

The Foreign Exchange Market

Within an economy prices are stated in the domestic currency. For example, in the United States, prices are stated in dollars and in Europe prices are stated in euros. Buyers use the domestic currency to purchase domestic goods. However, when goods are purchased from another country, they must be paid for in that country's domestic currency. Exporters are paid in the domestic currencies so they can spend it domestically. As a result, international trade requires that currencies also be traded. Currencies are traded in *foreign exchange markets*. The equilibrium price at which currencies are traded is called the *exchange rate*. An exchange rate is the rate at which the currency of one country is exchanged for the currency of another.

AP Reg. #91
P 810

Table 7-3.1 shows the exchange rates for selected countries for May and August of the same year.



Table 7-3.1
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	August	May	August
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	6.6558

Use the data in the table to 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. Indicate whether the dollar has appreciated or depreciated between May and August.


	May	August	Appreciated or Depreciated
1. A dinner for two that costs 500 Mexican pesos	\$55.05	\$75.10	Depreciated
2. A hotel room that costs 30,000 Japanese yen	\$249.00	\$270.00	Depreciated
3. A BMW that costs 85,000 euros in Germany	\$73,977.37	\$77,343.04	Depreciated
4. A pound of Swedish meatballs that costs 30 kronor	\$2.82	\$2.79	Appreciated
5. A pair of pants that costs 72 pounds in London	\$101.41	\$128.57	Depreciated
6. A leather jacket that costs 1,800 Canadian dollars	\$1,152.00	\$1,134.00	Appreciated

When Americans buy foreign goods, U.S. dollars are supplied in the foreign exchange market and the foreign currency is demanded. When foreigners buy U.S. goods, the foreign currency is supplied in foreign exchange markets and the U.S. dollar is demanded. A foreign exchange market determines the equilibrium exchange rate (price) and quantity of currency exchanged using the supply and demand curves for a currency.

An increase in the exchange rate for a currency (which can be caused by an increase in demand or a decrease in supply) is called *appreciation* of that currency. When a currency appreciates, it is said to have strengthened. For example, if the exchange rate increases in the market for dollars, it means that it takes more of the foreign currency to purchase a dollar. This means that a dollar can buy more of the foreign currency. A decrease in the exchange rate for a currency (which can be caused by a decrease in demand or an increase in supply) is called *depreciation* of that currency. When a currency depreciates, it is said to have weakened. For example, if the exchange rate decreases in the market for dollars, it means that it takes less of the foreign currency to purchase a dollar. This means it takes more dollars to buy the foreign currency.

Appreciation or depreciation of a currency changes the price of imports and exports. When a country's currency appreciates, it is more expensive for foreigners to buy the country's exports and it is cheaper for the country to buy imports. When a country's currency depreciates, it is cheaper for foreigners to buy the country's exports and it is more expensive for the country to buy imports. Appreciation and depreciation of a currency will affect the economy because they affect net exports.

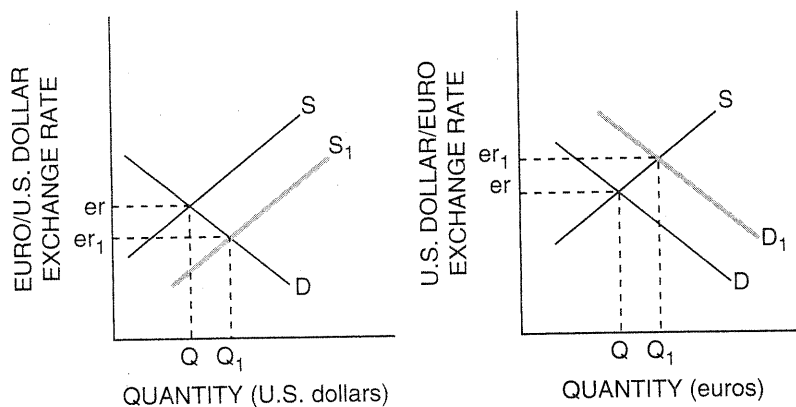
Consider the following situations. In each case, an underlying event causes a change in foreign exchange markets. Graph the effect on the equilibrium exchange rate and currency exchanged in the foreign exchange markets as shown in the example.

 **Student Alert:** Pay close attention to correct labeling on foreign exchange market graphs!

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



Figure 7-3.1
Prices of U.S. Goods Increase

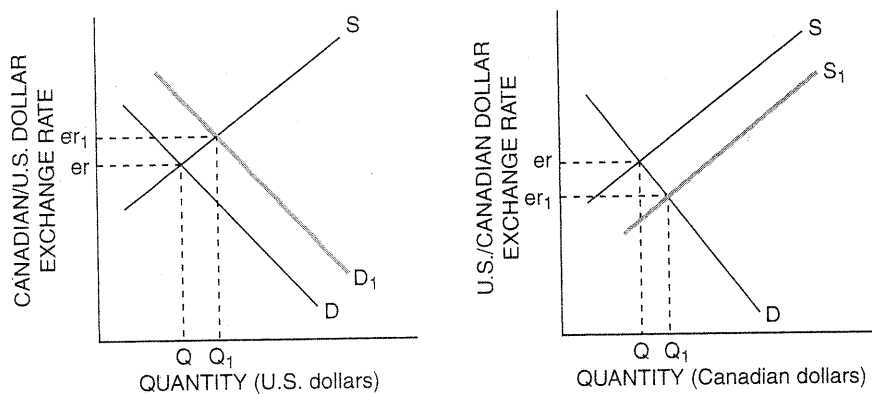


Rationale: Americans will demand the less expensive German goods. To purchase the German goods, they need euros, so the demand for euros increases (shifts to the right). To buy euros, the Americans will supply U.S. dollars to the foreign exchange market, so the supply of U.S. dollars shifts to the right. The U.S. dollar depreciates (the exchange rate decreases). The euro appreciates (the exchange rate increases).

- Real interest rates in the United States rise faster than real interest rates in Canada.



Figure 7-3.2
Real Interest Rates in the United States Increase



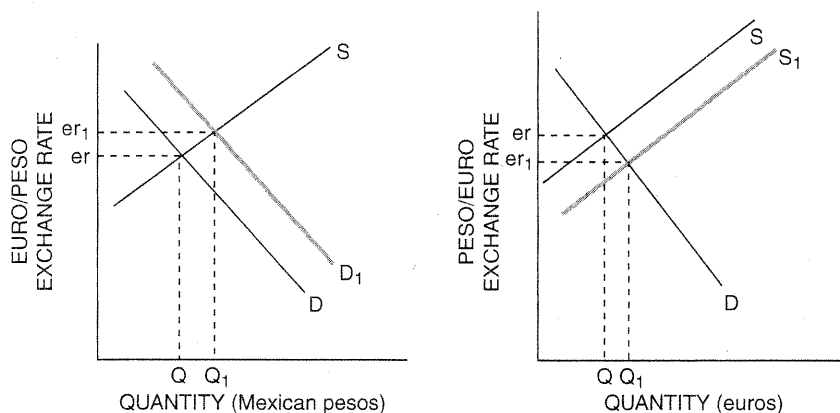
Rationale:

Canadian investors will demand U.S. dollars to purchase U.S. investments, causing the U.S. dollar to appreciate. The supply of Canadian dollars will increase because Canadians are trading Canadian dollars for U.S. dollars. The Canadian dollar will depreciate.

8. French tourists flock to Mexico's beaches.



Figure 7-3.3
French Tourists Visit Mexico



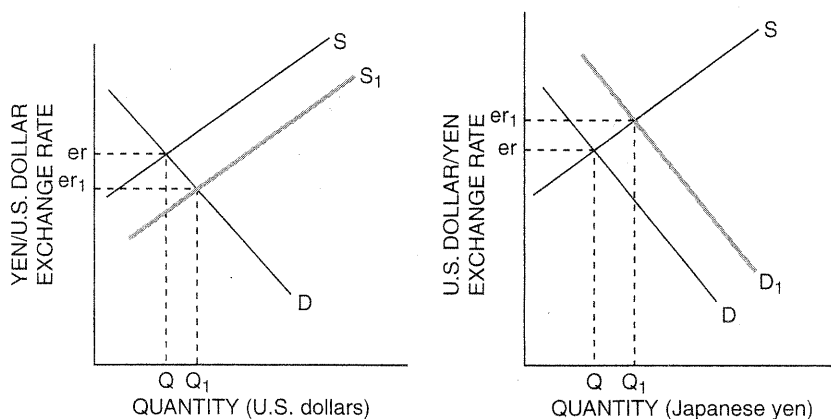
Rationale:

The demand for pesos increases to pay for the beach vacations. The supply of euros increases because the French are exchanging euros for Mexican pesos. The Mexican peso is appreciating, and the euro is depreciating.

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



Figure 7-3.4
U.S. Children Want Videos Produced in Japan



Rationale:

Demand for Japanese yen increases as U.S. children buy more Japanese video games; the supply of dollars to the exchange market increases. The U.S. dollar depreciates. The Japanese yen appreciates.

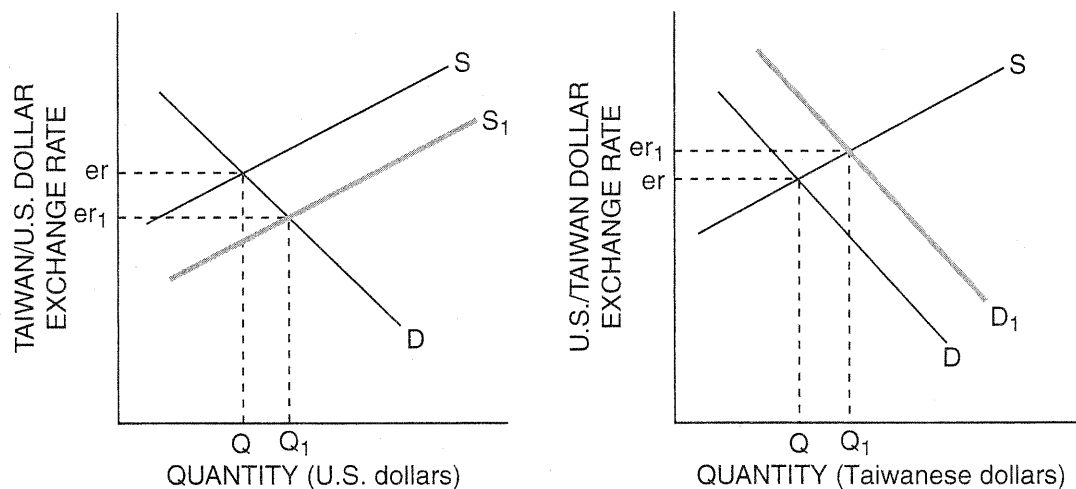
How Monetary and Fiscal Policies Affect Exchange Rates

Changes in a nation's monetary and fiscal policies affect its exchange rates and its balance of trade through the real interest rate, income, and the price level. Changes in the value of a country's currency affect the balance of trade, which affects aggregate demand. Changes in aggregate demand affect real output and the price level. In other words, domestic policies influence currency values, and currency values influence domestic policies. Policy makers cannot ignore the international effects of changes in monetary and fiscal policies.

For each scenario, show the effect on equilibrium interest rate and quantity of currency in the foreign exchange market graphs in Figures 7-4.1 through 7-4.5. Use the graphs to show the starting equilibrium exchange rate and quantity, the shift that occurs, and the new equilibrium exchange rate and quantity. Following each set of graphs, indicate the short-run effect of the change in the foreign exchange market on net exports, aggregate demand, and the price level in the United States.



Figure 7-4.1
Effect on Taiwan If U.S. Government Decreases Taxes



1. Effect on Taiwan if U.S. government decreases taxes:

(A) U.S. imports (increase / decrease). Explain.

The increase in disposable income increases the demand for all goods, including foreign goods. Furthermore, the increase in U.S. prices makes foreign goods relatively less expensive.

(B) U.S. exports (increase / decrease). Explain.

The relative price to foreigners of U.S. goods has increased, so foreigners buy less.

(C) U.S. aggregate demand (increase / decreases). Explain.

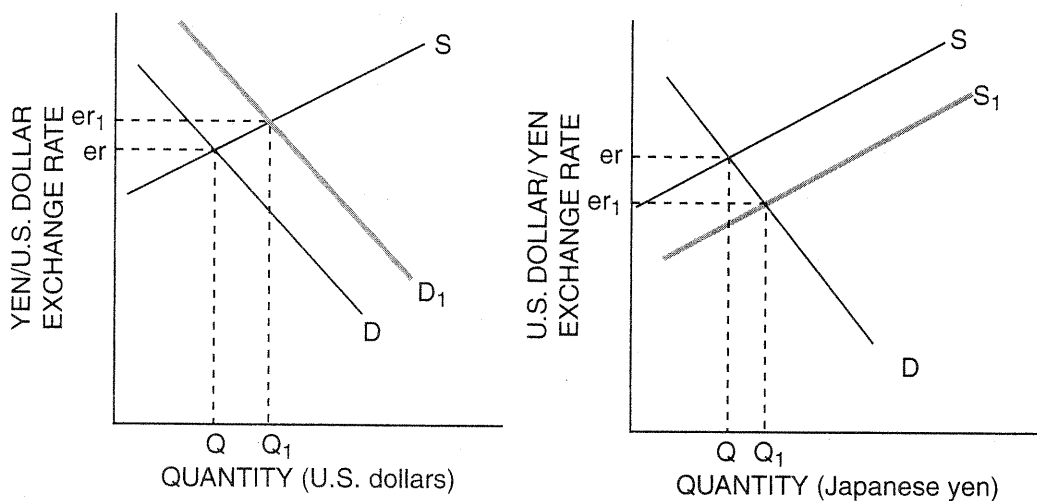
The increase in disposable income increases aggregate demand.

(D) The price level in the United States (increase / decreases). Explain.

The price level increases as a result of the increase in aggregate demand.



Figure 7-4.2
Japan's Real GDP Increases



2. Effect if Japan's real gross domestic product (GDP) increases:

(A) U.S. imports (increase / decrease). Explain.

Each dollar buys more yen; therefore, Japanese goods are cheaper in U.S. dollars and imports from Japan increase.

(B) U.S. exports (increase / decrease). Explain.

It takes more yen to buy each dollar; therefore, U.S. goods cost more in yen than previously and exports to Japan decrease.

(C) U.S. aggregate demand (increases / decreases). Explain.

Exports decrease and imports increase so aggregate demand decreases.

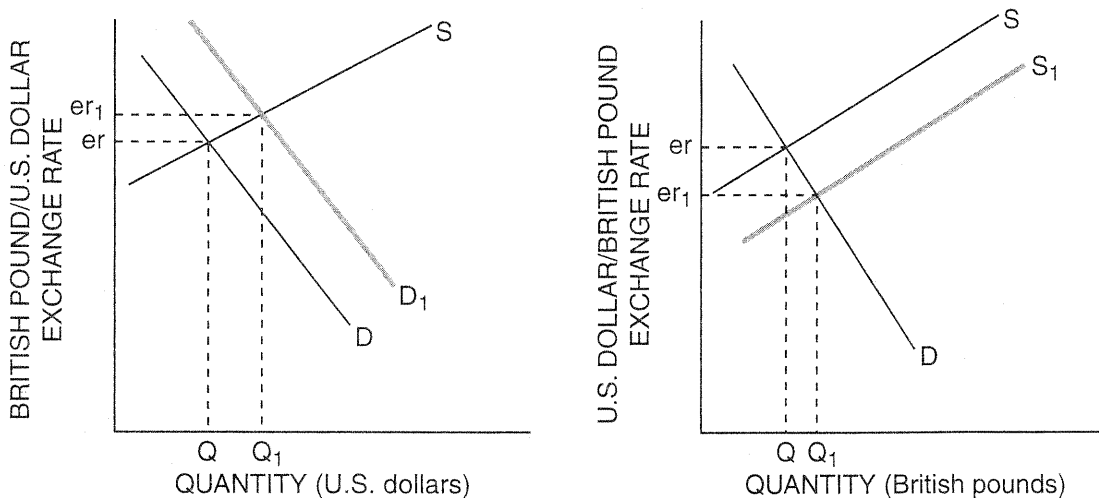
(D) The price level in the United States (increases / decreases). Explain.

The decrease in aggregate demand causes the price level to decrease.



Figure 7-4.3

Real Interest Rates in the United States Increase Relative to Great Britain



3. Effect if real interest rates in the United States increase relative to Great Britain:

(A) U.S. imports (*increase / decrease*). Explain.

Each dollar buys more pounds; therefore, British goods are cheaper in U.S. dollars and imports from Great Britain increase.

(B) U.S. exports (*increase / decrease*). Explain.

It takes more pounds to buy each dollar; therefore, U.S. goods cost more in pounds than previously and exports to Great Britain decrease.

(C) U.S. aggregate demand (*increases / decreases*). Explain.

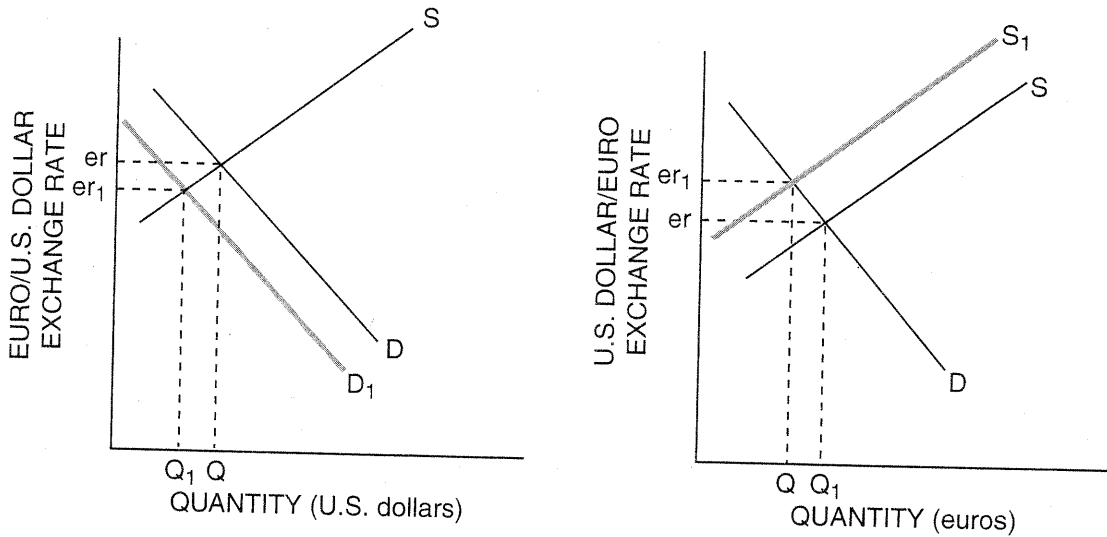
Exports decrease and imports increase so aggregate demand decreases.

(D) The price level in the United States (*increases / decreases*). Explain.

The decrease in aggregate demand causes the price level to decrease.



Figure 7-4.4
Europe Experiences a Recession



4. Effect if Europe experiences a recession:

(A) U.S. imports (*increase / decrease*). Explain.

Each dollar buys fewer euros; therefore, European goods are more expensive in U.S. dollars and imports fall.

(B) U.S. exports (*increase / decrease*). Explain.

Each euro buys more U.S. dollars; therefore, U.S. goods are less expensive and exports increase.

(C) U.S. aggregate demand (*increases / decreases*). Explain.

If imports fall and exports increase, Xn will increase and therefore AD will increase.

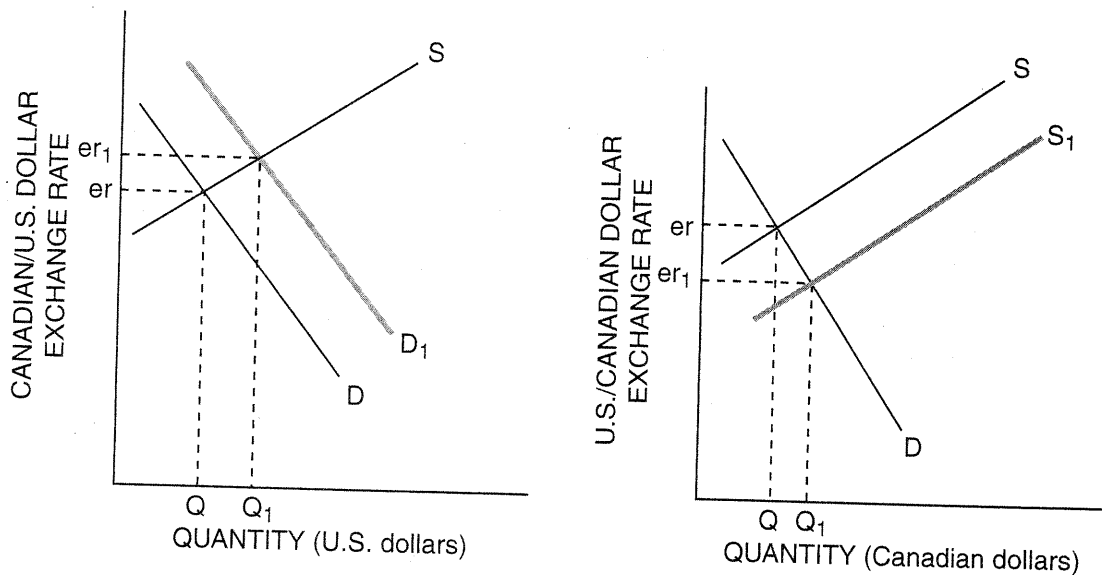
(D) The price level in the United States (*increases / decreases*). Explain.

The increase in aggregate demand causes the price level to increase.



Figure 7-4.5

The Price Level in Canada Increases Relative to the United States



5. Effect if the price level in Canada increases relative to the United States:

(A) U.S. imports (increase / decrease). Explain.

Each U.S. dollar buys more Canadian dollars; therefore, Canadian goods are cheaper in U.S. dollars and imports from Canada increase.

(B) U.S. exports (*increase* / decrease). Explain.

It takes more Canadian dollars to buy each U.S. dollar; therefore, U.S. goods cost more in Canadian dollars than previously and exports to Canada decrease.

(C) U.S. aggregate demand (*increases* / decreases). Explain.

Exports decrease and imports increase so aggregate demand decreases.

(D) The price level in the United States (*increases* / decreases). Explain.

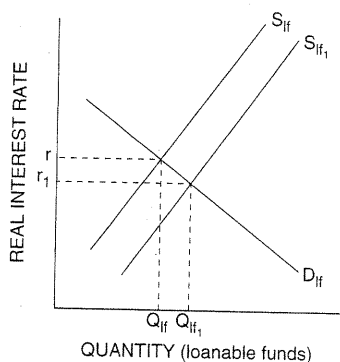
The decrease in aggregate demand causes the price level to decrease.

Net Exports and Capital Flows: Linking Financial and Goods Markets

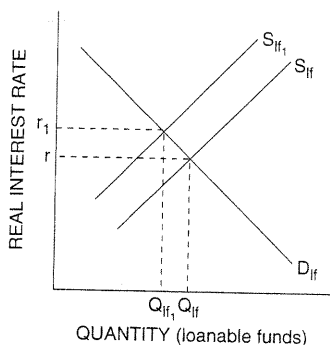
The term *capital flow* refers to the movement of financial capital (money) between economies. *Capital inflows* consist of foreign funds moving into an economy from another country; *capital outflows*, or capital flight, is the opposite—domestic funds moving out of an economy to another country. For example, from the perspective of the U.S. economy, the construction of a new plant by a Japanese automobile manufacturer within the United States is an example of capital inflow. Likewise, when an American manufacturer finances the construction of a plant outside of the United States, it is an example of capital outflow.

The loanable funds market is used to analyze capital flows in an economy. Because financial capital affects the amount of money available for borrowers, changes in capital flows shift the supply curve for loanable funds.

Capital inflows increase the supply of loanable funds, resulting in the decrease in domestic real interest rates shown in the following graph:

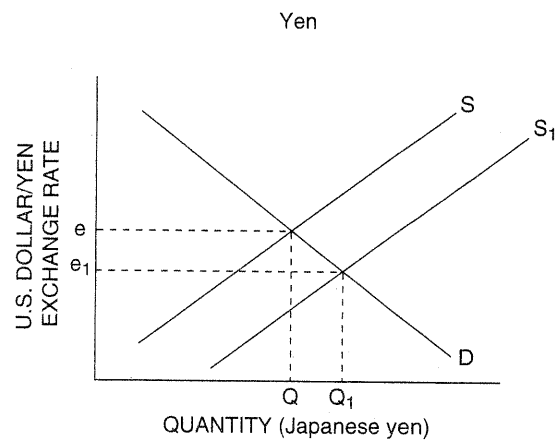
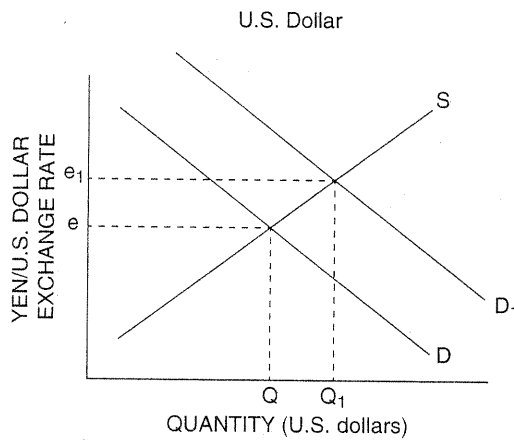


Capital outflows deplete a nation's supply of loanable funds, causing domestic interest rates to increase, as shown in the following graph:

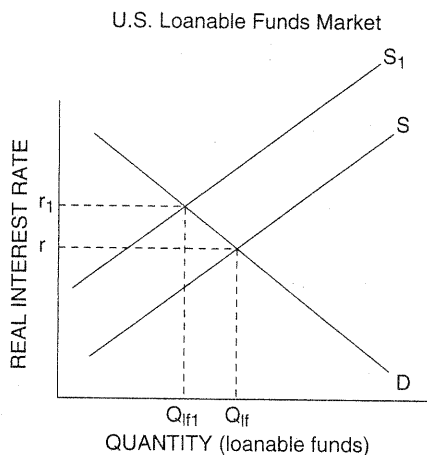


Capital Flows Resulting from a Change in Net Exports

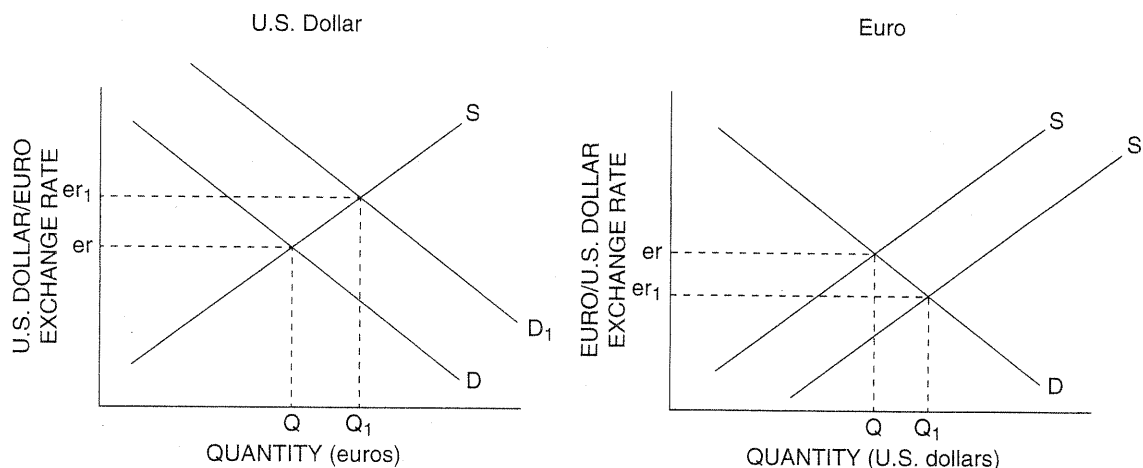
- Japanese firms have recently increased their imports of American made semiconductors. As a result, the U.S. current account moves toward (surplus / deficit) and U.S. net exports will (increase / decrease).
- Illustrate on the graphs provided how the relative exchange rates of the U.S. dollar and Japanese yen will change as a result of the increase in Japanese purchases of U.S. semiconductors. Be sure to label your graphs correctly (e.g., the price of dollars should be stated in terms of yen per dollar, and vice versa).



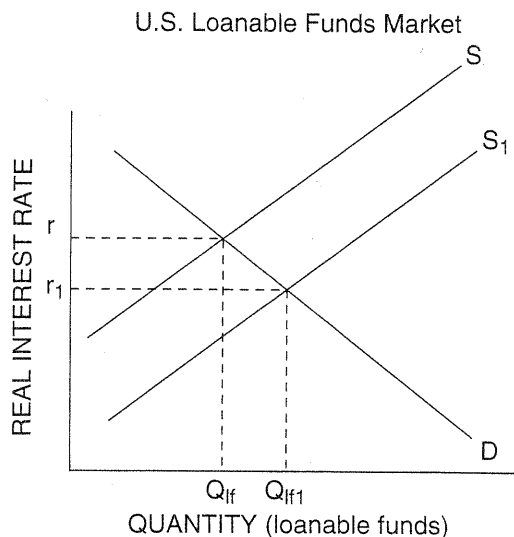
- Illustrate on a correctly labeled graph of the loanable funds market in the United States the changes that result from the Japanese importation of U.S. semiconductors. *Hint: Current account deficits are offset by financial account surpluses (capital inflow) while current account surpluses are offset by financial account deficits (capital outflow).*



- Assume that inflation in the United States begins to rise while prices throughout the European Union remain relatively stable. The U.S. current account moves toward (*surplus* / *deficit*) and U.S. net exports (*increase* / *decrease*).
- Illustrate on the graphs provided how the relative exchange rates of the U.S. dollar and euro will change as a result of this change in relative inflation rates. Be sure to label your graphs correctly (e.g., the price of dollars should be stated in terms of euro per dollar, and vice versa).

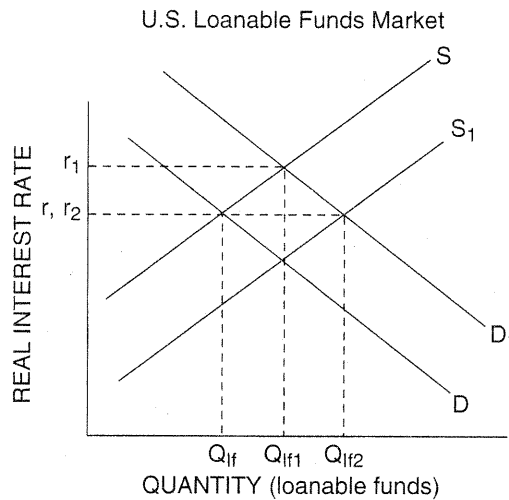


- Illustrate on a graph of the loanable funds market in the United States the changes that result when the relative inflation rates change. *Hint:* Current account deficits are offset by financial account surpluses (capital inflow) while current account surpluses are offset by financial account deficits (capital outflow).



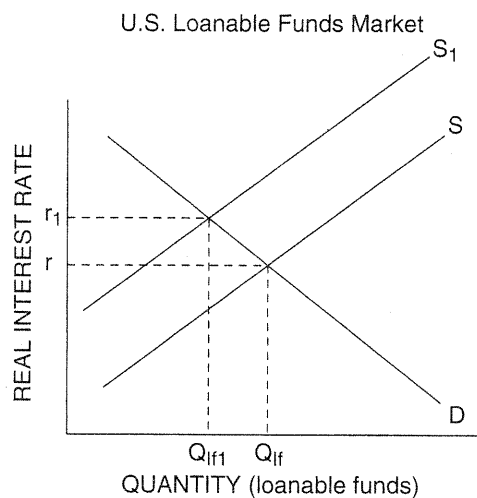
Capital Flows Resulting from a Change in Policy

7. Due to a recent recession, expansionary fiscal policies in the United States have led to historically large federal budget deficits. On a correctly labeled graph of the loanable funds market in the United States, illustrate the effects of massive government borrowing.



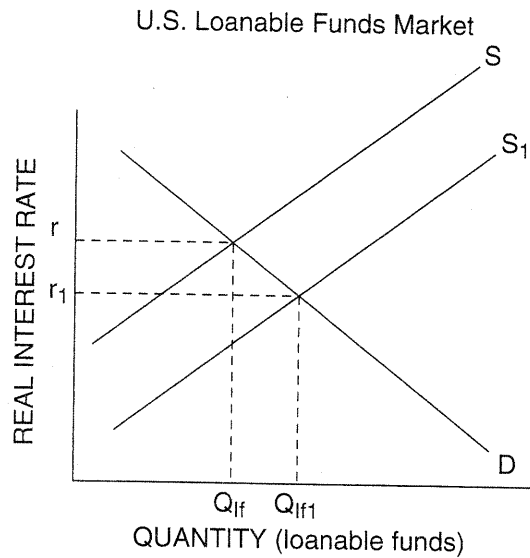
8. The recession causes real interest rates to (increase / decrease) and foreign investors will (increase / decrease) their purchases of bonds in the United States. Illustrate this change on your loanable funds graph above.
9. Assume that the central bank enacts an expansionary policy of purchasing government securities on the open market. This monetary policy will (increase / decrease) real interest rates in the United States. As a result of the change in real interest rates, foreign investors will (increase / decrease) their purchases of bonds in the United States.

Illustrate this change on a correctly labeled graph of the loanable funds market.

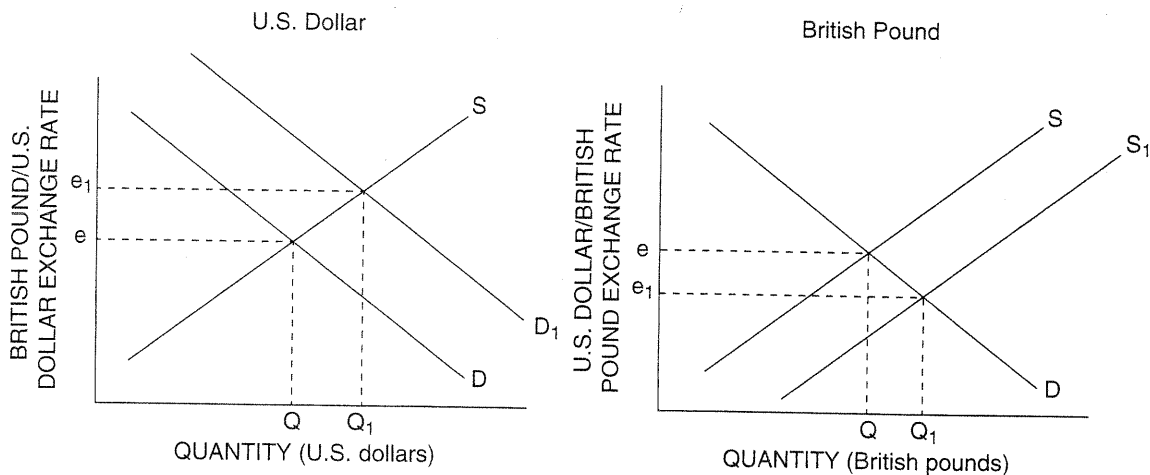


Capital Flows Resulting from a Change in Foreign Direct Investment

10. Foreign direct investment (FDI) into the United States rose sharply during the second half of the 1990s due to the perceived strength and stability of the U.S economy relative to unstable economies worldwide. On a correctly labeled graph of the loanable funds market in the United States, illustrate the effect of this influx of FDI.



11. Great Britain was a leading investor in American firms at this time. Use correctly labeled graphs of the markets for dollars and pounds to illustrate the relative change in value of these two currencies on the foreign exchange market as a result of British investment in American companies. Be sure to label your graphs correctly (e.g., the price of dollars should be stated in terms of pounds per dollar, and vice versa).



12. The changes above will cause U.S. net exports to (*increase / decrease*).

13. The U.S. economy slowed in the early 2000s while American firms discovered less costly production possibilities in foreign countries. On a correctly labeled graph of the loanable funds market in the United States, illustrate the effects of this capital flight.

