


Opinions

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Multinational Companies and Technology Spillovers



CHOI Hyelin

Ph.D., Research Fellow, International Macroeconomics Team
Korea Institute for International Economic Policy 

Governments provide a variety of incentives such as lower income taxes, tax holidays, import duty exemptions, and subsidies to attract foreign firms into their country based on the belief that multinational companies (MNCs) bring benefits to the host country. Among the benefits, technology transfer and the productivity growth of domestic firms are the most anticipated by policy-makers. For example, Mauritius and Bangladesh experienced a sharp increase in exports in their respective textile sectors upon the entry of multinational firms. Considering that export companies are more productive than non-export companies, the presence of MNCs within the territory may contribute to the productive growth of domestic firms.

Multinational firms - enterprises that manage production establishments which span two or more countries - are well known to be larger and more productive than domestically-owned firms. Since they own their superior assets and modern technology, they can cope with high fixed costs when establishing foreign affiliates and pioneering new markets. The entry of foreign firms with modern technology into the host country may incur intended and unintended technology spillovers to the host country's domestic firms, and hence, reduce their average cost of production and increase productive efficiency.

There are several channels through which technology spillovers move from foreign to domestic firms. First, technology transfers from MNCs to domestic firms happen when domestic workers with work experience at foreign firms move to domestic firms. Workers hired by MNCs are provided with on-the-job training and better work experiences, and obtain advanced technology or managerial practices from MNCs. When they move to domestic firms after leaving the MNCs, they apply MNCs' superior know-how and managerial skills to domestic firms' production process and management. Second, when new MNC products are introduced to the domestic market, local firms learn the MNCs' technology by re-engineering and imitating the new products. Third, knowledge spillovers can be observed in the backward and forward linkages between foreign and domestic firms. When MNCs contract with local firms to purchase intermediate goods, foreign firm technicians regularly visit domestic firms and hand down advanced skills to improve production efficiency and goods quality to meet their higher standards and to procure intermediate goods at lower prices. Also, as MNCs sell intermediate goods in the domestic market, local firms have access to higher quality intermediate goods and apply them in their production process.

Despite these plausible channels for FDI technology transfer, a number of empirical studies, carried out on regressing labor or total factor productivity on foreign investment, reveal mixed results. According to Gorg and Greenway (2004) which reviewed more than 40 empirical studies on the FDI spillovers, 20 found positive spillovers, 17 cases yielded insignificant results, and 8 negative knowledge spillovers. Motivated by the inconclusive results, researchers have tried to disentangle complicated patterns of FDI spillovers and found that the spillovers differ depending on various firm, industry, and country conditions and the characteristics of MNCs.

Among the conditions, the absorptive capacity of domestic firms, the technology gap between foreign and domestic firms, the development level of the host country's financial institutions, linkages between MNCs purchasers and domestic suppliers are considered to be

important. If there are not enough skilled technicians in the domestic labor market, MNCs' modern technology cannot be understood and applied in domestic firms. Borensztein, de Gregario, and Lee (1998) and Xu (2000) show that the presence of MNCs brings about technology transfer and economic growth in the host country only when the receiving countries have a minimum threshold stock of human capital. Also, if domestic firms already possess the same level of technologies as MNCs, there is no room for knowledge spillovers from foreign to domestic firms. The development of the financial market enables entrepreneurial development, which promotes the adoption and application of advanced technology from MNCs. As McKinnon (1973) stated, the development of capital markets is very important in fostering knowledge spillovers from MNCs. Lastly, some studies show that FDI spillovers mainly occur within vertical linkages rather than horizontal linkages. As multinational firms have enough incentives to transfer their advanced production processes and managerial skills to acquire high-quality intermediate goods at lower prices, intentional, large-scale knowledge spillovers occur within vertical linkages.

Some studies also found that characteristics such as the activities and nationalities of foreign firms are important determinants of FDI spillovers. According to Gorg, Hijzen, and Murakozy (2009), foreign firms that focus on capital-intensive activities generate larger knowledge spillovers than firms that carry labor-intensive activities. Also, as Bukley, Clegg, and Wang (2007) show, while MNCs in China originating from Hong Kong, Macau, and Taiwan do not generate significant technology spillovers, MNCs from the U.S., Europe and Japan bring positive externalities to China, proving that the nationality of foreign firms is an important determinant in FDI spillovers.

In addition, the mixed results on FDI spillovers may be attributable to MNC's market stealing or crowding-out effect, as stated by Aitken and Harrison (1999). They argue that foreign firms holding advanced technology can provide goods at lower marginal costs, and hence crowd out indigenous firms from the domestic market. If firms face fixed costs, local firms spread it out over a small range of goods, and hence their average cost of production rises, while productivity efficiency falls.

To summarize, when and how the presence of MNCs is beneficial to the productivity of domestic firms in the host country is yet unclear and it has a complicated pattern. Hence, this calls for more research on a deeper understanding of FDI spillovers and ways to maximize the positive externalities of MNCs and minimize their negative effects. 