

Foreign Direct Investment

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Abstract: Foreign direct investment (FDI) occurs when an individual or firm acquires controlling interest in productive assets of another country. We review the literature on FDI which can be divided into two broad categories. The first is the inquiry into why multinational production occurs and the factors that determine the patterns of worldwide FDI. The second is the impact that FDI and MNEs have on the parent and host countries, including economic growth, returns to factors of production, and externalities.

Foreign direct investment (FDI) occurs when an individual or firm acquires controlling interest (typically defined as at least 10% ownership) in productive assets of another country. This contrasts with portfolio investment which includes purchases of foreign bonds, currencies, and stocks in amounts that do not provide control. The most common method of FDI is through the acquisition of a firm. Construction of a new plant is also common and typically referred to as greenfield FDI. Other forms of FDI include partnerships in a foreign joint venture and reinvested earnings into an existing foreign affiliate. Firms with affiliates in more than one country are termed multinational enterprises (MNEs).

While real world GDP grew at a 2.5% annual rate and real world exports grew by 5.6% annually from 1986 through 1999, real world FDI inflows grew by 17.7% over this same period! (Giorgio and Venables, 2004) Additionally, Bernard et al. (2005) find that 90% of U.S. exports and imports flow through a U.S. MNE, with roughly 50% of U.S. trade flows occurring between affiliates of the same MNE, or what is termed “intra-firm trade”. While the majority of FDI flows are between developed countries, FDI accounted for the majority of capital flows to less-developed countries from 1990-2003. (United Nations Conference on Trade and Development, 2004)

The study of FDI can be divided into two broad categories. The first is the inquiry into why multinational production occurs and the factors that determine the patterns of worldwide FDI. The second is the impact that FDI and MNEs have on the parent and host countries, including economic growth, returns to factors of production, and externalities for innovative activity.

Understanding what motivates FDI by MNEs

Theory

Theoretical treatment of FDI and MNEs in the economics profession can be traced back to the 1970s when researchers began to consider why some firms choose to locate production abroad rather than serve such markets through exports or licensing. A key insight is that MNEs may be distinguished by their ownership of firm-specific assets for which market failures can make exporting or licensing arrangements less attractive to the firm than FDI. For example, a foreign licensee may not offer full value in negotiations over a contract if the firm-specific asset is intangible and not fully revealed (e.g., a unique production process), but the licensor firm will not want to reveal the asset fully until a contract is finalized. The costs associated with this inherent hold-up problem may then lead the firm to set up its own affiliate in the foreign market. This is termed “internalization” in the literature and forms the key element in the “ownership-location-internalization” (OLI) theory of MNEs that developed out of this era and has been surveyed recently by Dunning (2001).

The OLI theory is an international business concept that was never formally represented in a mathematical model. As such, the international economics literature continued to treat FDI as simply another capital flow until the mid-1980s, despite the obvious unique features and patterns of FDI relative to other capital flows. This changed with papers by Markusen (1984) and Helpman (1984) that developed general equilibrium models of MNEs. Both papers focused on another feature of firm-specific assets; namely, the public-goods aspect of many firm-specific assets that can be applied simultaneously in production across all plants owned by the firm. This feature of firm-specific assets makes it more attractive for a firm to build multiple plants, though something else must be added to a model to explain locating plants into foreign countries. In

Helpman (1984) this is accomplished by assuming that MNEs can be separated into two types of activities: a skill-intensive headquarters that generates the firm-specific assets and a low-skill-intensive production process. If endowment differences are sufficient across countries, MNEs will vertically separate the firm between headquarter services in the skill-abundant parent country and production in the low-skill host country. This type of model is called a vertical FDI model. In contrast, Markusen's (1984) model generates multi-plant MNEs through the introduction of trade costs (i.e., transportation costs, trade barriers, etc.) that are large enough that an MNE chooses to replicate itself in the foreign country to serve the market there. This type of model is termed horizontal FDI.

These models have become the main theoretical MNE frameworks for trade economists, as recent literature has extended these models. Brainard (1997) develops and tests hypotheses from a simplified horizontal MNE model assuming monopolistic competition. Markusen et al. (1996) develop an MNE model that blends both the horizontal and vertical models into what is termed the knowledge-capital model. More recently, Helpman et al. (2004) develop a model that can explain the co-existence of both exporting and MNEs in the same industry by allowing for heterogeneity across firms and other papers have developed models that formalize the role of transactions costs and theory of the firm (e.g., Antras and Helpman, 2003; Feenstra and Hanson, 2005).

Empirics

Empirical work on the factors that determine FDI patterns has focused primarily on the effect of government policies and macroeconomic phenomena, such as exchange rates and taxes. Most of these studies motivate their analyses with a partial equilibrium model of firm behavior

responding to these various factors. Only recently, have empirical studies examined the more fundamental long-run drivers of total FDI activity, such as country size and factor endowments, as predicted by the general equilibrium modeling discussed above. Availability of micro-level data has been an issue for the literature as well. Testing theories of firm-level models with industry- or country-level data requires strong assumptions about firm characteristics. While firm-level data is being employed more often in recent work, much of the literature has examined more aggregate data.

Exchange Rates

The effects of exchange rate movements on FDI are not immediately obvious. If a host-country's currency depreciates relative to the parent-country's currency, this lowers the price of host-country assets. However, if the asset generates returns in the host-country's currency, these returns have likewise depreciated in the parent-country currency. Froot and Stein (1991) and Blonigen (1997), however, provide theoretical links that predict that host-country depreciations increase inbound FDI and empirical evidence generally supports this. A related literature has examined how exchange rate expectations may affect FDI decisions. Campa (1993) find provides theory and evidence that exchange rate uncertainty will decrease FDI, while Cushman (1985) and Goldberg and Kolstad (1995) find that quite opposite results can be expected and found depending on the firm's trade linkages across markets. On a final note, there has been recent work on the impact of exchange rate crises on FDI. Surprisingly, FDI is relatively stable through currency crises in host countries and, in fact, Aguiar and Gopinath (2005) show that MNEs opportunistically increase their investments in these host countries.

Taxes

Like exchange rate movements, the effect of taxes on FDI has not proven to be straightforward either. While there is an array of taxes that may affect FDI, the primary focus has been on corporate income tax rates in host countries. The natural hypothesis is that higher host-country tax rates discourage FDI and a survey by De Mooij and Ederveen (2003) finds a median elasticity of tax rates on FDI of -3.3 across 25 different empirical studies. However, the literature has also shown that the effects of taxes on FDI can vary substantially depending on the type of taxes, the form of FDI (e.g., see Hartman, 1985), and the influence of government policy.

Perhaps the most explored issue in this literature has been the issue of how parent countries deal with the “double taxation” issue -- taxation in both the host and parent country. The common distinction is between territorial countries that do not tax any income outside of the parent country, exempting foreign-earned income from tax liability, and a worldwide tax method which considers all earned income by its parent firms potentially taxable, but may treat foreign income in a number of ways to avoid double taxation of the MNE. Two standard treatments to deal with this double taxation issue are for the home country to offer a credit or a deduction of foreign tax payment made by the MNE. A number of studies of the U.S. 1986 tax reform find mixed evidence for differences in FDI behavior under different parent-country tax regimes (e.g., Scholes and Wolfson, 1990; Swenson, 1994). Much stronger results come from work by Hines (1996) which finds that U.S. taxation decreases FDI more for non-credit-system foreign investors than credit-system foreign investors.

A final significant literature in this area is tax competition between countries competing for FDI (e.g., Janeba, 1995) and the impact of bilateral tax treaties between countries (e.g.,

Chisik and Davies, 2004). Hines (1999) and Gresik (2001) have excellent surveys of the FDI and taxation literature.

Other factors

A variety of other smaller literatures have investigated the effect of other factors on FDI. These include the effects of host-country institutions (Wei, 2000), trade protection policies, and agglomeration and information externalities (Head et al., 1995, and Blonigen et al., 2005).

Examination of general-equilibrium model predictions

More recently, empirical efforts have been made to more closely match empirical specifications of country-level FDI activity with general-equilibrium models of MNEs. Most previous empirical work uses gravity-based variations to model country-level FDI patterns where size of countries and distance between them are key regressors. Carr et al. (2001) instead lay out an empirical specification based on the knowledge-capital model of MNE activity which suggests that factor endowment differences are an important control not found in gravity-based specifications. These endowment differences are important as they proxy for vertical MNE motivations. While Carr et al. (2001) find the data fit the knowledge-capital model, follow-up work has found specification issues that calls into question evidence of vertical motivations for FDI. (see Blonigen et al., 2003; Braconier et al., 2005) Alternative approaches by Yeaple (2003b) and Hanson et al (2005), however, have confirmed vertical motivations in the data, at least for certain sectors such as electronics and transportation equipment. Another concern pointed out by Yeaple (2003a) is that third country interactions may matter for FDI patterns. Recent empirical work by Baltagi et al. (2006) suggests that such effects are important empirically.

The Economic Impact of FDI and MNE Activity

A second significant part of the FDI literature is the examination of FDI impacts on parent and, particularly, host countries. The primary areas of study have been on the effect of FDI on host country wages, technology spillovers, and economic growth.

Studies of FDI effects on host-country wages typically begin with the hypothesis that MNEs raise wages in the host country. Part of this is ascribed to the fact that the value of marginal product will be higher with MNEs due to productivity advantages and, thus, MNEs pay higher wages. However, an argument can also be made that MNEs need to pay higher efficiency wages than local firms to attract quality workers in an environment which they are relatively uninformed. Regardless of the explanation, the empirical evidence clearly shows that MNEs pay higher wages in both developed countries (e.g., Globerman et al., 1994) and less-developed ones (e.g., Aitken et al., 1996).

The more intriguing question is whether there are wage spillovers, in the sense that MNEs raise the wages paid by local firms as well. Spillovers are inherently difficult to identify in the data. Virtually all of the studies rely on interpreting a positive correlation between the presence of foreign firms in a local firms industry and wages of local firms as evidence for spillovers. Not surprisingly, the evidence is decidedly quite mixed across numerous studies as discussed by Lipsey and Sjöholm (2005). The theoretical development behind this issue is also relatively undeveloped in the literature as to when and where we should expect such wage spillovers.

A related issue is the effects of FDI on wage inequality. If MNEs have different technologies that demand different types of labor than local firms, increased FDI can lessen or exacerbate existing wage inequality. There are a number of cross-country studies that find a

variety of FDI effects on wage inequality for the host country. Results for the U.S. using more detailed industry-level data likewise finds little to no impact of outbound or inbound FDI on U.S. wage inequality (Slaughter, 2000; Blonigen and Slaughter, 2001). Feenstra and Hanson (1997) provides a model to show how FDI can increase the difference between skilled and unskilled workers' wages in both the host and parent countries with empirical work that finds strong impacts of U.S. FDI activity on Mexican wage inequality.

The literature on productivity spillovers from FDI is vast compared to the one on wage spillovers, yet the evidence is decidedly mixed as well (see Görg and Strobl, 2001, for a survey). This is not surprising in many ways. First, theory is ambiguous on this issue. Foreign firms are presumably more efficient than the average local firm. Thus, FDI lowers market shares for local firms which can lead to productivity losses for these firms, particularly if economies of scale are important. However, better technologies of foreign firms may ultimately leak to local firms through, for example, former employees or common suppliers. The second likely reason for mixed evidence is again the difficulty of identifying spillovers in the data. (see Aitken and Harrison, 1999, for a discussion)

There is also a significant literature that attempts to gauge the overall impact of FDI on a host economy's economic growth. Like the trade and growth literature, this is difficult because of the obvious endogeneity issue which is difficult to overcome. Such a question also relies on aggregate cross-country data which is often quite poor. Most papers in the literature do not adequately control for these issues and Carkovic and Levine (2005) points out the sensitivity of these studies' results.

There are much smaller literatures on a variety of other host- and parent-country effects of FDI. This includes the impact of FDI on parent country investment and employment

(Blomström et al., 1997), the effects of FDI on host-country trade policies (Blonigen and Figlio, 1998), and differences in how MNEs adjust to local factor prices (Giorgio et al., 2003).

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