

Name: _____

Cosumnes River College
Principles of Macroeconomics
Problem Set 6
Due April 3, 2017

Spring 2017

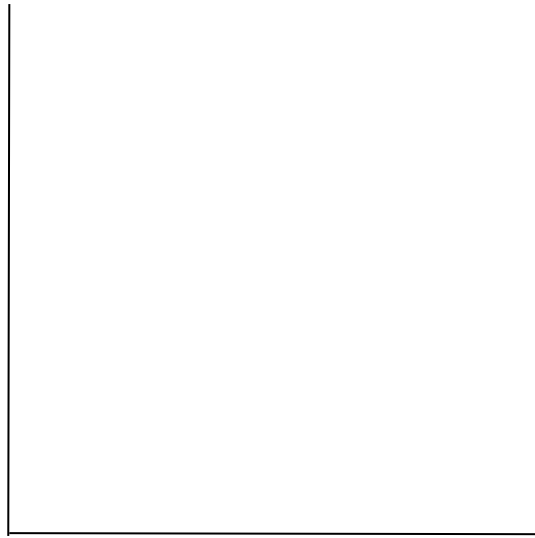
Prof. Dowell

Instructions: Write the answers clearly and concisely on these sheets in the spaces provided. Do not attach extra sheets.

1. Draw a diagram that shows how labor market equilibrium and the short-run production function determine output. Explain what is happening in the diagram.



2. a. On the axes below, use an aggregate supply and demand diagram to illustrate an equilibrium in which there is a recessionary gap. Be sure to clearly label everything.



- b. Clearly and thoroughly explain the “automatic” process through which the economy adjusts to close this gap.

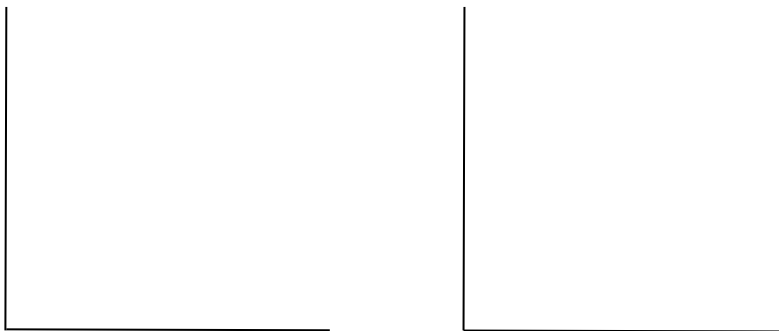
- c. How long does the adjustment process take?

3. Why do wages tend to be rigid, particularly in the downward direction?

4. Explain in words why rising prices reduce the multiplier effect of an autonomous increase in aggregate demand.

4. What is the difference between the classical and the extreme Keynesian versions of the aggregate supply curve? What are the assumptions about prices and wages for each?

5. Use aggregate supply and demand diagrams to show that the multiplier effects are smaller when the aggregate supply curve is steeper. Which case gives rise to more inflation – the steeper aggregate supply curve or the flatter one? What happens to the multiplier in the case of the classical (vertical) aggregate supply curve?



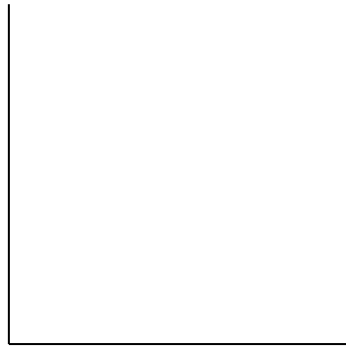
6. This is a lengthy question which requires a substantial amount of simple algebra. The question serves two purposes. First, it gives you a chance to practice solving our model – something which many of you need! Second, it will demonstrate mathematically the effects of price level changes on the size of the multiplier.

In Davisville, consumers spend (consume) according to the equation $C = 200 + 0.8(Y-T)$. Investment is 600, government purchases are 500, exports are 300, imports are 400, and taxes are fixed at 500.

- a. Find the equilibrium level of GDP. If full employment comes at $Y^{POT} = 6,000$, is there a recessionary or an inflationary gap and how large is it?
- b. Now suppose neighboring countries increase their demand for Davisville's exports from 300 to 425. Find the new equilibrium level of GDP. Now, is there a recessionary or an inflationary gap and how large is it?
- c. What is the value of the multiplier?
- d. Now the citizens of Davisville change their spending habits on imports from $M = 400$ (that is, imports fixed at 400) to $M = 300 + 0.05Y$ (that is, imports are 300 + five percent of GDP). Exports, investment and the government budget are as in part (a). Answer questions (a), (b) and (c) again, using this new import function.

- e. We now allow the price level in Davisville to vary. Go back to all the conditions of part (a), except change the consumption function to $C = 0.04(\omega/P) + 0.8(Y - T)$ where ω is the nominal or money value of wealth and P is the price level: hence, ω/P is real wealth. The money value of wealth is fixed at $\omega = 5000$ throughout this problem, but P will change. Make the necessary substitutions and write out the consumption function.
- f. Assume first that $P = 1$. Find equilibrium GDP.
- g. Repeat the calculations for $P = 1.25$ and for $P = 0.80$.

- h. Plot the above results (part (f) and part (g)) on a diagram with price on the vertical axis and output on the horizontal axis. Interpret this graph.



- i. Now, suppose that the aggregate supply curve is horizontal at $P = 1$. If exports rise by 100 (that is from 300 to 400), what happens to GDP? How large is the multiplier?
- j. Now suppose instead, that P is unknown; the aggregate supply curve is Davisville is given as $Y = 5000 - 500/P$. Find equilibrium GDP now.

k. Now, let exports rise from 300 to 400 again. What is the new equilibrium level of GDP? What, therefore, is the multiplier?

l. Explain why your answers in part (c) and part (k) differ.