

**Intermediate Macroeconomics 311 (Professor Gordon)  
Second Mid-Term Examination Fall, 2002**

**YOUR NAME:** \_\_\_\_\_ **TA:** \_\_\_\_\_

**INSTRUCTIONS:**

1. The exam is worth 55 points in total: 30 points for the two analytical questions, and 25 points for the multiple choice
2. Write your answers to Part A (the multiple choice section) in the blanks on page 1.  
**YOU WILL NOT GET CREDIT FOR CIRCLED ANSWERS IN THE MULTIPLE CHOICE SECTION**
3. Place all of your answers for part B in the spaces provided
4. Good Luck!

**PART A**

Answer multiple choice questions in the space provided below.  
Write clearly, **USING CAPITAL LETTERS.**

- |          |           |           |           |           |
|----------|-----------|-----------|-----------|-----------|
| 1. _____ | 6. _____  | 11. _____ | 16. _____ | 21. _____ |
| 2. _____ | 7. _____  | 12. _____ | 17. _____ | 22. _____ |
| 3. _____ | 8. _____  | 13. _____ | 18. _____ | 23. _____ |
| 4. _____ | 9. _____  | 14. _____ | 19. _____ | 24. _____ |
| 5. _____ | 10. _____ | 15. _____ | 20. _____ | 25. _____ |

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 1) A nation running a current account deficit must either be \_\_\_\_\_ its indebtedness to foreigners in the private sector or \_\_\_\_\_ its indebtedness to foreign governments.
- A) decreasing, increasing
  - B) increasing, decreasing
  - C) increasing, increasing
  - D) decreasing, decreasing
- 2) A nation's net international investment position moves toward surplus when
- A) that nation runs a current account deficit.
  - B) that nation runs a capital account surplus.
  - C) that nation runs a current account surplus.
  - D) none of the above
- 3) Suppose the aggregate demand curve shifts rightward against a horizontal short-run aggregate supply curve. Real GDP would \_\_\_\_\_ while the price level \_\_\_\_\_.
- A) rise, remain unchanged
  - B) remain unchanged, rises
  - C) remain unchanged, falls
  - D) rise, rises
  - E) fall, rises
- 4) An increase in the rate of growth of nominal GNP
- A) will cause a greater increase in real GNP the lower the rate of inflation.
  - B) will shift the SP curve downward.
  - C) will shift the SP curve upward.
  - D) will cause a smaller increase in real GNP the lower the rate of inflation.
- 5) If inflation is greater in Italy by 10% than it is in the rest of the world then the purchasing power parity theory predicts that the
- A) Italian lira would remain stable.
  - B) Italian lira would appreciate.
  - C) U.S. dollar would weaken.
  - D) Italian lira would depreciate.
- 6) The LM curve will shift to the
- A) left if the price level falls and the quantity of money is held constant.
  - B) left if the price level is held constant and the quantity of money rises.
  - C) right if the price level falls and/or the quantity of money rises.
  - D) right if the price level rises and the quantity of money is held constant.

- 7) The slope of the SAS curve is important because it
- A) partially explains the impact of AD stabilization policies on Y and P.
  - B) explains the impact of both supply and demand side policies on Y and P.
  - C) explains the impact of supply side policies on the economy.
  - D) none of the above
- 8) Monetary policy is more powerful than fiscal policy under \_\_\_\_\_ exchange rates due to the amplifying effect from changes in interest rates to exchange rates to \_\_\_\_\_.
- A) fixed, monetary accommodation
  - B) fixed, net exports
  - C) flexible, net exports
  - D) flexible, monetary accommodation
- 9) Fiscal policy measures with low multipliers include \_\_\_\_\_ while those with high multipliers include \_\_\_\_\_
- A) permanent income tax reduction; temporary sales tax reduction
  - B) temporary income tax reduction; temporary sales tax reduction
  - C) permanent income tax reduction; permanent sales tax reduction
  - D) temporary income tax reduction; permanent sales tax reduction
- 10) State and local governments are not allowed to run deficits yet their tax receipts depend on income. This implies
- A) the textbook model overstates the amount of government spending on goods and services
  - B) the textbook model overstates the monetary policy multiplier
  - C) the textbook model understates the amount of government spending on goods and services
  - D) the textbook model understates the monetary policy multiplier
- 11) In the dollar-yen market, a movement of the exchange rate from 130 to 125 yen per dollar is good news for Japanese \_\_\_\_\_ and good news for U.S. \_\_\_\_\_.
- A) importers of U.S. goods, importers of Japanese goods
  - B) exporters to the U.S., importers of Japanese goods
  - C) exporters to the U.S., exporters to Japan
  - D) importers of U.S. goods, exporters to Japan
- 12) After a period of sustained unexpected inflation, it is likely that the renegotiation of nominal wages will
- A) shift the SAS curve upward thereby decreasing output.
  - B) shift the AD curve downward thereby increasing output.
  - C) shift the SAS curve upward thereby increasing output.
  - D) shift the SAS curve downward thereby increasing output.

- 13) With a fixed nominal wage the SAS curve is positively sloped because
- A) the marginal leakage rate is small.
  - B) business firms are responsive to interest rates.
  - C) A decrease in P decreases the real wage and raises profits if output is increased.
  - D) an increase in P decreases the real wage and raises profits if output is increased.
- 14) All points on the SP curve (but not on the LP line) share the characteristic that the economy is not in the long-run equilibrium because
- A) wage contracts failed to anticipate inflation correctly.
  - B) price level is constantly increasing faster than nominal wage rate.
  - C) wage contracts failed to specify in advance the wage increases necessary to keep up with inflation.
  - D) all of the above
- 15) Under the assumption of perfect capital mobility, a nation
- A) can control its interest rate only through monetary policy.
  - B) can control its interest rate only through fiscal policy.
  - C) can control its interest rate through either fiscal or monetary policy.
  - D) cannot control its interest rate through either fiscal or monetary policy.
- 16) Which of the following statements is true of the Great Depression in the U. S. during 1929-33
- A) The Federal Reserve maintained a fixed nominal interest rate
  - B) When Britain went off the gold standard in 1931, the U. S. dollar appreciated
  - C) When Britain went off the gold standard in 1931, the U. S. dollar depreciated
  - D) The Federal Reserve maintained a fixed real interest rate
- 17) An increase in the price level will
- A) decrease the real money supply and shift the aggregate demand curve.
  - B) change the slope of the aggregate demand curve at each income level.
  - C) increase the real money supply and shift the aggregate demand curve.
  - D) None of the above is correct.
- 18) In lecture emphasis was given to what one quoted item described as the "depression and instability" pact. Which of the following is NOT true about this pact
- A) It hampers automatic stabilization
  - B) It encourages automatic stabilization
  - C) It establishes fixed exchange rates among the countries which signed the pact
  - D) It provides an example of the "Trilemma" for the countries which signed the pact

19) The purchasing power parity theory (PPP) of the exchange rate holds that if  $e'$  is the nominal exchange rate,  $P$  is the domestic price level and  $P_f$  is the foreign price level, then

- A) the real exchange rate is constant.
- B)  $e' = P_f/P$ .
- C) if  $P_f$  grows faster than  $P$  the nominal exchange rate appreciates.
- D) all of the above

20) At any AD/SAS intersection to the right of LAS, excess \_\_\_\_\_ in the labor market is putting \_\_\_\_\_ pressure on the nominal wage.

- A) demand, upward
- B) demand, downward
- C) supply, upward
- D) supply, downward

21) Which of the following statements are most accurate

- A) Japan's public debt to GDP ratio was higher than in the U. S. in 2002
- B) Japan's short-term interest rate was higher than the same rate in the U. S. in 2002
- C) Japan's stock market slumped in the 1980s and soared in the 1990s.
- D) A) and C)

22) If the Pigou effect characterizes the economy then the slope

- A) of the AD cannot be vertical; the aggregate supply curve is unaffected.
- B) of the aggregate demand curve is zero; the aggregate supply curve is vertical.
- C) of both the AD and SAS curves are vertical.
- D) of the aggregate supply curve is zero; the aggregate demand curve is vertical.

23) Which of the following statements is NOT correct, according to the lecture discussion of the Japanese banking situation

- A) "Zombie" companies are supported by Japanese banks
- B) Young Japanese branch bankers could be demoted if they did not grant loans
- C) The Japanese government has provided aid to return the banks to solvency
- D) The Japanese government wishes to prevent bankruptcy for the "zombie" companies

24) An acceleration of nominal GDP growth from, say 4% to 6% will

- A) permanently raise the rate of inflation.
- B) temporarily lower the rate of inflation.
- C) leave real GDP unaffected in the long run.
- D) both A and C

25) Which of the following statements is true of the Great Depression in Europe during 1929-33

A) International reserves flowed out of Germany in 1928, forcing it to reduce its money supply

B) International reserves flowed out of the U. S. in 1928, helping Germany avoid the Great Depression

C) International reserves flowed out of the U. K. after it left the gold standard in 1931

D) International reserves flowed out of the U. S. after it left the gold standard in 1931

**QUESTION 1(15 points)**

Consider the following economy:

$$A_p = 1,000 - 50r$$

$$k = 2$$

$$M_s/p = 250$$

$$M_d = .25Y - 25r$$

**(a) (3 points)** Write the IS, the LM and calculate the equilibrium interest rate and GDP levels.

**(b) (3 points)** Now suppose that  $G$  increases by 300. Write the IS, the LM and calculate the equilibrium interest rate and GDP levels.

Both (a) and (b) are small open economies with a fixed exchange rate.  
World interest rate is 5

**(c) (3 points)** Which of the two equilibria in (a) or (b) can last only for a limited amount of time? Why?

**(d) (6 points)** How will monetary policy react in the temporary equilibrium? What is the final equilibrium outcome and  $M_s/p$  ?

**QUESTION 2 (15 points)**

Consider an economy characterized by the following:

- 1% of unexpected inflation increases the log-output ratio by 4%;
- there are no supply shocks, i.e.  $z_t = 0$  for all  $t$ ;
- expected inflation is revised by incorporating 75% of the error committed in forecasting inflation in the previous period;
- the equation describing the DG curve is:  $\hat{Y}_t = \hat{Y}_{t-1} + \hat{x}_t - p_t$ .

**(a) (5 points)** Write down the equations for the short-run and long-run Phillips curve, for the constant output line, and for the rule people adopt to update their inflation expectations.

**(b) (6 points)** Assume that the economy is in a long-run equilibrium at  $t=0$ ,  $\hat{x}_0 = p_0 = p_0^e = 10$ ,  $\hat{Y}_0 = 0$ . In period 1 nominal GDP growth permanently decreases to 5%. Using the equations derived above, complete the following table:

Period	$\hat{x}_t$	$p_t$	$\hat{Y}_t$	$p_t^e$
0	10	10	0	10
1				
2				

**(c) (4 points)** Redo part (b) assuming that expected inflation is revised by incorporating only 25% of the forecasting error.

Period	$\hat{x}_t$	$p_t$	$\hat{Y}_t$	$p_t^e$
0	<b>10</b>	<b>10</b>	<b>0</b>	<b>10</b>
1				
2				

## **SOLUTIONS**

- 1) C
- 2) C
- 3) A
- 4) A
- 5) D
- 6) C
- 7) A
- 8) C
- 9) B
- 10) D
- 11) D
- 12) A
- 13) D
- 14) D
- 15) D
- 16) B
- 17) D
- 18) B
- 19) D
- 20) A
- 21) A
- 22) A
- 23) C
- 24) D
- 25) A

### QUESTION 1(15 points)

Consider the following economy:

$$A_p = 1,000 - 50r$$

$$k = 2$$

$$M_s/p = 250$$

$$M_d = .25Y - 25r$$

(a) (3 points) Write the IS, the LM and calculate the equilibrium interest rate and GDP levels.

$$(IS) Y = 2,000 - 100r$$

$$(LM) Y = 1,000 + 100r$$

$$Y = 1,500$$

$$r = 5$$

(b) (3 points) Now suppose that G increases by 300. Write the IS, the LM and calculate the equilibrium interest rate and GDP levels.

$$(IS) Y = 2,600 - 100r$$

$$(LM) Y = 1,000 + 100r$$

$$Y = 1,800$$

$$r = 8$$

Both (a) and (b) are small open economies with a fixed exchange rate.  
World interest rate is 5

(c) (3 points) Which of the two equilibria in (a) or (b) can last only for a limited amount of time? Why?

**The equilibrium in (b) can last only for a short period. Interest rates are higher than  $r_f$ , so that capital inflows increase central bank reserves pressuring an increase in money supply.**

(d) (6 points) How will monetary policy react in the temporary equilibrium? What is the final equilibrium outcome and  $M_s/p$  ?

**The monetary policy will increase money supply so as to equate domestic interest rate to the foreign one. The final equilibrium is given by the intersection of the Is with the BP line  $r = r_f = 5$ :**

$$Y = 2,600 - 100 * 5 = 2,100$$

**The associated real money supply is then found as:**

$$M_s/p = .25 * 2100 - 25 * 5 = 400$$

**QUESTION 2 (15 points)**

Consider an economy characterized by the following:

- 1% of unexpected inflation increases the log-output ratio by 4%;
- there are no supply shocks, i.e.  $z_t = 0$  for all  $t$ ;
- expected inflation is revised by incorporating 75% of the error committed in forecasting inflation in the previous period;
- the equation describing the DG curve is:  $\hat{Y}_t = \hat{Y}_{t-1} + \hat{x}_t - p_t$ .

**(a) (5 points)** Write down the equations for the short-run and long-run Phillips curve, for the constant output line, and for the rule people adopt to update their inflation expectations.

$$\begin{array}{ll} \text{(SP)} & p_t = p_t^e + 0.25 * \hat{Y}_t & \text{(LP)} & \hat{Y}_t = 0 \\ \text{(E)} & p_t^e = p_{t-1}^e + 0.75 * (p_{t-1} - p_{t-1}^e) & \text{(CY)} & \hat{x}_t = p_t \end{array}$$

**(b) (6 points)** Assume that the economy is in a long-run equilibrium at  $t=0$ ,  $\hat{x}_0 = p_0 = p_0^e = 10$ ,  $\hat{Y}_0 = 0$ . In period 1 nominal GDP growth permanently decreases to 5%. Using the equations derived above, complete the following table:

Period	$\hat{x}_t$	$p_t$	$\hat{Y}_t$	$p_t^e$
0	10*	10*	0*	10*
1	5*	9	-4	10
2	5*	7.6	-6.6	9.25

\* known at 0.

**Expected inflation for time 1 is:**

$$p_1^e = p_0^e + 0.75 * (p_0 - p_0^e) = 10 + 0.75 * 0 = 10$$

**The SP and DG at time 1 are:**

$$p_1 = p_1^e + 0.25 * \hat{Y}_1 = 10 + 0.25 * \hat{Y}_1$$

$$\hat{Y}_1 = \hat{Y}_0 + \hat{x}_1 - p_1 = 0 + 5 - p_1$$

**Solving these two equations,  $p_1 = 9$  and  $\hat{Y}_1 = -4$ .**

**Repeating the previous steps for period 2:**

$$p_2^e = p_1^e + 0.75 * (p_1 - p_1^e) = 10 + 0.75 * (9 - 10) = 9.25$$

$$p_2 = p_2^e + 0.25 * \hat{Y}_2 = 9.25 - 0.25 * \hat{Y}_2$$

$$\hat{Y}_2 = \hat{Y}_1 + \hat{x}_2 - p_2 = -4 + 5 - p_2$$

**Solving the last two equations for  $p_2$  and  $\hat{Y}_2$ ,  $p_2 = 7.6$  and  $\hat{Y}_2 = -6.6$ .**

(c) (4 points) Redo part (b) assuming that expected inflation is revised by incorporating only 25% of the forecasting error.

Period	$\hat{x}_t$	$p_t$	$\hat{Y}_t$	$p^e_t$
0	10	10	0	10
1	5*	9	-4	10
2	5*	8	-7	9.75

\* known at 0.

The new expectations updating rule is:

$$(E') \quad p^e_t = p^e_{t-1} + 0.25*(p_{t-1} - p^e_{t-1})$$

Expected inflation for time 1 is:

$$p^e_1 = p^e_0 + 0.25*(p_0 - p^e_0) = 10 + 0.25*0 = 10$$

Hence, inflation and the log-output ratio will be the same as in (b):  $p_1 = 9$  and

$$\hat{Y}_1 = -4.$$

Repeating the same step as in (b) for period 2:

$$p^e_2 = p^e_1 + 0.25*(p_1 - p^e_1) = 10 + 0.25*(9-10) = 9.75$$

$$p_2 = p^e_2 + 0.25*\hat{Y}_2 = 9.75 - 0.25*\hat{Y}_2$$

$$\hat{Y}_2 = \hat{Y}_1 + \hat{x}_2 - p_2 = -4 + 5 - p_2$$

Solving the last two equations for  $p_2$  and  $\hat{Y}_2$ ,  $p_2 = 8$  and  $\hat{Y}_2 = -7$ .