CHAPTER 12

International Resource Movements and Multinational Corporations

12.1 Introduction

So far, we have dealt almost exclusively with commodity trade and have assumed no international resource movement. However, capital, labor, and technology do move across national boundaries. In some ways, international trade and movements of productive resources can be regarded as substitutes for one another. For example, a relatively capital-abundant and labor-scarce country, such as the United States, could either export capital-intensive commodities or export capital itself, and either import labor-intensive products or allow the immigration of workers from countries with plentiful labor supplies. As in the case of international trade, the movement of productive resources from nations with relative abundance and low remuneration to nations with relative scarcity and high remuneration has a tendency to equalize factor returns internationally and generally increases welfare.

International trade and movements of productive factors, however, have very different economic effects on the nations involved. In this chapter, we focus on the

cost and benefits of international resource movements. Since multinational corporations are an important vehicle for the international flows of capital, labor, and technology, we also devote a great deal of attention to this relatively new and crucial type of economic enterprise.

There are two main types of foreign investments: portfolio investments and direct investments. **Portfolio investments** are purely financial assets, such as bonds, denominated in a national currency. With bonds, the investor simply lends capital to get fixed payouts or a return at regular intervals and then receives the face value of the bond at a prespecified date. Most foreign investments prior to World War I were of this type and flowed primarily from the United Kingdom to the "regions of recent settlement" for railroad construction and the opening up of new lands and sources of raw materials. The U.S. government defines as a portfolio investment stock purchases that involve less than 10 percent of the voting stock of a corporation. (A purchase of 10 percent or more of the voting stock of a corporation is regarded as a direct investment.) With stocks the investor purchases equity, or a claim on the net worth of the firm. Portfolio or financial investments take place primarily through financial institutions such as banks and investment funds. International portfolio investments collapsed after World War I and have only revived since the 1960s.

Direct investments, on the other hand, are real investments in factories, capital goods, land, and inventories where both capital and management are involved and the investor retains control over use of the invested capital. Direct investment usually takes the form of a firm starting a subsidiary or taking control of another firm (for example, by purchasing a majority of the stock). Any purchase of 10 percent or more of the stock of a firm, however, is defined as direct investment by the U.S. government. In the international context, direct investments are usually undertaken by multinational corporations engaged in manufacturing, resource extraction, or services. Direct investments are now as important as portfolio investments as forms or channels of international private capital flows.

In Section 12.2, we present some data on international capital flows. In Section 12.3, we examine the motives for portfolio and direct investments abroad. In Section 12.4, we analyze the welfare effects of international capital flows on investing and host countries. Section 12.5 deals with multinational corporations–the reasons for their existence and some of the problems they create. Finally, in Section 12.6, we discuss the reasons for and welfare effects of the international migration of labor in general and of skilled labor in particular. The appendix deals with the so-called transfer problem associated with international capital flows.

12.2 Some Data on International Capital Flows

We now present some data on the size and composition of U.S. capital investments in foreign nations and foreign capital investments in the United States from 1950 to 2001.

We can see from Table 12.1 that both U.S. private holdings of foreign long-term securities (stocks and bonds) and foreign private holdings of U.S. long-term securi-

TABLE 12.1. *U.S. Foreign Long-Term Private International Investment Position in Selected Years, 1950–2001 (billions of U.S. dollars, at historical cost, current cost, and market value basis, at year end)*

Year	1950	1960	1970	1980	1985	1990	1995	2000	2001
U.S. assets abroad									
Foreign securities	4.3	9.5	20.9	62.4	119.4	342.3	1,169.6	2,389.4	2,110.5
Direct investments at:									
Historical cost	11.8	31.9	75.5	214.5	230.3	421.5	711.6	1,239.4	1,381.7
Current cost	—	—	—	396.2	358.4	616.7	885.5	1,515.3	1,623.1
Market value	—	—	—	—	386.4	731.8	1,363.8	2,674.2	2,289.9
Foreign assets in the U.S.									
U.S. securities	2.9	9.3	34.8	74.1	207.9	460.6	969.8	2,623.6	2,856.7
Direct investments at:									
Historical cost	3.4	6.9	13.3	83.0	184.6	403.7	560.1	1,214.3	1,321.1
Current cost	—	—	—	125.9	229.5	505.3	680.1	1,374.8	1,498.9
Market value	—	—	—	—	220.0	539.6	1,005.7	2,766.0	2,526.7

Source: U.S. Department of Commerce, *Survey of Current Business* (Washington, D.C.: U.S. Government Printing Office, Various Issues).

ties increased very rapidly from 1950 to 2001, with the latter about 35 percent higher than the former at the end of 2001. Table 12.1 also shows the value of U.S. *direct* investments abroad and foreign *direct* investments in the United States at the end of various years. Foreign direct investments are valued at historical cost, at current or replacement cost, and at market value (i.e., using stock market prices). Figures for foreign direct investments at current cost are available only from 1976, and those at current values only from 1982. The need to supplement the historical values of foreign direct investments with those at current cost and at market value arises because most U.S. foreign direct investments occurred in the 1960s and 1970s and require significantly larger adjustments for the cumulative effects of inflation than foreign direct investments in the United States, which occurred mostly since the 1980s. Table 12.1 shows that both the stock of U.S. direct investments abroad and foreign direct investments in the United States also increased very rapidly from 1950 to 2001 and were similar in amount at the end of 2001 when measured at market value.

Table 12.2 shows that from 1950 to 2001, the stock of U.S. direct investments in Europe grew much more rapidly than the stock of U.S. direct investments in Canada and Latin America. This was due to the rapid growth of the European Union and the United States' desire to avoid the common external tariff imposed by the EU on imports from outside the EU. Note that U.S. direct investments in Latin America were actually lower in 1985 than in 1980 as a result of the international debt problem of the Latin American countries (discussed in Section 11.6B). Also note that U.S. direct investments in Japan increased less than elsewhere since 1995 because of stagnation in Japan.

TABLE 12.2. *U.S. Direct Investments Abroad by Area in Selected Years, 1950–2001 (billions of U.S. dollars, at historical cost, at year end)*

Year	Total	Canada	Europe	Latin America	Asia and Pacific	of which Japan	Others
1950	$ 11.8	$ 3.6	$ 1.7	$ 4.6	$ 0.3	$ 0.0	$ 1.6
1960	31.9	11.2	7.0	8.4	1.2	0.3	4.1
1970	78.2	22.8	24.5	14.8	8.3	1.5	7.8
1980	215.6	45.0	96.5	38.9	25.3	6.2	9.9
1985	230.3	46.9	105.2	28.3	35.3	9.2	14.6
1990	421.5	68.4	204.2	72.5	63.6	21.0	12.8
1995	711.6	81.4	363.5	122.8	126.0	39.2	17.9
2000	1,293.4	128.8	679.5	251.9	205.3	59.4	27.9
2001	1,381.7	139.0	725.8	269.6	216.5	64.1	30.8

Source: U.S. Department of Commerce, *Survey of Current Business* (Washington, D.C.: U.S. Government Printing Office, Various Issues).

Table 12.3 separates U.S. direct investments abroad and foreign direct investments in the United States into petroleum, manufacturing, finance (excluding depository institutions), and other (mostly services other than financial services). Data on finance are available only since 1985. The table shows that direct investments in manufacturing, finance, and other categories grew much more rapidly than direct investments in petroleum since 1985. Case Study 12-1 shows the yearly inflows of foreign direct investments into the United States from 1980 to 2001.

TABLE 12.3. *U.S. Foreign Long-Term Private International Investment Position in Selected Years, 1950–2001 (billions of U.S. dollars, at historical cost, current cost, and market value basis, at year end)*

Year	1950	1960	1970	1980	1985	1990	1995	2000	2001
U.S. investments abroad									
Petroleum	3.4	10.8	19.8	47.6	57.7	52.8	70.2	95.8	102.1
Manufacturing	3.8	11.1	31.0	89.3	94.7	168.0	250.3	353.6	376.3
Finance	—	—	—	—	22.5	109.4	228.7	542.6	572.5
Other	4.6	10.0	24.7	78.5	55.4	96.8	168.3	301.4	330.8
Total	11.8	31.9	75.5	215.4	230.3	427.0	717.5	1,293.4	1,381.7
Foreign investments in the U.S.									
Petroleum	0.4	1.2	3.0	12.2	28.3	42.9	34.9	87.1	95.9
Manufacturing	1.1	2.6	6.1	33.0	59.6	152.8	214.5	479.9	508.5
Finance	—	—	—	—	35.5	70.4	115.6	239.5	250.6
Other	1.9	3.1	4.2	37.8	61.2	128.8	170.6	407.8	466.1
Total	3.4	6.9	13.3	83.0	184.6	394.9	535.6	1,214.3	1,321.1

Source: U.S. Department of Commerce, *Survey of Current Business* (Washington, D.C.: U.S. Government Printing Office, Various Issues).

Case Study 12-1 Fluctuations in Foreign Direct Investment Flows to the United States

Table 12.4 shows that the level of foreign direct investments (FDI) in the United States was $12.2 billion in 1980. It declined to $8.1 billion in 1983 (a recession year) before rising to $72.7 billion in 1988. Afterward, it declined to $15.3 billion in 1992 (another recession year) and then rose to the all-time high of $335.6 billion in 2000, before falling to 132.9 in 2001 (a recession year). Thus, flows of FDI to the United States seem to be cyclical, rising during periods of high growth and falling during periods of recession or slow growth.

During the second half of the 1980s, many Americans became concerned that foreigners, particularly the Japanese, were "buying up" America. These fears subsided during the early 1990s, as slow growth and recession made FDI in the United States less attractive to foreigners. With the resumption of rapid growth in 1993, FDI in the United States shot up again to much higher levels than during the late 1980s, but with the United States doing much better in international competitiveness than in the 1980s (see Case Study 6-4), the new upsurge in FDI did not cause much concern and was actually welcomed as contributing to rapid growth in the U.S. economy.

TABLE 12.4. *Foreign Direct Investment Flows to the United States in Selected Years, 1980–2001 (billions of U.S. dollars)*

Year	FDI	Year	FDI
1980	$12.2	1991	$ 25.5
1981	23.2	1992	15.3
1982	10.8	1993	26.2
1983	8.1	1994	45.6
1984	15.2	1995	57.2
1985	23.1	1996	79.9
1986	39.2	1997	69.7
1987	40.3	1998	215.3
1988	72.7	1999	275.0
1989	71.2	2000	335.6
1990	65.9	2001	132.9

Source: U.S. Department of Commerce, *Survey of Current Business* (Washington, D.C.: U.S. Government Printing Office, Various Issues).

12.3 Motives for International Capital Flows

In this section, we examine the motives for portfolio and direct investments abroad. While the motives for both types of foreign investments are basically the same, direct foreign investments require additional explanations not provided by the basic model that explains international portfolio investments.

12.3A Motives for International Portfolio Investments

The basic motive for international portfolio investments is to earn higher returns abroad. Thus, residents of one country purchase bonds of another country if the returns on bonds are higher in the other country. This is the simple and straightforward outcome of yield maximization and tends to equalize returns internationally. According to the basic (two-nation) Heckscher–Ohlin model, returns on capital are originally higher in the nation having the lower overall capital–labor ratio. Residents of one country may also purchase stock in a corporation in another country if they expect the future profitability of the foreign corporation to be greater than that of domestic corporations. (For simplicity, here we ignore the greater transaction and other costs usually involved in holding foreign securities.)

The explanation that international portfolio investments occur to take advantage of higher yields abroad is certainly correct as far as it goes. The problem is that it leaves one important fact unexplained. It cannot account for *observed* two-way capital flows. That is, if returns on securities are lower in one nation than in another nation, this could explain the flow of capital investments from the former nation to the latter but is inconsistent with the simultaneous flow of capital in the opposite direction, which is often observed in the real world (see Tables 12.1 and 12.3).

To explain two-way international capital flows, the element of risk must be introduced. That is, investors are interested not only in the rate of return but also in the risk associated with a particular investment. The risk with bonds consists of bankruptcy and the variability in their market value. With stocks, the risk consists of bankruptcy, even greater variability in market value, and the possibility of lower than anticipated returns. Thus, investors maximize returns for a given level of risk and generally accept a higher risk only if returns are higher.

For example, suppose that we deal with stocks and measure risk by the variability (variance) of returns about the average. Suppose also that both stocks A and B have a rate of return of 30 percent on average, but there is a fifty-fifty chance that the yield will be either 20 percent or 40 percent on stock A and 10 percent or 50 percent on stock B. Stock B is then clearly riskier than stock A. Since both stocks have the same yield on the average, investors should purchase stock A to minimize risks.

However, if the yield on stock A falls when the yield on stock B rises and vice versa (i.e., if changes in yields are inversely, or negatively, correlated over time), then by holding both stocks, the investor can still receive a yield of 30 percent on average but with a much lower risk. That is, the risk of a lower than average yield on stock A at any point is more or less matched by the tendency for the yield on stock B to be higher than average at the same time. As a result, the risk of a portfolio including *both* stock A and stock B is substantially reduced.

Portfolio theory thus tells us that by investing in securities with yields that are inversely related over time, a given yield can be obtained at a smaller risk or a higher yield can be obtained for the same level of risk for the portfolio as a whole. Since yields on foreign securities (depending primarily on the different economic conditions abroad) are more likely to be inversely related to yields on domestic securities, a portfolio including both domestic and foreign securities can have a higher average yield and/or lower risk than a portfolio containing only domestic securities.

To achieve such a balanced portfolio, a two-way capital flow may be required. For example, if stock A (with the same average yield but lower risk than stock B) is avail-

able in one country, while stock B (with yields inversely related to the yields on stock A) is available in another country, investors in the first nation must also purchase stock B (i.e., invest in the second nation), and investors in the second nation must also purchase stock A (i.e., invest in the first nation) to achieve a balanced portfolio. **Risk diversification** can thus explain two-way international portfolio investments.

Throughout the preceding discussion, it was implicitly assumed that investors know precisely the average return on stocks and their variability. In reality, this is seldom known in advance. Thus, investors must determine for themselves (from their market knowledge and intuition) what the average returns and variabilities are likely to be in deciding which stocks to purchase. Since different individuals can have different expectations for the same stocks, it is possible that some investors in each nation think that stocks in the other nation are a better buy. This provides an additional explanation for two-way international portfolio investments.

12.3B Motives for Direct Foreign Investments

The motives for direct investments abroad are generally the same as for portfolio investments, that is, to earn higher returns (possibly resulting from higher growth rates abroad, more favorable tax treatment, or greater availability of infrastructures) and to diversify risks. Indeed, it has been found that firms with a strong international orientation, either through exports or through foreign production and/or sales facilities, are more profitable and have a much smaller variability in profits than purely domestic firms.

Although these reasons are sufficient to explain international portfolio investments, they leave one basic question unanswered with regard to direct foreign investments. That is, they cannot explain why the residents of a nation do not borrow from other nations and themselves make real investments in their own nation rather than accept *direct* investments from abroad. After all, the residents of a nation can be expected to be more familiar with local conditions and thus to be at a competitive advantage with respect to foreign investors. There are several possible explanations for this. The most important is that many large corporations (usually in monopolistic and oligopolistic markets) often have some unique production knowledge or managerial skill that could easily and profitably be utilized abroad and over which the corporation wants to retain direct control. In such a situation, the firm will make direct investments abroad. This involves **horizontal integration**, or the production abroad of a differentiated product that is also produced at home.

For example, IBM has a particular computer technology over which it wants to retain direct control but which it can easily duplicate abroad so as to serve the foreign market better (by adapting to local conditions) than through exports. IBM does not want to license foreign producers because it wants to retain complete control over its trade secrets and patents and to ensure consistent quality and service. Even if IBM were willing to negotiate licensing agreements with foreign producers, this would not be feasible in view of the very rapid rate of technological innovations in the field. The situation is basically the same for Xerox, Gillette, Toyota, and many other multinational corporations, and it is the motive behind most direct foreign investments in manufacturing in developed nations.

Another important reason for direct foreign investments is to obtain control of a needed raw material and thus ensure an uninterrupted supply at the lowest possible

Case Study 12-2 The Stock of Foreign Direct Investments Around the World

Table 12.5 shows the outward and inward stock of foreign direct investment (i.e., the stock of foreign direct investment made and received) by region and selected country in 1980, 1990, and 2001. The table shows that in 2001 the United States had by far the largest outward and inward stock of foreign direct investment (FDI). For the outward stock of FDI, the United States was followed by the United Kingdom, France, Germany, Belgium and Luxembourg, Netherlands, Japan, Canada, Switzerland, and Italy, in that order. For the inward stock of FDI, the United States was followed by the United Kingdom, Belgium and Luxembourg, Germany, France, Netherlands, Canada, Italy, Switzerland, and Japan. In 2001, the outward stock of FDI of developing countries was about one-seventh that of developed countries, while their stock of inward FDI was less than one-half that of developed countries. Of the total inward stock of FDI of all developing countries, about 62 percent was in Asia (with Hong Kong and China having by far the largest share) and 32 percent was in Latin America. The inward stock of FDI of Africa and Central and Eastern Europe was very small (see the table).

(continued)

cost. This is referred to as **vertical integration** and was the form of most direct foreign investments in developing countries and in some mineral-rich developed countries. Thus, American and foreign corporations own mines in Canada, Jamaica, Venezuela, Australia, and other nations, and foreigners own some coal mines in the United States. Vertical integration involving multinational corporations can also go *forward* into the ownership of sales or distribution networks abroad, as is the case with most of the world's major automobile producers.

Still other reasons for direct foreign investments are to avoid tariffs and other restrictions that nations impose on imports or to take advantage of various government subsidies to encourage direct foreign investments. Examples of the former are the large-scale direct investments made by U.S. firms in the EU countries and some direct foreign investments in manufacturing in developing nations. Examples of the latter are the direct foreign investments made in developing nations and in depressed regions of some developed nations. Other possible reasons for direct foreign investments are to enter a foreign oligopolistic market so as to share in the profits, to purchase a promising foreign firm to avoid its future competition and the possible loss of export markets, or because only a large foreign multinational corporation can obtain the necessary financing to enter the market.

Two-way direct foreign investments can then be explained by some industries being more advanced in one nation (such as the computer industry in the United States), while other industries are more efficient in other nations (such as the automobile industry in Japan). Direct foreign investments have been greatly facilitated (in a sense made possible) by the very rapid advances in transportation (i.e., jet travel) and communications (i.e., international telephone lines and international data transmission and processing) that have occurred since the end of World War II. These advances permit the headquarters of multinational corporations to exert immediate and direct control over the operations of their subsidiaries around the world, thus facilitating and encouraging direct investments abroad.

The regional distribution of foreign direct investments around the world also seems to depend on geographical proximity or established trade relations. For

Case Study 12-2 (continued)

TABLE 12.5. *Stock of Outward and Inward FDI by Region and Selected Country in 1980, 1990, and 2001 (billions of U.S. dollars)*

	Outward			Inward		
	1980	1990	2001	1980	1990	2001
Developed countries	$499	$1,630	$5,752	$390	$1,383	$4,504
United States[a]	220	431	1,382	83	395	1,321
United Kingdom	80	229	943	63	204	497
France	24	120	515	56	100	310
Germany	43	148	514	37	120	481
Belgium and Luxembourg	6	41	449	7	58	482
Netherlands	42	107	328	19	69	284
Japan	20	201	300	3	10	50
Canada	24	85	244	54	113	201
Switzerland	21	66	236	9	34	90
Italy	7	57	182	9	58	108
Developing countries	22	90	776	246	485	2,181
Asia	6	48	602	160	315	1,326
Hong Kong (China)	0	12	375	124	148	452
Singapore	4	8	63	6	29	104
China	0	2	27	6	25	395
Korea	0	2	41	1	6	47
Malaysia	0	3	19	5	10	53
Indonesia	0	0	2	10	39	57
Latin America	9	19	128	50	117	693
Argentina	6	6	21	5	9	76
Brazil	1	2	11	17	37	219
Mexico	0	1	12	8	22	116
Africa	7	23	45	34	50	159
Central/Eastern Europe	0	1	24	0	4	160
World	521	1,721	6,552	636	1,872	6,846

[a]U.S. values differ a little from those in Tables 12.1 to 12.3 because of different data collection methods.
Source: UNCTAD, *World Investment Report* (Geneva: United Nations, 2002).

example, the United States is the main supplier of foreign direct investments to Latin America, Bangladesh, Pakistan, the Philippines, and Saudi Arabia; foreign direct investments from the European Union flow mostly to Ghana and Morocco in Africa, Brazil in Latin America, India, Sri Lanka, and Vietnam in Asia, and to the former communist countries in Eastern Europe; and Japan is the main supplier of foreign direct investments to South Korea, Singapore, Taiwan, and Thailand. Case Study 12-2 shows the outward and inward stock of foreign direct investment in various regions and selected countries and years.

12.4 Welfare Effects of International Capital Flows

In this section, we examine the welfare effects of international capital flows on the investing and host countries. Some of these effects can be shown graphically. These are examined first. Subsequently, we examine the effects not revealed in the graphical analysis. In order to isolate the effect of capital flows, we assume here that there is no trade in goods.

12.4A Effects on the Investing and Host Countries

In Figure 12.1, we examine a world of only two nations (Nation 1 and Nation 2) with a total combined capital stock of OO'. Of this total capital stock, OA belongs to Nation 1 and $O'A$ belongs to Nation 2. The $VMPK_1$ and $VMPK_2$ curves give the value of the marginal product of capital in Nation 1 and Nation 2, respectively, for various levels of investments. Under competitive conditions, the value of the marginal product of capital represents the return, or yield, on capital.

In isolation, Nation 1 invests its entire capital stock OA domestically at a yield of OC. The total product (which can be measured by the area under the value of the marginal product curve) is thus $OFGA$, of which $OCGA$ goes to owners of capital in Nation 1 and the remainder of CFG goes to other cooperating factors, such as labor and land. Similarly, Nation 2 in isolation invests its entire stock $O'A$ domestically at a yield of $O'H$. Total product is $O'JMA$, of which $O'HMA$ goes to owners of capital in Nation 2 and the remainder of HJM goes to other cooperating factors.

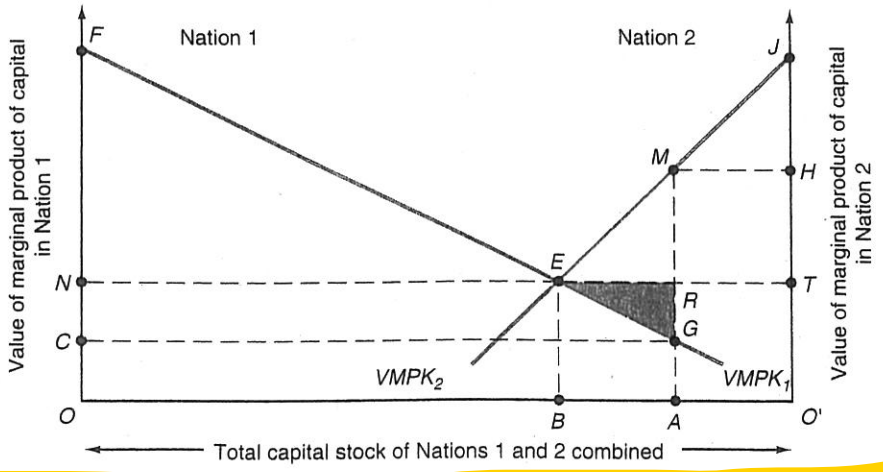

FIGURE 12.1. Output and Welfare Effects of International Capital Transfers. Of the total capital stock of OO', Nation 1 holds OA and its total output is $OFGA$, while Nation 2 holds $O'A$ and its total output is $O'JMA$. The transfer of AB of capital from Nation 1 to Nation 2 equalizes the return on capital in the two nations at BE. This increases world output by EGM (the shaded area), of which EGR accrues to Nation 1 and ERM to Nation 2. Of the increase in total domestic product of $ABEM$ in Nation 2, $ABER$ goes to foreign investors, leaving ERM as the net gain in domestic income in Nation 2.

Let us assume that free international capital movements are allowed. Since the return on capital is higher in Nation 2 ($O'H$) than in Nation 1 (OC), AB of capital flows from Nation 1 to Nation 2 so as to equalize at BE ($= ON = O'T$) the rate of return on capital in the two nations. Total *domestic product* in Nation 1 is now $OFEB$, to which must be added $ABER$ as the total return on foreign investments, giving a total *national income* of $OFERA$ (ERG greater than before foreign investments). With free international capital flows, the total return on capital in Nation 1 increases to $ONRA$, while the total return on other cooperating factors decreases to NFE.

The inflow of AB of foreign capital into Nation 2 lowers the rate of return on capital from $O'H$ to $O'T$. Total domestic product in Nation 2 grows from $O'JMA$ to $O'JEB$. Of the increase in total product of $ABEM$, $ABER$ goes to foreign investors, so that ERM remains as the *net gain* in total product accruing to Nation 2. The total return to domestic owners of capital falls from $O'HMA$ to $O'TRA$, while the total return to other cooperating factors rises from HJM to TJE.

From the point of view of the world as a whole (i.e., the two nations combined), total product increased from $OFGA + O'JMA$ to $OFEB + O'JEB$, or by $ERG + ERM = EGM$ (the shaded area of the figure). Thus, international capital flows increase the efficiency in the allocation of resources internationally and increase world output and welfare. Note that the steeper the $VMPK_1$ and $VMPK_2$ curves are, the greater is the total gain from international capital flows.

12.4B Other Effects on the Investing and Host Countries

Assuming two factors of production, capital and labor, both fully employed before and after the capital transfer, it can be seen from Figure 12.1 that the total and average return on capital increases, whereas the total and average return to labor decreases in the investing country. Thus, while the investing country as a whole gains from investing abroad, there is a redistribution of domestic income from labor to capital. It is for this reason that organized labor in the United States is opposed to U.S. investments abroad. On the other hand, while the host country also gains from receiving foreign investments, these investments lead to a redistribution of domestic income from capital to labor. If we allow for less than full employment, foreign investments tend to depress the level of employment in the investing country and increase it in the host country and, once again, can be expected to be opposed by labor in the former and to benefit labor in the latter.

International capital transfers also affect the balance of payments of the investing and host countries. A nation's balance of payments measures its total receipts from and total expenditures in the rest of the world. In the year in which the foreign investment takes place, the foreign expenditures of the investing country increase and cause a balance-of-payments deficit (an excess of expenditures abroad over foreign receipts). This was certainly a major contributor to the huge balance-of-payments deficits of the United States during the 1960s and led to restrictions on U.S. foreign investments from 1965 to 1974. Of course, the counterpart to the worsening in the investing nation's balance of payments is the improvement in the host nation's balance of payments in the year in which it receives the foreign investment.

The initial capital transfer and increased expenditures abroad of the investing country are likely to be mitigated by increased exports of capital goods, spare parts, and other products of the investing country, and by the subsequent flow of profits to the investing country. It has been estimated that the "payback" period for the initial capital transfer is between five and ten years on average. Another effect to consider in the long run is whether foreign investments will lead to the replacement of the investing country's exports and even to imports of commodities previously exported. Thus, while the immediate effect on the balance of payments is negative in the investing country and positive in the host country, the long-run effects are less certain.

Since foreign investments for most developed countries are two-way (see Section 12.2), these short-run and long-run balance-of-payments effects are mostly neutralized, except for a nation such as Japan, with investments abroad greatly exceeding foreign investments received, and for developing countries that are primarily recipients of foreign investments and chronically face serious balance-of-payments difficulties (see Case Study 12-2).

Another important welfare effect of foreign investments on both the investing and host countries results from different rates of taxation and foreign earnings in various countries. Thus, if corporate taxes are 40 percent of earnings in the United States but only 30 percent in England, it is only natural for U.S. firms to invest in England or reroute foreign sales through subsidiaries there in order to pay the lower tax rate. Because most nations, including the United States, are signatories of double-taxation agreements (to avoid double taxation—on equity grounds), the United States would collect a tax of only 10 percent on foreign earnings (the difference between the domestic tax rate of 40 percent and the foreign tax rate of 30 percent) when foreign earnings are repatriated. As a result, the tax base and the amount of taxes collected decline in the investing country and rise in the host country.

Foreign investments, by affecting output and the volume of trade of both investing and host countries, are also likely to affect the terms of trade. However, the way the terms of trade will change depends on conditions in both nations, and not much can be said a priori. Foreign investments may also affect the investing nation's technological lead and the host country's control over its economy and ability to conduct its own independent economic policy. Since these and other effects of international capital transfers usually result from the operations of multinational corporations, they are examined in the next section.

12.5 Multinational Corporations

One of the most significant international economic developments of the postwar period is the proliferation of **multinational corporations (MNCs).** These are firms that own, control, or manage production facilities in several countries. Today MNCs account for about 25 percent of world output, and *intrafirm* trade (i.e., trade among the parent firm and its foreign affiliates) is estimated to be about one-third of total world trade in manufacturing. Some MNCs, such as General Motors and Exxon, are truly giants, with yearly sales in the tens of billions of dollars and exceed-

ing the total national income of all but a handful of nations. Furthermore, most international direct investments today are undertaken by MNCs. In the process, the parent firm usually provides its foreign affiliates with managerial expertise, technology, parts, and a marketing organization in return for some of the affiliates' output and earnings. In this section, we examine the reasons for the existence of MNCs and some of the problems they create for the home and host countries.

12.5A Reasons for the Existence of Multinational Corporations

The basic reason for the existence of MNCs is the competitive advantage of a global network of production and distribution. This competitive advantage arises in part from vertical and horizontal integration with foreign affiliates. By vertical integration, most MNCs can ensure their supply of foreign raw materials and intermediate products and circumvent (with more efficient intrafirm trade) the imperfections often found in foreign markets. They can also provide better distribution and service networks. By horizontal integration through foreign affiliates, MNCs can better protect and exploit their monopoly power, adapt their products to local conditions and tastes, and ensure consistent product quality.

The competitive advantage of MNCs is also based on economies of scale in production, financing, research and development (R&D), and the gathering of market information. The large output of MNCs allows them to carry division of labor and specialization in production much further than smaller national firms. Product components requiring only unskilled labor can be produced in low-wage nations and shipped elsewhere for assembly. Furthermore, MNCs and their affiliates usually have greater access, at better terms, to international capital markets than do purely national firms, and this puts MNCs in a better position to finance large projects. They can also concentrate R&D in one or a few advanced nations best suited for these purposes because of the greater availability of technical personnel and facilities. Finally, foreign affiliates funnel information from around the world to the parent firm, placing it in a better position than national firms to evaluate, anticipate, and take advantage of changes in comparative costs, consumers' tastes, and market conditions generally.

The large corporation invests abroad when expected profits on additional investments in its industry are higher abroad. Since the corporation usually has a competitive advantage in and knows its industry best, it does not usually consider the possibility of higher returns in every other domestic industry before it decides to invest abroad. That is, differences in expected rates of profits domestically and abroad in the particular industry are of crucial importance in a large corporation's decision to invest abroad. This explains, for example, Toyota automotive investments in the United States and IBM computer investments in Japan. Indeed, it also explains investments of several Japanese electronics MNCs in the United States as an attempt to invade the latter's computer market. All of the above implies that MNCs are *oligopolists* selling for the most part *differentiated products,* often developed as described by the *technological gap* and *product cycle models,* and produced under strong *economies of scale* (see Section 6.5). Examples of the products sold by MNCs are motor vehicles, petroleum products, electronics, metals, office equipment, chemicals, and food.

MNCs are also in a much better position to control or change to their advantage the environment in which they operate than are purely national firms. For example, in determining where to set up a plant to produce a component, an MNC can and usually does "shop around" for the low-wage nation that offers the most incentives in the form of tax holidays, subsidies, and other tax and trade benefits. The sheer size of most MNCs in relation to most host nations also means the MNCs are in a better position than purely national firms to influence the policies of local governments and extract benefits. Furthermore, MNCs can buy up promising local firms to avoid future competition and are in a much better position than purely domestic firms to engage in other practices that restrict local trade and increase their profits. MNCs, through greater diversification, also face lower risks and generally earn higher profits than purely national firms.

Finally, by artificially overpricing components shipped *to* an affiliate in a higher-tax nation and underpricing products shipped *from* the affiliate in the high-tax nation, an MNC can minimize its tax bill. This is called **transfer pricing** and can arise in intrafirm trade as opposed to trade among independent firms or conducted at "arm's length."

In the final analysis, it is a combination of all or most of these factors that gives MNCs their competitive advantage vis-à-vis purely national firms and explains the proliferation and great importance of MNCs today. That is, by vertical and horizontal integration with foreign affiliates, by taking advantage of economies of scale, and by being in a better position than purely national firms to control the environment in which they operate, MNCs have grown to become the most prominent form of private international economic organization in existence today. Case Study 12-3 examines the world's largest MNCs.

12.5B Problems Created by Multinational Corporations in the Home Country

While MNCs, by efficiently organizing production and distribution on a worldwide basis, can increase world output and welfare, they can also create serious problems in both the home and host countries. The most controversial of the alleged harmful effects of MNCs on the home nation is the loss of domestic jobs resulting from foreign direct investments. These are likely to be unskilled and semiskilled production jobs in which the home nation has a comparative disadvantage. It is for this reason that organized labor in the United States and other major home nations is against direct foreign investments by MNCs. However, some clerical, managerial, and technical jobs are also likely to be created in the headquarters of the MNC in the home nation as a result of direct foreign investments. Even if the number of jobs lost exceeds the number created, it may be that the home nation would have lost these jobs anyway to foreign competitors and would have had no jobs created at home without the direct foreign investment. The extent to which this may be true depends, of course, on the type of direct foreign investment and the circumstances under which it takes place. See Case Study 12-4 for the employment of workers abroad by U.S. MNCs.

A related problem is the export of advanced technology to be combined with other cheaper foreign factors to maximize corporate profits. It is claimed that this may undermine the technological superiority and future of the home nation. However,

Case Study 12-3 The World's Largest Multinational Industrial Corporations

For the world's industrial multinational corporations (MNCs) with 2000 sales in excess of $50 billion, Table 12.6 gives the home nation of the parent firm, the major industry, the level of yearly sales, and the percentage of those sales made outside the home country. From the table we see that 6 (including the top 3) of these 19 MNCs have headquarters in the United States, 5 in Japan, 2 in Germany, and one each in Germany/United States, the United Kingdom, United Kingdom/Netherlands, France, Italy, and Venezuela. Seven are in motor vehicles, 6 in petroleum, 5 in electronics, and 1 in computers. Petroleos de Venezuela has the highest percentage of foreign sales (93.5), and the simple average for all the firms is 55.7 percent.

TABLE 12.6. *The World's Largest Industrial Multinational Corporations in 2000*

Rank	Company	Home Nation	Industry	Yearly Sales (billion $)	Percentage of Foreign Sales
1	ExxonMobil Corporation	United States	Petroleum	206.1	69.4
2	General Motors	United States	Motor vehicles	184.4	26.1
3	Ford Motor Company	United States	Motor vehicles	170.1	30.4
4	DaimlerChrysler	Germany/US	Motor vehicles	152.4	32.0
5	Royal Dutch/Shell Group	UK/Netherlands	Petroleum	149.1	54.4
6	British Petroleum	United Kingdom	Petroleum	148.1	71.3
7	General Electric	United States	Electronics	129.9	38.1
8	Toyota	Japan	Motor vehicles	125.6	49.6
9	Chevron Texaco	United States	Petroleum	117.1	55.5
10	Total Fina Elf	France	Petroleum	105.8	78.0
11	IBM	United States	Computers	88.4	57.9
12	Volkswagen Group	Germany	Motor vehicles	79.6	72.6
13	Hitachi	Japan	Electronics	75.5	29.3
14	Siemens	Germany	Electronics	71.4	43.8
15	Matsushita Electric	Japan	Electronics	68.9	49.3
16	Sony	Japan	Electronics	63.7	67.2
17	Honda Motor	Japan	Motor vehicles	57.5	72.9
18	Fiat	Italy	Motor vehicles	53.6	66.9
19	Petroleos de Venezuela	Venezuela	Petroleum	53.2	93.5

Source: United Nations, *World Investment Report 2002*.

against this possible harmful effect is the tendency of MNCs to concentrate their R&D in the home nation, thus allowing it to maintain its technological lead. Whether or not MNCs, on balance, undermine the technological superiority of the home country is a hotly debated question to which no clear-cut answer is yet possible.

Another possible harmful effect of MNCs on the home country can result from transfer pricing and similar practices, and from shifting their operations to lower-tax nations, which reduce tax revenues and erode the tax base of the home country. This

Case Study 12-4 Employment of U.S. MNCs Abroad

Table 12.7 shows the number and percentage of workers employed abroad by U.S. MNCs in various nations in 1999. The table shows that U.S. MNCs employed 8.9 million workers abroad in 1999, of which 42.5 percent were in Europe, 21.2 percent in Asia and the Pacific, and 20.5 percent in Latin America and other countries of the Western Hemisphere. The United Kingdom and Canada had the largest number among industrial countries (with 13.2 percent and 11.8 percent of the total, respectively). Mexico came first among developing nations and third among all nations (with 10.5 percent of the total). Foreign-based MNCs employed 6.0 million workers in the United States in 1999, and, as pointed out in Section 12.5B, not all jobs created abroad by U.S. MNCs come at the expense of domestic jobs in the United States.

TABLE 12.7. *Number of Workers Employed Abroad by U.S. MNCs in 1999 (in thousands)*

Region/Country	Employment	Percentage of Total
Canada	1,055	11.8
Europe, of which:	3,787	42.5
United Kingdom	1,172	13.2
Germany	676	7.6
France	518	5.8
Italy	206	2.3
Netherlands	195	2.2
Spain	180	2.0
Asia and Pacific of which:	1,889	21.2
Japan	399	4.5
Australia	309	3.5
China	262	2.9
Latin America and Other Western Hemisphere, of which:	1,828	20.5
Mexico	933	10.5
Brazil	412	4.6
Africa, of which:	219	2.5
South Africa	136	1.5
Middle East	93	1.1
International[a]	37	0.4
All countries	8,907	100.0

[a]Consists of affiliates that have operations in more than one country and that are engaged in petroleum shipping, other water transportation, or offshore oil and gas drilling.

Source: U.S. Department of Commerce, *Survey of Current Business*, March 2002, p. 48.

results from common international taxing practice. Specifically, the host country taxes the subsidiary's profits first. To avoid double taxation of foreign subsidiaries, the home country then usually taxes only repatriated profits (if its tax rate is higher than in the host country), and only by the difference in the tax rates.

An example will clarify this point. Suppose that the corporate profit tax is 50 percent in the home country and 40 percent in the host country, and the before-tax risk-adjusted profit rate is 20 percent abroad but 16 percent at home. The MNC will then invest abroad. When 20 percent is earned abroad, the host country gets 8 percent in taxes and the MNC retains 12 percent. When the MNC repatriates this 12 percent profit, the home country will tax it at the rate of 10 percent (the difference between the domestic and the foreign corporate tax profit rate). Thus, the home country gets only 1.2 percent and only when the profits are repatriated. The reinvestment of profits abroad in the MNC's affiliate thus amounts to an interest-free loan from the home country. If the corporate profit tax rates of the home and host countries were equal, the home country would collect no tax at all even when the MNC repatriates its profits. Had the MNC invested in the home country to begin with and earned a profit of 16 percent, the home country would have collected a tax of 8 percent (at the 50 percent tax rate). Thus, MNCs reduce tax revenues and erode the tax base of the home country.

Finally, because of their access to international capital markets, MNCs can circumvent domestic monetary policies and make government control over the economy in the home nation more difficult. These alleged harmful effects of MNCs are of crucial importance to the United States, since it is home for about one-third of the largest MNCs. In general, home nations do impose some restrictions on the activities of MNCs, either for balance-of-payments reasons or, more recently, for employment reasons.

12.5C Problems Created by Multinational Corporations in the Host Country

Host countries have even more serious complaints against MNCs. First and foremost is the allegation that MNCs dominate their economies. This is certainly true for Canada, where almost 60 percent of the total capital in manufacturing is owned or controlled by foreigners (40 percent by Americans). It is also true for some of the smaller developing nations. Foreign domination is felt in many different ways in host countries, including (1) the unwillingness of a local affiliate of an MNC to export to a nation deemed unfriendly to the home nation or the requirement to comply with a *home*-nation law prohibiting such exports; (2) the borrowing of funds abroad to circumvent tight domestic credit conditions and the lending of funds abroad when interest rates are low at home; and (3) the effect on national tastes of large-scale advertising for such products as Coca-Cola, jeans, and so on.

Another alleged harmful effect of MNCs on the host country is the siphoning off of R&D funds to the home nation. While this may be more efficient for the MNC and the world as a whole, it also keeps the host country technologically dependent. This is especially true and serious for developing nations. MNCs may also absorb local savings and entrepreneurial talent, thus preventing them from being used to establish domestic enterprises that might be more important for national growth and development. The extent to which this occurs, however, is not clear. MNCs may also

extract from host nations most of the benefits resulting from their investments, either through tax and tariff benefits or through tax avoidance. In developing nations, foreign direct investments by MNCs in mineral and raw material production have often given rise to complaints of foreign exploitation in the form of low prices paid to host nations, the use of highly capital-intensive production techniques inappropriate for labor-abundant developing nations, lack of training of local labor, overexploitation of natural resources, and creating highly dualistic "enclave" economies.

Most of these complaints are to some extent true, particularly in the case of developing host countries, and they have led many host nations to regulate foreign investments in order to mitigate the harmful effects and increase the possible benefits. Thus, Canada imposed higher taxes on foreign affiliates with less than 25 percent Canadian interest. India specifies the sectors in which direct foreign investments are allowed and sets rules to regulate their operation. Some developing nations allow only *joint ventures* (i.e., local equity participation) and set rules for the transfer of technology and the training of domestic labor, impose limits on the use of imported inputs and the remission of profits, set environmental regulations, and so on. In the extreme, the host nation can nationalize foreign production facilities. However, this is likely to seriously reduce the future flow of direct foreign investments to the nation.

Even in the United States, the home of about a third of the largest MNCs, great concern was expressed over foreign control at the height of foreign direct investment flows during the late 1980s. This concern then vanished in the light of the sharp reduction in foreign direct investments in the early 1990s (see Case Study 12-1). Efforts are currently in progress within the EU, OECD, the UN, and UNCTAD to devise an international code of conduct for MNCs. However, since the interests of home and host countries are generally in conflict, it is virtually impossible for such an international code to be very specific. As a result, it is unlikely to succeed in severely restricting most of the abuses of and problems created by MNCs in home and host countries.

12.6 Motives for and Welfare Effects of International Labor Migration

Labor is generally less mobile internationally than capital. However, great waves of immigrants moved from Europe to the New World during the nineteenth century. This relieved population pressures in Europe and contributed significantly to the rapid growth and development of the New World, especially the United States. In this section, we examine the causes of international labor migration and analyze its welfare effects on the countries of emigration and immigration. Those effects that can be illustrated graphically are examined first. Subsequently, we examine the effects that are not apparent from the graphical analysis.

12.6A Motives for International Labor Migration

International labor migration can take place for economic as well as noneconomic reasons. Some of the international migrations that occurred in the nineteenth cen-

tury and earlier were certainly motivated by the desire to escape political and religious oppression in Europe. However, most international labor migration, particularly since the end of World War II, has been motivated by the prospect of earning higher real wages and income abroad.

The decision to migrate for economic reasons can be analyzed in the same manner and with the same tools as any other investment decision. Specifically, migration, just like any other type of investment, involves both costs and benefits. The costs include the expenditures for transportation and the loss of wages during time spent relocating and searching for a job in the new nation. In addition, there are many other less quantifiable costs, such as the separation from relatives, friends, and familiar surroundings; the need to learn new customs and often a new language; and the risks involved in finding a job, housing, and so on in a new land. To be sure, many of these noneconomic costs are greatly reduced by the fact that migrations usually occur in waves and in chains, with many migrants moving together and/or to areas with an already substantial number of earlier migrants from the same place of origin.

The economic benefits of international migration can be measured by the higher real wages and income that the migrant worker can earn abroad during his or her remaining working life, over and above what he or she could have earned at home. Other benefits may be greater educational and job opportunities for the migrants' children. From the excess of returns over costs, an internal rate of return for the migration decision can be estimated, just as for any other type of investment. If this rate of return is sufficiently high to also overcome the noneconomic costs associated with migration, then the worker will migrate. Of course, in the real world workers seldom, if ever, have the information to carry out this type of cost-benefit analysis explicitly. Nevertheless, they behave as if they did. This is confirmed by the fact that migrants invariably move from low-wage to high-wage nations. Furthermore, younger workers migrate more readily than older workers because, among other things, they have a longer remaining working life over which to benefit from the higher wages abroad.

12.6B Welfare Effects of International Labor Migration

The welfare effects of international labor migration on the nations of emigration and immigration can be analyzed with the same diagrammatic technique used to analyze the welfare effects of international capital movements. In Figure 12.2, the supply of labor is OA in Nation 1 and $O'A$ in Nation 2. The $VMPL_1$ and $VMPL_2$ curves give the value of the marginal revenue product of labor in Nation 1 and Nation 2, respectively. Under competitive conditions, $VMPL$ represents the real wages of labor.

Before migration, the wage rate is OC and total product is $OFGA$ in Nation 1. In Nation 2, the wage rate is $O'H$ and total product is $O'JMA$. Now let us assume free international labor migration. Since wages are higher in Nation 2 ($O'H$) than in Nation 1 (OC), AB of labor migrates from Nation 1 to Nation 2 so as to equalize wages in the two nations at BE ($= ON = O'T$). Thus, wages rise in Nation 1 and fall in Nation 2 (and for that reason immigration is generally opposed by

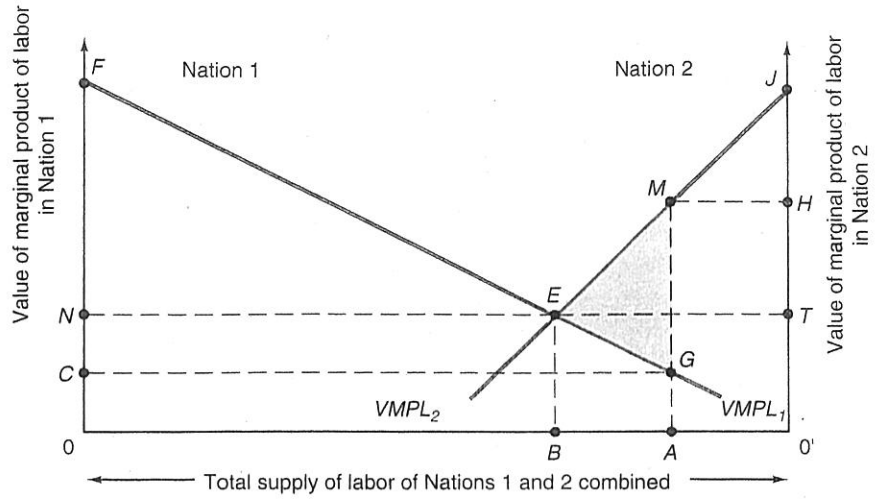

FIGURE 12.2. Output and Welfare Effects of International Labor Migration. With a supply of labor of *OA*, Nation 1 has a real wage rate of *OC* and a total output of *OFGA*. With a supply of labor of *O'A*, Nation 2 has a real wage rate of *O'H* and a total output of *O'JMA*. The migration of *AB* of labor from Nation 1 to Nation 2 equalizes real wages in the two nations at *BE*. This reduces total output to *OFEB* in Nation 1 and increases it in Nation 2 to *O'JEB*, for a net increase in world output of *EGM* (the shaded area).

organized labor). On the other hand, total product falls from *OFGA* to *OFEB* in Nation 1 and rises from *O'JMA* to *O'JEB* in Nation 2, for a net gain in world output of *EGM* (the shaded area in the figure). Note that there is a redistribution of national income toward labor in Nation 1 (the nation of emigration) and toward nonlabor resources in Nation 2. Nation 1 may also receive some remittances from its migrant workers. Note also that if *AB* of labor had been unemployed in Nation 1 before migration, the wage rate would have been *ON* and the total product *OFEB* in Nation 1 with and without migration, and the net increase in world output with migration would have been *ABEM* (all accruing to Nation 2).

12.6c Other Welfare Effects of International Labor Migration

So far, we have implicitly assumed that all labor is unskilled. However, even casual observation of the real world reveals a great variety in the quality and amount of human capital (in the form of education, training, and health) embodied in different workers and labor groups. The question then arises as to the welfare effects of the migration of a highly skilled worker on the nations of emigration and immigration. These welfare effects are likely to be significantly different from those arising from the migration of unskilled labor. Concern with this question has greatly increased since the 1950s and 1960s as relatively large numbers of scientists and technicians, doctors and nurses, and other highly skilled personnel have moved from developing to developed nations and from Europe to the United States. For example, of the 8.7

million people that poured into the United States from the rest of the world during the 1980s, 1.5 million were college educated. More than 40 percent of the 200 researchers in the Communications Sciences Research wing at AT&T Bell Laboratories were foreign born, and more than 50 percent of computer science doctorates awarded by U.S. universities in the early 1990s went to foreign-born students—many of whom remained in the United States. Indeed, more and more U.S. high-tech industries, from semiconductors to biotechnology, are depending on immigrant scientists and engineers to remain competitive in the increasingly global marketplace. The problem of the migration of highly skilled workers is vividly conveyed by the term **brain drain.** See Case Study 12-5.

The nations of origin of skilled migrants charge that they incur a great cost in educating and training these workers, only to see them leave and benefit the receiving nations. To be sure, many of these highly skilled workers often cannot be used effectively at home—as, for example, when a doctor only performs nursing services and engineers are used as technicians, as frequently happens in some developing countries. Nevertheless, the fact remains that the nation of origin incurs the great expense of training these workers but receives little, if any, benefit in the form of emigrant remittances. It may also be that the more dynamic, more alert, and younger workers emigrate, thus reducing the stock of these qualities in the remaining labor force.

The brain drain is often encouraged by national immigration laws (as in the United States, the United Kingdom, and other industrial nations) that facilitate the immigration of skilled persons but generally impose serious obstacles to the immigration of unskilled workers. This has led to demands to tax skilled emigrants at the time of exit or tax their subsequent higher earnings in the nation of immigration, so that the nation of origin could recoup part of the cost incurred in training them. Although these proposals seem reasonable, it must be remembered that an important element of personal freedom is involved in the ability to migrate. Thus, it might be more acceptable from the individual's point of view and more efficient from an economic point of view for the government of the receiving nation to somehow compensate, through increased aid or other financial transfer to the nation of origin, for the training costs of skilled immigrants, particularly if the nation of origin is a developing nation.

In the above discussion of the migration of skilled and unskilled workers, we implicitly assumed that the migration decision is more or less permanent. However, a great deal of labor migration, particularly into the European Union, has been of a temporary type. That is, a nation such as Germany admitted foreign workers on a temporary basis when needed (the so-called guest workers) but refused to renew work permits during domestic economic downturns when the foreign workers were no longer needed. By doing so, Germany more or less insulated its economy and its labor force from economic downturns and imposed the adjustment problem on sending nations such as Turkey, Algeria, and Egypt, which are poorer and less capable of dealing effectively with the resulting unemployment.

In 2000, immigrants represented nearly 25 percent of the *labor force* of Australia, 20 percent of that of Canada, 18 percent of Switzerland, 12 percent of the United States, 10 percent of Austria, 9 percent of Germany, and 6 percent of France. In recent years and in the face of high unemployment rates in many industrial nations,

Case Study 12-5 British and Russian Brain Drain Is U.S. Brain Gain

From 1983 to 1988, more than 200 well-known scholars in the fields of history, philosophy, political science, and physics left British universities to take positions in some of the top universities in the United States. Their departure resulted from a combination of "push" and "pull" forces. Among the push forces were the budget cuts that froze professors' salaries and left many vacancies unfilled, the abolishment of tenure and the suspension of promotions, and reductions in funds for libraries and assistants. The pull forces were U.S. salaries that often were more than three times higher than those in Britain, as well as the availability of large research funds, assistants, and sophisticated laboratories. There was a time when it was almost impossible to induce a top scholar to leave Oxford or Cambridge University. In the late 1980s, on the other hand, a British scholar who had not received at least one attractive offer from an American university started to question his reputation outside Britain.

With the collapse of communism in the Soviet Union in the late 1980s and early 1990s, a huge and growing exodus of top Russian scientists headed for the United States either permanently or on temporary work visas. This surpassed the earlier British exodus and became the largest brain drain to (and brain gain of) the United States since the end of World War II. Russia worried a great deal about losing many of its top scientists. Virtually the entire faculty of the University of Minnesota's Theoretical Physics Institute in the mid-1990s was from Russia. Many top Russian scientists flowed into the U.S. computer, biological, and chemical laboratories. As Russia struggles to restructure its economy, few if any funds are available for science. "For science, there is no money, no jobs, and no respect from the public," says one recent emigre. "My productivity in America is 10 times more than in Russia," says another. He might have added that his salary in the United States is also 100 times more than in Russia!

Another form of the brain drain is created by the large number of foreign students getting advanced degrees in the United States and then choosing to remain. Today, more than 60 percent of the students receiving engineering doctorates in the United States are foreign born, and the percentage is almost as high in mathematics and computer science. (It is 40 percent in economics.) More than 70 percent of these students chose to remain in the United States after getting their doctorate. Finally, the H1-B visa program established in 1990 allowed each year 65,000 educated foreigners (raised to 115,000 in 1998 and 195,000 in 2001) to fill specialized American jobs, largely in the high-tech industry for a period of six years (but requiring renewal after the first three years) if an employer petitions the U.S. Immigration and naturalization Service on their behalf.

Source: "British Brain Drain Enriches U.S. Colleges," *The New York Times,* November 22, 1988, p.1; "The Soviet Brain Drain Is the U.S. Brain Gain," *Business Week,* November 11, 1991, pp. 94–100; "Foreign Students Spur U.S. Brain Gain," *The Wall Street Journal,* August 31, 1994, p. 9A; "Increase Seen in the Number of Foreign Students Here," *The New York Times,* December 7, 1998, p.23; "Congress Approves a Big Increase in Visas for Specialized Workers," *The New York Times,* October 4, 20000, p. 1; and "As the Tech Economy Goes, So Go Special Visas," *The New York Times,* June 16, 2002, sect. 3, p. 4.

particularly in Europe, temporary migrants have been made to feel increasingly unwelcome and have encountered rising discrimination, even in nations such as France and England that usually welcomed them. Their work permits have not been renewed, and they have been encouraged to return home. Nevertheless, their numbers and proportion of the total labor force in most receiving nations continued to increase.

There is then the problem of illegal migration. This has become a burning issue in the United States, where millions of illegal immigrants work in the so-called underground economy at below minimum wages and with few if any social benefits. Illegal immigration significantly affects income distribution in the United States by depressing the income of low-skill American workers. This has given rise to vigorous debates in the United States on how to deal with the problem and how to stop or slow down the flood of illegal immigrants.

It has been estimated that there were between 4 and 5 million illegal workers, representing from 3 to 4 percent of the labor force in the United States today. The problem is worsening, due to the continuous (illegal) arrival of hundreds of thousands of additional immigrants each year. Immigration officials in the United States seem completely overwhelmed by the problem and unable to prevent the thousands who cross the border from Mexico and arrive daily on planes and ships from the Caribbean, Central and South America, and other parts of the world.

In 1986, the United States passed the *Immigration Reform and Control Act of 1986,* which provided (1) amnesty and the possibility to acquire legal residence and eventual citizenship to illegal aliens who could demonstrate that they had resided in the United States continuously since before January 1, 1982 and (2) fines for employers ranging from $250 to $10,000 for each illegal alien that they hired. By 1995, about 2.5 million aliens had applied for legal status. But this was only one-third or two-thirds of the total number of illegal aliens estimated to be in the United States. The penalty imposed on employers for hiring illegal aliens also does not seem to have done much to discourage the flow of illegal migration to the United States. Case Study 12-6 provides historical data on U.S. immigration and summarizes the debate over immigration policy.

Case Study 12-6 U.S. Immigration and Debate over Immigration Policy

Table 12.8 shows the number of people immigrating to the United States and their percentage of the U.S. population for each decade from 1821 to 2000. The table shows that the number of immigrants into the United States reached almost 9 million representing over 10 percent of the U.S. population in the 1901–1910 decade. It fell drastically during the 1931–1940 decade because of the Great Depression and the outbreak of World War II. Immigration rose again after World War II and surpassed 9 million in the 1991–2000 decade (but represented only 2.7 percent of the population because of rapid growth of the U.S. population during the past century). With legal immigration rising steeply, the U.S. Congress is considering bills to restrict it (except for highly skilled people).

(continued)

Case Study 12-6 (continued)

TABLE 12.8. *U.S. Immigration, 1820–2000*

Years	Total		Years	Total	
	Number	Rate		Number	Rate
1821–1830	152	1.2	1911–1920	5,736	5.7
1831–1840	599	3.9	1921–1930	4,107	3.5
1841–1850	1,713	8.4	1931–1940	528	0.4
1851–1860	2,598	9.3	1941–1950	1,035	0.7
1861–1870	2,315	6.4	1951–1960	2,515	1.5
1871–1880	2,812	6.2	1961–1970	3,322	1.7
1881–1890	5,247	9.2	1971–1980	4,493	2.1
1891–1900	3,688	5.3	1981–1990	7,338	3.0
1901–1910	8,795	10.4	1991–2000	9,095	2.7

Source: OECD, *Trends in International Migration* (Paris, OECD, 2002), Table A1.

In 2000, 28.4 million Americans were born elsewhere. This represented 10.1 percent of the entire population for that year, which was higher than in any other year since World War II (the all-time high was 14.7 percent in 1910). The rapid increase in immigration in recent years has emerged as a hot issue, especially in California and New York, the states with the highest proportion of foreign born (25 percent and 16 percent, respectively). Indeed, an intense national debate is taking place on the nation's immigration policy.

The immigration of highly trained or bright students coming to the United States to get higher degrees and then remaining is clearly of great benefit to the United States. Less clear is the case for immigration of uneducated and unskilled people. The U.S. Census data indicate that nearly 21 percent of recent immigrants over the age of 25 have bachelor's degrees (as compared with about 15 percent for native Americans), but 36 percent do not have a high school diploma (as compared with 17 percent of those born in the United States). Thus, the majority of recent immigrants are either very educated or have little education.

In general, immigration is good for the country. But, at least in the short run, native workers receive lower wages than without immigration, while employers gain by being able to pay lower wages. This explains why labor is generally opposed to immigration while business favors it. The nation as a whole generally gains from immigration because employers' gains exceed labor's losses. With an appropriate redistribution policy, some of business's gains could be taxed away and used to compensate workers for their loss and also to provide workers with a share of the remaining gains. In a recent study, *Borjas* estimated that native workers who compete with immigrants for jobs lose about $133 billion (through lower wages) because of immigration, but firms gain about $140 billion, for a net gain of $7 billion. This, however, represents only 0.1 percent of U.S. GDP.

Source: "Surprising Rise in Immigration Stirs Up Debate," *The New York Times*, August 30, 1995, p. 1; George Borjas, "The Economic Benefits from Immigration," National Bureau of Economic Research, *Working Paper No. 4955*, July 1995; "Immigration Overhaul Moves Toward Vote," *The New York Times*, August 2, 1996, p. 2; "Tight Labor Market Shifts Immigration Debate," *The Wall Street Journal*, February 10, 2000, p. A2; "Foreign Workers at Highest Level in Seven Decades," *The New York Times*, September 4, 2000, p. 1; and "The Coming Battle for Immigrants," *Business Week*, August 26, 2002, pp. 138–140.

Summary

1. In this chapter we examined the effects of international flows of capital, labor, and technology. In some ways, these are substitutes for international commodity trade. Portfolio investments, such as the purchase of stocks and bonds, are purely financial assets and take place primarily through banks and investment funds. Direct investments are real investments in factories, capital goods, land, and inventories where both capital and management are involved and the investor retains control over use of the invested capital. International direct investments are usually undertaken by multinational corporations.
2. U.S. private holdings of foreign long-term securities (stocks and bonds) and foreign private holdings of U.S. long-term securities increased sharply from 1950 to 2001. The same is true for foreign direct investments. From 1950 and 2001, the stock of U.S. direct investments in Europe grew much more rapidly than the stock of U.S. direct investments in Canada and Latin America. U.S. direct investments abroad and foreign direct investments in the United States in manufacturing, finance, and services grew much more rapidly than in petroleum. The surge in foreign direct investments in the United States during the second half of the 1990s did not cause as much concern as that of the second half of the 1980s.
3. The basic motives for international portfolio investments are yield maximization and risk diversification. The latter is also required to explain two-way capital movements. Direct foreign investments require additional explanations. These are (1) to exploit abroad some unique production knowledge or managerial skill (horizontal integration), (2) to gain control over a foreign source of a needed raw material or a foreign marketing outlet (vertical integration), (3) to avoid import tariffs and other trade restrictions and/or to take advantage of production subsidies, (4) to enter a foreign oligopolistic market, (5) to acquire a foreign firm in order to avoid future competition, or (6) because of the unique ability to obtain financing.
4. International capital transfers increase the national income of both the investing and host countries, but in the investing nation the relative share going to capital rises and the share going to labor falls, while the opposite occurs in the host or receiving nation. Thus, the level of employment tends to fall in the investing nation and rise in the host nation. In the short run, the balance of payments tends to worsen in the investing nation and improve in the host nation. In the long run, the balance-of-payments effects of foreign investments on the investing and host nations are less clear-cut. Nations with high corporate tax rates encourage investments abroad and thereby lose tax revenues. The terms of trade are also likely to be affected by foreign investments.
5. Multinational corporations have grown to be the most prominent form of private international economic organization today. The basic reason for their existence is the competitive advantage of a global network of production and distribution. Some of the alleged problems created by multinational corporations in the home country are the export of domestic jobs, erosion of the home nation's technological advantage, avoidance of domestic taxes through

transfer pricing, and reduced government control over the domestic economy. On the other hand, host countries complain of loss of sovereignty and domestic research activity, tax avoidance, inappropriate technology, and most benefits flowing to the home nation. As a result, most host nations have adopted policies to reduce these alleged harmful effects and increase the possible benefits.

6. International labor migration can occur for economic and noneconomic reasons. When the decision to migrate is economic, it can be evaluated in terms of costs and benefits just as any other investment in human and physical capital. International migration reduces total output and increases real wages in the nation of emigration while it increases total output and reduces real wages in the nation of immigration. These changes are accompanied by a net increase in world output. The migration of highly skilled and trained people confers special benefits on the nation of immigration and imposes serious burdens, in the form of sunk and replacement costs, on the nation of emigration. This problem is referred to as the brain drain.

A Look Ahead

This chapter completes Part Two, dealing with international trade policies and resource movements. We next move on to Parts Three and Four, in which we will be discussing the monetary sector, or international finance. In Part Three, Chapter 13 deals with the balance of payments, Chapter 14 examines the operation of foreign exchange markets, and Chapter 15 presents monetary theories of exchange rate determination.

Key Terms

Portfolio investments
Direct investments
Portfolio theory
Risk diversification
Horizontal integration
Vertical integration
Multinational corporations (MNCs)
Transfer pricing
Brain drain

Questions for Review

1. In what sense are international flows of productive resources a substitute for international commodity trade?
2. What is meant by portfolio investments? Through what institutions do they usually take place?
3. What is meant by direct investments? By what organizations are they usually undertaken internationally?
4. What was the dollar value of U.S. direct investments abroad and U.S. private holdings of long-term foreign securities in 1950 and 2001?
5. How were U.S. foreign direct investments in 2001 distributed among Europe, Canada, Latin America, and elsewhere? How much of U.S. foreign direct investments in 2001 went into manufacturing, finance, petroleum, and other

activities? Answer the same questions for foreign investments in the United States.

6. What are the basic motives for international portfolio investments? What additional reasons are required to explain direct foreign investments?
7. How can two-way international capital investments be explained? What is meant by risk diversification? horizontal integration? vertical integration?
8. What is the effect of foreign investments on the national income of the investing and host nations? What is the effect on the relative share of national income going to capital and labor in each nation?
9. What is the effect of foreign investments on the balance of payments of the investing and host nations in the short run and in the long run? What problems do nations with high corporate tax rates face?
10. What is the importance of multinational corporations today? What are the reasons for their existence?
11. What are some of the problems created by multinational corporations in the home country? in the host country?
12. How have host countries attempted to limit the alleged harmful effects and increase the beneficial effects of multinational corporations?
13. What are the motives for the international migration of workers? What is the effect of labor migration on real wages, total output, and the relative share of national income going to labor in the nation of emigration and the nation of immigration?
14. What is meant by the brain drain? Why is it a problem? How can it be overcome?

Problems

1. On a set of price–quantity axes show the effect of a capital outflow on the investing country.
2. On a set of price–quantity axes show the effect of a capital inflow on the host or receiving country.
3. Update Table 12.1 for the most recent year for which data are available.
4. Update Table 12.2 for the most recent year for which data are available.
5. Update Table 12.3 for the most recent year for which data are available.
6. Update Table 12.4 for the most recent year for which data are available.

*7. Determine whether the following statement is true or false and explain why: "The profitability of a portfolio of many securities can never exceed the yield of the highest-yield security in the portfolio, but it can have a risk lower than the lowest-risk security."

8. Draw a figure similar to Figure 12.2 showing equal gains in two nations as a result of capital transfers from Nation 1 to Nation 2.
9. Draw a figure similar to Figure 12.2 showing greater gains for Nation 1 than for Nation 2 resulting from capital transfers from Nation 1 to Nation 2.
10. What general principle can you deduce from your answer to the previous two problems and from Figure 12.1 as to the distribution of the total gains from international capital transfers between the investing and the host nation?
11. Explain why the rate of return on U.S. direct investment in developing nations often exceeds the rate of return on investment on U.S. direct investments in developed nations.

*12. Using Figure 12.2, explain why organized labor in the United States opposes U.S. investments abroad.

* = Answer provided at the end of the book.

*13. Using Figure 12.2, explain why labor in developing nations benefits from an inflow of foreign investments.

14. Update Table 12.6 for the most recent year for which data are available. How has the ranking of the world's largest MNCs changed since 2000?

Appendix

A 12.1 The Transfer Problem

To be successful, any international long-term capital movement must be accompanied by a transfer of real resources from the investing or lending country to the host or borrowing country. For example, if a nation invests $100 million in another country, the investing nation must free real domestic resources and increase its exports to the host or receiving nation by $100 million in order for the international capital transfer to actually take place. Precisely how this transfer of real resources occurs is discussed in detail in Section A17.2 in connection with the income adjustment mechanism to correct balance-of-payments disequilibria. At this point, all that needs to be remembered is that a transfer of real resources must accompany any international transfer of financial resources in order for the latter to actually occur. This is known as the *transfer problem*.

A transfer problem arises not only in the case of international capital movements but also in connection with reparations payments for war damages. Examples of these are the indemnities that France was made to pay to Prussia after the 1870–1871 war and those that Germany had to pay to France after World War I. A more recent example is the transfer problem that arose from the sharp increase in petroleum prices during the 1970s. Most petroleum-exporting nations, notably Saudi Arabia, Libya, and Kuwait, did not spend all of their petroleum earnings on increased imports from petroleum-importing countries. Most unspent earnings were used for portfolio purchases in developed nations, especially in the United States. To the extent that not all excess earnings were so used, a deflationary tendency arose in the world economy as petroleum-importing nations tried to reduce their collective import surplus. Thus, a transfer problem was at the heart of the petroleum crisis during the 1970s.

Of more immediate interest is the transfer problem arising from the huge net foreign investments in the United States during the 1980s, which resulted in the United States joining the ranks of the debtor nations after 1985, for the first time since 1914. The counterpart to these huge net capital flows to the United States was the record trade deficits of the United States by which the transfer of real resources was accomplished (see Sections 13.6 and A17.2).

Problem For the period from 1973 to 1980 (the time of the petroleum crisis), construct a table showing (a) the dollar price per barrel of Saudi Arabian petroleum exports, (b) the dollar value of the total exports of the nations belonging to the Organization of Petroleum Exporting Countries (OPEC), (c) the dollar value of the total imports of OPEC, and (d) the dollar value of U.S. petroleum imports. (*Hint:* Consult the 1981 issue of *International Financial Statistics,* published by the International Monetary Fund, in your library.)