"nonmarket economy." A *Business Week* story described the difference that China's status makes: "That means the U.S. can simply ignore Chinese data on costs on the assumption they are distorted by subsidized loans, rigged markets, and the controlled yuan. Instead, the government uses data from other developing nations regarded as market economies. In the TV and furniture cases, the U.S. used India—even though it is not a big exporter of these goods. Since India's production costs were higher, China was ruled guilty of dumping."[19]

As the quote suggests, China has been subject to antidumping duties on TVs and furniture, along with a number of other products including crepe paper, hand trucks, shrimp, ironing tables, plastic shopping bags, steel fence posts, iron pipe fittings, and saccharin. These duties are high: as high as 78 percent on color TVs and 330 percent on saccharin.

Multinationals and Outsourcing

When is a corporation multinational? In U.S. statistics, a U.S. company is considered foreign-controlled, and therefore a subsidiary of a foreign-based multinational, if 10 percent or more of its stock is held by a foreign company; the idea is that 10 percent is enough to convey effective control. Similarly, a U.S.-based company is considered multinational if it owns more than 10 percent of a foreign firm. The controlling (owning) firm is called the multinational parent, while the "controlled" firms are called the multinational affiliates.

When a U.S. firm buys more than 10 percent of a foreign firm, or when a U.S. firm builds a new production facility abroad, that investment is considered a U.S. outflow of **foreign direct investment (FDI)**. The latter is called *greenfield* FDI, while the former is called *brownfield* FDI (or cross-border mergers and acquisitions). Conversely, investments by foreign firms in production facilities in the United States are considered U.S. FDI inflows. We describe the worldwide patterns of FDI flows in the Case Study that follows. For now, we focus on the decision of a firm to become a multinational parent. Why would a firm choose to operate an affiliate in a foreign location?

Case Study

Patterns of Foreign Direct Investment Flows Around the World

Figure 8-9 shows how the magnitude of worldwide FDI flows has evolved over the last 30 years. We first examine patterns for the world, where FDI flows must be balanced: Hence world inflows are equal to world outflows. We see that there was a massive increase in multinational activity in the mid- to late 1990s, when worldwide FDI flows more than quintupled, and then again in the early 2000s. We also see that the growth rate of FDI is very uneven, with huge peaks and troughs. Those peaks and troughs correlate with the gyrations of stock markets worldwide (strongly dominated by fluctuations in the U.S. stock market). The financial collapse in 2000 (the bursting of the dot-com bubble) and the most recent financial crisis in 2007–2009 also induced huge crashes in worldwide FDI flows. Most of those FDI flows related to cross-border mergers and acquisitions, whereas greenfield FDI remained relatively stable.

[19] "Wielding a Heavy Weapon Against China," *Business Week*, June 21, 2004.

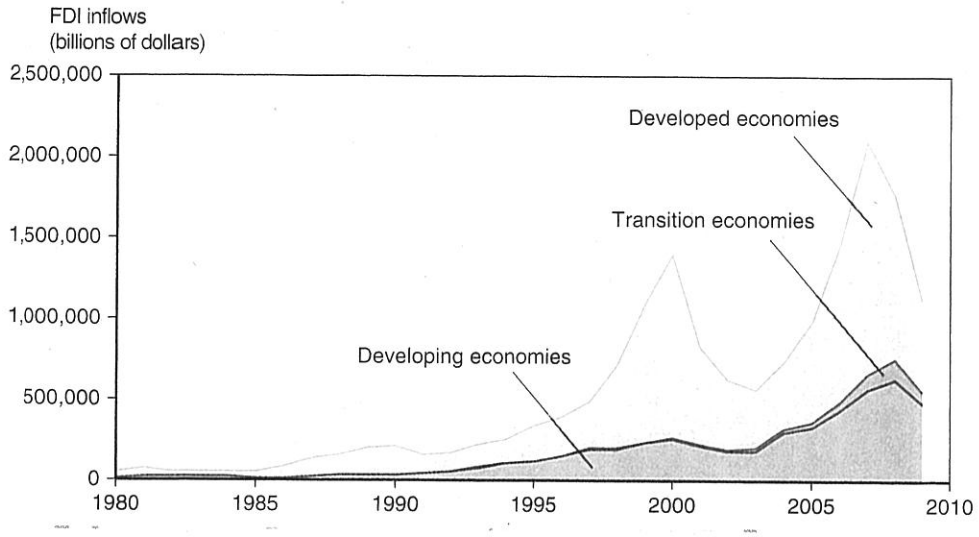

Figure 8-9

Inflows of Foreign Direct Investment, 1980–2009 (billions of dollars)

Worldwide flows of FDI have significantly increased since the mid-1990s, though the rates of increase have been very uneven. Historically, most of the inflows of FDI have gone to developed countries. However, the proportion of FDI inflows going to developing and transition economies has steadily increased over time and accounted for half of worldwide FDI flows in 2009.

Source: UNCTAD, World Investment Report, 2010.

Looking at the distribution of FDI inflows across groups of countries, we see that historically, developed countries have been the biggest recipients of inward FDI. However, we also see that those inflows are much more volatile (this is where the FDI related to mergers and acquisitions is concentrated) than the FDI going to developing and transition economies (economies in Central/Eastern Europe that used to be part of the Soviet Union or Yugoslavia). Finally, we can see that there has been a steady expansion in the share of FDI that flows to developing and transition countries. This accounted for half of worldwide FDI flows in 2009, after the most recent contraction in the flows to developed economies.

Figure 8-10 shows the list of the top 25 countries whose firms engage in FDI outflows. Because those flows are very volatile, especially with the recent crisis, they have been averaged over the past three years. We see that FDI outflows are still dominated by the developed economies; but we also see that big developing countries, most notably China (including Hong Kong), are playing an increasingly important role. In fact, one of the fastest-growing FDI segments is flows *from* developing countries *into* other developing countries. Multinationals in both China and India play a prominent role in this relatively new type of FDI. We also see that international tax policies can shape the location of FDI. For example, the British Virgin Islands would not figure in that top-25 list were it not for its status as an international tax haven. Firms from that location that engage in FDI are mainly offshore companies: They are incorporated in the British Virgin Islands, but their productive activities are located elsewhere in the world.

FDI flows are not the only way to measure the presence of multinationals in the world economy. Other measures are based on economic activities such as sales, value

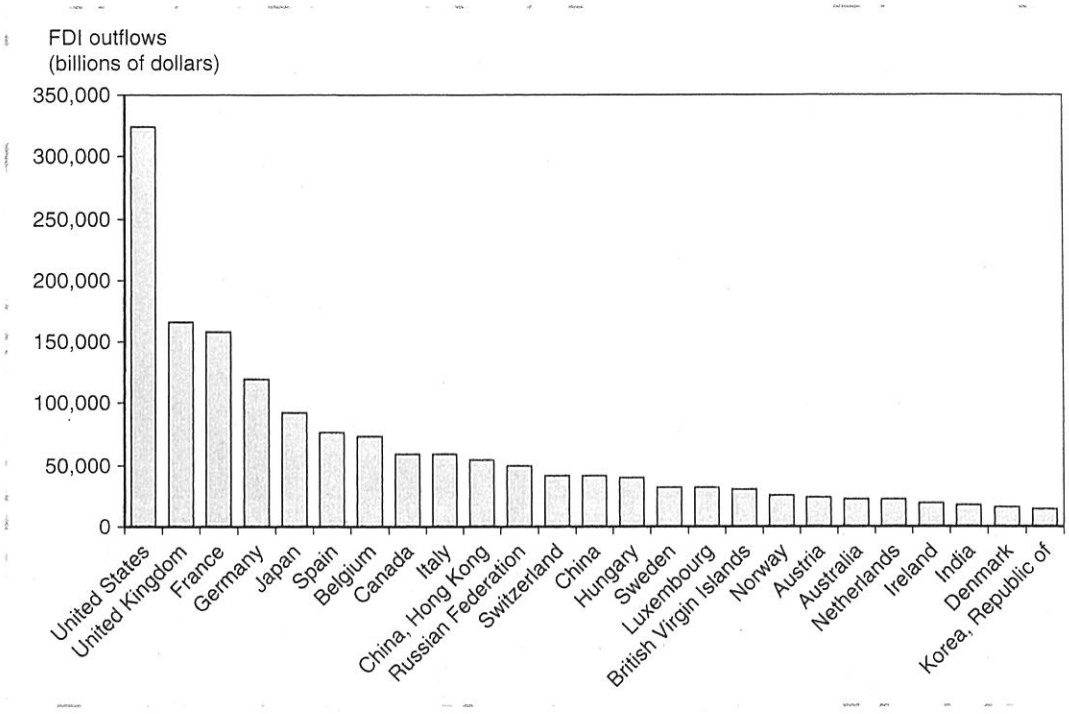

Figure 8-10

Outward Foreign Direct Investment for Top 25 Countries, Yearly Average for 2007–2009 (billions of dollars)

Developed countries dominate the list of the top countries whose firms engage in outward FDI. More recently, firms from some big developing countries such as China and India have performed significantly more FDI.

Source: UNCTAD, World Investment Report, 2010.

added (sales minus purchased intermediate goods), and employment. Sales of FDI affiliates are often used as the benchmark of multinational activity. This provides the relevant benchmark when comparing the activities of multinationals to export volumes. However, the sales of multinationals are also often compared to country GDPs showing, for example, that the big multinationals have higher sales volumes than the GDPs of many countries in the world. For the world as a whole in 2000, the total sales of the largest multinationals (top 200) amounted to more than 27 percent of world GDP.

However striking, this comparison is misleading and overstates the influence of multinationals, because country GDP is measured in terms of value added: Intermediate goods used in final production are not double-counted in this GDP measure. On the other hand, the intermediate goods that one multinational sells to another are double-counted in the multinationals' sales totals (once in the sales of the producer of the intermediate goods, and another time as part of the final value of the goods sold by the user of the intermediate goods). As a result, the appropriate comparison between multinationals and GDPs should be based on value added. By this metric, the value added produced by the biggest multinationals accounted for 4.3 percent of world GDP in 2000. This is still a big percentage, but not as eye-catching as the 27 percent measure.

The answer depends, in part, on the production activities that the affiliate carries out. These activities fall into two main categories: (1) The affiliate replicates the production process (that the parent firm undertakes in its domestic facilities) elsewhere in the world; and (2) the production chain is broken up, and parts of the production processes are transferred to the affiliate location. Investing in affiliates that do the first type of activities is categorized as **horizontal FDI**. Investing in affiliates that do the second type of activities is categorized as **vertical FDI**.[20]

Vertical FDI is mainly driven by production cost differences between countries (for those parts of the production process that can be performed in another location). What drives those cost differences between countries? This is just the outcome of the theory of comparative advantage that we developed in Chapters 3 through 7. For example, Intel (the world's largest computer chip manufacturer) has broken up the production of chips into wafer fabrication, assembly, and testing. Wafer fabrication and the associated research and development are very skill-intensive, so Intel still performs most of those activities in the United States, as well as in Ireland and Israel (where skilled labor is still relatively abundant). On the other hand, chip assembly and testing are labor-intensive, and Intel has moved those production processes to countries where labor is relatively abundant, such as Malaysia, the Philippines, and, more recently, Costa Rica and China. This type of vertical FDI is one of the fastest-growing types of FDI, and is behind the large increase in FDI inflows to developing countries (see Figure 8-9).

In contrast to vertical FDI, horizontal FDI is dominated by flows between developed countries; that is, both the multinational parent and the affiliates are located in developed countries. The main reason for this type of FDI is to locate production near a firm's large customer bases. Hence, trade and transport costs play a much more important role than production cost differences for these FDI decisions. Consider the example of Toyota, which is the world's largest motor vehicle producer (at least, at the time of writing). At the start of the 1980s, Toyota produced almost all of its cars and trucks in Japan and exported them throughout the world, but mostly to North America and Europe. High trade costs to those markets (in large part due to trade restrictions; see Chapter 9) and rising demand levels there induced Toyota to slowly expand its production overseas. By 2009, Toyota produced over half of its vehicles in assembly plants abroad. Toyota has replicated the production process for its most popular car model, the Corolla, in assembly plants in Japan, Canada, the United States, the United Kingdom, and Turkey: This is horizontal FDI in action.

The Firm's Decision Regarding Foreign Direct Investment

We now examine in more detail the firm's decision regarding horizontal FDI. We mentioned that one main driver was high trade costs associated with exporting, which leads to an incentive to locate production near customers. On the other hand, there are also increasing returns to scale in production. As a result, it is not cost effective to replicate the production process too many times and operate facilities that produce too little output to take advantage of those increasing returns. This is called the *proximity-concentration* trade-off for FDI. Empirical evidence on the extent of FDI across sectors strongly confirms the relevance of this trade-off: FDI activity is concentrated in sectors where trade costs are high (such as the automobile industry); however, when increasing returns to scale are important and average plant sizes are large, one observes higher export volumes relative to FDI.

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[20] In reality, the distinctions between horizontal and vertical FDI can be blurred. Some large multinational parents operate large networks of affiliates that replicate parts of the production process, but are also vertically connected to other affiliates in the parent's network. This is referred to as "complex" FDI.

Empirical evidence also shows that there is an even stronger sorting pattern for FDI at the firm level *within* industries: Multinationals tend to be substantially larger and more productive than nonmultinationals in the same country. Even when one compares multinationals to the subset of exporting firms in a country, one still finds a large size and productivity differential in favor of the multinationals. We return to our monopolistic competition model of trade to analyze how firms respond differently to the proximity-concentration trade-off involved with the FDI decision.

The Horizontal FDI Decision How does the proximity trade-off fit into our model of firms' export decisions captured in Figure 8-8? There, if a firm wants to reach customers in Foreign, it has only one possibility: export, and incur the trade cost t per unit exported. Let's now introduce the choice of becoming a multinational via horizontal FDI: A firm could avoid the trade cost t by building a production facility in Foreign. Of course, building this production facility is costly, and implies incurring the fixed cost F again for the foreign affiliate. (Note, however, that this additional fixed cost need not equal the fixed cost of building the firm's original production facility in Home; characteristics that are specific to the individual country will affect this cost.) For simplicity, continue to assume that Home and Foreign are similar countries so that this firm could build a unit of a good at the same marginal cost in this foreign facility. (Recall that horizontal FDI mostly involves developed countries with similar factor prices.)

The firm's export versus FDI choice will then involve a trade-off between the per-unit export cost t and the fixed cost F of setting up an additional production facility. Any such trade-off between a per-unit and a fixed cost boils down to scale. If the firm sells Q units in the foreign market, then it incurs a total trade-related cost $Q \times t$ to export; this is weighed against the alternative of the fixed cost F. If $Q > F/t$, then exporting is more expensive, and FDI is the profit-maximizing choice.

This leads to a scale cutoff for FDI. This cutoff summarizes the proximity-concentration trade-off: Higher trade costs on one hand, and lower fixed production costs on the other hand, both lower the FDI cutoff. The firm's scale, however, depends on its performance measure. A firm with low enough cost c_i will want to sell more than Q units to foreign customers. The most cost-effective way to do this is to build an affiliate in Foreign and become a multinational. Some firms with intermediate cost levels will still want to serve customers in Foreign, but their intended sales Q are low enough that exports, rather than FDI, will be the most cost-effective way to reach those customers.

The Vertical FDI Decision A firm's decision to break up its production chain and move parts of that chain to a foreign affiliate will also involve a trade-off between per-unit and fixed costs—so the scale of the firm's activity will again be a crucial element determining this outcome. When it comes to vertical FDI, the key cost saving is not related to the shipment of goods across borders; rather, it involves production cost differences for the parts of the production chain that are being moved. As we previously discussed, those cost differences stem mostly from comparative advantage forces.

We will not discuss those cost differences further here, but rather ask why—given those cost differences—all firms do not choose to operate affiliates in low-wage countries to perform the activities that are most labor-intensive and can be performed in a different location. The reason is that, as with the case of horizontal FDI, vertical FDI requires a substantial fixed cost investment in a foreign affiliate in a country with the appropriate characteristics.[21]

[21] Clearly, factor prices such as wages are a crucial component, but other country characteristics, such as its transportation/public infrastructure, the quality of its legal institutions, and its tax/regulation policies toward multinationals, can be critical as well.

Again, as with the case of horizontal FDI, there will be a scale cutoff for vertical FDI that depends on the production cost differentials on one hand, and the fixed cost of operating a foreign affiliate on the other hand. Only those firms operating at a scale above that cutoff will choose to perform vertical FDI.

Outsourcing

Our discussion of multinationals up to this point has neglected an important motive. We discussed the **location motive** for production facilities that leads to multinational formation. However, we did not discuss why the parent firm chooses to *own* the affiliate in that location and operate as a single multinational firm. This is known as the **internalization motive**.

As a substitute for horizontal FDI, a parent could license an independent firm to produce and sell its products in a foreign location; as a substitute for vertical FDI, a parent could contract with an independent firm to perform specific parts of the production process in the foreign location with the best cost advantage. This substitute for vertical FDI is known as **foreign outsourcing** (sometimes just referred to as outsourcing, where the foreign location is implied).

Offshoring represents the relocation of parts of the production chain abroad and groups together both foreign outsourcing and vertical FDI. Offshoring has increased dramatically in the last decade and is one of the major drivers of the increased worldwide trade in services (such as business and telecommunications services); in manufacturing, trade in intermediate goods accounted for 40 percent of worldwide trade in 2008. When the intermediate goods are produced within a multinational's affiliate network, the shipments of those intermediate goods are classified as intra-firm trade. Intra-firm trade represents roughly one-third of worldwide trade and over 40 percent of U.S. trade.

What are the key elements that determine this internalization choice? Control over a firm's proprietary technology offers one clear advantage for internalization. Licensing another firm to perform the entire production process in another location (as a substitute for horizontal FDI) often involves a substantial risk of losing some proprietary technology. On the other hand, there are no clear reasons why an independent firm should be able to replicate that production process at a lower cost than the parent firm. This gives internalization a strong advantage, so horizontal FDI is widely favored over the alternative of technology licensing to replicate the production process.

The trade-off between outsourcing and vertical FDI is much less clear-cut. There are many reasons why an independent firm could produce some parts of the production process at lower cost than the parent firm (in the same location). First and foremost, an independent firm can specialize in exactly that narrow part of the production process. As a result, it can also benefit from economies of scale if it performs those processes for many different parent firms.[22] Other reasons stress the advantages of local ownership in the alignment and monitoring of managerial incentives at the production facility.

But internalization also provides its own benefits when it comes to vertical integration between a firm and its supplier of a critical input to production: This avoids (or at least lessens) the potential for a costly renegotiation conflict after an initial agreement has been reached. Such conflicts can arise regarding many specific attributes of the input that cannot be specified in (or enforced by) a legal contract written at the time of the initial agreement. This can lead to a holdup of production by either party. For example, the buying firm can

[22] Companies that provide outsourced goods and services have expanded their list of clients to such an extent that they have now become large multinationals themselves. They specialize in providing a narrow set of services (or parts of the production process), but replicate this many times over for client companies across the globe.

claim that the quality of the part is not exactly as specified and demand a lower price. The supplying firm can claim that some changes demanded by the buyer led to increased costs and demand a higher price at delivery time.

Much progress has been made in recent research formalizing those trade-offs. This research explains how this important internalization choice is made, by describing when a firm chooses to integrate with its suppliers via vertical FDI and when it chooses an independent contractual relationship with those suppliers abroad. Developing those theories is beyond the scope of this textbook; ultimately, many of those theories boil down to different trade-offs between production cost savings and the fixed cost of moving parts of the production process abroad.

Describing which types of firms pick one offshoring option versus the other is sensitive to the details of the modeling assumptions. Nonetheless, one robust prediction emerges from those models when one compares either offshoring option to that of no offshoring (not breaking up the production chain and moving parts of it abroad). Relative to no offshoring, both vertical FDI and foreign outsourcing involve lower production costs combined with a higher fixed cost. As we saw, this implies a scale cutoff for a firm to choose either offshoring option. Thus, only the larger firms will choose either offshoring option and import some of their intermediate inputs.

This sorting scheme for firms to import intermediate goods is similar to the one we described for the firm's export choice: Only a subset of relatively more productive (lower-cost) firms will choose to offshore (import intermediate goods) and export (reach foreign customers)—because those are the firms that operate at sufficiently large scale to favor the trade-off involving higher fixed costs and lower per-unit costs (production- or trade-related).

Empirically, are the firms that offshore and import intermediate goods the same set of firms that also export? The answer is a resounding yes. For the United States in 2000, 92 percent of firms (weighed by employment) that imported intermediate goods also exported. Those importers thus also shared the same characteristics as U.S. exporters: They were substantially larger and more productive than the U.S. firms that did not engage in international trade.

Consequences of Multinationals and Foreign Outsourcing

Earlier in this chapter, we mentioned that internal economies of scale, product differentiation, and performance differences across firms combined to deliver some new channels for the gains from trade: increased product variety, and higher industry performance as firms move down their average cost curve and production is concentrated in the larger, more productive firms. What are the consequences for welfare of the expansion in multinational production and outsourcing?

We just saw how multinationals and firms that outsource take advantage of cost differentials that favor moving production (or parts thereof) to particular locations. In essence, this is very similar to the relocation of production that occurred *across* sectors when opening to trade. As we saw in Chapters 3 through 6, the location of production then shifts to take advantage of cost differences generated by comparative advantage.

We can therefore predict similar welfare consequences for the case of multinationals and outsourcing: Relocating production to take advantage of cost differences leads to overall gains from trade, but it is also likely to induce income distribution effects that leave some people worse off. We discussed one potential long-run consequence of outsourcing for income inequality in developed countries in Chapter 5.

Yet some of the most visible effects of multinationals and outsourcing occur in the short run, as some firms expand employment while others reduce employment in response

to increased globalization. We mentioned in Chapter 4 that those employment changes due to overseas plant relocations (along with plant closures due to import competition) account for only a small fraction (2.5 percent) of all involuntary worker displacements in the United States. Nevertheless, when such plant relocations do occur, they inevitably generate some substantial costs for those affected workers. As we argued in Chapter 4, the best policy response to this serious concern is still to provide an adequate safety net to unemployed workers without discriminating based on the economic force that induced their involuntary unemployment. Policies that impede firms' abilities to relocate production and take advantage of these cost differences may prevent these short-run costs for some, but they also forestall the accumulation of long-run economy-wide gains.

SUMMARY

1. Trade need not be the result of comparative advantage. Instead, it can result from increasing returns or economies of scale, that is, from a tendency of unit costs to be lower with larger output. Economies of scale give countries an incentive to specialize and trade even in the absence of differences between countries in their resources or technology. Economies of scale can be internal (depending on the size of the firm) or external (depending on the size of the industry).
2. Economies of scale internal to firms lead to a breakdown of perfect competition; models of imperfect competition must be used instead to analyze the consequences of increasing returns at the level of the firm. An important model of this kind is the monopolistic competition model, which is widely used to analyze models of firms and trade.
3. In monopolistic competition, an industry contains a number of firms producing differentiated products. These firms act as individual monopolists, but additional firms enter a profitable industry until monopoly profits are competed away. Equilibrium is affected by the size of the market: A large market will support a larger number of firms, each producing at a larger scale and thus a lower average cost, than a small market.
4. International trade allows for the creation of an integrated market that is larger than any one country's market. As a result, it is possible to simultaneously offer consumers a greater variety of products and lower prices. The type of trade generated by this model is intra-industry trade.
5. When firms differ in terms of their performance, economic integration generates winners and losers. The more productive (lower-cost) firms thrive and expand, while the less productive (higher-cost) firms contract. The least-productive firms are forced to exit.
6. In the presence of trade costs, markets are no longer perfectly integrated through trade. Firms can set different prices across markets. These prices reflect trade costs as well as the level of competition perceived by the firm. When there are trade costs, only a subset of more productive firms choose to export; the remaining firms serve only their domestic market.
7. Dumping occurs when a firm sets a lower price (net of trade costs) on exports than it charges domestically. A consequence of trade costs is that firms will feel competition more intensely on export markets because the firms have smaller market shares in those export markets. This leads firms to reduce markups for their export sales relative to their domestic sales; this behavior is characterized as dumping. Dumping is viewed as an unfair trade practice, but it arises naturally in a model of monopolistic competition and trade costs where firms from both countries behave in the same way. Policies against dumping are often used to discriminate against foreign firms in a market and erect barriers to trade.
8. Some multinationals replicate their production processes in foreign facilities located near large customer bases. This is categorized as horizontal foreign direct investment

(FDI). An alternative is to export to a market instead of operating a foreign affiliate i that market. The trade-off between exports and FDI involves a lower per-unit cost f FDI (no trade cost) but an additional fixed cost associated with the foreign facilit Only firms that operate at a big enough scale will choose the FDI option over export

9. Some multinationals break up their production chain and perform some parts of that cha in their foreign facilities. This is categorized as vertical foreign direct investment (FDI One alternative is to outsource those parts of the production chain to an independent fo eign firm. Both of those modes of operation are categorized as offshoring. Relative to t option of no offshoring, offshoring involves lower production costs but an additional fixe cost. Only firms that operate at a big enough scale will choose to offshore.
10. Multinational firms and firms that outsource parts of production to foreign countri take advantage of cost differences across production locations. This is similar to mode of comparative advantage where production at the level of the industry is determined b differences in relative costs across countries. The welfare consequences are similar a well: There are aggregate gains from increased multinational production and outsour ing, but also changes in the income distribution that leaves some people worse off.

KEY TERMS

antidumping duty, p. 208
average cost, p. 188
dumping, p. 208
foreign direct investment (FDI), p. 210
foreign outsourcing, p. 215
horizontal FDI, p. 213
imperfect competition, p. 186
internal economies of scale, p. 185
internalization motive, p. 215
intra-industry trade, p. 199
location motive, p. 215
marginal cost, p. 188
marginal revenue, p. 187
markup over marginal cost, p. 193
monopolistic competition, p. 189
offshoring, p. 215
oligopoly, p. 189
pure monopoly, p. 187
vertical FDI, p. 213

PROBLEMS

1. In perfect competition, firms set price equal to marginal cost. Why can't firms do th when there are internal economies of scale?
2. Suppose the two countries we considered in the numerical example on pages 196–19 were to integrate their automobile market with a third country, which has an annu market for 3.75 million automobiles. Find the number of firms, the output per firn and the price per automobile in the new integrated market after trade.
3. Suppose that fixed costs for a firm in the automobile industry (start-up costs of fact ries, capital equipment, and so on) are $5 billion and that variable costs are equal t $17,000 per finished automobile. Because more firms increase competition in th market, the market price falls as more firms enter an automobile market, or specif cally, $P = 17{,}000 + (150/n)$, where n represents the number of firms in a marke Assume that the initial size of the U.S. and the European automobile markets are 30 million and 533 million people, respectively.
   a. Calculate the equilibrium number of firms in the U.S. and European automobil markets *without* trade.
   b. What is the equilibrium price of automobiles in the United States and Europe if th automobile industry is closed to foreign trade?
   c. Now suppose that the United States decides on free trade in automobiles wit Europe. The trade agreement with the Europeans adds 533 million consumers t the automobile market, in addition to the 300 million in the United States. Ho

many automobile firms will there be in the United States and Europe combined? What will be the new equilibrium price of automobiles?

d. Why are prices in the United States different in (c) and (b)? Are consumers better off with free trade? In what ways?

4. Go back to the model with firm performance differences in a single integrated market (pages 202–205). Now assume that a new technology becomes available. Any firm can adopt the new technology, but its use requires an additional fixed-cost investment. The benefit of the new technology is that it reduces a firm's marginal cost of production by a given amount.
   a. Could it be profit maximizing for some firms to adopt the new technology but not profit maximizing for other firms to adopt that same technology? Which firms would choose to adopt the new technology? How would they be different from the firms that choose not to adopt it?
   b. Now assume that there are also trade costs. In the new equilibrium with both trade costs and technology adoption, firms decide whether to export and also whether to adopt the new technology. Would exporting firms be more or less likely to adopt the new technology relative to nonexporters? Why?
5. In the chapter, we described a situation where dumping occurs between two symmetric countries. Briefly describe how things would change if the two countries had different sizes.
   a. How would the number of firms competing in a particular market affect the likelihood that an exporter to that market would be accused of dumping? (Assume that the likelihood of a dumping accusation is related to the firm's price difference between its domestic price and its export price: the higher the price difference, the more likely the dumping accusation.)
   b. Would a firm from a small country be more or less likely to be accused of dumping when it exports to a large country (relative to a firm from the large country exporting to the small country)?
6. Which of the following are direct foreign investments?
   a. A Saudi businessman buys $10 million of IBM stock.
   b. The same businessman buys a New York apartment building.
   c. A French company merges with an American company; stockholders in the U.S. company exchange their stock for shares in the French firm.
   d. An Italian firm builds a plant in Russia and manages the plant as a contractor to the Russian government.
7. For each of the following, specify whether the foreign direct investment is horizontal or vertical; in addition, describe whether that investment represents an FDI inflow or outflow from the countries that are mentioned.
   a. McDonald's (a U.S. multinational) opens up and operates new restaurants in Europe.
   b. Total (a French oil multinational) buys ownership and exploration rights to oil fields in Cameroon.
   c. Volkswagen (a German multinational auto producer) opens some new dealerships in the United States. (Note that, at this time, Volkswagen does not produce any cars in the United States.)
   d. Nestlé (a Swiss multinational producer of foods and drinks) builds a new production factory in Bulgaria to produce Kit Kat chocolate bars. (Kit Kat bars are produced by Nestlé in 17 countries around the world.)
8. If there are internal economies of scale, why would it ever make sense for a firm to produce the same good in more than one production facility?
9. Most firms in the apparel and footwear industries choose to outsource production to countries where labor is abundant (primarily, Southeast Asia and the Caribbean)—but those firms do not integrate with their suppliers there. On the other hand, firms in many

capital-intensive industries choose to integrate with their suppliers. What could be some differences between the labor-intensive apparel and footwear industries on the one hand and capital-intensive industries on the other hand that would explain these choices?

10. Consider the example of industries in the previous problem. What would those choices imply for the extent of *intra-firm* trade across industries? That is, in what industries would a greater proportion of trade occur within firms?

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