

CHAPTER 9

International Factor Movements: Labor and Capital

Our focus so far has been on the international movement of goods and services. However, some of the most dramatic changes in the international economy have been caused by international movements of factors of production—labor and capital. In the nineteenth century the countries of Europe sent forth their workers and capital in great quantities to develop nearly empty regions. The United States remains a destination for migrants, but today mainly from developing countries. Capital movements remain very important, especially as foreign direct investment by multinational corporations. (Part V considers financial capital movements.)

9.1 Factor Movements, Efficiency, and Welfare

Gains from trade occur because goods move from where their relative prices are low (in the absence of trade) to where they are high. Trade in intermediates, discussed in Chapter 8, can expand a country's production and consumption possibilities by letting it swap other goods abroad for intermediates that have greater resource cost if produced at home. Or a country may specialize in intermediates as a cheaper way to obtain final consumption goods than producing them at home. For the world as a whole, efficiency is further served to the extent that primary factors such as labor can migrate from regions of relatively low returns to regions of higher returns. Production may contract in some countries and expand in others, but for the world as a whole such an international movement of factors serves to increase output. As discussed further in Chapter 11, such a conclusion presupposes that factor returns in various countries accurately reflect the productivity of factors. By contrast, if some countries use tariffs, subsidies, or taxes to attract foreign capital, such flows may be detrimental to world outputs and, indeed, may actually harm the countries into which the capital flows.

The Heckscher-Ohlin model, introduced in Chapter 6, illustrates how trade confined to final commodities may be sufficient to bring about the full equalization of factor prices without any international mobility of capital or labor. The severity of the assumptions, however, suggests the potential for further efficiency gains through factor mobility. For trade in commodities alone to bring about factor-price equalization, countries must share the same technology and differ relatively little in the structure of their factor endowments, so that they also produce similar commodities. Certainly the most casual of observations reveals that these conditions are not obtained in many cases.

Effect of Factor Movements on Commodity Trade

One of the underlying themes of standard Heckscher-Ohlin theory is that international trade in commodities goes at least part way in substituting for international mobility of productive factors. Thus world efficiency would be enhanced if capital, for example, could flow from capital-abundant to labor-abundant countries. Barring such a possibility, though, discrepancies in the returns to capital among countries are lessened by a trade pattern that allows relatively capital-abundant countries to export capital-intensive commodities. That is, the volume of international trade in commodities could be reduced if productive factors are freed to move to locations where their returns are higher. This view suggests that trade in commodities and international mobility of factors can be interchangeable.

Freeing primary factors to move internationally could cause trade in commodities to *expand* instead of contract. James Markusen analyzed this possibility by considering two countries differing in only one of the many ways that could encourage commodity trade.¹ Suppose, as in Heckscher-Ohlin theory, that two countries share the same technology but differ in relative factor endowments. If factors of production could move internationally, the basis for commodity trade would be eroded; trade and factor movements are interchangeable. Now suppose factor endowments are identical but trade is encouraged because the home country has a Ricardian technological superiority in producing the labor-intensive good. With trade, the home country is encouraged to increase its production of the labor-intensive good (so as to export it), which serves to drive up home wages compared to foreign wages. If, now, factors can move between countries, foreign labor is attracted to the home country, which serves to *expand* trade in commodities. The reason: Home exports of labor-intensive goods are encouraged by the inflow of labor.

The general results are clear. If the basis for the international exchange of final commodities resides in differences in factor endowments, allowing these factors to move directly between countries obviates the need for commodity trade. However, if the basis for trade lies in other reasons (technological differences, as in Ricardo, increasing returns to scale, etc.), trade by itself will tend to raise the return to factors used intensively in each nation's export sector.² Factor mobility that responds to such differentials adds a factor-endowment basis for expanded commodity trade.

Sometimes the international mobility of factors is a prerequisite for the development of commodity trade. Proponents of this view often point to the extraction and export of natural resources in many developing regions, extraction made possible by foreign investment undertaken by Europe and the United States. On the other hand, deliberate protectionist policies may reduce trade significantly if they encourage the inflow of capital to avoid the tariff barriers. In such a case, factor mobility has enhanced the antitrade nature of protection. Foreign investment may serve to expand production

¹See James Markusen, "Factor Movements and Commodity Trade as Complements," *Journal of International Economics*, 14 (May 1983): 341–356.

²This distinction need not always hold. For further discussion, see Ronald Jones, *Globalization and the Theory of Input Trade* (Cambridge, MA: MIT Press, 2000), Chapter 1.

of a nation's exportables or, as above, to encourage production of import-competing products. Much of the large flow of American foreign investment to Europe during the 1960s was viewed as a response to the unified tariff walls of the newly created European Community, and capital flows similarly anticipated further internal unification in 1992.

Migration and Income Distribution

Although factor movements can increase the efficiency of the world economy, they often are restricted by governments serving what they see as their national interests. Immigration of labor in particular is always under strict control, partly from concern over the distribution of income. The models presented in Chapters 5 and 6 showed that this concern has a cogent basis. Immigration acts like a natural increase in the nation's endowment of labor and is predicted to drive down wages and benefit the specific factors of production (Chapter 5) or the other general factor of production (Chapter 6). Under some circumstances all the native factors and the immigrants together can be shown to benefit from immigration.³ Nonetheless, it is the issue of redistribution that rules the public discussion. Will immigration impoverish native labor? The theoretical predictions are ambiguous, just like those about migration and the volume of trade. Suppose our country produces a single good for consumption and export, using native labor and capital. Immigrants who are perfect substitutes for native labor simply increase the labor working with each unit of capital, driving down labor's marginal product and the real wage. Suppose instead that our country matches the Heckscher-Ohlin model, producing two goods with labor and capital. Ours is a small country, so its terms of trade are fixed on the world market. Relative factor rewards are correspondingly locked to these commodity prices. Increasing the labor supply through immigration will expand domestic production of the labor-intensive good and contract capital-intensive production, but it will not affect the wage rate (or returns to capital). If immigrant and native labor are imperfect substitutes, additional considerations become important, such as the relative ease of substitution between immigrant labor and the two domestic factors, native labor and capital. In short, the theoretical expectation that immigration depresses domestic wages is plausible but not inevitable.

Let us turn to the empirical setting. In the 1960s the European countries faced what they perceived as shortages of unskilled labor. They devised programs for "guest" workers to come from lower-income European countries, presumably for temporary stays and without a change in their basic national allegiances. If the excess demand for unskilled labor should abate, it was thought, these guests could be hustled back to their homelands in order to avert any unemployment problems in the host countries. The guests' stays proved a lot more permanent than had been anticipated, and in the latter 1970s they made up 10 to 20 percent of the workforces of some European nations.

In the United States both legal and clandestine immigration have been heavy. In 2000 11.1 percent of the total population was foreign born, up from 6.2 percent in 1980.

³Harry G. Johnson, "Some Economic Aspects of the Brain Drain," *Pakistan Development Review*, 7 (August 1967): 379-411.

From 1991 to 2000 the inflow of legal immigrants was 28.2 percent of the increase in the total population. The number of unauthorized immigrants who reside in the United States in 2000 was estimated to be approximately 7 million. Researchers have explored the degree to which immigrants, mostly low-skill workers, have reduced the real wages or employment opportunities of closely competing low-skill natives. Some redistribution occurs, but fortunately it appears small. A doubling of immigrants in a typical U.S. industrial city would drive down native unskilled workers' wages by about 4 percent (and the immigrants' own wages by 3 percent). The labor-force participation of low-skilled natives has not fallen in areas with large influxes of immigrants, as it would if job opportunities for natives were foreclosed in the long run.⁴

Immigrants increase the U.S. supply of low-skill labor. Because industries that use low-skill labor intensively tend to be import-competing in the United States, we might expect them to enlarge the import-competing sector and possibly reduce the nation's overall participation in international trade. Indeed, in 1980 immigrants made up 10.4 percent of the labor forces of import-competing industries but only 7.5 percent of the industries exporting most heavily. That pattern is consistent with immigration's having a negative effect on the real income of labor while increasing the incomes of other factors of production (including the human capital of skilled workers).⁵

9.2 International Capital Movements: Selected Issues

International capital movements are commonly divided into two classes, depending on whether the lender acquires or possesses decision-making control over the borrowing entity. Portfolio capital transfers occur when individuals or institutions purchase bonds or other liabilities issued by foreign enterprises or governments, or acquire equity shares in foreign companies in blocks too small to give the purchasers voting control over the companies. Direct investment, which does imply control over the borrowing entity, is mainly the domain of the multinational company, discussed in Section 9.3.

British Foreign Investment in the Nineteenth Century

Net portfolio capital transfers nowadays are usually small. Norway borrowed 14 percent of its GNP in the 1970s to finance its oil industry, and Singapore loaned double-digit percentages in the 1990s, but the major industrial countries rarely exported capital totaling more than 1 percent annually of their gross national products. However, between 1870 and 1913 Great Britain placed 5.2 percent of its GNP in net foreign

⁴John M. Abowd and Richard B. Freeman, eds., *Immigration, Trade, and the Labor Market* (Chicago: University of Chicago Press, 1991), especially Chapters 6, 7, 10.

⁵Peter Kuhn and Ian Wooton (in Abowd and Freeman, *ibid.*, Chapter 10) argue, however, that the story may be more complicated. Skilled labor is used heavily in U.S. exporting industries, whereas the non-traded-goods sector (cement, electricity) relies heavily on physical capital, which is also the middle factor in the traded-goods industries. Increases in the stock of unskilled labor (through immigration or otherwise) could then increase the returns to physical capital while lowering those to both unskilled and skilled labor.

lending, France 2 to 3 percent, and Germany somewhat less than 2 percent. Large flows of migration also occurred in those years. The experience is still instructive as an example of the economics of large-scale international factor movements. The focus here will be on the British economy, which experienced the largest outflows.

It is expected that capital will flow abroad whenever it can earn a higher return than at home. Indeed, from 1870 to 1913 British portfolio investments abroad did earn higher rates of return than did domestic securities held by British investors. What long-run changes opened these gaps in returns to capital, and how did the capital transfers go about eliminating them? The bulk of British portfolio investments went to the United States and to the overseas dominions, such as Australia and Canada. Ultimately, the capital flows served to complement the labor services of Europeans who emigrated to these areas in the development of the new countries' vast quantities of land and natural resources. This long-run adjustment process can be seen as occupying three centuries—from the initial voyages of discovery and settlement to the beginning of the twentieth century.

The period 1870 to 1913, in particular, shows the rhythms of this massive process of factor movement. British foreign investment moved in a somewhat cyclical fashion during this period. Capital flowed abroad heavily when capital formation was depressed in Britain's home economy; when home investment revived, foreign investment fell off. These switches between home and foreign investment responded to shifts in rates of return in Britain and abroad, which, in turn, reflected shifts in Britain's international terms of trade for its manufactured exports relative to its imports of food and raw materials. When the country's terms of trade were poor, primary-product prices were high and so was the profitability of expanding the capital stocks of the recently settled regions. British funds poured into railroad investments in the United States and Australia. Emigration to these areas also went in waves, but the timing was not closely related to the timing of the capital outflows. International capital flows depended not so much on the raw stocks of land and labor in the overseas regions as on the large-scale social capital investments being made there and the degree to which local savings could finance them.⁶

Another aspect of this large flow of capital exports is the transfer process that was explained in Section 3.4. Will a transfer of purchasing power disturb the equilibrium terms of trade between the lending and borrowing countries? It depends on how the borrower spends the proceeds and how the lender cuts back on expenditure that would otherwise be made. The changes in their spending decisions determine whether, without a change in the terms of trade, the balance of trade changes by the amount of the transfer. From the casual observation that people spend most of their incomes on locally produced goods, it is probable that the propensities are too low to adjust trade flows to the transfer without a deterioration of the lender's terms of trade. However, Britain was a major supplier of machinery and other manufactures to the borrowing

⁶Most of the analysis in this section is taken from these sources: A. K. Cairncross, *Home and Foreign Investment, 1870–1913: Studies in Capital Accumulation* (Cambridge, UK: Cambridge University Press, 1953), Chapters 7 and 8; Michael Edelstein, *Overseas Investment in the Age of High Imperialism: The United Kingdom, 1850–1914* (New York: Columbia University Press, 1982).

TABLE 9.1

Average Ratios of Wage to Land Rent, 1870 and 1910, in Selected Groups of Old and New World Countries (Indexes, 1900 = 100)

Country Group	1870	1910
Average of New World countries (Argentina, Australia, United States)	195	57
Average of Old World free traders (United Kingdom, Denmark, Ireland, Sweden)	32	99
Average of Old World protectionists (France, Germany, Spain)	77	95

Source: Kevin H. O'Rourke, Alan M. Taylor, and Jeffrey G. Williamson, "Factor Price Convergence in the Late Nineteenth Century," *International Economic Review*, 37 (August 1996), Table 2.

countries, as well as a major importer of raw materials from them. The borrowing countries' marginal propensities to import must have been high enough to change trade flows roughly by the amounts of the transfers, because history reveals no obvious evidence of terms-of-trade disturbances or their short-run monetary counterparts. Also, in a broader sense, the transfer of capital was surely smoothed by the simultaneous movement of labor from Britain. The exit of both factors from Britain reduced the pressure for changes in British wages relative to capital rents that otherwise might have arisen.

Recent research has found more links between economic development in the late nineteenth century and the Heckscher-Ohlin theory. Land in Britain and North America was the fixed factor of production, and labor and capital migrated in response to their high marginal products when combined with abundant American land. This shift in endowments should have lowered the premium of American over British wages; indeed, between 1870 and 1895 it fell from 67 to 44 percent. Relative American land rents rose. The ideal way to illustrate this adjustment process is by means of the ratio of wages to land rents in the various countries involved in the adjustment process. Over the period of 1870 to 1913, it should have fallen in the New World countries because of immigration and risen in the Old World nations that lost labor relative to their (fixed) supplies of land. Indeed, we can add another wrinkle to this hypothesis. Some European countries (Britain, Sweden) followed a policy close to free trade over this period; others (France, Germany) protected their import-competing, land-intensive industries. The protecting countries should have retarded the increase in their domestic wage/rent ratio that would otherwise have resulted from emigration. The data in Table 9.1 strongly confirm these predictions and illustrate the process of convergence of relative factor prices.

Recent Flows of Portfolio Capital

In modern times international flows of portfolio capital have played smaller and rather different roles. A major flow of international lending went to the developing countries in the 1970s and 1980s (and again in the early 1990s). The larger and better-off of them

TABLE 9.2

Total Foreign Capital Stock Placed in Developing Countries, 1980 and 2000, Current Dollars and Relation to Country Groups' GDPs

Foreign Capital Stock Component	Billions of U.S. Dollars		Percentage of Developing Countries' Combined GDP		Percentage of G-10 Combined GDP	
	1980	2000	1980	2000	1980	2000
Total foreign capital stock	770	4,937	26.3	72.6	10.9	23.2
Long, medium-term debt	457	2,192	15.6	32.2	6.4	10.3
Official	182	977	6.2	14.4	2.6	4.6
Private	275	1,215	9.4	17.9	3.9	5.7
Short-term debt	147	352	5.0	5.2	2.1	1.7
Portfolio investment	60	959	2.0	14.1	0.8	4.5
Foreign direct investment	106	1,434	3.6	21.1	1.5	6.8

Source: Wendy Dobson and Gary Clyde Hufbauer, *World Capital Markets: Challenge to the G-10* (Washington, DC: Institute for International Economics, 2001), Table 1.4. The G-10 are the ten leading developed countries.

had enjoyed faster rates of economic growth than the industrial countries, and the infusion of capital made obvious sense given their abundant labor. The main lenders in the 1970s were the large international banks, located in the industrial countries. A large portion of the transferred funds, however, no doubt was the wealth of the countries belonging to the Organization of Petroleum Exporting Countries (OPEC—see Chapter 12). Lending to developing countries has continued to encounter crises (see Chapter 24), but nonetheless it has occurred in large volumes. Table 9.2 shows the stocks of foreign capital that they received in 1980 and 2000. The total volume more than doubled in relation to the combined GDP levels of both the developing countries and the largest industrial countries (G-10). The mix has shifted from short- to long-term lending (including both portfolio and foreign direct investment) and away from official and syndicated bank loans.

In the 1980s international capital flows increased perhaps threefold among the developed nations. The pattern of these flows differed greatly from that of the late nineteenth century, described earlier. Rather than being driven by differences in investment opportunities between lenders and borrowers, it mainly reflected differences in rates of saving. A major example was the large flows of lending from high-saving Japan to the low-saving United States; as a result, the United States, once a major international creditor, became a large international debtor. Another key driver was efforts by holders of financial wealth to diversify portfolios internationally, taking advantage of many innovative securities and falling transaction costs in international capital markets. In short, capital flows were dominated by considerations of managing existing wealth rather than creating new capital.⁷

⁷For a survey, see Philip Turner, *Capital Flows in the 1980s: A Survey of Major Trends* (Basel: Bank for International Settlements, 1991).

9.3 Multinationals and Foreign Direct Investment

Direct investment is a unique form of international capital flow because it affects both the nation's stock of productive factors and competitive conditions in its markets. Its uniqueness lies in two traits.

1. Direct investment represents a capital movement, but the lender both transfers resources and takes control of the project. Most direct investment passes through or gives rise to *multinational enterprises* (MNEs), defined as firms that control and operate business units in more than one nation.
2. The MNE presumably makes investments abroad to increase its profit. It establishes a distribution firm abroad to market its exports, a factory to supply its foreign customers with locally produced goods, or a mine or an intermediate-goods factory to provide inputs for its operations back home. The factors that explain foreign direct investments are therefore *industry-specific* conditions in particular markets.

MNEs are very important in the international economy.⁸ By 1990 they accounted for more than 75 percent of total U.S. merchandise trade, and 40 percent of U.S. merchandise trade passed between domestic and foreign branches of MNEs. The United States in 1995 owned 25 percent of the world's foreign direct investment and served as host for another 22 percent. Table 9.3 illustrates several features of the world distribution of MNEs. More than 60 percent of MNE trade emanates from a handful of major industrial countries, and 70 percent is placed in industrial host countries.

Causes of Direct Investment

Why should a firm invest in production facilities abroad? It does not know the language, the laws, the customs, the local markets. The foreign government may not be its friend. There must be a general explanation as to why profit-maximizing firms, at least in certain industries, establish foreign subsidiaries in the face of these obstacles.

The explanation draws on the theory of industrial organization and is just one application of the concepts used to explain any complex, multiactivity business firm. Many transactions (like buying lettuce at the supermarket) take place simply and effectively as arm's-length deals between a seller and buyer who are anonymous to each another. Other transactions, however, tend to tie the parties together in complex dealings for long periods of time. Consider a Japanese automobile producer that has grown skillful at producing durable, low-cost vehicles for the Japanese market and now considers selling them in the United States. It cannot simply take orders over the phone from

⁸For summaries of the large literature on MNEs and the policy issues they raise, see Richard E. Caves, *Multinational Enterprise and Economic Analysis*, 3rd ed. (New York: Cambridge University Press, 2007); and Edward M. Graham and Paul Krugman, *Foreign Direct Investment in the United States*, 3rd ed. (Washington, DC: Institute for International Economics, 1994).

TABLE 9.3**Stock of Foreign Direct Investment by Region,
1990 and 2004 (\$ billion)**

Region or Country	1990	2004
Outward		
World total	1785	9732
Developing countries	147	1036
Major developed countries	1123	5370
United States	431	2018
Japan	201	371
United Kingdom	229	1378
France	110	769
Germany	152	834
Other countries	515	3326
Inward		
World total	1769	8895
Developing countries	364	2226
Major developed countries	807	3226
United States	395	1474
Japan	10	97
United Kingdom	204	772
France	87	535
Germany	111	348
Other countries	598	3443

Source: United Nations Conference on Trade and Development, *World Investment Report, 2005* (New York: United Nations, 2005), Table B.2. Differences in inward and outward totals reflect discrepancies in the underlying data.

American customers; it must establish a dealer network to market and service its cars. That distribution system requires a substantial investment, and the firm has become a MNE. (It could contract with an independent U.S. firm to provide these services, but it will have trouble writing a contract that motivates its partner's marketing efforts so that they bring in the maximum profit for the Japanese firm.)

Instead of exporting cars, the Japanese firm might establish a plant in the United States to serve the U.S. market. Such a choice could result from reasons familiar from the theory of international trade: High transport costs might favor local production, or Japan's comparative advantage (vis-à-vis the United States) might shift away from automobiles. There are also organizational explanations. By making its vehicles locally, the Japanese seller can more readily adapt them to U.S. tastes, operating conditions, legal requirements, and the like. Finally, a subsidiary might be established in the United States to provide inputs to Japan, such as a design studio that draws on American talent

for automotive styling. The Japanese car maker chooses to control both the U.S. plant and the U.S. design studio because their importance to and intricate ties with the parent make dealing with an independent firm infeasible.

Notice the affinity of this explanation for MNEs to elements of trade theory noted in previous chapters. MNEs that produce the same or similar goods in different countries—*horizontal* MNEs—show an affinity for product differentiation. Its role in international trade was treated in Chapter 7. MNEs that produce intermediate goods and services in one country for assembly into final goods in another—*vertical* MNEs—undertake a type of trade examined in Chapter 8. A vertical MNE can be regarded as a production block that is divided into components but minimizes the cost of service links through common ownership.

This sketch illustrates the microeconomic factors that explain foreign direct investment. In any of these forms, it occurs in the first instance because a firm (the Japanese car maker) acquires some rent-yielding skill, some *proprietary asset*. The amount and type of foreign investment are a result of the firm's effort to make the most profitable use of that proprietary asset. Industries vary greatly in the prevalence of foreign direct investment, and the ones dominated by MNEs are not the ones we consider purely competitive. Instead, they are industries in which research and innovation are important, in which successful firms acquire reputations with customers that are valuable goodwill assets, and in which the firm's basic task or production process requires the intricate and large-scale cooperation of many diverse physical assets and human skills.

This explanation for MNEs is consistent with many facts about their activities and international distribution. MNEs spring up especially in industrial countries that are enjoying rapid economic growth, which brings proprietary assets into the hands of many native firms. Examples include Japan in the 1970s and 1980s, European firms after the recovery from World War II, and the United States, still earlier, during its period of industrial dominance. Most direct investment passes between industrial countries. The wealthy nations have similar tastes for sophisticated goods, and a firm successful in serving one national market could well profit as a MNE from serving others as well. Foreignness has its costs and disadvantages, however. MNEs tend to go first to countries most familiar and nearby: U.S. firms go to Canada or Britain, German firms to European neighbors, Spanish firms to Latin America. They tend to locate in large countries because establishing a manufacturing plant or a distribution network always involves some scale economies. They interpenetrate each other's national markets; intra-industry foreign direct investment is mainly an extension of the intra-industry trade described in Section 7.5.

The developing countries are not left out of the loop. They long have been hosts to foreign investment that developed and extracted their natural resources. Before Toyotas ever appeared on U.S. highways, firms in resource-short Japan were big foreign investors in natural resource development. The footloose production activities that were swept into the newly industrializing countries (NICs) sometimes arrived as foreign direct investments, although many of them flourished as arm's-length dealings between foreign and local firms. The NICs' own development successes led them to

sprout foreign investments of their own, and multinationals in developing countries have attracted attention as natural outcomes of industrial success in conditions peculiar to these countries.⁹

MNEs and Merchandise Trade

MNEs are widely active in international trade, both as arm's-length exporters and importers and in trading inputs and finished goods between their national branches. There is widespread interest in how foreign direct investment is related to trade. Foreign direct investment from a country could be either a substitute or a complement for its exports. The MNE has an incentive to move production abroad in response to lower real costs of production. But the MNE's capital also seeks to produce exports wherever unit labor cost is the lowest, and we saw that such investments expand trade overall. MNEs that produce complex goods or product lines commonly source their inputs and specialized products in many locations and engage heavily in intrafirm trade. The empirical evidence suggests that overall foreign direct investment expands trade. The complementarity seems to reflect the process of development: The successful firm begins exporting to a foreign market through a local agent; if export sales prosper, it finds it can do better by investing in its own distribution subsidiary; it discovers enough opportunities in the foreign market to warrant starting production there. However, the foreign subsidiary both imports components from its parent and also uncovers new market opportunities, so the parent's total exports to the host country might well continue to increase.

Although foreign direct investment can complement or substitute for trade, like any other capital flow, it does have a distinctive sensitivity to international differences in production costs. Even short-run international differences in costs of production strongly affect flows of foreign direct investment. An appreciation of a country's currency on the foreign exchange markets, even if temporary, can send its firms scurrying to invest abroad, as can the depreciation of the currency of a promising host country. During the 1980s direct investment inflows to the United States strongly reflected swings in the foreign currency value of the dollar.

One factor that makes foreign investment a substitute for trade is the influence of a potential host country's tariff.¹⁰ The historical record is awash with cases in which a foreign enterprise develops a market in a country by selling exports. Then a tariff is imposed, and the foreign enterprise shifts to serving the market through a direct investment. We can enjoy the paradox that domestic producers seeking tariff protection only

⁹Louis T. Wells, Jr., *Third World Multinationals* (Cambridge, MA: MIT Press, 1983); and his "Mobile Exporters: New Foreign Investors in East Asia," in Kenneth Froot, ed., *Foreign Direct Investment* (Chicago: University of Chicago Press, 1993), pp. 173–195.

¹⁰Exports and production abroad are in one sense clearly substitutes for the MNE. The higher the costs of shipping its goods to a foreign market, the higher the trade barriers surrounding that market, and the less scale economies deter decentralized production, the more the MNE serves the market by local production. See S. Lael Brainard, "An Empirical Assessment of the Proximity-Concentration Trade-off between Multinational Sales and Trade," *American Economic Review*, 87 (September 1997): 520–544.

make their problem worse when the foreign tiger comes prowling in their own backyard (consider the investments by Japanese auto producers in response to U.S. import restrictions), but quite possibly too much foreign direct investment results from such made-to-measure trade restrictions.

MNEs and Technology Transfer

Some models of international trade assume that the same technology is costlessly available to all trading nations; other models (the Ricardian approach) explore the effect of differences. What trade theory neglects is the process by which technological improvements, originating somewhere in the world, are diffused to other sites where they prove useful. Many channels exist: the direct diffusion of nonproprietary scientific knowledge through journals, conferences, and the like; international trade in new machinery and equipment that embodies process improvements; the activities of international engineering firms that transfer technology when they build plants around the world; the licensing of proprietary industrial technology by owners to other firms willing to pay for its use; and the processes by which proprietary technology slips informally from the hands of its discoverers to those who capture it through direct observation, “reverse engineering,” or even industrial espionage. The MNE is an important agent in this transmission process. The proprietary assets that launch successful firms on their international journeys consist prominently of industrial knowledge: product and process technologies in the narrow sense; repertoires of skills and routines that serve as organizational technology and are no less important for resource productivity than is technology in an engineering sense. One reason why MNEs are so widespread is that firms holding these proprietary intangibles find it impossible to write contracts to license their technology to independent firms abroad that will extract the maximum value from the licensee’s use of the technology yet protect it from appropriation by the licensee or other parties.

International technology flows are hard to observe directly, but they can be measured by the flows of revenue they generate. The royalties and license fees that U.S.-based MNEs earn abroad grew rapidly from \$4.2 billion in 1985 to \$23.3 billion in 1999. We know large companies commit resources to research and development with heed to the possibility of using or licensing it abroad and they would cut research back sharply if denied this opportunity. The newer a technology and the faster it changes, the more likely the firm is to use it abroad only in its subsidiaries; mature technologies tend to be licensed instead to independent firms abroad. Although most transfers of proprietary technology through licensing and foreign investment pass among the industrial countries, one factor promoting multinationals in developing countries is the exploitation of technologies and products suited to the labor-intensive conditions and small markets typical in developing countries.

Direct Investment and Economic Welfare

MNEs have long attracted a storm of controversy in the realm of public policy. Economic analysis detects some welfare effects of foreign direct investment that should trigger government actions. However, economists and other would-be policy makers

sometimes disagree sharply on what policy should be. We start with the message of economics, then turn to the public policy debate.

Consider the MNE that earns a profit on its proprietary assets through a successful foreign direct investment in a host country. The firm's host-country customers get something of value from the services of these proprietary assets, but they also pay for this benefit. They are not necessarily better off, on balance. The MNE does earn some additional profit, which belongs to its owners (equity shareholders) in the source country. The profit is a real benefit to the source country.

The host nation may benefit directly from the services of the MNE's proprietary assets if that firm—facing competition with other firms in the host-country market—is unable to charge its customers a price high enough to exact all of their consumers' surplus. The spillover benefits that attract the most attention, however, are those that might pass from the foreign subsidiary to other producers in the host country. These are numerous. If the foreign subsidiary draws on local suppliers and/or business customers (distributors, say), it may benefit from expending efforts to raise the efficiency of these partners, even though some of the gains likely stick to them. It trains local employees, letting them in (as it were) on the workings of its proprietary assets and organizational skills. These employees may pay for their training by receiving only apprentice wages at the start, but the foreign subsidiary likely cannot prevent them, once their training is complete, from quitting and taking their skills to other (domestic) firms. Host-country firms competing with the foreign subsidiary may be able to observe and copy its proprietary assets and business methods. Economists have tried to measure these spillover benefits to host countries, both statistically and through case studies. The spillovers to suppliers and customers clearly occur, although not in every setting. Spillovers to local competitors have proved more elusive; the best statistical evidence on spillovers to competitors confirms their existence, but only in host countries sufficiently advanced in development and organization to absorb the available lessons.

Recent evidence indicates that spillovers in the setting of MNEs can run in both directions. A MNE may invest abroad not to exploit but to augment its proprietary assets by pitching a tent near other firms (which may or may not be MNEs), the better to copy their proprietary assets. A recent study used patent statistics to confirm this. A patent document cites previous patents to indicate the nature of its innovation, thereby indicating knowledge spilled by holders of the previous patents. It turns out empirically that, on the basis of citation counts, foreign subsidiaries “fish” more spillovers from a host country's domestic firms than the domestic firms do from them. (MNEs are even better at snatching spillover from other MNEs.)¹¹

Multinational Firms and Public Policy

How do governments treat these rents and surpluses that may be associated with the activities of MNEs? A very important branch of policy is the taxation of corporate income. The host country's tax collector gets first crack at the profits that foreign subsidiaries earn. Rates of taxation on corporate profits naturally vary from country to

¹¹Jasjit Singh, *Multinational Firms and Knowledge Diffusion: Evidence Using Patent Citation Data*, Ph.D. dissertation, Harvard University, 2003, Chapter 1.

country but commonly lie in the neighborhood of 30 percent. Foreign subsidiaries' profits are also subject to tax by the source country when they are remitted to the parent, but they are not "double taxed." Source countries' tax collectors let the MNE deduct from its liability to the source the taxes already paid on these profits to the host country. Other source countries exempt corporate income earned abroad from any further taxation. In terms of welfare economics, these tax arrangements give the host country a cut of the rents earned by MNEs operating in the host country. To the extent that the host government provides unpriced infrastructure-type facilities and services to foreign affiliates, these taxes may function partly as user charges.

The torpid details of taxation much understate the intensity of the controversies over MNEs. Host countries long regarded MNEs, especially those facing few competitors and those engaged in the extraction of host countries' natural resources, as exploiters. In the two decades after World War II, nationalizations of foreign subsidiaries were common. Foreign direct investment was severely restricted until the MNEs and host governments learned to work out deals whereby the government paid a project's fixed costs (that were at hazard of expropriation) and the MNE provided only managerial services (that were not). Source countries were often no less happy about MNEs' effects. "Exporting jobs" was a rallying cry. In the 1970s U.S. labor unions unsuccessfully launched a major campaign to restrict U.S. direct investment abroad. In the early 1990s the North American Free Trade Agreement (a preferential trading arrangement among the United States, Canada, and Mexico) was feared to draw jobs to Mexico. Economists point out that jobs lost when a MNE invests abroad (or, for that matter, jobs gained when a foreign MNE alights at home) seldom have any substantial or sustained *net* effect on national employment levels—jobs are continuously gained and lost throughout the economy.

The general hostility that MNEs encountered several decades ago has sharply reversed, especially in developing countries and in the economies in transition from central planning. The newfound love for MNEs recognizes the spillover benefits just mentioned, but it raises concern for misconceived policies of an opposite sort. Countries hoping to attract foreign direct investment may fall into competition with one another, bestowing subsidies or giving "tax holidays" to MNEs with major investments to place. The foregone revenues might otherwise have financed worthwhile public expenditures. There is, of course, something to be said for competition to attract investments: The jurisdiction in which an investment creates the greatest spillover value should be the one willing to make the highest bid. That logic falters, though, when a government overvalues the economic benefits. For example, to attract a Mercedes-Benz plant, the state of Alabama spent an amount equal to \$168,000 per job created in the plant, hardly a credible benefit.

9.4 Summary

International trade in factors of production potentially increases world welfare. When factor prices are not equalized between countries, factors that move internationally raise both their productivity and their incomes. Factor migration tends to cause income

redistribution, however. The industrial countries have been fearful that immigration impoverishes domestic low-skilled labor, but in the United States the effect seems to be small.

Capital moving internationally is direct investment when the investor controls the receiving enterprise and portfolio investment when it does not. Portfolio investment moved in large flows from England and other European countries from 1870 to 1913. Bursts of foreign investment flowed to the overseas regions that supplied Britain's imports when import prices were high (i.e., Britain's terms of trade were poor). Capital stayed at home when Britain's terms of trade improved. There was no obvious transfer problem because the overseas recipients naturally spent most of the proceeds on British capital goods. Portfolio capital flowed heavily but erratically to the developing countries in the 1970s and early 1990s, subject to financial shocks and crises. Recent portfolio capital movements among the industrial countries have been related to differences in rates of saving and the diversification of wealth rather than to differences in investment opportunities.

Foreign direct investment typically involves the creation or acquisition of a subsidiary abroad by a corporation. It is sector specific and usually occurs in certain market structures. Some companies invest abroad to obtain sources of raw materials or other inputs; others acquire subsidiaries that can produce the same product line as their parent. When a foreign subsidiary's production replaces exports, capital and commodity flows are substitutes, but for several reasons they may be complements. A country's tariff that restricts imports, though, is likely to cause foreign producers to set up shop within the protected market. The MNE is an important conveyor of new technologies across national borders. Two features of MNEs' operations drive their encounters with public policy. The first is the profit that many of them earn on proprietary assets that give rise to their multinational status. Countries' corporate income tax provisions affect the distribution of these profits between source and host countries. The second is the spillovers of their proprietary assets and business methods to domestic firms. These can explain why governments nowadays compete to attract foreign direct investments. Unfortunately, they seem sometimes to misconceive these benefits as "creating jobs."

CHAPTER PROBLEMS

1. Suppose that factor-price equalization prevails in the world but a large migration takes place from country *A* to country *B* (because of some political disturbance, for example). Describe the adjustments that will occur if capital is also mobile internationally. What will happen if it is immobile?
2. Research by David M. Gould showed that the bilateral trade between the United States and other countries increases substantially in tandem with the number of a country's citizens who have migrated to the United States. What mechanisms could account for this relationship? Might it apply to flows of foreign direct investment as well?

3. Some observers have noted the occurrence of intra-industry flows of foreign direct investment, like the intra-industry trade discussed in Chapter 7. Given the nature of the multinational company, why might this happen?
4. Recent research indicates that those U.S. multinational firms expanding their outputs and/or capital stocks abroad tend to be expanding them in the United States as well. Is that consistent with the microeconomic theory of MNEs? Is it consistent with equilibrium for the U.S. economy as a whole?

SUGGESTIONS FOR FURTHER READING

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