SOLUTIONS TO TEXT PROBLEMS:

Quick Quizzes

1. The supply of loanable funds comes from national saving. The demand for loanable funds comes from domestic investment and net capital outflow. The supply in the market for foreign-currency exchange comes from net capital outflow. The demand in the market for foreign-currency exchange comes from net exports.

2. The two markets in the model of the open economy are the market for loanable funds and the market for foreign-currency exchange. These markets determine two relative prices: (1) the market for loanable funds determines the real interest rate and (2) the market for foreign-currency exchange determines the real exchange rate.

3. If Americans decided to spend a smaller fraction of their incomes, the increase in saving would shift the supply curve for loanable funds to the right, as shown in Figure 1. The decline in the real interest rate increases net capital outflow and shifts the supply of dollars to the right in the market for foreign-currency exchange. The result is a decline in the real exchange rate. Since the real interest rate is lower, domestic investment increases. Since the real exchange rate declines, net exports increase and the trade balance moves toward surplus. Overall, saving and domestic investment increase, the real interest rate and real exchange rate decrease, and the trade balance moves toward surplus.
Questions for Review

1. The supply of loanable funds comes from national saving; the demand for loanable funds comes from domestic investment and net capital outflow. The supply of dollars in the market for foreign exchange comes from net capital outflow; the demand for dollars in the market for foreign exchange comes from net exports. The link between the two markets is net capital outflow.

2. Government budget deficits and trade deficits are sometimes called the twin deficits because a government budget deficit often leads to a trade deficit. The government budget deficit leads to reduced national saving, causing the interest rate to increase, and reducing net capital outflow. The decline in net capital outflow reduces the supply of dollars, raising the real exchange rate. Thus, the trade balance will move toward deficit.

3. If a union of textile workers encourages people to buy only American-made clothes, imports would be reduced, so net exports would increase for any given real exchange rate. This would cause the demand curve in the market for foreign exchange to shift to the right, as shown in Figure 2. The result is a rise in the real exchange rate, but no effect on the trade balance. The textile industry would import less, but other industries, such as the auto industry, would import more because of the higher real exchange rate.
Capital flight is a large and sudden movement of funds out of a country. Capital flight causes the interest rate to increase and the exchange rate to depreciate.

Quick Check Multiple Choice
1. c
2. b
3. b
4. a
5. d
6. a

Problems and Applications
1. Japan generally runs a trade surplus because the Japanese saving rate is high relative to Japanese domestic investment. The result is high net capital outflow, which is matched by
high net exports, resulting in a trade surplus. The other possibilities (high foreign demand for Japanese goods, low Japanese demand for foreign goods, and structural barriers against imports into Japan) would affect the real exchange rate, but not the trade surplus.

2. a. If Congress passes an investment tax credit, it subsidizes domestic investment. The desire to increase domestic investment leads firms to borrow more, increasing the demand for loanable funds, as shown in Figure 3. This raises the real interest rate, thus reducing net capital outflow. The decline in net capital outflow reduces the supply of dollars in the market for foreign exchange, raising the real exchange rate. The trade balance moves toward deficit, because net capital outflow, hence net exports, is lower. The higher real interest rate also increases the quantity of national saving. In summary, saving increases, domestic investment increases, net capital outflow declines, the real interest rate increases, the real exchange rate increases, and the trade balance moves toward deficit.

b. A rise in the real exchange rate reduces exports.

3. a. A decline in the quality of U.S. goods at a given real exchange rate would reduce net exports, reducing the demand for dollars, thus shifting the demand curve for dollars to the left in the market for foreign exchange, as shown in Figure 4.
b. The shift to the left of the demand curve for dollars leads to a decline in the real exchange rate. Because net capital outflow is unchanged, and net exports equals net capital outflow, there is no change in equilibrium in net exports or the trade balance.

c. The claim in the popular press is incorrect. A change in the quality of U.S. goods cannot lead to a rise in the trade deficit. The decline in the real exchange rate means that we get fewer foreign goods in exchange for our goods, so our standard of living may decline.

**Figure 4**

4. A reduction in restrictions of imports would reduce net exports at any given real exchange rate, thus shifting the demand curve for dollars to the left. The shift of the demand curve for dollars leads to a decline in the real exchange rate, which increases net exports. Because net capital outflow is unchanged and net exports equals net capital outflow, there is no change in equilibrium in net exports or the trade balance. But both imports and exports rise, so export industries benefit.

5. a. When the French develop a strong taste for California wines, the demand for dollars in the foreign-currency market increases at any given real exchange rate, as shown in Figure 5.

b. The result of the increased demand for dollars is a rise in the real exchange rate.
c. The quantity of net exports is unchanged.
6. An export subsidy increases net exports at any given real exchange rate, causing the demand for dollars in the foreign exchange market to shift to the right as shown in Figure 6. The resulting increase in the real exchange rate increases imports to match the increase in exports generated by the export subsidy. Thus, net exports and the trade deficit are unchanged. The senator is incorrect.

![Figure 6](image-url)
7. An export subsidy increases net exports at any given real exchange rate, causing the demand for dollars in the foreign exchange market to shift to the right as shown in Figure 7. The resulting increase in the real exchange rate increases imports to match the increase in exports generated by the export subsidy. Thus, net exports and the trade deficit are unchanged at this point. The expenditure on the export subsidy, however, increases the fiscal deficit, decreases public saving, causing the supply of loanable funds to shift left. The resulting increase in the real interest rate reduces domestic investment and net capital outflow, decreasing the supply of dollars on the foreign exchange market. The real exchange rate rises again, further increasing imports but decreasing exports. In the end, imports increase, exports could increase or decrease, net exports fall, and the trade balance moves toward deficit.

![Figure 7](image_url)
8. Higher real interest rates in Europe lead to increased U.S. net capital outflow. Higher net capital outflow leads to higher net exports, because in equilibrium net exports equal net capital outflow \((NX = NCO)\). Figure 8 shows that the increase in net capital outflow leads to a lower real exchange rate, higher real interest rate, and increased net exports.

![Graph showing real interest rate, net capital outflow, and real exchange rate](image)

**Figure 8**

9. a. If the elasticity of U.S. net capital outflow with respect to the real interest rate is very high, the lower real interest rate that occurs because of the increase in private saving will increase net capital outflow a great deal, so U.S. domestic investment will not increase much.

b. Because an increase in private saving reduces the real interest rate, inducing an increase in net capital outflow, the real exchange rate will decline. If the elasticity of U.S. exports with respect to the real exchange rate is very low, it will take a large decline in the real exchange rate to increase U.S. net exports by enough to match the increase in net capital outflow.