INWARD FOREIGN DIRECT INVESTMENT (FDI) INFLUENCE ON SKILL UPGRADING IN THE DEVELOPING COUNTRIES LABOUR MARKETS.

Obidike Paul C.
Dept of Banking & Finance
Abia State University
Uturu

ABSTRACT

FDI stimulates skill upgrading in host countries through several channels. To date, most empirical evidence indicates that these channels work mainly within multinationals themselves rather than through knowledge spillovers to domestic firms. On the demand side and on the supply side, the inward FDI influences the development of human capital with possible links at both the micro- and macro-levels. This paper offers evidence on the links between inward FDI and skill upgrading for country-industries, both developed and developing countries. These links include intra-industry and inter-industry spillovers, vertical and horizontal linkages, imitation, research and development (R&D), competition and adoption channels.

INTRODUCTION

An important part of globalization in recent years has been the ongoing rise in foreign direct investment (FDI). UNCTAD (2000), reports that from 1979 to 2007, the ratio of world FDI stock to world gross domestic product rose from 5% to 16% and the ratio of world FDI inflows to global gross domestic capital formation rose from 2% to 14%. One consequence is that an increasing share of countries' output is accounted for by foreign affiliates of multinational enterprises (MNEs). The foreign-affiliate share of world production is now 15% in manufacturing and other tradables (Lipsey, et al, 1998).

The unprecedented expansion of the multinational corporations has evoked a strong interest in this phenomenon among scholars, the masses, media and the general public. The dramatic development of the multinational corporation into a major phenomenon in international economic relation has been on for the past quarter of the last century. Multinational corporations are responsible for most foreign direct investments.

For the fact that FDI is generally accompanied by transfer of considerable production and managerial knowledge from investor to the host country that is likely to spill over to domestic enterprises in the host economy. Romer (1993), has argued that by bringing new knowledge to the host countries, MNCs may help to reduce "idea gaps" between developed and developing countries which are sources of growth. Thus, FDI effect on growth in host countries could be more valuable than its direct generation of output by complementing the domestic investments. The indirect effect of FDI inflow on growth in the host country may comprise a sum total of its externalities on domestic investment through knowledge spillovers and vertical linkages.

The externalities or spillovers associated with MNCs could be classified into two broad categories viz; intra-industry spillovers and inter-industry spillovers. Intra-industry spillovers are absorbed by competitors of foreign entrants who are promoted to respond to new improved process or product technology introduced by technology importing firms by upgrading their technology. In certain cases the demonstration effect from foreign firms may speed up the diffusion of new technologies. Yet, another source of spillovers could be through the increased competition from foreign entry which forces local firms to become more efficient users of existing technologies or to explore new technologies. Among the mechanism of technology spillovers of this sort are reverse engineering by competitors, increased rivalry through R&D and product developments and the mobility of employees trained in new technologies by foreign firms.

Another mechanism of diffusion of technology imported within the host economy is through generation of vertical inter-firm linkages. The vendors and customers of foreign firm may benefit from the knowledge brought in the course of their dealings with it. MNCs may demand higher specifications, retooling and technology updating from their component vendors forcing technology on their part. In quite a few cases they may actually be passing on new designs, drawing and specifications, which may be significant sources of technology diffusion. Similarly, certain element of knowledge may be passed on downstream to customers of foreign firms in embodied manner. The diffusion of knowledge through this channel could be particularly significant in the case of equipment manufacturers. For instance, a foreign investment to make more efficient loans may play an important role in diffusing the new technology within the textile industry of the host country.

In this paper, I offer some insights on this question by examining the issue of "skill up-grading," which I will define both in terms of labuor demand and supply. Each side of the labuor market will be addressed in turn. The paper is divided into four sections, the present section introduced the study, which covered the background, section 2. covers the theoritical concepts, section 3. covers the modes of transfer of activities and section 4. concludes.

2.Theoretical Concepts.

The 'traditional' argument is that an inflow of FDI improves economic growth by increasing the capital stock, whereas recent literature points to the role of FDI as a channel of international technology transfer. There is growing evidence that FDI enhances technological change through technological diffusion, for example because multinational firms are concentrated in industries with a high ratio of R&D relative to sales and a large share of technical and professional workers (Markusen,1995). Economic literature identifies technology transfers as perhaps the most important channel through which foreign corporate presence may produce positive externalities in the host developing economy. MNEs are the developed world's most important source of corporate research and development (R&D) activity, and they generally possess a higher level of technology than is available in developing countries, so they have the potential to generate considerable technological spillovers. However, whether and to what extent MNEs facilitate such spillovers varies according to context and sectors. Multinational corporations are probably among the most technologically advanced firms in the world. Moreover, FDI not only

contributes to imports of more efficient foreign technologies, but also generate technological spillovers for local firms.

Spillovers of knowledge from affiliates to domestic firms are an often-claimed benefit to inward FDI, so it is worth outlining possible spillover channels. The general idea that interaction among firms can generate spillovers dates back to at least Marshall (1920). Caves (1974, 1996) has had an early and ongoing interest in analyzing this possibility for multinationals interacting with host-country firms. Mansfield and Romeo (1980) present some early survey evidence in which U.S. multinationals reported the frequency and pace at which their technology deployed in foreign affiliates reached host-country competitors, all consistent with multinational spillovers.
In this approach, technological change plays a pivotal role in economic growth and FDI by multinational corporations is one of the major channels in providing developing countries (LDCs) with access to advanced technologies. The knowledge spillovers may take place via imitation, competition, linkages and/ or training (Kinoshita, 1998; Sjoholm, 1999). Although it is in practice rather difficult to distinguish between these four channels, the underlying theory differs. The imitation channel is based on the view that domestic firms may become more productive by imitating the more advanced technologies or managerial practices of foreign firms (the more so the greater the technology gap). In the absence of FDI, acquiring the necessary information for adopting new technologies is too costly for local firms. Thus, FDI lowers the cost of technology adoption and may expand the set of technologies available to local firms. The competition channel emphasises that the entrance of foreign firms intensifies competition in the domestic market, encouraging domestic firms to become more efficient by upgrading their technology base. The linkages channel stresses that foreign firms may transfer new technology to domestic firms through transactions with these firms. By purchasing raw materials or intermediate goods a strong buyer-seller relationship may develop that gives rise to technical assistance or training from the foreign firm to the domestic firm. Finally, the training channel arises if the introduction of new technologies requires an upgrading of domestically available human capital. New technologies can only be adopted when the labour force is able to work with them. The entrance of foreign firms may give an incentive to domestic firms to train their own employees. If labour moves from a multinational to a local firm (through labour turnover), the physical movement of workers causes knowledge to move between firms.
In a very influential paper, Borensztein et al (1998) suggest that the effectiveness of FDI depends on the stock of human capital in the host country. Only in countries where human capital is above a certain threshold does FDI positively contribute to growth.Thus, FDI leads to growth via technology spillovers that increase factor productivity. Certain host country conditions are necessary to ensure the spillover effects. In particular, human capital (an educated labour force) is necessary for new technology and management skills to be absorbed.
How do these multinational affiliates influence host labuor markets in developing countries?
On the demand side, the academic literature on multinationals suggests several channels by which inward FDI stimulates demand for more-skilled workers in host countries. These include technology transfer to host-country affiliates; technology flows—both market-mediated and via spillovers—to host-country firms; and investments in physical capital related to new

technologies. I will discuss the theoretical concepts on these various channels. There is compelling evidence on the importance of within-firm technology transfer and capital investment as modes of boosting host-country demand for more-skilled workers. The evidence is much more mixed on technology flows to domestic firms, particularly via spillovers. But contrary to what is commonly assumed, I will argue that lack of spillovers is not necessarily a bad thing in light of the stronger evidence on the roles for within-firm technology transfer and capital accumulation. In what ways does the nationality of ownership influence the demand for labuor of firms in developing countries? Note that if there were no such ways, then MNEs would merit no particular attention when thinking about skill upgrading. There is widespread agreement among researchers in many fields that a distinguishing feature of these firms is their possession of knowledge assets—patents, proprietary technology, trademarks, etc.—that can be deployed in plants outside the parent country. This knowledge intensity is important for understanding the nature of MNE labuor demand in host countries.

On the supply side, the question of how inward FDI influences the development of human capital is much less clear. The major impact of FDI on human capital in developing countries appears to be indirect, occurring not principally through the efforts of MNEs, but rather from government policies seeking to attract FDI via enhanced human capital. Once individuals are employed by MNE subsidiaries, their human capital may be enhanced further through training and on-the-job learning. Those subsidiaries may also have a positive influence on human capital enhancement in other enterprises with which they develop links, including suppliers. Such enhancement can have further effects as that labour moves to other firms and as some employees become entrepreneurs. Thus, the issue of human capital development is intimately related with other, broader development issues.

3. Modes of Transfer of Activities:

I distinguish two different modes by which MNEs can facilitate investments in human capital. One is the short-term, firm-level activities by which individual firms interact with host-country labuor markets through on-the-job training, support for local educational institutions, and the like. The other is long-term, country-level activities by which MNEs collectively contribute to the overall macro environment in which fiscal policy drives education policy. To the extent that MNEs contribute to a good macro environment in host countries—through raising worker productivity, providing a relatively stable source of foreign capital, paying host-country taxes—they contribute to the ability of host countries to fund education. If successful generalizations of firm-level educational initiatives may be hard to come by, as these efforts continue sight should not be lost of the country-level contributions. I will distinguish two different supply modes by which MNEs can facilitate investments in human capital.

a. Multinationals and the Short-Term, Firm-Level Supply of Labuor

MNEs can facilitate investments in skilled labuor through the short-term, firm-level activities in which individual firms interact with host-country labuor markets through on-the-job training, support for local educational institutions, and the like. MNEs might directly affect labuor

supplies, as their transferred knowledge might boost the skills of their employees (and, with spillovers, the skills of domestic employees as well). They might also indirectly affect labuor supplies, for example, by influencing the educational infrastructure of host countries in terms of curriculum choices and vocational training. For example, Hanson (2000) reports that Intel recently chose to establish a large assembly and testing facility in Costa Rica, in part thanks to Costa Rica's agreement to expand high-school training in electronics and English.

There is recurring discussion of the "skills gaps" multinationals encounter in host-country labour markets. Knowing how individual firms try to overcome these gaps may hold lessons for the educational initiatives of host-country governments.

I just offer two related points. First, in the training literature it is well documented that educational initiatives by firms tend to be for firm-specific skills, not general skills (e.g., Lynch, 1992). This focus on firm-specific skills is understandable in light of the inability of firms to capture the returns on investment in general skills. Second, I reiterate that the knowledge of MNEs is often times of competitive value. Taken together, these two points are not to say that individual MNEs cannot engage the institutions of host country labuor markets to help build skills. But they are to say that the methods of MNE human capital development are likely to often be firm-specific rather than aimed at general human capital issues of numeracy, literacy, and problem-solving.

b. Multinationals and the Long-Term, National Supply of Labour

The other way in which MNEs can facilitate human- capital development is a set of long term, country-level activities by which MNEs collectively contribute to the overall macro environment in which fiscal policy can support education policy. To the extent that MNEs contribute to a good macro environment in host countries, they contribute to the ability of host countries to fund education.

First, MNEs foster skills acquisition economy-wide to the extent that their affiliate activities of technology transfer and capital investment boost demand and thus wages for skilled workers. Economy-wide, if MNEs contribute to rising demand and wages for skilled workers, then over the long-run they contribute to the general-equilibrium incentive of individuals in host countries to acquire skills through education and/or training. If individuals in host countries have access to these methods of skills acquisition, then they should respond to the price signals coming from the labuor market.

The rise in economic activity from MNE affiliates means a rise in host-country tax revenue (whether taxes are levied on labour, capital, or both). This broadening of host-country tax bases can allow greater government investment in education and training. Of course, FDI output and taxes there from do not automatically imply greater investment in human capital. But FDI output and taxes there from do free up budget constraints and thereby make possible these greater investments. This broadly accords with the recent findings of Dollar and Kray (2000), who document for a large set of developing countries that overall economic growth tends to coexist with growth in incomes for countries' poorest groups.

From an industrial-organization perspective, Dunning (1981), formalized a framework in which MNEs are firms possessing three particular sets of advantages, known together as "OLI." First is

the ownership advantage, i.e., the ownership of a firm-specific asset. Second is the location advantage, i.e., it must be cost efficient for the firm to exploit that asset abroad rather than in just the home country. And third is the internalization advantage, i.e., the firm must be better off using its asset itself rather than contracting with another independent firm.

In international trade, over the last two decades there has been substantial progress in modeling multinational firms in general equilibrium. This theoretical literature contains mostly uni-dimensional theories of multinationals, which focus on either *horizontal* or *vertical FDI.*

(i)Vertical FDI

The vertical-FDI view is that multinationals arise to take advantage of international factor price differences. Firms engage in two activities: headquarter services to develop and maintain the firm's knowledge assets, and production of output. Headquarter services are intensive in physical and human capital, while production is intensive in manual labour. When factor prices differ across countries, firms become multinational by locating production in countries where manual-labuor costs are low and headquarters in countries where skilled-labour costs are low. Even though these production activities may be low-skill intensive relative to headquarter services, for host countries they likely will be skill-intensive relative to their initial activity mix.

(ii) Horizontal FDI

The horizontal-FDI view is that multinationals arise because trade barriers make exporting costly. The formal setup is one in which firms have a high-fixed-cost headquarters and one or more production plants. When trade costs are low, a firm produces all output in domestic plants and serve foreign consumers through exports. When trade costs are high, a firm becomes multinational by building production plants at both home and abroad, each serving just that country's consumers. This type of FDI is called horizontal because the multinational does the same activities (production) in all countries.

(iv) Competition

FDI and the presence of MNEs may exert a significant influence on competition in host-country markets. However, since there is no commonly accepted way of measuring the degree of competition in a given market, few firm conclusions may be found in empirical evidence.

The presence of foreign enterprises may greatly assist economic development by spurring domestic competition and thereby leading eventually to higher productivity, lower prices and more efficient resource allocation. Conversely, the entry of MNEs also tends to raise the levels of concentration in host-country markets, which can hurt competition. This risk is exacerbated by any of several factors: if the host country constitutes a separate geographic market, the barriers to entry are high, the host country is small, the entrant has an important international market position, or the host-country competition law framework is weak or weakly enforced.

Market concentration worldwide has increased significantly since the early 1990s due to a wave of M&As that has reshaped the global corporate landscape. At the same time, a surge in the number of strategic alliances has changed the way in which formally independent corporate

entities interact. Alliances are generally thought to limit direct competition while generating efficiency gains, but evidence of this is not firmly established. There has also been a wave of privatisations that has attracted considerable foreign direct investment (mainly in developing and emerging countries), and this, too, could have important effects on competition.

(v) Research and Development (R&D)

One tell-tale sign that MNEs are knowledge-intensive firms is their intensity of research and development (R&D). In the aggregate, evidence consistent with this is the overlap between countries that perform lots of R&D and countries that headquarter lots of MNEs. It is commonly calculated that approximately 90% of the world's R&D is performed in just five countries: the United States, United Kingdom, France, Germany, and Japan (e.g., Keller, 2001). These five countries are also among the largest source countries for world FDI flows. At the firm level, Slaughter (1998) reports that over the past 20 years the U.S. parents of U.S.-headquartered MNEs—only 2,727 firms in 1994—have consistently performed over half of all U.S. R&D.

(vi) Regional Lines

Theoretical work on the mechanics of spillovers ranges from general discussions, often leavened with anecdotes, to formal general-equilibrium models. Broadly speaking, spillovers are commonly hypothesized to fall along industry or regional lines. An example of multinational spillovers along industry lines is Rodriguez-Clare (1996), in which affiliates increase a host country's access to specialized varieties of intermediate inputs, the improved knowledge of which raises the TFP of domestic producers. Less formally, it is often hypothesized that domestic firms learn from affiliates in the same industry via a range of informal contacts: e.g., trade shows; supplier/distributor discussions; exposure to affiliate products, marketing, and patents; technical support from affiliates; reverse engineering. Depending on how narrowly or broadly industries are defined, if the key contacts are between suppliers and/or distributors, then spillovers may be classified as intra-industry or inter-industry.

Other spillover mechanisms may operate along regional lines. One commonly proposed avenue (Marshall, 1920) is via labuor turnover. If at least some of the knowledge particular to foreign affiliates is embodied in their labuor force, then as affiliate employees leave to work for domestic firms this knowledge may move as well. For example, Song, et al (2001), use U.S. patent records to trace the movement of scientists between domestic and foreign firms (Motta, et al, 1999, and Moen, 2000). This knowledge need not be firm-specific (e.g. inventory-control or management techniques). If inter-regional labour mobility within a country is low, then these spillovers are likely to be concentrated within regions where the affiliates operate rather than dispersed country-wide. More generally,regional labour-market spillovers can be thought of as one important kind of agglomeration economy that can induce firms to locate near each other in space. Krugman (1991) offers some formal models of agglomeration issues. A third channel for boosting host-country skilled-labour demand, for both foreign and domestically owned firms alike, is capital investments. Implementing new technologies often entails making new capital investments (e.g., computers and office products). To the extent that capital and skills are

complements in firms' factor demands, skill upgrading may arise not just directly from new technologies but also indirectly from the capital investments induced by these new technologies.

4. Conclusions

This paper has discussed how multinational firms affect both the demand for and supply of skills in host-country labour markets. On the demand side, multinational affiliates raise demand for more-skilled workers as they utilize firm-specific knowledge assets and as they invest in physical capital. All this may also occur in domestic firms in host countries if these knowledge assets are somehow transferred, but evidence on this—particularly for externality spillovers—is rather mixed. On the supply side, multinationals can raise the supply of more-skilled workers both at the micro-level of individual affiliates training workers in-house and via interactions with host-country education and training institutions. They can also do this at the macro-level through channels such as helping raise and stabilize output and affecting migration decisions.

In closing, it is important to point out that multinational firms and FDI are not the only channel by which countries can gain access to the technology and capital required for economic growth. It has been widely documented that in recent years most governments worldwide have made their policies much more friendly to foreign firms (e.g., UNCTAD, 2000). That said, history offers many examples of governments (e.g., Japan and South Korea) pursuing development strategies instead of or in tandem with an FDI strategy: joint ventures, licensing, and exporting have been common. The focus of this paper on the role of FDI in facilitating host country skill upgrading is best seen in the broad context of all development strategies.

REFERENCES

Caves, Richard E. (1974). "Multinational Firms, Competition, and Productivity in Host-Country Industries." ***Economical***, 41, pp. 176-193.

Caves, Richard E. (1996). Multinational Enterprise and Economic Analysis, 2nd Edition.Cambridge: Cambridge University Press.

Dollar, David, and Aart Kraay.(2000). "Growth is Good for the Poor." Development Research Group. Washington, D.C.: World Bank.

Dunning, J. H. (1981). International Production and the Multinational Enterprise. London:

Hanson, Gordon H., Raymond Mataloni, and Matthew J. Slaughter. (2001). "Expansion Strategies of U.S. Multinational Firms," in Dani Rodrik and Susan Collins (eds) Brookings Trade Forum 2001, 2001, pp. 245-294.

Helpman, E. (1984). "A Simple Theory of Trade with Multinational Corporations." ***Journal of Political Economy***, 92, pp. 451-471.

Helpman, E. and P. Krugman. (1985). Market Structure and Foreign Trade. Cambridge, MA: MIT Press.

Krugman, Paul R. (1991). Geography and Trade. Cambridge: MIT Press.

Lipsey, Robert E., Magnus Blomstrom, and Eric Ramstetter. (1998). "Internationalized Productionin World Output." In Robert Baldwin, Robert Lipsey, and J. David Richardson (eds.), Geography and Ownership as Bases for Economic Accounting. Chicago: The University of Chicago Press, pp. 83-135.

Lynch, Lisa M. (1992). "Private-Sector Training and the Earnings of Young Workers." ***American Economic Review***, 82 (1), pp. 299-312.

Markusen, J.R. (1984). "Multinationals, Multi-Plant Economies, and the Gains from Trade." ***Journal of International Economics,*** *16, pp. 205-226.*

Markusen, J.R. (2001). Multinational Firms and the Theory of International Trade. Cambridge, MA: MIT Press, forthcoming.

Markusen, J. and A. Venables. (1998). "Multinational Firms and the New Trade Theory." ***Journal of International Economics,*** 46, pp. 183-203.

Markusen, J. and A. Venables. (2000). "The Theory of Endowment, Intra-Industry and Multinational Trade." ***Journal of International Economics***, 52, pp. 209-234.

Marshall, Alfred. (1920). ***Principles of Economics***, 8th Edition. London: Macmillan.

Motta, M., A. Fofur, and T. Ronde. (1999). "Foreign Direct Investment and Spillovers through Workers' Mobility." CEPR Discussion Paper #2194.

Reisen, Helmut, and Marcelo Soto. (2001). "Which Type of Capital Flows Foster Developing-Country Growth?" ***International Finance***, 4(1), pp. 1-14.

Rodriguez-Clare, Andres. (1996). "Multinationals, Linkages, and Economic Development." ***American Economic Review***, 86 (4). September, pp. 852-873.

Slaughter, Matthew J. (2002). U.S. Trade and Investment Policy and the Growth of Information Technology. Washington, D.C.: Emergency Committee for American Trade.

Slaughter, Matthew J (2000). "Production Transfer Within Multinational Enterprises and American Wages," ***Journal of International Economics***, 50. April, pp. 449-472.

Slaughter, Matthew J. (1998). American Investments, Global Returns. Washington, D.C. Emergency Committee for American Trade.

Song, J., Almeida P., and Wu, G. (2001). "Learning-by-Hiring: When is Mobility Useful?", paper presented at "Technological Innovation and Evolution" Conference, March.

United Nations Conference on Trade and Development. (2000). World Investment Report: Cross- Border Mergers and Acquisitions and Development. New York: United Nations.

World Bank. 1999,(2000). Global Development Finance. Washington, D.C.