

- Macroeconomic policy involves combinations of fiscal and monetary policies.
- The inside lag is the amount of time it takes policy makers to recognize the economic situation and take action. The outside or impact lag is the amount of time it takes the economy to respond to the policy changes. The inside lag is long for fiscal policy and short for monetary policy. The outside lag is very short for fiscal policy and variable for monetary policy.
- Crowding-out is the effect on investment and consumption spending of an increase in interest rates caused by increased borrowing by the federal government. The higher interest rates crowd out business and consumer borrowing.
- A Phillips curve illustrates the trade-off between inflation and unemployment. The trade-off differs in the short and long run, varies at different times and is often different for increases and decreases in output.
- The short-run Phillips curve shows a trade-off between the inflation rate and the unemployment rate.
- The long-run Phillips curve is vertical.
- Both monetary and fiscal policies are primarily aggregate demand policies, but not all of the macroeconomic problems in the economy are aggregate demand problems.
- If factors other than excess aggregate demand are contributing to inflation, it is difficult for monetary policy to control inflation.
- The Barro-Ricardo effect is the possibility that government deficits will lead to an increase in private savings and a decrease in consumption, thus offsetting the effects of expansionary fiscal policy.
- Economic growth is concerned with increasing an economy's total productive capacity at full employment or its natural rate of output. This output is represented by a vertical long-run aggregate supply curve.
- Economic growth can be shown graphically as a rightward shift of a nation's long-run aggregate supply curve or a rightward shift of its production possibilities curve.
- Short-run economic growth is usually measured by changes in real gross domestic product or by changes in real GDP per capita.
- The rate of economic growth is affected by a variety of aggregate supply and aggregate demand factors.
- Different economic theories are only one reason why economists disagree. Other reasons are different assumptions, different values, different interpretations about economic history and different ideas about policy lags.

Monetary and Fiscal Policy

Part A

Tools of Monetary and Fiscal Policy

Both monetary and fiscal policy can be used to influence the inflation rate and real output. Indicate what effect each specific policy has on inflation and real output in the short run (nine to 18 months).



Figure 43.1

Monetary Policy	Inflation	Real Output
1. (A) Buy government securities		
(B) Sell government securities		
2. (A) Decrease the discount rate		
(B) Increase the discount rate		
3. (A) Decrease reserve requirement		
(B) Increase reserve requirement		

Fiscal Policy	Inflation	Real Output
4. (A) Increase government spending		
(B) Decrease government spending		
5. (A) Increase taxes		
(B) Decrease taxes		

Part B

Lags in Policy Making

As the economic situation changes, policy makers must decide when to take action and which policy action to take. Then they must implement the policy. The economy then responds to the policy. The amount of time it takes policy makers to recognize and take action is called the *inside lag*. The amount of time it takes the economy to respond to the policy changes is called the *outside* or *impact lag*. The inside lag is estimated to be short for monetary policy but long for fiscal policy. The inside lag is long for fiscal policy because the legislative branch must come to agreement about the appropriate action. The outside lag, however, is long and variable for monetary policy but very short for fiscal policy.

6. Explain why the inside lag can be short for monetary policy but the outside lag is long and variable.

Activity written by Rae Jean B. Goodman, U.S. Naval Academy, Annapolis, Md.

7. Explain why the outside lag is short for fiscal policy.

8. Explain why lags are important to the discussion of stabilization policy.

Crowding-Out: A Graphical Representation

Monetary policy and fiscal policy do not exist in separate airtight compartments. Monetary policy and fiscal policy can reinforce or accommodate each other, or they can work at cross-purposes. This activity assumes no changes in the foreign exchange rate, imports or exports.

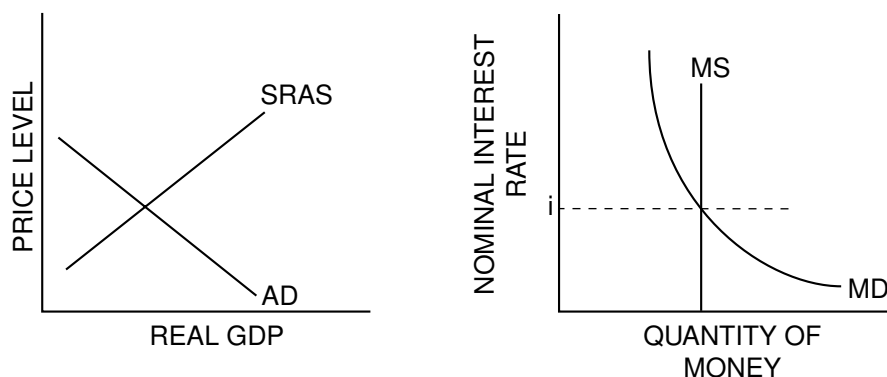
For example, an expansionary fiscal policy will increase aggregate demand. The expansionary fiscal policy should also increase the demand for money. If the Fed does not increase the money supply, interest rates will rise. Because the government is borrowing money to finance its expansionary fiscal policy, consumers and businesses will be crowded-out of the financial markets. This could lower consumer and investment spending and slow down the economic expansion. On the other hand, if the Fed increases the money supply, interest rates should not rise as much. Of course, increasing the money supply will increase the price level further.

Part A Using Aggregate Demand and Aggregate Supply Analysis



Figure 44.1

Crowding-Out Using Aggregate Demand and Aggregate Supply Analysis



1. Assume fiscal policy is expansionary and monetary policy keeps the stock of money constant at MS. Shift one curve in each graph to illustrate the effect of the fiscal policy.
 - (A) Which curve did you shift in the short-run aggregate demand and aggregate supply graph? What happens as a result of this new curve?
 - (B) In the money market graph, which curve did you shift to demonstrate the effect of the fiscal policy? What happens as a result of this shift?

Adapted from Phillip Saunders, *Introduction to Macroeconomics: Student Workbook*, 18th ed. (Bloomington, Ind., 1998). Copyright 1998 Phillip Saunders. All rights reserved. Activity revised by Rae Jean B. Goodman, U.S. Naval Academy, Annapolis, Md.

(C) Given the change in interest rates, what happens in the short-run aggregate supply and aggregate demand graph?

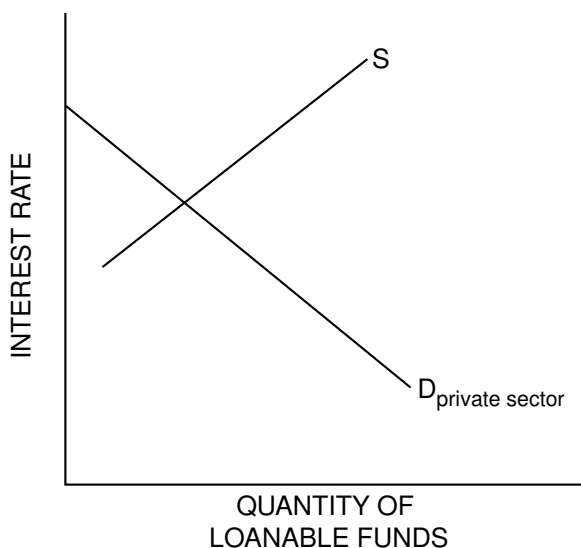
(D) How could a monetary policy action prevent the changes in interest rates and output you identified in (B) and (C)? Shift a curve in the money market graph, and explain how this shift would reduce crowding-out.

Part B

Using the Loanable Funds Market

The loanable funds market provides another approach to looking at the effects of increases in the budget deficit. The *demand* for funds in the loanable funds market comes from the private sector (business investment and consumer borrowing), the government sector (budget deficits) and the foreign sector. The *supply* of funds in the loanable funds market comes from private savings (businesses and households), the government sector (budget surpluses), the Federal Reserve (money supply) and the foreign sector.

* Figure 44.2
Loanable Funds Market



2. Shift one of the curves on Figure 44.2 to indicate what occurs in the loanable funds market if government spending increases without any increases in tax revenue or the money supply.

(A) What happens to the interest rate as a result of this expansionary fiscal policy? Explain.

(B) Indicate on the graph the new quantity of private demand for loanable funds.

(C) An accommodating monetary policy could prevent the effects you described in (A) and (B). Shift a curve in the diagram to show how the accommodating monetary policy would counteract the effects of crowding-out. Explain what would happen to interest rates and the level of private demand for loanable funds as a result of this new curve.

Part C Applications

3. Indicate whether you agree (A), disagree (D) or are uncertain (U) about the truth of the following statement and explain your reasoning. “Exhaustion of excess bank reserves inevitably puts a ceiling on every business boom because without money the boom cannot continue.”

Answer the questions that follow each of the scenarios below.

4. The Federal Reserve Open Market Committee wishes to accommodate or reinforce a contractionary fiscal policy.
 - (A) Would the Fed buy bonds, sell bonds or neither?
 - (B) What effect would this policy have on bond prices and interest rates?
 - (C) What effect would this policy have on bank reserves and the money supply?
 - (D) What effect would this policy have on the quantity of loanable funds demanded by the private sector?
 - (E) What effect would the change in interest rates you identified in (B) have on aggregate demand?

5. The Federal Reserve Open Market Committee wishes to accommodate or reinforce an expansionary fiscal policy.
 - (A) Would the Fed buy bonds, sell bonds or neither?
 - (B) What effect would this policy have on bond prices and interest rates?
 - (C) What effect would this policy have on bank reserves and the money supply?
 - (D) What effect would this policy have on the quantity of loanable funds demanded by the private sector?
 - (E) What effect would the change in interest rates you identified in (B) have on aggregate demand?

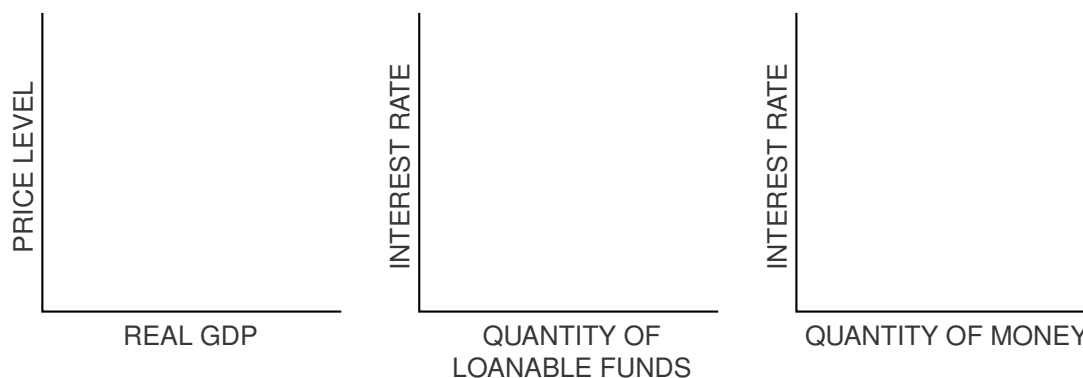
Graphing Monetary and Fiscal Policy Interactions

Illustrate the short-run effects for each monetary and fiscal policy combination using aggregate demand and supply curves, the money market and the loanable funds market. Once again, assume that there are no changes in the foreign sector. Circle the appropriate symbols (↑ for increase, ↓ for decrease, and ? for uncertain), and explain the effect of the policies on real GDP, the price level, unemployment, interest rates and investment.

- The unemployment rate is 10 percent, and the CPI is increasing at a 2 percent rate. The federal government cuts personal income taxes and increases its spending. The Fed buys bonds on the open market.



Figure 45.1
Expansionary Monetary and Fiscal Policy



(A) Real GDP	↑	↓	?	Explain.
(B) The price level	↑	↓	?	Explain.
(C) Unemployment	↑	↓	?	Explain.

Activity written by John Morton, National Council on Economic Education, New York, N.Y., with modifications by Rae Jean B. Goodman, U.S. Naval Academy, Annapolis, Md.

(D) Interest rates ↑ ↓ ? Explain.

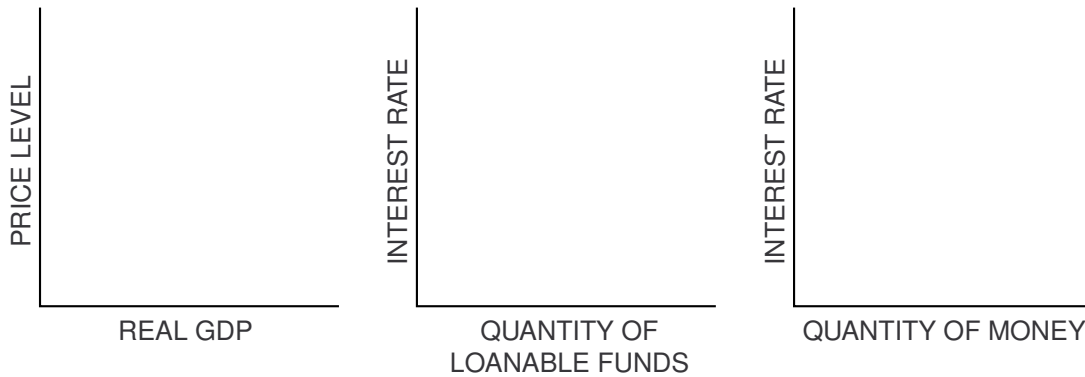
(E) Investment ↑ ↓ ? Explain.

- The unemployment rate is 6 percent, and the CPI is increasing at a 9 percent rate. The federal government raises personal income taxes and cuts spending. The Federal Reserve sells bonds on the open market.



Figure 45.2

Contractionary Monetary and Fiscal Policy



(A) Real GDP ↑ ↓ ? Explain.

(B) The price level ↑ ↓ ? Explain.

(C) Unemployment ↑ ↓ ? Explain.

(D) Interest rates ↑ ↓ ? Explain..

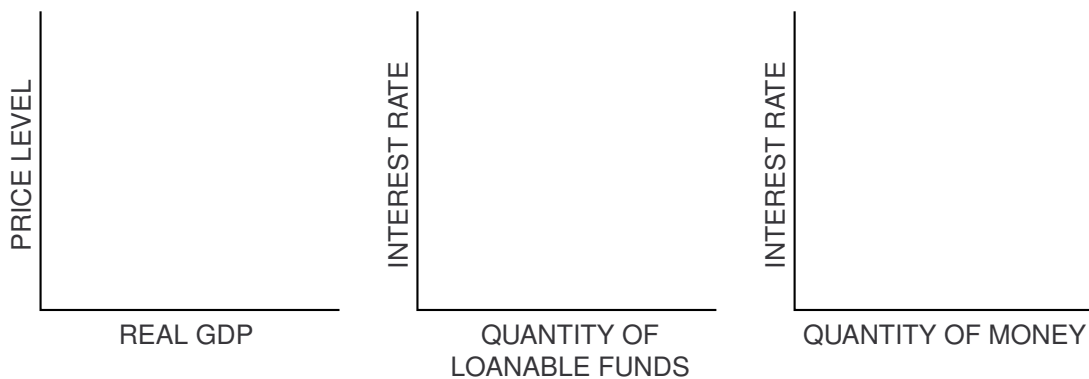
(E) Investment ↑ ↓ ? Explain.

3. The unemployment rate is 6 percent, and the CPI is increasing at a 5 percent rate. The federal government cuts personal-income taxes and maintains current spending. The Fed sells bonds on the open market.



Figure 45.3

Contractionary Monetary Policy and Expansionary Fiscal Policy



(A) Real GDP ↑ ↓ ? Explain.

(B) The price level ↑ ↓ ? Explain.

(C) Unemployment ↑ ↓ ? Explain.


(D) Interest rates ↑ ↓ ? Explain.

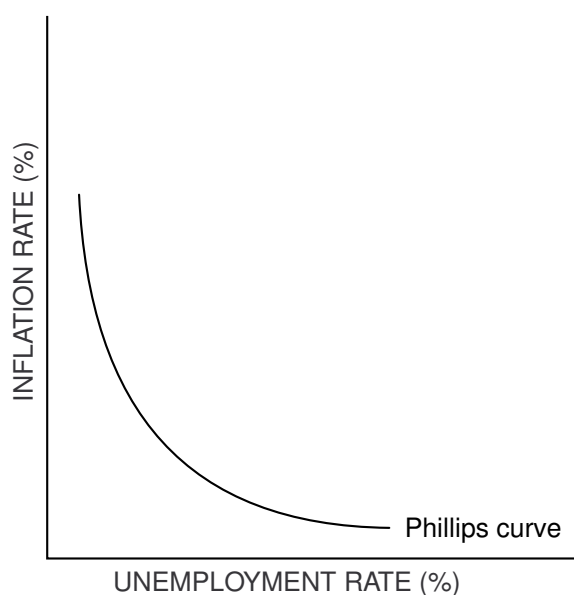
(E) Investment ↑ ↓ ? Explain.

Short-Run Phillips Curve

A.W. Phillips studied the historical relationship between the rate of change in wages and the unemployment rate in the United Kingdom. In 1958 he published his findings, showing an inverse relationship between these variables. In following studies, other economists found that the inverse relationship held when a change in the level of prices (inflation) was used in place of the rate of change in wages. In other words, when inflation increased, the unemployment rate decreased; and when inflation decreased, the unemployment rate increased. A graphic representation of this trade-off became known as the *Phillips curve*.

In Figure 46.1, an example of the Phillips curve illustrates the trade-off between inflation and unemployment, or all of the different possible combinations of inflation and unemployment that exist along the curve.

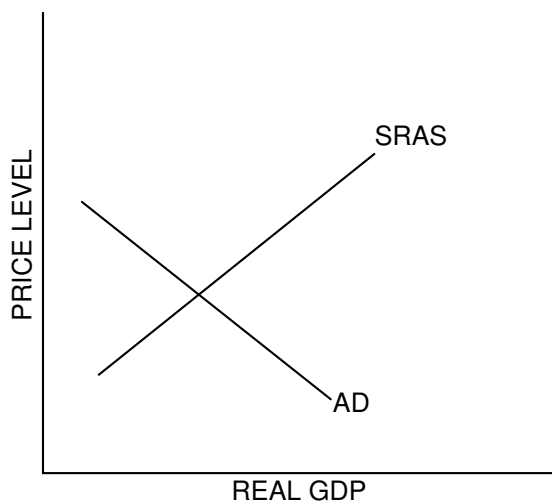
 Figure 46.1
Phillips Curve



The economy of the 1960s appeared to support Phillips' hypothesis. The economy was sluggish, inflation was low and the unemployment rate was high. Since the unemployment rate was higher than the natural rate of unemployment, the economy was not operating at its potential GDP. The Phillips curve suggested to some economists that if policy makers wished to lower unemployment, the trade-off would be higher inflation.

1. Suppose government policy makers want to increase GDP because the economy is not operating at its potential. They can increase aggregate demand by increasing government spending, lowering taxes or a combination of both. Using an AD and SRAS model, draw a new AD curve that will represent the change caused by government policy designed to increase real GDP.

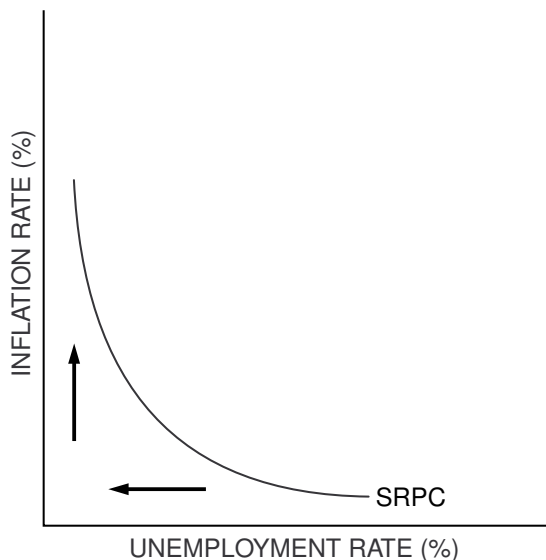
* Figure 46.2
Expansionary Fiscal Policy



- (A) What happens to the price level in the short run? _____
- (B) What happens to real GDP in the short run? _____
- (C) What happens to the rate of unemployment in the short run? _____
- (D) The Federal Reserve can use monetary policy to try to stimulate the economy. It can encourage bank lending by _____ bonds on the open market, _____ the discount rate and/or _____ the reserve requirements.

A Phillips curve would tell the same story. Inflation is low at high levels of unemployment, but inflation begins to increase as the unemployment rate decreases. The Phillips curve is useful for analyzing short-run movements of unemployment and inflation. See Figure 46.3.

✱ Figure 46.3
Short-Run Phillips Curve



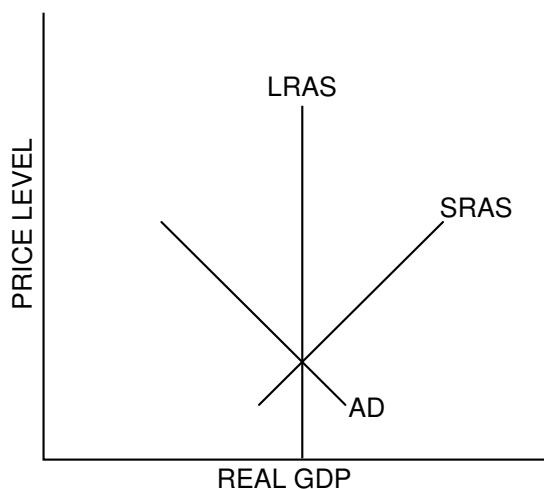
In the late 1960s, some economists such as Milton Friedman and Edmund Phelps published papers that concluded there were two Phillips curves: one for the short run and one for the long run. The controversy continued as the economy of the 1970s experienced high inflation and high unemployment at the same time. The relationship appeared to be less stable than previously thought; the short-run Phillips curve had shifted to the right.

✱ Figure 46.4
Short-Run Phillips Curve
During the 1960s and 1970s




2. Aggregate supply shocks resulting from the oil embargo imposed by Middle Eastern countries (OPEC) and worldwide crop failures helped to bring about higher inflation and higher unemployment rates. The economy, with rising prices and decreased output, was in a state of *stagflation*. Using an AD and SRAS model, draw a new SRAS curve that will represent the change caused by the OPEC oil embargo.

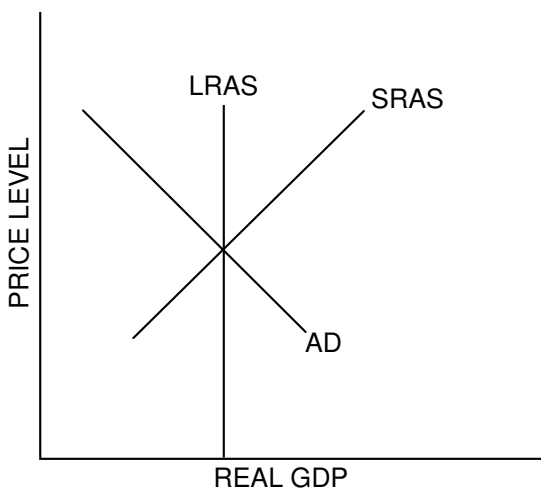
* Figure 46.5
Effects of Oil Embargo



- (A) In the short run, based on the new SRAS,
- what happens to the price level? _____
 - what happens to real GDP? _____
 - what happens to the rate of unemployment? _____
- (B) As the economy moves to the long run,
- what happens to the wage rate?
 - what happens to the price level?
 - what happens to real GDP?
 - what happens to the rate of unemployment?

3. Use the AD and SRAS model in Figure 46.6 to show the appropriate policy response to the oil-price increases in the following instances. Be sure to show on the graph the effects of the oil-price increase.
 - (A) If unemployment were the main concern of policy makers
 - (B) If inflation were the main concern of policy makers
 - (C) If inflation and unemployment were of equal concern

 **Figure 46.6**
Policy Response to Oil Embargo



Economic Growth and the Determinants of Productive Capacity

The limit of an economy's ability to produce real goods and services is set by the quantity and quality of its basic productive resources and technology. At any given moment, an economy's total productive capacity may be fixed, but over time an economy can increase (or decrease) its capacity to produce real goods and services by increasing (or decreasing) the quantity and/or the quality of its productive resources.

An economy's productive resources can be classified in several different ways. Some of our resources are physical or tangible: things that we can see, count, weigh or measure. Other resources that are useful in the production process are intangible. Intangible resources are more difficult to identify and measure, but no less important than tangible resources.

At any given time, an economy's productive capacity is determined by the quantity and quality of its

- **Human Resources:** labor resources, but not all labor is equal. Different people have different skills, based on their investment in *human capital*. Human capital (education and skill level) and entrepreneurship are difficult to measure.
- **Natural Resources:** the gifts of nature that are useful in producing goods and services. There are fixed, exhaustible and renewable natural resources.
- **Capital Goods:** the plant, equipment and machinery needed to make other goods and services
- **Technological Progress:** when production becomes more efficient, producing more output without using any more inputs: additional capital or labor
- **Public Policy:** the basic social, economic, legal and political values and institutions supported by a society that either aid or hinder efficient markets and the production of goods and services

In practice, economic growth is usually measured by changes in real GDP or, better still, changes in real GDP per capita: gross domestic product per person adjusted for changes in prices. The rate of economic growth is the average annual percentage change in real GDP per capita. Economists use real GDP per capita to measure living standards across time and between countries.

To summarize, economic growth occurs because an economy experiences technical progress, increased investments in physical capital and increased investments in human capital. In the most fundamental sense, economic growth is concerned with increasing an economy's total productive capacity at full employment.

Adapted from Phillip Saunders, *Introduction to Macroeconomics: Student Workbook*, 18th ed. (Bloomington, Ind., 1998). Copyright 1998 Phillip Saunders. All rights reserved. Activity revised by Elaine McBeth, College of William and Mary, Williamsburg, Va.

Part A
Measuring Economic Growth in Hamilton County and Jefferson County

* Figure 47.1

Year	Hamilton Real GDP	Hamilton Population	Jefferson Real GDP	Jefferson Population
1	\$2.1 billion	70,000	\$500,000	15
2	2.5 billion	80,000	525,000	16
3	2.8 billion	90,000	600,000	17
4	2.7 billion	86,000	650,000	18

1. Using Figure 47.1 as a reference, fill out the tables in Figures 47.2, 47.3 and 47.4.

* Figure 47.2

Time period	Hamilton % Change in Real GDP	Jefferson % Change in Real GDP
From Year 1 to Year 2		
From Year 2 to Year 3		
From Year 3 to Year 4		

* Figure 47.3

Year	Hamilton Per Capita Real GDP	Jefferson Per Capita Real GDP
1		
2		
3		
4		

* Figure 47.4

Time period	Hamilton % Change in Per Capita Real GDP	Jefferson % Change in Per Capita Real GDP
From Year 1 to Year 2		
From Year 2 to Year 3		
From Year 3 to Year 4		

2. When did Hamilton County experience the largest growth in real GDP? _____
In per capita real GDP? _____
Are these growth rates different? Explain.
3. When did Jefferson County experience the largest growth in real GDP? _____
In per capita real GDP? _____
Are these growth rates different? Explain.
4. The residents of Hamilton County believe they live in a wealthier community than small rural Jefferson County. Based on these numbers, do they? Explain.

Part B

Analyzing the Reasons for Economic Growth

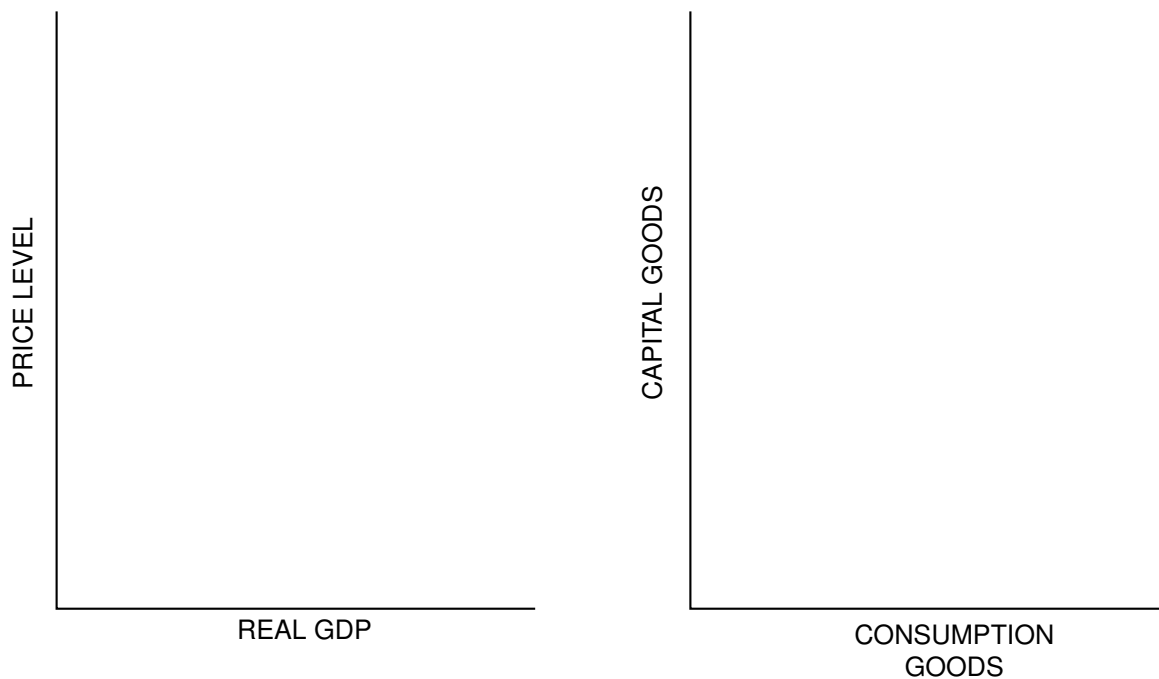
Economic growth can be illustrated by a rightward shift of the long-run aggregate supply curve or a shift outward of the production possibilities curve of consumption goods vs. capital goods.

5. Draw a graph that includes AD, SRAS and LRAS and then draw a graph of a PPC.



Figure 47.5

**Relationship Between LRAS and PPC:
Increased Investment in Education**



(A) On each graph you drew, show the effect of an increased investment in education that makes the work force more productive. Explain your reasoning.

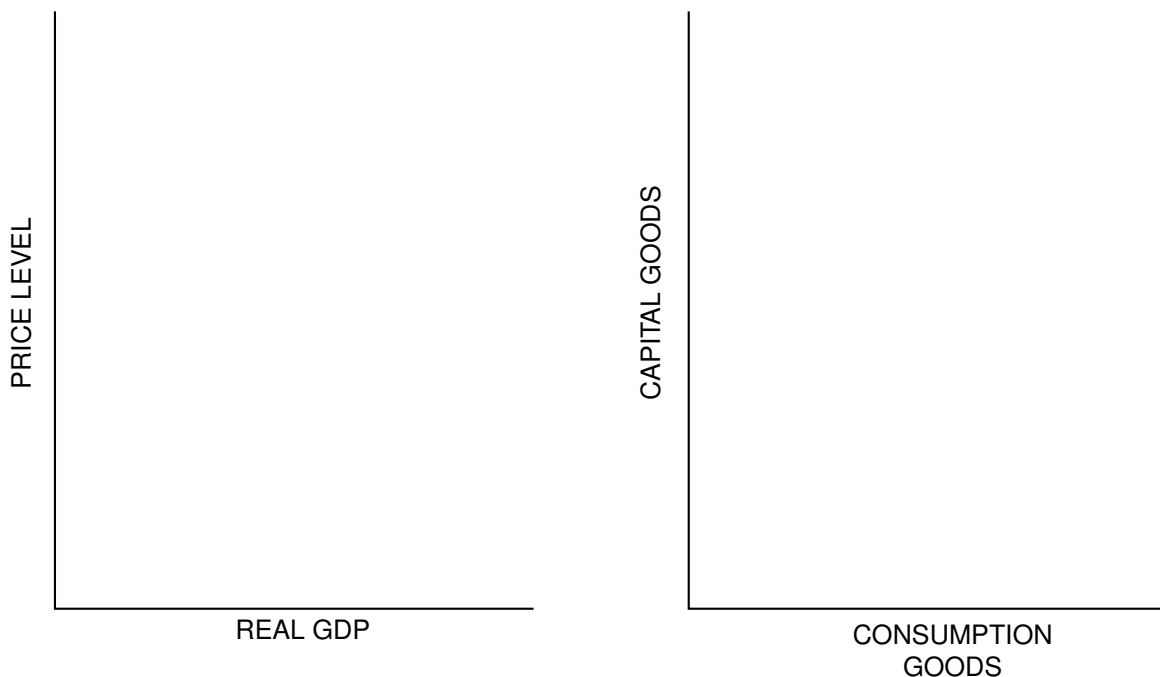
(B) Of the five factors that affect economic growth, which factor is increased by this investment in education?

6. Explain how fewer government regulations will affect economic growth. Cite an example to support your explanation. Show the effect of fewer government regulations on the graphs in Figure 47.6.



Figure 47.6

**Relationship Between LRAS and PPC:
Fewer Government Regulations**



7. Briefly explain how the following policies will affect economic growth and why.
- (A) Higher taxes on businesses

- (B) Improvements in technology

- (C) Less savings by people who want to enjoy the good life

- (D) Higher productivity of labor because of improved management styles

- (E) Lower interest rates

Why Economists Disagree

Part A

Understanding the Reasons Why Economists Disagree

It is not unusual to find “experts” disagreeing with each other. Experts disagree about all sorts of matters: nuclear power, environmental protection and who will win the Super Bowl. Why do experts disagree? How can the average person make sense out of the differing viewpoints and recommendations? Here are several important factors that often lead economists to different conclusions.

■ **Different Time Periods**

One economist might state that the current policy of the government will lead to inflation. Another might disagree. Both could be right if they are talking about the effects of the policy on inflation at different times — for example, six months from now compared with two years from now.

■ **Different Assumptions**

Because an economy is a complex system, it is often hard to predict the effects of a particular policy or event. Therefore, to be able to make predictions, economists usually must make certain assumptions. But economists often differ in their assumptions. For example, one economist might assume that the federal budget deficit will become larger next year. Another might not. These different assumptions could be the result of their assumptions about economic growth, tax revenue and government spending.

■ **Different Economic Theories**

Economists agree on many matters such as, “If the price of beef goes up and nothing else changes, people will buy less beef.” This is a prediction with which nearly all economists would agree because it rests on the generally accepted law of demand. However, economists have yet to settle a number of important questions, especially those concerning macroeconomics. Macroeconomics deals with the behavior of the economy as a whole or large subdivisions of it, and how to influence this behavior. Economists have several different theories or explanations about what influences macroeconomic behavior. Until these theories are reconciled or until one of them is widely agreed on as best, economists will disagree on macroeconomic questions because the economists are using different theories. The same applies to certain microeconomic questions.

■ **Different Values**

Economics is concerned with explaining what is happening in the economy. It is also concerned with predictions. The economist should be able to say to the president or to Congress, “If you follow Policy One, then X, Y and Z will happen. If you follow Policy Two, then Q, R and S will happen. Pick the policy that gives the results you like better.” In practice, such statements by economists often contain more than just analysis and a prediction about results. Their statements often recommend policies they like because the results agree with their own values — in other words, the results they prefer. For

From *Master Curriculum Guide in Economics: Teaching Strategies for High School Economics Courses* (New York: National Council on Economic Education, 1985), p. 158. Modified by John Morton, National Council on Economic Education, New York, N.Y.

example, some economists will recommend Policy One because X, Y and Z will happen and they favor achieving X, Y and Z. Other economists will recommend Policy Two because they favor achieving results Q, R and S. Such disagreements are basically about which outcomes the economists prefer. The economic policies they recommend are determined by their preferred outcomes.

Part B

Listening in on a Discussion of Economists

Four distinguished professors of economics are discussing current economic policy at a luncheon press conference attended by leading reporters of business news. Let's listen in.

Professor T.X. Cut: Let's separate issues. On the fiscal policy side, this administration's budget proposal is not extravagant or inflationary. The tax cuts are partly balanced by spending cuts. With so many people still unemployed and many factories still closed, a policy of this kind cannot rekindle inflation. The tax cuts will stimulate consumer spending, work effort and business investment in an economy just emerging from a recession. We must let people keep the fruits of their labor and sustain savings as incentives to produce and invest more. The spending cuts will prevent government from continuing to receive an ever-increasing piece of the nation's economic pie.

Professor U.R. Nutts: Excuse me, Dr. Cut. But that position makes little sense. First of all, let me say that this administration's tax cuts and spending cuts have been and are grossly unfair. The tax cuts have favored the rich, and the spending cuts have reduced programs that help maintain economic security for Americans with low incomes. The present deficit — and the deficits projected for the future — are so large that they threaten our recovery from the recession. Here's why: All deficits must be paid for by government borrowing, and because the government is borrowing so much money, there is less available for consumers and businesses. With government borrowing now threatening to increase, interest rates will rise and this will reduce spending for houses and cars and, in fact, spending on anything bought with a loan, as well as business investment that must be financed by borrowing. In other words, some important private borrowing will be crowded-out. Sometime next year, the recovery will therefore weaken, and we'll move back into recession. Taxes should be raised, especially on the wealthy, and at least some government programs that help low-income people should be restored to the original funding levels.

Professor E.Z. Money: Let me just comment, U.R., on your point about federal spending and borrowing crowding-out private consumer spending and business investment. This is where monetary policy comes in. The Federal Reserve must continue to allow relatively free expansion of money and credit. If the Fed makes more money available, there will be less pressure for interest rates to rise. We'll be able to sustain the recovery in housing, autos and other sectors. And businesses will be able to get loans for investments at affordable interest rates. Continuing our economic growth by sustaining this recovery is the most important task we have before us. Increasing taxes now would only reduce total spending and thus threaten the recovery.

Professor Fred Critic: Excuse me, Dr. Money. You forget that the expansion of the money supply we're currently witnessing is part of a long history of bungling by the monetary policy makers. Our most recent recession was brought on by the Fed's jamming on the monetary brakes by an abrupt reduction in the increase of the money supply in order to bring inflation under control. They

overdid it, as they always do, and produced a recession. Now, they're overdoing it in the other direction: stepping on the monetary accelerator and increasing the money supply too rapidly. This will stimulate the economy all right, but in a year or two these actions will rekindle inflation. The Fed then will again jam on the monetary brakes and produce yet another recession. Everyone knows this. Interest rates right now are higher than they should be because everyone expects more inflation later. Only moderate growth in the money supply can bring interest rates down in the long run. The only way to get back on a long-term, stable economic growth path is to reduce money growth to a steady, predictable, noninflationary level.

Ladies and gentlemen, that's all the time we have. Let's give our distinguished panel a round of applause.

Part C

Analyzing Disagreements Among Economists

Economists disagree for the following reasons:

- Because they evaluate the impact of policy over different lengths of time.
- Because they make different assumptions.
- Because they have different theories about how the economy works.
- Because they have different values and ideas about which economic goals are most important.

Now analyze each professor's comments in Part B, using the format on the next two pages.

Professor T.X. Cut

Major point:

Time period:

Assumptions:

Theoretical support:

Values:

Professor U.R. Nutts

Major point:

Time period:

Assumptions:

Theoretical support:

Values:

Professor E.Z. Money

Major point:

Time period:

Assumptions:

Theoretical support:

Values:

Professor Fred Critic

Major point:

Time period:

Assumptions:

Theoretical support:

Values:

- People and nations trade to improve their standard of living.
- Because trade is the voluntary exchange of goods and services, the decision to trade will occur only if both parties to the exchange expect to gain from it.
- Voluntary trade promotes economic progress because it allows people and nations to specialize in what they do best.
- The law of comparative advantage explains why there are mutual gains from specialization and trade. Through specialization and trade, nations are able to get beyond, or outside of, their production possibilities curve.
- A nation has an absolute advantage over another nation in the production of a good when it can produce more of that good using the same amount of resources.
- Comparative advantage occurs when a nation can produce a good at a lower opportunity cost than another nation. Relative costs determine comparative advantage.
- Every nation has a comparative advantage in some good or service.
- Trade barriers such as tariffs and quotas limit the potential gains from trade. These barriers generally protect domestic sellers at the expense of domestic buyers. Trade barriers reduce efficiency in the allocation of scarce resources and slow economic progress.
- The balance of payments is a broader measure of international transactions than the balance of trade. The balance of trade considers only a nation's exports and imports of goods, while the balance of payments considers all international economic transactions including the current account, the capital account and official reserves.
- There are three accounts within the balance of payments. The current account records a nation's exports and imports of goods, services, net investment income and net transfers. The capital account records the flows of money from the purchase and sale of real and financial assets domestically and abroad. The official transactions account is an offsetting account for government controls.
- For the current and capital accounts, if foreign currency is used to complete the international transaction, the transaction is a debit (negative). If the transaction earns foreign currency, it is a credit (positive).
- To trade, nations must exchange currencies. An exchange rate is the price of one currency in terms of another and is generally set by supply and demand.
- Appreciation is an increase in the value of a nation's currency in foreign-exchange markets. Appreciation of a nation's currency tends to reduce exports and increase imports.
- Depreciation is a decrease in the value of a nation's currency in foreign-exchange markets. Depreciation of a nation's currency tends to increase exports and reduce imports.
- Monetary and fiscal policies can affect exchange rates, the international balance of trade and the balance of payments.
- Domestic economic policies affect international trade, and international trade affects the domestic economy, influencing economic growth, unemployment and the rate of inflation.

Determining Comparative Advantage

Nations trade on the basis of comparative advantage, but how do we determine who has a comparative advantage? To do this, we need to calculate each country's or person's opportunity costs for both activities. The way we calculate opportunity cost depends crucially on how the productivity data are expressed.

There are two ways to measure productivity: We can calculate output over a given period of time, or we can measure it by the amount of inputs (usually time) necessary to do an activity. Examples of output are tons per acre, miles per gallon, words per minute, apples per tree and televisions produced per hour. Examples of input are number of hours to do a job, number of gallons of paint to paint a house, number of acres to feed a horse and number of pitches to throw a strike. We are going to work through two examples that measure productivity differently.

Part A

Productivity Measures and Example Problems

Output Method

	Tons Produced per Hour	
	Fish (A)	Cheese (B)
Ted	60	25
Nancy	45	40

For Ted, the opportunity cost of producing fish in terms of cheese is $60 \text{ fish} = 25 \text{ cheese}$; therefore $1 \text{ fish} = \frac{5}{12} \text{ cheese}$. On the other hand, $1 \text{ cheese} = \frac{12}{5} \text{ fish}$. Similarly we can calculate the opportunity costs for Nancy. We summarize the opportunity cost information in the table below.

	Opportunity Cost (B / A)	Opportunity Cost (A / B)
	Fish	Cheese
Ted	$\frac{5}{12}$ (0.42) cheese	$\frac{12}{5}$ (2.4) fish
Nancy	$\frac{8}{9}$ (0.89) cheese	$\frac{9}{8}$ (1.125) fish

Ted should produce fish because his opportunity cost in terms of cheese is less than Nancy's opportunity cost. Nancy should produce cheese because her opportunity cost in terms of fish is less than Ted's opportunity cost to produce cheese. Ted producing fish and Nancy producing cheese yields the *most* fish and cheese per hour of any combination of production.

Activity written by Jim Charkins, California State University, San Bernardino, Calif. Activity adapted by Jerry De Young, Riverbank High School, Riverbank, Calif., and Ike Brannon, Joint Economic Committee, U.S. Senate, Washington, D.C.

Input Method

	Acres Required to Produce One Bushel	
	Apples (A)	Pears (B)
Tony	5	2
Chris	6	3

For the input method, the opportunity cost of producing one apple in terms of pears requires that we initially convert the input (acres) into output. For Tony, 5 acres = 1 apple; therefore, 1 acre = $\frac{1}{5}$ apple. Also 2 acres = 1 pear; therefore, 1 acre = $\frac{1}{2}$ pear. Now you can use the same method as for the output method: $\frac{1}{5}$ apple = $\frac{1}{2}$ pear; therefore 1 apple = $\frac{2}{5}$ pear. Likewise 1 pear = $\frac{5}{2}$ apple. We summarize the opportunity costs in the following table.

	Opportunity Cost (B / A)	Opportunity Cost (A / B)
	Apples	Pears
Tony	$\frac{5}{2}$ (2.5) pears	$\frac{2}{5}$ (0.40) apples
Chris	$\frac{6}{3}$ (2) pears	$\frac{3}{6}$ (0.50) apples

Tony has the comparative advantage in producing pears. To produce one bushel of pears, Tony must give up 0.40 bushels of apples, whereas Chris has to give up half (0.50) of a bushel of apples. Thus, the opportunity cost of a bushel of pears is lower for Tony than for Chris, and so Tony should produce pears. Conversely, Chris should produce apples because he has the lower opportunity cost in terms of forgone bushels of pears.

Part B

Practice Problems

First decide whether the problem is an output or input problem; underline *output* or *input*. Then in the space below the table, calculate the opportunity cost of each product and indicate the product with the lower opportunity cost for each person, firm or country. The first one is completed for you.

1. Anna and Barry can grow the following amounts of potatoes and cabbage with the same amount of labor. Type of problem: (output / input)

	Potatoes	Cabbage
Anna	100	200
Barry	120	150

For Anna, the opportunity cost of one potato is two cabbages; for Barry, the opportunity cost of one potato is 1.25 cabbages. Barry has to give up fewer cabbages than does Anna to grow one potato. Thus, the opportunity cost of potatoes is lower for Barry than for Anna, so Barry should grow potatoes. Conversely, to grow one cabbage, Anna must give up one-half potato and Barry must give up 0.80 potato. Thus, the opportunity cost of growing cabbages is lower for Anna than it is for Barry, so Anna should grow cabbages.

2. Number caught per day. Type of problem: (*output / input*)

	Deer	Antelope
Henry	4	6
John	24	12

3. Days to produce one unit of each. Type of problem: (*output / input*)

	Cars	Planes
XYZ Corp.	8	10
QKFX Corp.	15	12

4. Acres to produce 100 bushels. Type of problem: (*output / input*)

	Corn	Rice
India	9	3
China	8	2

5. To produce the following from one ton of olives. Type of problem: (*output / input*)

	Cans of Olives	Bottles of Olive Oil
Zaire	60	10
Colombia	24	8

6. Why should a person, firm or country produce the product that has the lower opportunity cost and trade for the other product?

Economic Efficiency and Gains from Trade

The following comparative advantage problems illustrate how two nations can trade even if one is more efficient at producing both products. The country that is more efficient in the production of a good is the country that can produce the good with the least input. In other words, if the United States can produce a ton of oats in three hours and Scotland can produce a ton of oats in four hours, the United States is more efficient in the production of oats. In the language of economics, the United States would have an *absolute advantage* in the production of oats.

A nation has a *comparative advantage* in the good in which it has the lower opportunity cost. The nation should specialize in the good for which it has the lower opportunity cost and trade for the good for which the other country has the lower opportunity cost. A nation with an absolute advantage in the production of both goods will have a comparative advantage in the production of only one of these goods.

Terms of trade is the exchange rate between two commodities, for example, two bananas for 30 grapes. The *gains from trade* are the additional amount of commodities a country has after specialization and trade in comparison with the combination before specialization and trade. For example, a country may gain five bananas relative to the total amount of bananas it had when producing only with its own resources.

Underline the correct words in parentheses and complete the questions.

1. The following table gives the number of hours it takes in the United States and Scotland, using the same amount of resources, to produce a ton of oats or one bagpipe.

	Oats	Bagpipe
United States	3 hours	2 hours
Scotland	4 hours	5 hours

- (A) (*The United States / Scotland*) has an absolute advantage in the production of oats.
- (B) (*The United States / Scotland*) has an absolute advantage in the production of bagpipes.
- (C) (*The United States / Scotland*) has a comparative advantage in the production of oats because
- (D) (*The United States / Scotland*) has a comparative advantage in the production of bagpipes because
- (E) Based only on the data above and comparative advantage considerations, the United States should specialize in (*oats / bagpipes*).
- (F) Based only on the data above and comparative advantage considerations, Scotland should specialize in (*oats / bagpipes*).
- (G) Why will both Scotland and the United States be better off if they specialize and trade?
- (H) Suppose that Scotland and the United States agree to specialize according to comparative advantage and to the following terms of trade: 1 ton of oats for 1 bagpipe. In a production period there are 60 hours, and before specialization Scotland produced 7.5 tons of oats and six bagpipes. After specialization and trade with the United States, Scotland wants to maintain the six bagpipes. How many tons of oats will it have? What are its gains from trade?

2. The following table gives the number of hours it takes in the United States and Canada, using the same amount of resources, to produce a ton of wheat or one bolt of cloth.

	Wheat	Cloth
United States	1 hour	2 hours
Canada	3 hours	4 hours

- (A) (*The United States / Canada*) has an absolute advantage in the production of wheat.
- (B) (*The United States / Canada*) has an absolute advantage in the production of cloth.
- (C) (*The United States / Canada*) has a comparative advantage in the production of wheat because
- (D) (*The United States / Canada*) has a comparative advantage in the production of cloth because
- (E) Based only on the data above and comparative advantage considerations, the United States should specialize in (*wheat / cloth*).
- (F) Based only on the data above and comparative advantage considerations, Canada should specialize in (*wheat / cloth*).
- (G) Why will both Canada and the United States be better off if they specialize and trade?
- (H) Suppose that Canada and the United States agree to specialize according to comparative advantage and to the following terms of trade: three tons of wheat for two bolts of cloth. In a production period, there are 60 hours; and before specialization, Canada produced nine tons of wheat and 8.25 bolts of cloth. After specialization and trade with the United States, Canada wants to maintain the nine tons of wheat for each production period. How many bolts of cloth will it have? What are its gains from trade?

3. The following table gives the number of hours it takes in the United States and Japan, using the same amount of resources, to produce one computer or one auto.

	Computer	Auto
United States	2 hours	5 hours
Japan	1 hour	4 hours

- (A) (*The United States / Japan*) has an absolute advantage in the production of computers.
- (B) (*The United States / Japan*) has an absolute advantage in the production of autos.
- (C) (*The United States / Japan*) has a comparative advantage in the production of computers because
- (D) (*The United States / Japan*) has a comparative advantage in the production of autos because
- (E) Based only on the data above and comparative advantage considerations, the United States should specialize in (*computers / autos*).
- (F) Based only on the data above and comparative advantage considerations, Japan should specialize in (*computers/autos*).
- (G) Why will both Japan and the United States be better off if they specialize and trade?
- (H) Suppose that Japan and the United States agree to specialize according to comparative advantage and to the following terms of trade: three computers for one auto. In a production period there are 60 hours; and before specialization, Japan produced 40 computers and five autos. After specialization and trade with the United States, Japan wants to maintain the five autos for each production period. How many computers will it have? What are its gains from trade?

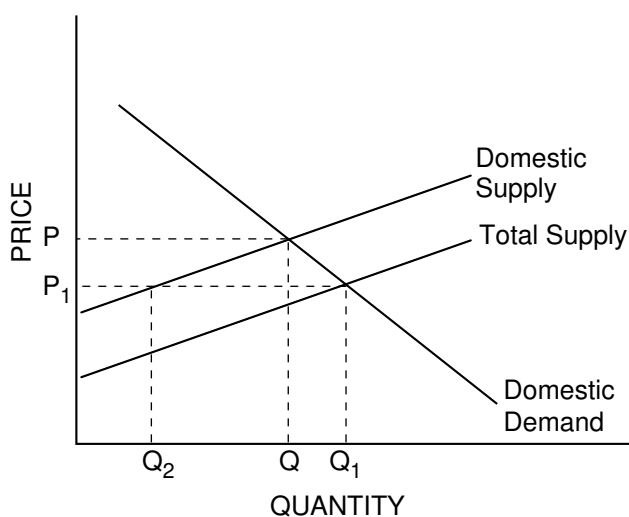
Barriers to Trade

The free trade movement started about 200 years ago. Previously, it appears that one of the goals of governments was to stifle international trade, presumably for the benefit of their own economies. Over the last 50 years, there have been efforts to reduce trade barriers, with significant success during the 1990s. Examples of these efforts include the North American Free Trade Agreement (NAFTA), the World Trade Organization (WTO), the European Union (EU) and the Asia-Pacific Economic Cooperation (APEC) forum.

We want to be able to investigate the economic effects of various barriers to trade that a nation might impose to protect domestic industries. In Figure 51.1, the demand curve represents the demand by the domestic economy for a commodity that is produced domestically and also imported. The domestic supply curve indicates what the domestic suppliers are willing and able to produce at alternative prices. If there were no international trade or a complete ban on imports, the equilibrium price would be P , and the equilibrium quantity, Q , would be produced only by domestic firms.



Figure 51.1
International Trade



If there is free international trade, the Total Supply curve represents the production by domestic and foreign producers. Domestic consumers would pay P_1 and consume Q_1 : They are able to consume more of the commodity at a lower price. Also, at P_1 , domestic firms are producing Q_2 and foreign producers are producing $(Q_1 - Q_2)$. Thus, domestic firms are producing less under free trade than they would if the nation did not import the commodity.

Activity written by Rae Jean B. Goodman, U.S. Naval Academy, Annapolis, Md.


Part A
Quotas

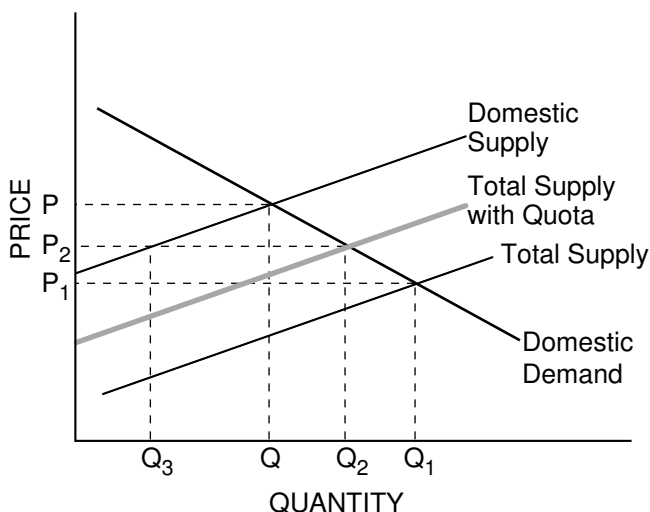
Instead of permitting free trade or imposing a complete ban, a nation may decide to set a quota to limit the number of imports. Import quotas are sometimes referred to as *voluntary export restraints* (VERs) because the two countries have agreed that the exporting nation will not export more than a certain amount.

We can see the effect of an import quota by looking at Figure 51.2. Here the domestic price would be P and the quantity would be Q if there were a complete import ban. If there were free trade, the price would be P_1 and the quantity demanded by domestic consumers would be Q_1 .

Notice that under free trade, the entire market is supplied by foreign producers as the market is drawn in Figure 51.2. This does not have to be the case; it depends on the costs of the domestic industry and the domestic industry’s ability to sell at the lower price.

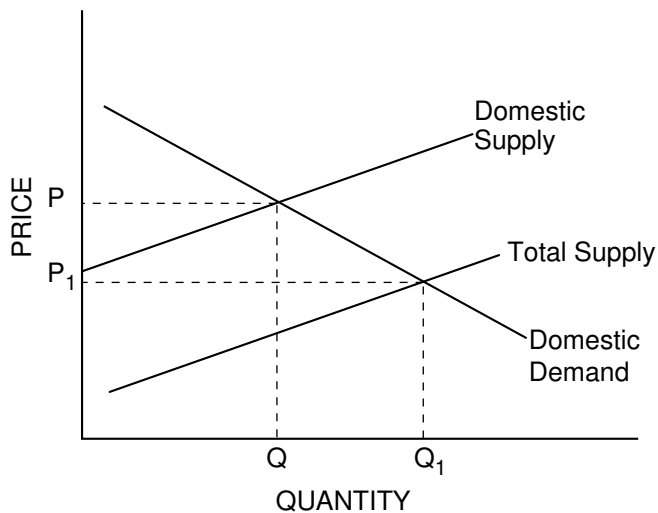
Suppose the importing nation imposes a quota, or VER, of X amount; the Total Supply with Quota curve represents the new supply curve. Total Supply with Quota is the domestic supply curve plus X amount at every price level ($X = Q_2 - Q_3$). The domestic price has risen from P_1 to P_2 , and consumers are able to purchase less of the commodity. Equilibrium quantity has decreased from Q_1 units to Q_2 units. However, domestic producers are now producing Q_3 units, and foreign producers are supplying $X = Q_2 - Q_3$.

 Figure 51.2
Effects of Import Quota



1. Use Figure 51.3 to demonstrate what will happen to the domestic price, domestic production and the amount of imports if a quota is removed. The Domestic Supply and Total Supply curves on the graph are without any barriers to trade imposed. Be sure to show on the graph the supply curve with the quota. It is not on the graph now.

* Figure 51.3
Eliminating a Quota




7. What is the primary difference between the effects of a quota and those of a tariff?
8. Suppose a country can impose either a quota that raises the domestic price to P_2 as in Figure 51.2 or a tariff that raises the domestic price to P_2 . Explain whether domestic consumers would prefer a tariff or a quota and why.

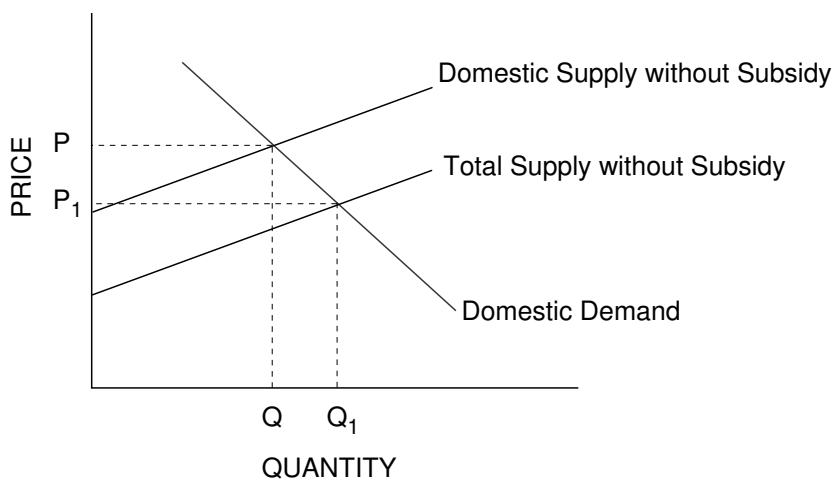
Part C

Export Subsidies

Nations may choose to assist domestic industries by providing subsidies to an industry. The subsidies would lower the costs and permit the industry to sell at a lower price. This assistance is called an *export subsidy* because the industry can now compete on the world market and export some of its product to other nations.

9. Modify Figure 51.5 to show the effects of an export subsidy on domestic producers. Indicate as P_S and Q_S the equilibrium price and quantity for domestic consumers after an export subsidy. Add two curves to the graph: a Domestic Supply with Subsidy curve and a Total Supply with Subsidy curve.

 Figure 51.5
Effects of a Subsidy



According to Figure 51.5 with your modification, what would be the equilibrium price and quantity for

- (A) a completely closed economy (no imports and no subsidy)? _____
 - (B) an open economy (completely free trade) with no export subsidy? _____
 - (C) an open economy with a domestic export subsidy? _____
10. What is the effect of an export subsidy on the equilibrium price and quantity for domestic consumers relative to the free trade equilibrium without a subsidy?
11. If an industry receives a subsidy, what will happen at the equilibrium to domestic production and the amount of imports?

Imbalance of Payments

The place is New York City. The store is McDonald's. A visitor from Japan tries to buy a Big Mac with several yen. The store refuses. McDonald's wants dollars. Somewhere, somehow, this tourist needs to exchange yen for dollars to buy lunch.

The tourist's plight is no different from the situation Boeing faces when it sells airplanes to France. Indeed, whether the product is one Big Mac or 20 airplanes, when people from different nations exchange goods, they also have to exchange currencies. And whether the goods are Big Macs or airplanes, nations like to keep track of currency transactions with other nations. They record purchases of imports, sales of exports, investments in other nations and foreign investment in the domestic country. A record of foreign transactions, called the *balance of payments*, is essential for making sense of a nation's position in the global economy.

There are three accounts within the balance of payments: *current*, *capital* and *official transactions* (or *reserve*) *accounts*. Market transactions determine the first two; the third is an offsetting account the government controls.

The current account records a nation's exports and imports of goods, services (such as travel to other countries, shipping and insurance), net investment income (U.S. earnings on investment abroad *minus* foreign earnings from capital invested in the U.S.) and net transfers (foreign aid, pensions paid to U.S. citizens living abroad and funds immigrants send to family abroad).

The capital account records the flows of money from the purchase and sale of real and financial assets domestically and abroad. A real asset might be a hotel building in Tokyo, while a financial asset might be shares of stock in a Swedish company. Foreign investors may buy similar assets in the U.S. When these real and financial assets are bought and sold, nations use or earn foreign exchange.

When classifying a transaction, consider whether a country uses (loses) or earns (gains) foreign currency. For the current and capital accounts, if the international transaction *uses* foreign currency to complete the transaction, it is a *debit* (*negative*). If it *earns* foreign currency, it is a *credit* (*positive*).

The official transactions account is a counterbalancing account: A country uses foreign assets or currency to offset a balance of payments deficit, and this is recorded as a credit (positive). Similarly, when there is a balance of payments surplus, the earned foreign currency is recorded as a debit (negative).

Part A

To make sure you understand the components of the current account, the capital account and the difference between a credit (transaction that earns foreign exchange) and a debit (transaction that uses foreign currency), identify each of the following transactions on the U.S. balance of payments. Complete Figure 52.1 by putting check marks in the appropriate boxes for credit or debit and for capital or current account. The first one has been done for you.



Figure 52.1
Transactions on the U.S. Balance of Payments

	Credit +	Debit -	Current Account	Capital Account
1. Harley Davidson USA purchases \$25 million in production machinery from a Japanese company.		✓		✓
2. André Prenoor, U.S. entrepreneur, invests \$50 million to develop a theme park in Malaysia.				
3. A Chinese company sells \$1 million worth of berets to the U.S. Army.				
4. BMW pays \$1 million to a U.S. shipper for transporting cars from Germany to the United States.				
5. Each month, Ima Grent, who recently arrived in the United States, sends half her paycheck to her sister in Poland.				
6. Bank of America pays \$5 million in interest to French depositors.				
7. Senor Ramos from Spain buys a shopping center in Florida.				
8. A Brazilian investor buys five \$10,000 U.S. Treasury bonds.				
9. German tourists spend \$3 million in the United States; U.S. tourists spend \$5 million in Germany.				
10. Brit-Disz, a London record store, spends \$10,000 on CDs by the Generic Gurls, a U.S. kiddy-pop group.				
11. Sam Boney, U.S. ice-rink magnate, buys stock in a Chilean ice-rink chain.				

Part B

We can investigate an important balance of payments identity. In the absence of any governmental or central bank intervention, *the current account balance and the capital account balance must sum to zero*. If a nation imports more than it exports (current account deficit), a surplus in the capital account must necessarily offset the deficit because, by definition, goods must either be paid for or the payment is owed. The foreign currency used to buy imports had to come from somewhere (in addition to currency earned from exports); and in this simplified situation, only a capital account surplus could supply the needed foreign currency. In other words, *the excess spending on imports must have found its way back into the United States in the form of foreign investment, a capital account credit*.

12. Analyze the data in Figure 52.2. Compute the missing figures, and answer the questions that follow.



Figure 52.2

2002 Balance of Payments, Z-Land

Current Account

Z-Land exports of goods	\$ +300	
Z-Land imports of goods	-400	
Z-Land exports of services	+150	
Z-Land imports of services	-120	
Balance of trade		_____
Net investment income	+10	
Net transfers	-14	
Balance on current account		_____

Capital Account

Z-Land capital going abroad	-110	
Foreign capital coming into Z-Land	+160	
Balance on capital account		_____

Balance on Current Account

Plus Balance on Capital Account _____

Official Reserves Account

Official reserves transactions balance _____

Total _____ **\$ 0**

13. Does Z-Land have a current account deficit or surplus? How do you know?

14. Without central bank intervention, does Z-Land carry a balance of payments surplus or deficit? How do you know?

15. If Z-Land runs a balance of payments deficit, how can this difference be made up? If it carries a balance of payment surplus, what will happen?

Exchange Rates

People, firms and nations exchange products for money and use the money to buy other products or to pay for the use of resources. Within an economy, prices are stated in the domestic currency, such as U.S. dollars or European euros. Buyers use their currency to purchase goods. International markets are different. Producers in other countries who export goods want to be paid in their own currencies so they can carry out transactions. As a result, a *foreign exchange market* develops where national currencies can be exchanged. Such markets serve the need of all international buyers and sellers. The equilibrium prices in these markets are called *exchange rates*. An exchange rate is the rate at which the currency of one nation is exchanged for the currency of another.

Figure 53.1 shows the exchange rates for selected countries for May and August of the same year.



Figure 53.1
Exchange Rates

	Cost of Foreign Currency in U.S. Dollars (U.S. dollars / foreign currency)		Cost of U.S. Dollar in Foreign Currency (foreign currency / U.S. dollars)	
	May	Aug.	May	Aug.
British pound	1.4	1.8	0.71	0.56
Canadian dollar	0.64	0.63	1.5625	1.5873
European euro	0.87	0.91	1.149	1.099
Swedish krona	0.094	0.093	10.638	10.753
Japanese yen	0.0083	0.0090	120.482	111.111
Mexican peso	0.1101	0.1502	9.083	6.658

Part A

Using the data in Figure 53.1, calculate the cost of the following products in U.S. dollars. To solve, divide the cost of the product in the foreign currency by the cost of the U.S. dollar in the foreign currency.

	May	Aug.
1. A dinner for two that costs 500 Mexican pesos		
2. A hotel room that costs 30,000 Japanese yen		
3. A BMW that costs 85,000 euros in Germany		
4. A pound of Swedish meatballs that costs 30 krona		
5. A pair of pants that costs 72 pounds in London		
6. A leather jacket that costs 1,800 Canadian dollars		

Activity written by Sarah Franklin, Plano Senior High School, Plano, Texas; Nancy Griffin and Ruth Kramp, Plano East Senior High School, Plano, Texas; and James Spellicy, Lowell High School, San Francisco, Calif.

7. Using the exchange table in Figure 53.1, calculate how much foreign tourists would have to pay in their own currency for an American meal that costs \$60.00. To solve, divide the cost in U.S. dollars by the cost of the foreign currency in U.S. dollars.

	May	Aug.
British pound		
Canadian dollar		
European euro		
Swedish krona		
Japanese yen		
Mexican peso		

8. Did the value of the dollar appreciate (strengthen) or depreciate (weaken) against the following currencies between May and August? (Put an X in the appropriate column.)

	Appreciate	Depreciate
British pound		
Canadian dollar		
European euro		
Swedish krona		
Japanese yen		
Mexican peso		

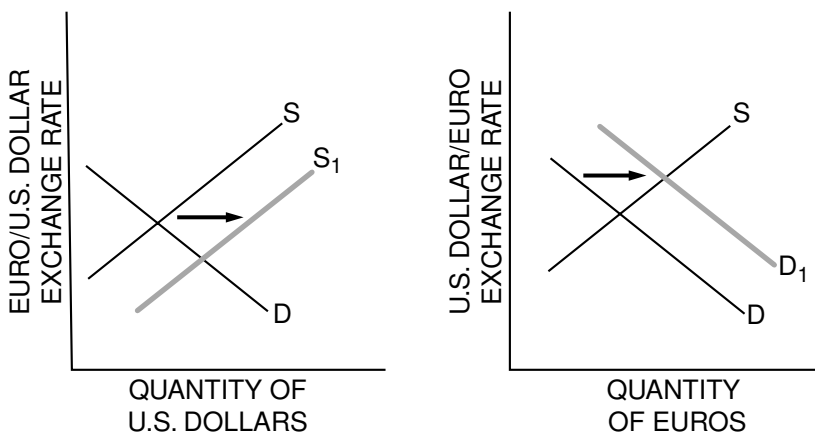
Part B

When Americans buy more foreign goods, U.S. dollars are sold in the international currency market to purchase foreign currencies that are used to pay producers in their own domestic currencies. Supply and demand graphs are used to demonstrate such transactions. If the demand for a currency increases, the currency appreciates (strengthens) in value. Currencies sold to purchase other monies depreciate (weaken) in value.

Consider the following situations. In each case, an underlying event causes a change in the supply and demand for currencies. Indicate the impact of each scenario on each currency. The first example is done for you as a model.

9. The prices of U.S. goods rise relative to the prices of German goods.

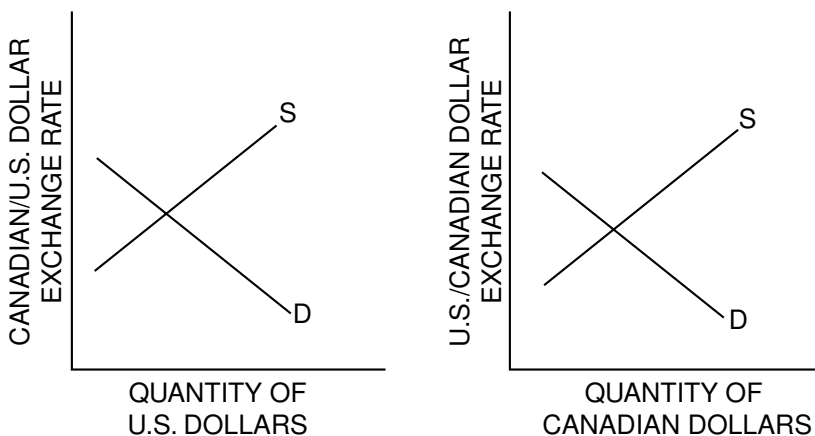
* Figure 53.2
Prices of U.S. Goods Increase



Rationale: Americans will demand less expensive German goods, thereby increasing the demand for euros and supplying more dollars to the foreign exchange market. The U.S. dollar depreciates. The euro appreciates.

10. Interest rates in the United States rise faster than interest rates in Canada.

* Figure 53.3
Interest Rates in the United States Increase



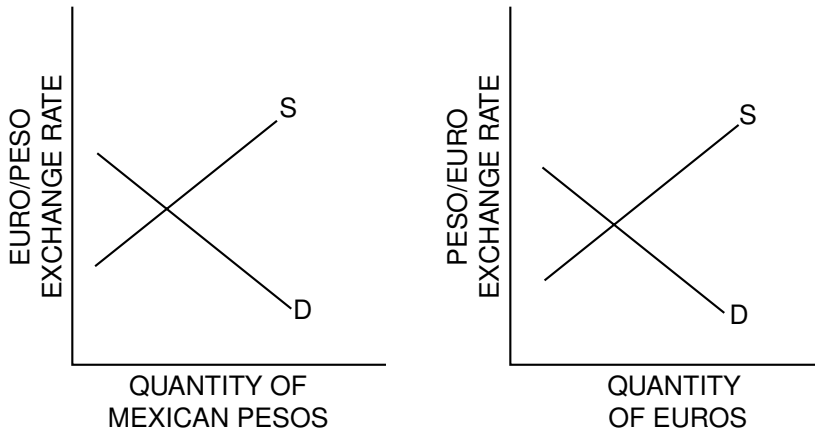
Rationale:

11. French tourists flock to Mexico's beaches.



Figure 53.4

French Tourists Visit Mexico



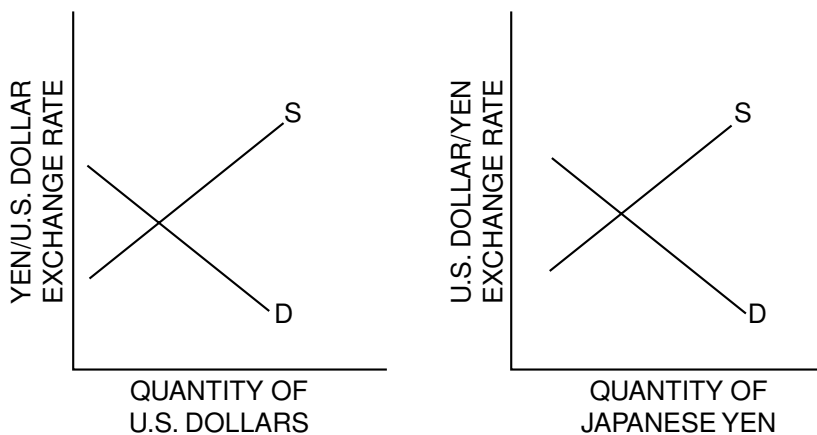
Rationale:

12. Japanese video games become popular with U.S. children.



Figure 53.5

U.S. Children Want Videos Produced in Japan



Rationale:

How Monetary and Fiscal Policies Affect Exchange Rates

Changes in a nation’s monetary and fiscal policies affect its exchange rates and its balance of trade through the interest rate, income and the price level. Changes in the value of a country’s currency may affect the balance of trade and aggregate demand. The value of real output and price levels may also be affected. Domestic policies influence currency values, and currency values influence domestic policies. The complexity of the connection leads to careful evaluation of any change in domestic policy goals. Policy makers cannot ignore the international effects of changes in monetary and fiscal policies.

A series of situations is presented below. In each case:

- Evaluate the expected effects on exchange rates in the United States and the other country. Use the currency graphs provided to reflect changes in the currency values.
- Analyze the impact of the currency changes on the U.S. economy as it applies to net exports, balance of trade, aggregate demand and price levels. *Work out the situations in the short run only.*

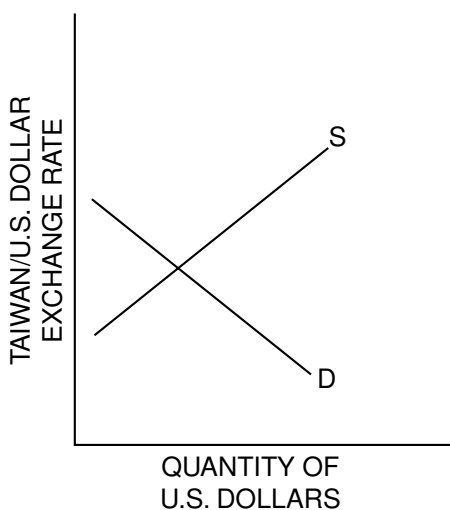
1. The U.S. government initiates a personal income tax reduction plan, leaving every tax-paying American with more disposable income.

(A) What will happen as a result to trade between the United States and Taiwan?

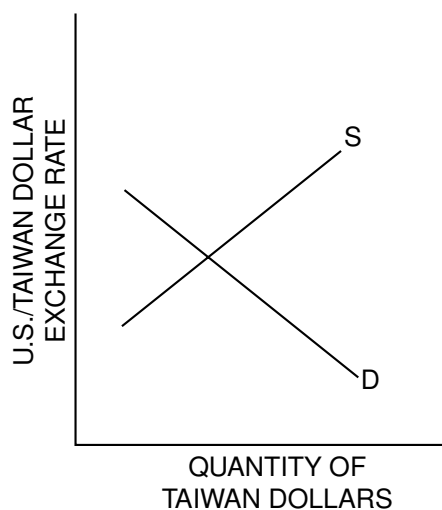


Figure 54.1
U.S. Government Reduces Taxes

Graph A



Graph B




Activity written by James Spellicy, Lowell High School, San Francisco, Calif.

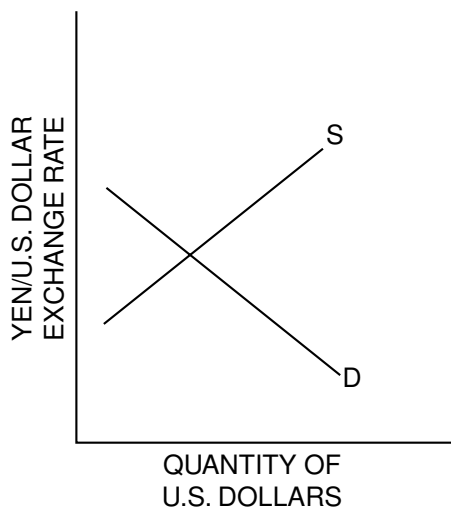
- (B) In Graph A, what happens to the U.S. dollar? _____
- (C) In Graph B, what happens to the Taiwanese dollar? _____
- (D) As a result of the fiscal policy,
- (i) U.S. aggregate demand shifts (*left / right*).
 - (ii) Price levels in the United States (*rise / fall*).
 - (iii) U.S. imports (*increase / decrease*). Explain why.
 - (iv) U.S. exports (*increase / decrease*). Explain why.

2. Japan's fiscal policies lead to an increase in Japan's real GDP.

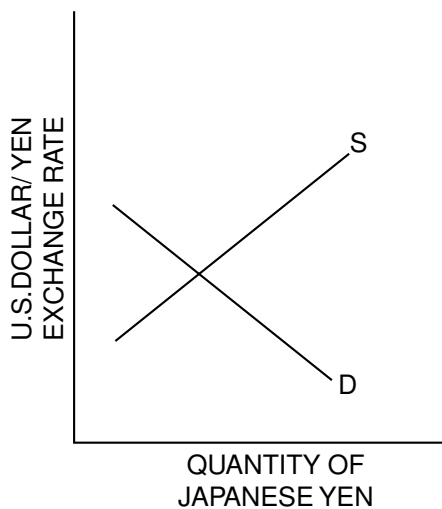
- (A) What will happen as a result to trade between the United States and Japan?

 Figure 54.2
Japan's Real GDP Increases

Graph A



Graph B



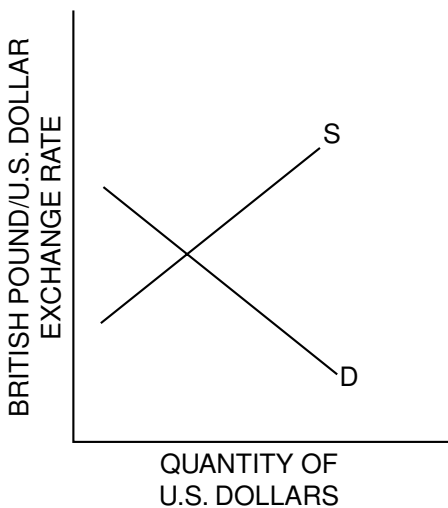
- (B) In Graph A, what happens to the U.S. dollar? _____
- (C) In Graph B, what happens to the Japanese yen? _____

- (D) As a result of the changing value of the U.S. dollar,
- (i) U.S. exports (*increase / decrease*). Explain why.
 - (ii) U.S. imports (*increase / decrease*). Explain why.
 - (iii) U.S. aggregate demand shifts (*left / right*).
 - (iv) Price levels in the United States (*rise / fall*).
3. The U.S. federal budget deficit increases, which causes the interest rate to rise. (Assume trade with Great Britain.)
- (A) What will happen as a result to trade between the United States and Great Britain?

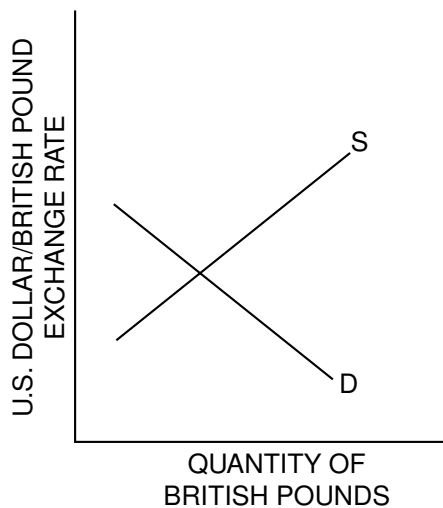


Figure 54.3
Interest Rates in the United States Increase

Graph A



Graph B



- (B) In Graph A, what happens to the U.S. dollar? _____
- (C) In Graph B, what happens to the British pound? _____

(D) As a result of the changing value of the U.S. dollar,
 (i) U.S. exports (*increase / decrease*). Explain why.

(ii) U.S. imports (*increase / decrease*). Explain why.

(iii) U.S. aggregate demand shifts (*left / right*).

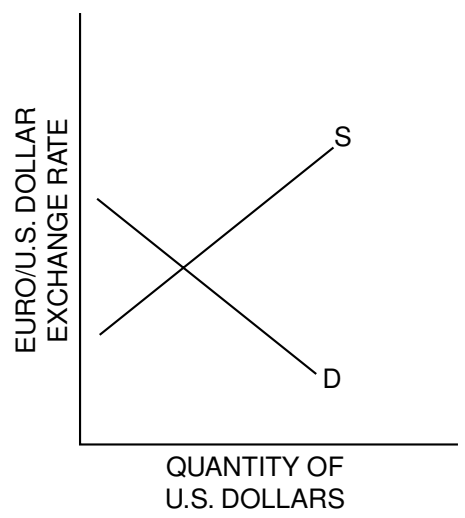
(iv) Price levels in the United States (*rise / fall*).

4. Europe's interest rates are increasing, while the U.S. interest rate remains relatively constant.

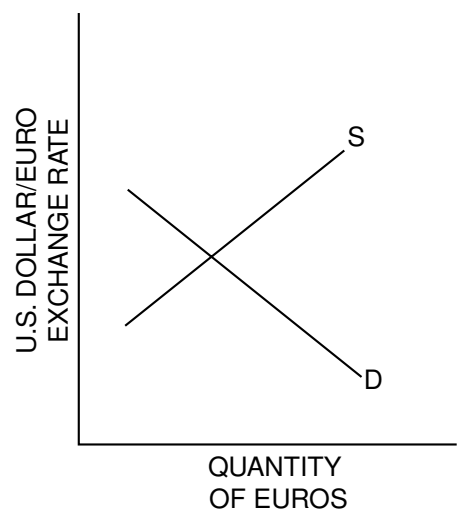
(A) What will happen as a result to trade between the United States and Europe?

* Figure 54.4
Interest Rates in Europe Increase

Graph A



Graph B



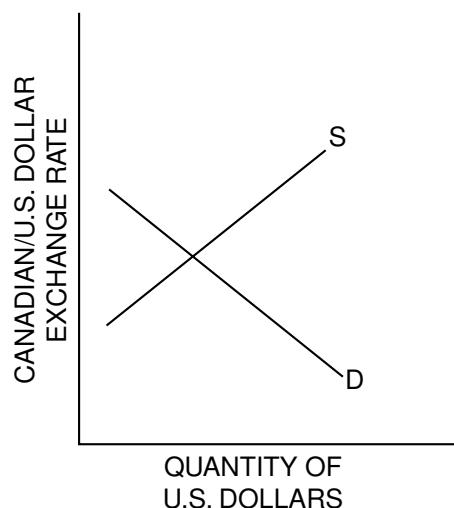
(B) In Graph A, what happens to the U.S. dollar? _____

(C) In Graph B, what happens to the European euro? _____

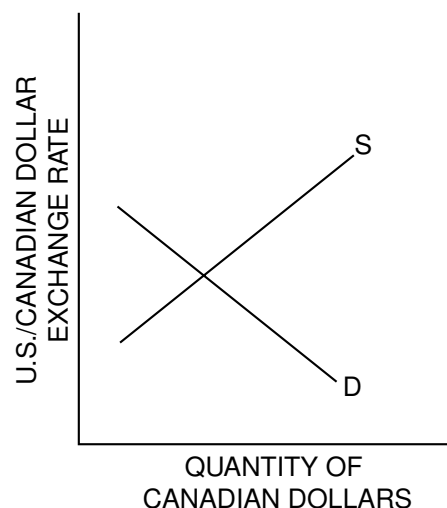
- (D) As a result of the changing value of the U.S. dollar,
- (i) U.S. exports (*increase / decrease*). Explain why.
 - (ii) U.S. imports (*increase / decrease*). Explain why.
 - (iii) U.S. aggregate demand shifts (*left / right*).
 - (iv) Price levels in the United States (*rise / fall*).
5. There is a rapid increase in the Canadian price level while the U.S. price level remains relatively constant.
- (A) What will happen as a result to trade between the United States and Canada?

 **Figure 54.5**
The Price Level in Canada Increases

Graph A



Graph B



- (B) In Graph A, what happens to the U.S. dollar? _____
- (C) In Graph B, what happens to the Canadian dollar? _____

(B) Explain the effects of the tariff on the price and quantity of bicycles available to U.S. consumers.

(C) What are the effects of the tariff on

(i) foreign bicycle manufacturers?

(ii) domestic bicycle manufacturers?

(iii) U.S. consumers?

4. The table below shows how much wine and cheese Germany and France can produce in a day.

	Wine	Cheese
Germany	25 liters	30 kilos
France	50 liters	40 kilos

(A) Which country has an absolute advantage in wine production? Why?

(B) Which country has an absolute advantage in cheese production? Why?

(C) Which country has a comparative advantage in wine production? Why?

- (D) Which country has a comparative advantage in cheese production? Why?
- (E) Based on the data above and considering comparative advantage only, what should France import? What should France export?
- (F) Based on the data above and considering comparative advantage only, what should Germany import? What should Germany export?
5. For each of the following situations, explain the effect of the event on the value of the U.S. dollar in relation to the Mexican peso. Draw a supply and demand graph to illustrate each situation.
- (A) Americans increase their demand for Mexican tomatoes.
- (B) Inflation in Mexico rises at a higher rate than in the United States.

- (C) Americans increase their investments in Mexico because they feel the Mexican economy will be strong.
- (D) Interest rates rise in the United States and have become relatively higher than Mexican interest rates.
- (E) Mexico becomes a much more popular tourist destination for Americans.
6. Explain three effects of a new law that would forbid U.S. citizens and businesses from trading with any other country.
7. Assume that the United States increases its federal budget deficit, which causes interest rates to rise.
- (A) What would be the effect of this on the international value of the dollar? Why?
- (B) What would be the effect of this on the U.S. balance of trade? Why?