Home and Host Country Effects of FDI

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I. Introduction

Protests against “globalization” involve a wide spectrum of discontents with modern life and market economies. They include the growth of international trade and specialization, and the disruptions of traditional or established economic practices they entail. They include also the actions of intergovernmental agencies, such as the ITO, the IMF, the World Bank, and the regional development banks. And it is rare that multinational firms are not mentioned, as the presumed leaders and chief beneficiaries of globalization.

There are also more specific accusations against multinationals. Many evils are alleged. They depress wages and employment at home by moving production abroad. They depress wages in their host countries by exploiting helpless workers. They stifle host country growth by displacing local firms and obstructing their technological progress.

To the extent that opposition to globalization stems from different values that view as bads traditional economic goods such as higher consumption or the growth of production and exchange, I do not attempt to deal with them. Many of the other accusations are framed in vague terms. I attempt to appraise them by classifying the effects of multinational operations under several homogeneous headings and reviewing what research has concluded with respect to each topic. On home country effects, I summarize the findings on home country exports and home country factor demand. On host country effects, I discuss wages, productivity, exports, and the introduction of new industries.
There are two concepts of FDI and two matching ways of measuring it. One is that FDI is a particular form of the flow of capital across international boundaries from home countries to host countries. These flows give rise to a particular form of international assets for the home countries, specifically, the value of holdings in entities, typically corporations, controlled by a home country resident or in which a home country resident holds a certain share of the voting rights. The other concept of direct investment is that it is a set of economic activities or operations carried out in a host country by firms controlled or partly controlled by firms in some other (home) country. These activities are, for example, production, employment, sales, the purchase and use of intermediate goods and fixed capital, and the carrying out of research.

The former of these two concepts is the one reflected in balance of payments accounts. The measures of it, flows and stocks of direct investment, are the only virtually ubiquitous quantitative indicators of FDI. However, if the effects of FDI stem from the activity of the foreign-owned firms in their host countries, the balance of payments measures have many defects for any examination of these impacts. The activity is frequently not in the same industry as the stock, or not in the same host country, or has not originated from the same home country (Lipsey, 2002, United Nations, 2001). For this reason, wherever possible, I emphasize studies based on activity, such as production or employment, rather than those based on balance of payments stocks and flows.

Production from foreign direct investment, that is, production in enterprises located outside the country of residence of their owners, reached a little over 10 per cent of total world output in 2000, by a rough estimate. That compares with about 5 per cent in 1985 and 6 per cent in 1990. The increase has been relatively rapid in the 1990s, particularly because countries other
than the traditional direct investors have been raising their share of the world’s outward direct investment.

II. What happens when a foreign direct investment is made?

Much of the earlier economics literature on foreign direct investment, but not the business literature, treated it as a part of the general theory of international capital movements, based on differences among countries in the abundance and cost of capital. If country A makes a direct investment in country B, there is an addition to the physical capital of country B, and new production capacity is created there. The investing firm in A will have chosen to use some of its capital in B instead of in A. If the output is tradable, some production that now takes place in country B may replace production that formerly took place in country A. The investing firm may have reduced its production in its home country, A, possibly by shutting down or selling a plant, and opened up a new plant abroad to serve the same market.

A different possibility is that a firm in country A makes a direct investment in country B, but the stock of physical capital and the level of production are unchanged in both countries. Country A owners and managers in industry X, perhaps using the skills they have acquired in home production, buy out country B owners with lower skills in that industry and operate the industry X plants in country B more efficiently than before. Country B owners use their capital, released by the buyout, in other industries. They might, for instance, lend it to other owners and managers in country B, skilled in industry Y, to enable them to buy out less competent owners in that industry in country A. No net movement of physical or financial capital is necessarily implied, although it could take place.
This picture belongs to what Markusen (1997) and Markusen and Maskus (2001) have called the “knowledge-capital model” of the multinational enterprise. It is related also to what Caves (1996, Chapter 1) refers to as the dependence of multinational enterprises on “proprietary assets,” or “firm-specific” assets. And it also fits with Romer’s distinction (1993a) and (1993b) between the roles in economic development of what he calls “ideas” in contrast to “objects”.

Caves (1996) traces the destruction of the view that multinationals are principally arbitrageurs of financial or physical capital to Hymer (1960) and to Kindleberger (1969), who adopted many of Hymer’s ideas. Dunning (1970) summarized their view as being that “… the modern multinational company is primarily a vehicle for the transfer of entrepreneurial talent rather than financial resources.” (p. 321).

While both of these are aspects of FDI, they are derived from different explanations for FDI and imply different consequences for the home and host countries. The capital flow story, for example, depends on the advantages of countries as locations for production, and changes in such advantages. It is descended from Mundell’s (1957) article analyzing the substitutability between trade flows and investment flows. It implies changes in the industrial composition of production and employment in home and host countries and, in industries producing tradables, it implies shifts in the composition of exports and imports. Worries about effects on exports and employment stem from this characterization of FDI. The entrepreneurship story, on the other hand, hinges on characteristics of firms and their managers, rather than those of countries. It contains implications for the ownership of production, but these operate independently of the determinants of the location of production.
It is not obvious that one of these explanations of direct investment is predominant. In service industries, where trade is limited, competition with output in the home country is not an issue, whether the investment involves a net movement of capital or not. That does not exclude a reallocation of world production in these industries, as production rises in the host countries without falling in the home countries. There may also be competition for investment funds that reduces the rate of growth of home country output in these industries below what it would be if there were no overseas alternative. That competition is likely to be more acute for the geographical allocation of investment and production within an individual firm than for the allocation of production in general.

In the case of tradables, particularly manufacturing industries, it is more plausible to think of production being moved from one geographical location to another, and most of the studies of home country impacts of outward direct investment have been focussed on these industries. Again, it is desirable to distinguish the location choices within firms from the location choices for industries in the aggregate. If, for example, because of a decline in communication costs, or an increase in the severity of currency fluctuations, firms in all countries decided to diversify their production locations, each firm in each country might shift production from home to foreign locations through FDI. However, there might be no change in the geographical location of production as a whole, because in each country, the outward shift of home country firms’ production might be balanced by the inward shift of foreign firms' production. Or there could be a general shift of production toward markets in each industry.

If there is a geographical relocation of production, the force behind it might be a change in factor prices, such as a rise in the home country price of labor, or a rise in the home country
price of a natural resource. In that case, we would expect a shift in the production of labor-intensive or resource-intensive goods away from the home country, both within firms and in the aggregate. That might be reflected in a decline in firm and home country exports, but it might also be the case that it was the decline of home country exports, or the expectation of such a decline, that precipitated the production shift. The difficulty of disentangling trade shifts produced by production location shifts from location shifts produced by trade, or potential trade, shifts has haunted most analyses of home country impacts.

There is some indication that the exchange of ownership has become a larger part of FDI flows over time and particularly during the 1990s. One piece of evidence is that the value of mergers and acquisitions has risen relative to the value of FDI flows and relative to world output (United Nations, 2000, Chapter IV). Most of this merger and acquisition activity has taken place among the developed countries. The rising trend seems to reflect an increase in mergers and acquisitions in general, rather than one mainly in international, or cross-border ones: the international share appears to have been relatively constant since the late 1980s (ibid, p. 107). Much of this activity has taken the form of exchanges of stock, where relatively little capital flow is involved. A few large examples of this form accounted for a third or more of the value of all cross-border mergers and acquisitions in 1998 and 1999.

Another sign of the growth of takeovers as a form of FDI is the large rise in outlays by foreign firms for acquisitions of U.S. firms. The annual average of these outlays tripled between 1980-84 and 1985-94 and then tripled again by 1995-99. This rate of increase considerably outpaced that of new greenfield investment. Thus, most of the production in foreign-owned firms in the United States is in plants that existed before their acquisition by foreigners as U.S.-owned plants.
The idea that what appears to be a movement of production and employment may represent mainly a substitution of one national ownership for another can be illustrated by the changes within the U.S. manufacturing sector. Between 1977 and 1997, the share of U.S. manufacturing parent firms in U.S. manufacturing output fell from 65 to 55 per cent. Almost all of that share was taken over by U.S. manufacturing affiliates of foreign firms, which produced 3\&1/2 per cent of U.S. manufacturing output in 1977, but 12\&1/2 per cent in 1997 (Lipsey, 2002). The U.S. parent share of U.S. manufacturing employment declined from 60 per cent in 1977 to 46 per cent in 1997, while the share of U.S. manufacturing affiliates of foreign parents rose from 3\&1/2 per cent to over 12 per cent. Most of the reduction in U.S. parents’ manufacturing output and employment were offset by an increase in foreign-owned affiliates output and employment. U.S. and foreign firms were both internationalizing; each group was expanding in the other group’s home region (Lipsey, 2002).

Behind the strong interest in some of the questions about effects of the internationalization of firms’ production there must be some policy issues. Should countries promote or discourage the internationalization of their home country firms, or should policy be neutral? Should countries encourage the entrance of foreign producers, or discourage it, leave the decisions to market forces? Some of the early studies of U.S. direct investment abroad were motivated by the belief that features of the U.S. taxation of corporations were important inducements to foreign investment. That question may not have been settled, but the spread of the practice of internationalization from firms based in the United States to those from many other countries suggests that there were forces beyond any distortionary U.S. tax policies that were driving these trends.
III Home Country Effects of Outward FDI

a. Outward FDI and home country exports

Since the United States was the dominant outward direct investor in the period after World War II, much of the debate about the home country consequences of FDI took place first there. The debate over the possible substitution of U.S. firms’ foreign production for U.S. exports was most intense during the time of worries about the balance of payments during the 1960s. Curiously, earlier studies of U.S. foreign investment, such as Lewis (1938) and Madden, Nadler, and Sauvain (1937), did not take up this issue, despite the high unemployment levels of the 1930s. In the 1960s, there was a campaign against outward investment, largely fueled by fears about effects on U.S. exports and, presumably, domestic employment, that was supported by labor unions and culminated in the unsuccessful attempt to pass the Burke-Hartke bill. What did ensue was, first, the “Voluntary Program of Capital Restraints,” from 1965 to 1967. That was followed by the compulsory Office of Foreign Direct Investment (OFDI) regulations, specifically aimed at reducing the outflow of U.S. capital for direct investment in an effort to “improve” the U.S. balance of payments. The focus of these regulations, which lasted until 1974, was the outflow of capital, rather than the growth of U.S. firms’ production abroad, and they therefore did not attempt to discourage the expansion of production abroad financed from outside the United States (Lipsey, 1995, p. 16).

The controversies of this period spawned a series of studies relating outward FDI to home country exports. There are a number of different questions that can be asked, and they have not always been clearly distinguished, although the implications of the answers to them differ considerably. One set of questions is about the relationships within the individual investing firm. One can ask (a) about the relation, for an individual parent firm, between its production in a host
country and its exports to that country. Or one can ask (b) about the relation of a firm’s production in a country to its exports to the world, taking account of the possibility that affiliate exports to other countries might affect parent markets there. Or one can ask (c) about the relation between a firm’s production in all foreign countries and its exports to the world, taking account of all interrelationships between production abroad and exports.

All of these are issues of firm strategy: how a firm chooses to serve markets around the world. Unless it is assumed that no other domestic or foreign firms react to the firm’s choices, there are no necessary inferences to be drawn about effects on the firm’s home country.

A second set of questions is about the relation of the aggregate of decisions by a country’s firms about production abroad to home country exports in the same industry or in the aggregate, or to home country or industry employment or employment of different types of labor. The answers to these questions come closer than those of the first set to implying welfare consequences for the home countries as a whole, assuming that the choices by firms in one country do not affect the choices made by firms in other countries.

A third set of questions is about the relation between the decisions on the location of production made by firms from all countries on the worldwide pattern of production, trade, and employment, or on any particular countries’ position. One reason these questions are rarely asked is that little is known about the outward FDI activities of about half or more of the world’s direct investors, because most countries do not inquire into what their firms do outside their countries’ borders.

The basic problem with these studies has always been the close connection between the factors that determine a firm’s exports and those that determine its foreign direct investment. A country’s most competent and successful firms tend to export and to invest in production abroad,
and the same is generally true of the most successful industries. All the research indicates an awareness of the problem, and the studies attempt to deal with it, usually in ways found unsatisfactory by critics.

The most common type of study was of the first question described above. Exports by a firm or an aggregate of firms in an industry to a foreign market were related to the firm’s investment or production or employment in that market. The interrelations between exports and investment were dealt with by assumption, as in the case of the Reddaway reports that in the absence of a British-owned plant in a market, the alternative was a foreign-owned plant of the same size in the same industry (Reddaway et al, 1967 and 1968). That assumption essentially guaranteed a positive, or complementary relationship between a firm’s exports and its foreign production. In the other direction, Bergsten, Horst, and Moran (1978) described the assumptions in Frank and Freeman (1975), and some in Hufbauer and Adler (1968), as assuming “…that foreign investment can only displace U.S. exports” (p. 98). Their own analysis of questions 1a and 1b, based on U.S. aggregate data, cautiously summarized, pointed to mainly complementary relationships (pp. 93-96). The studies by Lipsey and Weiss (1981) and (1984), the first of exports, by industry, to individual destinations, and second of total exports by individual U.S. firms, concluded that exports and production abroad by U.S. firms were, for the most part, complementary. A study using a later U.S. census of direct investment abroad found more mixed results, mostly no relation, but where there was a significant relation, more frequently positive than negative (Blomström, Lipsey, and Kulchycky, 1988).

Two of the few studies based on access to the confidential individual firm data collected by the U.S. Department of Commerce were Brainard (1997) and Brainard and Riker (1997). The focus of the Brainard and Riker study was on employment, rather than exports, but it is relevant
here because employment issues lie behind much of the interest in exports. They concluded that
while there is some competition between a manufacturing firm’s employment at home and that
abroad, the degree of substitution is low. Mostly, competition takes place among workers in
affiliates in different developing countries, “…particularly in low value added industries” (p. 17).
Brainard (1997), testing the importance of factor price differences as an explanation for the
location of foreign operations, dismisses it in favor of explanations based on the advantages of
proximity to markets, among other factors. She suggests that “the overall complementarity
between trade and affiliate sales” is attributable to the fact that both “…are increasing in market
size and intellectual property advantages…” (p. 539).

Similar concerns in Sweden about home country effects of FDI led to a series of studies
by Swedenborg (1973), (1979), (1982), (1985), and (2001), and by Swedenborg et al (1988),
examining this question, among others. A feature of Swedenborg (1979) was the use of 2SLS to
attempt to deal with the endogeneity of exports and the mutual determination with investment,
and that procedure was carried into her later work as well. The latest of her papers (Swedenborg,
2001), in addition, takes advantage of the longitudinal aspect of the Swedish data to examine the
effects on firm exports of changes in a firm’s foreign production over time. She concludes that
“…the enormous growth of foreign production by Swedish firms in the thirty-year period, 1965-
94 has not, in itself, had a negative effect on parent-company exports” (p. 121). These studies
examine parent company exports to individual countries as well as total parent exports.
Blomström, Lipsey, and Kulchycky (1988) used total Swedish exports and changes in them,
rather than parent exports as the dependent variables, and found mainly positive relationships
with production abroad and its growth, although there was one major industry in which a
negative relationship was evident (pp. 268-269).
As data on Japanese multinationals have become available for research in recent years, similar calculations have been carried out, with both parent exports (Lipsey, Ramstetter, and Blomström (1999) and Japanese industry exports (Lipsey, Ramstetter, and Blomström (2000a) as dependent variables. In the minority of industries where any relationship between exports and overseas production can be discerned, the relation was positive, as in the United States and Sweden. The relationships for the three countries are compared and summarized in Lipsey, Ramstetter, and Blomström (2000b).

With the rise in unemployment levels in Europe and the increase in outward FDI by European firms, the possible connection between the two has become a popular subject for study in Europe. In a study of bilateral trade and direct investment relationships for France, Fontagné and Pajot (2002) found complementarity between investment flows and net exports both for countries as a whole and for individual industries, and concluded that much of the complementarity between countries came from spillovers among industries. Studies by Chédor and Mucchielli (1998) and by Chédor, Mucchielli, and Soubaya (2002), the latter based on panel data for individual French firms, and the former concerned with effects of developed countries’ direct investment in developing countries, both produced conclusions that investment and exports were complementary.

There have been many studies for other countries, mostly examining the relation of firms’ or industries’ foreign production to firm or industry exports. While there are some examples of negative associations, they are not frequent, and positive associations are more common. What is noticeable in a review of past studies, but is not commented on so often, is the frequency of results indicating no association in either direction. The elements of gravity equations are consistently significant in the expected direction, while the influence of FDI production is spotty,
varies among host countries, industries, and types of parent company exports. Bergsten, Horst, and Moran (1978) refer to the relationship as “haphazard” (p. 97) and to “…the presence of complementary and substitutional relations” (p. 98). Lipsey and Weiss (1984) found mostly complementarity, but in half the industries there were no significant relationships at all.

Blomström, Lipsey, and Kulchycky (1988) reported that “The predominant relationship between production in a country by affiliates of Swedish and U.S. firms and exports to that country from Sweden and the United States is something between neutrality and complementarity” (p. 275). Swedenborg, in her latest paper incorporating the data from her long series of studies of Swedish FDI, concludes that “…the net effect of foreign production is probably close to zero” (Swedenborg, 2001, p. 117).

A recent survey of Australian firms’ investment overseas concluded that “…outward direct investment by Australian firms is mainly tapping into new growth and market opportunities for firms, rather than substituting for, or displacing, operations in Australia” (Australia, Productivity Commission, 2002, p. 24). The questions about effects on employment and production in Australia both produced more than 70 per cent “no change” answers, but of those who reported changes increases were more common than decreases. The question on effects on exports from Australia also yielded a majority of “no change,” but of those who reported an effect, the overwhelming majority reported an increase (ibid, p. 25).

One way of interpreting these findings is that there are no universal relationships between production abroad by a firm or a country’s firms and exports by the investing firms, their industries, and the country as a whole. There are circumstances in which foreign production tends to add to exports and circumstances in which it tends to reduce exports. The effect may depend on whether the foreign operations’ relation to home operations is “horizontal” or
“vertical,” a distinction stressed by Markusen and Maskus (2001). It may also depend on whether the foreign operations are in goods industries or in service industries, are in developed or developing countries, or are in industries with plant level or firm level economies of scale.

A problem with almost all the studies of this topic is that the terms, “substitution” and “complementarity” are not clearly defined. That is partly because no policy measures are specified as determining changes the in investment or production. It is rare to find a clear counterfactual to which the existing situation is being compared. The Reddaway report (1967 and 1968) did specify a counterfactual case: production by a foreign-owned firm in the host country was the alternative to production by a UK-owned firm. However, some commentators felt that the assumption determined the conclusions of the study.

The problem is illustrated by the example of a host-country tariff on imports that leads to both a reduction or cessation of imports and the establishment of host-country production owned by the former exporters. Higher local production is accompanied by reduced exports, an apparent case of substitution. The implied counterfactual is the original level of exports. In fact, the alternative to the establishment or expansion of host-country production may have been no exports and no sales by the parent firm or its country. That counterfactual would lead to the conclusion that the production and trade were either not related or were complementary, instead of the apparent substitution that appears in the data.

A possible interpretation of these studies is that foreign production by a firm or industry has very little influence on exports from the parent firm or its home country. Mainly, trade is determined by other factors, such as countries’ changing comparative advantages in production. Direct investment is mainly about the ownership of production, not its location. What moves from country to country when a direct investment takes place is not primarily physical capital or
production capacity, but rather intellectual capital, or techniques of production, unobserved and unmeasured. There may be movements of physical or financial capital accompanying the intellectual capital, but there need not be, and they are not the essence of the investment.

b. FDI and Home Country Factor Demand

Even if direct investment does not affect the location of production in general, and has no effect on a home country’s exports, it could influence home country factor demand and factor prices through changes in the allocation of types of production within the firm. For example, multinationals based in rich countries might allocate their more labor-intensive production to their affiliates in poor countries, while concentrating their more capital-intensive or skill-intensive operations at home. Large differences in capital intensity between U.S. (home) operations and affiliates in developing countries were noted in Kravis and Lipsey (1982), but the response of capital intensity to labor costs was tested only among affiliates. If multinationals tended to allocate their production in this way, their labor input per unit of home production should be lower than that of non-multinational firms. Among multinational firms in an industry, larger affiliate output relative to parent output should be associated with lower labor intensity and higher skill intensity in home production. That relationship for labor intensity, measured by numbers of workers per unit of output, was found fairly consistently among industries in Kravis and Lipsey (1988), and less consistently for skill intensity, as measured by hourly wages. In a later study covering the United States and Sweden, Blomström, Fors, and Lipsey (1997) found that larger production in developing countries by a U.S. firm was associated with lower labor intensity at home. However, Swedish firms tended to use more labor per unit of output at home if they produced more abroad, possibly because production abroad required supervisory and
other auxiliary employment at home. One explanation offered for the difference was that the Swedish investments in developing countries were concentrated in import substitution activities, and the affiliates exported little of their output, much less than U.S. affiliates. The Swedish affiliates could not, therefore, be woven into a worldwide division of labor that took account of factor price differences.

A later paper added Japanese firms to these comparisons (Lipsey, Ramstetter, and Blomström, 2000b). The conclusion was that Japanese firms were more like Swedish firms than U.S. firms. Higher levels of foreign output, given the level of home output, led to higher employment at home per unit of home output, presumably for supervision. It was suggested in that paper also that Japanese firms, relatively recent foreign direct investors, could not easily shed redundant home-country workers even if they had wished to do so.

c. Home Country Exports and Home Country Multinationals’ Exports

The idea that firms have their own firm-specific comparative advantages, separate from those of their home countries, has been illustrated by several episodes. One is the contrast between the export shares of the United States and of US-based multinational firms. During the period from 1966 to 1987, the US share of world exports of manufactured goods fell from 17 per cent to about 11 per cent, a decline of a third. Over that same period, US-based multinational firms’ share of these exports, from the parent companies and their overseas affiliates, was quite stable, ranging from 15&1/2 per cent to 18 percent, but ending up in 1987 about where it began in 1966. The way this stability was achieved was that, as the world share of exports by the parent firms fell from 11 to 7&1/2 per cent, the share of the overseas affiliates of these companies, exporting from their host countries, grew from under 5 to over 8 per cent. The US
multinationals retained their shares of world exports, while the United States as a country was losing a large part of its share, because the multinationals’ share depended on their firm-specific advantages, and the multinationals could exploit their firm-specific advantages by producing in other countries (Lipsey, 1995, pp. 12-13).

The divergence between home countries and home country firms was not confined to the United States. For example, as Japanese export shares fell after the currency revaluations in 1985, Japanese affiliate export shares increased enough to approximately offset the decline in the country’s share. Swedish shares in world manufactured exports fell by almost a third between 1965 and 1990, but Swedish multinationals’ shares remained stable, or even increased a little (ibid., pp. 14-15).

For all these countries’ multinationals, foreign production was apparently not only a way of exploiting their firm-specific assets in foreign markets, but also a way of protecting these market shares against unfavorable home country developments. These might be exchange rate appreciations, increases in home country wage levels, increases in taxes, or other changes that reduced the geographical advantages of their home countries as locations for production.

IV. Host Country Effects of Inward FDI

a. Host Country Wages

There are several ways in which the entrance or existence of foreign firms might affect wages in the host countries where they operate. One is if these firms offer higher wages than are paid by domestic firms. That possibility raises the question, dealt with in section 1, of whether they do pay higher wages. Even if they did pay higher wages, there might be no overall impact
on wage levels if the higher wages simply reflected the selection by foreign firms among workers, plants, or locations. They might select superior workers who would command high wages from any employer, or acquire higher wage plants or firms, or concentrate their activities in high-wage industries or regions of a country. Thus, the second question, discussed in section 2, is whether the payment of higher wages by foreign-owned firms, when it occurs, results in higher wages in domestically-owned firms. That phenomenon is referred to as “wage spillovers.” The third question, discussed in section 3, which I think is the most important from a policy point of view, is whether the activities of foreign-owned firms cause wages in general to be higher, on average, where they operate. That could be the result of the combination of higher wages in the foreign-owned plants and wage spillovers to domestically-owned plants, but it could result from higher wages paid by foreign-owned firms even if there were no wage spillovers, or negative spillovers, to domestically-owned plants. It could also occur without any wage differential between foreign-owned and domestically-owned operations if labor markets were sufficiently competitive and the rise in demand for labor from foreign-owned operations forced all firms to raise their wage levels equally.

The measurement of wage levels is in some ways simpler than the measurement of productivity levels, taken up in Part B. It has its own problems, however. Most of the data are calculated as compensation/number of workers. Very few take account of hours of work, probably most important outside manufacturing, but a possible source of mismeasurement in all industries. Probably more important is that there are few sources of data that contain information on the characteristics of workers, so that it is impossible in most cases to distinguish between differences in wage rates for identical workers and differences in labor quality.
1. Wage comparisons

It is rare to find a study of FDI and wages in any host country that does not find that foreign-owned firms pay higher wages, on average, than at least privately-owned local firms. That is the case not only in developing countries, where most of the research has taken place, but also in developed, high-wage countries. To some extent, the differential can be explained by the industry composition of FDI, weighted toward relatively high-wage industry sectors. However, the differential exists within industries, in most industries, and in most countries.

There are two broad types of questions that can be asked about this phenomenon. One is about how labor markets operate in these host countries, and whether foreign firms pay higher prices for labor, in the sense of paying higher wages for workers of the same quality. The other is about how inward foreign direct investment affects labor markets, whether or not the effects can be accounted for by firm size, industry, capital intensity, R&D intensity, or other characteristics, aside from foreignness itself, that could belong to domestic firms as well as to foreign firms.

Why might a foreign-owned firm pay a higher price than a domestic firm for labor of a given quality? There are several plausible reasons. One is that it may be forced to do so by host-country regulations or home-country pressures. The Findlay model assumes that they pay a higher wage for labor of the same quality “…for purposes of good public relations” (1978, p. 9). Another reason for paying higher wages might be that workers prefer locally-owned firms, and must be compensated to overcome this preference. A third is that foreign-owned firms pay a premium to reduce worker turnover, because they have brought some proprietary technology and wish to reduce the speed with which it leaks out to domestic rivals as employees change jobs. A
fourth is that foreign firms, because of their limited understanding of local labor markets, pay higher wages to attract better workers, while more knowledgable local firms can identify and attract better workers without paying them higher wages.

Studies attempting to measure the pure effect of foreignness are akin to successive distillations to remove impurities. The impurities in this case are explanations for differentials that are not necessarily intrinsic to foreignness, although they may be associated with it in practice.

What may be more relevant to judging the optimum policies toward inward direct investment are studies with not quite as many controls. A state or a region or a country that wishes to estimate the effect of allowing inward FDI where it had been prohibited, or reducing obstacles to it, may not care why the foreign firm will pay higher wages. It is not relevant whether it is because the firm is foreign, or because it is large, because it brings more capital-intensive or skill-intensive production methods, or better access to world markets. A domestic firm with the same attributes might have the same impact, but there may not be any such domestic firm, or if there is one, it may not be willing to make this particular investment.

If foreign firms are found to pay higher wages than local firms, for whatever reason, there are still several questions to be asked about the impact. If foreign firms hired high-wage workers away from local firms, or acquired local firms with skilled labor forces, we might find that foreign ownership was associated with higher wages in the foreign-owned firms and lower wages in domestic firms, but no difference in average industry wage levels. If foreign firms paid more, but did not differentially poach the best workers from local firms, one should find a larger presence of foreign ownership associated with higher wages in the industry, but not in locally-
owned firms in the industry. Or finally, we might find examples of “spillover”, where higher foreign presence was associated with higher wages in domestically-owned establishments.

Data on wage differences come in several different forms. Some are simple comparisons of average wages, or average wages by industry, where wage differences reflect any effects of firm or plant characteristics, such as size or capital intensity, and of worker characteristics, such as age and education. Others adjust for differences in plant characteristics, asking whether foreign-owned plants pay wages different from those in otherwise identical domestically-owned plants. A third type, less common, adjusts for differences in worker characteristics, asking whether foreign-owned plants pay different wages from those in domestically-owned plants for identical workers. And a fourth type, still more rare, adjusts for both plant and worker characteristics, asking whether foreign-owned plants pay different wages from those in identical domestically-owned plants for identical workers.

Observations of higher wages in foreign-owned firms in developing countries go back a long time, although the earliest ones were not the result of careful statistical studies. A study of American firms in Colombia, for example, concluded that “…it appears safe to make the general statement that Colombian labor, whenever it is paid a stipulated wage, is better remunerated and granted more sanitary living quarters by foreigners than by natives, but the foreigners probably exact more systematic and strenuous effort” (Rippy, 1931, p. 190). Another partial explanation for the higher wages was that “…the American companies are eager to attract the most efficient labor…” (ibid, p. 191).

A study by Blomström (1983b) of Mexican manufacturing industries in 1970 found that foreign-owned firms paid wages about 25, per cent above those in domestically-owned firms in manufacturing as a whole. Foreign firm wage levels were also higher in each of four major
groups of manufacturing industries, by 25 to 30 per cent, except in capital goods industries, where the difference was much smaller (pp. 18-19).

Many of the recent studies of wages in foreign plants in developing countries have been based on manufacturing sector data on individual establishments collected in national surveys and assembled by the World Bank. A number of the studies have been carried out by Ann Harrison, in collaboration with several others. Wage data for three of these studies are summarized in Harrison (1996). There were statistically significant differences between wages in foreign-owned and domestically-owned plants in 3 out of 12 industries in Côte d’Ivoire, 12 out of 18 in Morocco, and 8 out of 9 in Venezuela. Ratios of foreign/domestic plant wages, where the differences were significant, ranged from 1.1 to 1.9 in Côte d’Ivoire, 1.3 to 2.6 in Morocco, and 1.2 to 2.0 in Venezuela. These are simple differences without adjustment for plant or worker characteristics. One problem with cross-sectional analyses of wage differences is the unknown role of unmeasured aspects of plant heterogeneity. For Venezuela, that problem could be dealt with by examining wages in individual plants over time. While the relationship between wages and foreign ownership of a plant was weaker, and the differential smaller than in aggregated data, foreign ownership of a plant, controlling for plant size, industry, and capital intensity, resulted in higher wages by 16-18 per cent (Aitken, Harrison, and Lipsey, 1996, p. 368).

A paper on Morocco by Haddad and Harrison (1993), not primarily focused on wages, found that wages were 70 per cent higher, on average, in foreign firms (p. 58). The difference partly reflected the greater size of the foreign-owned firms; in weighted means, calculated to eliminate the size effect, the difference was reduced to 30 per cent. The unweighted average mean real wages were significantly higher in foreign-owned firms in 11 out of 18 individual
industries and the weighted averages were higher in 16 out of 18. All the industries in which the wage differences were statistically significant showed higher wages in the foreign-owned plants. Foreign plant wages were about twice as high in the unweighted averages and 50 per cent higher in the weighted averages. Something of an oddity is that these higher wages in foreign-owned plants were accompanied by lower output per worker, at least in the weighted averages, and lower total factor productivity.

Several studies of Indonesia, such as Hill (1990) and Manning (1998) have found that foreign firms pay higher wages than domestic firms. A recent paper using establishment data for Indonesia, but confined to a single cross-section (Lipsey and Sjöholm, 2001), found that foreign-owned firms paid about 50 per cent higher wages than private domestically-owned firms in manufacturing as a whole, for both blue collar and white collar workers. When account was taken of the education levels of the workers, and of the industry and location of plants, foreign ownership was associated with wages about 25 per cent higher for blue-collar workers and 50 per cent higher for white-collar workers. Much of the differential was associated with the larger size of foreign-owned plants and greater inputs of energy and other intermediate product. The authors concluded that there was strong evidence that foreign firms “...paid a higher price for labor than domestically-owned plants.” (p.13). They paid a higher price, by a large margin, for workers of a given educational level (something most studies do not have information on, because business censuses rarely include labor force characteristics). Even with the effects of all these plant characteristics removed, and education as well, blue collar workers in foreign-owned plants earned about 12 per cent more than in domestic plants and white collar workers about 20 per cent more (ibid).
Similar questions can be asked about wage effects of inward FDI in developed countries. The increasing availability of individual firm and establishment microdata sets has given a push to such studies. In the United States, the linking of Economic Census establishment data with BEA surveys of inward foreign direct investment was the catalyst. Using the BEA-Census data for 1987, the first such match, Lipsey (1994) found that workers in foreign-owned establishments earned 10–12 per cent more than those in domestically- owned establishments in the same 2-digit SIC industries and states, 6-7 percent in manufacturing and 12-15 per cent in other industries. Howenstine and Zeile (1994), using access to more detailed information on manufacturing by industry and location not available outside the Department of Commerce, found similar differentials, all of which they could explain by differences in establishment size. Using individual manufacturing plant data, Doms and Jensen (1998) found that even controlling for 4-digit industry, state, plant size, and plant age, foreign- owned plants paid higher wages. They attributed the higher wage in foreign plants to the fact that they were parts of multinational firms, a theory they felt was confirmed by the fact that the highest wages of all were paid by domestic plants that were parts of U.S. multinational firms. One question about this comparison is whether foreign subsidiaries in the United States were comparable to the establishments of U.S. multinationals, since the latter include firm headquarters operations, a high-paid category probably not part of the U.S. operations of foreign multinationals.

A recent paper uses both the 1987 and 1992 Census-BEA matches for establishments, combined into state by detailed industry cells for foreign- owned and domestically- owned establishments (Feliciano and Lipsey, 2001). It is unusual in that it covers the whole economy, rather than only manufacturing. Foreign- owned establishments in the United States paid higher wages than domestically- owned ones in all industries taken together, by 22 per cent in
1987 and 18 per cent in 1992. In manufacturing and in low-skill service industries outside retail trade, foreign ownership in a state by industry by ownership cell was associated with significantly higher pay in both years. The margin was much higher in the service industries, 18 to 20 per cent, than in manufacturing, 2 to 3 per cent, once average establishment size and education levels in the state and industry were accounted for and industry dummies were included. The foreign firms paid lower wages in retail trade.

While the United States has been the subject of the largest number of studies, there have been some for other developed countries as well. An early study of American direct investment in Australia (Brash, 1966) concluded, from a survey, that “…it… appears beyond a doubt that even within each industry American-affiliated firms on average pay higher total incomes to their employees than do firms without American connections” (p. 129). Globerman, Ries, and Vertinsky (1994) reported higher wages in foreign-owned plants in Canada.

In recent years, establishment microdata have become available for the United Kingdom, and these have been used for wage and other comparisons. Griffith and Simpson (2001) report that foreign-owned establishments in the United Kingdom paid higher wages than domestically-owned establishments for both operatives and administrative and technical employees, in both 1980 and 1995. The margin was larger for the lower-skill employees, and widened considerably over the period. An earlier published paper (Griffith, 1999) compared wages in foreign-owned plants of companies based in France, Germany, Japan, and the United States with those in domestically-owned plants. It found no significant differences for 1980, except in U.S.-owned plants, but higher wages in foreign-owned plants in 1992, by margins ranging from 8 to 25 per cent (p. 428). In the Motor Vehicle and Engines Industry, examined in more detail in the article,
there were only small margins for operatives, 2 to 4 per cent, but foreign-owned plants paid around 25 per cent more to administrative, technical, and clerical workers (p. 431).

A set of “survivors”, establishments present in the UK Annual Census of Production, or ARD, throughout the period 1973-1993, was assembled by Oulton (2001). He reports that foreign-owned establishments paid average wages for operatives that were above the average for UK-owned establishments by 17 per cent for non-US establishments and 26 per cent for US-owned establishments. The margins for Administrative, Technical, and Clerical (ATC) employees were 12 and 24 per cent. The plants differed in other respects as well: foreign-owned plants, and especially US-owned plants, were characterized by higher capital per worker, much higher intermediate input per worker, and higher proportions of ATC employees (p. 129). Although there is no evidence on worker quality, Oulton attributes the wage differential to higher human capital per worker in the foreign plants, because “…companies do not pay higher wages out of the goodness of their hearts…” (p. 130). A set of regressions including industry dummy variables indicates that industry composition accounts for little of the differential. Within industries, US-owned establishments paid 14 to 15 per cent more than domestic establishments and other foreign establishments paid 10 per cent more to operatives and 8 per cent more to ATC workers (p. 132).

Using a large sample of UK firms from 1991 to 1996 Girma et al. (2001) reported an overall wage differential of 14 per cent in favor of workers in foreign-owned firms, and a differential of almost 10 per cent when industry and scale of operations are taken into account. In addition, wage growth was higher by 0.4 per cent per year in the foreign-owned firms (Tables 1 and 2). They summarized their reading of earlier literature as showing “…considerable evidence to support a wage differential in favour of foreign owned firms” (p. 121).
Since there is always a problem of the effect of unknown firm characteristics on these comparisons, a tempting solution is to observe firms that are acquired by foreign owners. That solution is rare because of the lack of accessible data, but Conyon, Girma, Thompson, and Wright (1999) were able to construct panels of firms in the United Kingdom taken over by domestic and foreign acquirers and matching data for over 600 firms that did not change ownership. At the time of acquisition, the firms acquired by foreigners paid wages about the same as those of firms acquired by domestic owners. However, in the first, second, and third years after acquisition, firms acquired by foreigners raised their wages faster than did firms acquired by domestic owners (Table 5). “…controlling for fixed firm and industry effects and aggregate time shocks only…” the authors find that wages rose by 3.4 per cent in firms acquired by foreigners and fell by 2.1 per cent in firms acquired by domestic owners. Controlling also for firm size and industry wages hardly changes the results. Adding productivity change as a control variable eliminates the differential in favor of foreign firms (p. 9 and Table 6), but if one is interested in measuring wage differentials, rather than explaining them, productivity change is not an appropriate control.

The evidence seems to me overwhelming that foreign-owned firms in all kinds of economies pay higher wages than domestically-owned firms. It is harder to say whether they also pay a higher price for labor; that is a higher wage for workers of a given quality, although one of the few studies that incorporates quality measures finds that they do. Much of the differential, all of it in some studies, can be associated with the larger size of the foreign-owned operations. However, higher capital intensity and higher inputs of intermediate products, leading
to higher productivity, are also important. If regions or countries encouraging inward investment are interested in encouraging high-wage plants, foreign investors seem to meet that desire.
2. Wage spillovers

Whether or not foreign-owned firms in a country pay higher wages than domestic firms, they might still affect the level of wages in domestically-owned plants. Such effects are referred to as wage spillovers to domestically-owned plants. They would not take place in the world envisioned in the Findlay (1978) model, following Lewis (1954). There, “The economy is considered able to draw on a reservoir of labor in a ‘peasant hinterland’ as in the famous model of Arthur Lewis (1954) and also on a substantial ‘industrial reserve army’ of urban unemployed” (p.8). However, domestic firm wage effects from inward investment could take place in any world where the supply curve for labor was not horizontal.

Calculations of wage spillovers in two developing countries, Mexico and Venezuela, are included in Aitken, Harrison, and Lipsey (1996). Impacts of shares of employment in foreign-owned plants in an industry and region on wages in domestically-owned establishments were measured. In Mexico, wages in domestically-owned plants appeared to be lower where foreign ownership was high, but the coefficients were not statistically significant. However, in Venezuela, there seemed to be a significant negative influence of foreign presence on wages in domestically-owned plants. To some extent, this result could reflect a reallocation of the labor force to foreign plants, through the “poaching” of better workers or the acquisition of higher-paying plants by foreigners. However, if this had been the whole story, there would not have been a positive effect of higher foreign ownership on total industry wages.

Lipsey and Sjöholm (2001) made a variety of calculations of spillovers from foreign presence to wages in domestically-owned establishments in Indonesia, calculating foreign presence at various levels of industry and geographical detail. In every variant, there were
significant spillovers to domestically-owned establishments. The coefficients on foreign shares were larger than the wage differentials themselves, suggesting some impact through increases in the demand for labor. The coefficients were generally higher for white-collar than for blue-collar workers (pp. 26-27).

In their study of South Carolina counties described below, Figlio and Blonigen (2000) did not have the data needed for testing for spillovers from inward investment. However, they concluded that the effect of the investment on aggregate wage levels was so large that it could not have been confined to the foreign plants themselves.

In Feliciano and Lipsey (2001), the existence of two years of data permitted the authors to examine the effects of changes in the extent of foreign ownership in a state by industry cell on wages in domestically-owned establishments. In manufacturing, and in low-skill service industries, there were no significant effects. In retail trade and in high-skill service industries, there were large and statistically significant effects on domestic firm wages, although those in retail trade were no longer significant when state dummies were added. The effect of the state dummies might mean that the apparent spillover effect in retail trade was an illusion, but it might also mean that the effects of changes in foreign ownership have been absorbed by the dummy variables.

Girma et al. (2001) test for wage spillovers to domestic firms in their UK company data set for 1991-96 and find no overall spillover effect on wage levels and a small negative effect on wage growth (p. 128). The only firm characteristic that appears to influence the extent of wage spillovers is the gap in productivity between the firm and the firm in the industry at the 90th percentile in productivity. The larger the productivity gap, the smaller the wage spillover. The
only industry characteristic that affects wage spillovers is the degree of import penetration. The higher it is, the larger the wage spillover.

Some of the literature on wage spillovers from foreign-owned to domestically-owned firms has recently been reviewed by Görg and Greenaway (2001). They summarize the results of panel data studies as showing mostly negative spillovers and cross-section studies as showing positive spillovers. There is no overlap in the countries studied, but the authors are skeptical about all findings from cross-section studies. My own judgment is that there are enough indications of positive wage spillovers to preclude any general conclusion that they are typically negative. What is needed is more consideration of the different circumstances and policies of countries and industries that promote or obstruct spillovers.

3. Effects on Average Wages

Whether or not wages are higher in foreign-owned plants than in domestically-owned plants, and whether or not, where there are higher wages, they spill over to domestically-owned plants, a higher degree of foreign ownership could affect the average level of wages in a country or industry. It might do so either by raising the demand for labor or through the higher wages paid by the foreign plants themselves.

Aitken, Harrison, and Lipsey report (1996, p. 352) that even though there were no spillovers or negative spillovers, to domestically-owned plants in Mexico and Venezuela, there was a significant effect of foreign ownership shares in raising average industry wages. The effect was larger for skilled workers than for unskilled, and larger in Venezuela than in Mexico.

Feenstra and Hanson (1997), defining skilled workers simply as non-production workers, found that a higher level of maquiladora activity in a Mexican industry within a state led to a
higher share of total wages going to skilled workers. They interpreted this increase in the non-production wage share as implying a rise in the demand for skilled labor relative to unskilled labor resulting from the growth in maquiladora production by foreign, mainly U.S. firms. The increase in the wage share of non-production workers could be a combination of relative wage increases for them or relative increases in their numbers. However, there is some evidence of particularly large relative wage growth for non-production workers in the border region, where most of the maquiladoras are located, in the periods after investment rules were liberalized.

The effect of changes in foreign ownership from 1987 to 1992 on average wages in state by industry cells in the United States were found to be insignificant in manufacturing by Feliciano and Lipsey (2001). However, outside of the manufacturing sector, in retail trade, in low-skill, and in high-skill services, larger increases in foreign ownership were associated with larger increases in average wages for workers as a group. The coefficients for change in foreign ownership in the two service sectors survived the addition of state dummy variables to the equations, but that for retail trade did not (Tables 4 and 6).

In a more local study, Figlio and Blonigen (2000) reported that, in South Carolina, the addition of foreign- owned manufacturing plants was associated with increases in real wages for all workers in the same industry and county. The gain was much larger than that from the addition of new domestically- owned plants. Some of this wage gain was from the higher wages paid in the foreign plants themselves, but the authors find it improbable that the differential could be large enough to account for all of the county-wide gain. Therefore, they conclude that some of the gains in wages must have taken place in domestically- owned plants.

I would summarize the evidence on overall wage levels as pointing to positive effects of FDI activity. When there are no spillovers, the effect is wholly from the higher wages offered by
the foreign firms. When there are positive spillovers, they add to the impact of the foreign firms. Even when there are negative spillovers, they do not seem to be large enough to offset the positive effect of the foreign firms’ high wages or the effects of increased demand for labor.

b. Host Country Productivity

The same issues that arise with respect to measuring effects on wages in host countries are also involved in judging effects on productivity. The benefits to the host countries, if they exist, stem mainly from the superior efficiency of the foreign-owned operations. The first question, then, is whether foreign-owned firms or establishments are more efficient. If they are, the second question is whether their superior productivity spills over to to locally-owned firms in their industries, or their industries within their regions, or related industries. Locally-owned firms might increase their efficiency by copying the operations of the foreign-owned firms, or be forced by competition from foreign-owned firms to raise their efficiency to survive. On the negative side, it is conceivable that foreign-owned operations are more efficient only because foreigners have taken over the more efficient local firms, leaving the less efficient in local ownership. Or by taking markets from local firms, foreign-owned firms might force the locally-owned firms into less efficient scales of production. The third, and broadest question is whether as a result of the operations of foreign-owned firms, there are improvements in aggregate industry efficiency. Those could arise from spillovers, but they could come simply from the higher efficiency of foreign firms, even if the higher efficiency is confined to the foreign firms. There could also be increases in aggregate productivity without any visible productivity differentials between foreign-owned and domestically-owned firms, if the industry were sufficiently competitive that the entry of foreign-owned firms forced their domestically-owned
competitors to match them quickly to survive. These possibilities point to the importance of
examining not only firms that remain in an industry over the period of observation, but also firms
that enter or exit, because they may account for many of the changes in productivity for an
industry or country.

For any of these questions, efficiency must be defined. The choices range from value
added per unit of labor input, the simplest, to value added per unit of labor and capital input and
value of output per unit of labor, capital, and intermediate product input. Some studies fit
production functions that also incorporate scale economies. Most authors seem to prefer the
efficiency measures including capital input. The result is to ignore any host country benefit from
the accumulation of physical capital, or from any advance in technology that consists of the
adoption of more capital intensive methods of production or larger scale production.

Most theoretical discussions of the possible role of inward investment refer to the
transmission of superior technology, and the productivity measurement is an attempt to measure
technology gaps and changes in technology. That is a narrow view of multinationals’ technology
advantages, which may consist more of their knowledge of world markets or methods of
coordinating production over many countries. Almost all the measurement is confined to
manufacturing, a large part of multinational activity, but far from the whole of it.

Some of the problems of wage measurement and comparisons were mentioned above, but
they are small compared to those of productivity measurement. All the same labor input issues
are involved, but in the studies that use total factor productivity, as most prefer to do, there are
many additional problems. Many involve the measurement of capital input. Most sources of
establishment data either do not report capital stocks, or report nominal values. These are likely
to bear a small resemblance to market values, especially in countries that have undergone major
inflations. Where even nominal capital values are missing, they are often calculated from past expenditures using the perpetual inventory method. Such calculations should involve capital goods price measures, scarce and subject to serious doubts even in the best of statistical systems. The complications do not mean that the calculations should not be carried out, but they suggest caution in drawing conclusions and the advisability of comparing total factor productivity measures with labor productivity and wages to see whether the relations among them are logical.

1. Productivity Comparisons

Comparisons of productivity between foreign-owned and domestically-owned firms have been far more common than comparisons of wage levels. Much of the productivity literature has been directed at the question of whether there were spillovers to domestic firms, but that question itself implies the expectation that foreign firms are more efficient, and thus that there is some productivity advantage that might spill over to domestic firms. The comparisons themselves range from simple overall productivity comparisons to attempts to explain differences between foreign and domestic firms. The explanatory variables, aside from nationality of ownership, include capital intensity, skill intensity, scale of operations. These comparisons ask, in effect, whether foreign firms that differ from domestic firms differ because they operate on different production functions or because they operate at different points on the same functions.

Most of the productivity comparisons have been for the manufacturing sectors in developing countries. In one of the early studies, Blomström (1983b), using Mexican manufacturing census data for 1970, found that value added per worker had been 40 per cent higher in foreign-owned plants than in domestically-owned ones, and higher also in each of four major sectors of manufacturing (p. 26). Most of the difference, but not all of it, could be
accounted for by differences in “…capital intensity, labour quality, scale of production, and concentration…” (p. 33). Sjöholm (1999) examined Indonesian establishment data for 1980 and 1991, calculating differences in “technology” between foreign-owned and domestically-owned establishments. Technology differences are measured as the coefficients on foreign ownership dummies in equations relating value added per worker in 1980 and 1991 to scale, 1980 investment expenditure per worker, as a proxy for capital intensity, and dummy variable for 1991 observations and foreign ownership. The estimated technology differences were found to be in favor of the foreign-owned establishments in 26 out of 28 industries. Kokko, Zejan, and Tansini (2001) reported that in Uruguay, in 1988, productivity, as measured by value added per worker, was about twice as high on average in foreign firms as in domestic firms. Haddad and Harrison (1993) found, for Morocco, in 1985-89, that output per worker was higher, and deviations from best-practice frontiers were smaller, in foreign-owned firms than in domestically-owned firms in 12 out of 18 industries, and in all eight of the industries in which the differences were statistically significant. Okamoto and Sjöholm (1999), examining Indonesian manufacturing microdata from 1990 to 1995 report higher foreign shares of gross output than of employment in almost every industry. One implication is that labor productivity, at least, was higher in the foreign-owned plants. The study also compared the rates of labor and total factor productivity growth from 1990 to 1995 between foreign and domestically-owned plants. Productivity growth, especially labor productivity, was faster in domestically-owned plants. Some of the findings seem hard to explain. Plants with higher initial productivity tended to lose shares in output, but plants with rapid productivity growth gained shares, and those gains were the major contributor to overall productivity growth, particularly for domestically-owned plants. The productivity of both domestic and foreign-owned plants, particularly the latter,
gained from the entry of new plants with high productivity, but plants with high productivity seemed to be exiting also. Plants in existence in both beginning and end years had reductions in productivity, except for total factor productivity in foreign-owned plants. It is hard not to suspect that the attempt to subdivide productivity changes by type strains the data beyond their degree of accuracy.

Kathuria (2000) studied Indian firms in 26 manufacturing industries over the 14 years from 1975-76 to 1988-89, in a “pre-liberalization period when Indian industry was highly regulated in terms of industrial and technology policy” (p. 346). The main productivity measurement used was distance from its industry technological frontier, for a firm rather than an establishment. An unusual feature of the data was that firms with 40 per cent of their equity held outside India were labeled as foreign, whether or not there was concentrated control, as required by the IMF definition of direct investment.

In 13 of the 26 industries, a foreign firm was the technological leader, and in 15 industries, foreign firms were, on average, more efficient. In two of the industries, the reported efficiency of the foreign firms was so low as to arouse suspicions about the data, but no comment is made in the source. Another unusual feature of the data is that because employment is not reported, it is estimated from compensation, assuming that local and foreign firms pay the same wages. That assumption, if we can judge from the wage studies, almost certainly overstates employment in foreign firms and understates their productivity.

Chuang and Lin (1999) report that among a random sample of manufacturing firms in Taiwan in 1991, foreign-owned firms had higher labor productivity than domestically-owned firms, but lower total factor productivity. The foreign-owned firms were much larger and much more capital-intensive.
There have been fewer examinations of the productivity of foreign-owned and domestically-owned firms within developed countries, despite their large share of direct investment. Notable studies of the United States include Howenstine and Zeile (1994), and Doms and Jensen (1998), mentioned earlier. Globerman (1979) was an early study of Canada. Howenstine and Zeile, using the combined BEA and Census establishment data for manufacturing, found foreign-owned plants to have higher labor productivity than domestically-owned ones. They attributed the difference largely to “...the tendency for foreign-owned establishments to be concentrated in industries in which productivity is high...” and the within-industry differences to “...plant size, capital intensity, and employee skill level—rather than foreign ownership per se.” Doms and Jensen concluded that foreign-owned plants were superior to U.S.-owned plants of non-multinational firms, even large firms, in both labor productivity and TFP, but that they were behind plants owned by U.S. multinationals. Thus they find multinationality of the firm to be strongly associated with productivity levels, beyond the association with size and other plant characteristics. A similar hierarchy characterized the ranking with respect to the “number of technologies” used in each type of plant (pp. 246-250).

Comparisons within the United Kingdom go back for many years, at least to Dunning and Rowan (1970), and up to recent studies based on individual establishment data such as Griffith and Simpson (2001), Conyon et al. (1999), and Girma et al. (2001).

Girma et al. (2001) found in their data set for 1991-96 that among firms with no change in ownership, foreign-owned firms in the United Kingdom had labor productivity about 10 per cent above that for domestically-owned firms and total factor productivity about 5 per cent higher. Labor and total factor productivity growth rates were higher by about 1 ½ per cent per
year. Conyon et al. (1999) found that acquisitions of UK firms by foreigners led to increases in their profitability.

2. Productivity Spillovers to Domestic Firms

Theories of the effect of direct investment on host countries have generally taken it for granted that foreign-owned firms possessed superior technology and that some of that technological knowledge spills over to the host country economy. Findlay (1978) assumed that “…the rate of change of technical efficiency in the backward is an increasing function of the relative extent to which the activities of foreign firms with their superior technology pervade the local economy” (p. 5). He also combined with that assumption the idea that the larger the gap in technology, the faster the transmission, provided that “…the disparity must not be too wide for the thesis to hold” (p. 1). Wang and Blomström (1992) added, as explanations for the speed of transmission, the characteristics of the host country environment and host country firms. The transmission of technology would be accelerated by a more competitive business environment and greater investment in learning and imitation by competing host country firms (p. 153).

Most studies of productivity spillovers from foreign investment assume that they occur mainly in the industry in which the foreign firm operates. Blomström and Kokko (1998) refer to the literature on backward linkages as examples of spillovers outside those industries, to supplying industries. These arise partly from efforts by multinational firms to improve the quality of the intermediate products they buy locally, sometimes under duress. However, they may arise without explicit help, from the competition among local firms to become the suppliers to the multinationals. The only statistical examination of this issue they report is from an unpublished paper on Venezuela by Aitken and Harrison (1991), which reported negative effects of foreign direct investment in an industry on productivity in upstream industries. The reason
offered was that foreign firms shift the demand for intermediate inputs from domestic to foreign producers, reducing the scale of output, and therefore productivity, in domestic production. The paper did, however, report positive effects of FDI on downstream industries. These calculations do not appear in the later, published, version of the paper.

A more recent study for Venezuela, Aitken and Harrison (1999), found that “…increases in foreign equity participation were correlated with increases in productivity…” for small plants, but that increases in foreign ownership in an industry negatively affected productivity in domestically-owned plants in the same industry. The positive effects within the foreign plants exceeded the negative effects, but only slightly. The positive relationships found by others, they argued, were due to the tendency of foreign firms to invest in high productivity sectors and firms (pp. 616 and 617). The authors report similar findings for Indonesia, except that there the positive effects are larger than in Venezuela and the negative effects smaller (p. 617).

Using data for 215 industries from the Mexican Industrial Census for 1970, Blomström (1983b) found that the labor productivity in domestically-owned plants was positively related to the extent of foreign presence in the industry. That was the case with differences in capital intensity and in the quality of labor employed accounted for. In a study based on the same Mexican census, Kokko (1994) confirmed the existence of productivity spillovers to locally-owned firms and found some evidence that high capital intensity in an industry and a high level of technology might inhibit spillovers. A stronger conclusion was that the combination of large technology gaps between foreign and domestic firms and large foreign market shares, which the author thinks of as “enclave” situations, discourages spillovers.
Blomström and Wolff (1994), on the basis of Mexican Census data, conclude that the larger the foreign presence in a Mexican industry, the more quickly local firms approached U.S. productivity levels between 1965 and 1982.

Kathuria (2000), in his study of spillovers to Indian manufacturing firms, found that a division of the manufacturing sectors into “scientific” and “non-scientific” subgroups showed important differences. He found positive spillovers in the “scientific” sectors, but none in the “non-scientific” ones. One conclusion was that “…spillovers are not found to be automatic consequences of foreign firms’ presence, but they depend to a large extent on the efforts of local firms to invest in learning or R&D activities so as to decodify the spilled knowledge” (p. 364). He thus supports the theoretical model proposed by Wang and Blomström (1992).

A pioneering attempt to measure impacts on domestic firms in developed countries was Caves (1974), on Canada and Australia. He found some evidence that higher shares in an industry for foreign subsidiaries were weakly, and negatively, related to the profitability of Canadian firms, a possible indication that foreign firms raised the level of competition and reduced the excess profits that had been earned by their local rivals. However, he was not certain that the relation was not due entirely to differences in the attainment of economies of scale. In Australian manufacturing, he found that “…higher subsidiary shares do apparently coincide with higher productivity in competing domestic firms.” However no such relationship could be found between changes in foreign shares and changes in the productivity of domestic firms, a fact that reduced his confidence in the significance of the finding for levels (pp. 190-191).

A later study by Globerman (1979), using better data for a sample of manufacturing industries in 1972, concluded that differences across Canadian industries in labor productivity
“…derive, in part, from spillover efficiency benefits associated with foreign direct investment,” (p. 53).

Haskel, Pereira and Slaughter (2002) use British panel data to relate changes in TFP of domestically-owned British establishments to changes in foreign presence in the establishment’s industry, region, or industry in the region. Foreign presence is measured by shares in employment. Significant evidence is found for positive spillovers within industries, but regional variables were not important. Positive spillovers are found to come from U.S. and French presence, but Japanese presence produces negative spillovers. The authors conclude that 5 per cent of the aggregate increase of 11 per cent in British TFP from 1972 to 1992 could be ascribed to spillovers from foreign-owned plants (p. 17).

Girma et al. (2001) find no significant effect of foreign presence, measured by shares of employment or output, on the labor productivity or total factor productivity of UK firms during 1991-96. When they relate the extent of spillovers to firm and industry characteristics, they find strong effects. The higher the skill level of the industry, as measured by the ratio of skilled to unskilled employment, the greater the productivity spillover. The greater the degree of foreign competition in the industry, the larger the spillover. And the larger the individual firm’s distance from the productivity leader in its industry (the firm at the 90th percentile in TFP), the smaller the spillover (p. 129). Thus they point to the importance of firm and industry characteristics in determining the extent of spillovers, as well as, possibly, trade policy, as represented by import penetration levels.

Examining changes in productivity in domestically-owned UK firms between 1989 and 1992, Driffield (2001) finds no spillovers related to the amount of sales by foreign-owned firms or their R&D stock. However, the growth of labor productivity among foreign-owned firms in
the previous period, from 1986 to 1989, did lead to productivity growth among domestically-owned firms in the same industry. He concluded that “…the foreign productivity advantage was responsible for an average increase in domestic productivity of 0.75 per cent a year (p. 113).

Girma and Wakelin, also using UK microdata for manufacturing establishments, found evidence of positive spillovers to domestic firms in the same region as the foreign firms, but some evidence of negative spillovers outside the regions. They also concluded that low technology gaps between domestic and foreign firms and location in more technologically advanced regions promoted spillovers.

Blomström and Kokko (1998) end their review of productivity spillovers to host countries by concluding that “…such effects exist and…they may be substantial both within and between industries, but there is no strong evidence on their exact nature and magnitude.” Furthermore, “…the positive effects of FDI are likely to increase with the level of local capability and competition.” (p. 24).

Görg and Greenaway (2001) summarize the results of the productivity studies with respect to spillovers from foreign-owned to domestically-owned by saying that “…only limited evidence in support of positive spillovers has been reported. Most work fails to find positive spillovers, with some even reporting negative spillovers, at the aggregate level” (p. 23). In contrast, Görg and Stroble (2000) take spillovers for granted in their study of firm survival in Ireland, and find that foreign presence reduces exit by domestically-owned firms, at least in high-tech industries, an effect they attribute to spillovers. Görg and Stroble (1999) find also that foreign presence encourages entry by domestically-owned firms.

Görg and Greenaway are inclined to attribute the variety of findings on spillovers mainly to the difference between cross-section and panel data studies. However, there is evidence that
differences among firms in their capabilities, differences among industries in their
c characteristics, and differences among countries in both capabilities and policies may be
important explanations for this diversity of results.

Productivity spillover studies typically assume that the effect on domestic firms should be
linearly or log-linearly dependent on the foreign share of an industry. It is not obvious that this
should be the case, particularly as the foreign share goes to high levels. Spillover is not
obviously maximized at a foreign share of 100 per cent. One way this problem is recognized is
in Kokko (1996), where industries with foreign shares above 50 per cent are dropped, being
categorized as “enclave industries.” A more general objection, that this formulation of the
foreign investment variable biases the estimate of its influence downward, is made by Castellani
and Zanfei (2002). They point out that it assumes that equal increases in foreign and domestic
participation, with no change in share, would have no effect on domestic firms’ productivity.

A broader problem is that there is little basis for assuming any particular form of the
relationship. Some mechanisms might suggest a linear relation to the foreign participation share,
but others might suggest a strong effect from foreign entry, but little effect from changes in
share.

c. The Introduction of New Industries

One of the main contributions of inward direct investment in some cases has been to
introduce new industries to a country or drastically change the composition of production. Lipsey
(2000) describes the large role of U.S. affiliates in the electronics industry in East Asia,
especially in the early development of the industry. The earliest data available, not necessarily at
the industries’ beginnings, show U.S. affiliates accounting for three quarters of exports in some
cases, with the share declining over time. Labor intensive industries, such as food textiles, and apparel, declined, while the share of chemical and machinery industries in exports rose to more than half (p. 163). Some of the country studies in Dobson and Chia (1997) are summarized as showing that “…Foreign firms…saw a way to integrate these countries into worldwide networks of production. Foreign firms supplied the technology and the links to other parts of the production networks that completed the set of resources necessary for the growth of these industries (ibid, p. 163).

A set of country and industry-specific case studies of “Export Catalysts in Low –Income Countries,” devoted to success stories in countries where underlying conditions were unfavorable, was collected in Rhee and Belot (1990). Foreign direct investment was not the focus of the research, but the development of new industries was. However, they refer in their summary to “…the critical role of transnational corporations (TNCs) in the transfer of technical, marketing, managerial know-how to developing countries—a role more important than the transfer of financial resources associated with DFI by TNCs.” (p. viii). The development of plywood manufacturing and export in Indonesia in the 1980s was started by firms from Korea and Taiwan. They had developed their skills when these countries replaced Japan in plywood manufacturing and transferred “technical, marketing, and managerial know-how through joint ventures…” after the home countries lost their comparative advantage as their wages rose (pp. 22-29). A military uniform exporter from Zambia grew from a joint venture with a German firm that originally was aimed at the domestic market but could draw on export experience from the German parent when selling locally became impractical (pp. 33-34). In Cote d’Ivoire, a joint venture with a French company, experienced in marketing and technically skilled, brought the country into the semi-processed cocoa market (pp. 39-40). The ingredients for expansion of
Jamaican exports of garments to the United States were provided by a joint venture with a Korean company that supplied “…effective management, effective training in advanced technology, efficiency of operations, and marketing skills and channels (p. 42). Not all the catalysts described in the report involved FDI, but quite a few of them did, and the contribution they made seemed to have little to do with supplying capital and much to do with technology and marketing knowledge.

Since export data are available in much more detail than production data in many countries, the development of new industries or sub-industries, or new varieties of products may be evident most clearly in the growth of exports. Blomström (1990) describes the role of multinationals in shifting production in developing countries toward tradable goods and among tradables, away from import substitution and toward export markets. The role of access to the international networks of parent multinationals in promoting exports by U.S. affiliates in Asia is assessed in Lipsey (1998).

Ireland was an unusual example for Western Europe, in that it went from being extremely hostile to inward investment, until the late 1950s, to welcoming, and even favoring it by tax and other policies. One could not have predicted the current comparative advantage of Ireland from its comparative advantage before inward investment was liberalized, which was that of an agricultural country. The entrance of foreign firms, together with Ireland’s joining the European Union, transformed the economy into one where foreign firms, exporting over 70 per cent of their output, accounted for two thirds of manufacturing employment and almost half of manufacturing net output. In relatively high-tech industries, the foreign firms were geared almost entirely to export markets (Ruane and Görg, 1999, pp. 51-53).
V. Conclusions

Among the early fears about the effects of the growth of multinationals on their home countries, the worry that they would cause exports from the home country and aggregate employment to fall has mostly dissipated. There are some indications that multinational 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. The alternative to this shift may have been a shift to non-affiliated firms in those countries. However, even that reallocation does not appear to have occurred in Sweden or Japan, so it cannot be considered a universal consequence of multinational operations.

Within host countries, it has been abundantly shown that foreign-owned firms pay higher wages than domestically-owned firms. They do so for many reasons. Foreign-owned firms tend to be in higher wage sectors of the economy. They tend to hire more educated and better-qualified workers than locally-owned firms in their industries, and they tend to be larger, more capital-intensive, and more intensive in their use of intermediate products. Beyond that, there is some evidence that foreign-owned firms pay a higher price for labor, in the sense of paying more for a worker of given quality, but there are not many studies that include data on worker characteristics.

Evidence on wage spillovers, that is, effects of foreign entry or participation in an industry or region, or industry within a region, on the wages paid by domestically-owned firms, is sparse, and not conclusive as to direction. However, there is more evidence that, whatever the extent and direction of spillovers to domestically-owned plants, the effect of foreign firms’
presence is to raise the average level of wages. The effect may come simply from higher wages in the foreign-owned operations, even without any effect on locally-owned ones. It might come from positive spillovers to locally-owned plants. Or it may come from the effects of the increased demand for labor, even if there is no difference in wage levels between foreign-owned and domestically-owned plants.

Many wage studies, if they are based on individual firm or establishment data, include controls for plant size and, where possible, for capital intensity and other plant characteristics. They attempt in this way to learn whether wage levels reflect these characteristics other than foreignness itself, since wage levels are, for example, almost always positively associated with establishment or firm size. From a policy maker’s point of view, this distillation of the effects of pure foreignness may not be relevant. An expansion of foreign presence may be desirable because foreign firms bring larger scale, more capital-intensive, or more technically advanced methods of production. It does not matter that an identical domestic firm would produce the same results, because there may not be any such firms, or they may not find it profitable to make these same investments.

Even if foreign entry and larger foreign shares of production almost always raise wage levels, there are some host country losers from their participation. Small or inefficient local firms may be forced to contract or leave the industry altogether. That may be viewed as a healthy redeployment of capital, but it is an explanation for some host country opposition to foreign multinationals.

Much more effort has gone into productivity comparisons than into wage comparisons, and most of these are based on total factor productivity when capital data are available or can be estimated in some way. Productivity comparisons between foreign-owned and domestically-
owned firms or establishments almost always find that the foreign-owned firms have higher productivity levels. As with the wage comparisons, some of the differences can be associated with the larger scale of production in foreign-owned plants.

Evidence on spillovers of superior foreign productivity to domestically-owned firms is mixed. Some observers conclude that there is substantial evidence for positive spillovers and others see the evidence as inconclusive. However, the mixed story for spillovers, combined with the strong evidence for superior productivity in foreign-owned firms, suggests that overall productivity is improved by the presence of foreign-owned operations, although that question is rarely, if ever, examined.

In many of these productivity studies there has been a substantial effort to calculate total factor productivity comparisons, rather than labor productivity comparisons, and to remove the influence of firm or establishment size. An effort is made, in effect, to learn whether foreign and domestic firms are on different production functions. It is not always clear why it is so important to measure the effect of foreignness alone, untainted by differences in capital intensity and size. Much of the growth of presently developed countries came from increases in the scale of production and in its capital intensity. Perhaps the contribution of foreign firms comes partly by introducing larger scale or more capital intensive methods of production, or differences in technology may be inextricably tied to differences in scale and capital intensity.

One effect of foreign entry that is widely accepted is the introduction of new industries or products to the host-country economy and the tighter linking of the host country to the world trading system. The contribution of the foreign-owned firms is mainly of knowledge, particularly knowledge of demand in the world market, and knowledge about how the host country can find a place in the worldwide allocation of intermediate steps in the path of
production that can be geographically separated. Through both productivity effects and the
development of new (to the host country) products, inward direct investment is associated with faster economic growth.

This association with more trade and faster economic growth would not necessarily please critics of multinationals. Trade links reduce the freedom of action of a country’s government domestically, if not that of its people. Fast growth involves disruptions and the destruction of the value of old techniques of production and old skills. Those who value stability over economic progress will not be convinced of the worth of the gifts brought by foreign involvement.
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