Our attention so far has been on international flows of goods and services. However, some of the most dramatic changes in the world economy have been due to international flows of factors of production, including labor and capital. In the 1800s, European capital and labor (along with African and Asian labor) flowed to the United States and fostered its economic development. In the 1960s, the United States sent large amounts of investment capital to Canada and Western Europe; in the 1980s and 1990s, investment flowed from Japan to the United States. Today, workers from southern Europe find employment in northern European factories, while Mexican workers migrate to the United States. The tearing down of the Berlin Wall in 1990 triggered a massive exodus of workers from East Germany to West Germany.

The economic forces underlying international movements in factors of production are virtually identical to those underlying international flows of goods and services. Productive factors move, when they are permitted to, from nations where they are abundant (low productivity) to nations where they are scarce (high productivity). Productive factors flow in response to differences in returns (such as wages and yields on capital) as long as these are large enough to more than outweigh the cost of moving from one country to another.

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A nation in which labor is scarce can either import labor-intensive products or import labor itself; the same applies to capital. Thus, *international trade in goods and services and flows of productive factors are substitutes for each other*. One cannot conduct a satisfactory study of international trade without also analyzing the international mobility of labor and capital.

This chapter considers the role of international capital flows (investment) as a substitute for trade in capital-intensive products. Special attention is given to the multinational enterprise that carries on the international reallocation of capital. The chapter also analyzes the international mobility of labor as a substitute for trade in labor-intensive products.

**THE MULTINATIONAL ENTERPRISE**

Although the term *enterprise* can be precisely defined, there is no universal agreement on the exact definition of a multinational enterprise (MNE). But a close look at some representative MNEs suggests that these businesses have a number of identifiable features. Operating in many host countries, MNEs often conduct research and development (R&D) activities in addition to manufacturing, mining, extraction, and business service operations. The MNE cuts across national borders and is often directed from a company planning center that is distant from the host country. Both stock ownership and company management are typically multinational in character. A typical MNE has a high ratio of foreign sales to total sales, often 25 percent or more. Regardless of the lack of agreement as to what constitutes an MNE, there is no doubt that the multinational phenomenon is massive in size. Table 10.1 provides a glimpse of some of the world's largest corporations.

MNEs may diversify their operations along vertical, horizontal, and conglomerate lines within the host and source countries. Vertical integration often occurs when the parent MNE decides to establish foreign subsidiaries to produce intermediate goods or inputs that go into the production of the finished good. For industries such as oil refining and steel, such *backward integration* may include the extraction and processing of raw materials. Most manufacturers tend to extend operations backward only to the production of component parts. The major international oil companies represent a classic case of backward vertical integration on a worldwide basis. Oil production subsidiaries are located in areas such as the Middle East, whereas the refining and marketing operations occur in the industrial nations of the West.

**Table 10.1 The Worlds Largest Corporation, 1999**

<table>
<thead>
<tr>
<th>Firm</th>
<th>Headquarters</th>
<th>Revenues ($ Billions)</th>
<th>Profits ($ Billions)</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Motors</td>
<td>United States</td>
<td>161.3</td>
<td>3.0</td>
<td>594,000</td>
</tr>
<tr>
<td>DaimlerChrysler</td>
<td>Germany</td>
<td>154.9</td>
<td>5.7</td>
<td>441,502</td>
</tr>
<tr>
<td>Ford Motor</td>
<td>United</td>
<td>144.4</td>
<td>22.1</td>
<td>345,175</td>
</tr>
<tr>
<td>Wal-Mart Stores</td>
<td>United</td>
<td>139.2</td>
<td>4.4</td>
<td>910,000</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>Japan</td>
<td>108.7</td>
<td>-0.3</td>
<td>5,775</td>
</tr>
<tr>
<td>Itochu</td>
<td>Japan</td>
<td>1072</td>
<td>0.2</td>
<td>36,000</td>
</tr>
<tr>
<td>Exxon</td>
<td>United</td>
<td>100.7</td>
<td>6.4</td>
<td>79,000</td>
</tr>
<tr>
<td>General Electric</td>
<td>United</td>
<td>100.5</td>
<td>9.3</td>
<td>293,000</td>
</tr>
<tr>
<td>Toyota Motor</td>
<td>Japan</td>
<td>99.7</td>
<td>2.8</td>
<td>183,879</td>
</tr>
</tbody>
</table>

MNEs may also practice *forward integration* in the direction of the final consumer market. Automobile manufacturers, for example, may establish foreign subsidiaries to market the finished goods of the parent company. In practice, most vertical foreign investment is backward. MNEs often wish to integrate their operations vertically to benefit from economies of scale and international specialization.

Horizontal integration occurs when a parent company producing a commodity in the source country sets up a subsidiary to produce the identical product in the host country. These subsidiaries are independent units in productive capacity and are established to produce and market the parent company's product in overseas markets. Coca-Cola and Pepsi-Cola, for example, are bottled not only in the United States but also throughout much of the world. MNEs sometimes locate production facilities overseas to avoid stiff foreign tariff barriers, which would place their products at a competitive disadvantage. Parent companies also like to locate close to their customers because differences in national preferences may require special designs for their products.

Besides making horizontal and vertical foreign investments, MNEs may diversify into nonrelated markets, in what is known as conglomerate integration. For example, in the 1980s, U.S. oil companies stepped up their nonenergy acquisitions in response to anticipated declines of future investment opportunities in oil and gas. Exxon acquired a foreign copper-mining subsidiary in Chile, and Tenneco bought a French company producing automotive exhaust systems.

To carry out their worldwide operations MNEs rely on foreign direct investment - acquisition of a controlling interest in an overseas company or facility. Foreign direct investment typically occurs when (1) the parent company obtains sufficient common stock in a foreign company to assume voting control (the U.S. Department of Commerce defines a company as directly foreign owned when a "foreign person" holds a 10-percent interest in the company); (2) the parent company acquires or constructs new plants and equipment overseas; (3) the parent company shifts funds abroad to finance an expansion of its foreign subsidiary; or (4) earnings of the parent company's foreign subsidiary are reinvested in plant expansion.

Table 10.2 summarizes the position of the United States with respect to foreign direct investment in 1998. Data are provided concerning U.S. direct investment abroad and foreign direct investment in the United States.

<table>
<thead>
<tr>
<th>Country</th>
<th>U.S. Direct Investment Abroad</th>
<th>Foreign Direct Investment in United States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount (Billions of Dollars)</td>
<td>Percentage</td>
</tr>
<tr>
<td>Canada</td>
<td>103.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Europe</td>
<td>489.5</td>
<td>49.9</td>
</tr>
<tr>
<td>Latin America</td>
<td>196.7</td>
<td>20.1</td>
</tr>
<tr>
<td>Africa</td>
<td>13.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Middle East</td>
<td>10.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Asia and Pacific</td>
<td>161.8</td>
<td>17.0</td>
</tr>
<tr>
<td></td>
<td>975.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In recent years, the majority of U.S. foreign direct investment has flowed to Europe and Canada, especially in the manufacturing sector. Most foreign direct investment in the United States has come from Europe, Japan, and Canada-areas that have invested heavily in U.S. manufacturing, petroleum, and wholesale trade facilities.

**MOTIVES FOR FOREIGN DIRECT INVESTMENT**

The case for opening markets to foreign direct investment is compelling as it is for trade. More open economies enjoy higher rates of private investment, which is a major determinant of economic growth and job creation. Foreign direct investment is actively courted by countries, not least because it generates spillovers such as improved management and better technology. As is true with firms that trade, firms and sectors where foreign direct investment is intense tend to have higher average labor productivity and pay higher wages. Outward investment allows firms to remain competitive and thus supports employment at home. Investment abroad stimulates exports of machinery and other capital goods.
New MNEs do not pop up haphazardly in foreign nations; they develop as a result of conscious planning by corporate managers. Both economic theory and empirical studies support the notion that foreign direct investment is conducted in anticipation of future profits. It is generally assumed that investment flows from regions of low anticipated profit to those of high anticipated profit, after allowing for risk. Although expected profits may ultimately explain the process of foreign direct investment, corporate management may emphasize a variety of other factors when asked about their investment motives. These factors include market-demand conditions, trade restrictions, investment regulations, labor costs, and transportation costs. All these factors have a bearing on cost and revenue conditions and hence on the level of profit.

DEMAND FACTORS

The quest for profits encourages MNEs to search for new markets and sources of demand. Some MNEs set up overseas subsidiaries to tap foreign markets that cannot be maintained adequately by export products. This sometimes occurs in response to dissatisfaction over distribution techniques abroad. Consequently, a business may set up a foreign marketing division and, later, manufacturing facilities. This incentive may be particularly strong when it is realized that local taste and design differences exist. A close familiarity with local conditions is of utmost importance to a successful marketing program.

The location of foreign manufacturing facilities may be influenced by the fact that some parent companies find their productive capacity already sufficient to meet domestic demands. If they wish to enjoy growth rates that exceed the expansion of domestic demand, they must either export or establish foreign production operations. General Motors, for example, has felt that the markets of such countries as Britain, France, and Brazil are strong enough to permit the survival of GM manufacturing subsidiaries. But Boeing Aircraft has centralized its manufacturing operations in the United States and exports abroad because an efficient production plant for jet planes is a large investment relative to the size of most foreign markets.

Market competition may also influence a firm's decision to set up foreign facilities. Corporate strategies may be defensive in nature if they are directed at preserving market shares from actual or potential competition. The most certain method of preventing foreign competition from becoming a strong force is to acquire foreign businesses. For the United States, the 1960s and early 1970s witnessed a tremendous surge in acquisition of foreign businesses. Approximately half of the foreign subsidiaries operated by U.S. MNEs were originally acquired through purchase of already existing concerns during this era. Once again, General Motors exemplifies this practice, purchasing and setting up auto producers around the globe. GM has been successful in gaining control of many larger-foreign-model firms, including Monarch (GM Canada) and Opel (GM Germany). It did not acquire smaller-model firms such as Toyota, Datsun, and Volkswagen, all of which have become significant competitors for General Motors.
DO LOW WAGES ATTRACT FOREIGN INVESTMENT?

U.S. DIRECT INVESTMENT ABROAD

<table>
<thead>
<tr>
<th></th>
<th>1995, Value of $(Billions)</th>
<th>Percent of Total</th>
<th>Employment, 1993 Thousands</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>United</td>
<td>120</td>
<td>17</td>
<td>866</td>
<td>13</td>
</tr>
<tr>
<td>Canada</td>
<td>81</td>
<td>11</td>
<td>875</td>
<td>13</td>
</tr>
<tr>
<td>Germany</td>
<td>43</td>
<td>6</td>
<td>569</td>
<td>8</td>
</tr>
<tr>
<td>Japan</td>
<td>39</td>
<td>6</td>
<td>411</td>
<td>6</td>
</tr>
<tr>
<td>France</td>
<td>33</td>
<td>5</td>
<td>403</td>
<td>6</td>
</tr>
<tr>
<td>Italy</td>
<td>17</td>
<td>2</td>
<td>164</td>
<td>2</td>
</tr>
<tr>
<td>All</td>
<td>509</td>
<td>72</td>
<td>4,379</td>
<td>65</td>
</tr>
<tr>
<td>Industrial*</td>
<td>159</td>
<td>100</td>
<td>6,731</td>
<td>100</td>
</tr>
</tbody>
</table>

*Includes Western Europe, Canada, Japan, Australia, and New Zealand.

Foreign direct investment by U.S. companies—the establishment or expansion of a foreign subsidiary—grew at a rate of 10 percent per year between 1982 and 1995. A common explanation for this rise is that U.S. firms are lured overseas by low wages in developing countries, where they produce goods for exports to the United States.

An examination of the data suggests that such claims are exaggerated. As seen in the table, 72 percent of the stock of U.S. direct investment abroad was in high-wage, industrialized countries in 1995. Employment data presents a similar picture. Foreign affiliates of U.S. companies employed 6.7 million workers in 1993. About 65 percent of these workers held jobs in industrialized countries. Moreover, nearly half of the 6.7 million jobs are found in six major economies: Canada, France, Germany, Italy, Japan, and the United Kingdom. Market access is one explanation for the preponderance of foreign direct investment in industrialized countries. When locating abroad, firms choose stable and prosperous markets. Furthermore, the presence of trade barriers may make direct investment preferable to exporting.

Though these data show that access to cheap labor is not the driving force for most foreign direct investment, U.S. companies do have a strong presence in some developing countries. Brazil and Mexico, for example, rank among the top ten recipients of U.S. direct investment based on employment data.

COST FACTORS MNEs often seek to increase profit levels through reductions in production costs. Such cost-reducing foreign direct investments may take a number of forms. The pursuit of essential raw materials may underlie a company’s intent to go multinational. This is particularly true of the extractive industries and certain agricultural commodities. United Fruit, for example, has established banana-producing facilities in Honduras to take advantage of the natural trade advantages afforded by the weather and growing conditions. Similar types of natural trade advantages explain why Anaconda has set up mining operations in Bolivia and why Shell produces and refines oil in Indonesia. Natural supply advantages such as resource endowments or climatic conditions may indeed influence a company’s decision to invest abroad.

Production costs include factors other than material inputs, notably labor. *Labor costs* tend to differ among national economies. MNEs may be able to hold costs down by locating part or all of their productive facilities abroad. Many U.S. electronics firms, for instance, have had their products produced or at least assembled abroad to take advantage of cheap foreign labor. (The mere fact that the United States may pay higher wages than those prevailing abroad does not necessarily indicate higher costs. High wages may result from U.S. workers’ being more productive than their foreign counterparts. Only when high U.S. wages are not offset by superior U.S. labor productivity will foreign labor become relatively more attractive.)

MNE location can also be affected by transportation costs, especially in industries where transportation costs are a high fraction of product value. When the cost of transporting raw materials used by a MNE is significantly higher than the cost of shipping its finished products to markets, the MNE will generally locate production facilities closer to its raw material sources than to its markets; lumber, basic chemicals, aluminum, and steel are among the products that fit this description. Conversely, when the cost of transporting finished products is significantly higher than the cost of transporting the raw materials that are used in their manufacture, VINES locate production facilities close to their markets. Beverage manufacturers, such as CocaCola and Pepsi-Cola, transport syrup concentrate to plants all over the world, which add water to the syrup, bottle it, and sell it to consumers. When transportation costs are a minor fraction of product value, MNEs tend to locate where the availability and cost of labor and other inputs provide them the lowest manufacturing cost. MNEs producing electronic components, garments, and shoes offer examples of such locational mobility.

*Government policies* may also lead to foreign direct investment. Some nations seeking to lure foreign manufacturers to set up employment-generating facilities in their countries may grant subsidies, such as preferential tax treatment or free factory buildings, to MNEs More commonly, direct investment may be a way of circumventing import tariff barriers. The very high tariffs that Brazil levies on auto imports means that foreign auto producers wishing to sell in the Brazilian market must locate production facilities in that country. Another example is the response of U.S. business to the formation of the European Union, which imposed common external tariffs against outsiders while reducing trade barriers among member nations. U.S. companies were induced to circumvent these barriers by setting up subsidiaries in the member nations. Another example is Japanese businesses that apparently located additional auto-assembly plants in the United States in the 1980s and 1990s to defuse mounting protectionist pressures.

SUPPLYING PRODUCTS TO FOREIGN BUYERS: WHETHER TO PRODUCE DOMESTICALLY OR ABROAD

Once a firm knows that foreign demand for its goods exists, it must ascertain the least-cost method of supplying these goods abroad. Suppose Anheuser-Busch (A-B) of the United States wants to sell its Budweiser beer in Canada. A-B can do this in one of three ways: (1) brew Bud in the United States and export it to Canada (direct exporting); (2) establish its own production subsidiary in Canada (foreign direct investment); or (3) license the rights to a Canadian brewery to produce and market Bud in Canada. The method A-B chooses depends on the extent of economies of scale, transportation and distribution costs, and international trade barriers. These considerations are discussed in the following sections.

DIRECT EXPORTING VERSUS FOREIGN DIRECT INVESTMENT/ LICENSING Let us consider A-B’s decision to supply Bud to Canada via direct exports versus foreign direct investment or licensing. We will first analyze the influence of economies of scale on A-B’s decision. One would expect economies of scale to encourage A-B to export Bud to Canada when the quantity of beer demanded in Canada is relatively small, and to
encourage Canadian production, via either licensing agreements or foreign direct investment, when a relatively large quantity of beer is demanded in Canada.

To illustrate this principle, assume that A-B, a Canadian brewery, and a Canadian subsidiary of A-B all have identical production functions exhibiting economies of scale and that the firms pay the same price for their inputs. As illustrated in Figure 10.1, their average cost schedules are identical and are denoted by AC.

Suppose U.S. consumers demand 200 cases per year of Bud at the going price. Producing this output permits A-B to realize economies of scale and a cost of $8 per case. Suppose that Canadians demand a smaller quantity of Bud, say 100 cases. Because this quantity is too small to permit efficient production in Canada, the Canadian brewery or A-B's production subsidiary realizes a higher cost of $11 per case. A-B thus minimizes cost by increasing its U.S. production to meet the additional Canadian demand. By brewing 300 cases, A-B achieves a longer production run and the resulting economies of scale so that costs fall to $6 per case. Canadian consumers are thus supplied 100 cases of Bud via direct export. As long as the cost of transporting Bud from the United

![Figure 10.1 The Choice Between Direct Exporting and Foreign Direct Investment/Licensing](image)

States to Canada is less than $5 a case, A-B increases its profit by exporting beer to Canada.

If the quantity of Bud demanded by Canadians is 300 cases or more, it may be more profitable for A-B to locate production in Canada, either by licensing production technology to a Canadian brewery or by investing in a production subsidiary. Referring to Figure 10.1, suppose Canadians demand 400 cases of Bud whereas Bud sales in the United States remain at 200 cases. With economies of scale exhausted at 300 cases, the larger Canadian demand does not permit A-B to brew Bud at a cost lower than $6 per case. By increasing output from 100 to 400 cases, however, the Canadian brewery or production subsidiary of A-B could match A-B's efficiency since they realize the least possible cost of $6 per case. Given equal production costs, A-B minimizes total cost by avoiding the additional costs of transporting beer to Canada. A-B thus increases profits by either licensing its beer technology to a Canadian brewer or investing in a production subsidiary in Canada.
Similar to transportation costs, trade restrictions can neutralize production-cost advantages. If Canada has high import tariffs, production cost advantages in the United States may be offset, so that foreign direct investment or licensing is the only feasible way of penetrating the Canadian market.

**FOREIGN DIRECT INVESTMENT VERSUS LICENSING** Once a firm chooses foreign production as a method of supplying goods abroad, it must decide whether it is more efficient to establish a foreign production subsidiary or license the technology to a foreign firm to produce its goods. In the United Kingdom, there are KFC establishments that are owned and run by local residents. The parent U.S. organization merely provides its name and operating procedures in return for royalty fees paid by the local establishments. Although licensing is widely used in practice, it presupposes that local firms are capable of adapting their operations to the production process or technology of the parent organization.

Figure 10.2 [see below] portrays the hypothetical cost conditions confronting A-B as it contemplates whether to license Bud production technology to a Canadian brewery or invest in a Canadian production subsidiary. Curve AVC_{Subsidiary} represents the average variable cost (such as labor and materials) of A-B's production subsidiary, and AVC_{Canada} represents the average variable cost of a Canadian brewery. The establishment of a foreign production subsidiary also entails fixed costs denoted by curve AFC_{Subsidiary}. These include expenses of coordinating the subsidiary with the parent organization and the sunk costs of assessing the market potential of the foreign country. The total unit costs that A-B faces when establishing a foreign subsidiary are given by ATC_{Subsidiary}.

Comparing ATC_{Subsidiary} with AVC_{Canada} a relatively small market of less than 400 cases of beer, the Canadian brewery has an absolute cost advantage. Licensing Bud production technology to a Canadian brewery in this case is more profitable for A-B. But if the Canadian market for Bud exceeds 400 cases, A-B's production subsidiary has an absolute cost advantage; A-B increases profits by supplying beer to Canadians via foreign direct investment.

Several factors influence the output level at which A-B's production subsidiary begins to realize an absolute cost advantage vis-à-vis the Canadian brewery (400 cases in Figure 10.2). To the extent that production is capital-intensive and A-B's production subsidiary can acquire capital at a lower cost than that paid by the Canadian brewery, the variable cost advantage of the subsidiary is greater. This neutralizes the influence of a fixed-cost disadvantage for the subsidiary at a lower level of output. The amount of the production subsidiary's fixed costs also has a bearing on this minimum output level. Smaller fixed costs lower the subsidiary's average total costs, again resulting in a smaller output at which the subsidiary first begins to have an absolute cost advantage.

As noted, international business decisions are influenced by such factors as production costs, fixed costs of locating overseas, the relative importance of labor and capital in the production process, and the size of the foreign market. Another factor is the element of risk and uncertainty. When determining where to locate production operations, management is concerned with possibilities such as currency fluctuations and subsidiary expropriations.
INTERNATIONAL TRADE THEORY AND MULTINATIONAL ENTERPRISE

Perhaps the main explanation of the development of MNEs lies in the strategies of corporate Management. The reasons for engaging in international business can be outlined in terms of the comparative-advantage principle. Corporate managers see advantages they can exploit in the forms of access to factor inputs, new technologies and products, and managerial know-how. Organizations establish overseas subsidiaries largely because profit prospects are best enhanced by foreign production.

From a trade-theory perspective, the multinational-enterprise analysis is fundamentally in agreement with the predictions of the comparative-advantage principle. Both approaches contend that a given commodity will be produced in the low-cost country. The major difference between the multinational-enterprise analysis and the conventional trade model is that the former stresses the international movement of factor inputs, whereas the latter is based on the movement of merchandise among nations.

International trade theory suggests that the aggregate welfare of both the source and host countries is enhanced when MNEs make foreign direct investments for their own benefit. The presumption is that if businesses can earn a higher return on overseas investments than on those at home, resources are transferred from lower to higher productive uses, and on balance the world allocation of resources will improve. Thus, analysis of MNEs is essentially the same as conventional trade theory, which rests on the movement of products among nations.

Despite the basic agreement between conventional trade theory and the multinational-enterprise analysis, there are some notable differences. The conventional model presupposes that goods are exchanged between independent organizations on international markets at competitively determined prices. But MNEs are generally vertically integrated companies whose subsidiaries manufacture intermediate goods as well as finished goods. In an MNE, sales become intrafirm when goods are transferred from subsidiary to subsidiary. Although such sales are part of international trade, their value may be determined by factors other than a competitive pricing system.
**JAPANESE TRANSPLANTS IN THE U.S. AUTOMOBILE INDUSTRY**

During the 1980s, the growth of Japanese direct investment in the U.S. auto industry was widely publicized. From 1980 to 1990, Japanese automakers invested more than $5 billion in U.S.-based assembly facilities, known as transplants. Eight Japanese-affiliated auto manufacturers and more than a hundred Japanese parts suppliers operated or constructed facilities in the United States. By 1990, Japanese transplants built more than 15 percent of the passenger cars produced in the United States. Table 10.3 provides examples of Japanese transplant automakers in the United States.

Establishing transplants in the United States provided a number of benefits to Japanese automakers, including opportunities to:

- silence critics who insist that autos sold in the United States must be built there.
- avoid export restraints imposed by the Japanese government and potential import barriers of the United States.
- gain access to an expanding market at a time when the Japanese market was nearing saturation.
- provide a hedge against fluctuations in the yen-dollar exchange rate.

<table>
<thead>
<tr>
<th>Table 10.3 Japanese Auto Plants in the United States</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plant Name/Parent Company</strong></td>
</tr>
<tr>
<td>Honda of America, Inc. (Honda)</td>
</tr>
<tr>
<td>Nissan Motor Manufacturing Corp. (Nissan)</td>
</tr>
<tr>
<td>New United Motor Manufacturing, Inc. (Toyota/General Motors)</td>
</tr>
<tr>
<td>Toyota Motor Manufacturing, USA, Inc. (Toyota)</td>
</tr>
<tr>
<td>Mazda Motor Manufacturing, USA, Inc. (Mazda)</td>
</tr>
<tr>
<td>Diamond-Star Motors Corp. (Mitsubishi/Chrysler)</td>
</tr>
</tbody>
</table>

The rapid growth of Japanese investment in the U.S. auto industry led to concerns over the future of U.S.-owned auto-manufacturing and parts supplier industries. Proponents of foreign direct investment maintained that it would foster improvement in the overall competitive position of the domestic auto-assembly and parts industries. They also argued that foreign investment generates jobs and provides consumers with a wider product choice at lower prices than would otherwise be available.

However, the United Auto Workers (UAW) union maintained that this foreign investment would result in job losses in the auto-assembly and parts-supplier industries. They and other critics argued that Japanese transplants would decrease the market share for U.S. automakers and parts suppliers and contribute to excess capacity at both automakers and parts-suppliers levels.

One factor that influences the number of workers hired is a company's *job classifications*, which stipulate the scope of work each employee performs. As the number of job classifications increases, the scope of work decreases, along with the flexibility of using available employees; this can lead to falling worker productivity and rising production costs.

Japanese-affiliated auto companies have traditionally used significantly fewer job classifications than traditional U.S. auto companies. Japanese transplants use work teams, and each team member is trained to do all the operations performed by the team. A typical Japanese-affiliated assembly plant has three to four job classifications: one team leader, one production technician, and one or two maintenance technicians. Often, jobs are rotated among team members. In contrast, traditional U.S. auto plants have enacted more than 90 different job classifications, and employees generally perform only those operations specifically permitted for their classifica-
tion. These trends have contributed to the superior labor productivity of Japanese transplants compared to the U.S. Big Three. Although powerful forces within the U.S. Big Three have resisted change, international competition has forced U.S. automakers to slowly dismantle U.S. management and production methods and remake them along Japanese lines.

For policy makers, the broader issue is whether the Japanese transplants have lived up to expectations. When the Japanese initiated investment in U.S. auto-manufacturing facilities in the 1980s, many Americans viewed them as models for a revitalized U.S. auto industry and new customers for U.S. auto-parts suppliers. Transplants were seen as a way of providing jobs for U.S. autoworkers whose jobs were dwindling as imports increased. When the transplant factories were announced, Americans anticipated that transplant production would be based primarily on American parts, material, and labor; transplant production would displace imports in the U.S. market while transferring new management techniques and technology to the United States.

Certainly, the transplant factories boosted the economies in the regions where they located. And there is no doubt that the transplants helped to transfer Japanese quality control, just-in-time delivery, and other production techniques to the United States. However, the original expectations of the transplants were only partially fulfilled. Skeptics contended that Japanese manufacturing operations were twice as likely to import parts for assembly in the United States as the average foreign company, and were four times as likely to import parts as the average U.S. company. Extensive use of imported parts by Japanese transplants would contribute to a U.S. automotive trade deficit with Japan and would result in fewer jobs for U.S. autoworkers.

How competitive are Japanese transplants relative to the U.S. Big Three auto manufacturers? Table 10.4 provides the estimated labor cost per vehicle for North American auto manufacturers in 1999. The table shows that Nissan's transplant factory was the most productive manufacturer in North America, with labor costs of $1,055 per vehicle for assembly, stamping, and powertrain.

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**BOX - FEARS AND FACTS ABOUT FOREIGN DIRECT INVESTMENT**

In the 1980s, concerns arose in the United States that the rapid rise in inward foreign direct investment would have adverse effects on American workers. Some feared that foreign-controlled affiliates that displaced U.S. firms might change the composition of employment, moving "good" jobs to the home country and offering only "bad" jobs in the United States. In fact, foreign multinationals in the United States pay higher-than-average wages, suggesting that in fact they provide good jobs. When net foreign direct investment flows turned outward during the 1990s, the concern became that U.S. companies would begin outsourcing much of their production to other countries, again at the expense of jobs and wages at home. This seeming contradiction—that inward and outward foreign direct investment would have similar effects on U.S. workers—may reflect how little was actually known about the effects of foreign direct investment.

Unlike trade, which has been the subject of study for hundreds of years, foreign direct investment has been subjected to little rigorous study until recently. As more has been learned about foreign direct investment, many of these initial fears have subsided. The following are some fears that have been recently expressed about foreign direct investment, and the facts that we now know.

**Fear:** Won't U.S. industries leave for low-wage developing countries?
**Fact:** During the NAFTA debate, some voiced concern that lowering barriers to investment in Mexico would result in a large movement of U.S. industry there, as firms exploited low Mexican wages. But since the passage of NAFTA in 1993, Mexico's share of the U.S. outward foreign direct investment position has decreased. The reason there has been no mass exodus of U.S. industry to Mexico or to other low-wage countries is simple: There is no free lunch for multinationals as for the rest of us. Real wages may vary significantly across countries, but studies show that these differences are linked to productivity differences, just as economic theory would predict. Low wages are not a sufficient reason to move production to a foreign country if low productivity there raises the labor cost per unit of output to a level close to that of the United States. The vast majority of U.S. foreign direct investment continues to be with other high-wage countries, so clearly other motivations than the potential for low-wage outsourcing are behind the greater part of foreign direct investment.

**Fear:** Are U.S. firms that invest abroad exporting jobs?
**Fact:** It may seem reasonable to suppose that a U.S. firm that hires workers in an overseas affiliate is contributing to U.S. unemployment, because the firm could be hiring U.S. workers to do the same job here. Evidence shows, however, that generally this is not the case: Increases in employment in foreign affiliates of U.S. firms are often associated with increases in employment at the parent as well. What employment substitution there is seems to be occurring entirely offshore, between countries.

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BOX - FEARS AND FACTS ABOUT FOREIGN DIRECT INVESTMENT (continued)

compelling for U.S. FDI, not between U.S. parents and their foreign affiliates. Far from exporting jobs, it appears that creating jobs overseas creates jobs at home as well.

**Fear:** Doesn’t U.S. foreign direct investment abroad represent domestic investment forgone?

**Fact:** With the surge in outward foreign direct investment in recent years, foreign direct investment outflows now amount to more than 10 percent of gross investment. However, when a U.S. firm invests abroad, that does not necessarily mean it would have invested here instead if foreign direct investment had not been an option. It might then have chosen not to invest at all. Moreover, two-thirds of recorded outflows in 1996 were actually the reinvested earnings of foreign affiliates, not capital originating in the United States. Considering only actual capital outflows, a recent study estimated that outward foreign direct investment averaged only 0.9 percent of gross investment between 1970 and 1990—and the share has been decreasing. Capital outflows are also largely compensated by foreign investment inflows. Evidence suggests that a complementarity may exist between the United States and other industrial countries that increases total investment in all countries that participate.

In short, opponents of foreign direct investment have incorrectly framed it as a zero-sum venture, where for one country to gain, another must lose. Both the theoretical arguments of the benefits of FDI and the evidence now available suggest that foreign direct investment can provide net gains for all parties.


**Table 10.4** Labor Cost per Vehicle for Selected North American Auto Manufacturers in 1999

<table>
<thead>
<tr>
<th></th>
<th>DaimlerChrysler</th>
<th>Ford</th>
<th>General Motors</th>
<th>Honda</th>
<th>Nissan</th>
<th>Toyota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor hours per vehicle (assembly, stamping powertrain)</td>
<td>43.58</td>
<td>36.24</td>
<td>43.03</td>
<td>29.34</td>
<td>29.30</td>
<td>30.96</td>
</tr>
<tr>
<td>Labor cost per vehicle¹</td>
<td>$2,005</td>
<td>$1,667</td>
<td>$1,979</td>
<td>$1,056</td>
<td>$1,055</td>
<td>$1,115</td>
</tr>
<tr>
<td>Labor cost relative to Nissan</td>
<td>$950</td>
<td>$612</td>
<td>$924</td>
<td>$1</td>
<td>$1</td>
<td>$60</td>
</tr>
<tr>
<td>Annual production volume (million)</td>
<td>3.085</td>
<td>4.550</td>
<td>5.717</td>
<td>686</td>
<td>325</td>
<td>688</td>
</tr>
</tbody>
</table>

¹Labor cost of $46 per hour for DaimlerChrysler, Ford, and General Motors and $36 per hour for Honda, Nissan, and Toyota.


The Honda plant was the second most productive, at $1,056 per vehicle. Ford was the most productive of the U.S. Big Three manufacturers with labor costs of $1,667 per vehicle. The labor cost disadvantages of DaimlerChrysler and General Motors, relative to Nissan, were larger than that of Ford.

**INTERNATIONAL JOINT VENTURES**

Another area of multinational enterprise involvement is international joint ventures. A joint venture is a business organization established by two or more companies that combines their skills and assets. It may have a limited objective (research or production) and be short-lived. It may also be multinational in character, involving cooperation among several domestic and foreign companies. Joint ventures differ from mergers in that they involve the creation of a new business firm, rather than the union of two existing companies. Table 10.5 provides examples of recent joint ventures between U.S. and foreign companies.

**Table 10.5** Joint Ventures Between U.S. and Foreign Companies

<table>
<thead>
<tr>
<th>Joint Venture</th>
<th>U.S. Partner</th>
<th>Foreign Partner</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>New United Motor Manufacturing</td>
<td>General Motors</td>
<td>Toyota (Japan)</td>
<td>Subcompact cars</td>
</tr>
<tr>
<td>National Steel</td>
<td>National Intergrup</td>
<td>Nippon Kokan</td>
<td>Steel</td>
</tr>
<tr>
<td>Siecor</td>
<td>Coming Glass Works</td>
<td>Siemens (Germany)</td>
<td>Optical cable</td>
</tr>
<tr>
<td>Himont</td>
<td>Hercules</td>
<td>Montedison (Italy)</td>
<td>Polypropylene resin</td>
</tr>
<tr>
<td>International Aero Engines</td>
<td>United Technologies</td>
<td>Rolls-Royce (Britain)</td>
<td>Aircraft engines</td>
</tr>
<tr>
<td>Tokyo Disneyland</td>
<td>Walt Disney Productions</td>
<td>Oriental Land Company</td>
<td>Entertainment</td>
</tr>
</tbody>
</table>

There are three types of international joint ventures. The first is a joint venture formed by two businesses that conduct business in a third country. For example, a U.S. oil firm and a British oil firm may form a joint venture for oil exploration in the Middle East. Next is the formation of a joint venture with local private interests. Honeywell Information Systems of Japan was formed by Honeywell, Inc., of the United States and Mitsubishi Office Machinery Company of Japan to sell information-systems equipment to the Japanese. The third type of joint venture includes participation by local government. Bechtel of the United States, Messerschmitt-Boelkow-Blom of West Germany, and National Iranian Oil (representing the government of Iran) formed Iran Oil Investment Company for oil extraction in Iran.

Several reasons have been advanced to justify the creation of joint ventures. Some functions, such as R&D, can involve costs too large for any one company to absorb by itself. Many of the world's largest copper deposits have been owned and mined jointly by the largest copper companies on the grounds that joint financing is required to raise enough capital. The exploitation of oil deposits is often done by a consortium of several oil companies. Exploratory drilling projects typically involve several companies united in a joint venture, and several refining companies traditionally own long-distance crude-oil pipelines. Oil refineries in foreign countries may be co-owned by several large U.S. and foreign oil companies.

Another factor that encourages the formation of international joint ventures is the restrictions some governments place on foreign ownership of local businesses. Governments in developing nations often close their borders to foreign companies unless they are willing to take on local partners. Mexico, India, and Peru require that their own national companies represent a major interest in any foreign company conducting business within their borders. The foreign investor is forced to either accept local equity participation or forgo operation in the country. Such government policies are defended on the grounds that joint ventures result in the transfer of managerial techniques and know-how to the developing nation. Joint ventures may also prevent the possibility of excessive political influence on the part of foreign investors. Finally, joint ventures help minimize dividend transfers abroad and thus strengthen the developing nation's balance of payments.

International joint ventures are also viewed as a means of forestalling protectionism against imports. Apparently motivated by fear that rising protectionism would restrict their access to U.S. markets, Japanese manufacturers (Toyota Motor Enterprise) increasingly formed joint ventures with U.S. enterprises in the 1980s. Such ventures typically resulted in U.S. workers' assembling Japanese components, with the finished goods sold to U.S. consumers. Not only did this process permit Japanese production to enter the U.S. market, but it also blurred the distinction between U.S. and Japanese production. Just who is us? And who is them? The rationale for protecting domestic output and jobs from foreign competition is thus lessened.

There are, however, disadvantages to forming an international joint venture. A joint venture is a cumbersome organization compared with a single organization. Control is divided, creating problems of "two masters." Success or failure depends on how well companies can work together despite having different objectives, corporate cultures, and ways of doing things. The action of corporate chemistry is difficult to predict, but it is critical, because joint-venture agreements usually provide both partners an ongoing role in management. When joint-venture ownership is divided equally, as often occurs, deadlocks in decision making can take place. If balance is to be preserved between different economic interests, negotiation must establish a hierarchical command. Even when negotiated balance is achieved, it can be upset by changing corporate goals or personnel.

WELFARE EFFECTS International joint ventures can yield both welfare-increasing effects and welfare-decreasing effects for the domestic economy. Joint ventures lead to welfare gains when (1) the newly established business adds to preexisting productive capacity and fosters additional competition, (2) the newly established business is able to enter new markets that neither parent could have entered individually, or (3) the business yields cost reductions that would have been unavailable if each parent performed the same function separately. However, the formation of a joint venture may also result in welfare losses. For instance, it may give rise to increased market power, suggesting greater ability to influence market output and price. This is especially likely to occur when the joint venture is formed in markets in which the parents conduct business. Under such circumstances, the parents, through their representatives in the joint venture, agree on prices and output in the very market that they themselves operate. Such coordination of activities limits competition, reinforces upward pressure on prices, and lowers the level of domestic welfare.

Let's consider an example that contrasts two situations: (1) Two competing companies sell autos in the domestic market. (2) The two competitors form a joint venture that operates as a single seller (a monopoly) in the domestic market. We would expect to see a higher price and smaller quantity when the joint venture behaves as a monopoly. This will always occur as long as the marginal cost curve for the joint venture is
identical to the horizontal sum of the marginal cost curves of the individual competitors. The result of this market-power effect is a deadweight welfare loss for the domestic economy—a reduction in consumer surplus that is not offset by a corresponding gain to producers. If, however, the formation of the joint venture entails productivity gains that neither parent could realize prior to its formation, domestic welfare may increase. This is because a smaller amount of the domestic economy's resources is now required to produce any given output. Whether domestic welfare rises or falls because of the joint venture depends on the magnitudes of these two opposing forces.

Figure 10.3 illustrates the welfare effects of two parent companies forming a joint venture in the market in which they operate. Assume that Sony Auto Company of Japan and American Auto Company of the United States are the only two firms producing autos for sale in the U.S. market. Suppose each company realizes constant long-run costs, suggesting that average total cost equals marginal cost at each level of output. Let the cost schedules of each company prior to the formation of the joint venture be MC_0 = ATC_0, which equals $10,000. MC_0 = ATC_0 thus becomes the long-run market supply schedule of autos.

Assume that Sony Auto Company and American Auto Company initially operate as competitors, charging a price equal to marginal cost. In Figure 10.3, market equilibrium exists at point A, where 100 autos are sold at a price of $10,000 per unit. Consumer surplus totals area a + b + c. Producer surplus does not exist, given the horizontal supply schedule of autos (recall that producer surplus equals the sum of the differences between the market price and each of the minimum prices indicated on the supply schedule for quantities between zero and the market output).

![Figure 10.3: Welfare Effects of an International Joint Venture](image)

An international joint venture can yield a welfare-decreasing market-power effect and a welfare-increasing cost-reduction effect. The source of the cost-reduction effect may be lower resource prices or improvements in technology and productivity. The joint venture leads to improvements in national welfare if its cost-reduction effect is due to improvements in technology and productivity and if it more than offsets the market-power effect.

Now suppose that the two competitors announce the formation of a joint venture known as JV Company, which manufactures autos for sale in the United States. The autos sold by JV replace the autos sold by the two parents in the United States.

Suppose the formation of JV Company entails new production efficiencies that result in cost reductions. Let JV's new cost schedule, MC_1 = ATC_1, be located at $7,000. As a monopoly, JV maximizes profit by equating marginal revenue with marginal cost. Market equilibrium exists at point B, where 90 autos are sold at a price of $12,000 per unit. The price increase leads to a reduction in consumer surplus equal to area a + b. Of this amount, area a is transferred to JV as producer surplus. Area b represents the loss of consumer surplus that is not transferred to JV and that becomes a deadweight welfare loss for the U.S. economy (the consumption effect).

Against this deadweight welfare loss lies the efficiency effect of JV Company: a decrease in unit costs from $10,000 to $7,000 per auto. JV can produce its profit-maximizing output, 90 autos, at a cost reduction equal to

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area $d$ as compared with the costs that would exist if the parent companies produced the same output. Area $d$ thus represents additional producer surplus, which is a welfare gain for the U.S. economy. Our analysis concludes that, for the United States, the formation of JV Company is desirable if area $d$ exceeds area $b$.

It has been assumed that JV Company achieves cost reductions that are unavailable to either parent as a stand-alone company. Whether the cost reductions benefit the overall U.S. economy depends on their source. If they result from productivity improvements (for example, new work rules leading to higher Output per worker), a welfare gain exists for the economy, because fewer resources are required to produce a given number of autos and the excess can be shifted to other industries. However, the cost reductions stemming from JV Company's formation may be monetary in nature. Being a newly formed company, JV may be able to negotiate wage concessions from domestic workers that could not be achieved by American Auto Company. Such a cost reduction represents a transfer of dollars from domestic workers to JV profits and does not constitute an overall welfare gain for the economy.

**MULTINATIONAL ENTERPRISES AS A SOURCE OF CONFLICT**

The advocates of MNES often point out the benefits these enterprises can provide for the nations they affect, including both the source country where the parent organization is located and the host country where subsidiary firms are established. Benefits allegedly exist in the forms of additional levels of investment and capital, creation of new jobs, and development of technology and production processes. But critics contend that MNES often create trade restraints, conflict with national economic and political objectives, and have adverse effects on a nation's balance of payments. These arguments perhaps explain why some nations frown on direct investment, while others welcome it. This section examines some of the more controversial issues involving multinationals. The frame of reference is the U.S. MNE, although the same issues apply no matter where the parent organization is based.

**EMPLOYMENT** One of the most hotly debated issues surrounding the MNE is its effects on employment in both the host and source countries. MNES often contend that their foreign direct investment yields favorable benefits to the labor force of the recipient nation. Setting up a new multinational automobile manufacturing plant in Canada creates more jobs for Canadian workers. But the MNES effect on jobs varies from business to business. One source of controversy arises when the direct investment spending of foreign-based MNES is used to purchase already existing local businesses rather than to establish new ones. In this case, the investment spending may not result in additional production capacity and may not have noticeable effects on employment in the host country. Another problem arises when MNES bring in foreign managers and other top executives to run the subsidiary in the host country. In the U.S. oil companies locating in Saudi Arabia, the Saudis are increasingly demanding that their own people be employed in higher-level positions.

As for the source country, the issues of runaway jobs and cheap foreign labor are of vital concern to home workers. Because labor unions are confined to individual countries, the multinational nature of these businesses permits them to escape much of the collective-bargaining influence of domestic unions. It is also pointed out that MNES can seek out those countries where labor has minimal market power.

The ultimate impact that MNES have on employment in the host and source countries seems to depend in part on the time scale. In the short run, the source country will likely experience an employment decline when production is shifted overseas. But other industries in the source country may find foreign sales rising over time. This is because foreign labor consumes as well as produces and tends to purchase more as employment and income increase as a result of increased investment. Perhaps the main source of controversy stems from the fact that the MNES are involved in rapid changes in technology and in the transmission of productive enterprise to host countries. Although such efforts may promote global welfare in the long run, the potential short-run adjustment problems facing source-country labor cannot be ignored.

**TECHNOLOGY TRANSFER** Besides promoting runaway jobs, multinationals can foster the transfer of technology (knowledge and skills applied to how goods are produced) to other nations. Such a process is known as technology transfer.

Technology has been likened to a contagious disease: It spreads out farther and more quickly if there are more personal contacts. Foreign trade is viewed as a channel through which people in different nations make contacts and through which people in one nation get to know about the products of other nations. Foreign direct investment is an even more effective method of technology transfer. When foreign firms having technological advantages establish local production subsidiaries, the personal contacts between these subsidiaries and local firms are more frequent and closer than when firms are located abroad.
International trade and foreign direct investment also facilitate technology transfer via the so-called demonstration effect: As a firm shows how its products operate, this sends important information to other firms that such products exist and are usable. Technology diffusion is also aided by the competition effect: When a foreign firm manufacturers a superior product that is popular among consumers, other firms are threatened. To survive, they have to innovate and improve the quality of their products.

Although technology transfer may increase the productivity and competitiveness of recipient nations, donor nations may react against it because it is detrimental to their economic base. Donor nations contend that the establishment of production operations abroad by multinational enterprises decreases their export potential and leads to job losses for their workers. By sharing technical knowledge with foreign nations, a donor nation may eventually lose its international competitiveness, thus causing a decrease in its rate of economic growth.

Consider the case of U.S. technology transfer to China in the mid-1990s. After decades of mutual hostility, the United States hoped that by the 1990s China would open itself to the outside world and engage in free trade, so that foreign nations could trade with China according to the principle of comparative advantage. Instead, China used its leverage as a large buyer of foreign products to pressure multinational enterprises to localize production and transfer technology to China to help it become competitive. With multinational enterprises willing to outbid each other to woo Chinese bureaucrats, China was in a favorable position to reap the benefits of technology diffusion.

For example, Microsoft Corp., under threat of having its software banned, co-developed a Chinese version of Windows 95 with a local partner and agreed to aid efforts to develop a Chinese software industry. Another example was General Motors. To beat out Ford Motor for the right to become a partner in manufacturing sedans in Shanghai, General Motors agreed to bring in dozens of parts joint ventures and to design much of the car in China. It also agreed to establish five research institutes to teach Chinese engineers to turn technological theory in fields such as power trains and fuel-injection systems into commercial applications.

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**Boeing Workers Contest Technology Transfer to China**

Sharing the manufacture of a product with foreign workers is a popular but controversial practice in today's global economy. Does it lead to job losses for domestic workers? Consider the case of commercial jet manufacturing.

In the mid-1990s, Boeing's domestic sales of jetliners weakened because of a post-Cold War decrease in U.S. defense spending and cost cutting by U.S. airlines in a mature travel market. Boeing increasingly looked to growing foreign markets, especially China, as a source of potential sales.

Being a major buyer in a sluggish market, China used its leverage to insist that if foreign producers wanted to sell jetliners to China, they would have to subcontract a portion of the planes' production to Chinese manufacturers. Such technological transfers would help China learn the art of jet-plane manufacturing and eventually result in China's becoming a builder of jetliners. China succeeded in pressuring Boeing, Airbus, and McDonnell Douglas to locate factories in China that produce airliner doors, tail fins, and a myriad of other parts.

The three Western airline producers bid to help China develop the hundred-seat jet, even though the winner would have only about a 20 percent stake in the venture. Each firm wanted to ensure that the design of the jet fit into its own lineup of larger jets, which cost $45 million to $185 million each.

The possibility of Boeing's helping China develop a jetliner threatened Boeing machinists, who saw the potential of their jobs being lost to the Chinese. The workers went on strike, demanding, among other things, that the firm cease or slow the granting of production contracts to China in exchange for orders of U.S. planes. The workers also pressed the Clinton Administration to halt U.S. exports of jetliner manufacturing and technology to China; they complained that the United States was moving toward becoming a seller of jetliner technology rather than a manufacturer of jets.

Boeing justified production sharing on the grounds that curtailment of subcontracting to China would cost its machinists more jobs than would be saved. Without any Boeing subcontracting, the contract would likely be awarded to Airbus, which indicated that it would subcontract production to China; more jobs would thus be lost by Boeing workers than would occur with Boeing's subcontracting some production to China. Boeing emphasized that its strategy was to share what it must, but only what it must, to maintain its 60 percent share of China's jetliner market.

After a lengthy strike, the machinists and Boeing agreed to a new contract. Boeing pledged to consult with the machinists' union on plans for subcontracting work. The firm also agreed to help its workers whose jobs were lost as a result of subcontracting, retaining them for other positions in the company as they became available.

As it happens, Boeing and McDonnell Douglas lost out to Airbus in the contest to become China's partner in building the hundred-seat jet. Some observers noted that Boeing and McDonnell Douglas may have been better off for having lost this contest, because China's Western partner stood to become embroiled in a long and costly development effort.
U.S. multinationals argued that transferring technology to China was largely risk-free because a competitive challenge from China was decades away. However, the acceleration of technology transfer in the mid-1990s became increasingly unpopular with U.S. labor unions, which feared that their members were losing jobs to lower-paid Chinese workers. U.S. government officials also feared that technology transfer was helping create a competitor of extreme proportions.

**NATIONAL SOVEREIGNTY** Another controversial issue involving the conduct of MNEs is their effect on the economic and political policies of the host and source governments. There is a suspicion in many nations that the presence of MNEs in a given country results in a loss of its national sovereignty. For example, MNEs may resist government attempts to redistribute national income through taxation. By using accounting techniques that shift profits overseas, an MNE may be able to evade taxes of a host country. An MNE could accomplish this by raising prices on goods from its subsidiaries in nations with modest tax rates to reduce profits on its operations in a high-tax nation where most of its business actually takes place.

The political influence of MNEs is also questioned by many, as illustrated by the case of Chile. For years, U.S. businesses had pursued direct investments in Chile, largely in copper mining. When Salvador Allende was in the process of winning the presidency, he was opposed by U.S. businesses fearing that their Chilean operations would be expropriated by the host government. International Telephone and Telegraph tried to prevent the election of Allende and attempted to promote civil disturbances that would lead to his fall from power. Another case of MNEs' meddling in host-country affairs is that of United Brands (now Chiquita), the MNE engaged in food-product sales. In 1974, the company paid a $1.25 million bribe to the president of Honduras in return for an export-tax reduction applied to bananas. When the payoff was revealed, the president was removed from office.

There are other areas of controversy. Suppose a Canadian subsidiary of a U.S.-based MNE conducts trade with a country subject to U.S. trade embargoes. Should U.S. policy makers outlaw such activities? The Canadian subsidiary may be pressured by the parent organization to comply with U.S. foreign policy. During international crises, MNEs may move funds rapidly from one financial center to another to avoid losses (make profits) from changes in exchange rates. This conduct makes it difficult for national governments to stabilize their economies.

In a world where national economies are interdependent and factors of production are mobile, the possible loss of national sovereignty is often viewed as a necessary cost whenever direct investment results in foreign control of production facilities. Whether the welfare gains accruing from the international division of labor and specialization outweigh the potential diminution of national independence involves value judgments by policy makers and interested citizens.

**BALANCE OF PAYMENTS** The United States offers a good example of how an NINE can affect a nation's balance of payments. In brief, the balance of payments is an account of the value of goods and services, capital movements (including foreign direct investment), and other items that flow into or out of a country. Items that make a positive contribution to a nation's payments position include exports of goods and services and capital inflows (foreign investment entering the home country), whereas the opposite flows would weaken the payments position. At first glance, we might conclude that when U.S. MNEs make foreign direct investments, these payments represent an outflow of capital from the United States and hence a negative factor on the U.S. payments position. Although this view may be true in the short run, it ignores the positive effects on trade flows and earnings that direct investment provides in the long run.

When a U.S. MNE sets up a subsidiary overseas, it generally purchases U.S. capital equipment and materials needed to run the subsidiary. Once in operation, the subsidiary tends to purchase additional capital equipment and other material inputs from the United States. Both of these factors stimulate U.S. exports, strengthening its payments position.

Another long-run impact that U.S. foreign direct investment has on its balance of payments is the return inflow of income generated by overseas operations. Such income includes earnings of overseas affiliates, interest and dividends, and fees and royalties. These items generate inflows of revenues for the economy and strengthen the balance-of-payments position.

**TAXATION** One of the most controversial issues involving MNEs for U.S. policy makers is the taxation of income stemming from foreign direct investment. Labor unions and other groups often contend that U.S. tax laws provide a disincentive to invest at home that results from tax concessions offered by the U.S. government on foreign direct investment. These concessions include foreign tax credits and tax deferrals.

According to U.S. tax law, an NINE headquartered in the United States is permitted credits against its U.S. income-tax liabilities in an amount equal to the income taxes it pays to foreign governments. Assuming that a Canadian subsidiary earns $100,000 taxable income and that Canada's income-tax rate is 25 percent, the company
would pay the Canadian government $25,000. But if that income were applied to the parent organization in the United States, the tax owed to the U.S. government would be $48,000, given an income-tax rate of 48 percent. Under the tax credit system, the parent organization would pay the U.S. government only $23,000 ($48,000 - $25,000 = $23,000). The rationale of the foreign tax credit is that MNEs headquartered in the United States should not be subject to double taxation, whereby the same income would be subject to comparable taxes in two countries. The foreign tax credit is designed to prevent the combined tax rates of the foreign host and domestic source governments from exceeding the higher of the two national rates. In this example, should Canada's income tax rate be 48 percent, the parent organization would not pay any taxes in the United States on the income of its Canadian subsidiary.

U.S.-based MNEs also enjoy a tax-deferral advantage. Under U.S. tax laws, the parent organization has the option of deferring U.S. taxes paid on the income of its foreign subsidiary as long as that income is retained overseas rather than repatriated to the United States. This system amounts to an interest-free loan extended by the U.S. government to the parent for as long as the income is maintained abroad. Retained earnings of an overseas subsidiary can be reinvested abroad without being subject to U.S. taxes. No similar provisions apply to domestic investments. Such discriminatory tax treatment encourages foreign direct investment over domestic investment.

**TRANSFER PRICING** Another device that MNEs utilize in their effort to decrease their overall tax burden is transfer pricing. Using this technique, an NINE reports most of its profits in a low-tax country, even though the profits were earned in a high-tax country. For example, if corporate profit taxes are higher in the parent country than in the host country, and if the parent firm is exporting to its subsidiary in the host country, the NINE can lower its overall tax burden by underpricing its exports to its host-country subsidiary, thus shifting profits from the parent to the subsidiary, as illustrated in Figure 10.4. Profits are thus transferred from the branch in the high-tax country to the branch in the low-tax country. Conversely, if the host-country subsidiary is exporting to the parent and the parent country has high tax levels, it would be in the interest of the subsidiary to overprice its exports, thus decreasing taxable profits in the parent country. The result is lower overall taxes for the MNE in question.

Both foreign governments and the U.S. government are interested in the part that transfer prices play in the realization of corporate profits. Abuses in pricing across national borders are illegal if they can be proved. According to U.S. Internal Revenue Service (IRS) regulations, enterprises dealing with their own subsidiaries are required to set prices "at arms length," just as they would for unrelated customers. However, proving that the prices that one subsidiary charges another are far from market prices is very difficult.

There's no question that transfer-pricing abuses can be enormous. It is estimated that foreign based multinationals dodge more than $20 billion in U.S. taxes each year, while U.S. multinationals account for an additional $5 billion in lost U.S. taxes on profits dubiously allocated to foreign tax havens. In its biggest known tax-abuse victory, the IRS argued that Toyota of Japan had systematically overcharged its U.S. subsidiary for years on most of the automobiles, trucks, and parts sold in the United States. What would have been taxable profits from the United States were shifted back to Japan. Although Toyota denied improprieties, it agreed to a $1 billion settlement with the IRS, paid in part with tax rebates from the Japanese government.

**U.S. PRODUCTION SHARING WITH MEXICO**

The ships sail east from South Korea and Japan to the Mexican port of Guaymas. There, rolls of steel are transferred to trains and shipped to Ford Motor’s assembly plant in Hermosillo, Sonora. Ford stamps and assembles the steel into Mercury auto bodies, puts in Japanese engines, and transports the autos to the United States.
Manufacturers such as Ford not only have changed the methods by which autos are produced but also have brought industry to Mexico's north, turning cow towns like Hermosillo into manufacturing centers. Mexico's north, once a desert buffer between the capital, Mexico City, and the United States, has been the recipient of direct investment by foreign companies that have set up manufacturing facilities from the beaches south of San Diego to the Gulf Coast dunes beyond Brownsville, Texas. Mexico's maquiladoras, or industrial parks, typically host an assemblage of U.S.-owned companies that combine U.S. parts and supplies and Mexican assembly to manufacture goods that are exported to the United States. The mix of maquiladora products has traditionally been dominated by electronics (such as television sets) and automobiles. The largest concentration of maquiladora plants is in the border cities, including Ciudad Juarez, Tijuana, and Mexicali. Table 10.6 provides examples of companies that have located production facilities in Mexico.

Today, more than 1,300 maquiladoras operate in Mexico, employing more than half a million workers. The maquiladoras' managers point out that their workers are among the most highly skilled in Mexico and that they have trained large numbers of Mexican technicians, engineers, accountants, and middle managers.

The maquiladoras are engaged primarily in labor-intensive assembly operations that combine Mexican labor with U.S. capital and technology. Maquilas (firms) benefit from relatively low wages in Mexico and proximity to the United States. Proximity not only reduces transportation costs, compared with more distant low-wage countries (such as Taiwan), but also eases communication, facilitates supervision, and reduces lead times for delivery. Mexico's regional advantage is especially strong for such products as motor-vehicle parts that may require quick turnaround and benefit from good rail and highway connections between parts factories in the central United States, Mexican assembly plants in the Rio Grande Valley, and final auto assembly plants in the central United States.
**Table 10.6** Companies with Production Facilities in Mexico: Selected Examples

<table>
<thead>
<tr>
<th>Company</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borg-Warners</td>
<td>Auto parts</td>
</tr>
<tr>
<td>Calmar Inc.</td>
<td>Plastics</td>
</tr>
<tr>
<td>Carrier</td>
<td>Metal</td>
</tr>
<tr>
<td>Emerson Electric</td>
<td>Electronics</td>
</tr>
<tr>
<td>General Instruments</td>
<td>Electronics</td>
</tr>
<tr>
<td>Honda</td>
<td>Auto parts</td>
</tr>
<tr>
<td>Lasating</td>
<td>Ceramics</td>
</tr>
<tr>
<td>Mattel</td>
<td>Toys</td>
</tr>
<tr>
<td>Motorola</td>
<td>Electronics</td>
</tr>
<tr>
<td>Unisys</td>
<td>Electronics</td>
</tr>
</tbody>
</table>

Mexico's attractiveness as an assembly location relative to that of other countries is reinforced by higher relative wage costs in such competing nations as Singapore, Taiwan, and South Korea.

The maquiladoras have drawn a considerable amount of capital to Mexico's northern border region, providing jobs and earning much-needed foreign exchange. But they have generated much controversy in both Mexico and the United States. Opposition in the United States has come mainly from labor unions that maintain that maquiladora investment by U.S. companies results in "runaway jobs." Proponents of the maquiladoras counter that northern Mexico is actually competing with other countries for labor-intensive factories and that jobs "lost" to the maquilas would eventually have been lost to other low-wage countries. Without the maquilas, many small and medium-sized U.S. companies would be driven out of business by foreign low-wage competitors in South Korea, Taiwan, and elsewhere. Having their unskilled jobs performed just across the border allows these companies to maintain the jobs of their skilled workers in the United States. They also contend that when U.S. jobs migrate to the border, a large amount of employment is generated in U.S. border communities and elsewhere in the United States because border production requires large quantities of U.S. inputs. Moreover, if it were not for the maquiladoras, additional Mexicans would likely be living in the United States as illegal immigrants.

In Mexico, critics of the maquiladoras contend that they make poor models for Mexican development. They assert that the maquilas exploit Mexican workers by paying them subsistence-level wages. Also, U.S. employers have relied on the most vulnerable and cheapest workers—young women and girls, who represent two-thirds of the maquiladora labor force. It is also maintained that a negligible fraction of the components used in the assembly of maquiladora output comes from Mexican suppliers. And the work itself is low skilled, so workers receive minimal training. Because the maquiladoras do not transfer technology, there is little linkage between the maquiladoras and the rest of the Mexican economy, and few secondary benefits are generated. Maquiladoras tend to make Mexico more dependent on the rest of the world because important economic decisions are made outside of Mexico.

NAFTA, which went into force in 1994, has increased the competitiveness of production sharing operations located in Mexico compared with those in East Asia and elsewhere. Producers within NAFTA have an incentive to purchase parts from fellow NAFTA beneficiaries to meet the NAFTA rules-of-origin requirements. Furthermore, U.S. and Canadian firms wishing to establish production-sharing facilities abroad are drawn to Mexico because products made in Mexico have preferential access to both NAFTA markets.

**INTERNATIONAL LABOR MOBILITY: MIGRATION**
Historically, the United States has been a favorite target for international migration. Because of its vast inflow of migrants, the United States has been described as the melting pot of the world. Table 10.7 indicates the volume of immigration to the United States from the 1820s to the 1990s. Western Europe was a major source of immigrants during this era, with Germany, Italy, and the United Kingdom among the largest contributors. In recent years, large numbers of Mexicans have migrated to the United States, as well as people from Asia. Migrants have been motivated by better economic opportunities and by noneconomic factors such as politics, war, and religion.

Although international labor movements can enhance the world economy's efficiency, they are often restricted by government controls. The United States, like most countries, limits immigration. Following waves of immigration at the turn of the century, the Immigration Act of 1924 was enacted. Besides restricting the overall flow of immigrants to the United States, the act implemented a quota that limited the number of immigrants from each foreign country. Because the quotas were based on the number of U.S. citizens who had previously emigrated from those countries, the allocation system favored emigrants from northern Europe relative to southern Europe. In the late 1960s, the quota formula was modified, which led to increasing numbers of Asian immigrants to the United States.

**EFFECTS OF MIGRATION** Figure 10.5 [below] illustrates the economics of labor migration. Suppose the world consists of two countries, the United States and Mexico, that are initially in isolation. The horizontal axes denote the total quantity of labor in the United States and Mexico, and the vertical axes depict the wages paid to labor. For each country, the demand schedule for labor is designated by the value of the marginal product (VMP) of labor. Also assume a fixed labor supply of 7 workers in the United States, denoted by $S_{US0}$ and 7 workers in Mexico, denoted by $S_{MX0}$.

The equilibrium wage in each country is determined at the point of intersection of the supply and demand schedules for labor. In Figure 10.5(a), the U.S. equilibrium wage is $9, and total labor income is $63; this amount is represented by the area a + b. The remaining area under the labor demand schedule is area c, which equals $24.50; this represents the share of the nation's income accruing to owners of capital. In Figure 10.5(b), the equilibrium wage for Mexico is $3; labor income totals $21, represented by area f + g; capital owners enjoy incomes equaling area h + i + j, or $24.50. Suppose labor can move freely between Mexico and the United States and assume that migration is costless and occurs solely in response to wage differentials. Because U.S. wage rates are relatively high, there is an incentive for Mexican workers to migrate to the United

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**Table 10.7 U.S. Immigration, 1820-1998**

<table>
<thead>
<tr>
<th>Period</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820-1840</td>
<td>751</td>
</tr>
<tr>
<td>1841-1860</td>
<td>4,311</td>
</tr>
<tr>
<td>1861-1880</td>
<td>5,127</td>
</tr>
<tr>
<td>1881-1900</td>
<td>8,935</td>
</tr>
<tr>
<td>1901-1920</td>
<td>14,531</td>
</tr>
<tr>
<td>1921-1940</td>
<td>4,635</td>
</tr>
<tr>
<td>1941-1960</td>
<td>3,550</td>
</tr>
<tr>
<td>1961-1980</td>
<td>7,815</td>
</tr>
<tr>
<td>1981-1990</td>
<td>7,338</td>
</tr>
<tr>
<td>1991-1998</td>
<td>7,605</td>
</tr>
</tbody>
</table>


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2. The value of the marginal product of labor (VMP) refers to the amount of money producers receive from selling the quantity that was produced by the last worker hired: in other words, VMP = product price x the marginal product of labor. The VMP curve is the labor demand schedule. This follows from an application of the rule that a business hiring under competitive conditions finds it most profitable to hire labor up to the point at which the price of labor (wage rate) equals its VMP. The location of the VMP curve depends on the marginal productivity of labor and the price of the product that it produces. Under perfect competition price is constant. Therefore, it is because of diminishing marginal productivity that the labor demand schedule is downward sloping.

3. How do we know that area c represents the income accruing to U.S. owners of capital? Our analysis assumes two productive factors, labor and capital. The total income (value of output) that results from using a given quantity of labor with a fixed amount of capital equals the area under the VMP curve of labor for that particular quantity of labor. Labor's share of that area is calculated by multiplying the wage rate times the quantity of labor hired. The remaining area under the VMP curve is the income accruing to the owners of capital.

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Figure 10.5  
Effects of Labor Migration from Mexico to the United States  
Prior to migration, the wage rate in the United States exceeds that of Mexico. Responding to the wage differential, Mexican workers migrate to the United States; this leads to a reduction in the Mexican labor supply and an increase in the U.S. labor supply. Wage rates continue to fall in Mexico and rise in the United States until they eventually are equalized. The labor migration hurts native U.S. workers but helps U.S. owners of capital; the opposite occurs in Mexico. Because migrant workers flow from uses of lower productivity to higher productivity, world output expands.

States and compete in the U.S. labor market; this process will continue until the wage differential is eliminated. Suppose 3 workers migrate from Mexico to the United States. In the United States, the new labor supply schedule becomes $S_{U.S.}^N$; the excess supply of labor at the $9$ wage rate causes the wage rate to fall to $6$. In Mexico, the labor emigration results in a new labor supply schedule at $SM_1$; the excess demand for labor at wage rate $3$ causes the wage rate to rise to $6$. The effect of labor mobility is thus to equalize wage rates in the two countries.  

Our next job is to assess how labor migration in response to wage differentials affects the world economy's efficiency. Does world output expand or contract with open migration? For the United States, migration increases the labor supply from $SU0$ to $SU1$. This leads to an expansion of output; the value of the additional output is denoted by area $d + e$ ($22.50$). For Mexico, the decrease in labor supply from $S_n$ to $SM_1$ results in a contraction in output; the value of the lost output is represented by area $g + i$ ($13.50$). The result is a net gain of $9$ in world output as a result of labor migration. This is because the VMP of labor in the United States exceeds that of Mexico throughout the relevant range. Workers are attracted to the United States by the higher wages paid. These higher swages signal to Mexican labor the higher value of worker productivity, thus attracting workers to those areas where they will be most efficient. As workers are used more productively, world output expands.

Migration also affects the distribution of income. As we will see, the gains in world income resulting from labor mobility are not distributed equally among all nations and factors of production. The United States as a whole benefits from immigration; its overall income gain is the sum of the losses by native U.S. workers, gains by Mexican immigrants now living in the United States, and gains by U.S. owners of capital. Mexico experiences overall income losses as a result of its labor emigration; however, workers remaining in Mexico gain relative to Mexican owners of capital. As previously suggested, the Mexican immigrants gain from their relocation to the United States.

For the United States, the gain in income as a result of immigration is denoted by area $d + e$ ($22.50$) in Figure 10.5(a). Of this amount, Mexican immigrants capture area $d$ ($18$), while area $e$ ($54.50$) is the extra income accruing to U.S. owners of capital thanks to the availability of additional labor to use with the capital. However, immigration forces wage rates down from $9$ to $6$. The earnings of the native U.S. workers fall by area $b$ ($21$); this amount is transferred to U.S. owners of capital.

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*4. Wage-rate equalization assumes unrestricted labor mobility in which workers are concerned only about their incomes. It also assumes that migration is costless for labor. In reality, there are economic and psychological costs of migrating to another country. Such costs may result in only a small number of persons finding the wage gains in the immigrating country high enough to compensate them for their migration costs. Thus, complete wage equalization may not occur.*
As for Mexico, its labor emigration results in a decrease in income equal to $g + i (S13.50); this represents a transfer from Mexico to the United States. The remaining workers in Mexico gain area $b$ ($S12$) as a result of higher wages. However, Mexican capital owners lose because less labor is available for use with their capital.

We can conclude that the effect of labor mobility is to increase overall world income and to redistribute income from labor to capital in the United States and from capital to labor in Mexico. Migration has an impact on the distribution of income similar to an increase in exports of labor-intensive goods from Mexico to the United States.

**IMMIGRATION AS AN ISSUE** The preceding example makes it clear why domestic labor groups in capital-abundant nations often prefer restrictions on immigration; open immigration tends to reduce their wages. When migrant workers are unskilled, as is typically the case, the negative effect on wages mainly affects unskilled domestic workers. Conversely, domestic manufacturers will tend to favor unrestricted immigration as a source of cheap labor.

Another controversy about immigrants is whether they are a drain on government resources. Nations that provide generous welfare payments to the economically disadvantaged may fear they will induce an influx of nonproductive people who will not produce as did the immigrants of Figure 10.5, but will enjoy welfare benefits at the expense of domestic residents and working immigrants. However, fiscal relief may not be far away. The children of immigrants will soon enter the labor force and begin paying taxes, thus supporting not only their kids' education, but also their parents' retirement. And, in a matter of two generations, most immigrant families tend to assimilate to the point that their fiscal burdens are indistinguishable from those of other natives. When it's all added up, most long run calculations show that immigrants make a net positive contribution to public coffers.

Developing nations have sometimes feared open immigration policies because they can result in a brain drain - emigration of highly educated and skilled people from developing nations to industrial nations, thus limiting the growth potential of the developing nations. The brain drain has been encouraged by national immigration laws, as in the United States and other industrial nations, that permit the immigration of skilled persons while restricting that of unskilled workers. In the previous labor-migration example, we implicitly assumed that the Mexican workers' migration decision was more or less permanent. In practice, much labor migration is temporary, especially in the European Union. That is, a country such as France will allow the immigration of foreign workers on a temporary basis when needed; these workers are known as guest workers. During periods of business recession, France will refuse to issue work permits when foreign workers are no longer needed. Such a practice tends to insulate the French economy from labor shortages during business expansions and labor surpluses during business recessions. However, the labor-adjustment problem is shifted to the labor emigrating countries.

There is also the problem of illegal migration. In the United States, this has become a political hot potato, with millions of illegal immigrants finding employment in the so-called underground economy, often at below-minimum wages. Some 3 to 15 million illegal immigrants are estimated to be in the United States, many of them from Mexico. For the United States, and especially the southwestern states, immigration of Mexican workers has provided a cheap supply of agricultural and less skilled workers. For Mexico, it has been a major source of foreign exchange and a safety cushion against domestic unemployment. Illegal immigration also affects the distribution of income for U.S. natives because it tends to reduce the income of low skilled U.S. workers.

On the other hand, immigrants not only diversify an economy, but they may also contribute to economic growth. It is because immigrants are often different from natives that the economy as a whole profits. In many instances, immigrants both cause prices to fall, which benefits all consumers, and enable the economy to domestically produce a wider variety of goods than natives could alone. If immigrants weren't different from natives, they would only augment the population and the scale of the economy, but not have an effect on the overall growth rate of per capita income. According to the National Research Council, the overall effect of immigration on the U.S. gross domestic product is between $1 billion and $10 billion a year. While these amounts may seem negligible in an $8 trillion economy (about one-eighth of 1 percent at most), they are still a gain - and not the drain many believe immigration to be.

As we learned from Figure 10.5, immigrants increase the supply of labor in the economy. This results in a lower market wage for all workers if all workers are the same. But all workers are not the same. Some natives will compete with immigrants for positions because they possess similar skills; others will work

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alongside immigrants, complementing the immigrants' skills with their own. This skill distinction means that not all native workers will receive a lower wage. Those who compete with (are substitutes for) immigrants will receive a lower wage than they would without immigration, while those who complement immigrants will receive a higher wage.

Most analyses of various countries have found that a 10-percent increase in the immigrant share of the population reduces native wages by 1 percent at most. This finding suggests that most immigrants are not substituting for native labor - skilled or unskilled - but are, instead, complementing it.6

**IMMIGRATION AND THE U.S. LABOR MARKET** By the 1970s and 1980s, immigration and trade had become increasingly significant for the U.S. labor market. The number of legal and illegal immigrants to the United States grew, modifying the size and composition of the work force and increasing the immigrant share of labor in so-called gateway cities, such as Los Angeles, New York, and Miami. The national origins of immigrants to the United States changed from primarily European to Mexican, Latin American, and Asian.

For native workers whose skills compete with those of new immigrants, immigration can adversely affect wages and employment, making their economic well-being a central issue in immigration policy. If certain segments of the native labor force, such as the low-wage workers for whom immigrants may be good substitutes, undergo sizable reductions in employment and earning opportunities, then the case for immigration controls to aid these workers is strengthened. Conversely, if the labor market can easily absorb additional immigrants without serious distributional impacts on native workers, allowing increasing numbers of immigrants seems more reasonable.

Critics of U.S. liberal trade and immigration policies maintain that they have depressed U.S. wages. In 1991, the National Bureau of Economic Research (NBER) analyzed this issue by considering the widening gap in earnings between lesser-educated and higher-educated U.S. workers during the 1980s.7 This was a period in which college graduates' wages increased in inflationary-adjusted terms while inflationary-adjusted earnings of lesser-educated workers either failed to rise or actually decreased.

According to the NBER study, both trade and immigration augmented the effective U.S. supply of workers during the 1980s. The large U.S. trade deficits in manufacturers increased the "implicit" labor supply by some 6 percent annually during this period; the immigration flow increased the share of the U.S. workforce that was foreign born from 6.9 percent in 1980 to 9.3 percent in 1988. Moreover, trade and immigration augmented the supply of less-skilled workers more than they augmented the supply of more-skilled workers. This was because the largest portion of the U.S. trade deficit was concentrated in industries that intensively employed high-school dropouts, and the wave of new immigrants during the 1980s included many poorly educated workers. Many of these immigrants were non-English-speaking, sometimes barely-literate in their own native languages, less able and less willing to adapt to American culture than earlier immigrants, and more of a burden on social services.

The NBER estimated that by 1988, the combination of the trade deficit and continued high immigration had increased the effective supply of high-school dropouts by approximately 30 percent. These two factors accounted for some 30 to 50 percent of the 10-percentage-point decline in dropout wages relative to those of high-school and college graduates during the period 1980 to 1988. In short, by increasing the effective supply of less-educated workers in the 1980s, imports and increased immigration depressed wages and thus widened the earnings gap between less skilled and more-skilled Americans. By the 1990s, many Americans were expressing concerns that immigrants harmed the country by taking away jobs, driving down wages, and using too many government services.

Recent empirical work by labor economist George Borjas suggests that the increasing internationalization of the U.S. labor market, through both immigration and trade, has had an important impact on the wage structure. Immigration has tended to increase aggregate wage inequality because more recent immigrant waves tend to be less skilled than earlier waves. Also, it is likely that the large number of unskilled immigrants who entered the United States in the past two decades have had an adverse impact on the employment opportunities of less-skilled native workers. Trade in durable goods has increased wage inequality because durable-goods industries employ a disproportionately large number of less skilled workers, and these workers previously received higher wages than comparable workers in more competitive sectors of the economy. The trade deficit in durable goods has decreased the returns going to domestic firms and workers and has had adverse spillover effects as displaced

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workers move from the trade-impacted industries into other sectors of the economy.\textsuperscript{8}

The infusion of foreigners into the United States during the 1980s and 1990s, however, did not include only people with minimal skills and minimal education. Enjoying the benefits of a foreign brain drain, the United States reaped a bonanza of highly educated newcomers who enhanced the competitiveness of its companies. America's high-tech industries, from biotechnology to semiconductors, increasingly depended on immigrant scientists, engineers, and entrepreneurs to remain competitive; in Silicon Valley, the jewel of U.S. high-tech centers, much of the workforce is foreign born. With their bilingual skills, family ties, and knowledge of how things get done overseas, immigrants also contributed to the export of Made-in-USA goods and services. Moreover, they helped revitalize America by establishing new businesses and generating jobs, profits, and taxes to pay for social services. The infusion of new people into the United States thus helped improve the globally competitive top half of its economy. These benefits must be weighed against the economic disruptions caused by the infusion of less educated and less capable people into the nation.

**IS IMMIGRATION GOOD FOR CALIFORNIA?** The current national debate on immigration policy is especially intense in California, home to one-third of the country's immigrants. Economists at RAND, a private research institute, have analyzed the effects of immigration on California. Their conclusion: immigration is still a good thing, but its benefits are diminishing because of a growing mismatch between the needs of the economy and the quality of the new immigrants.\textsuperscript{9}

According to RAND, California's employers, and its economy in general, have been the main beneficiaries of immigration. Immigrants are paid less than native workers at all skill levels but are equally productive employees. As a result, they have contributed to California's faster economic growth compared to the rest of the nation from 1960 to 1990. Even when California's growth advantage disappeared during the depths of the recession from 1990 to 1994, immigrants continued to arrive in the state in greater numbers and to hold down its labor costs.

However, these economic benefits have not come without certain costs. According to RAND, California's economy increasingly needs workers who have been educated beyond the high-school level. However, the latest immigrants appear to be less well educated than native-born Californians, and speak little or no English. Also, the educational level of immigrants has been decreasing relative to that of native Californians.

This results in several adverse consequences for California, according to RAND. First, the least-skilled native-born Californians have seen their wages hit and their job opportunities hurt by increased competition from immigrants. And the least-skilled immigrants have seen their earnings decline both in relation to native-born workers and in relation to previous generations of immigrants. Second, the lower incomes and larger family sizes of recent immigrants have increased their demand for public services, particularly education, without increasing tax payments. The third effect is to erode California's claim to have America's most highly skilled labor force.

RAND does not hesitate to draw conclusions. For California, RAND argues that the state should develop policies for integrating immigrants both socially and economically. Because education is the most important determinant of the success of immigrants and their children, California must make special efforts to promote high-school graduation and college attendance for the children of immigrants, most of whom are born in the state. Moreover, the state should work with the federal government to sponsor programs that expedite English proficiency for adult immigrants already living and working in California. RAND also argues that the United States should decrease legal immigration, including refugees, and that it should expand the criteria for admission to include skills and education.

Critics of the RAND study maintain that its authors think that immigrants fill educationally graded slots in a predetermined economy. However, the entrepreneurs of Los Angeles's thriving toy and garment sector did not fill slots; they created businesses that would not have existed without the skills and capital they brought in from abroad. RAND places too much emphasis on education as compared with other resources, such as sheer willingness to work.

The second concern is RAND's emphasis individuals rather than families, an emphasis that is especially misleading in its treatment of California's largest immigrant group, Hispanic. They try to make up for their low individual incomes by pooling family resources to purchase houses and small businesses.


Indeed, foreign-born Hispanics may have three advantages that help them make up for their lack of educational qualifications: the highest number of wage earners per family of a ethnic group, the highest participation in the labor force, and stable families. Thus, the households of American-born Hispanics - the descendants of immigrants - have almost the same average incomes as their white and Asian equivalents: 55 percent of them own their own home compared with 71 percent of white households and 44 percent of black ones.