Econ 375: Problem Set 2 Answers

1. Fed reduces money supply by 5%.
a) AD shifts to the left.
b) In the short run, the price will remain constant and GDP will fall. In the long run, the price level will fall (by 5%) and output will return to full employment.
c) In the short run, unemployment will rise. In the long run, unemployment will return to the natural rate.

2. Fed's Response:
a) An exogenous decrease in the velocity of money causes the AD curve to shift downward, as in the graph below. In the short run, prices are fixed, so output falls. If the Fed wants to keep output and employment at their natural rate levels, it must increase AD to offset the decrease in velocity. By increasing the money supply, the Fed can shift the AD curve upward, restoring the economy to its original equilibrium at point A. Both the price level and output remains constant.

If the Fed wants to keep prices stable, then it wants to avoid the long-run adjustment to a lower price level at point C in the figure above. Therefore, it should increase the money supply and shift the AD curve upward, again restoring the original equilibrium at point A. Thus, both Feds make the same choice of policy in response to this demand shock.

b) An exogenous increase in the price of oil is an adverse supply shock which causes the short-run AS curve to shift upward, as in the figure below. If the Fed cares about keeping output and employment at their natural rate levels, then it should increase AD by increasing the money supply. This policy response shifts the AD curve upwards, as shown in the shift from AD_1 to AD_2 below. In this case, the economy immediately reaches a new equilibrium at point C. The price level at point C is permanently higher, but there is no loss in output associated with the adverse supply shock.

If the Fed cares about keeping prices stable, then there is no policy response it can implement. In the short run, the price level stays at the higher level P2. If the Fed increases AD, then the economy ends up with a permanently higher price level. Hence, the Fed must simply wait, holding AD constant. Eventually, prices fall to restore full employment at the old price level P1. But the cost of this process is a prolonged recession. Thus, the two Feds make a different policy choice in response to a supply shock.

3. AD/AS Model.
a) The AD equation is Y = 3000+2000/P
b) New AD equation is Y = 3000+2500/P
c) Point A: Y = 5500 and P = 1.0
Point B: Y = 5000 and P = 1.25

4. We did this one in class.

5. Using the Keynesian cross:
a) An increase in government purchases will shift the E curve upward causing equilibrium GDP to rise.
b) An increase in taxes will shift the E curve downward causing equilibrium GDP to fall.
c) An equal increase in G and T will shift the E curve upward (since the G multiplier is larger than the T multiplier), thereby causing equilibrium GDP to rise.

6. AD/AS Model
a) Equilibrium Y = 6000; Equilibrium P = 2.00 in short run and long run.
b) No graph provided.
c) Short run equilibrium: Y = 4800; P = 2.50
d) Long run equilibrium: Y = 5500; P = 2.18
e) To keep Y at 6000, the Fed would have to increase M to 2500. If M = 2500, then the long run price level will be P = 2.72.

7. I can't remember if we did this one in class or not. In any event, here's the answer:
a) The "E curve" will be an upward sloping function with respect to GDP.
b) Y = $3600
c) Y = $3800
d) G = 500

8. Money Market
a) Typical looking money market graph.
b) 9%
c) Interest rate falls to 8%.
d) M = 5000

9. This is in your notes and the book.

10. This is in your notes and the book.

11. IS-LM model comparative statics results:
a) if M^S increases: r falls; Y rises; C rises; I rises.
b) if G increases: r increases; Y increases; C increases; I falls.
c) if T falls: r increases; Y increases; C increases; I falls.
d) if G = T rises: r rises; Y rises; C rises; I falls.

12. This is for you to ponder.

13. IS Curve.
a) Y = 2800 - 400r [or r = 7 - (1/400)Y]
b) slope equals -(1/400)
c) See table:
d) IS shifts right.
e) IS shifts left.
f) IS becomes flatter.
g) IS becomes flatter.

	I	Y
r = 1	800	2400
r = 3	400	1600
r = 5	0	800

14. LM curve:
a) Y = 1600 + 200r [or, r = (1/200)Y - 8]
b) slope = (1/200)
c) See table:
d) LM shifts right.
e) LM shifts right.
f) LM shifts left.
g) LM becomes flatter.
h) LM becomes steeper.

	Y
r = 1	1800
r = 3	2200
r = 5	2600

15. IS-LM model:
a) Y = 11200 - 200r
b) Y = 4500 + 100r
c) Y = 6733; r = 22.3; Y-T = 5533; C = 4979.7; I = 554
Private saving = 554; Public saving = 0; national saving = 554
d) Y increases by 667. The government spending multiplier is 3.33
e) Y increases by 334. The multiplier for money supply is 1.67

16. We did this one in class.

17. IS-LM and AD/AS model.
a) IS equation: Y = 1700 - 100r;
LM equation: Y = 500 + 100r
b) r = 6; Y = 1100
c) r = 7; Y = 1200
d) r = 5.5; Y = 1150
e) r = 7.25; Y = 975
f) AD equation: Y = 850 + 500/P. If G rises, the AD curve shifts to the right. If M rises, the AD curve shifts right.

18. More IS-LM and AD-AS models.
a) No graph provided.
b) Short run equilibrium: Y = 2500; r = 10%.
c) Y = 1750 + 750/P
d) Long run equilibrium: Y = 3000; P = 0.60