
Multinational Firms in the World Economy

Multinational enterprises (MNEs) continue to grow in importance in the world economy, not because they bridge different capital markets but for the industrial-organization reasons first identified by Hymer (1976).¹ Estimates from the United Nations Conference on Trade and Development (UNCTAD 2005, 19) suggest that there were about 70,000 MNEs in 2004 with about 690,000 foreign affiliates across the globe. MNEs are now responsible for two-thirds of world trade, one-third of which is intrafirm trade. Firm-specific assets—which are often intangibles that do not show up on the balance sheet, such as trade names, know-how, and government permits—enable an MNE to prosper in its specific product lines. These assets can be highly valuable in a foreign market but difficult to license at a remunerative fee.² Instead, to best exploit its potential advantage, an MNE must invest overseas.³ Economists who study MNEs have

1. More recently, Graham and Krugman (1991, chapter 2 and appendix B) likewise conclude that industrial-organization explanations of FDI in the United States are much superior to cost-of-capital explanations.

2. Markusen (2000) points out that the property of knowledge that makes it easy to transfer to foreign locations makes it easily dissipated. Licensees can easily absorb knowledge capital and then defect from the supplying firm or ruin the firm's reputation for short-run profit. To maintain the value of assets and prevent asset dissipation, most firms only transfer knowledge internally.

3. Dunning (1988, 1993) stresses the role of imperfect markets in intangible assets as a core reason why MNEs flourish. Morck and Yeung (1991) support the argument that an imperfect market in intangible assets is necessary to justify FDI.

long accepted industrial-organization reasons as the most important explanation for MNE growth.⁴

Recognition of this proposition is the starting point for designing tax policy toward direct investment income, even though tax policy for MNEs was historically driven by capital allocation analysis. Today US tax policy toward foreign direct investment (FDI) is rightly, if slowly, changing its focus from capital allocation and instead asking how the United States wishes to shape MNE activities.⁵ The starting question is whether the goals of world efficiency and national prosperity are inseparably linked in such activities, or whether they diverge.⁶ This crucial question brings us to the domain of strategic tax policy, which may be seen as a companion to the strategic trade policy debate of the 1980s.⁷

Large corporations, each exercising significant market power, are a fact of life in the world economy, and imperfect competition is the rule rather than the exception in global markets. There are good reasons for large firms to exist and prosper in this setting. Some products can only be manufactured efficiently in very big plants. More important, many lines

4. The connection between a firm's specific assets and its decision to invest overseas was highlighted by Dunning (1988, 1993). His so-called OLI paradigm explains activities of multinational corporations in terms of ownership (O), location advantage (L), and internalization advantage (I). When selling its products abroad, a firm is initially disadvantaged relative to local producers. To compete effectively with local rivals, a foreign producer must possess some ownership advantages, which can be trademarks, patents, reputation, or other assets. Location advantage can be due to trade barriers, transport costs, customer access, or low factor prices; they explain why a foreign presence should be established through production rather than exports. The last advantage, internalization, explains why foreign firm prefers to retain full control over the production process instead of licensing intangible assets to local firms. The decision to retain full control reflects the difficulty of regulating and enforcing licensing contracts.

5. Caves (1982) offers an old but fascinating example of the schizophrenia that characterized tax policy discussions two decades ago. Using different terms, he strongly endorses the industrial-organization thesis in chapter 2: "For all these reasons it is fair to conclude that the capital arbitrage hypothesis has been swept from the field by the transactional hypothesis." However, when it comes time to analyze tax policy toward multinationals in chapter 8, Caves completely forgets this conclusion; the entire discussion concerns the effect of taxation on the allocation of capital.

6. Dunning (1993) reviews the interaction between the global strategies of MNEs designed to advance the profitability and growth of the firm and the national strategies of governments designed to enhance the economic and social welfare of its citizens.

7. Strategic trade policy focuses on hard-to-reverse locational decisions and first-mover advantages in oligopolistic industries. Surveys of strategic trade policy include Deardorff and Stern (1987), Helpman and Krugman (1985, 1989), Krugman (1994), and Brander (1995). The literature applying these theories to trade policy is a large one, but little work has been done on the implications for tax policy. Markusen (1988) is an important exception; see also Bond and Samuelson (1989).

of business require substantial overhead investments in the software of running a firm, and these investments are usually in fixed costs: extensive research, development, and experimentation (RD&E) efforts; engineering skills sufficient to build a state-of-the-art plant at low cost; branding of a trade name in the public mind; and developing effective distribution systems. These overhead investments may be so large that there is room in the world economy for only a few companies in a given industry to operate profitably. The result of these assorted barriers to entry is usually an oligopolistic market structure, with its well-known implication for less-than-perfect efficiency, as prices are kept substantially above the marginal costs of production, possibly for many years.

Such considerations from the theory of imperfect competition do not invalidate the traditional conclusion that free trade and open investment are best for the world economy. But they do suggest that a country may enhance its own national prosperity by attracting certain components of MNE activity.⁸

Strategic Arguments

Historically, FDI and exports were treated as mutually exclusive substitutes. However, because intrafirm trade is at least as important as arm's length trade, impediments to FDI (via industrial policy) are equivalent to trade barriers (Dunning 1993, UNCTAD 1995). Hence strategic trade and investment policies need to be seen as two possible pillars of state support for domestic firms in the global economy (Hart and Prakash 1997).

The strategic arguments for intervention are easy to sketch out. Consider an emerging technology that is likely to result in an oligopolistic market structure, such as genetic technology for treating multiple sclerosis (MS). If oligopolists dominate the world market in any case, it would seem worthwhile for the United States to encourage its own contenders to be among the world leaders, as the United States then can capture some of the oligopoly profit that the new MS technology is bound to create. Moreover, if spillover benefits occur—say, leading to genetic breakthroughs on Parkinson's or Alzheimer's disease—then they are more likely to occur in the United States. Interventionist policies, including

8. Before delving into details, it is worth summarizing the conclusions of some of the pioneers of strategic trade theory regarding its implications for free trade. Helpman and Krugman (1989, 186): "A key question about the new trade theory is whether it gives rise to any systematic new reason to reject free trade. The answer appears to be no." Deardorff and Stern (1987, 50): "Clearly these contributions to the trade literature . . . have broadened our understanding in useful ways. But have they added to the arsenal of reasons for trade intervention in ways that should alter the trade theorists' bias in favor of nonintervention? We think not."

tariffs, RD&E subsidies, buy-national public procurement, unique technical standards, and even special corporate tax breaks, would seem desirable if the United States can thereby assist its own firms to gain greater prominence in the circle of world oligopolists. Careful studies have demonstrated that such a result can be obtained in a theoretical model.⁹ Building on this insight, some of the work on international trade provides a valuable basis for analyzing MNE taxation.¹⁰ The starting point is to recognize that MNEs engage in two distinct activities: headquarters services and traditional production and distribution activities.

Providing headquarters services entails investing in firm-specific intangible assets, such as management techniques, engineering skills, advances in technology, and establishing trade names.¹¹ In addition, headquarters costs may be defined to include the extra costs of overcoming barriers to entry in particular national markets, such as unique technical standards, administrative obstacles, and licensing requirements. Like the setup costs of a complex distribution system, these administratively imposed costs are essential to market access.

Tables 5.1 and 5.2 roughly illustrate the role of headquarters costs in US manufacturing industry over an extended period of time. As table 5.1 shows, between 1960 and 2005 total manufacturing employment was for the most part flat but contracted sharply during the 2001 recession. Meanwhile, the share of administrative personnel to all employees has been roughly constant since the mid-1970s, but administrative employees have accounted for a greater share of payroll than has the share of workers. This reflects the fact that administrative positions absorb large numbers of professionally trained individuals at higher salaries.

9. Deardorff and Stern (1987) credit Brander and Spencer (1981) and Spencer and Brander (1983) for the first careful studies. However, the Brander-Spencer analysis does not rely on learning-curve or scale-economy phenomena. Rather, production is characterized by flat or rising marginal and average costs. The question is how government intervention affects the ability of firms to bear the fixed costs of entry and hence the subsequent division of the global pie of economic rent. Krugman (1994) gives a hypothetical example. Imagine that a good could be developed by either a US or European firm. If either firm developed the product alone, it could earn large profits; however, the development costs are large enough so that if both firms try to enter the market, both will lose money. If European governments subsidize their firms, they may deter the US firm and thereby ensure that Europe, not the United States, gets the monopoly profits.

10. This discussion draws on Helpman and Krugman (1985, chapters 12 and 13).

11. Engineering skills are sometimes acquired in the process of building a costly plant. For example, it is said that General Motors paid nearly twice as much for its Saturn automobile plant in Spring Hill, Tennessee as Honda US did for a similar expansion of its Accord plant in Marysville, Ohio. Contrary to traditional cost accounting, the extra \$1 billion or so General Motors paid can be chalked up to the cost of acquiring engineering skills.

Table 5.1 United States: Manufacturing output, RD&E, and employment, 1960–2005

Year	Billions of dollars			RD&E as share of valued added (percent)	Total employment		Administrative employment (percent)	
	Value of shipments	Value added	Private RD&E spending ^a		Millions of workers	Payroll (billions)	As share of work force	As share of payroll
1960	369	164	4	2.5	16.7	88	26.9	36.4
1965	492	227	6	2.7	18.0	114	27.2	37.7
1970	634	300	10	3.2	19.2	153	29.7	39.9
1975	1,039	442	15	3.4	18.3	210	31.1	42.4
1980	1,853	774	29	3.7	19.3	316	28.0	41.9
1985	2,280	1,000	52	5.2	17.5	397	30.5	40.5
1990	2,912	1,347	65	4.8	17.6	472	30.4	41.8
1995	3,594	1,711	81	4.7	17.4	545	29.7	41.7
2000	4,209	1,974	113	5.7	16.6	617	28.3	41.1
2005	4,735	2,204	119 ^b	5.4	13.1	580	29.9	41.8

RD&E = research, development, and experimentation

a. Data for private RD&E spending for manufacturing for 1960 to 1985 was derived from total industry private RD&E spending, reflecting the approximate shares of 1986, which was roughly 92 percent. The data for 2004 are projected from the share in 2003.

b. For 2004.

Sources: After 1980, US Department of Commerce, Bureau of the Census, *Annual Survey of Manufactures*, various years, table 1; National Science Foundation, *Science and Engineering Indicators*, various years, appendix table 4-3. Prior to 1980, US Department of Commerce, Bureau of the Census, *Annual Survey of Manufactures 1996*, table 1a; National Science Foundation (2006, appendix table 4-3).

Table 5.2. United States: High-technology output, RD&E, and employment, 1960–2005

Year	Billions of dollars			RD&E as share of valued added (percent)	Total employment			Administrative employment (percent)	
	Value of shipments	Value added	Private RD&E spending ^a		Millions of workers	Payroll (billions)	As share of work force	As share of payroll	
1960	50	31	2	7	3	16	36	47	
1965	71	45	3	8	3	21	36	48	
1970	108	63	6	9	3	30	40	50	
1975	129	79	9	11	3	36	41	52	
1980	284	162	18	11	3	66	42	53	
1985	418	244	36	15	4	99	47	58	
1990	468	245	43	18	3	116	48	60	
1995	699	400	53	13	2	114	46	60	
2005	799	485	64 ^b	13	2	126	50	64	

a. Data for private RD&E spending for manufacturing for 1960 to 1985 was derived from total industry private RD&E spending, reflecting the approximate shares of 1986, which was roughly 92 percent. The data for 2004 are projected from the share in 2003.

b. For 2004.

Note: High-technology industry is defined (under the old classification system applicable until 1997) as Standard Industry Classification (SIC) 281–83, 348, 351, 357, 365–67, 375 and 38 (less 385). Data for 2004 are based on the North American Industry Classification System (NAICS). Since there is not yet an official definition of “high-technology” under NAICS, we use the following to approximate the old SIC definition: 3254, 3332, 3339, 3341–2, 3344–5, 3353, 3364.

Sources: For 2005, US Department of Commerce, Bureau of the Census, *Annual Survey of Manufactures 2006*, table 2; National Science Foundation, *Research and Development in Industry, 2004*. For 1995 and prior years, US Department of Commerce, Bureau of the Census, *Annual Survey of Manufactures, 1996*, table 1a; National Science Foundation, *Research and Development in Industry, 1997*, table A-7, and *Science and Engineering Indicators, 1991*, appendix table 6-16.

Accounting for the entire period from 1960 to 2005 and focusing only on high-technology manufacturing (table 5.2), we see a clear pattern of greater reliance on administrative workers, both in share of employment (rising from 36 to 50 percent) and share of payroll (rising from 47 to 64 percent). To be sure, a great many administrative employees are not engaged in headquarters activity as we have defined the term, but the data in table 5.2 reflect salient trends. In 2005 the average payroll cost per administrative employee in high-technology industry was \$75,000, compared with an average of \$43,600 for production workers (based on the raw data underlying table 5.2). Expenditure on RD&E as a percentage of value added in high-technology manufactures approximately doubled between 1960 and 2005.¹² As table 5.2 indicates, the role of headquarters activity and the cost of RD&E are much larger for high-technology industries than for all manufacturing.

The various headquarters services have special characteristics that together explain why companies become MNEs. In the first place, once headquarters services are created, most can be used throughout the firm. Like a trademark, patent, or just-in-time inventory system, using headquarters services in one plant does not diminish their usefulness to other plants, though some headquarters services, such as those that surmount regulatory barriers, may only be useful in particular markets. Moreover, a given quantity of headquarters services cannot sustain an indefinite amount of production. But these qualifications simply mean that, though the need for additional headquarters services increases somewhat with production, the increase occurs at a sharply attenuated rate. For example, a doubling of sales may require an increase of only 25 percent in headquarters services.

A second special characteristic is that headquarters services cannot be licensed easily to unrelated firms on a profitable basis. Put another way, a firm can usually earn substantially more by applying its headquarters services to its own production efforts than by licensing those headquarters services to an unrelated firm. Often the only way one firm can convince an unrelated firm of the value of a new process or system is to reveal so much information that the other firm obtains most of the knowledge for free. Further, once a firm conveys its know-how, it begins to lose control over the development of subsequent inventions. When reputation is conveyed by trademark, the firm might find that an unrelated licensee with little ownership stake carelessly damages the mark through inadequate quality control. Yet another example is that regulatory permits may not be transferable by any means short of selling the firm. Such pitfalls prompt firms to set up their own production facilities

12. Figures in tables 5.1 and 5.2 exclude RD&E expenditure in industry by the federal government.

Table 5.3 Operations of foreign affiliates of US firms
(percent of US parent totals)

Year	Assets	Sales	Net income	Number of employees
1966	18	30	23	30
1977	24	38	26	43
1982	21	32	26	28
1989	22	32	44	27
1999	26	27	29	29
2004	36	35	47	32

n.a. = not available

Note: Majority-owned nonbank affiliates of nonbank US parents.

Sources: Bureau of Economic Analysis, *Survey of Current Business*, November 2006, 61–62; Bureau of Economic Analysis, US Direct Investment Abroad, various years, www.bea.gov (accessed March 21, 2005).

around the world even when they do not have a competitive advantage in manufacturing the product abroad.

There is a third special characteristic: Many headquarters services are efficiently produced at a single location or in very few locations. For example, spreading RD&E activity over many sites is often less efficient than concentrating the work in a few laboratories. Likewise, operating a system of computer-controlled warehousing, managing corporate cash flows, or staffing the legal department is best done at a single center.

Official statistics on US outward FDI reflect MNEs' tendency to keep RD&E at home even as their overseas operations expand. In 1966 foreign affiliates of US firms accounted for about 30 percent of sales and about 8 percent of RD&E. In 2004 foreign affiliates of US firms accounted for 35 percent of sales and about 12 percent of RD&E (see tables 5.3 and 5.4). Meanwhile, foreign firms have sharply expanded the amount of RD&E they undertake in the United States, from \$1.5 billion in 1980 to \$33 billion in 2004. In 2004 some 17 percent of all private-industry RD&E expenditure carried out within the United States was in fact conducted by US affiliates of foreign MNEs.

Once a firm has successfully invested in headquarters services, it acquires a technological or marketing advantage that it can use to carry out production and distribution at the most advantageous sites in the world economy. But this does not mean that the successful MNE can extract juicy monopolistic profits from consumers around the world. Instead, as

Table 5.4 RD&E performed in the United States and by foreign affiliates of US firms outside the United States, 1975–2004

Year	Private RD&E expenditures within the United States (billions of dollars)	RD&E performed by foreign affiliates of US parents outside the United States		RD&E performed by US affiliates of foreign parents in the United States	
		Billions of dollars	Percent of total US private RD&E expenditure ^a	Billions of dollars	Percent of total US private RD&E expenditure ^a
1975	15.6	1.5	8.8	n.a.	n.a.
1976	17.4	1.7	8.9	n.a.	n.a.
1977	19.3	1.9	9.0	n.a.	n.a.
1978	22.1	2.2	9.1	n.a.	n.a.
1979	25.7	2.8	9.8	n.a.	n.a.
1980	30.5	3.2	9.5	1.5	4.5
1981	35.4	3.4	8.8	n.a.	n.a.
1982	40.1	3.1	7.2	n.a.	n.a.
1983	44.6	3.3	6.9	n.a.	n.a.
1984	51.4	3.6	6.5	n.a.	n.a.
1985	57.0	3.7	6.1	n.a.	n.a.
1986	59.9	4.6	7.1	n.a.	n.a.
1987	61.4	5.2	7.8	4.5	6.8
1988	66.6	6.2	8.5	5.5	7.5
1989	73.5	6.7	8.4	6.7	8.4
1990	81.6	8.0	8.9	8.5	9.5
1991	90.6	9.1	9.1	9.1	9.2
1992	94.4	10.1	9.7	10.7	10.3
1993	94.6	9.6	9.2	11.3	10.8
1994	97.1	9.4	8.8	12.7	11.9
1995	108.7	13.1	10.8	14.8	12.2
1996	121.0	14.1	10.4	15.6	11.6
1997	133.6	13.1	8.9	19.4	13.2
1998	146.3	16.0	9.9	25.4	15.6
1999	161.6	16.8	9.5	26.9	15.1
2000	182.8	17.6	9.0	29.3	14.6
2001	185.1	19.7	9.6	29.2	14.3
2002	177.5	21.2	10.7	30.2	15.2
2003	183.3	22.3	10.8	32.7	15.9
2004	195.7	27.5	12.3	33.1	14.8

n.a. = not available

a. Includes RD&E expenditure within the United States and overseas.

Sources: US Department of the Treasury, *The Impact of Section 861-8 Regulation on US R&D*, June 1983, table 1; National Science Foundation (2006, tables 4-3, 4-46, and 4-49); Bureau of Economic Analysis, International Economic Accounts: Direct Investment, annual series, www.bea.gov (accessed March 21, 2005 and June 13, 2006).

long as competing firms can move freely from country to country and ship components and finished products among their affiliates, it is likely that several large firms, each with its own technology and reputation, will emerge to compete with one another. The result is that, on average, the profits that a typical MNE earns over its direct production costs and a

normal return on fixed assets will just pay for its prior investment in headquarters services.¹³

The other principal activity of MNEs, apart from turning out headquarters services, is the production and distribution of goods and services. These activities have their own special features. In the first place, although there may be some economies of scale, they are usually not as extensive as they are for headquarters services. Typically, there is a minimum practical threshold for plant size (say, 100,000 automobiles or 10 million chips assembled) or distribution lots (one cargo plane), but beyond that point a doubling of output requires a doubling of inputs. The absence of decisive scale economies enables production to be located in response to other considerations.¹⁴

Traditional production is highly sensitive to the cost and incentive conditions of different environments. When free to do so, MNEs locate production activity according to the availability of labor, natural resources, and a favorable tax climate,¹⁵ or in an effort to get close to the market, or to garner government incentives. For example, labor-intensive assembly operations tend to be located in countries with cheap, semi-skilled labor, such as East Asia or Mexico.¹⁶ Oil drilling obviously takes place where geological conditions are favorable. Sophisticated machinery tends to be manufactured in the midwestern United States or Germany,

13. Technically, the models assume that the competing MNEs earn zero economic profit—that is, no profit above the prevailing return on debt and equity capital, accounting for the riskiness of the enterprise.

14. There are important exceptions. According to an estimate prepared by the US Department of Commerce in cooperation with McDonnell Douglas Corporation, the production cost per copy of a 150-seat civilian airliner drops by about 70 percent after 250 planes are made and then levels off. See Baldwin and Krugman (1988).

15. Analyzing empirical evidence, Mutti (2003) finds that the influence of taxes on affiliate production appears to be significant, an effect that is especially relevant when production occurs in countries with open trade policies and the output is destined for export markets. Mutti notes that the effect also has become more important over time and that a greater role for taxation appears most relevant outside of the high-income Organization for Economic Cooperation and Development (OECD) countries. For high-income countries, the estimates suggest that taxes alone are less likely to affect MNE activity within their borders, indicating that they have less to gain from tax competition. Mutti also emphasizes that, without complementary policies such as an open trade regime, tax reductions alone are not particularly successful.

16. Kravis and Lipsey (1988) provide evidence that US MNEs tailor the location of production to labor cost conditions, finding that the greater a firm's foreign production, the greater its ability to locate less skill-intensive work outside the United States. This ability to subdivide production is more pronounced among manufacturing firms than among service firms. Lipsey (2002, 57), surveying the body of empirical evidence, concludes that "there are some indications that MNE operations have led to a shift toward more capital-intensive and skill-intensive production in the United States, as labor-intensive, and particularly unskilled labor-intensive production has been allocated to affiliates in developing countries."

owing to the network of suppliers and highly skilled workers in those places.

For other kinds of production, rapid feedback from household or industrial consumers is crucial. This is true not only of fashion apparel and retail groceries but also of many high-technology items. IBM executives tell the story of a major mistake the company made in trying to sell stand-up automatic teller machines (ATMs) of the American variety in the French market. The French style of banking is to sit down while doing business, requiring an entirely different ATM design. This simple point surely would have been grasped if the entire project had been carried out by IBM Europe rather than in the United States. For other types of production, national incentives can be important. To take only one example, the European Community has made it clear that massive imports of Japanese automobiles from Tokyo plants are politically unacceptable. Consequently, Japanese automobile firms have erected transplant factories in the United Kingdom. Much the same story can be told about Japanese transplants in the United States.

Another important aspect for an MNE's vitality is its ability to buy and sell components and business services among group members to achieve the lowest possible cost to the group as a whole and supply members with unique goods and services that are not readily available from unrelated suppliers. The importance of intragroup transactions is illustrated by US statistics. In 2003 total US intra-MNE merchandise trade, including imports plus exports between both US parents and their foreign affiliates, and between US affiliates and their foreign parents, represented about 45 percent of total US merchandise trade (imports plus exports).¹⁷

A Model of Operating Profits and Headquarters Costs

The simple model depicted in figures 5.1a and 5.1b illustrates the implications of the above analysis. Figure 5.1a portrays MNE behavior in a world economy with significant restraints on trade and investment; 5.1b shows their behavior in an open world economy. There are two major components of the model: the cost of headquarters services associated with the introduction and continuing management of the new product, process, or system; and the operating profits generated on a global scale by applying the new technology.¹⁸

17. US Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, May 2006, tables F.3, F.5; *Survey of Current Business*, May 2005, available at www.bea.gov.

18. Operating profits are defined as receipts minus the variable costs of production and distribution.

Figure 5.1a Economic profits and headquarters costs in a market restrained by government barriers

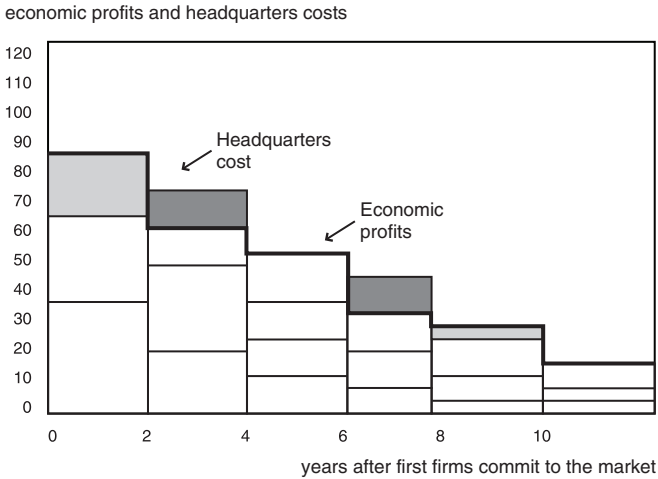
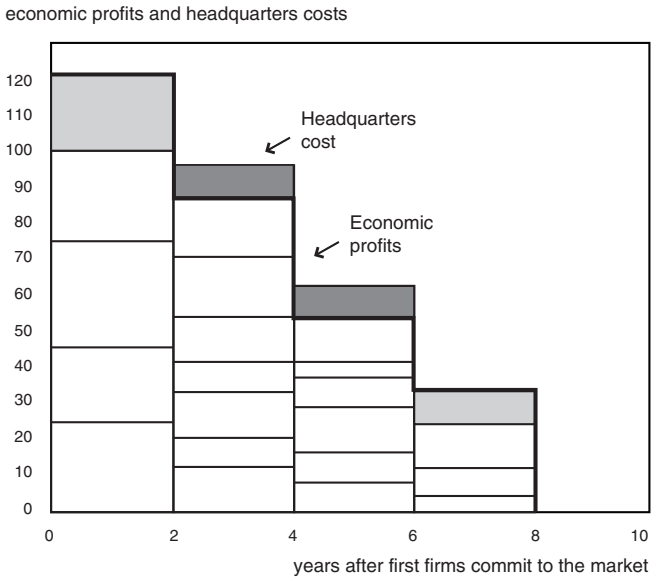


Figure 5.1b Economic profits and headquarters costs in a market not restrained by government barriers



Note: In both figures, the vertical axis represents the discounted economic profits and the discounted headquarters costs for the cohort of firms entering the market in successive biennial periods. Each rectangle indicates the headquarters costs incurred by a single firm. A lightly shaded area indicates that the total economic profits for the cohort of entering firms exceed the total headquarters costs for those firms; a darker gray area indicates headquarters costs in excess of economic profits.

Providing headquarters services requires a mixture of up-front outlays and ongoing administrative costs. To keep the model simple, we include costs of debt service and normal returns to equity capital among headquarters costs. To abstract from the time dimension, in figures 5.1a and 5.1b all headquarters costs are expressed in terms of present value. To ensure comparability among firms that embark on headquarters investments in successive periods, all outlays are discounted at an appropriate interest rate to the beginning of the first biennial period. Likewise, operating profits are expressed in present-value terms, and all operating profits over the life of the product or process are discounted to the beginning of the first biennial period, in the same manner as headquarters costs.

Headquarters costs are depicted as rectangular blocks for MNEs that join the market in successive two-year periods, starting with the first prospect of a profitable product or process (the choice of a two-year interval is arbitrary). The number of stacked blocks indicates the number of firms entering the market in each biennial period: For example, in figure 5.1a, two firms enter the market in the first period, three firms enter the market in the second period, and so forth.

The combined height of the blocks in any biennial period indicates the total of discounted headquarters costs incurred by all new entrants in that period; the sum may be less than, equal to, or greater than the total of discounted operating profits expected by that same cohort of entering firms, depicted by the heavy line (to simplify the picture, each individual firm's expected operating profits are not shown). Although there is considerable variance among firms, headquarters costs for new entrants progressively decline in successive biennial periods as the technology becomes more widely known and as a larger pool of knowledgeable engineers and managers becomes available for hire by new entrant firms.

In both figures 5.1a and 5.1b, discounted operating profits are also shown as progressing downward in a stair-step schedule over time, for three reasons. First, as new firms crowd the market, they drive prices down closer to production costs, thereby squeezing out operating profits per unit of output (see appendix D for a technical analysis). Second, as more firms join the new industry or use the new process, the total available pool of operating profits must be divided among more firms, including previous entrants, leaving less for the cohort of new entrants (the only entrants depicted for each biennial period). Finally, improved products eventually capture market share from the product depicted in figures 5.1a and 5.1b. In any given period, on average, enough new entrants join the market so that the total discounted operating profits that the new firms expect to earn over the remaining life of the product are approximately matched by total discounted headquarters costs that the new firms expect to incur.

The amount of operating profits claimed by some firms will, of course, far exceed their headquarters costs; while other firms never

recoup their costs. Likewise, for some cohorts of entering firms, total operating profits exceed total headquarters costs, whereas for other cohorts the reverse is true (see the light and dark shaded areas in figures 5.1a and 5.1b). But a central assumption of the model is that there are enough large firms with the capability to enter any new market that, all in all, no cohort of firms can anticipate operating profits greatly in excess of headquarters costs. Put another way, firms spend enough on headquarters costs in the chase for operating profits to ensure that, by and large, the profits are totally consumed by costs. In figures 5.1a and 5.1b, this feature is captured by the rough match between total headquarters costs and total operating profits for each cohort of firms.

Restrictions on trade and investment imposed on the firms in figure 5.1a hamper the firms' ability to export to some markets, create difficulties in establishing plants in some countries, and incur excessive capital costs in others. Headquarters costs are on average higher because firms must pay the costs of bureaucratic impediments, such as meeting unique technical requirements, gaining acceptance for public procurement, obtaining required licenses, and so forth. Not only are headquarters costs driven up by such impediments, but the available pool of operating profits for the cohorts of early entrants is driven down, for example, by paying tariffs on imports, higher costs of local production (including the excess capital cost of inefficient capacity), or artificial limitations on the size of the local market. A pharmaceutical company might not be permitted to market a drug, or a cellular telephone system might not meet local technical standards. The systemic result is that fewer firms enter the market in early periods because the prospective operating profits do not justify the headquarters costs of additional firms. Consequently, the rate of decline of operating profits is slower—contrast the flatter slope of the stair-step schedule in figure 5.1a with the steeper slope in figure 5.1b—both because there are fewer firms competing in the world market and because the various barriers restrain head-to-head competition.

Figure 5.1b depicts the introduction of the same new product or process into an international market that has no serious barriers to trade or investment. Headquarters costs are lower because each MNE can exploit its technology on a global scale without making additional outlays to hurdle an array of artificial barriers. In addition, the initial prospects for operating profits are greater, as the scope of the market is not limited by government barriers and firms are not compelled to pay tariffs or locate plants in high-cost countries. Because headquarters costs for each firm are lower and global operating profits are larger, more firms enter the market early. There are two systemic consequences: Operating profits are front-loaded in the product cycle, and operating profits for successive cohorts of firms decline at a faster pace.

Figure 5.1b is arbitrarily drawn so that the difference between global operating profits and headquarters costs for the last cohort of entrants

approaches zero after 20 firms have joined the world market. In this figure, elimination of operating profits is assumed to occur strictly as a result of competition between the firms; however, the excess of operating profits over headquarters costs could be terminated sooner by introducing a new product, process, or system. In an open world economy, 20 firms is an arbitrary but plausible number to establish energetic competition. In contrast, when the world market is fragmented by barriers, excess profits for cohorts of new entrants could well remain positive even after 20 firms have commenced production (see figure 5.1a) because many markets are partly protected from world competition.

This simple model yields several useful insights. First, it is clear that imperfect competition significantly increases the benefits of free trade and open investment policies by promoting world efficiency.¹⁹ More MNEs enter the market in early periods, attracted by a larger front-loaded global pool of excess profits. Indeed, a larger global pool means that some projects with very high initial headquarters costs will be undertaken much sooner than otherwise: Civilian aircraft, satellite, and pharmaceutical markets come to mind. In other markets, more firms will leap on an accelerated timetable, as in the personal computer market with Dell, Hewlett-Packard, and the Chinese firm Lenovo. Whereas national markets may be large enough to support only one or two firms, the global market may support many firms. The general result is that industrial users and household consumers benefit from the latest technology at the earliest possible date with the smallest oligopolistic price markup on the cost of production.

In an open world economy, Lenovo's laptop computers compete with Dell's and Posco competes with US Steel, to the benefit of buyers in all countries. The quicker capture of a larger pool of excess profit means that the world's resources are channeled wisely into highly productive activities. It also means a shorter period of economic distortion, as prices fall more quickly toward the level of production costs. In turn, rapidly falling prices may inspire another round of innovation based on the use of "old" technology as a low-cost input. The world of information technology, based on semiconductors, integrated circuits, and microprocessors, illustrates the new vistas opened up by lowering input costs. Finally, in the open world economy, total headquarters costs are smaller, both because the costs of overcoming administrative barriers are averted and because fewer firms need to enter the market to drive excess profits toward zero.

These theoretical results, suggested by a simple model, are plausible in the real world. Carefully studying the Europe 1992 program, Smith and Venables (2002) concluded that in 9 out of 10 industries, the EC-wide benefits of market integration in a Europe of imperfect competition would

19. The generality of this proposition was first emphasized by Richardson (1989).

exceed those in a Europe of perfect competition. Surveying the body of empirical literature, Richardson (1989) cites other scholars who reached similar conclusions. It is fair to conclude that the world efficiency case for free trade established by Adam Smith and David Ricardo is buttressed by the realities of imperfect competition.

Restrictive Policies and National Prosperity

The next and more interesting question is whether, in a world of imperfect competition and high technology, a strong case can be made for restrictive policies on behalf of national prosperity, even though the policies erode world efficiency. The short answer is that it depends. The long answer must start with some preliminary observations.

To begin, the familiar arguments for restrictive policies—the terms of trade argument, the infant-industry argument, and the national security argument—were traditionally regarded as footnotes in the classical case for free trade.²⁰ Do the footnotes become more important in a world of imperfect competition and high technology? Or does the standard case for free trade and investment gain ground as the best prescription for national well being? There are three reasons why the standard open-market case is reinforced (see Richardson 1989, 14):²¹

- Free international markets reduce the price distortions inherent in a setting of imperfect competition, as every domestic firm is forced to compete with its foreign rivals. This is important not only to consumers but also to downstream industrial users, who often pay the penalty of protection (through the higher price or lower quality of inputs) and are thereby rendered less competitive on world markets.
- World competition rationalizes the domestic industry by both discouraging the entry of new firms that would otherwise add to the national burden of headquarters costs and weeding out established but less efficient firms.
- World competition reduces the economic rent that is transferred from the domestic economy to foreign firms that have already accessed the protected local market.

20. For example, Gottfried Haberler (1936, chapter 17) regarded all three arguments with skepticism. However, in a recent and influential article, Harberler's most famous student, Paul Samuelson (2004), resurrected the terms-of-trade argument as a valid reason for US concern about the rise of China and India in high-technology industries.

21. Richardson revisits the case in his forthcoming book; see Richardson (2008).

On the other hand, there are three reasons that a setting of imperfect competition could bolster the traditional exceptions to the case for free markets.

First, if interventionist policies enable one country to host a larger number of MNEs and deter some foreign countries from spawning competitors, that country might capture a bigger slice of the global pie of excess profits. The ensuing gains would be analogous to the terms of trade advantage that might be captured by tariffs in the sense that the gains are garnered at the expense of other countries.²² But in this case the MNEs themselves would act as agents of beggar-thy-neighbor policies. In a numerical study of several European industries under oligopolistic conditions, Venables (1990) found that protecting the home market could improve national welfare by up to 2 percent of consumption.²³

Second, intervention may nourish some MNEs that were weak at first but are able to acquire world-class competitive skills with the assistance of restrictive policies. The infant-industry argument is an old story, dating back to Alexander Hamilton and Friedrich List in the 19th century. Its dangers are well known: Favored producers may grow lazy rather than robust, and even when they succeed, their costs may never justify the penalty imposed on the rest of the economy.

However, in the context of our model, the infant-industry argument may play an important role in the location of headquarters services. Once a firm has provided headquarters services for one type of product, it is

22. Some scholars partly attribute the rapid industrialization of Japan and other East Asian nations to an interventionist approach by central governments. Weber and Zysman (1992) suggest that Japan followed a deliberately phased process of industrialized development. During the first phase, Japanese firms were disadvantaged in both development and production costs. To shelter the firms against international competition, the domestic market was closed with a combination of import barriers and inward investment restrictions. Without inward investment restrictions, foreign firms would have been tempted to jump import barriers by establishing local subsidiaries. In the second phase, Japanese and other Asian firms borrowed technology from abroad to bridge the technology gap. The state thus relaxed import restrictions while maintaining inward investment restrictions. The state also encouraged firms to export by linking state support, such as import-duty exemptions and special depreciation allowances, to export performance (Noland and Pack 2003). Finally, Asian producers began to build world market positions without fearing foreign competition in the home market. They tapped foreign markets through exports as well as through FDI (Hart and Prakash 1997).

23. See Venables (1990) and Richardson (1989, table 2). Noting that 2 percent is not a very large gain, Venables stated, "But the conclusion which emerges from the simulation is that trade models of this type provide a rather weak case for policy intervention. This is not because results are so sensitive to market structure that anything is possible; but rather because even if government gets the policy right, the maximum gains it can expect from it are rather small."

often easier to fulfill the same function for related products. In technical terms, headquarters services are probably subject to long-run falling cost curves. A successful headquarters experience for one family of products improves the firm's chances for the next. From a national perspective, headquarters activities are highly desirable in that they create interesting, well-paying jobs. Moreover, headquarters services are an incubator of human capital, and human capital is highly mobile, so the spillover effects are potentially large, as key employees acquire the knowledge to start new firms and energize old firms.

It is striking that the world's most affluent metropolitan areas are headquarters to a disproportionate number of the world's largest corporations (see table 5.5). Of the 500 largest firms in the world measured by revenue, 189 are based in the United States, and of these, some 13 percent are located in or around New York, while five other metropolitan areas are collectively home to another 23 percent.²⁴ In Japan 70 percent of the 89 firms that make the list are headquartered in Tokyo, and most of the rest are in Japan's second largest city, Osaka. In France 78 percent of the largest firms are located in or around Paris. Some 65 percent of the British firms on the list are headquartered in London. However history and federalism have dampened the rise of a single center in Germany, the Ruhr area has 29 percent of the German corporations on the list, and Munich has 21 percent.

The tendency toward conglomeration of headquarters is even stronger when we consider financial firms alone. Of the 500 firms above, 130 are financial—roughly one-quarter of the firms on the list—and financial firms hold more than three-quarters of the assets of the listed firms (see table 5.6). In the United States 50 percent of the financial firms on the *Fortune* list are based in the New York area. Some 79 percent of Japanese financials are based in Tokyo, with the remainder in Osaka. All French financials on the list are in Paris, while three-fourths of British financials are in London; the final one-fourth are all headquartered in Edinburgh. Germany has two financial centers, with 45 percent of the 11 financial firms located in Frankfurt and 36 percent in Munich.

The third traditional argument for restricting trade and investment, the national security argument, asserts that protecting domestic industry in certain goods is necessary to ensure the availability of essential war materials in time of hostility. The argument acquires new life when imperfect competition is combined with high technology and has two new twists. If the industry is dominated by imperfect competition, the startup time is

24. Metropolitan areas with several firms on the Fortune Global 500 list tend to benefit from industry-level conglomeration. For example, six of the eight firms headquartered in Houston, Texas are related to the energy industry; four of the eight San Francisco, California Bay Area firms are technology companies.

Table 5.5 Countries with more than 20 firms in Fortune Global 500 in 2004 and metropolitan areas with five or more firms

Country/ major city or region	Total number of companies	Industrial companies	Financial companies	Revenue, 2003 (billions of dollars)	Profits, 2003 (billions of dollars)	Assets, 2003 (billions of dollars)	Stockholders' equity, 2003 (billions of dollars)	Employees, 2003 (thousands)
United States	189	151	38	5,841.4	383.6	17,600.6	2,594.9	17,778.2
New York/Newark	25	11	14	828.9	82.1	6,603.2	677.1	1,844.7
Chicago ^a	10	8	2	272.3	14.5	690.7	96.1	1,031.6
Los Angeles ^b	9	8	1	161.4	7.4	256.2	69.0	422.3
Atlanta	8	8	0	204.1	17.1	251.9	89.8	1,011.1
Houston	8	8	0	227.5	1.9	203.1	62.6	284.7
Bay Area ^c	8	7	1	261.9	16.6	616.5	158.7	630.0
Japan	82	63	19	2,180.6	62.9	8,277.2	904.4	4,853.4
Tokyo	58	43	15	1,509.8	45.5	6,030.3	613.4	3,317.9
Osaka	10	6	4	288.9	1.0	1,622.1	99.1	436.0
France	37	30	7	1,245.8	33.1	5,537.1	435.3	4,745.3
Paris/Roissy	29	22	7	964.4	16.7	5,229.1	339.3	3,658.6
United Kingdom	37	25	12	1,329.5	64.8	6,530.9	758.6	3,288.7
London	24	15	9	780.5	45.6	4,241.7	351.8	1,966.1
Germany	34	23	11	1,363.5	16.2	7,010.0	479.0	4,213.7
Ruhr district ^d	10	10	0	368.4	9.3	744.1	115.9	1,519.8
Munich	7	3	4	362.2	3.5	2,625.2	135.6	870.0
Frankfurt	5	0	5	120.4	-0.3	2,595.9	67.9	131.5

a. Includes immediate environs (Elk Grove, Abbott Park, etc.)

b. Includes immediate environs (Burbank, Thousand Oaks, etc.)

c. San Francisco, San Jose, Santa Clara, and Palo Alto.

d. Essen, Dusseldorf, Bonn, and Cologne.

Source: Fortune Global 500 dataset, available by subscription at www.fortune.com (accessed on April 25, 2005).

Table 5.6 Industry breakdown of Fortune Global 500, 2004

Category	Number of companies	Revenue, 2003 (billions of dollars)	Profits, 2003 (billions of dollars)	Assets, 2003 (billions of dollars)	Stockholders' equity, 2003 (billions of dollars)	Employees, 2003 (thousands)
Industrial	370	11,070.1	468.2	14,401.1	4,388.8	38,136.0
Motor vehicles and parts	32	1,538.3	34.9	2,181.6	405.3	4,222.2
Petroleum refining	32	1,675.0	116.6	1,574.8	666.6	3,120.7
Telecommunications	24	772.0	62.2	1,831.9	669.5	2,546.0
Food and drug stores	23	720.6	13.6	457.3	144.1	3,426.3
Utilities	23	499.7	20.9	1,312.6	301.8	1,085.2
Electronics, electrical equipment	18	686.0	14.4	757.9	229.4	2,728.8
Specialty retailers	13	290.2	12.0	153.8	77.9	1,220.1
General merchandisers	12	540.8	16.0	314.4	95.2	3,068.9
Health care	12	223.2	6.4	238.3	50.8	439.3
Pharmaceuticals	12	301.4	48.2	512.1	239.4	892.8
Other	169	3,822.8	123.0	5,066.4	1,508.7	15,385.8
Financial	130	3,803.0	262.9	46,413.5	2,393.5	7,772.7
Banks: Commercial and savings	58	1,534.8	148.9	30,399.8	1,323.3	4,852.6
Insurance	52	1,689.6	58.8	11,005.0	738.9	1,972.9
Securities	4	103.6	12.5	1,813.2	87.3	135.0
Diversified financials ^a	6	275.9	34.7	2,748.5	162.0	486.9
Trading ^b	10	199.1	8.1	447.1	82.0	325.4

a. All six are US conglomerates with significant financial business (includes General Electric, Fannie Mae, and American Express).

b. Asian and European conglomerates with significant financial business (includes E.ON, Mitsui, Sinochem, Mitsubishi, and Samsung).

Source: Fortune Global 500 dataset, available by subscription at www.fortune.com (accessed on April 25, 2005).

longer if foreign supplies are cut off.²⁵ In addition, the command of sophisticated technology can give a country leverage in a variety of situations short of hostility; put another way, high technology can contribute to diplomatic or military clout. For example, European satellite technology appears to be a useful bargaining chip in its relations with China. For civilian and possibly military reasons, China is eager to acquire access to Galileo, the European constellation of navigation satellites and a competitor to the US global positioning system (GPS) (*Financial Times*, February 24, 2005, 16).

To summarize, in a world of imperfect markets, a strong case can be made that government barriers that protect the domestic market are doubly harmful to the national economy. But a case can also be made that the traditional exceptions to the argument for free trade—the terms-of-trade argument, the infant-industry argument, and the national security argument—acquire greater force (see, for example, Tyson 1992). On balance, the arguments against intervention tell most heavily for production activity, whereas the arguments for intervention have greatest weight in the realm of headquarters services.

Tax Policy Implications

We draw four conclusions for tax policy. First, the United States should tilt its own tax policy to favor the domestic location of headquarters activity.²⁶ In corporate income taxation, the three largest elements of the tilt deserve mention: The United States should adopt a territorial system for taxing active foreign corporate income; it should severely restrict the foreign tax credit; and it should encourage RD&E.

25. Moran (1989) has argued that imperfect competition considerations should prompt the United States to monitor carefully the concentration of sources of supply of militarily important items, in terms of both countries and companies. In his view, the United States should not necessarily insist that all of these items be produced in the United States, but it should insist on diversity of supply. Specifically, he has suggested that the United States take action if fewer than four firms in fewer than four countries control more than 50 percent of the world market. Graham and Krugman (1991) also call for a focus on diversity of supply rather than domestic supply, arguing that the United States should actively encourage inward foreign investment (or compulsory licensing) to avoid dependence on a single supplier, foreign or domestic.

26. In 1991, Peter F. Drucker commented with approval on the Japanese strategy of concentrating production activities abroad and headquarters activities in Japan. According to Drucker, Japanese MNEs were focusing their competitive efforts on accumulating knowledge, primarily through their own research facilities located in Japan. Drucker cites an elder of the Mitsubishi Group as saying, "In another 20 years the entire Mitsubishi Group will be organized around this research institute" (*Wall Street Journal*, October 2, 1991, A12).

As for production work, we conclude that the United States should end the incentive that the current tax system unwittingly provides for MNEs to locate high-technology production abroad rather than in the United States. This incentive arises because the cross crediting of foreign tax credits, under current law effectively exempts foreign royalty and fee income from US tax. At the same time, this income is taxed abroad at very low rates, typically 5 percent withholding taxes. By contrast, analogous technology income earned in the United States pays federal corporate income tax at a marginal rate of 35 percent (perhaps 40 percent of state corporate taxes are counted).

These prescriptions (developed in chapter 6) build on the present reality of an identification between MNEs and their home countries. They also reflect two emerging realities that are weakening this sense of identification: rising global tax competition and so-called stateless corporations.²⁷ Both forces have stimulated the outsourcing of headquarters activities. The new realities indicate that, for corporate managers, considerations of patriotism often take a back seat to considerations of competitiveness.²⁸ Writing in the *Financial Times* (June 12, 2006, 15) and *Foreign Affairs*, Samuel Palmisano (2006), chief executive officer of IBM, advocated a shift in terminology to describe firms such as IBM, calling them “globally integrated enterprises” rather than MNEs. Behind Palmisano’s proposed change in nomenclature lay a deeper purpose: to condition US citizens and their congressional representatives to accept quietly the dispersion of headquarters functions throughout the globe. Such a transformation would serve IBM’s corporate interests and no doubt would be welcomed by countries on the receiving end of RD&E facilities. More

27. UNCTAD (1998) indicates that among the top 100 multinational firms, it is commonplace for more than half of sales, assets, and employees to be located outside the home country. Bearing such trends in mind, more than 15 years ago, Robert B. Reich (1991) advocated a US industrial policy that championed US workers rather than US corporations on the grounds that stateless corporations would soon dominate the economic landscape.

28. In March 1999 the former tax vice president of Intel opined at a Senate hearing that international tax rules are putting US-headquartered MNEs at a competitive disadvantage, testifying, “If I had known at Intel’s founding (over 30 years ago) what I know today. . . . I would have advised the parent company be established outside the US. . . . The degree to which our tax code intrudes upon business decision-making is unparalleled in the world.” That testimony was criticized harshly by then-Senator Daniel Patrick Moynihan (D-NY), who roundly chastised Intel’s testimony on patriotic grounds. According to Martin Sullivan (2003, 419), “there is an increased ability and willingness of US businesses to loosen their legal ties with the United States and not just move operations but also their headquarters offshore. This can happen in any of three ways: First, US businesses may expatriate by inverting their corporate structure and placing US headquarters under a holding company located offshore, preferably in a tax haven like Bermuda or Bahamas. Second, as in the case of Daimler-Chrysler, they may merge with a foreign corporation and choose to locate the new corporate headquarters in the country of the foreign partner. Third, new start-ups or spin-offs, like Accenture, may simply set up their headquarters in low-tax jurisdiction.”

doubtful is whether relocating RD&E and other headquarters functions from the United States to foreign locations would improve the quality of US jobs and the pace of US productivity gains.

These concerns, from a US perspective, are not merely theoretical. Huizinga and Vogel (2006) examined a large panel of some 33,000 M&A events involving European, Japanese, and US companies between 1985 and 2004. The authors found that, for a merger of equals, a decrease of 1 percent in the double tax rate imposed by one country on dividends received from the partner country increased its probability of being the acquiring country by 7.7 percent. In a simulation, the authors found that, by switching from the current foreign tax credit system to a dividend exemption system (territorial system), the United States would have increased the probability of its firms becoming the acquiring companies from 53 percent to 56 percent.

As a corollary of the new global environment, the United States should seek to attract corporate headquarters activity, whether performed by a distinctly Japanese, European, or name-brand US firm. Because of continuing strong links between the historic nationality of firms and the location of their headquarters services, it is usually easier to retain the headquarters activities of established US MNEs than to attract the headquarters activities of foreign MNEs. Nevertheless, US tax law should be designed with the stateless corporation in mind.²⁹

The United States should also seek a regime of technological export neutrality for the use of technical know-how and managerial expertise. Royalties and fees should be taxed the same whether the technology and expertise are used at home or abroad. Current US tax law actually favors using intellectual know-how abroad. There is no good reason to bias the tax system against production within the United States, even though we are more concerned with the strategic advantages of retaining and augmenting headquarters activity than production activity.

According to Corrado, Hulten, and Sichel (2006), the pace of intangible investment in the late 1990s was around \$1 trillion a year, and the stock of US intangible capital was around \$3.6 trillion. Nearly all of this investment outlay is deducted immediately for tax purposes—the correct approach, we think. Our objection centers on the tax-preferred use of

29. One example of head office jobs that have migrated for tax reasons arises in the construction services field. The United States characterizes the source of income as the place where services are rendered, but most territorial jurisdictions, including many developing countries, attempt to tax the architectural, engineering, legal, accounting, and other professional work product based on where it is used (e.g., in the country where a plant is erected). The resulting double taxation may not be offset by the US foreign tax credit, as the construction services firm does not have foreign-source income as measured by US source rules. Hence the best way for the US firm to minimize its taxes may be to move its professional staff to the project site or to a third country.

intangible capital to produce goods and services abroad rather than in the United States. In our view, the home country should be entitled to all tax revenues resulting from applying the stock of know-how generated as a tax-deductible expense, and these revenues should be collected at the same tax rate wherever production takes place. The reasons for rewarding public policy virtue are as compelling for know-how capital as for portfolio capital. Based on this precept, only the residence country should tax royalties and management fees.³⁰ Moreover, the residence country should apply the same tax rate whether the technology is applied to produce goods and services at home or abroad.

Ensuring that the United States obtains tax revenues from royalties and fees, however, will require a strong effort to monitor intrafirm pricing and enforce the arms-length pricing standard, as our recommendation may create further incentives for firms to arbitrage differences in tax rates.³¹ Research on transfer price manipulation indicates that MNEs are sensitive to tax differentials, particularly in markets for differentiated and high-technology products (Bernard, Jensen, and Schott 2006; Eden 2003). In such cases, opportunities for manipulation arise due to the absence of independent price quotations and the market power of the parent firm. Therefore, our third conclusion is that the United States should redouble its efforts to control transfer-pricing abuse.

Fourth, the United States should ensure that its tax policy remains broadly favorable to US exports. The attractiveness of the United States as a production location depends on not only access to foreign markets but also a competitive domestic tax climate. Now that the foreign sales corporation and extraterritorial income exclusion regimes have been repealed (see appendix A4), it is important that US taxation of export earnings be placed on a similar footing with the tax systems of other major exporting countries. Two ways to accomplish this involve the technical details of international taxation (discussed more fully in chapter 6): exempting from taxation the foreign-source portion of export earnings (roughly 50 percent under the so-called export-source rule (see appendix A4) and excluding from subpart F of the Internal Revenue Code the so-called base-company income earned by selling US exports to third countries.

30. For a similar approach, see Grubert (2003), who concludes that “royalties and license fees paid by users of intangible assets in one country to developers of the patents, trademarks, etc., in another should be taxed in the developers’ country. This will lead to a more efficient choice of the location in which the intangible asset is exploited.”

31. Transfer pricing abuse occurs when an MNE artificially alters the price charged to or paid by a foreign subsidiary, for product supplies or technology, to minimize its global tax burden.