FORM 1

Name:
Section No.:
Student ID No.:
GSI:

Economics 102
Introduction to Macroeconomics
Prof. Alan Deardorff
Midterm Exam 2

ANSWERS

November 13, 2000

INSTRUCTIONS: READ CAREFULLY!!!

1. Please do not open the exam book until you are told to do so.

2. **PLACE YOUR NAME, UM ID NO. (ALL EIGHT DIGITS), SECTION NUMBER AND FORM NUMBER ON THE EXAM AND ON THE SCANTRON SHEET. *THIS IS WORTH TWO POINTS ON THE EXAM*.**

3. This exam has 100 points and is designed to take about 60 minutes to complete. However, you have approximately 80 minutes to complete the test. Check that you have all 10 pages of the exam.

4. **Section A** consists of 25 multiple choice questions worth 3 points each. Answers to the multiple-choice questions in Section A should be marked on the scantron sheet using a #2 pencil. There are no penalties for guessing.

5. **Section B** consists of 2 parts for which you must provide written answers on these sheets. Point values for questions in Section B are indicated in parentheses. Please try to fit your answer into the space provided.

6. Good luck!

GSI	Sections	
Tom Bishop	112, Thu 10-11:30	113, Thu 8:30-10
Brahima Coulibaly	102, Wed 1-2:30	103, Wed 2:30-4
Herman Kamil	101, Thu 4-5:30	109, Thu 1-2:30
Yener Kandogan	111, Thu 2:30-4	
George Li	105, Thu 4-5:30	115, Wed 1-2:30
Byung-ho Suh	107, Thu 10:11:30	108, Thu 1-2:30
Hui-chen Wang	110, Thu 2:30-4	114, Thu 10:11:30

Yingbin Xiao 104, Wed 2:30-4 116, Thu 4-5:30

PART A: Multiple Choice
(3 points each; 75 points total)

A.1. According to Mankiw's Open-Economy Model, U.S. trade liberalization, i.e. lowering U.S. tariff rates on imports, will _______ the real interest rate, and will ________ the real exchange rate of the U.S.

(a) increase, appreciate
(b) decrease, appreciate
(c) increase, depreciate
(d) not change, depreciate
(e) not change, not change
Answer: D

A.2. Assuming the Open-Economy Model for both Mexico and the US, which of the following will NOT happen as a result of capital flight out of Mexico into the US? (Note that this DOES cause an increase in Mexican net foreign investment into the US, even after any changes in interest rates).

(a) US net foreign investment will decrease.
(b) Real interest rate in Mexico will increase.
(c) Real exchange rate of Mexican pesos will depreciate.
(d) US goods will be cheaper compared to Mexican goods.
(e) US exports to Mexico will decrease.
Answer: D

A.3. Which of the following is NOT a cost of inflation?

(a) A decrease in the purchasing power of wages due to high prices.
(b) Inflation causes capital gains, and therefore your tax burden will increase.
(c) Retailers have to do frequent price adjustments.
(d) You need to spend more time going back and forth to the bank in order to minimize your cash holdings.
(e) None. All of the above are valid costs of inflation.
Answer: A

A.4. According to Open-Economy Model, which of the following will happen if the next US president proceeds with his plans to cut income taxes?

(a) US national savings will increase.

(b) US real interest rate will decrease.
(c) US net foreign investment abroad will increase.
(d) US dollar will depreciate.
(e) None of the above

Answer: E

A.5. Suppose a country has an adult population of 100,000. If the labor force participation rate is 96% and unemployment rate is 25%, which of the following CANNOT be true?

(a) 4,000 people are not in the labor force.
(b) 72,000 people are employed.
(c) 25,000 people are unemployed.
(d) Total population is 140,000.
(e) 96,000 people are in the labor force.

Answer: C

A.6. Suppose the rate of inflation is 3% per year. Which of the following statements conflicts with the quantity theory of money?

(a) Nominal GDP grows by 3% per year.
(b) Money supply grows by 8% per year while real GDP grows by 5% per year.
(c) Money demand and money supply grow by 7% per year.
(d) Velocity of money is constant in the long run.
(e) Real GDP grows 3% faster than the money supply.

Answer: E

A.7. Frictional unemployment occurs in each of the following cases EXCEPT when:

(a) there is a sectoral shift in the economy
(b) certain firms go bankrupt causing the employees to search for new jobs
(c) workers quit their current jobs to look for other occupations
(d) workers leave the labor force to raise a family
(e) students graduate from school and look for a job

Answer: D

A.8. When monetary neutrality holds, an increase in money supply will

(a) not change output or the price level
(b) increase output but not change the price level
(c) increase the price level but not change output
(d) increase output and increase the price level
(e) increase output but decrease the price level

Answer: C

A.9. According to purchasing power parity (with televisions as the only good that matters), if a television sells for $500 in the US and 2000 won in Korea, then the nominal exchange rate in won per dollar should be

(a) 0.2 won per dollar
(b) 0.25 won per dollar
(c) 3 won per dollar
(d) 4 won per dollar
(e) 5 won per dollar
Answer: D

A.10. The US trade deficit has been much larger in recent years than it was two or three decades ago. Based **only** on Mankiw's Open Economy model, which of the following changes by itself could explain this increase?

(a) an increase in import demand by US consumers
(b) an increase in taxes in the US
(c) a decrease in domestic investment by US citizens
(d) a decrease in private savings by US consumers
(e) a decrease in US government purchases
Answer: D

A.11. Which of the following is NOT included in calculation of GDP?

(a) production within the household for its own use
(b) building of houses by private citizens
(c) unsold toys left over at the end of the year
(d) municipal government expenditures on city buses
(e) purchase of flour, eggs and milk used by a consumer to bake a cake for dinner
Answer: A

A.12. All of the following about unemployment are TRUE EXCEPT:

(a) Unemployment insurance tends to increase unemployment.
(b) A higher number of discouraged workers causes a higher unemployment rate.
(c) Minimum wage laws can lead to higher unemployment.
(d) An increased demand by firms for workers tends to reduce unemployment.
(e) Labor unions tend to increase the unemployment rate.
Answer: B

A.13. According to monetary neutrality, which of the following is CORRECT?

(a) If money supply increases by 5%, price level will not be affected.
(b) If money supply increases by 5%, real interest rate will increase by 5%.
(c) If money supply increases by 5%, real GDP will not be affected.
(d) If money supply increases by 5%, nominal interest rate will not be affected.
(e) If money supply increases by 5%, nominal GDP will not be affected.
Answer: C

A.14. Suppose that domestic investment becomes more profitable in the US because of a new technology. According to Mankiw's open economy model, which of the following is CORRECT?

(a) The real exchange rate of the US dollar appreciates.
(b) The level of net foreign investment increases.
(c) The real interest rate decreases.
(d) The level of domestic investment decreases.
(e) US trade deficit decreases.
Answer: A

A.15. Suppose that US investors purchase Japanese stocks using US dollars. These US dollars are deposited by Japanese in dollar-denominated bank accounts in Tokyo. Which of the following is CORRECT?

(a) US net foreign investment increases
(b) US net foreign investment decreases
(c) US FDI increases
(d) US FDI decreases
(e) There is no change in US net foreign investment
Answer: E

A.16. According to the quantity theory of money, the demand for money in the economy:

(a) depends positively on the real interest rate.
(b) depends negatively on the price level.
(c) depends positively in the value of money.
(d) depends negatively in the velocity of money .
(e) depends negatively on real GDP
Answer: D

A.17. Which of the following is NOT a valid reason for the disparity in per capita real GDP across the countries of the world?

(a) Population growth is more rapid in some less developed countries than in developed ones.
(b) The average skill level of workers in industrial economies is higher than that in developing countries.
(c) A higher level of savings in industrial countries over the years has increased their investment and real GDP.
(d) There are differences in prices across countries.
(e) Industrial countries have higher levels of expenditures on research and development.

Answer: D

A.18. Looking at labor statistics, you see that the number of employed and the labor force have both decreased, by the same amount. Which of the following is CONSISTENT with this observation?

(a) The unemployment rate has increased.
(b) The number of discouraged workers has increased.
(c) The labor force participation rate has decreased.
(d) Many people went back to school because that they found working less rewarding.
(e) All of the above are consistent.

Answer: E

A.19. Suppose that there is an increase in real income in the US. At the same time, the Fed buy bonds from the public. Assuming the quantity theory of money, which of the following must be TRUE:

(a) The quantity of money will increase and the price level will go down.
(b) The quantity of money will increase and the price level will go up.
(c) The quantity of money will decrease and the price level will go down.
(d) The effect on the quantity of money is uncertain and the price level will go up.
(e) The quantity of money will increase and the effect on the price level is uncertain.

Answer: E

A.20. Consider two countries: Canada and the US. Suppose that the Canadian dollar appreciates against the US dollar. Which of the following is TRUE according to Purchasing Power Parity?

(a) Canada has higher inflation than the US.
(b) The US has higher inflation than Canada.
(c) Goods in Canada become cheaper relative to goods in the US.
(d) Goods in the US become cheaper relative to goods in Canada.
(e) The nominal exchange rate between these two countries remains the same.

Answer: B

A.21.

	M1 (in billions of $)	Real GDP (in billions of $)
1998	10,000	40,000
1999	14,000	50,000

Given the information above, according to the quantity money theory, what is the inflation rate between 1998 and 1999?

(a) –60%
(b) 0%
(c) 15%
(d) 25%
(e) 40%
Answer: C

A.22. Suppose that American investors are buying more British bonds, while British investors are decreasing their purchases of US stocks. Which of the following is a CORRECT consequence of this observation?

(a) The effect on US net foreign investment is ambiguous.
(b) British net foreign investment increases.
(c) US net foreign investment remains the same.
(d) US net foreign investment increases.
(e) US FDI increases.
Answer: D

A.23. Suppose that the Fed increases the discount rate and there is no change in the price levels in the foreign countries. If Purchasing Power Parity holds, you would expect that

(a) US net foreign investment increases.
(b) US exports decrease.
(c) American people have less incentive to travel in foreign countries.
(d) Foreign people have no additional incentive to travel in the US.
(e) US imports decrease.
Answer: D

A.24. In August 2000 according to the Wall Street Journal, the U.S. trade deficit became smaller. Which of the following happened at the same time **and** helps to explain why?

(a) US imports declined.
(b) US exports increased.
(c) The US dollar depreciated.
(d) The US dollar appreciated.
(e) US prices increased more than foreign prices.
Answer: B

A.25. In the assigned reading by Robert E. Scott, he argues that the increase in the U.S. trade deficit reduced employment in the United States. Which of the following additional effects of trade on workers did he identify?

(a) Export of goods causes export of jobs.
(b) Trade makes consumer goods more costly, raising the cost of living of workers.
(c) Trade makes it more difficult for workers to change jobs, locking them into jobs with no future in export sectors.
(d) The net loss of jobs due to trade has mostly hit the high-wage manufacturing sector, thus causing a fall in wages overall.
(e) The trade deficit forces workers to go into debt.
Answer: D

PART B: Written Answers
(23 points total)

NOTE: Be sure to show your work, so that you can get partial credit if appropriate.

B.1. (6 points) Consider the following data on nominal exchange rates and the domestic prices of a Big Mac hamburger.

- One US$ buys 49 Belgian Francs.
- With 1 British Pound, you can buy 1.6 US$.
- 1 Big Mac burger costs 98 Belgian Francs in Belgium, 1.50 British Pounds in England, and $2 in the US.

(a) In which pair of countries above does the Big Mac cost the same? In which country or countries does the Big Mac cost the most?

The easiest way to answer this is just to convert the price of the Big Mac in each country into a single currency. For example, since the Big Mac costs 98 Francs in Belgium and the exchange rate is $1=49 Francs (or 1 Franc = 1/49 $), the Dollar price of the Belgian Big Mac is 98/49 $ = $2, the same as in the U.S. The Big Mac costs 1.50 Pounds in Britain and the exchange rate is 1 pound = $1.60 (or $1 = 1/1.60=0.625 Pounds). Therefore the British Big Mac costs (1.6)1.50 $ = $2.40, which is much more than the $2 price in the U.S. So the Big Mac costs the same in the U.S. and Belgium, and it costs the most in Britain.

To answer this question, you could also calculate the real exchange rates between these countries in terms of Big Macs. If a Big Mac costs the same in two countries, the real exchange rate between those two countries will be 1.

Defining the real exchange rate as the relative price of US Big Macs compared to foreign ones, between Belgium and the US it is: $eP/P^* = 49 \times 2 / 98 = 1$. Therefore a Big Mac in the US and Belgium cost the same.

The real exchange rate between England and the US: eP/P^*, where e must be the exchange rate in pounds per dollars, or 1/1.6. Thus $eP/P^* = (1/1.6) \times 2/1.50 = 2/2.4 = 0.83 < 1$. That is with one Big Mac in US, you can buy only 0.83 Big Mac in the Britain. Therefore, a Big Mac in England costs more than a Big Mac in the US.

(b) For which pair of countries does Purchasing Power Parity (PPP) hold (in Big Macs only)?

Since the real exchange rate is 1 only between the US and Belgium, the PPP holds only between the US and Belgium.

(c) If PPP determines the long-run trends in nominal exchange rates, which currencies are expected to appreciate, which ones will depreciate? What will be the new nominal exchange rates?

Since a Big Mac in England costs more than a Big Mac in the US and in Belgium, we would expect the British Pound to depreciate, and the US Dollar and the Belgian Franc to appreciate. To restore PPP, the exchange value of the Pound must fall so that the 1.50 Pound price of the Big Mac is worth $2, requiring an exchange rate of 1.33 Dollars per Pound. Equivalently, to make the real exchange rate 1 between the US and England, we need $e = P^* / P = 1.5 / 2 = 0.75$ *Pounds/Dollar. That is the same as 1/0.75 = 1.33 Dollars per Pound.*

(d) Assume that PPP holds between the US and Mexico, and that the annual inflation rate in Mexico is 2.5% and the inflation rate in the US is 3%. What will be the percentage change per year in the amount of Mexican Pesos that one US Dollar can buy?

The percentage change in e (defined as pesos/dollar) is the difference between the inflation rate in the foreign country and the rate in the domestic country. The inflation rate in the US is higher than the rate in Mexico; therefore the US Dollar will depreciate by the difference, i.e. by 0.5% a year. In other words the amount of Mexican Pesos that one US Dollar can buy will decrease by 0.5%.

B.2. (5 points) Match each term on the left with one of the definitions on the right. Write the letter of your answer ("A", "B", etc.) clearly in the blank provided.

F	Natural rate of unemployment
E	Fisher effect
K	real exchange rate
H	Capital flight
J	Medium of exchange

A. The sum of frictional, structural, and cyclical unemployment.

B. The rise in unemployment that occurs when firms are forced to pay higher than equilibrium wages.

C. A rise in the price level causes an equal percentage depreciation of the currency.

D. A person who is able to exert psychic power over the value of a currency.

E. When the inflation rate rises, the nominal interest rate rises by the same amount.

F. The normal rate of unemployment around which actual unemployment fluctuates.

G. The rate at which workers become unemployed in return for unemployment compensation.

H. A large and sudden fall in demand for assets located in a country.

I. The fall in investment that occurs when the government increases its budget deficit.

J. An item that buyers give to sellers to pay for goods and services.

K. The rate at which consumers can trade goods and services of one country for goods and services of another.

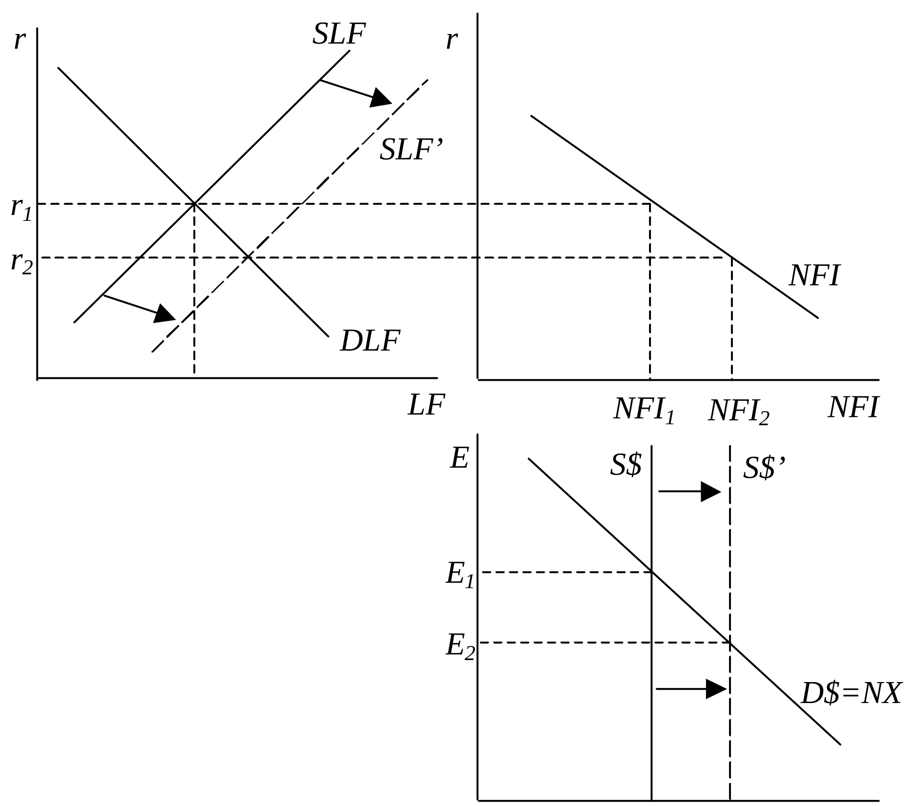
L. A value of a country's currency that is neither very high nor very low.

B.3. (12 points) Use Mankiw's Open-Economy Model to determine the effects of a decrease in US government purchases on: the US real interest rate, the US real exchange rate, the level of US net foreign investment abroad, the US domestic investment, and the US trade balance. In the space below, draw and label clearly all of the following graphs that give you your results. **Explain** the reason for any curve(s) that you shift:

- market for loanable funds
- net foreign investment
- market for foreign-currency exchange

Then indicate the answers that you get on the next page, by circling your answer. The answers that you circle MUST be consistent with your graphs.

A decrease in government purchases leads to an increase in government surplus. This will increase national savings and shift the supply of loanable funds to right. The resulting decrease in real interest rate will cause a rise in net foreign investment. That is it will lead to an increase in the supply of US$ on the exchange market.



FORM 1

Circle below the answers that you found using your diagrams on the previous page:

i. The US real interest rate:

Increases	**Decreases**	does not change	cannot be determined

ii. The US real exchange rate:

appreciates	**Depreciates**	does not change	cannot be determined

iii. The level of US net foreign investment abroad:

increases	Decreases	does not change	cannot be determined

iv. US domestic investment:

increases	Decreases	does not change	cannot be determined

v. The US trade balance:

Runs a larger surplus (or smaller deficit)	Runs a larger deficit (or smaller surplus)	does not change	cannot be determined