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American Multinationals and American Economic Interests: New Dimensions to an Old Debate

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Abstract

The 2008 election rekindled debate about whether US multinationals shift technology across borders and relocate production in ways that might harm workers and communities at home. President Obama now pledges to end tax breaks for corporations that ship jobs overseas.

The preoccupation about the behavior of American multinationals takes three forms: (1) that US-based multinational corporations may follow a strategy that leads them to abandon the home economy, leaving the workers and communities to cope on their own with few appealing alternatives after the multinationals have left; (2) worse, that US-based multinational corporations may not just abandon home sites but drain off capital, substitute production abroad for exports, and "hollow out" the domestic economy in a zero-sum process that damages those left behind; and (3) worst, that US-based multinational corporations may deploy a rent-gathering apparatus that switches from sharing supranormal profits and externalities with US workers and communities to extracting rents from the United States. Each of these concerns contains a hypothetical outcome that can be compared with contemporary evidence from the United States and other home countries.

This working paper shows that multinational corporations do not locate their operations in a zero-sum manner that favors host economies at the expense of the home economy. The two-way flow of inward and outward investment does not create an outcome that can be reasonably characterized as "hollowing out" the home economy. The evidence consistently shows that the expansion of MNC operations abroad and the strengthening of MNC operations in the home country are complementary, and the answer to the counterfactual—would the home country be better off, or would workers in the home country be better off, if home-country MNCs were prevented from engaging in outward investment?—is indisputably negative.

Making it more difficult to engage in outward investment would not strengthen the home economy in the United States. Quite the contrary, placing obstacles in the way of US multinationals using the United States as the center for conducting their global operations would leave them, their suppliers, their workers, and the communities where they are located worse off and less competitive in the world economy.

Keywords: International investment, foreign direct investment, multinational corporations, exports
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INTRODUCTION

The 2008 US presidential campaign rekindled old controversy about the consequences for the US economy of US multinational corporations (MNCs) spreading technology and repositioning production around the globe. Now in office, President Obama has pledged that his administration will end tax breaks for corporations that ship jobs overseas. Nobel laureate Paul Samuelson's (2004) critique of whether trade liberalization always confers net positive benefits on all trading partners and Lawrence Summers's suggestions that the economic success of developing countries, particularly China, might be damaging to US interests, particularly to US workers, have added sophisticated new dimensions to the debate.[1] "Historically, US workers used to have kind of a de facto monopoly access to the US's superlative capital and know-how (scientific, engineering and managerial). All of us Yankees, so to speak, were born with silver spoons in our mouths," declared Samuelson (2004). Are US multinationals taking away those silver spoons and delivering them to non-Yankees in a manner that leaves workers, firms, and communities in the United States less well off? Does the globalization of industry via foreign direct investment (FDI) come at the expense of US economic interests, or does it complement and strengthen the US economy?

THREE TESTABLE PROPOSITIONS ABOUT THE GLOBALIZATION OF INDUSTRY VIA FOREIGN DIRECT INVESTMENT

Answering the questions posed by Samuelson and Summers about whether US multinationals shift technology across borders in ways that harm workers and communities in the United States requires a fresh examination of how the globalization of industry via FDI takes place. Economic history, according to Samuelson (2004), is replete with examples of a nation or a region suffering a permanent measurable loss in per capita real income from the "adverse headwind" generated from low-wage competitors and technical imitators. Samuelson's concern that the United States may suffer permanently lower per capita real income due to the globalization of trade and investment rests upon two formal assessments: first, an assessment of whether the United States continues to enjoy positive gains from trade; and second, an assessment of whether the United States has begun to suffer unfavorable terms of trade. These two assessments require examining whether consumers and producers continue to reap benefits from specialization, division of labor, and economies of scale as globalization proceeds, as well as investigating the relative prices of US exports versus US imports to determine whether the United States must generate higher levels of exports to pay for a given level of imports.

The formal models needed to make these assessments draw on traditional trade theory, in which the location of production is determined by relative costs that are a function of the natural endowments

1. Lawrence Summers, "America needs to make a new case for trade," *Financial Times*, April 27, 2008, and "A strategy to promote healthy globalisation," *Financial Times*, May 4, 2008.

of countries around the world. Exogenous changes in technology add a dynamic dimension to how the global structure of production might evolve. But traditional trade theory does not adequately encompass multinational corporate investment: MNCs operate according to a centralized strategy in imperfectly competitive markets, creating technology (including management, quality-control, and marketing procedures) that the headquarters can then deploy at home or abroad with some margin of choice about where to locate specific activities and how to integrate the stages of production. Therefore, standing apart from a formal assessment of trade effects and tests of whether the United States continues to enjoy gains from trade and favorable terms of trade is a separate concern about the consequences of the behavior of MNCs in the contemporary period. Preoccupation with MNCs' transfer of technology and their placement of production pervades Samuelson's critique and reappears in Summers's commentary. This preoccupation takes three forms: (1) that US multinationals may follow a strategy that leads them to abandon the US economy, leaving workers and communities with few appealing alternatives after the multinationals have left; (2) worse, that US MNCs may not just abandon sites in the United States but may actually drain capital, substitute production abroad for exports, and "hollow out" the US economy in a zero-sum process that damages those left behind; and (3) worst, that US MNCs may deploy a rent-gathering apparatus that switches from sharing supranormal profits and externalities with US workers and communities to extracting rents from the United States.

These concerns cannot be ignored. The globalization of economic activities is no longer simply a function of impersonally evolving trade flows. Multinational corporations are a major force in creating technology, in establishing the international structure of production, in determining the location of high-value jobs and activities, and in dictating the consequent patterns of trade. Indeed, for the United States, some thirty percent of all goods exports and twenty-six percent of all services exports are intrafirm transactions within the confines of multinational corporations themselves (Council of Economic Advisors 2008, 90). But do multinational investors, following their own self-interested, profit-driven strategies, deploy their operations in ways that are disadvantageous or harmful to the economic interests of their home countries, which for Samuelson and Summers means the United States? Each of the three concerns discussed above contains a hypothetical outcome that can be compared with contemporary evidence from the United States and other home countries.

OUTWARD FDI AND ABANDONMENT OF THE HOME ECONOMY

The first proposition that underlies Samuelson's and Summers's critique of the globalization of industry is that developed-country MNCs' self-interested actions, taken without regard to their country of origin, lead them to abandon former sites, leaving workers and communities in their home economies bereft of productive activities and well-paying alternatives. This proposition has its origin in an analogy. Samuelson

(2004) observed that in the early twentieth century the owners of textile, shoe, and other manufacturing plants in New England left their New England plants and set up alternative facilities in South Carolina and Alabama to take advantage of cheaper Southern labor. Lowell, Massachusetts and other New England locations were forced to turn to other industries, almost all of which were lower paying and less desirable than the departed textile and shoe companies. It took many decades for appealing alternatives to emerge, and when they did, the new industries owed nothing to the original textile, shoe, and other manufacturing firms that had departed.

How closely does this analogy with the move of New England manufacturing to the low-wage South match our evidence about outward manufacturing FDI during the contemporary period? To be sure, the globalization of industry via trade and investment does result in US companies relocating their operations abroad, as examined below. It also results in the dislocation of workers and forces communities to search for new industries. But US multinationals that are globalizing their economic activities also maintain an ongoing presence in the United States, unlike early twentieth-century New England manufacturing, which entirely abandoned its original communities.

A US multinational corporation is defined as a business enterprise headquartered in the United States that has a 10-percent ownership stake or more in at least one affiliate in another country. In absolute numbers, the ranks of US multinationals are rather small; less than 1 percent of all US firms, for a total of 2,278 US multinationals with 25,362 foreign affiliates in 2006 (Bureau of Economic Analysis 2008a and Mataloni 2008). But US multinationals continue to have a disproportionately large economic impact on the US economy. They generate 20 percent of total US employment and 25 percent of total US output. Their operations remain overwhelmingly concentrated in the United States. In 2006 (the latest data available) US MNCs generated total value-added of $3.505 trillion, with more than 70 percent located in the United States and 30 percent abroad, while employing 21.9 million workers in the United States and 9.4 million abroad (BEA 2008a and Mataloni 2008).

Over time, US multinationals have increased both employment and output in an absolute sense, with a slightly rising share of total US output and a slightly declining share of total US employment. In 1982, the first year for which annual employment data were collected, US multinationals employed 18.7 million American workers, or 25 percent of the total workforce, while by 2006 US MNCs employed 21.9 million workers, or 19 percent of the total workforce (BEA 2008a and Mataloni 2008). In 1994, the first year for which annual output data were collected, the value of domestic output by US MNCs was $1.3 trillion, or 24 percent of total private US output, while in 2006 the value of domestic output was $2.5 trillion, or 25 percent of total private US output. In cyclical terms, US MNC output and employment both peaked in 2000 then started to decline, with output rebounding in 2003 and employment in 2004–06 (BEA 2008a and Mataloni 2008).

Between 1984 and 2004 US multinationals expanded employment in their foreign affiliates by 3.8 million and in their home operations by 3.2 million. From 1990 to 2000 the ratio of domestic to foreign jobs created was particularly beneficial for the United States, as US MNCs created almost two jobs at home for each job created abroad. Between 2000 and 2003, however, during the downturn in the US business cycle after the dotcom bubble burst, US MNCs continued to expand employment abroad but decreased the number of jobs at home (table 1). Then, between 2004 and 2006, US MNCs returned to expanding payrolls both at home and abroad, adding 571,000 jobs in the United States and 830,000 jobs overseas (Bureau of Economic Analysis 2008a and Mataloni 2008).

Table 1 US MNC employment (thousands of employees)

	Total	US	Foreign
2000	32,057	23,885	8,171
2001	30,929	22,735	8,194
2002	30,373	22,118	8,255
2003	29,347	21,105	8,242
2004	29,843	21,177	8,667
2005	30,573	21,472	9,101
2006	31,245	21,748	9,497

Sources: Bureau of Economic Analysis (2008a and 2008b) and Mataloni (2008).

When analyzing job creation, it is logical to expect that US MNCs will create jobs in line with the relative growth rates of the countries where they have operations. Not only does the United States sometimes grow more slowly than other markets, but US operations are likely to be more capital intensive, R&D intensive, and skill intensive—and hence fewer in number—than more labor-intensive production and assembly activities in the developing world. Therefore, an assessment of how US MNCs contribute to the US economy should not depend on whether the absolute number or growth rate of jobs created by US MNCs at home and abroad happen to be equal or not.

The principal contribution that US MNCs should be expected to make to the US economy is to reallocate economic activity in ways that raise US living standards. Here, benefits emerge in the form of the newer, better, cheaper, and more-reliable goods and services that US MNCs produce at home and import from abroad, as well as from the competition they generate in the economy more broadly. Another important measurement is the specific kinds of jobs and activities that US MNCs generate at home. The plants of US MNCs are the most productive in the United States in terms of both total factor productivity, which is 4.2 percent higher than at large domestic firms and 11.1 percent higher than at small domestic firms, and labor productivity, which is 16.6 percent higher than at large domestic firms and 44.6 percent higher than at small domestic firms (Doms and Jensen 1998). They are also the most

technology intensive, using more technologies from the Survey of Manufacturing Technology's list of 17 advanced manufacturing technologies than do large or small domestic firms, and they pay wages that are 7–15 percent higher than at comparable domestic plants (Richardson 2005a, 113).[2] In 2006 US MNCs accounted for 31 percent of all US private-sector investment and 76 percent of all US private-sector R&D. In addition to the high productivity, high value-added, high wage activities undertaken directly by US MNCs in the United States, US MNCs purchase large amounts of goods and services from US suppliers and account for a sizable amount of US exports. In 2006 US MNC purchases from US firms amounted to $5 trillion, almost 90 percent of all their purchases. In the same year US MNCs exported goods from the United States valued at $532 billion, 51 percent of all US goods exports (Mataloni 2008, 4). Of these, $203 billion, or 38 percent, were shipped directly from US plants to their sister affiliates abroad.

In short, far from supporting Samuelson's "abandonment" hypothesis, US multinationals continue to make large and growing contributions to the US economy even as they move outward from the United States. These beneficial home-country effects of multinational corporations are not limited to US corporations. Rugman (2005) found that of the 500 largest MNCs from the United States, Europe, and Asia, 320 average 80 percent of their sales in their own home region.[3]

The globalization of industry also brings investment into the United States from foreign multinationals at the same time that US multinationals engage in outward investment, a phenomenon that was not present when manufacturers abandoned New England in the early twentieth century. In 2004 the US affiliates of foreign MNCs owned $5.5 trillion in assets, produced $515 billion of goods and services within the United States, and accounted for 5.7 percent of total US private output, up from 3.8 percent in 1988 (Council of Economic Advisors 2007). The US affiliates of foreign MNCs employed 5.1 million workers, 4.7 percent of the US workforce in 2004, up from 3.6 percent in 1988. They also accounted for 19 percent of US exports, 10 percent of physical capital expenditures, and 13 percent of R&D expenditures (Bernard, Jensen, and Schott 2005).

In terms of raising US living standards by improving access to good jobs, foreign-owned plants in the United States are more capital intensive, more productive, use a higher proportion of nonproduction workers, and pay higher wages than the average US-owned plant (Doms and Jensen 1998). Controlling for industry, size, plant age, and state, foreign-owned plants in the United States still show better operating characteristics than domestically owned plants. Foreign-owned plants pay wages 2.5–7 percent higher than at comparable domestic plants (Richardson 2005a). The performance of the US affiliates of foreign MNCs is second only to the performance of the US plants of US MNCs.

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2. Information on the Survey of Manufacturing Technology can be found at www.census.gov/econ/.

3. Rugman (2005) reported that these 500 largest MNCs account for more than 90 percent of the world's stock of FDI, but did not provide more detail on these stocks or flows.

The inflows of foreign investment into the United States constitute an important channel for technology spillovers to domestic companies, especially in high-tech sectors. Keller and Yeaple (2008) calculated that 8–19 percent of all productivity growth among US firms between 1987 and 1996 was the result of the growing presence of foreign investors in the US economy. The positive impact was disproportionately large in high-tech sectors, namely chemicals, computers and office equipment, electronic components, scientific instruments, and medical instruments. A good example of the contributions made by the US affiliates of foreign MNCs to the US economy is the Chevrolet Volt, a plug-in hybrid that GM considers an important part of its plans to turn the company around. At the opening of the 2009 North American International Auto Show the Governor of Michigan marched with cheering GM employees alongside the Volt, waving signs reading "We're electric" on one side and "Here to stay" on the other.[4] One of the keys to the success of the Volt is its lithium-ion polymer battery, the contract for which was awarded to LC Chemicals of Korea. LC Chemicals will ship battery cells from Korea and build the battery packs themselves at its Compact Power affiliate assembly plant in Troy, Michigan.[5] In 2008 Mohamed Alamgir, director of research at Compact Power, and Anne Marie Sastry, professor of mechanical, biomedical, and materials science and engineering at the University of Michigan won the Trevor O. Jones Outstanding Paper Award for their research comparing alternative battery technologies for the transportation sector. GM and LC Chemicals successfully tested the latter's cells in the Chevrolet Volt prototype at the Ochang TechnoPark, two hours south of Seoul, Korea. To supply the Volt after it is launched, GM has also announced plans to build its own battery plant, relying on the technology and production experience gained from its association with LC Chemicals.

Turning to US exports, the majority of US goods exports are manufactured within MNC networks. In 2005 goods exported by US MNCs, by the US affiliates of foreign MNCs, and by unaffiliated US companies to the foreign affiliates of US MNCs amounted to $621 billion, or 69 percent of all US goods exports (Council of Economic Advisors 2008, 90). Of this total, US MNCs exported $416 billion, and the US affiliates of foreign MNCs exported $169 billion, jointly accounting for 65 percent of total US goods exports. Almost half of these exports consisted of intrafirm trade within multinational networks: Goods exported from US MNCs to their foreign affiliates and from the US affiliates of foreign MNCs to their parent companies totaled $267 billion, 30 percent of all US goods exports.

Multinationals also play a large and growing role in the export of services. Services exports from US MNCs to their foreign affiliates and from the US affiliates of foreign MNCs to their parent companies totaled $103 billion in 2006, 26 percent of all US private services exports, and accounted for almost one third of the growth in US private services exports over the previous decade (Council of Economic

4. Kendra Marr, "GM Puts a Charge in Auto Show," *Washington Post*, January 13, 2009.

5. LC Chemicals also has a US affiliate that manufactures industrial materials in Adairsville, Georgia.

Advisors 2008, 90). The United States shows a strong comparative advantage in the export of high-wage, high-skill services, and US MNCs and the US affiliates of foreign MNCs are likely to remain an important channel for exploiting this comparative advantage (Jensen and Kletzer 2008).

Thus the globalization of industry in the contemporary period leaves the United States with a high-performance, high-productivity, high value-added core that exploits the evolving comparative advantages of the United States. To be sure, these activities may be located in different sites from before—in Raleigh-Durham, Austin, Palo Alto, and Seattle rather than in Detroit, Gary, and Toledo—and the costs of churn and displacement are no less real in the contemporary period than they were a century ago. But public concern and public policy should concentrate on dealing with these genuine burdens of displacement rather than on inaccurate and misleading analogies with twentieth-century manufacturing in New England.

OUTWARD FDI, RUNAWAY PLANTS, AND LOST CAPITAL

The second testable proposition in Samuelson's and Summers's critiques of globalization envisions a fate worse than abandonment, namely that outward investment by US multinationals substitutes external production for exports, drains off capital, and "hollows out" the US economy in a zero-sum process that damages those left behind. This proposition contains two distinct assertions: first, that outward investment by US MNCs replaces exports that would have been produced by US plants with external production; and second, that outward investment by US MNCs siphons off capital, replacing investment that would have been made in the United States. The common theme to these two assertions is that outward investment by US MNCs is a win-lose phenomenon that harms the US economy.

The concern that US MNCs would use production abroad to substitute for exports that otherwise would have been manufactured in the United States has a long and venerable history, beginning with the Burke-Hartke legislation (sponsored by the AFL-CIO) in the 1970s and culminating, at least rhetorically, in Ross Perot's "great sucking sound" claim about NAFTA (Bergsten, Horst, and Moran 1978). But does the evidence from the United States and other developed countries show that MNC production abroad actually substitutes for exports that otherwise would have been produced in the home economy?

To determine the answer, it is crucial to look closely at the counterfactual—what would happen in the home economy if the MNC did not make the outward investment—both to evaluate the substitution hypothesis and to assess the often-suggested policy proposal of making it more expensive and difficult for MNCs to build plants abroad. A pioneer in the testing of the substitution-hypothesis was Thomas Horst (Bergsten, Horst, and Moran 1978, chapter 3). Subsequent analysis has grown increasingly sophisticated; but reviewing Horst's approach is particularly useful since his methodology permits clear assessment of the counterfactual outcome of no outward investment by MNCs. To conduct a fair test, it is not enough

to simply acknowledge that MNCs invest more at home and export more from home plants than the typical home-country firm. As Host noted, MNCs are not typical or average: They are larger, conduct more R&D, engage in more advertising, and have other characteristics that set them apart. MNCs should be expected to do even more investment at home or engage in even more exporting from home plants. To discover, then, whether US MNCs substitute production abroad for exports from the United States, we should compare "likes with likes"—that is, we must compare the export behavior of large firms, firms with high R&D spending, and firms with extensive advertising that undertake outward investment with the export behavior of comparable firms that do not undertake outward investment.

The table constructed from Horst's data (table 2) goes beyond this. The table compares the export behavior (exports as a percentage of domestic shipments) of similar firms using four measurements: the export performance of firms that do not invest abroad (first column), the export performance of firms that engage in minimal outward investment (second column), the export performance of firms with substantial outward investment (third column), and the export performance of firms that have thoroughly globalized their production (fourth column).

Table 2 Export performance of particular types of industries by foreign investment levels
(exports as percentage of domestic shipments)

	Foreign investment			
Type of industry	**Least amount or none**	**Low to middle range**	**Middle to middle range**	**Most**
High tech	2.3	7.8	9.7	7.6
Low tech	1.3	3.0	2.5	3.5
High advertising	1	2.8	2.4	4.6
Low advertising	1.4	4.8	7.5	7.7
High unionization	1.9	5.5	4.4	3.8
Low unionization	1.3	3.2	7	7.8

Note: More recent data are cited below; these statistics are introduced to illustrate the methodology and the counterfactual.
Source: Adapted from Bergsten, Horst, and Moran (1978), 81-82, table 3-3.

This set of like-with-like comparisons demonstrates that US firms that undertake outward investment actually achieve higher levels of exports as a percentage of domestic shipments than firms that stay at home in the United States. This superior export performance, a demonstration of superior competitiveness in the face of global pressures, increases as they further globalize their operations. The percentage of domestic shipments that leave the home market for external markets rises as MNCs engage in greater international investment.[6] This demonstrates that outward investment by US MNCs enhances

6. The exact relationship in the fourth column is somewhat murky in these data, but subsequent statistical analyses, discussed below, show a positive correlation between greater international investment and exports as a percentage of domestic shipments.

the competitiveness of their US operations in comparison with similar firms that do not undertake outward investment or that do not undertake as much outward investment. Outward investment is a complement to greater production at home, not a substitute for it.

Most important, these comparisons provide a clear picture of the counterfactual: What would the situation in the US economy be if US MNCs did not engage in outward investment at all or did not engage in outward investment so extensively? The performance of firms in columns 2, 3, and 4 would more closely resemble the performance of their peers in column 1. This shows that staying at home does not strengthen the US industrial base or lead to greater US exports from home. On the contrary, this option leads to a less-competitive industrial base in the United States and fewer exports from the United States. If US MNCs were prevented from investing abroad or if obstacles and disincentives were put in their path, the United States would be weaker and the labor market would contain fewer export-related jobs. Somewhat surprisingly, this positive relationship between outward investment and exports holds for US low-tech (i.e., low R&D) industries just as for US high-tech industries and for heavily unionized US industries just as for nonunionized US industries. Outward investment creates more export-related jobs in the US economy for low-tech workers and for unionized workers, just as it does for US workers overall, in comparison with US firms with similar workers that do not engage in outward investment.

Subsequent studies, relying on more-sophisticated statistical techniques, have consistently demonstrated the complementarity between MNC outward investment and exports from a more-competitive industrial base at home. Lipsey and Weiss (1981) found a positive correlation, after controlling for firm characteristics, between outward investment and exports for all levels of investment. They also discovered that the level of manufacturing activity by US firms in a given country was positively associated with US exports from the same industries to that country and negatively associated with exports to that country by producers of rival nationalities. Along the same lines, they noted that the presence of foreign multinationals in a given country was negatively correlated with US exports to that country and positively correlated with foreign countries' exports. In a somewhat mercantilistic vein, they concluded that direct investment by US MNCs in any one country tended to increase US exports to and US market shares in that country and to reduce those of producers of rival nationalities, while foreign MNCs' operations tended to raise their countries' exports and market shares and to reduce those of US firms. A smaller US MNC presence outside of the United States would reduce US exports to and market share in other countries. Lipsey and Weiss's counterfactual outcome was the same as Horst's: Reducing the outward investment of home-country MNCs would hurt the access of home-country workers to export-related jobs. A later study by Lipsey and Weiss (1984) showed that the complementarity between outward investment and exports was strong not only for intermediate goods sent abroad for further processing but also for the exports of finished products shipped by parent US firms. This same study also

found that higher proportions of foreign operations on the part of US firms were associated with higher average compensation at home.

This complementarity is not unique to US MNCs. When Swedish MNCs were subjected to criticisms from domestic labor, Bloomström, Lipsey, and Kulchyck (1988) found a similar complementary relationship between outward investment on the part of Swedish MNCs and Swedish exports and employment. Outward investment by Japanese MNCs shows similar effects on the Japanese economy (Lipsey, Ramsterrer, and Blomström 2000). The complementarity is almost as great for manufacturing as it is for distribution: Head and Ries (2001) calculated that a 10 percent rise in FDI abroad in manufacturing and distribution would increase exports from home plants in Japan by 1.2 percent and 1.5 percent, respectively. More recent studies have confirmed that the relationship between outward investment and home-country exports is predominantly complementary (Markusen and Maskus 2003). When labor substitution does show up in the data, it is almost entirely limited to competition between alternative low-wage locations in the developing world rather than vertically between parents and their affiliates in lesser-developed regions (Brainard and Riker 1997).

Turning now to the contention that outward investment on the part of US MNCs "drains off" capital that otherwise would have been invested in the United States, the evidence also suggests complementarity rather than zero-sum dynamics in parent-MNC strategy. Desai, Foley, and Hines (2005) discovered that years in which American multinational firms made greater capital expenditures abroad coincided with greater capital spending by the same firms in the United States. But the correlation between the domestic and foreign growth rates of multinational firms may be due to other reasons than an interaction between operations in both locales—a pharmaceutical company may discover a new drug or a software company may develop a new process that leads to simultaneous increases in activity at home and abroad. So Desai, Foley, and Hines (2005) used an instrumental variable that would predict foreign investment but not directly affect domestic operations. Their instrumental variable is a firm-specific weighted average of foreign GDP growth, which can be used to forecast the growth rates of foreign investment made by the multinational. These predicted growth rates in turn can be traced back in order to possibly explain related changes in home-country activity by the multinational. Using this procedure, they found that 10 percent greater foreign investment by the multinational triggers 2.2 percent additional domestic investment. They have also showed similar positive relationships between foreign investment and home-country exports, R&D spending, numbers of employees, and employee compensation (Desai, Foley, and Hines forthcoming).

The evidence suggests that outward investment is an integral part of MNC strategy to maximize the competitive position of the corporation as a whole, a goal for which headquarters raises the needed amount of capital from sources all around the globe. In determining where to deploy capital and where to

locate production, relative costs, including relative wages and benefits as well as relative skills and relative productivity, play a definite role, but in the end operations at home and operations abroad complement each other, as the MNC parent tries to deploy tangible and intangible assets in the most productive and most profitable way possible. As pointed out earlier, US MNC plants accounted for 51 percent of all US goods exports in 2006, of which 38 percent were shipped directly to overseas affiliates of the US parent.

The finding that firms engaging in outward FDI export more from their domestic market than similar firms not engaging in outward investment bears directly on the composition of good and bad jobs in the home-country market, since export-related jobs across all developed countries offer a wage and benefit premium in comparison with jobs in comparable firms. In the United States export jobs pay wages 10–11 percent higher than nonexport-related jobs (Richardson 2005a). Thus outward investment by US MNCs results in a higher proportion of US jobs with relatively high wages and benefits compared with jobs with lower wages and benefits.

The benefits that accrue to US companies that engage in outward investment are not limited to their superior export performance. US MNCs that invest abroad use frontier production processes in their US plants more frequently, have higher levels of worker productivity, and enjoy more-rapid growth rates of overall productivity than firms that do not invest abroad (Bernard, Jensen, and Schott 2005). US firms that engage in outward investment pay their blue-collar production workers 7–15 percent more than comparable firms that do not invest abroad: 7 percent more in large US MNC plants and 15 percent more in small US MNC plants (Richardson 2005b). Given their higher productivity, US firms that invest abroad enjoy lower levels of bankruptcy and are less likely to suffer job losses than similar firms that do not engage in outward investment. This outcome makes intuitive sense, but contrasts strongly with conventional wisdom: Contrary to popular perception, outward investment by US MNCs leads to a more-stable job base at home.

To be sure, these findings do not imply that the domestic industrial sector from which the outward investment originates is always expanding on a net basis. What is striking, however, is that US firms that engage in outward investment offer better prospects for their workers than firms that do not in both expanding and contracting industries. Home-country companies in contracting sectors that are globally engaged, to use Richardson's characterization—importing, exporting, engaging in outward investment, or connected to inward investors—are the most successful participants in those sectors. Across sectors, whether expanding or declining, the superior benefits associated with globally engaged firms accrue to average-skilled as well as high-skilled workers, to union members as well as nonunion workers, to minorities, and to those who live in small towns as well as large urban areas.

A good example of this result in a declining sector is the family history of "Pam's family" that Lewis and Richardson (2001) traced through five generations. Pam's great-grandmother, grandmother,

and mother worked as seamstresses in Cumberland, Maryland, for minimum wage. Pam herself worked her way up from sewing to customer service at the Schwab garment company, responsible for the Ralph Lauren line of children's clothes, via computer courses at a local community college. Over the course of the 1990s, the total number of jobs at Schwab remained remarkably constant (unusually for this sector), but their composition changed as sewing and cutting moved offshore and were replaced with marketing, distribution, and business-service occupations. As of 2001, Pam supervised five managers and eighteen contract supervisors with the task of ensuring that the correct bar codes, labels, and prices arrived on time at their destinations around the globe. Pam's son, meanwhile, became a manager at Schwab's distribution center in Martinsburg, West Virginia. Both Pam and her son enjoyed wages and benefits, and profit sharing, that placed the family more squarely in the middle class than her grandmother or great-grandmother could have ever achieved.

The more-frequent story for declining industries may involve net job losses. Between 2002 and 2006 North Carolina lost some 72,000 manufacturing jobs, concentrated in textiles and furniture fabrication (Kletzer, Levinsohn, and Richardson 2007). To replace these jobs, North Carolina partnered with newly arrived businesses to design courses for the state's community college network to provide the skills their workforce would need.[7] A state recruitment director singled out Regina Whitaker as a model for their effort. In 1996, just out of high school, Regina took a job at the same yarn texturing plant where her mother had worked for three decades. As that company relocated labor-intensive production operations to China and Brazil, workers in the Piedmont region were laid off. In 2003 Regina enrolled in biotechnology classes at Forsyth Technical Community College, and on graduating was hired as a lab technician in Targacept, a biotech firm in Winston-Salem, with a salary that she reported was "significantly more" than she had earned at the yarn factory. Between 1996 and 2003 the number of workers in biosciences in the region increased from 20,000 to 47,000.

Looking at companies that remained within the North Carolina textile sector, Richardson's global engagement rule—that even in declining industries there may be international opportunities for US firms, workers, and communities—finds support. As Glen Raven lost out in the struggle to sell nylon pantyhose from its Piedmont plant, the US parent shifted to producing and weaving high-grade industrial yarn used in upholstery.[8] These more capital-intensive operations led to downsizing, reducing the number of employees from 225 to 156, but compensation rose from $10.50 to $22 per hour. The largest destination for Glen Raven's exports from North Carolina became China, and these increased fivefold between 2003 and 2006 to $52 million per year. Although Glen Raven has not yet invested abroad as other successful high-end US textile firms have, the company's story illustrates the more-general finding that even in

7. Peter S. Goodman, "In N.C., A Second Industrial Revolution," *Washington Post*, September 3, 2007.

8. Peter S. Goodman, "In N.C., A Second Industrial Revolution," *Washington Post*, September 3, 2007.

declining industries there may be international opportunities that provide benefits to firms, workers, and communities.

Turning now to middle-skill industrial sectors, where the United States has historically had worldwide comparative advantage but now faces increasing international competition: Rather than asking whether aggregate employment has expanded or contracted, we should instead ask what would have happened if US companies were hindered or restricted from investing abroad. One of the best selling and most successful trucks in the world has historically been Ford's F-150 series. In 2004–05 Ford fundamentally redesigned the F-150 line, making the Ford Essex Engine Plant in Windsor, Canada the exclusive source of the F-150's engine and choosing Ford's contract manufacturer, IMMSA of Monterey, Mexico as the sole supplier of its chassis, using cheaper Mexican steel alloy. Ford's prospects for holding its share of the truck market vis-à-vis the Toyota Tacoma, the Isuzu DMax, and the Chrysler Dodge Ram, as well as the fate of UAW workers at Ford's US assembly facilities, depend in part on this NAFTA-integrated supply chain. Despite the United Auto Workers' (UAW) visceral condemnation of NAFTA, the fate of UAW workers at Ford's US assembly facilities depend upon the North American trade-and-investment agreement.

Finally, the disc drive industry represents a sector where US multinationals demonstrate ongoing prowess along the international frontier. Seagate is the world's leading provider of hard disc drives on the basis of both revenue and units shipped, with approximately 45 percent of the global market (McKendrick, Donner, and Haggard 2000).[9] Seagate products are found in computers, digital video recorders, video game consoles, portable media players, and automotive navigation systems. For fiscal years 2006, 2007, and 2008 approximately 30 percent of Seagate's disc drive revenue came from customers located in North America, with approximately 27 percent coming from customers in Europe and approximately 43 percent from customers in Asia. Hewlett Packard and Dell each account for approximately 10 percent of Seagate's revenue, Lenovo less. Sony PlayStation 3 and Microsoft Xbox are the largest buyers for video game consoles.

Seagate has management, R&D, and design facilities in California (Sunnyvale and Scotts Valley), Massachusetts (Shrewsbury), Minnesota (Minneapolis), Colorado (Longmont), Pennsylvania (Pittsburg), Oklahoma (Oklahoma City), and Singapore. The company's principal, wholly owned manufacturing facilities are located in China, Malaysia, Northern Ireland, Singapore, Thailand, and, in the United States, in California and Minnesota. Seagate's worldwide employment was 45,000 in 2008, with 8,000 managers, engineers, and other staff in the United States and 37,000 abroad, mostly production-line personnel.

Across the spectrum of specific uses, disc drives have an extremely short production life-cycle. Two months before the introduction of each new model, Seagate brings three or four dozen local line-

9. Seagate Corporation, 2008, *Annual Report, Form 10-K*, available at www.seagate.com (accessed on July 6, 2009).

operators and supervisors from Thailand, Malaysia, China, and Singapore to the United States to work with product developers and manufacturing specialists (McKendrick, Donner, and Haggard 2000). The combined "new product transfer team," including American experts, then returns to Asia to set up the new production run, remaining in place until high capacity and low rejection rates are achieved. Seagate's competitive position in world markets and its 8,000 relatively high-compensation employees in the United States depend on this tight integration between home-country and overseas facilities. Seagate's principal competitors are Fujitsu, Hitachi, Toshiba, Samsung, GS Magicstor in Japan, and Western Digital in the United States.

Overall, as some sectors expand and other sectors contract there will surely be job losses and dislocations for some workers, while others gain new opportunities. Indeed Bernard and Jensen (2007) have showed that once favorable plant characteristics such as size, plant age, and the employment of skilled labor are controlled for, US MNC-owned plants are more likely to close, justifying anxiety on the part of their better treated workers. Multinational firms simply have more readily available margins to adjust than nonmultinationals: They can make changes in the mix of technology, marketing, and supplier inputs more easily than nonmultinationals and can respond to changes in market conditions more rapidly. They embody attributes that are extraordinarily valuable to the domestic economy (frontier practices, large scale operations, superior jobs) that nonmultinationals possess less often, but accompanying these attributes are more-rapid mechanisms for adjustment.

Changing patterns of MNC investment, like changing patterns of technology deployment more generally, contribute to job losses and dislocations for some workers as well as to new opportunities for others. The appropriate response for home-country authorities is to design adjustment and retraining programs to cushion the impact on those adversely affected, not to impede capital flows and engage in a futile effort to preserve jobs in uncompetitive home-country economic activities.[10]

OUTWARD INVESTMENT, STRATEGIC TRADE THEORY, AND THE CAPTURE OF "RENTS" ABROAD

The third testable proposition in Samuelson's and Summers's critiques of globalization embodies the most nightmarish scenario of all: that US MNCs may switch from sharing supranormal profits and externalities with US workers and communities to extracting rents from the United States. The theory behind FDI is that companies take the trouble to build plants and coordinate activities across borders, rather than simply selling products or licensing technology, because they possess intangible assets that afford them higher profits when they maintain control over all operations. FDI takes place only in industries where

10. For an agenda of retraining and adjustment policies for the United States, see Kletzer and Rosen (2005) and Rosen (2008).

markets are not perfectly competitive. The presumption is that successful multinational corporations can collect rents from their activities, some of which may be shared with their workers and generate externalities that benefit countries where their operations are located.

The United States may not "necessarily benefit from the economic success of its trading partners," argued Larry Summers, if the economies of those trading partners are powered by multinational corporations, thereby shifting rent collection to the new host states.[11] "Stateless elites whose allegiance is to global economic success and their own prosperity rather than the interests of the nation where they are headquartered" may share rents and externalities formerly captured by US workers and communities with external workers and communities in new locations. Similarly, Paul Samuelson (2004) observed: "Historically, US workers used to have kind of a de facto monopoly access to the US's superlative capital and know-how (scientific, engineering and managerial). All of us Yankees, so to speak, were born with silver spoons in our mouths." Perhaps multinational corporate investment is now offering monopoly access, and silver spoons, to non-Yankees.

A first look at the evidence supports apprehension about possible rent-shifting. Popular outrage about sweatshops and the possible abuse of workers often leaves the impression that multinational manufacturing and assembly investors predominantly engage in labor-intensive operations consisting primarily of low-skilled, low-wage jobs. But the data paint a quite different picture (Moran forthcoming). The vast majority of manufacturing FDI flows to middle-skilled industrial sectors in developing countries rather than to garment, footwear, and other low-skilled operations, and the already higher growth of more skill-intensive investor operations is speeding up over time. As table 3 shows, the flow of manufacturing FDI to medium-skilled activities, such as transportation equipment, industrial machinery, electronics and electrical products, chemicals, rubber, and plastic products, is nearly ten times larger each year than the flow to low-skilled, labor-intensive operations. This shift toward more-sophisticated activities has grown in recent decades. The ratio between higher- and lower-skill activities was roughly five to one in the period of 1989–91, but almost ten to one in the period of 2004–06. If the stock of manufacturing FDI is used instead of the flow, roughly the same results obtain: a ratio of seven to one in 1990, a ratio of ten to one in 2006. Moreover, these ratios are probably understated, because data on FDI stocks typically do not provide accurate information on reinvested earnings or make allowances for accelerated depreciation, both of which are particularly pronounced in more capital-intensive, higher-skilled FDI operations.

Survey data from industrial sectors such as autos and auto equipment, electronics, chemicals, and industrial equipment in comparison with garments and footwear show that foreign investors in higher-

11. Lawrence Summers, "America needs to make a new case for trade," *Financial Times*, April 27, 2008.

skilled activities pay their workers two to three times as much for basic production jobs, and perhaps ten times as much for technical and supervisory positions, as what is earned by employees in comparable positions in lower-skilled MNC operations. Thus the globalization of industry around the world via

Table 3 Manufacturing MNC operations in developing countries

	FDI flows (millions of dollars)			**FDI stocks** (millions of dollars)		
	1989–91 (annual average)	**1999–2000** (annual average)	**2004–06** (annual average)	**1990**	**1999**	**2006**
Lower-skilled sectors	2,860	3,100	9,526	19,885	46,864	65,134
Higher-skilled sectors	13,270	52,800	92,818	134,686	505,928	653,277

Note: For a complete breakdown by sector, see Annex I (FDI flows) and Annex II (FDI stocks) from the UNCTAD database in Moran (forthcoming).

Source: Moran (forthcoming).

FDI in manufacturing expands the opportunities available to medium- and higher-skilled workers in developing countries. It is therefore plausible to argue that auto workers and managers at MNC plants in Mexico and Brazil, or electronics workers and managers at MNC plants in Malaysia and Thailand, or workers at Intel's semiconductor plant in Costa Rica, who earn 150 percent of the average national manufacturing wage, are able to partake of the rents associated with their employers in ways that only US workers and managers were able to thirty years ago. But other evidence tempers this conclusion. Lawrence (1996, 82–84), expanding on work first done by Katz and Summers, has shown that from 1978 through 1990 average rents earned by production workers and managers in US manufacturing have not changed much. Moreover, Lawrence reminds us, most trade in high-rent sectors takes place among developed countries; trade involving developing countries typically involves low-rent sectors.

Could this be changing? The data presented above showing FDI taking place predominantly in higher-skilled rather than in the lowest-skilled activities suggest that it may be. But this evolution probably fits better with Vernon's (1966) product-cycle model of gradual dispersion of middle-skilled assembly operations than with Brander and Spencer's (1981) strategic trade model of one highest-rent, highest-externality location abruptly replacing another. These FDI activities are not the "commanding heights" of highest-rent strategic trade industries and do not appear to be heading in that direction very rapidly (Krugman 1986).

In the case of China, where concerns about FDI helping to create a new technological superstate are highest (Preeg 2008), multinational corporate investment helped to propel a substantial shift between 1992 and 2005 from agriculture and apparel manufacturing to electronics and machinery manufacturing, including computers, telecom equipment, electrical machinery, and office machines. These latter sectors are considerably more sophisticated and skill intensive than the former (Rodrick 2006). But the data

show that this outcome is largely due to the increased skill content of inputs from Taiwan, Japan, and the United States that are then assembled within China for export. Leaving aside the duty-free intermediates that make up the final electronic and machinery products, Lardy (2005) and Amiti and Freund (2008) observed that it is not clear that there has been a significant change in the skill content of China's own processing activities.

As for the possibility of extracting rents from US consumers or generating adverse terms of trade for the United States, the evidence shows just the opposite: the average prices of goods exported from China to the United States fell by an average of 1.5 percent per year between 1997 and 2005 (Amiti and Freund 2008). Schott (2006) found that while China exports more products in common with OECD countries than would be expected given the country's level of development (largely due to the benefits of FDI), Chinese exports sell for a substantial discount relative to OECD varieties of the same product. The reason seems to be that quality upgrades in each product category take place more rapidly within OECD countries than within China. At the end of the day, the data show no more than that US workers and managers may be less unique in their ability to extract rents from outsiders, rather than revealing that multinational investment has allowed foreign workers and managers to develop some new, powerful ability to extract rents from Americans.

CONCLUSIONS AND POLICY IMPLICATIONS

The analysis presented here shows that the globalization of industry and services via FDI may well be, as Lori Wallach has said, trade on steroids. But the pejorative connotations associated with this phrase are almost entirely inaccurate empirically. To be sure, FDI generates losers as well as winners. But multinational corporations do not spread technology and capital in ways that harm the aggregate interests of workers in developed countries. Multinational corporations do not locate their operations in a zero-sum manner that favors host economies at the expense of the home economy. The two-way flow of inward and outward investment does not result in anything like a "hollowing out" of the home economy.

Outward FDI from the United States, or from other home countries, is understandably the most controversial phenomenon. Multinational corporations do close plants at home and build plants abroad, and these firms demonstrably threaten workers during labor negotiations that they will ship jobs overseas if the workers ask for too much. But the evidence consistently shows that the expansion of MNC operations abroad and the strengthening of MNC operations in their home countries are complementary, and the answer to the counterfactual—would the home country or home-country workers be better off, if home-country MNCs were prevented from engaging in outward investment—is over and over again negative. Of particular note is the empirical support for Richardson's observation that outward FDI takes place in both declining and ascendant industries, but in both kinds of industries

firms that are globally engaged, including involved in FDI, show superior performance to their counterparts that are not.

President Obama has pledged that his administration will end tax breaks for corporations that ship jobs overseas. At the center of this proposal is an end of deferral for US multinationals. At first glance, the evidence presented above would appear to support such a position, as it seems to reinforce the "classical" conclusion that countries should try to equalize the tax burden on foreign and domestic income so that multinationals make investment decisions based entirely on commercial considerations not tax concerns—i.e., capital export neutrality.[12] But while capital export neutrality ostensibly justifies the elimination of deferral, the latest assessments by Hufbauer suggest that this would be counterproductive: US tax policy already places US multinational operations in the United States at a competitive disadvantage vis-à-vis rival multinationals.[13] Hufbauer and Kim (2009) recommended that the US tax regime be shifted toward a territorial system, coupled with favorable expense allocation rules: The United States would tax all income earned at home, but would not tax active business income earned abroad.

The data introduced here show that it would be unwise in the extreme to make the United States a less-favorable setting from which to conduct international business activities. Today US multinational corporations concentrate more than 70 percent of their operations here in the United States, constituting the most technology-intensive and productive segment of the American economy and offering higher wages and benefits than other companies as a result. They now conduct more than three quarters of all US private-sector R&D.

Using the US economy as the base for integrating their global operations, which includes engaging in outward investment, strengthens the domestic operations of US MNCs and allows them to generate more exports (and thus more higher-paying, export-related jobs) than firms that do not engage in outward investment. Making it more difficult to engage in outward investment would not strengthen the US economy. Quite the contrary, placing obstacles in the way of US multinationals' global operations would leave them and their suppliers, their workers, and the communities where their US facilities are located worse off and less competitive in the world economy.

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12. Bergsten, Horst, and Moran (1978) calculated that US tax policy was closer to capital export neutrality than commonly supposed. Deferral gave outward investment only a small advantage, which was offset by the denial of the US investment tax credit and ADR acceleration of depreciation.

13. Gary Clyde Hufbauer, "The President's Proposals to Tax Corporate Income Earned Abroad Are Bad for US Jobs and Exports," Real Time Economic Issues Watch, May 5th, 2009, available at www.piie.com (accessed on July 6, 2009).

REFERENCES

Amiti, Mary, and Caroline Freund. 2008. *The Anatomy of China's Export Growth*. World Bank Policy Research Working Paper 4628. Washington: World Bank.

Bergsten, C. Fred, Thomas Horst, and Theodore H. Moran. 1978. *American Multinationals and American Interests.* Washington: The Brookings Institution.

Bernard, Andrew B., and J. Bradford Jensen. 2007. Firm Structure, Multinationals, and Manufacturing Plant Deaths. *Review of Economics and Statistics* 89, no. 2 (May): 193–204.

Bernard, Andrew B., J. Bradford Jensen, and Peter K. Schott. 2005. *Importers, Exporters and Multinationals: A Portrait of Firms in the U.S. that Trade Goods*. National Bureau of Economic Research Working Paper 11404. Cambridge, MA: National Bureau of Economic Research.

Blomström, Magnus, Robert E. Lipsey, and K. Kulchyck. 1988. US and Swedish Direct Investment and Exports. In *Trade Policy Issues and Empirical Analysis,* ed. Robert E. Baldwin. Chicago: University of Chicago Press.

Brainard, Lael S., and David A. Riker. 1997. *Are US Multinationals Exporting US Jobs?* National Bureau of Economic Research Working Paper 5958. Cambridge, MA: National Bureau of Economic Research.

Brander, James A., and Barbara J. Spencer. 1981. Tariffs and the Extraction of Foreign Monopoly Rents and Potential Entry. *Canadian Journal of Economics* 14, no. 3 (August): 371–389.

Bureau of Economic Analysis (BEA). 2008a. U.S. Direct Investment Abroad: Financial and Operating Data for U.S. Multinational Companies. Available at www.bea.gov (accessed on March 20, 2009).

Bureau of Economic Analysis (BEA). 2008b. Summary Estimates for Multinational Companies: Employment, Sales, and Capital Expenditures for 2006. Available at www.bea.gov (accessed on April 17, 2009).

Council of Economic Advisors (CEA). 2007. *2007 Economic Report of the President*. Washington: Government Printing Office. Available at www.gpoaccess.gov (accessed on July 6, 2009).

Council of Economic Advisors (CEA). 2008. *2008 Economic Report of the President*. Washington: Government Printing Office. Available at www.gpoaccess.gov (accessed on July 6, 2009).

Desai, Mihir A., C. Fritz Foley, and James R. Hines, Jr. 2005. Foreign Direct Investment and the Domestic Capital Stock. *American Economic Review* 95, no. 2 (May): 33–38.

Desai, Mihir A., C. Fritz Foley, and James R. Hines, Jr. Forthcoming. Foreign Direct Investment and Domestic Economic Activity. *American Economic Journal: Economic Policy.*

Doms, Mark. E., and J. Bradford Jensen. 1998. Comparing Wages, Skills, and Productivity Between Domestic and Foreign Owned Manufacturing Establishments in the United States. In *Geography and Ownership as Bases for Economic Accounting,* eds. Robert E. Baldwin, Robert E. Lipsey, and J. David Richardson. Chicago: University of Chicago Press.

Head, Keith, and John Ries. 2001. Overseas Investment and Firm Exports. *Review of International Economics* 9: 108–22.

Hufbauer, Gary Clyde, and Jisun Kim. 2009. *US Taxation of Multinational Corporations: What Makes Sense, What Doesn't*. Peterson Institute for International Economics Policy Brief 09-7. Washington: Peterson Institute for International Economics.

Jensen, J. Bradford, and Lori G. Kletzer. 2008. *"Fear" and Offshoring: The Scope and Potential Impact of Imports and Exports of Services*. Peterson Institute for International Economics Policy Brief 08-1. Washington: Peterson Institute for International Economics.

Keller, Wolfgang, and Stephen R. Yeaple. 2008. Multinational Enterprises, International Trade, and Productivity Growth: Firm-Level Evidence from the United States. Photocopy (February).

Kletzer, Lori G., James Levinsohn, and David Richardson. 2007. Responses to Globalization: US Textile and Apparel Workers. Photocopy.

Kletzer, Lori G., and Howard Rosen. 2005. Reforming US Labor-Market Adjustment Programs to Better Assist US Workers. In *The United States and the World Economy: Foreign Economic Policy for the Next Decade*, ed. C. Fred Bergsten. Washington: Institute for International Economics.

Krugman, Paul R., ed. 1986. *Strategic Trade Policy and the New International Economics*. Cambridge, MA: Massachusetts Institute of Technology Press.

Lardy, Nicholas R. 2005. China: The Great New Economic Challenge? In *The United States and the World Economy: Foreign Economic Policy for the Next Decade*, ed. C. Fred Bergsten. Washington: Institute for International Economics.

Lawrence, Robert Z. 1996. *Single World, Divided Nations? International Trade and the OECD Labor Markets*. Washington: Brookings Institution

Lewis, Howard III, and J. David Richarson. 2001. *Why Global Commitment Really Matters!* Washington: Institute for International Economics.

Lipsey, Robert E., Eric D. Ramsterrer, and Magnus Blomström. 2000. *Outward FDI and Parent Exports and Employment: Japan, the United States, and Sweden*. National Bureau of Economic Research Working Paper 7623. Cambridge, MA.: National Bureau of Economic Research.

Lipsey, Robert E., and Merle Yahr Weiss. 1981. Foreign Production and Exports in Manufacturing Industries. *Review of Economics and Statistics* 63, no. 4 (November): 448–94.

Lipsey Robert E., and Merle Yahr Weiss. 1984. Foreign Production and Exports of Individual Firms. *Review of Economics and Statistics* 66, no. 2 (May): 304–8.

Markusen, James R., and Keith E. Maskus. 2003. General-Equilibrium Approaches to the Multinational Enterprise: A Review of Theory and Evidence. In *Handbook of International Trade*, eds. E. Kwan Choi and James Harrigan. Malden, MA: Blackwell Publishing.

Mataloni, Raymond J., Jr. 2008. US Multinational Companies: Operations in 2006. Bureau of Economic Analysis, *Survey of Current Business*: 26–47.

McKendrick, David G., Richard F. Donner, and Stephan Haggard. 2000. *From Silicon Valley to Singapore: Location and Competitive Advantage in the Hard Disk Drive Industry*. Palo Alto, CA: Stanford University Press.

Moran, Theodore H. Forthcoming. Foreign Direct Investment and Development: Launching a Second Generation of Policy Research, Avoiding the Mistakes of the First, Reevaluating Policies for Developed and Developing Countries.

Preeg, Ernest H. 2008. *India and China: An Advanced Technology Race and How the United States Should Respond*. Washington: Manufacturers Alliance/MAPI.

Richardson, David J. 2005a. Uneven Gains and Unbalanced Burdens? Three Decades of American Globalization. In *The United States and the World Economy: Foreign Economic Policy for the Next Decade*, ed. C. Fred Bergsten. Washington: Institute for International Economics.

Richardson, David J. 2005b. Global Forces, American Faces: US Economic Globalization at the Grass Roots. Photocopy.

Rodrik, Dani. 2006. *What's So Special About China's Exports?* National Bureau of Economic Research Working Paper 11947. Cambridge, MA: National Bureau of Economic Research.

Rosen, Howard. 2008. *Strengthening Trade Adjustment Assistance*. Peterson Institute for International Economics Policy Brief 08-2. Washington: Peterson Institute for International Economics.

Rugman, Alan M. 2005. *The Regional Multinationals*. Cambridge: Cambridge University Press.

Samuelson, Paul A. 2004. Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization. *Journal of Economic Perspectives* 18, no. 3 (Summer): 135–146.

Schott, Peter. 2006. *The Relative Sophistication of China's Exports*. National Bureau of Economic Research Working Paper 12173. Cambridge, MA: National Bureau of Economic Research.

Vernon, Raymond. 1966. International Investment and International Trade in the Product Cycle. *Quarterly Journal of Economics* 80, no. 2: 190–207.