MACROECONOMICS: UNIT IX

AGGREGATE SUPPLY AGGREGATE DEMAND

In the previous chapters, we discussed GDP and its determinants, the effects of unemployment and inflation on GDP, as well as how the economy is affected when GDP increases or decreases. What we haven't done yet is graph the aggregate economy, and because it is difficult to separate economists from their graphs, this chapter focuses on just that.

Similar to the supply/demand graph in microeconomics, the axes for the main macroeconomic graph – called the **Aggregate Supply/Aggregate Demand** graph, or AS/AD – reference price and quantity. However, because the AS/AD graph represents all goods and services produced in the entire economy (hence the name "aggregate" which means "total") rather than one particular market (as in micro), the labels for the axes are a bit different.

Micro Vocabulary	Macro Vocabulary
Price or P	Price Level or PL
Quantity or Q	Real GDP (or National Output or National Income). Remember the circular flow diagram. These measurements should be equal to each other.
Supply or S	Aggregate Supply or AS
Demand or D	Aggregate Demand or AD

The graph looks similar to a micro supply/demand graph, with upward-sloping supply and downward-sloping demand curves, as shown on the following page. The reasons for the slopes of the curves are different however. (The causes for the downward slope of the micro demand curve were explained in Unit III).

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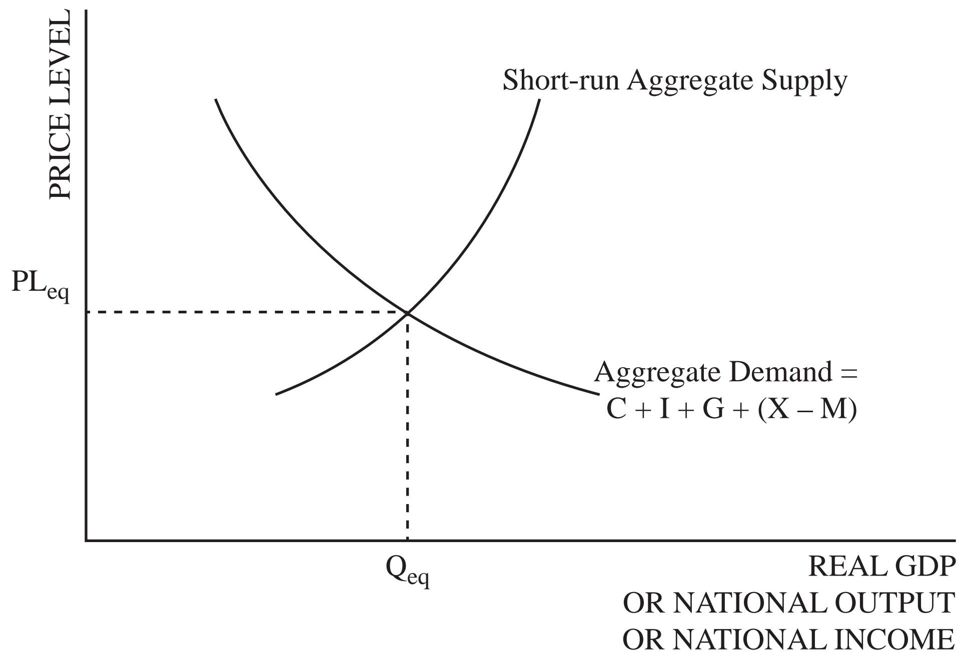

The key point for both micro and macro demand curves is the same: there is an inverse relationship between the vertical axis and the horizontal axis. When prices or overall price levels are low, the quantities consumed increase and vice versa. For both macro and micro supply curves, quantity produced increases as the opportunity for increased revenues grows. Thus, both micro and macro supply curves have a direct relationship between P (or PL) and Q (or output). The chart below summarizes this.

	Micro	**Macro**
Upward Slope of Supply Curve	Law of Supply: Low prices represent low marginal costs and low opportunity costs; high prices represent high opportunity and marginal costs.	Higher prices for goods and services make output more profitable, enabling businesses to expand their production; lower prices discourage production.
Downward Slope of Demand Curve	Law of Demand: Income effect rate Substitution effect Diminishing marginal utility	Interest rate effect Wealth effect Foreign purchases effect

The Downward-sloping Macro Demand Curve

The **wealth effect** (or **"real balances" effect**) is assumed to occur when people feel as if they have more money. For example, "Every $1 increase in stock prices raises consumer spending by 3 cents to 5 cents," according to calculations by Joseph Gagnon, a former Federal Reserve official. So if the market value of the Standard & Poor's 500 Stock Index is currently $13.9 trillion, and it increased 10 percent, consumer spending would rise $40 billion to $70 billion.[1] Rising housing prices can have the same effect.

[1] As quoted in "Fed Aims For 'Wealth Effect' To Revive The Economy" by the Associated Press, National Public Radio, September 14, 2012.

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The **interest rate effect** says that when interest rates change due to a change in the price level, the cost of borrowing money to purchase capital (the investment component of AD) is affected, as are interest-rate sensitive consumption purchases such as cars and appliances. Thus, when interest rates rise, consumption and investment fall, and vice versa.

The **foreign purchases effect** states that our economy is sensitive to price changes worldwide. When the price level in the United States rises relative to the price level in other countries (that is, when the same goods are more expensive in the U.S. than they are overseas), Americans will substitute cheaper foreign goods for more expensive American goods. Likewise, foreigners will import fewer of our goods. Net exports fall, and quantity of overall goods purchased decreases.

Determinants of AS and AD

The determinants that cause the curves to shift are unique to macro. Remember that aggregate demand is the sum of consumption spending, investment spending, government spending and net foreign purchases (or, AD = C + I + G + [X – M]). Anything that affects one of those components will shift the curve.

Determinants of Aggregate Demand	How do they work?
Changes in Consumer Spending (C)	
Consumer wealth	When consumers have more money, they tend to purchase more goods and services (and vice versa).
Consumer expectations	When consumers expect that the economy will grow in the future, they tend to purchase more goods and services (and vice versa).
Consumer indebtedness	When consumers own less debt (owe less money), they tend to purchase more goods and services (and vice versa).
Taxes	When consumers pay less of their income in taxes (their disposable income increases), they tend to purchase more goods and services (and vice versa).
Changes in Investment (I)	
Interest rates (i)	When interest rates are low, the cost of borrowing is low. Businesses tend to purchase more capital, and investment increases (and vice versa).
Profit expectations	When businesses expect that profits will be positive, they tend to purchase more capital, and investment increases (and vice versa).

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Business taxes	When business taxes are low, businesses have more money to re-invest in their companies. Businesses tend to purchase more capital, and investment increases (and vice versa).
Technology	Technology helps increase productivity, which increases profit opportunities for businesses. Businesses tend to purchase more capital, and investment increases (and vice versa).
Amount of excess capacity	When aggregate demand is straining a country's current production capabilities (production lines are running around the clock, for example), businesses expand in order to keep up with demand. Businesses tend to purchase more capital, and investment increases (and vice versa).
Changes in Government Spending (G)	If government spending increases, the amount of goods and services purchased in an economy increases (and vice versa).
Changes in Foreign Trade (X – M)	
National income abroad	When the income of consumers overseas increases, they tend to import more goods and services produced in the U.S. Thus our exports rise (and vice versa).
Exchange rates	When the dollar depreciates relative to other currencies, consumers overseas tend to import more of our goods and services produced in the U.S. Thus our exports rise (and vice versa).

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Aggregate supply reflects the output of all the producers in an economy. Their production is affected by a number of determinants.

Determinants of Aggregate Supply	How do they work?
Changes in Input Prices	
Domestic resource availability	Falling domestic input prices often lead to increases in AS as businesses have the confidence to increase production (and vice versa).
Prices of imported resources	Falling foreign input prices often lead to increases in AS as businesses have the confidence to increase production (and vice versa).
Market power	The ability to avoid the costs of competition often leads to increases in AS as businesses have the confidence to increase production (and vice versa).
Changes in productivity	An increase in the productivity of workers (say, through increased training or added technology) often leads to increases in AS as businesses increase production (and vice versa).
Changes in the legal environment	Legislation that favors property rights, for example, often leads to increases in AS as businesses have the confidence to increase production (and vice versa).
Government regulations	Fewer government regulations mean lower production costs, which often leads to increases in AS as businesses have the confidence to increase production (and vice versa).
Business taxes/subsidies	When business taxes are low and/or subsidies rise, AS increases because businesses have the confidence to increase production (and vice versa).

Demand and Supply Shocks

Occasionally events occur that are not predicted by the regular movement of AS and AD as outlined by the determinants listed above. A war or a recession overseas, a natural disaster, or a collapse of a housing price bubble all have unexpected impacts on the macroeconomy. Examples of these shocks and their effects are listed in the following chart.

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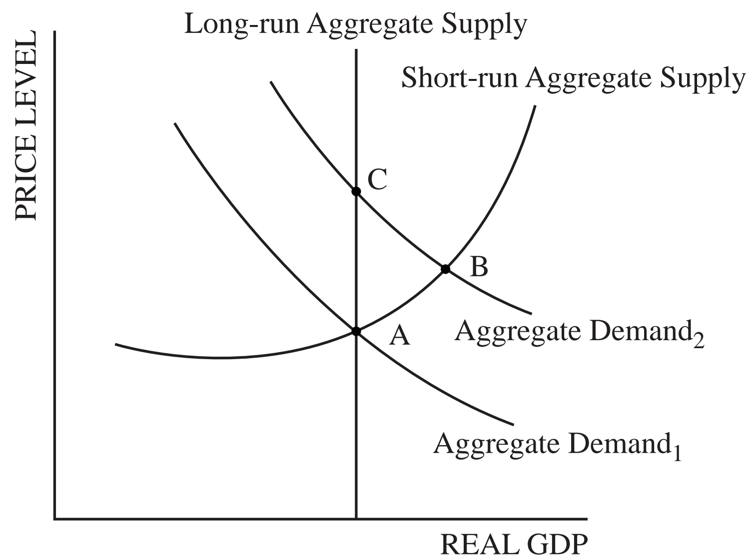
Questions 12-14 refer to the graph below:



12. In the graph above, expansionary fiscal policy would be demonstrated by a movement from

    (A) point B to point C.
    (B) point C to point B.
    (C) point C to point A.
    (D) point B to point A.
    (E) point A to point B.

13. In the graph above, contractionary monetary policy would be demonstrated by a movement from

    (A) point B to point A.
    (B) point A to point B.
    (C) point C to point A.
    (D) point C to point B.
    (E) point B to point C.

14. In the graph above, if the economy is presently operating at point B, in the absence of any fiscal or monetary policy action, we could conclude that

    (A) point B is the short-run equilibrium and long-run equilibrium will be established at point B.
    (B) point B is the short-run equilibrium and long-run equilibrium will be established at point A.
    (C) point B is the short-run equilibrium and long-run equilibrium will be established at point C.
    (D) point C is the short-run equilibrium and long-run equilibrium will be established at point C.
    (E) point A is the short-run equilibrium and long-run equilibrium will be established at point B.

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15. Which of the following will decrease aggregate demand?

    (A) an increase in government spending
    (B) an increase in business optimism
    (C) an increase in the price level
    (D) an increase in taxes
    (E) a decrease in taxes

16. In the country of Econostan, an island nation previously closed to contact with the rest of the world, the citizens tend to spend 80 percent of any increase in income. Based on this information, if a traveler from outside were to visit and spend $10,000 on a newly produced product, the GDP of Econostan could increase by a maximum of

    (A) $5,000
    (B) $9,000
    (C) $10,000
    (D) $45,000
    (E) $50,000

17. A simultaneous and equally sized tax decrease and spending decrease by the federal government would have which of the following effects?

    (A) increase the price level and increase real output
    (B) increase the price level and decrease real output
    (C) decrease the price level and decrease real output
    (D) decrease the price level and increase real output
    (E) have no effect on the price level or real output

18. An outward shift (to the right) on a production possibility curve would be most closely synonymous with a (an)

    (A) increase in long-run aggregate supply.
    (B) decrease in long-run aggregate supply.
    (C) increase in aggregate demand.
    (D) decrease in aggregate demand.
    (E) decrease in the capacity utilization rate.

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19. A series of natural disasters like fires, floods, and earthquakes in the short-run could cause

    (A) demand shocks and inflation.
    (B) supply shocks and inflation.
    (C) demand shocks and deflation.
    (D) supply shocks and deflation.
    (E) demand shocks and stagflation.

20. A commonly cited shortcoming of the effectiveness of fiscal policy is that

    (A) the interest rate effect and the foreign purchases effect tend to support the policy action.
    (B) the interest rate effect and the foreign purchases effect tend to run counter to the policy action.
    (C) the interest rate effect runs counter to the policy and the foreign purchases effect tends to support the policy action.
    (D) the interest rate effect supports the policy and the foreign purchases effect runs counter to the policy action.
    (E) time lags that exist between implementation and effect are uncertain and varied.

21. Based on the findings of the Council of Economic Advisors, the complex multiplier is

    (A) greater than the simple spending multiplier.
    (B) less than the simple spending multiplier.
    (C) equal to the simple spending multiplier.
    (D) equal to the reserve requirement.
    (E) equal to the simple money multiplier.

22. Cost-push inflation is caused by

    (A) an increase in aggregate demand and an increase in aggregate supply.
    (B) a decrease in aggregate demand only.
    (C) an increase in aggregate supply only.
    (D) a decrease in aggregate supply only.
    (E) a decrease in aggregate demand and an increase in aggregate supply.

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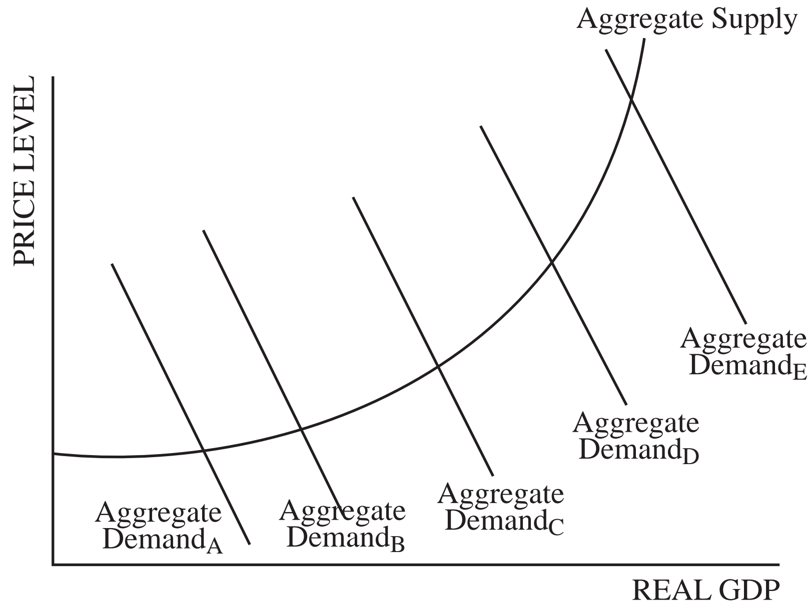
23. In the graph below, the intersection of which of the aggregate demand curves with the existing aggregate supply curve demonstrates an economy in the most severe recession?



(A) A
(B) B
(C) C
(D) D
(E) E

24. Which of the following represents a valid potential limitation of the effectiveness of fiscal policy and monetary policy respectively?

(A) crowding out; a weak link between interest rate changes and investment changes
(B) a weak link between interest rate changes and investment changes; crowding out
(C) the inability of Congress to decide on the correct fiscal policy to use; the inability of the Federal Reserve to decide on the correct monetary policy to use
(D) crowding out; crowding in
(E) crowding in; crowding out

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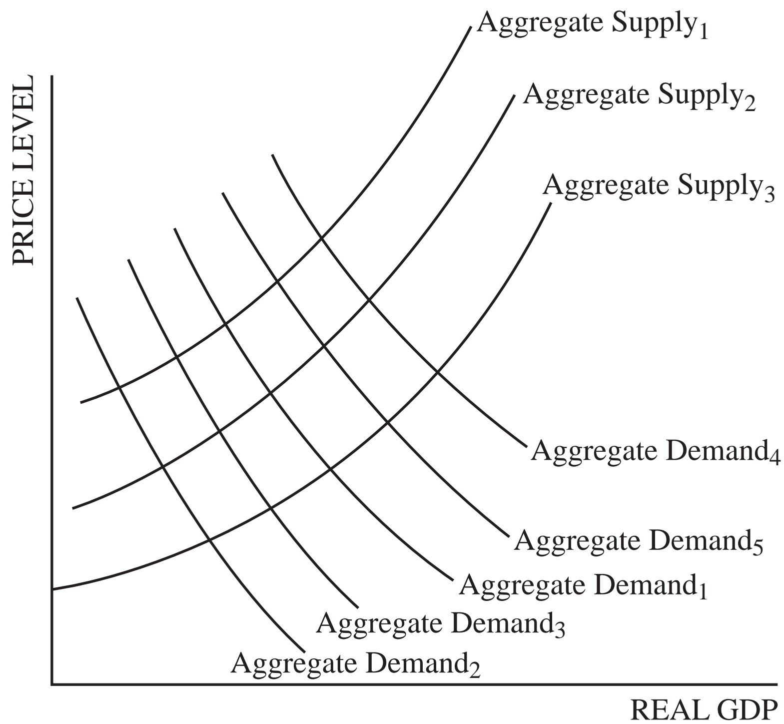
25. In the graph below, crowding out is demonstrated by which of the following shifts?



(A) Aggregate Demand_1 to Aggregate Demand_4 to Aggregate Demand_5
(B) Aggregate Demand_1 to Aggregate Demand_5 to Aggregate Demand_4
(C) Aggregate Demand_1 to Aggregate Demand_2 to Aggregate Demand_3
(D) Aggregate Demand_1 to Aggregate Demand_3 to Aggregate Demand_2
(E) Aggregate Supply_1 to Aggregate Supply_2 to Aggregate Supply_3

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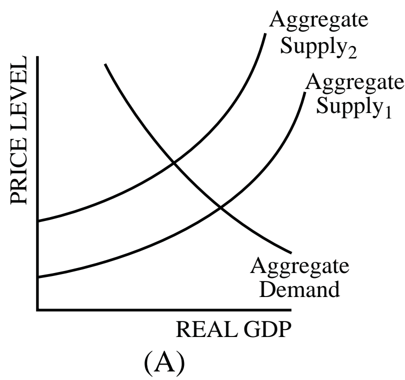
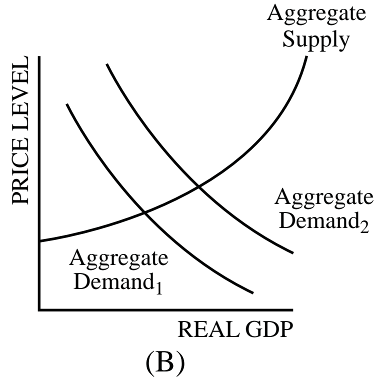
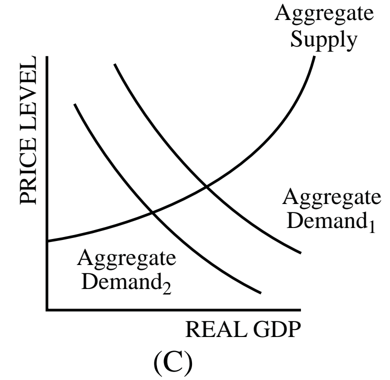
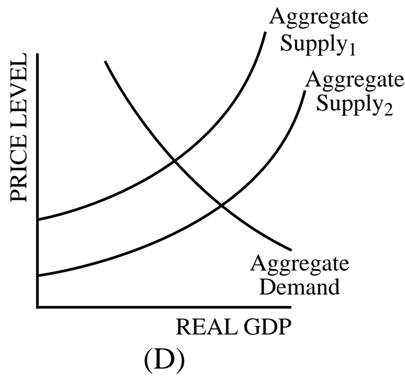
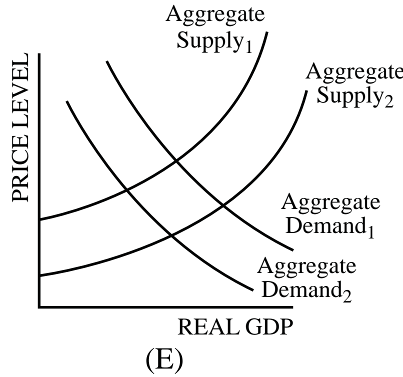
26. The effect of a simultaneous decrease in government spending and a decrease in the money supply would be correctly shown in which of the graphs below?











(A) A
(B) B
(C) C
(D) D
(E) E

27. The long-run aggregate supply curve is most similar to the

(A) Phillips curve.
(B) Laffer curve.
(C) aggregate demand curve.
(D) production possibilities curve.
(E) investment demand curve.

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28. Which of the following correctly sums up the difference between the classical and Keynesian views of macroeconomic stability?

    (A) The classical view is that the economy is inherently unstable and needs active counter-cyclical policies to provide stability, while the Keynesian view is that the best course of action is to allow market forces (through flexible wages and prices) to correct for any short-term economic fluctuations.
    (B) The Keynesian view is that the economy is inherently unstable and needs active counter-cyclical policies to provide stability, while the classical view is that the best course of action is to allow market forces (through flexible wages and prices) to correct for any short-term economic fluctuations.
    (C) The Keynesian view favors the active use of fiscal policy to correct for short-term economic fluctuations in the economy, while the classical view favors the active use of monetary policy to correct for short-term economic fluctuations in the economy.
    (D) Both the Keynesian and classical views support the idea that the economy is inherently unstable and needs active counter-cyclical policies to provide economic stability.
    (E) Both the Keynesian and classical views support the idea that the best course of action is to allow market forces (through flexible wages and prices) to correct for any short-term economic fluctuations.

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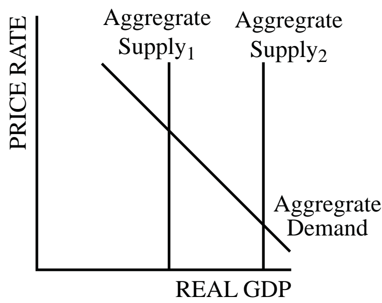
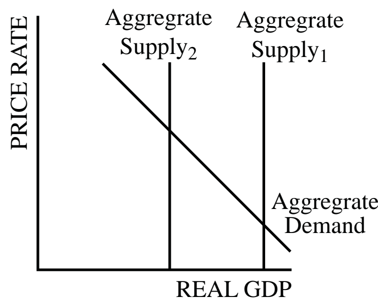
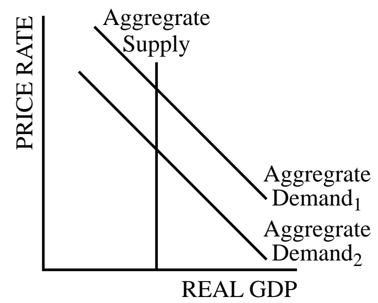
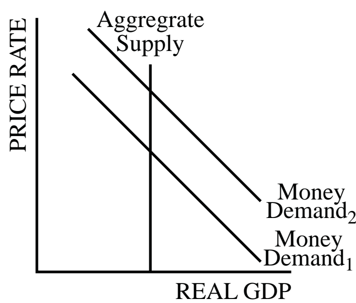
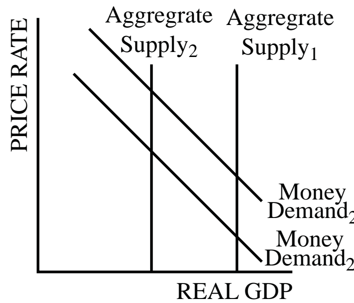
29. Which of the graphs below demonstrates an economy experiencing long-run economic growth?











(A) A
(B) B
(C) C
(D) D
(E) E

30. The concept of crowding out (or crowding in) is generally regarded as a limitation of the effectiveness of

(A) fiscal policy only.
(B) monetary policy only.
(C) both fiscal and monetary policy.
(D) incomes policy.
(E) open-market operations.

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FREE-RESPONSE QUESTIONS

1. Assume the following figures represent the existing condition in the U.S. economy:

Unemployment rate	6%
Inflation rate	6%
Annual rate of real GDP growth	3%

(a) Is the economy facing any economic problems as described by the data above? Explain.
(b) Draw an aggregate supply and aggregate demand diagram to demonstrate the effect of the federal government instituting a massive new tax increase on consumers and businesses in the economy described above.
(c) Describe the effect of the Federal Reserve decreasing the money supply on each of the following:
(i) interest rate
(ii) the level of output
(iii) the level of unemployment
(iv) the price level

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2. Draw a correctly labeled short-run Phillips curve and then redraw the curve to demonstrate the effect of each of the following:

   (a) a leftward shift of the aggregate demand curve
   (b) a rightward shift of the aggregate supply curve

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3. Draw a correctly labeled loanable funds graph and then redraw the curve to demonstrate each of the following:

   (a) an increase in deficit spending by the federal government
   (b) an increased desire on the part of consumers to save for their retirement

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