

Deree College-Department of Economics
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Review Questions and Answers for Chapter 11

1. Why is there a need for an aggregate demand and aggregate supply model of the economy? Why can't the supply and demand model for a single product explain developments in the economy?

The basic reason for an aggregate model is that there are thousands of individual products in an economy. Single product supply and demand model does not explain: (1) why prices in general rise or fall; (2) what determines the level of aggregate output; and (3) what determines changes in the level of aggregate output. The aggregate model is needed to explain these changes. It simplifies the analysis of prices by combining the prices of all individual goods and services into one aggregate price level. It simplifies the analysis of quantities by combining the equilibrium quantities of all individual goods and services into a single entity called the real domestic output.

2. What is the aggregate demand curve? What is the characteristic its slope?

The aggregate demand curve shows the relationship between the price level and real domestic output (real GDP). It shows the amounts of real output that domestic consumers, businesses, government, and foreign buyers collectively desire to purchase at each price level. As the price level increases, the amount of real domestic output purchased will decrease, so the aggregate demand curve is downsloping.

3. What is the difference in the explanation of the shape of the aggregate demand curve and a single product demand curve? After all, both demand curves show an inverse relationship between price and quantity.

The aggregate demand curve shows an inverse relationship between the price level (the general level of all prices) and real domestic output (the equilibrium quantity of all products). The explanation of this inverse relationship is based on the real-balances effect, the interest-rate effect, and the foreign-purchases effect. In this case, as the price level rises, the quantity of real domestic output decreases.

The supply and demand model for a particular product shows an inverse relationship between the price of that product and the quantity of that product. The explanation for the inverse relationship between price and quantity in the demand for a single product is based on the substitution and income effects. The substitution effect is not applicable to the aggregate case because there is no substitute for all products in the economy. Also, the income effect is not applicable to the aggregate case because income now varies with aggregate output.

4. Explain the three reasons given for the downward slope of the aggregate demand curve.

The three reasons given are the real-balances effect, the interest-rate effect, and the foreign purchases effect.

The real-balances effect refers to the idea that a higher price level will reduce the purchasing power of the population's accumulated financial assets. Because of the decline in value of such assets, people will feel poorer and will reduce their spending. Conversely, as the price level falls the opposite will occur.

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The interest-rate effect assumes that as the price level rises so will interest rates, and rising interest rates will reduce certain kinds of spending such as consumption spending on durable goods and investment spending.

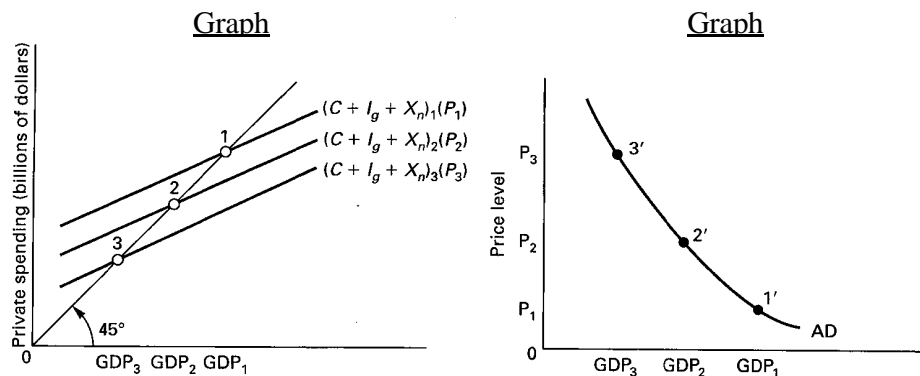
The foreign purchases effect assumes that if the price level rises in the U.S. relative to that in foreign countries, Americans will increase spending on imports at the expense of domestically produced goods and services, and foreigners will reduce purchases of U.S. goods. In other words, net exports decline.

5. How can the aggregate demand curve be derived from the aggregate expenditures model?

The aggregate demand curve is derived from the intersections of the aggregate-expenditures curves and the 45-degree curve. As the price level falls, the aggregate expenditures curve shifts upward and the equilibrium real GDP increases, but as the price level rises, the aggregate expenditures curve shifts downward and the equilibrium real GDP decreases. The inverse relationship between the price level and equilibrium real GDP is the aggregate demand curve.

Note that for the aggregate-expenditure model that a decrease in the price level: (1) increases the value of wealth; thus increasing the consumption schedule. A decrease in the price level decreases the interest rate, thus increasing the investment schedule. A decrease in the price level decreases imports and increases exports, thus increasing net exports expenditures. Thus a decrease in the price level will increase aggregate expenditures (and real domestic output) because of these changes in wealth, interest rates, and net exports. These three effects are also the ones that define the inverse relationship between the price level and real domestic output in the aggregate demand curve.

6. Explain the relationship between the aggregate expenditures model in graph (A) below and the aggregate demand-aggregate supply model in graph (B) below. In other words, explain how points 1, 2, and 3 are related to points 1', 2', and 3'.



Through the real-balances, interest-rate, and foreign purchases effects, the consumption, investment, and net exports schedules and therefore the aggregate expenditures schedule will rise when the price level declines and fall when the price level increases. If the aggregate expenditure schedule is at $(C + I_g + X_n)_2$ when the price level is P_2 , we can combine that price level and the equilibrium output, GDP_2 , to determine one point (2') on the aggregate demand curve. A lower price level such as P_1 shifts aggregate expenditures to $(C + I_g + X_n)_1$, providing us with point 1' on the aggregate demand curve. Similarly, a higher price level at P_3 shifts aggregate expenditures down to $(C + I_g + X_n)_3$ so P_3 and GDP_3 yield another point on the aggregate demand curve at 3'.

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7. The determinants of aggregate demand “determine” the location of the aggregate demand curve. Explain three of the four basic determinants of aggregate demand. The four basic determinants of aggregate demand are found in Figure 11.1 in the text. They are a change in consumer spending, a change in investment spending, a change in government spending, and a change in net export spending. Explanations for each follow.

A change in consumer spending could occur as a result of an increase or decrease in consumer wealth resulting from factors such as increased stock values. It could also be caused by a change in consumer expectations about the future, a change in the level of household indebtedness, or a change in personal taxes.

Changes in investment spending may occur as a result of changes in the interest rate (not related to changes in the price level), changes in profit expectations having to do with predictions about future returns on possible projects, changes in business taxes, technological improvements which induce more capital investment, and the degree of existing excess capacity.

Government spending might change for any of a number of reasons, including a change in priorities resulting from a change in elected officials.

Net export spending can change for two nonprice-level-related reasons such as rising or falling national incomes in other countries and exchange rate changes unrelated to domestic price levels.

8. Identify the ways in which each of the following determinants would have to change if each was causing a decrease in aggregate demand: consumer wealth, consumer expectations, business taxes, national income in countries abroad, exchange rates.

To decrease aggregate demand, consumer wealth would have to fall. For example, a decline in real estate values or a stock market decline would cause a decrease in consumer wealth. If consumers expected prices to fall in the future, or a recession which creates insecurity about jobs, they might cut back on spending now. If business taxes were raised, or some present tax breaks eliminated or reduced, this could reduce business investment spending which, in turn, reduces aggregate demand. When national income abroad is falling, U.S. exports will decline, which reduces the net export spending component of aggregate demand. A dollar appreciation will cause a decline in net exports as U.S. exports become more expensive to foreigners and foreign imports become less expensive to holders of American dollars.

9. How does the aggregate expenditures analysis differ from the aggregate demand-aggregate supply analysis?

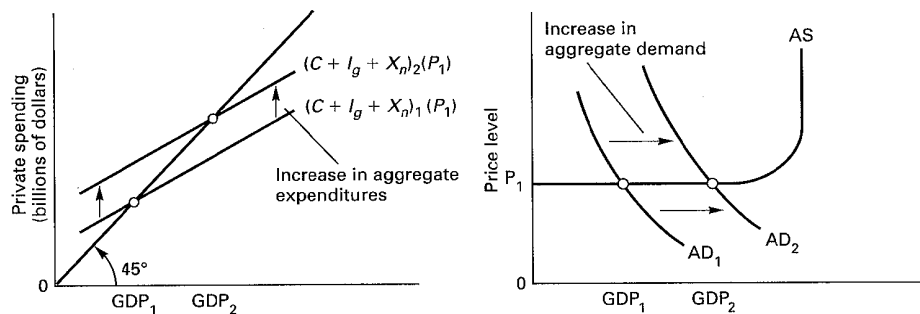
The aggregate expenditures analysis assumes a constant price level. Output measures are in terms of real GDP and real income. The aggregate demand-aggregate supply model shows the relationship between real GDP and the price level. The Keynesian model ignores price level effects of increased aggregate expenditures. In contrast, the AD-AS model indicates that the price level will rise as aggregate demand rises in the intermediate or vertical ranges of aggregate supply.

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10. Why does aggregate demand shift outward by a greater amount than the initial change in spending?

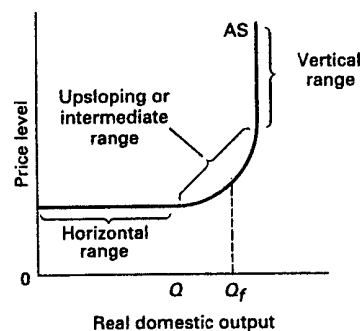
The basic reason is because of the multiplier. As shown by the aggregate expenditures model, an initial increase in spending times the multiplier will be the amount that aggregate expenditures shift upward. The size of this total increase will also be the amount of the shift of the aggregate demand curve outward. Thus, the shift of the aggregate demand curve will be equal to the initial change in spending times the multiplier.

11. Explain the relationship between the aggregate expenditures model in graph (A) below and the aggregate demand-aggregate supply model in graph (B) below where aggregate demand is shifting while the price level remains constant.



In (A) we assume that some determinant of consumption, investment, or net exports other than the price level shifts the aggregate expenditures schedule from $(C + I_g + X_n)_1$ to $(C + I_g + X_n)_2$, thereby increasing real domestic output from GDP_1 to GDP_2 . In (B) we find that the aggregate demand counterpart of this is a rightward shift of the aggregate demand curve from AD_1 to AD_2 which is just sufficient to show the same increase in real output as in the expenditures-output model.

12. The illustration below shows the three ranges of the aggregate supply curve. Describe why each range has the slope shown.



The horizontal range is flat because it presumes a level of GDP which is far below the full-employment level of GDP. Therefore, additional resources can be employed without bidding up prices because there is such a high degree of unemployed resources and unused capacity. The intermediate range is upward sloping because at this level GDP is approaching or at full employment. In some resource markets, full employment will have been reached and prices will be bid up as producers seek to attract these

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resources away from other uses. The vertical range is vertical because it presumes that the economy is at full capacity. Thus, any increase in aggregate demand at this point will simply result in higher prices, but no change in real GDP.

13. In the table below is an aggregate-supply schedule.

<u>Price level</u>	<u>Real domestic output supplied</u>
300	\$1,800
250	1,800
225	1,600
200	1,400
175	1,200
150	1,000
150	800
150	0

State the ranges for the horizontal, intermediate, and vertical portions of the aggregate supply curve.

The economy is in the horizontal range when the real domestic output is between \$0 and \$1,000. The economy is in the vertical range when the real domestic output is \$1,800 and the price level is \$250 or more. The economy is in the intermediate range when the real domestic output is between \$1,000 and \$1,800.

14. List three major factors that can cause a shift in aggregate supply. That is, list the three major determinants of supply.

The determinants of supply include changes in input prices, productivity, and the legal-institutional environment. Included as factors behind changes in input prices are availability of domestic resources, prices of imported resources (particularly energy resources), and changes in market power of resource suppliers. Included as factors related to the legal-institutional environment are business taxes and subsidies and government regulation.

15. Describe the change in aggregate supply that should result from each of the following changes in determinants. Assume that nothing else is changing besides the identified change. (Use "Decrease" or "Increase.") (a) A rise in the average price of inputs; (b) An increase in worker productivity; (c) Government antipollution regulations become stricter; (d) A new subsidy program is enacted for new business investment in productive equipment; (e) Energy prices decline.

(a) Decrease; (b) Increase; (c) Decrease (unless the increase in antipollution device production outweighs the decline in production caused by the increased cost of the regulations); (d) Increase; (e) Increase

17. What determines the equilibrium price level and the level of real domestic output in the aggregate demand-aggregate supply model?

The interaction of aggregate supply and aggregate demand will determine the equilibrium. The price and quantity levels where aggregate demand and aggregate supply are equal will be the equilibrium levels of price and quantity. In a graphical illustration such as Figure 11.7, it is where the two curves intersect.

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19. Suppose that a hypothetical economy has the following relationship between its real domestic output and the input quantities necessary for producing that level of output.

<u>Input quantity</u>	<u>Real domestic output</u>
400	800
300	600
100	200

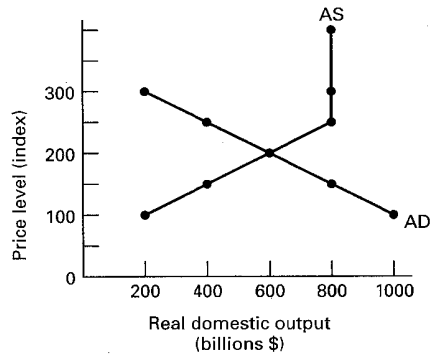
- (a) What is the level of productivity in this economy?
- (b) What is the unit cost of production if the price of each input is \$2.00?
- (c) If the input price decreases from \$2 to \$1.50, what is the new per unit cost of production? In what direction would the aggregate supply curve move? What effect would this shift have on the price level and the level of real domestic output if the economy is initially operating in the intermediate range?
- (d) Suppose that instead of the input price decreasing, the productivity had increased by 25%. What will be the new unit cost of production? In what direction would the aggregate supply curve move? What effect would this shift have on the equilibrium price and output level if the economy is initially operating in the intermediate range?
- (a) The level of productivity is 2 output units per input unit.
- (b) Since productivity is 2 units of output per input unit, the cost of production per unit is 2 units/\$2 or \$1 per unit of output. (Total input cost/output) = PUPC. $[(\$2 \times 400)/800] = \1 .
- (c) The unit cost will decline from \$1/unit to \$.75/unit. The aggregate supply curve has moved rightward and the level of prices has declined while the level of real domestic output has increased if the economy was operating in the intermediate range.
- (d) If productivity rose by 25%, then there would be 1.25 units produced per \$1 of input costs. The unit cost of production would be \$.80/unit. The aggregate supply curve would move in the same direction with similar effects to (c) above. However, the cost reduction is not quite as great so the real GDP would not rise as much as (c) nor would the price level decline by as much as (c).
20. Suppose the aggregate demand and supply schedules for a hypothetical economy are as shown below:

<u>Amount of real domestic output demanded, billions</u>	<u>Price level (price index)</u>	<u>Amount of real domestic output supplied, billions</u>
\$ 200	300	\$800
400	250	800
600	200	600
800	150	400
1,000	100	200

- (a) Use these sets of data to graph the aggregate demand and supply curves on the below graph.
- (b) What will be the equilibrium price and output level in this hypothetical economy? Is it also the full-employment level of output? Explain.
- (c) Why won't the 150 index be the equilibrium price level? Why won't the 250 index be the equilibrium price level?

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- (d) Suppose demand increases by \$400 billion at each price level. What will be the new equilibrium price and output levels?
- (e) What factors might cause a change in aggregate demand?
- (f) Over which range of the aggregate supply curve did the equilibrium change?
- (a) See graph below.



- (b) The equilibrium GDP is \$600 billion and price level 200. There is not enough information given to determine whether or not this is the full-employment level of output.
- (c) At 150, the aggregate demand would exceed aggregate supply and prices would be bid up. At price level 250, aggregate supply would exceed aggregate demand and the resulting surpluses would cause prices to be bid downward toward the equilibrium level of 200.
- (d) The new equilibrium price and output level will be 250 and \$800 billion respectively on the schedule shown.
- (e) Look at Figure 11.3, Determinants of Aggregate Demand, to help with this answer. An increase in consumer wealth, expected future inflation, decline in household indebtedness, or decreased personal taxes could increase the consumer spending component of aggregate demand. Investment spending might increase as a result of lower interest rates, expectations of improved profits in the future, decline in business taxes, new and improved technology, or decline in excess capacity. Government spending might increase for a variety of reasons. Net export spending could increase as a result of improved economic conditions abroad or a depreciation in the American dollar.
- (f) The equilibrium changed over the intermediate range because both the equilibrium real GDP and price level rose.

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21. Suppose the aggregate demand and supply schedules for a hypothetical economy are as shown below:

Amount of real domestic output demanded, billions	Price level (price index)	Amount of real domestic output supplied, billions
\$ 60	350	\$240
120	300	240
180	250	180
240	200	120
300	150	60

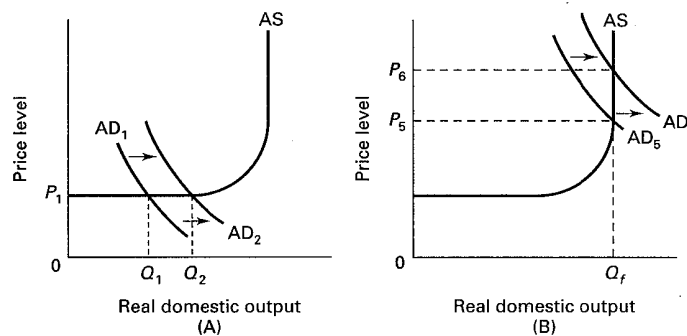
- (a) What will be the equilibrium price and output level in this hypothetical economy? Is it also the full-employment level of output? Explain.
- (b) Why won't the 200 index be the equilibrium price level? Why won't the 300 index be the equilibrium price level?
- (c) Suppose demand increases by \$120 billion at each price level. What will be the new equilibrium price and output levels?
- (d) List five factors that might cause a change in aggregate demand.
- (e) Over which range of the aggregate supply curve did the equilibrium change?
- (a) The equilibrium GDP is \$180 billion and price level 250. There is not enough information given to determine whether or not this is the full-employment level of output, but there is no reason why it should be one way or the other.
- (b) At 200, the aggregate demand would exceed aggregate supply and prices would be bid up. At price level 300, aggregate supply would exceed aggregate demand and the resulting surpluses would cause prices to be bid downward toward the equilibrium level of 250.
- (c) The new equilibrium price and output level will be 300 and \$240 billion respectively on the schedule shown.
- (d) Look at Figure 11.3, Determinants of Aggregate Demand, to help with this answer. (1) An increase in consumer wealth, (2) expected future inflation, (3) decline in household indebtedness, or (4) decreased personal taxes could increase the consumer spending component of aggregate demand, (5) investment spending might increase as a result of lower interest rates, (6) expectations of improved profits in the future, (7) decline in business taxes, (8) new and improved technology, or (9) decline in excess capacity. Government spending might increase for a variety of reasons. (10) Net export spending could increase as a result of improved economic conditions abroad or from a depreciation in the American dollar.
- (e) The equilibrium changed over the intermediate range because both the equilibrium real GDP and price level rose.

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22. Describe each of the following outcomes in terms of shifts in aggregate demand or aggregate supply curves.
- (a) A recession deepens while the rate of inflation increases
 - (b) The price level rises sharply while real output and employment remain constant
 - (c) The rate of inflation diminishes, but the unemployment rate rises
 - (d) Real output rises, unemployment rate falls, price level is constant
- (a) The aggregate supply curve has shifted to the left causing the price level to rise and output and employment levels to fall. The new equilibrium must be in the intermediate range of aggregate supply.
 - (b) The aggregate demand curve has shifted to the right in the vertical range.
 - (c) The aggregate demand curve has shifted leftward in the intermediate range.
 - (d) The aggregate demand curve has shifted rightward in the horizontal range.

23. Refer to the below diagrams for the following questions.

- (a) Which diagram(s) illustrate(s) situations where increasing aggregate demand will cause inflation?
- (b) Which diagram(s) illustrate(s) situations where increasing aggregate demand will reduce unemployment but not affect prices?



- (a) Diagram B
- (b) Diagram A.

24. What is the effect of the multiplier when aggregate demand increases and there is a large increase in the price level? What happens when there only is a small increase in the price level?

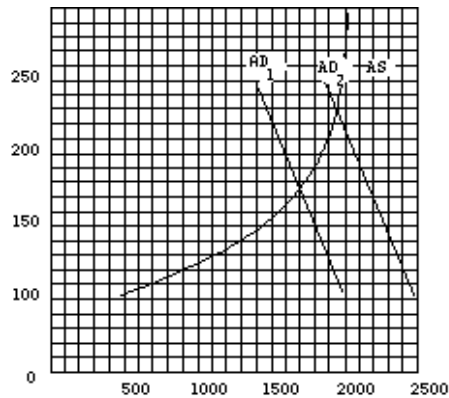
The multiplier effect is weakened with price level changes. In the vertical range of aggregate supply, an increase in aggregate demand only produces an increase in the price level but no increase in real output. In the intermediate range, the increase in aggregate demand raises the price level and real output, but real output does not increase by as much as it would have if there had been no price level increase (as would be the case in the horizontal range). The conclusion is that the more the price level increases, the less effect any increase in aggregate demand will have in increasing real GDP.

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25. In the table below are aggregate demand and supply schedules.

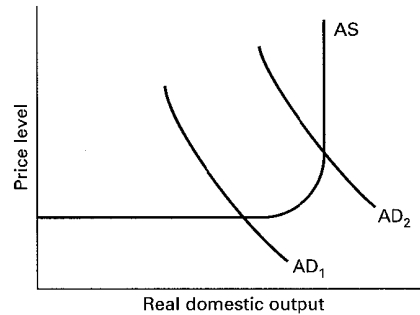
Price level	Real domestic output		
	<u>Demanded</u>	<u>Supplied</u>	
(1)	(2)	(3)	(4)
250	1,400	1,900	2,000
225	1,500	2,000	2,000
200	1,600	2,100	1,900
175	1,700	2,200	1,700
150	1,800	2,300	1,400
125	1,900	2,400	1,000
100	2,000	2,500	500

- (a) On the graph below, plot the aggregate demand curve shown in columns (1) and (2) in the above table, and label this curve AD₁.
 - (b) On the graph below, plot the aggregate supply curve shown in columns (1) and (4) in the above table; and label this curve AS.
 - (c) What is the level of equilibrium real domestic output and price level?
 - (d) Now assume that aggregate demand changes. Use columns (1) and (3) to plot the new aggregate demand curve; and label this curve AD₂.
 - (e) What is the new level of equilibrium real domestic output and price level?
- (a) *See below graph.*
 - (b) *See below graph.*
 - (c) 1,700; 175
 - (d) *See below graph.*
 - (e) 2,000; 225 [text: E pp.214-218; MA pp. 214-218]

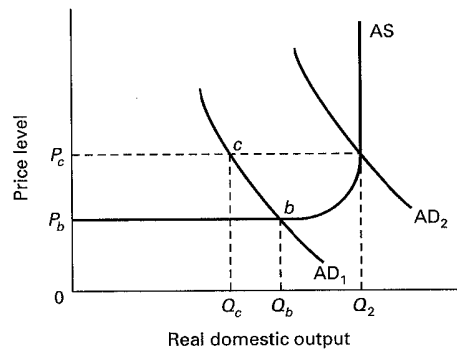


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26. In the below diagram assume that the aggregate demand curve shifts from AD_1 in year 1 to AD_2 in year 2, only to fall back to AD_1 in year 3.



- (a) Explain what will happen to equilibrium price and quantity from year 1 to year 2.
- (b) Locate the new equilibrium position in year 3 on the assumption that prices and wages are completely flexible downward. Label this position, P_b and Q_b for price and quantity of output respectively.
- (c) Locate the new equilibrium position in year 3 on the assumption that prices and wages are completely inflexible downward. Label this position, P_c and Q_c for price and quantity of output respectively.
- (a) Equilibrium price and quantity will rise from P_b to P_c and Q_b to Q_2 .
- (b) See below graph.
- (c) See below graph. [text: E pp. 216-218; MA pp. 216-218]



29. Explain “cost-push” inflation using aggregate demand-aggregate supply analysis.

“Cost-push” inflation using the AD-AS analysis could be explained by a leftward shift in the aggregate supply curve. If aggregate supply decreases in this manner, it will intersect the aggregate demand curve at a lower real GDP and a higher price level since the aggregate demand curve is downward sloping. This view suggests that prices might rise even if aggregate demand has not increased. The more traditional view has been that inflation is caused by increases in aggregate demand at or near the full-employment level of GDP.

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31. Suppose an economic advisor to the President recommended a personal income tax increase when the economy was operating in the intermediate range of the aggregate supply curve. Indicate the expected effects on aggregate demand and on aggregate supply.

The advisor would recommend this in hopes of dampening consumer demand and lessening demand-pull inflation. This should happen as consumers find themselves with less disposable income. However, at the same time there may be some less desirable effects on aggregate supply. For example, workers might demand higher wages to compensate for the higher taxes. Higher taxes may cause lessened work incentives which could cause a decline in productivity and, therefore, a rise in production costs. In other words, while raising personal taxes seems to be a correct policy for dampening demand and demand-pull inflation, it may have an offsetting effect on supply which could cause cost-push inflation.