

Econ 102/Lecture 100

Final Exam

Form 1

April 27, 2005

Answers

1. The Wall Street Journal reports that 2004 saw an increase in the real interest rate and a simultaneous depreciation of the real exchange rate. Which of the following events can explain this phenomenon according to the (long-run) open-economy model?

- a) An increase in the government budget deficit
- b) An increase in the government budget surplus
- c) A quota is imposed, restricting imports of a foreign good
- d) Capital flight out of the country**
- e) None of the above

2. Suppose a US resident buys a car from a German auto company and the auto company uses the US-dollar revenues to buy stock in GM (a large US auto company) from a British shareholder, who then deposits the money into a dollar-denominated bank account in Great Britain. Which of the following is true from the perspective of the US?

- a) NX decreases, Foreign Direct Investment decreases
- b) Imports decrease, Net Foreign Investment decreases
- c) NX decreases, Net Foreign Portfolio Investment decreases**
- d) NX increases, Net Foreign Investment decreases
- e) NX decreases, Net Foreign Investment is unchanged

3. Suppose that fear of war *outside* the US causes people everywhere to view assets outside the US as more risky before. According to the open economy model, which of the following **cannot** be true?

- a) The real interest rate in the US decreases
- b) Domestic investment in the US increases
- c) The US real exchange rate appreciates
- d) Net Exports in the US increases**
- e) The value of the US dollar, measured in foreign currency, rises

4. According to the information in the table below, what nominal interest rate will an asset purchased in 2002 yield from 2002 to 2003?

	2002	2003
Real GDP	5000	5125
Real interest rate	2%	2%
Money Supply	100,000	102,500
Velocity of Money	5	5

- a) 4%
- b) 1%
- c) 0%
- d) 2%**
- e) 3%

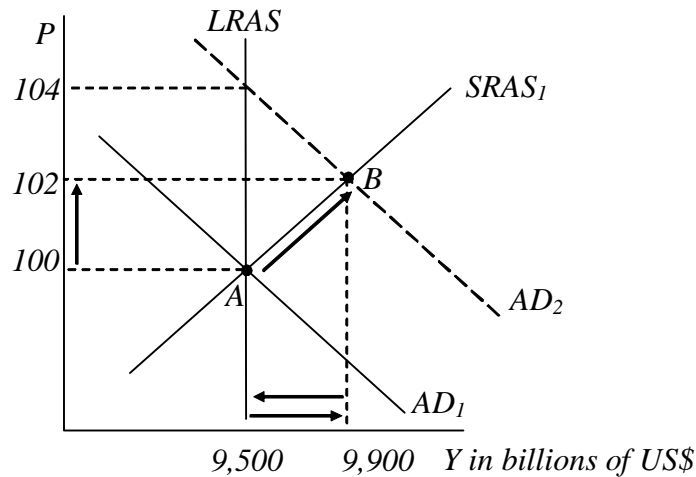
5. Which of the following is TRUE according to the data below?

Country	Price of a Hamburger	Exchange rate
South Korea	3000 won	1218 won/\$
Spain	375 pesetas	155 pesetas/\$
Mexico	19.9 peso	9.53 peso/\$
The Netherlands	2.16 euros	.916 euros/\$
US	2.43 US dollars	

- a) A hamburger in Spain is cheaper than one in Mexico
- b) A hamburger in Spain is cheaper than one in The Netherlands
- c) A hamburger in Spain is more expensive than in South Korea
- d) Hamburgers are most expensive in the US
- e) Hamburgers are most expensive in South Korea**

6. Which of the following is NOT necessarily true if a country has a trade surplus?
- a) Income is greater than domestic spending
 - b) National saving is greater than domestic investment
 - c) NFI is positive
 - d) The government has a budget surplus**
 - e) None of the above; that is, all of the above are necessarily true
7. The Fed announced that they will conduct open market operations to increase the money supply, once and for all, by 10%. Which one is always true in the **short run**?
- a) The real interest rate would go up.
 - b) The long run aggregate supply curve would shift out.
 - c) Real output would stay the same.
 - d) The cyclical unemployment rate would be decreased.**
 - e) None of the above; each of the above statements is NOT necessarily true.
8. Assume the all US citizens are required to take Introduction to Macroeconomics in high school. As a result, they can perfectly predict short run and long run outcomes of fiscal policy. Consequently, future expansionary fiscal policy would lead to _____ short-run increases in real output and _____ increases in short-run price levels.
- a) Larger, larger
 - b) Larger, smaller
 - c) Smaller, larger**
 - d) Smaller, smaller
 - e) Larger, no
9. What would happen in the short run if the aggregate demand curve shifted in?
- a) The real interest rate would increase.
 - b) Real and nominal GDP would both decrease.**
 - c) Real GDP would decrease, but nominal GDP would increase.
 - d) The natural rate of unemployment would increase.
 - e) None of the above.

10. Suppose that the US economy is initially, in the year 2003, in long-run equilibrium at point A in the figure below, with zero inflation and at the natural rate of unemployment. Assume that the labor force in the US totals 100 million people and the **aggregate production function is $Y=100,000L$ (Y is real GDP, L is number of people employed)**. If the economy moves to point B in 2004, then the unemployment rate for 2004 is _____, and the inflation rate from 2003 to 2004 is _____.



- a) 1%; 2%
- b) 3%; 2%
- c) 5%; 2%
- d) 1%; 4%
- e) 3%; 4%

11. Which of the following is **not** a valid reason for why the short run aggregate supply curve slopes upward?

- a) Wages and other input costs may be slow to adjust to changes in the price level.
- b) A rising price level reduces the real interest rate and therefore encourages production.**
- c) Some firms may be slow to adjust their prices because of menu costs.
- d) Some firms may misinterpret a rise in the general price level as an increase in demand for their own products.
- e) None of the above. That is, all of the above are valid reasons for why the short-run aggregate supply curve is upward sloping.

12. Assume $MPC = 0.8$. The White House decides to implement expansionary policy to increase the GDP. If the government increases its purchases by \$1 billion, *from the multiplier effect*, the increase in consumption will be _____, and *from the crowding out effect*, the increase in investment is _____.

- a) \$1.25 billion; positive
- b) \$1.25 billion; negative
- c) \$4.0 billion; negative**
- d) \$5.0 billion; positive
- e) \$5.0 billion; negative

13. When actual inflation exceeds expected inflation,

- a) Unemployment is greater than the natural rate of unemployment
- b) Unemployment is less than the natural rate of unemployment**
- c) Unemployment is equal to the natural rate of unemployment
- d) Phillips Curve shifts up because of actual inflation rises
- e) Phillips Curve shifts down because of expected inflation falls

Answer the following four questions based on the information provided in the table below:

Year	2001	2002	2003	2004
Real GDP	100	110	140	150
Nominal GDP	110	130	160	200

14. What is the rate of inflation between 2001 and 2002?

- a) 7.4%**
- b) 10%
- c) 13%
- d) 18.2%
- e) 20%

15. Which is the base year?

- a) 2001
- b) 2002
- c) 2003
- d) 2004
- e) **none of the above**

16. How would you best describe the change in the price level from 2002 to 2003?

- a) inflation
- b) hyperinflation
- c) disinflation
- d) **deflation**
- e) stagflation

17. Assume that population in 2001 was 1 million, and that it grew at a constant rate of 20% per year each year. In which year did the average person enjoy the highest standard of living?

- a) **2001**
- b) 2002
- c) 2003
- d) 2004
- e) There is insufficient information

18. Real GDP per person is \$30,000 in Wolverina, \$15,000 in Spartii, and \$7,000 in Buckenesia. Annual saving per person is \$1,000 in all three countries. *Everything else being equal*, we would expect

- a) All three countries to grow at the same rate
- b) Wolverina to have the highest rate of growth in GDP per person
- c) Spartii to have the highest rate of growth in GDP per person
- d) **Buckenesia to have the highest rate of growth in GDP per person**
- e) There is insufficient information for predicting relative growth rates

19. Congress has just passed a bill that provides an investment tax credit for firms that invest in new machinery. At the same time, they adjust government spending so as to leave the government's budget deficit or surplus unchanged. Which of the following will occur in the loanable funds market according to the closed economy model presented in class?

- I. Leftward shift of the supply curve
- II. Rightward shift of the supply curve
- III. Leftward shift of the demand curve
- IV. Rightward shift of the demand curve
- V. Movement along the supply curve
- VI. Movement along the demand curve

- a) I, VI
- b) II, VI
- c) III, V
- d) IV, V**
- e) I, IV

20. On the island of Arborland, there is only one bank, The Bank of Lorch. The reserve requirement set by the Fed is 5%. The Fed asks the owner of the bank, Mr. Dear, to report the bank's balance sheet. However, Mr. Dear argues that the bank's reserve holding is top secret, so he only reports the following. We assume that people do not hold cash.

Assets		Liabilities	
Reserves		Deposits	\$ 8,000,000
Loans	\$ 6,000,000		

How much in excess reserves does Bank of Lorch hold?

- a) \$400,000
- b) \$600,000
- c) \$1,200,000
- d) \$1,600,000**
- e) \$2,000,000

The table below provides labor statistics for 2004. Use these data to answer the two questions that follow.

Variable	2004
Population	45,000
Adult population	35,000
Adult population wanting to work	28,000
Number employed as part time	2,000
Number employed as full time	21,000
Number unemployed	4,000

21. What is the size of Labor Force?

- a) 18,000
- b) 20,000
- c) 25,000
- d) 27,000**
- e) 35,000

22. By approximately how much would the unemployment rate increase if we classified 'discouraged workers' as 'unemployed'?

- 1 percentage point
- 3 percentage points**
- 5 percentage points
- 7 percentage points
- 9 percentage points

23. The following assets (a through e) are each offered at the same selling price. Each asset pays the dollar amounts indicated over a three year period, with the first payment today, the second a year from today, and the third two years from today. The real interest rate is constant at 20%. Which asset has the highest net present value?

- a) **\$300, \$300, \$300**
- b) \$299, \$301, \$300
- c) \$200, \$400, \$300
- d) \$100, \$530, \$300
- e) \$400, \$400, \$0

24. The government believes that the interest rate is too high, so it is planning a policy change that will lower the interest rate. Using the long run closed economy model, which of the following policy options will accomplish the government's goal?

- I. A decrease in government spending
 - II. An investment tax credit
 - III. A decrease in Social Security benefit payments to retired people
- a) I only
 - b) II only
 - c) III only
 - d) I and II
 - e) **I and III**

25. Suppose the economy is in long-run equilibrium. A positive technological shock shifts the long-run aggregate supply curve by \$60 billion. Simultaneously, the Federal government purchases \$30 billion worth of Mankiw books to be supplied to public universities. You are told that the MPC equals 0.8 and that the crowding out effect is \$60 billion. Then in the long-run, you would expect

- a) Real GDP would be higher but the price level would be lower
- b) Real GDP would be higher but the price level would be the same
- c) **Real GDP, nominal GDP and the price level would all be higher**
- d) Nominal GDP and the price level would be higher but real GDP would be the same
- e) Nominal GDP, real GDP and the price level would all be lower

26. Consider the same facts as in the question above, except that you are told that the crowding out effect is in fact \$140 billion. In the long-run you would now expect

- a) **Real GDP would be higher but the price level would be lower**
- b) Real GDP would be higher but the price level would be the same
- c) Real GDP, nominal GDP and the price level would be the same
- d) Nominal GDP and the price level would be higher but real GDP would be the same
- e) Nominal GDP, real GDP and the price level would all be lower

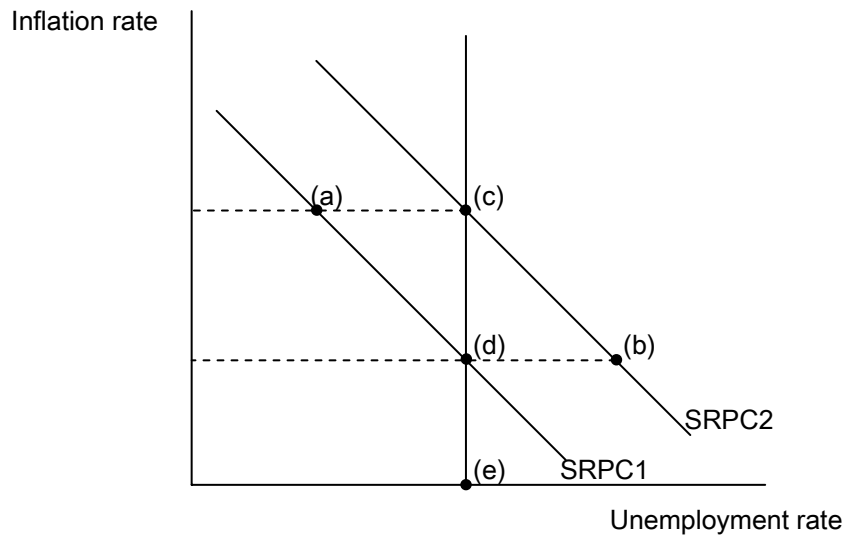
27. You are told that the labor market equilibrium wage is currently above the minimum wage. Everything else being equal, the long-run aggregate supply curve would shift right if the government were now to

- a) Increase the minimum wage by law
- b) Decrease the minimum wage by law
- c) Make unemployment benefits more generous
- d) Raise taxes on investment spending
- e) **None of the above**

28. The sticky wage theory of the short-run aggregate supply curve says that when the price level rises more than expected, the real wage

- a) Rises, so employment rises
- b) Stays the same, so there are no changes in long-run output
- c) Stays the same, so employment stays the same
- d) **Falls, so employment rises**
- e) Falls, so employment falls

Use the following graph to answer the next three questions:



29. For purposes of this question only: If point (d) above represents a point on the short-run Phillips Curve where expected inflation equals 3%, and the natural rate of unemployment is 10%, which of the following must be true about point (b)?

- I Expected inflation equals 3%
- II Actual inflation equals 3%
- III Actual unemployment is less than 10%

- a) I only
- b) I and II only
- c) I, II and III
- d) II only**
- e) II and III only

30. Assume again that the natural rate of unemployment is 10%. Which of the following is a possible combination of actual unemployment (u), actual inflation (π), and expected inflation ($E\pi$) represented by point (a) above?

- a) $u=8\%$, $\pi=7\%$, $E\pi=3\%$**
- b) $u=10\%$, $\pi=7\%$, $E\pi=3\%$
- c) $u=8\%$, $\pi=3\%$, $E\pi=7\%$
- d) $u=12\%$, $\pi=3\%$, $E\pi=7\%$
- e) $u=10\%$, $\pi=3\%$, $E\pi=7\%$

31. Suppose the economy is in long-run equilibrium in Year 1. The federal government announces and executes a plan of sustained expansion of the money supply in Year 2. As a result, expected inflation increases in Year 3. Which of the following might you observe in the short-run from Year 1 to Year 3?

- a) The economy moves from (a) to (d)
- b) The economy moves from (a) to (b)
- c) The economy moves from (e) to (b)
- d) The economy moves from (d) to (c)
- e) **The economy moves from (e) to (a)**

32. Suppose the interest rate is below a target set by the Fed. The Fed should

- a) Buy bonds
- b) Decrease the reserve ratio
- c) **Increase the discount rate**
- d) Increase the Marginal Propensity to Consume
- e) None of the above

33. During this semester, the price of oil reached a level that in real terms was

- a) Almost twice as high as the peak it reached in the early 1980s
- b) Just slightly above the peak it reached in the early 1980s
- c) Just slightly below the peak it reached in the early 1980s
- d) **Less than two-thirds as high as the peak it reached in the early 1980s**
- e) Higher than the nominal price of oil

34. In February, Alan Greenspan was reported as viewing monetary policy at that time as _____ overall spending, in part because the Fed's target interest rate at that time was _____ the U.S. rate of inflation.

- a) Retarding; below
- b) **Stimulating; below**
- c) Retarding; above
- d) Stimulating; above
- e) Having no effect on; about equal to

35. In the article handed out at the last class, Paul Krugman noted several reasons for his concern that the U.S. was experiencing “a mild form of stagflation.” Which of the following was **not** one of those reasons?

- a) The rate of inflation has been creeping up
- b) The rate of inflation is near the top end of the 2 to 3 percent range that the Fed prefers
- c) **The U.S. unemployment rate has recently risen**
- d) The average duration of employment is much higher than it was in the 1990s
- e) The fraction of the adult population that is employed has been falling

36. Which of the following is **not** one of the four ways that deflation can harm economies, according to the assigned article in the Economist?

- a) **Deflation pushes down wages, while prices remain sticky, so that workers are worse off**
- b) Deflation swells the real burden of debt, causing bankruptcies and bank failures
- c) Expectation of falling prices causes consumers to postpone spending, reducing aggregate demand
- d) Workers are often reluctant to accept a pay cuts in nominal terms, so that when prices are falling the real wage bill goes up causing firms to reduce production
- e) Interest rates cannot go below zero, so deflation makes real interest rates painfully high

37. AMT stands for

- a) Aggregate Macroeconomic Throughput
- b) **Alternative Minimum Tax**
- c) Absolute Maximum Tangent
- d) Aggregate Monetary Trend
- e) Alan the Mighty Teacher

38. Alan Greenspan cited several uncertainties that make the management of monetary policy difficult. Among them was

- a) Whether an increase in the money supply would raise or lower interest rates
- b) Whether an increase in the money supply would raise or lower real GDP
- c) **How much money there is in the economy**
- d) The interest rate at which commercial banks are lending among themselves
- e) The reserve requirement

39. Suppose that the unemployment rate is constant at 5%. Every week, 15 in every 1,000 workers quit their job or are fired. If there are 50 persons unemployed at any one time in the economy, approximately what percentage of them would have to become employed every week for the unemployment rate to remain constant?

- a) 10%
- b) 18%
- c) 5%
- d) 15%
- e) **28%**

Short Answer Question #1: (10 points) Suppose that a closed economy starts in a long-run equilibrium with a zero rate of inflation. Suppose also that the economy's GDP is initially not growing. Let the initial values of the economy's variables be the following:

Real GDP:	$Y_0 = 800$
Price level:	$P_0 = 100$
Rate of inflation:	$\pi_0 = 0.0\%$
Nominal rate of interest:	$i_0 = 2.0\%$
Rate of unemployment:	$u_0 = 5.0\%$

Now suppose that the central bank of the country begins to expand the money supply at a rate of 3.5% per year, indefinitely.

- a. After one year, assuming that the change in policy has not yet come to be expected, how will each of the above variables compare to what they were initially? Answer by inserting one of the following symbols into the blanks: “>”, “<”, “=”, or “?” (the latter if the comparison is ambiguous). Also, in the space at the right of each, say briefly in words the reason for your answer (may be used for partial credit if your answer is wrong). An example of such a reason would be “AD shifts left.”

Y	<u>></u>	Y_0	because	<u>AD shifts right</u>
P	<u>></u>	P_0	because	<u>AD shifts right</u>
π	<u>></u>	π_0	because	<u>u falls along short-run Phillips Curve</u>
i	<u><</u>	i_0	because	<u>M expands in short-run money market</u>
u	<u><</u>	u_0	because	<u>Y rises</u>

- b. After 20 years, assuming that this is long enough to reach long-run equilibrium, approximately what will each of these variables be?

$Y_{20} =$	<u>800</u>	because	<u>Money is neutral</u>
$P_{20} =$	<u>200</u>	because	<u>3.5% growth for 20 years doubles MS, thus P</u>
$\pi_{20} =$	<u>3.5%</u>	because	<u>Y is fixed, so P grows with MS</u>
$i_{20} =$	<u>5.5%</u>	because	<u>Fisher Effect</u>
$u_{20} =$	<u>5.0%</u>	because	<u>Long-run Phillips Curve</u>

Short Answer Question #2: Suppose you are told that the Swedish people are so prudent that every citizen in the country has a marginal propensity to consume of 0. However, their investment decisions are very sensitive to interest rates. In the US, on the other hand, the marginal propensity to consume for every citizen is $\frac{1}{2}$, and people's investment decisions are completely independent of interest rates. The two countries have identical short-run aggregate supply curves

Assume that the US and Sweden start at the same long-run equilibrium level of output and price. Both governments decide to build monuments to their greatest economists, which will cost \$10 billion.

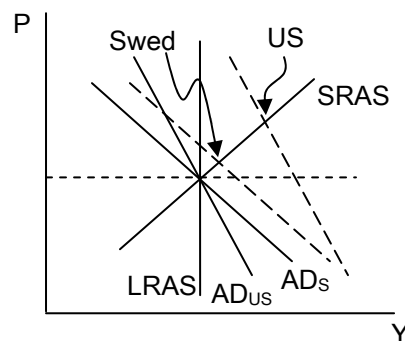
a) Compute the additional private consumption created in each country as a result of the government project (2 points).

US: Spending \$10 billion...multiplier effect is 2, so AD shifts by \$20 billion minus crowding out effect, which is zero because investment is independent of the interest rate. So private consumption increases by \$10 billion (the \$20 billion increase in AD minus the \$10 billion increase in G).

Sweden: Spending \$10 billion, multiplier effect is 1, so AD shifts by \$10 billion minus crowding-out effect – that is, less than \$10 billion. But with an MPC of zero, private consumption increases by \$0. (You can get this answer without actually working out what happens to Sweden's AD, but you will need the changes in AD in both US and Sweden for the questions below.)

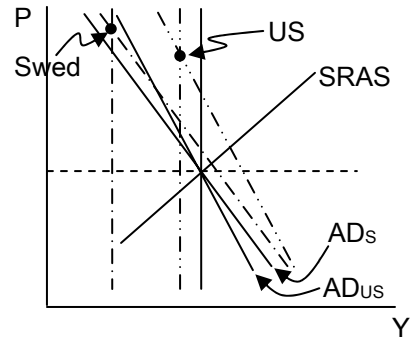
b) True/False/Uncertain: Price levels will be higher in the short run in Sweden than in the U.S. **Explain** (4 points)

FALSE: We know that the shift in AD is greater in the US than in Sweden, because the multiplier effect is greater and crowding-out effect is smaller (due to insensitivity to interest rate). Since the SRAS curves are identical, the price level will increase more in the US. (It is also true that the US AD curve is steeper than the Swedish one, which makes this even more true. But you can get the answer without that.)



c) Consider the effect of the government spending on the capital stock in each country. With this in mind, is it clear which countries price level will be affected more in the **long-run**? (4 points)

Without considering the movement of the LRAS curve, we know that the price level goes up more in the US (see where the two shifted AD curves cut the LRAS curve above). But we must consider any possible shifts in LRAS. Since firms in Sweden are more sensitive to interest rates, the increase in interest rates induced by an increase in government spending in both countries would lead to a larger drop in investment in Sweden. As a result, Sweden's capital stock would decrease relatively more than that of the US, which means Sweden's LRAS curve would shift further left...this implies that Sweden's price level may in fact increase more than in the US. The answer is therefore *Uncertain*.



This possibility is illustrated in the figure at the right. The new positions of AD and LRAS in Sweden are shown by lines broken with a single dot (— · — · — ·), while those for the US are shown by lines broken with a double dot (— · · — · · — · ·).