutes to complete. However, you'll have approximately 80 minutes. **Check that you have all 12 pages of the exam.**
- Read the questions and these instructions carefully!
- Use the space provided in this booklet and the back of the pages to work out the answers to the multiple choice problems. Use the space provided on the actual page for the short answer questions.
- You can use only NON-graphing calculators.
- For multiple choice questions, you get 3 points for a correct answer, 0 points for a blank, and 0 points for a wrong answer. There are NO penalties for guessing.
- Sign the honor code below!

Honor Code: I did not use any unauthorized aid on this exam.

Name: (PRINT) _____

UM ID #: _____

Signature: _____

1) Suppose that the following data describe the US economy (in trillion US\$).

GDP=10
Consumption = 7
Domestic Investment = 2
US Foreign Direct Investment Abroad = 1.0
Foreign Direct Investment in the US = 1.3
Net Taxes = 1.2
Government Budget Deficit=0.2

Which of the following is necessarily TRUE?

- A. **The amount of foreign Investment in the US exceeds the amount of US investment abroad.**
- B. **The amount of domestic investment exceeds the amount of private saving.**
- C. The amount of exports exceeds the amount of imports.
- D. The amount of net tax collected by the US government exceeds the spending of the US government.
- E. none of the above

[Both A and B are correct.]

2) Which of the following is a correct description of Capital Flight?

- A. a large and sudden rise in the aircraft industry
- B. a large and sudden movement of the physical capital stock across the regions within a country
- C. a large and sudden reduction in the supply of physical capital goods
- D. a large and sudden reduction in the supply of assets located in a country
- E. **a large and sudden reduction in the demand for assets located in a country**

3) A Swedish firm opens a factory that produces Mankiw textbooks in Ypsilanti. This will

- A. Decrease Sweden's NFI, but not effect US NFI
- B. Increase Sweden's NFI, but not effect US NFI
- C. **Increase Sweden's NFI and decrease US NFI**
- D. Decrease US NFI, but not effect Sweden's NFI
- E. Increase US NFI, but not effect Sweden's NFI

4) The US government is considering a tax exemption on capital income to encourage private saving (*accompanied by another tax change so as to leave the government budget unaffected*). In the new equilibrium of the long run open economy model, net foreign investment will _____, supply of US dollars in the foreign exchange market will _____, and US trade deficit will _____.

- A. increase; increase; increase
- B. increase; increase; fall**
- C. increase; fall; fall
- D. fall; fall; increase
- E. fall; fall; fall

5) The government of Sweden has recently announced a five-year plan for economic growth and it includes a more comfortable business environment for foreign investors, intended to attract foreign capital. Investors in the US (especially those in Ypsilanti) are enchanted by this opportunity and decide to build several plants in Swden. According to the long run open economy model, which of the following is TRUE about the US economy?

- A. Net exports increase by the same amount as the amount of foreign direct investment made on Slovakian plants.
- B. Supply of US dollar in foreign exchange market will not be affected because US monetary policy has not changed.
- C. Net foreign portfolio investment will increase due to a rise in real interest rate.
- D. Government saving will increase due to a rise in real interest rate.
- E. none of the above**

6) Sue visited Banana Island over the winter break. For some reason, she couldn't convert US dollars to Banana dollars (the currency for Banana Island) directly, so she had to convert US dollars to Mango dollars first. One Banana dollar exchanges for 1.2 Mango dollars and one US dollar exchanges for 1.5 Mango dollars. She was planning to take Econ 102 this semester, so she bought the Mankiw textbook for 60 Banana dollars in Banana Island. What is the cost of the textbook she bought in terms of US dollars?

- A. \$ 33.3
- B. \$ 48**
- C. \$ 60
- D. \$ 75
- E. \$ 108

- 7) Which of the following is true?
- A. Idiosyncratic risk affects all economic actors at once.
 - B. For a risk-averse person, the pain from losing \$1000 would be less than the gain from winning \$1000.
 - C. The stock market prices should follow a random walk according to the efficient markets hypothesis.**
 - D. If the efficient markets hypothesis is true, then you should be able to figure out which stock is more gainful in the stock market
 - E. Since the prices of stocks change every minute, we can conclude that the stock price of a company should not reflect its expected future profitability

Answer the following 2 questions based on the data in the table below

Year	2002		2003		2004	
Item	Quantities	Prices	Quantities	Prices	Quantities	Prices
Coffee	8	\$3	9	\$2	12	\$2.5
Cookies	-	-	25	\$4	30	\$5
TV sets	4	\$400	6	\$300	8	\$200
Coats	5	\$40	6	\$50	7	\$60

Take consumption in 2002 as the CPI basket.

- 8) With 2002 as your base year, what is the CPI in 2004?
- A. 68.2
 - B. 60.4
 - C. 120.6
 - D. 61.4**
 - E. 192.8
- 9) With 2003 as the base year, what is the GDP deflator for 2004?
- A. 131.8
 - B. 115.6
 - C. 100.0
 - D. 75.8**
 - E. 98.9

10) The Corporation of Imaginary offers two types of fellowships to the students in the University of Michigan with no requests. Being a student of University of Michigan, you can choose only one of them. Option A is to give you \$1000 now; Option B is to give you, one year from now, \$1,500 with a probability of 0.5 or \$500 with a probability of 0.5. The real interest rate in the economy is 0%. Which option should you choose?

- A. You should be indifferent between the options, because the expected net present value of each is \$1,000
- B. You should choose Option A, because it has a higher expected net present value
- C. You should choose Option B, because it has a higher expected net present value
- D. Unclear, it would depend on your utility function**
- E. None of the above

11) Suppose the current real GDP per capita in country A is \$8,000, whereas it is \$32,000 in country B. The long-term growth rates of real GDP per capita of country A and B are 4% and 2.5%, respectively. Then country A's real GDP per capita will catch up with B's real GDP per capita in approximately

- A. 35 years
- B. 46.5 years
- C. 70 years
- D. 93 years**
- E. never

12) Consider the closed economy loanable funds model: What would happen in the market for loanable funds if the government were to increase the tax on interest income while reducing the tax on other kinds of income so as to keep its budget balanced?

- A. The interest rate would rise**
- B. The change in the interest rate would be ambiguous
- C. Interest rates would be unaffected
- D. The interest rate would fall
- E. The interest rate would either fall or be unaffected, but it would certainly not rise

13) Consider the closed economy loanable funds model: Suppose that at a particular moment, instead of the market being in equilibrium, the interest rate is such that there is a shortage of loanable funds; that is, the amount of loanable funds supplied is less than the amount demanded. Then what would we expect to see happen over time as a result?

- A. The supply curve for loanable funds shifts right and the demand curve shifts left, while the interest rate remains constant.
- B. The supply curve for loanable funds shifts left and the demand curve shifts right, while the interest rate remains constant.
- C. Neither curve shifts, but the quantity of loanable funds supplied increases and the quantity demanded decreases as the interest rate rises to equilibrium**
- D. Neither curve shifts, but the quantity of loanable funds supplied increases and the quantity demanded decreases as the interest rate falls to equilibrium
- E. The interest rate changes, causing the supply curve for loanable funds to shift to the right and the demand curve to shift left.

14) Suppose you are given the following information about a closed economy:

Real GDP: $Y = \$20,000$

Net taxes: $T = \$3,000$

Private savings: $S_{pr} = \$2,000 + 0.15(Y - T) + 1,500r$, where r = the real interest rate

Investment: $I = \$4,795 - 3,000r$

Government purchases: $G = \$2,800$.

Which of the following is **NOT** true?

- A. The government is running a surplus
- B. The equilibrium real interest rate in this economy is 1%
- C. Private savings is \$4,565
- D. Total investment is \$4,565**
- E. None of the above; that is, all of the above statements are true.

The table below provides labor statistics for the years 1990, 1995, 2000 and 2005. Use this data to answer the two questions that follow.

Variable	1990	1995	2000	2005
Adult population	9,000,000	10,000,000	11,000,000	13,000,000
Adult population able and wanting to work	8,200,000	9,700,000	10,500,000	12,300,000
Number employed	6,400,000	8,000,000	8,500,000	9,200,000
Number unemployed	1,600,000	1,000,000	1,500,000	2,500,000

15) Which one of the following statements is INCORRECT?

- A. The size of the labor force in 1990 is 8,000,000
- B. The number of discouraged workers in 1995 is 700,000
- C. The unemployment rate in 2000 is 15%
- D. The participation rate in 2005 is approximately 95%**
- E. None of the above; that is, all of the above statements are correct.

16) If the natural rate of unemployment is historically at 10%, which of the years above saw the largest measure of cyclical unemployment?

- A. 1990
- B. 1995
- C. 2000
- D. 2005**
- E. We do not have enough information to calculate cyclical unemployment

17) Suppose the Fed's required reserve ratio is 10%, and the commercial banking system has \$5 million of deposits and holds no excess reserves. If the required reserve ratio is reduced to 8% and banks still do not want to hold any excess reserves and *non-banks hold no cash*, then banks will initially make new loans of _____, which will lead to an eventual increase in the money supply by _____.

- A. \$100,000; \$100,000
- B. \$100,000; \$1 million
- C. \$100,000; \$1.25 million**
- D. \$400,000; \$1.25 million
- E. \$400,000; \$5 million

18) Which of the following Fed actions decreases the money supply?

- A. Purchase of government bonds
- B. Decrease in the reserve requirement
- C. Increase in the discount rate**
- D. Decrease in the coupon rate of Treasury bond
- E. Decrease in the federal funds rate

The table below gives data to be used in the 2 questions that follow. The data include the money stock in each of five years, 1995-99, as well as real and nominal GDP for the first of these years, 1995. Assume that the growth rate in real GDP is constant at 3% a year. Assume that the money velocity and required reserve rate are fixed for these five years. Assume also that there are no excess reserves.

Year	M1	Real GDP	Nominal GDP
1995	1000	\$8,000	\$8,000
1996	1100		
1997	1540		
1998	1925		
1999	2695		

19) Which of the following is INCORRECT?

- A. The money velocity (v) is 8
- B. The nominal GDP for 1997 is \$12,320
- C. The inflation rate between 1995 and 1996 measured by the GDP deflator is approximately 7%
- D. The increase in the money supply between 1998 and 1999 is about 40%
- E. None of the above; that is, all of the above statements are correct.**

20) Which of the following can we ascertain from the table above, together with the assumptions stated before it?

- a) The real interest rate between 1995 and 1996
- b) The nominal interest rate between 1996 and 1997
- c) The change in the amount of currency between 1997 and 1998
- d) The change in the amount of required reserves between 1998 and 1999
- e) None of the above.**

21) Which of the following is NOT included in M1?

- A. **Excess reserves in banks**
- B. Traveler's checks
- C. Deposits in checking accounts
- D. Pennies
- E. Hundred dollar bills

22) Assume the inflation rate at the end of 2005 turns out to be higher than everyone expected in January. Which one of the following people would experience the greatest loss of real wealth as a result of this unexpected higher inflation rate?

- A. A U of M student who borrowed his tuition with a fixed interest rate of 4%.
- B. A retiree whose sole asset is a house in Ypsilanti.
- C. **A professor who invested his small salary in 4-year AAA corporate bonds in September 2004.**
- D. A GSI who has no savings in his account at all.
- E. None of the above; that is, none are hurt by unexpected inflation.

23) Which of the following is a correct statement about a "consumption tax," as advocated by Alan Greenspan in recently reported testimony?

- A. Compared to an income tax, a consumption tax is less likely to benefit the rich.
- B. **Compared to an income tax, a consumption tax is more likely to stimulate growth of the economy.**
- C. Here in Ann Arbor, we currently do not have anything like a consumption tax.
- D. The "value added tax" in Europe is essentially the opposite of a consumption tax, taxing only the savings with which people seek to add to their future wealth.
- E. A disadvantage of taxing consumption is that this cannot be done without disproportionately taxing the poor.

24) Without reform of the Social Security system, the Social Security Trust Fund is currently

- A. Bankrupt
- B. Shrinking and will run out of money in a few years.
- C. Shrinking, but will not run out of money until more than thirty years from now.
- D. **Growing, but will nonetheless run out of money in three or four decades.**
- E. Growing and will not run out of money in the foreseeable future.

25) If you hold two paying jobs, under what circumstances will the Bureau of Labor Statistics count you as two employed persons?

- A. If you work more than 30 hours in both jobs.
- B. If the jobs are in different states.
- C. If you lie and say you have only one job.
- D. If you are a member of two different labor unions.
- E. Never.**

26) What is the difference between "deflation" and "disinflation"?

- A. Deflation is a decline in the price level; disinflation is a decline in real output.
- B. Deflation is any fall in asset prices; disinflation is a fall in asset prices that occurs after a bubble.
- C. Deflation is a fall in the real exchange rate; disinflation is a fall in the nominal exchange rate.
- D. Deflation is a fall in the price level; disinflation is a fall in the rate at which prices are rising.**
- E. Nothing; the two words mean the same.

Short Answer #1 (8 Points)

1. You are strange person who consumes only Big Mac hamburgers. After graduating from The University of Michigan you are faced with the following job offers:

Offer #1: You will be located in Ypsilanti, paid \$2000 today and \$1800 a year from today.

Offer #2: You will be located in the French Riviera, paid 1800 euros today and 2200 euros a year from today.

You are given the following information:

- The nominal exchange rate for the period in question and \$1=0.9 Euro.
- The price of a Big Mac in France is 2.5 euros, while it is \$2 in Ypsilanti, and these prices are not expected to change.
- The interest rate in the US is 5%, while it is 6% in France (for purposes of this question only, you are restricted to borrowing and/or lending only in your country of location)

- a) Calculate the Net Present Value of each job offer in terms of US dollars. (4 points)

$$PV1\$ = 2000 + (1800/1.05) = \$3714.29$$

$$PV2€ = 1800 + (2200/1.06) = €3875.47$$

$$PV2\$ = PV2€ / (0.9€/\$) = 3875.47 / 0.9 = \$4306.08$$

- b) Given your assumed taste in consumption (and assuming that is all you care about), which job offer would you accept? Show your work! (4 points)

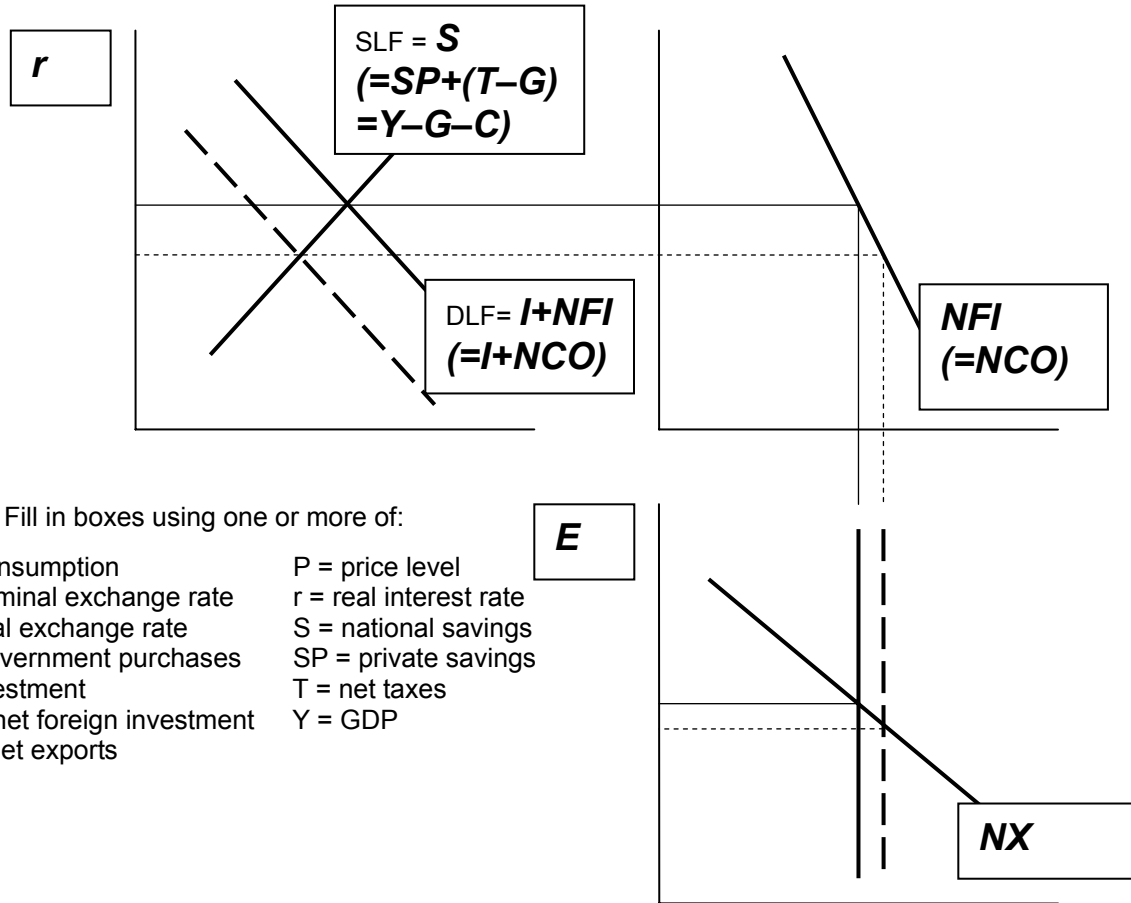
$$PV1M (= \text{present value in bib Macs of option 1, spent in country 1}) \\ = PV1\$ / PM\$ = 3714.21 / 2 = 1857.14 \text{ burgers}$$

$$PV2M = PV2€ / PM€ = 3875.47 / 2.5 = 1550.19 \text{ burgers}$$

Although the present value in money terms of option 2 is higher than option 1, once you convert to a common currency as in part (a), the present value in terms of burgers is higher in option 1, since the lower price of the Big Mac in Ypsilanti more than makes up for the smaller amount of money. So you would accept option 1.

Short Answer #2 (12 Points)

- a. Fill in the labels in the following open-economy model, using the symbols listed. (Some may require more than one symbol, adding or subtracting.)



- b. Starting from an initial equilibrium given by the solid lines, and moving to the new equilibrium given by the dashed lines, which **one** of the following changes does this figure represent?

- A decrease in government spending
- An increase in capital inflow from abroad
- A decrease in firms' desire to build new factories
- A decrease in households' desire to consume
- An increase in import tariffs

- c. In moving from the initial equilibrium to the new equilibrium, how do the following variables change? Indicate by writing "rise," "fall," "stay the same," or "ambiguous."

Private savings	<u>fall</u>
Government budget surplus	<u>stay the same</u>
Investment	<u>fall (2 points) [or ambiguous (1 point)]</u>
Imports	<u>fall</u>