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The Role of Multinationals in Economic Development

The Benefits of FDI

During her five years at the World Bank, Harrison initiated four studies involving multinational enterprises in four developing countries: Ivory Coast, Mexico, Morocco and Venezuela. These studies measure the role of multinational enterprises in promoting technology transfer; test whether multinationals push up wages for local workers; and analyze the validity of the "pollution haven hypothesis," which states that foreign investors flock to developing countries to take advantage of lax environmental standards. Harrison finds no evidence of pollution havens and shows that multinationals raise wages for local workers. However, she finds that technology transfer has generally been limited to the joint ventures who receive foreign equity participation.

Within policy circles, there is an ongoing debate over the economic and social impact of multinationals in developing countries. Should poor countries encourage multinationals to locate within their borders, or do foreign investors exploit the local population and take advantage of cheap natural resources? My research, much of it initiated at the World Bank over the last five years, examines this question. I concentrate on four issues: the role of multinational enterprises in promoting technology transfer; the extent to which foreign firms act as "export catalysts" for domestic firms; the rise or fall of wage rates for local workers in multinational enterprises; and the validity of the "pollution haven hypothesis," which states that foreign investors flock to developing countries to take advantage of lax environmental standards.

These studies reflect the increasing importance of foreign investment as a source of capital for developing countries. In 1993, direct foreign investment was the largest single source of external finance for developing countries, accounting for about half of all private resource flows. Following the virtual disappearance of commercial bank lending to these countries in the 1980s, many countries liberalized their restrictions on incoming foreign investment. Some countries even tilted the balance towards foreign firms by offering special incentives: in Czechoslovakia, joint ventures pay lower income taxes than domestic enterprises; foreign firms in much of the Caribbean receive income tax holidays, import duty exemptions and subsidies for infrastructure.

The pro-investment policies of the 1990s are very different from the wave of nationalizations which drove out foreign investment in many regions during 1960s and 1970s. The new attitude is in part driven by the need for alternative sources of new capital, and in part driven by increasing skepticism about import-substituting trade and investment strategies. India, within one year, liberated both its trade regime and opened up its internal market to foreign investors, leading to what Indian Finance Secretary Montek Ahluwalia dubbed a "quiet economic revolution."¹

Foreign Investment and Technology Transfer: Morocco and Venezuela

One reason to subsidize incoming foreign investors is the idea that they convey benefits which cannot be completely captured by the firm, such as new technology. Although technology transfer occurs through many different avenues,

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foreign investment could play an unusual role in several respects. New technology may not be commercially available and innovating firms may refuse to sell their technology via licensing agreements. In this case, alliances with innovating firms or close proximity to these firms may be the best means of learning about new technology. Foreign investment may also provide the competition necessary to stimulate technology diffusion, particularly if local firms are protected from import competition. Finally, foreign investors may provide a form of worker training which cannot be replicated in domestic firms or purchased from abroad, such as managerial skills. Technology diffusion may occur through labor turnover as domestic employees move from foreign to domestic firms.

The studies on Morocco and Venezuela tested the magnitude of technology transfer from foreign subsidiaries (or joint ventures) to wholly domestically owned firms.² This is a working definition for the idea of a technology “spillover.” I explored two related questions. First, to what extent do joint ventures or foreign subsidiaries perform better than domestic firms? Second, are there technology spillovers from firms with foreign equity investment to domestically owned firms?

Multinational enterprises (MNEs) are defined as any firm with foreign equity participation in the firm. Firm performance is measured as either labor productivity (output per worker) or a multi-factor productivity measure—which measures the productivity of all the firm’s inputs simultaneously. Technological change is defined as an increase in output after taking into account all increases in the various inputs in production. Obviously, this concept of technological change is not an engineering concept. Technological change is synonymous with increases in observed productivity at the enterprise level.

In both Morocco and Venezuela, MNEs—firms with foreign equity participation—exhibit much higher levels of productivity. In Venezuela, increases in foreign equity participation also led to higher productivity growth. There is strong evidence that an infusion of foreign investment does more than simply provide additional capital to enterprises—it is also accompanied by knowledge transfers which lead to better firm performance.

Yet there is no evidence that the benefits accruing to joint ventures or local subsidiaries of multinationals are diffused to domestic firms. In other words, foreign investors provide direct benefits to those firms receiving the investment, but there are no “spillovers” to other plants. In

fact, an increased multinational presence in Venezuela hurt the productivity of domestic competitors, in part because the multinationals took market share away from domestic plants.

These research results reinforce earlier case study evidence as well as interviews with plant managers in Morocco and Venezuela. The lack of technology transfer to domestic competitors can be explained by the limited hiring of domestic employees in higher level positions, very little labor mobility between domestic firms and foreign subsidiaries, limited subcontracting to local firms, no research and development by subsidiaries, and few incentives by multinationals to diffuse their knowledge to local competitors.

Foreign Investment and Breaking into Export Markets: Mexico

Anecdotal evidence, mostly derived from case studies in developing countries, suggests that the process of breaking into foreign markets can be very difficult. In order to export, firms must obtain information about foreign tastes and establish distribution channels in foreign markets. One obvious way for firms to learn about export markets is to observe other exporters who have already acquired experience selling abroad. Those exporters may be other domestic firms, or multinationals.

Case studies suggest that multinationals bring information about export markets to local producers, enabling them to access markets abroad. In Bangladesh, one Korean garment producer started a booming export business, triggering the entry into export markets of hundreds of new Bangladeshi garment producers. If this phenomenon is widespread, then governments may want to encourage foreign investors in sectors with high export potential but little know-how about foreign markets.

In a research project with Brian Aitken at the IMF and Gordon Hanson at the University of Texas, we test for the possibility that other exporters can reduce the cost of foreign market access for a firm contemplating the jump into export markets.³ In particular, we examine whether locating near multinational exporters helps a firm to gain information about the export process.

Ours is the first study which provides statistical evidence on the role of foreign firms as “catalysts” for other exporters.⁴ The basis for our study is 2,113 Mexican manufacturing plants over the period between 1986 and 1990. Following Mexico’s trade reform in 1985, many

Mexican manufacturers turned away from the previously protected domestic market towards outside markets. These changes during the 1980s allow us to identify the kinds of firms most likely to become exporters.

The analysis shows that multinational firms in Mexico do act as export catalysts. Domestic firms located near multinational exporters are much more likely to export than other firms. This suggests that foreign investors bring valuable information about export possibilities to developing countries—which then “spills over” to domestic rivals. One implication is that firms wishing to break into export markets should locate in areas with a concentration of multinational export activity. Another implication is that governments may wish to encourage exporters or potential exporters to locate near each other.

One policy option for developing countries is to encourage export processing zones (EPZs), special economic zones reserved for exporting firms. These zones often confer special benefits to exporters, such as duty-free imported inputs, tax holidays, or subsidized infrastructure. Our research suggests one unintended benefit of EPZs: by forcing potential exporters to locate near each other, they may help reduce the costs of breaking into foreign markets. However, EPZs need to be carefully designed to avoid isolating exporters from other enterprises. EPZs in countries like Jamaica, for example, are placed in fortress-like enclaves which isolates exporters from other enterprises.

Wages and Foreign Investment

Critics argue that foreign investors leave the United States and other developed countries in search of lower wages. According to these critics, foreign investors take advantage of weak labor laws to pay very low wages under abysmal working conditions. My current research on foreign investment suggests the opposite: foreign-owned firms generally pay higher wages than domestic firms, leading to an increase in overall wages in the host country.

My research examines wage-setting by foreign firms in the United States, Mexico and Venezuela.⁵ In the United States, foreign subsidiaries pay 10% to 20% higher wages than domestic firms. In developing countries like Mexico or Venezuela, the wage gap is even larger—multinationals pay as much as 30% more than domestic firms. The large wage premium paid by multinationals both in the United States and abroad provides strong evidence against the hypothesis that multinationals unfairly exploit domestic labor. In the U.S. case, however, much of the wage gap can be explained by the fact that foreign investors tend to invest in high wage industries. Within those industries, there is only a small difference in wages paid by multinationals and domestic firms. In addition, multinationals tend to be relatively large, and large firms typically pay higher wages than small firms.

In the developing countries, however, the wage gap cannot be explained by the fact that foreign investors locate in high wage industries. The wage gap between foreign and domestic firms is large even within the same industry. We explore one hypothesis that multinationals simply hire all the best workers away from their domestic competitors. This would imply that even if wages are higher in foreign firms, average wages do not rise with an influx in foreign investment. In fact, the results show that average wages do rise with increases in foreign investment—implying that multinationals are not just hiring the best workers.

The higher wages paid by multinationals reflect the fact that these firms bring in new ideas and technology, raising the productivity of their workers. Anecdotal evidence also suggests that multinational firms try to keep their employees from leaving, especially after investing in special training for their workers. Higher wages are one way to ensure that employees stay with the firm. Whatever the explanation, it seems clear that countries who encourage foreign investors benefit in at least one dimension: higher wages for employees of multinational firms.

Pollution Havens and Foreign Investment

In addition to fears of worker exploitation, the surge in foreign investment in developing countries has been cause for alarm in various policy circles. In the United States, some environmentalists argue that multinationals are flocking to developing countries to take advantage of lax environmental standards. This so-called pollution haven hypothesis, which assumes that pollution abatement costs at home are large enough to significantly affect the location and magnitude of foreign investment abroad, has received a lot of attention in both the popular and academic press.

My research with Gunnar Eskeland at the World Bank tests for the possibility that foreign investors are drawn to these so-called "pollution havens" focusing on the manufacturing sectors in Mexico, Venezuela, Ivory Coast and Morocco.⁶ The analysis of pollution havens and foreign investors is divided into two parts. First, we examined whether foreign investors in these countries are attracted towards "dirtier" sectors, defined as product groups where either pollution emissions are high or pollution abatement costs are high (such as cement or oil refining). Second, we then compared the energy efficiency of domestic enterprises and multinationals in these same countries. This allowed us to see whether foreign investors played an important role in improving the environment by using more energy-efficient technology as well as cleaner sources of energy.

Our research provides little support for the pollution haven hypothesis. There is no tendency for multinational firms to locate in dirtier sectors, although there is weak evidence that they do locate in sectors with higher abatement costs. These conclusions are consistent with earlier studies which find no evidence that multinationals are drawn to pollution havens.⁷ One reason is that pollution abatement costs are typically not a major component of operating costs for firms. Another reason is that foreign investors find other factors more important in deciding to relocate abroad—such as the size of the domestic market.

Multinational firms are significantly more efficient in their use of energy than domestic plants. In addition, multinationals tend to use cleaner types of energy, such as electricity and natural gas. Even if we take into account the fact that multinational enterprises are typically younger than domestic firms, we still find that firms of the same vintage are more energy efficient. To the extent that energy use is a good proxy for pollution emissions, this suggests

that multinationals in developing countries tend to use cleaner technologies than domestic firms.

These findings still leave many questions unanswered. Ideally, we would like to be able to compare actual pollution emissions of domestic and foreign plants, but that information is not yet available. It is also possible that foreign investors, while more environmentally conscious than developing country firms, do not adhere as carefully to environmental regulations as their competitors back home. Yet the results do suggest that foreign investors are unlikely to flock to Mexico to take advantage of looser environmental standards. We also find that multinationals are more energy efficient and use cleaner sources of energy than domestic firms.

Conclusion

To summarize, these four studies on multinational enterprises operating in Ivory Coast, Mexico, Morocco, and Venezuela suggest that:

- More foreign investment at the enterprise level is associated with improved performance and higher productivity. Clearly joint ventures benefit from foreign partnerships.
- Joint ventures and foreign subsidiaries, however, do not transfer technology to domestic enterprises. Domestic competitors, in fact, appear to be harmed by foreign entry.
- MNEs act as export catalysts, helping domestic firms to break into export markets.
- MNEs pay much higher wages than domestic firms, which suggests that incoming foreign investment may provide one way to raise living standards for at least a part of the population.
- There is almost no evidence that MNEs are drawn to industrial sectors where pollution emissions or pollution abatement costs are high. This provides evidence against the pollution haven hypothesis.
- MNEs are much more energy efficient than domestic firms, and also use cleaner types of energy.

With these findings in mind, governments should continue to open domestic markets to foreign investment, which is associated with rising productivity and higher wages for participating firms. However, there is no reason to subsidize incoming foreign investment—none of the technology which is transferred to joint ventures or subsidiaries is absorbed by local competitors. This suggests that there is no reason to give tax breaks or subsidies for infrastructure. One exception to the no-subsidy rule may be for export-oriented multinationals, who act as export catalysts for domestic firms who seek to break into foreign markets.

To ensure that domestic firms benefit as much as possible from foreign investment, host country governments may wish to encourage domestic and foreign firms to locate near each other. Export Processing Zones are effective as long as they do not isolate exporters from other firms. Measures to encourage worker turnover between foreign and domestic firms, such as labor regulations which make it easy to hire

and dismiss workers, should also help to spread the benefits from foreign entry.

Multinationals should continue to pay a wage premium, which discourages worker turnover and keeps technology from spreading to domestic competitors. Higher wages and cleaner production processes contribute to a good image in the host country, enhancing labor-management and government relations. There are also benefits from locating near other multinationals, who have developed supplier and buyer linkages, as well as a pool of well-trained employees.

Domestic competitors, however, will find themselves at a disadvantage when competing with incoming multinationals. Although locating near multinationals can help domestic firms to learn about export markets and give them access to high quality suppliers, competition will intensify. This is particularly true in markets protected from import competition. One solution is to welcome foreign equity participation, which is linked with higher productivity and better performance.

Notes

1 Montek S. Ahluwalia, "India's Quiet Economic Revolution," *Columbia Journal of World Business* 29 (1), (Spring 1994): 6-12.

2 See: Mona Haddad and Ann Harrison, "Are there positive spillovers from direct foreign investment? Evidence from panel data for Morocco," *Journal of Development Economics* 42, (1993); and, Brian Aitken and Ann Harrison, "Do Domestic Firms Benefit from Foreign Direct Investment?" World Bank Policy Research Working Paper 1248, February 1994.

3 See: Brian Aitken, Gordon Hanson, and Ann Harrison, "Spillovers, Foreign Investment, and Export Behavior," World Bank, November 1994.

4 The term, export "catalyst," however, is not our creation. See the paper by Y. Rhee and T. Belot, "Export Catalysts in Low-Income Countries," World Bank, 1989, which presents case study evidence of this phenomena.

5 This is joint work with Brian Aitken at the International Monetary Fund and Robert Lipsey at the National Bureau of Economic Research, entitled "Wages and Foreign Ownership: A Comparative Study of Mexico, Venezuela, and the United States."

6 See Ann Harrison and Gunnar Eskeland, "Multinationals and the Pollution Haven Hypothesis," World Bank, May 1994.

7 See Gene Grossman and Alan Krueger, "Environmental Impacts of a North American Free Trade Agreement," April 1992; Jeffrey Leonard, *Pollution and the Struggle for the World Product: Multinational Corporations, Environment, and International Comparative Advantage* (Cambridge: Cambridge University Press, 1988); and, Ingo Walter, "Environmentally Induced Industrial Relocation to Developing Countries," in J. Rubin and T.R. Graham, editors, *Environment and Trade* (New Jersey: Allanheld, Ossun, and Company, 1982).

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