Chapter 1

- **6.** a. Consumer demand theory predicts that when the price of a commodity rises (*cet. par.*), the quantity demanded of the commodity declines.
 - b. When the price of imports rises to domestic consumers, the quantity demanded of exports can be expected to decline (if everything else remains constant).
- **7.** a. A government can reduce a budget deficit by reducing government expenditures and/or increasing taxes.
 - b. A nation can reduce or eliminate a balance-of-payments deficit by taxing imports and/or subsidizing exports, by borrowing more abroad or lending less to other nations, and by reducing the level of its national income.
- **10.** International trade results in lower prices for consumers but harms domestic producers of products which compete with imports. Often those domestic producers that stand to lose a great deal from imports band together to pressure the government to restrict imports.

Since consumers are many and unorganized and each individually stands to lose only very little from the import restrictions, governments often give in to the demands of producers and impose some import restrictions. These topics are discussed in detail in Chapter 9.

Chapter 2

2. In case A, the United States has a comparative advantage in wheat and the United Kingdom in cloth.

In case B, the United States has a comparative advantage in wheat and the United Kingdom in cloth.

In case C, the United States has a comparative advantage in wheat and the United Kingdom in cloth.

In case D, the United States and the United Kingdom have a comparative advantage in neither commodity.

- 4. a. The United States gains 1C.
 - b. The United Kingdom gains 4C.
 - c. 3C < 4W < 8C.
 - d. The United States would gain 3C, while the United Kingdom would gain 2C.
- **10.** If $D_{W(US + UK)}$ intersected $S_{W(US + UK)}$ at $P_W/P_C = {^2/_3}$ and 120W in the left panel of Figure 2.3, this would mean that the United States would not be specializing completely in the production of wheat.

The United Kingdom, on the other hand, would be specializing completely

in the production of cloth and exchanging 20C for 30W with the United States. Since the United Kingdom trades at the U.S. pretrade-relative commodity price of PW/PC = 2/3, the United Kingdom receives all of the gains from trade.

Chapter 3

- **3.** a. See Figure 3.1.
 - b. Nation 1 has a comparative advantage in *X* and Nation 2 in *Y*.

Answers to Selected Problems

- c. If the relative commodity price line has equal slope in both nations.
- **4.** a. See Figure 3.2.
 - b. Nation 1 gains by the amount by which point E is to the right and above point A and Nation 2 by the excess of E' over A'. Nation 1 gains more from trade because the relative price with trade differs more from its pretrade price than for Nation 2.
- **7.** See Figure 3.3.

The small nation will move from A to B in production and will export X in exchange for Y so as to reach point E > A.







FIGURE 3.2



Chapter 4

- **6.** a. See Figure 4.1.
 - b. The quantity of imports demanded by Nation 1 at $P_{F'}$ exceeds the quantity of exports of Y supplied by Nation 2. Therefore, P_x/P_y declines $(P_y/P_x \text{ rises})$ until the quantity demanded of imports of Y by Nation 1 equals the quantity of exports of Y supplied by Nation 2 at $P_B = P_{B'}$.
 - c. The backward-bending (i.e., negatively sloped) segment of Nation 1's



FIGURE 4.1

offer curve indicates that Nation 1 is willing to give up less of X for larger amounts of Y.

8. See Figure 4.2.

From the left panel of Figure 4.4 in the text, we see that Nation 2 does not export any amount of commodity Y at $P_x/P_y = 4$, or $P_y/P_x = \frac{1}{4}$. This gives point A on Nation 2's supply curve of the exports of commodity Y (S). From the left panel of Figure 4.4 in the text, we also see that at $P_x/P_y = 2$ or $P_y/P_x = \frac{1}{2}$, Nation 2 exports 40Y. This gives point H on S. Other points on S could similarly be derived. Note that S in Figure 4.6 in the text, showing Nation 1's exports of commodity X.

From the left panel of Figure 4.3 in the text, we see that Nation 1 demands 60Y of Nation 2's exports at $P_x/P_y = P_y/P_x = 1$. This gives point *E* on Nation 1's demand curve of Nation 2's exports of commodity *Y* (*D*). From the left panel of Figure 4.3 in the text, we can estimate that Nation 1 demands 40Y at $P_y/P_x = \frac{3}{2}$ (point *R'* on *D*) and 120Y at $P_y/P_x = 2$ (point *H'* on *D*).

The equilibrium-relative commodity price of commodity Y is $P_{\gamma}/P_x = 1$. This is determined at the intersection of D and S in Figure 4.2. At $P_{\gamma}/P_x = \frac{3}{2}$, there is an excess of supply of R'R = 30Y, and P_{γ}/P_x falls to $P_{\gamma}/P_x = 1$. On the other hand, at $P_{\gamma}/P_x = \frac{1}{2}$, there is an excess demand of HH' = 80Y, and P_{γ}/P_x rises to $P_{\gamma}/P_x = 1$. Note also that Figure 4.2 is symmetrical with Figure 4.6 in the text.

10. See Figure 4.3.

In Figure 4.3, Nation 2 is the small nation, and we *magnified* the portion of the offer curve of Nation 1 (the large nation) near the origin (where Nation 1's offer curve coincides with $P_A = \frac{1}{4}$, Nation 1's pretrade-relative commodity price with trade). This means that Nation 2 can import a sufficiently small quantity



FIGURE 4.2



FIGURE 4.3

of commodity *X* without perceptibly affecting P_x/P_y in Nation 1.

Thus, Nation 2 is a price taker and captures all of the benefits from its trade with Nation 1. The same would be true

even if Nation 2 were not a small nation, as long as Nation 1 faced constant opportunity costs and did not specialize completely in the production of commodity X with trade.

Chapter 5

- **4.** See Figure 5.1.
- **7.** See Figure 5.2.
- 13. a. See Figure 5.3.



FIGURE 5.1

- b. Factor-intensity reversal could occur if the substitutability of K for L in the production of X were much greater than for Y and r/w were lower in Nation 2 than in Nation 1.
- c. Minhas found factor-intensity reversal to be fairly frequent. However, by correcting an important source of bias in the Minhas study, Leontief showed that factor-intensity reversal was much less frequent. Ball tested another aspect of Minhas's conclusion and confirmed Leontief's results that factor-intensity reversal was rare in the real world.

- 1. See Figure 6.1.
- **6.** See Figure 6.2.
 - The AC and the MC curves in Figure 6.2 here are the same as in Figure 6.2 in



FIGURE 5.2



Answers to Selected Problems



FIGURE 5.3





Chapter 6. However, D and the corresponding MR curve are higher on the assumption that other firms have not yet imitated this firm's product, reduced its market share, or competed this firm's profits away.

In Figure 6.2 here, MR = MC at point *E*, so that the best level of output of the firm is 5 units and price is \$4.50. Since at Q = 5, AC =\$3.00, the firm earns a profit of AB =\$2.00 per unit and \$10.00 in total.

14. See Figure 6.3.

- 5. See Figure 7.1.
- 6. See Figure 7.2.
- See Figure 7.3. 9.

Ans-7















FIGURE 7.2

4.
$$g = \frac{0.4 - (0.5)(0.4)}{1.0 - 0.5}$$

 $= \frac{0.4 - 0.2}{0.5} = \frac{0.2}{0.5} = 40\%$

- **7.** See Figure 8.1.
- 8. When Nation 1 (assumed to be a small nation) imposes an import tariff on commodity *Y*, the real income of labor falls and that of capital rises.



Chapter 9

- 2. The partial equilibrium effects of the import quota are: $P_x = \$1.50$; consumption is 45*X*, of which 15*X* are produced domestically; by auctioning off import licenses, the revenue effect would be \$15.
- 3. The partial equilibrium effects of the import quota are $P_x = 2.50 ; consumption is 40X, of which 10X are produced domestically; the revenue effect is \$45.
- 11. a. The monopolist should charge $P_1 =$ \$4 in the domestic market and $P_2 =$ \$3 in Figure 9.5 in Appendix A9.2.
 - b. This represents the best, or optimal, distribution of sales between the two markets because any other distribution of sales in the two markets gives less revenue.

Chapter 10

1. If Nation A imposes a 100 percent ad valorem tariff on imports of commodity *X* from Nation B and Nation C, Nation A will produce commodity *X* domestically because the domestic price of commodity X is \$10, as compared with the tariffinclusive price of \$16 if Nation A imported commodity X from Nation B and \$12 if Nation A imported commodity X from Nation C.

- a. If Nation A forms a customs union with Nation B, Nation A will import commodity X from Nation B at the price of \$8 instead of producing it itself at \$10 or importing it from Nation C at the tariff-inclusive price of \$12.
 - b. When Nation A forms a customs union with Nation B, this will be a trade-creating customs union because it replaces domestic production of commodity X at $P_x = \$10$ with tarifffree imports of commodity X from Nation B at $P_x = \$8$.
- 3. If Nation A imposes a 50 percent ad valorem tariff on imports of commodity X from Nation B and Nation C, Nation A will import commodity X from Nation C at the tariff-inclusive price of \$9 instead of producing commodity X itself or importing it from Nation B at the tariff-inclusive price of \$12.

Chapter 11

- 6. a. The nation's commodity terms of trade would be 91.7.
 - b. The nation's income terms of trade would be 119.2.
 - c. The nation's single factoral terms of trade would be 128.4.
- 7. The nation of Problem 6 will be better off in 2000 as compared with 1980 because its income and single factoral terms of trade rose.
- 8. Figure 7.6 in the text shows how deteriorating terms of trade resulting from growth can make a nation worse off after trade than before. This was called immiserizing growth in Chapter 7.

Chapter 12

7. The statement is true.

The profitability of a portfolio is equal to the weighted average of the yield of the securities included in the portfolio. Therefore, the profitability of a portfolio of many securities can never exceed the yield of the highest-yield security in the portfolio.

The second part of the statement is also true if the portfolio includes securities for which yields are inversely correlated over time.

- 12. U.S. labor generally opposes U.S. investments abroad because they reduce the K/L ratio and the productivity and wages of labor in the United States.
- 13. An inflow of foreign capital leads to an increase in the K/L ratio and in the productivity and wages of labor or employment in developing nations.

Chapter 13

1. a. The United States debits its current account by \$500 (for the merchandise

imports) and credits capital by the same amount (for the increase in foreign assets in the United States).

- b. The United States credits capital by \$500 (the drawing down of its bank balances in London, a capital inflow) and debits capital by an equal amount (to balance the capital credit that the U.S. importer received when the U.K. exporter accepted to be paid in three months).
- c. The United States is left with a \$500 debit in its current account and a net credit balance of \$500 in its capital account.
- 6. The United States credits its capital account by \$400 (for the purchase of the U.S. treasury bills by the foreign resident) and debits its capital account (for the drawing down of the foreign resident's bank balances in the United States) for the same amount.
- 7. The United States debits its current account by \$40 for the interest paid, debits its capital account by \$400 (for the capital outflow for the repayment of the principal to the foreign investors by the U.S. borrower), and then credits its capital account by \$440 (the increase in foreign holdings of U.S. assets, a credit).

Chapter 14

- a. The pound is at a three-month forward premium of 1¢ or 0.5% (or 2%/year) with respect to the dollar.
 - b. The pound is at a three-month forward discount of 4¢ or 2% (or 8%/ year) with respect to the dollar.
- 9. The speculator can speculate in the forward exchange market by purchasing pounds forward for delivery in three months at $FR = \frac{2}{1}$.

If the speculator is correct, he will earn 5ϕ per pound purchased.

11. The interest arbitrageur will earn 2% per year from the purchase of foreign three-month treasury bills if he covers the foreign exchange risk.

Chapter 15

- 7. $M_d = 100/4 = 25$ falls short of $M_s = 30$, and there will be an outflow of international reserves (a deficit in the nation's balance of payments).
- 9. a. The condition for uncovered interest parity is given by *i* − *i** = *EA*, where *EA* is the expected appreciation of the euro. That is, since the spot rate of *SR* = \$1.01/€1 in three months is 1% (4% on an annual basis) higher than *SR* = \$1.00/€1 today, the condition for UIA is satisfied because 6% − 10% = 4% (with all percentage rates expressed on an annual basis).
 - b. If the spot rate is expected to be SR = $1.02 \in 1$ in three months, the pound would be expected to appreciate by 2% for the three months (8% on an annual basis). Investors would now earn more by investing in Frankfurt than by investing in New York and the condition for UIA would no longer be satisfied. As more dollars are exchanged for euros to increase investments in London, the actual spot rate will increase from SR = \$12.00 / €1 to $SR = 1.01 \neq 1$. This will leave only an expected appreciation of the euro of about 4% per year (the same as before the change in expectations). This is obtained by comparing the new higher spot rate of $SR = \$1.01/\ge 1$ today with the new expected spot rate of $SR = \$1.01 / \pounds 1$ in three months, so as to return to UIA parity.
- **12.** According to the portfolio balance approach, an increase in the expected rate

of inflation in the nation would lead to the expectation that the domestic currency will depreciate and the foreign currency will appreciate under flexible exchange rates. In terms of the extended portfolio balance model, this means that the expected appreciation of the foreign currency (EA) increases.

The rise in EA will lead to a reduction in the demand for money balances (M) and the domestic bond (D) and an increase in the demand for the foreign bond (F) by domestic residents (see Equations 15-10 to 15-12). This leads to a depreciation of the domestic currency as domestic residents exchange the domestic for the foreign currency in order to purchase the foreign bond and to other changes in all other variables of the model until equilibrium is reestablished in all the markets simultaneously.

- 1. The nation's demand curve for imports is derived by the horizontal distance of the nation's supply curve from the nation's demand curve of the tradeable commodity at each price below the equilibrium level of the tradeable commodity. See Figure 16.1.
- 2. The nation's supply curve for exports is derived by the horizontal distance of the nation's demand curve from the nation's supply curve of the tradeable commodity at each price above the equilibrium level of the tradeable commodity. See Figure 16.2.
- 7. S_M is infinitely elastic for a small nation because a small nation can demand any quantity of imports without affecting its price; similarly, D_x is infinitely elastic because a small nation can sell any amount of its export good without having to reduce its price.













FIGURE 16.2

Chapter 17 5. a. S(Y) + M(Y) = -100 + 0.2Y + 150 + 0.2Y = 50 + 0.4Y I + X = 100 + 350 = 450 50 + 0.4Y = 450; therefore, $Y_E = 400/0.4 = 1000$. b. See Figure 17.1. 6. See Figure 17.2. 9. a. $k'' = \frac{1}{MPS_1 + MPM_1 + MPM_2(MPS_1/MPS_2)} = \frac{1}{0.20 + 0.20 + 0.10(0.20/0.15)}$

$$=\frac{1}{0.533}=1.88$$

FIGURE 17.2

$$\Delta Y_E = (\Delta X)(k'') = (200)(1.88) = 376$$

$$\Delta M = (\Delta Y_E)(MPM_1) = (376)(0.20) = 75.2$$

$$\Delta S = (\Delta Y_E)(MPS_1) = (376)(0.20) = 75.2$$

$$\Delta X = \Delta S + \Delta M = 75.2 + 75.2 = 150.4; so$$

$$\Delta X - \Delta M = 75.2 = Nation 1's trade surplus$$

b.

$$k^* = \frac{1 + MPM_2/MPS_2}{MPS_1 + MPM_1 + MPM_2(MPS_1/MPS_2)}$$
$$= \frac{1 + 0.10/0.15}{0.533} = \frac{1.667}{0.533} = 3.13$$

Ans-11

$$\Delta YE = (\Delta I)(k^{\circ}) = (200)(3.13) = 6.26$$

$$\Delta M = (\Delta Y_E)(MPM_1) = (626)(0.20) = 125.2$$

$$\Delta S = (\Delta Y_E)(MPS_1)(626)(0.20) = 125.2$$

$$200 + \Delta X - 125.2 + 125.2 \text{ and } \Delta X = 50.4;$$

so $\Delta X - \Delta M = 50.4 - 125.2 = -74.8$

Chapter 18

1.	Point	Changes in D	Changes in R
	C1	increase	devalue
	C4	increase	revalue
	C7	decrease	revalue
	C10	decrease	devalue

11. Starting from point E in Figure 18.1, the nation could use the fiscal policy that shifts the *IS* curve to *IS'*, intersecting the *LM* curve at point *Z*. Since point *Z* is now to the left of the *BP* curve, the nation will have a surplus in its balance of payments. With flexible exchange rates, the nation's currency appreciates and so the *BP* curve shifts to the left. This induces a leftward shift in the *IS* curve to *IS''* and a rightward shift in the *LM'* curve to *LM'*, such that curve *IS''*



FIGURE 18.1

Answers to Selected Problems

and LM' intersect on the *BP* curve at point *E'*. Since at point *E'* the nation still faces unemployment, the nation would need to apply additional doses of expansionary fiscal policy until all three markets are in equilibrium at the full-employment level of national income of $Y_F = 1500$.

12.	Point	Fiscal Policy	Monetary Policy
	C3	expansionary	easy
	C6	contractionary	easy
	C9	contractionary	tight

C12 expansionary tight

Chapter 19

- **5.** An unexpected increase in prices in the face of sticky wages means that real wages temporarily fall. This leads firms to hire more workers and thus increase output in the short run. In the long run, however, money wages fully adjust to (i.e., increase in the same proportion as) the increase in prices. As a result, real wages return to their previous higher level, firms reduce employment to their original lower level, and the nation's output returns to its lower long-run natural level, but at the new higher price level.
- 6. Starting from point *C* in Figure 18.3, an unexpected decrease in aggregate demand from AD' to AD causes prices to fall and firms to temporarily reduce their output, giving the new short-run equilibrium point where the AD' curve intersects the SRAS' curve. In the long run, however, as expected prices fall to match actual prices, the short-run aggregate supply curve shifts down by the amount of the price reduction (i.e., from SRAS' to SRAS) and defines new long-run equilibrium point *E* at the natural level of output Y_N , but at the lower price level of P_E .

Another way of saying this is that at the point to the left of the *LRAS* curve,

actual prices are lower than expected prices. Expected prices then fall and this shifts the *SRAS* curve downward until expected prices are equal to the lower actual prices; the economy then returns to its long-run natural level of output equilibrium.

12. Expansionary fiscal policy under fixed exchange rates or easy monetary policy under flexible exchange rates can correct a recession but only at the expense of higher prices or inflation. If prices are flexible downward in the nation. however, the recession can be corrected automatically and in a relatively short time by falling domestic prices, which would stimulate the domestic and foreign demand for the nation's goods and services. If domestic prices are sticky or not too flexible downward, however, relying on market forces (i.e., falling prices in the nation) to automatically correct the recession may take too long, and this may justify the use of expansionary fiscal or monetary policies.

Chapter 20

- 1. a. The United States will export the commodity because at R = 2, P =\$7 in the United States and P =\$8 in the United Kingdom.
 - b. The United States has a comparative disadvantage in this commodity at the equilibrium exchange rate.
- 2. Under a fixed exchange rate system and perfectly elastic international capital flows, the attempt on the part of the nation to reduce its money supply (tight monetary policy) tends to increase interest rates in the nation and attract capital inflows.

On the other hand, the attempt on the part of the nation's monetary authorities to increase the money supply of the nation will be frustrated by the tendency of the nation's interest rate to fall, resulting in a capital outflow that would leave the nation's money supply unchanged (see Section 17.4c).

6. An optimum currency area involves *permanently* fixed exchange rates as well as common monetary and fiscal policies among its members. Thus, an optimum currency area resembles a single economic entity and monetary union. There are no such implications for countries that are connected only by fixed exchange rates.

- 1. a. The primary goal of nations today is internal balance, while during the heyday of the gold standard nations gave priority to external balance. The gold standard days were also characterized by much greater price flexibility than today. Furthermore, London was then the undisputed center of international trade and finance, and as a result, there were no destabilizing international capital flows as frequently occur today between the different international monetary centers.
 - b. The reestablishment of the gold standard today would require the reestablishment of all the conditions that made for its smooth operation from 1880 until 1914. Nations would have to place priority on external over internal balance and give up their use of monetary policy. They would have to eliminate domestic restrictions on price flexibility (i.e., abolish price ceilings, minimum wages, interest restrictions, etc.), and reestablish the supremacy of one international monetary center (New York or London) so as to avoid destabilizing capital flows among the international monetary centers in existence today. Needless to say, this is impossible.

Answers to Selected Problems

- **7.** a. The nation could attempt to discourage large destabilizing international capital flows by purchasing the foreign currency forward to reduce the forward discount or increase the forward premium on the foreign currency.
 - b. The same is true today, except that today exchange rates can fluctuate much more than under the Bretton Woods system and capital moves much more freely internationally than under the old Bretton Woods system so that the policy of intervening in the forward market is likely to be much less effective.
- 8. a. The nation could attempt to discourage large destabilizing international capital flows by purchasing the foreign currency in the spot market. This tends to appreciate the foreign currency and discourage international capital inflows.
 - b. The same is true today, except that today exchange rates can fluctuate much more than under the Bretton Woods system and capital moves much more freely internationally than under the old Bretton Woods system so that the policy of intervening in the spot market is likely to be much less effective.