

Assignment 2 (Part 2)

Deadline: October 22, 2004

1. Refer to the accompanying table in answering the questions which follow:

(1) Possible levels of employment, millions	(2) Real domestic output, billions	(2) Aggregate Expenditures ($C_a + I_g + X_n + G$), billions
9	\$500	\$520
10	550	560
11	600	600
12	650	640
13	700	680

- a. If full employment in this economy is 13 million, will there be an inflationary or recessionary gap? What will be the consequence of this gap? By how much would aggregate expenditures in column 3 have to change at each level of GDP to eliminate the inflationary or recessionary gap? Explain.
- b. Will there be an inflationary or recessionary gap if the full-employment level of output is \$500 billion? Explain the consequences. By how much would aggregate expenditures in column 3 have to change at each level of GDP to eliminate the inflationary or recessionary gap? Explain.
- c. Assuming that investment, net exports, and government expenditures do not change with changes in real GDP, what are the sizes of the MPC, the MPS, and the multiplier?
 - (a) A recessionary gap. Equilibrium GDP is \$600 billion, while full employment GDP is \$700 billion. Employment will be 2 million less than at full employment. Aggregate expenditures would have to increase by \$20 billion (= \$700 billion - \$680 billion) at each level of GDP to eliminate the recessionary gap of \$100 billion. Therefore, the multiplier in this economy is 5 (= 100 ÷ 20).
 - (b) An inflationary gap. Equilibrium GDP is \$600 billion, while full employment GDP is \$500 billion. Aggregate expenditures will be excessive, causing demand-pull inflation. Aggregate expenditures would have to *fall* by \$20 billion (= \$520 billion -

\$500 billion) at each level of GDP to eliminate the inflationary gap of \$100 billion. Therefore, the multiplier in this economy is 5 ($= 100 \div 20$).

- (c) From column 2 and 3 of the table, it is clear that for every \$50 billion increase in real domestic output, the consumption expenditures increases by \$40 billion because the investment, net export and government expenditures do not change with changes in real GDP. Therefore, $MPC = .8$ ($= \$40 \text{ billion}/\50 billion); $MPS = .2$ ($= 1 - .8$); multiplier = 5 ($= 1/.2$).

2. Assume the consumption schedule for a private open economy is such that $C = 50 + 0.8Y$. Assume further that planned investment and net exports are independent of the level of income and constant at $I_g = 30$ and $X_n = 10$. Recall also that in equilibrium the real output produced (Y) is equal to the aggregate expenditures: $Y = C + I_g + X_n$.

- a. Calculate the equilibrium level of income for this economy. Check your work by expressing the consumption, investment, and net export schedules in tabular form and determining the equilibrium GDP.
- b. What will happen to equilibrium Y if I_g changes to 10? What does this tell you about the size of the multiplier?

(a) $Y = C + I_g + X_n = \$50 + 0.8Y + \$30 + \$10 = 0.8Y + \90

Therefore $Y - 0.8Y = \$90$, and $0.2Y = \$90$, so $Y = \$450$ at equilibrium.

Real domestic output (GDP = YI)	C	I_g	X_n	Aggregate expenditures, open economy
\$ 0	\$ 50	\$30	\$10	\$90
50	90	30	10	130
100	130	30	10	170
150	170	30	10	210
200	210	30	10	250
250	250	30	10	290
300	290	30	10	330
350	330	30	10	370
400	370	30	10	410
450	410	30	10	450
500	450	30	10	490

- (b) If I_g decreases from \$30 to \$10, the new equilibrium GDP will be at GDP of \$350, for with I_g now \$10 this is where AE also equals \$350. This indicates that the multiplier equals 5, for a decline in AE of \$20 has led to a decline in equilibrium GDP of \$100. The size of the multiplier could also have been calculated directly from the MPC of 0.8.

3. Work through the numerical example in the Appendix to Chapter 7 of the text book (10th edition).