A Capital Budgeting Approach to Foreign Direct Investment

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Much of the controversy surrounding foreign direct investment (FDI) centers on its growth impacts in developing countries. This paper contributes to the existing literature by introducing a new framework within which to examine the impact of FDI on economic growth. Specifically, FDI is viewed as a prospective host country investment that must be evaluated based on a discounted stream of costs and benefits. This framework explicitly considers host country alternatives to inbound FDI as well as the timing of cost and benefit flows. The host country "selects" FDI only if it represents the best use of its resources. The framework generates testable predictions about which types of FDI will generate the highest growth "returns" in particular circumstances, and supports the results of earlier work that suggests that FDI is only beneficial under certain conditions.

INTRODUCTION

By now, the arguments for and against foreign direct investment (FDI) are familiar. Much of the controversy centers on the growth impacts of FDI in developing countries. FDI proponents claim multinational enterprises (MNEs) can contribute to accelerated economic growth through direct benefits such as technology transfer, employment, increased access to global capital markets, as well as through additional spillover effects derived from backward and forward linkages. At the same time, critics offer compelling theoretical arguments and empirical evidence to suggest that FDI can lead to growth-stalling resource misallocations and increasing income inequality. A growing body of research emphasizes the need to account for differences in types of FDI, as well as country-specific characteristics and policies, in assessing growth impacts. As a result, host country governments have little or no guidance as to how to design policies towards FDI.

This paper addresses that problem and contributes to the existing literature by introducing a new framework within which to examine the impact of FDI on economic growth in developing countries. Specifically, FDI is viewed as a prospective host country investment that must be evaluated based on a discounted stream of costs and benefits. This framework explicitly considers host country alternatives to inbound FDI as well as the timing of cost and benefit flows. The host country "selects" FDI only if it represents the best use of its resources. The framework generates testable predictions about which types of FDI will generate the highest

growth "returns" in particular circumstances. As a result, it may be used to provide policymakers with coherent guidance as to whether FDI is likely to create value. Hopefully this framework will prove helpful to those resource-scarce countries facing pressure to attract FDI.

LITERATURE REVIEW

Motivation for FDI

Dunning's Eclectic Paradigm proposes three necessary conditions under which firms are motivated to engage in FDI. Ownership advantages refer to firm-specific knowledge-based assets that confer a competitive advantage in foreign markets; the "why" of foreign direct investment. Location advantages refer to abundant resources or market size in a foreign location that, in combination with firm-specific assets, permit the firm to produce more profitably than it could at home; the "where" of FDI. Internalization advantages direct the form of entry into foreign markets; the firm can more efficiently serve the market itself rather than exporting or using a foreign agent - the "how" of direct foreign investment. Collectively, these conditions are known as the "OLI" model (Dunning, 1993). The framework provided in this paper focuses on location advantages, which necessarily rest on the characteristics of prospective host countries.

As summarized by Campos and Kinoshito (2003), there are three location-driven motivations for FDI. The first, market-seeking FDI, is driven by the MNE's need to expand output by serving foreign markets. Efficiency-seeking FDI, as its name implies, occurs when the MNE exploits low factor costs in a foreign market in combination with its own technology and economies of scale. MNEs engage in resource-seeking FDI to access natural resources in host countries that are either scarce or non-existent in the home country.

Impacts of FDI

Some theories predict that FDI may accelerate economic growth through technology transfers, which not only benefit a particular firm or industry, but generate spillover effects for the rest of the developing economy. Blomstrőm *et al* (1999) provide a theoretical framework that models spillovers in a supply and demand framework. Other theoretical models suggest that, if existing macroeconomic variables are distorted, FDI can exacerbate resource misallocation and exert an adverse impact on economic growth.

Empirical studies do not unequivocally confirm either of these predictions. Several microeconomic studies have failed to identify positive spillover effects between foreign-owned and domestic firms, while others suggest that sectors with a higher presence of FDI exhibit higher productivity.[1] Hale and Long (2007) find no evidence that FDI spillovers increase the productivity of Chinese domestic firms. Girma (2005) finds that the extent of FDI spillovers is sensitive to the absorptive capacity of the host country. Haskell *et al* (2007) studied UK firms and found that while the productivity of domestic firms in the UK increased with the foreign affiliate share of activity, actual benefits were less than the incentives provided by the government. Still other studies suggest that the importance of country- and industry-specific factors override any overall impact of FDI on economic development.

In contrast, many macroeoconomic studies suggest that FDI does have a positive influence on economic growth. Borensztein *et al* (1998) suggest that FDI exhibits a positive growth effect when the host country workforce is highly educated and can exploit technology spillovers. Alfaro *et al* (2003) conclude that well-developed financial markets may be required in order for

[1] See, for example Aitken and Harrison (1999) and Blomstrőm (1986).

FDI to exert a positive growth impact. However, many of these studies are plagued by data problems, such as simultaneity, country-specific effects and lagged dependent variables. Even when these problems are addressed, no strong causal relationship between FDI and economic growth is established.[2] Nunnenkamp and Spatz (2003) find that countries with weak macroeconomic fundamentals tend to experience lower economic growth rates, the higher the stock of FDI.

Some studies have focused on the employment impacts of FDI. For example, Jenkins (2006) concludes that FDI's direct impact on employment in Viet Nam has been limited, due to the high labor productivity and low ratios of valued added to output that characterize much of this investment. In addition, he suggests that some of the indirect employment effects may be negative, due to crowding out of domestic investment.

THE CAPITAL BUDGETING APPROACH

Capital budgeting is a common concept in managerial economics and finance. Simply stated, an investment is evaluated based on a future stream of expected benefits and costs. The relevant calculation is net present value, or the present value of expected future cash flows less the present value of anticipated investment and operating costs. Economists may include the value of alternative investments in an assessment of a particular investment project; if so, then a positive net present value indicates that the investment is not only expected to be profitable, but it represents the best use of available resources.

A capital budgeting framework is well suited to an analysis of FDI impacts on economic growth, for several reasons. First, the host country government contemplating inward FDI is analogous to the firm evaluating a potential investment project. Just as the firm must create value for its shareholders, the government must create value for its citizens. The host country, like the firm, must identify the best use of its scarce resources. Finally, like any investment project, FDI inevitably requires certain capital expenditures on the part of the host country government. These may take the form of explicit subsidies to the MNE, improvements to domestic infrastructure, reduced taxes, and the like.[3] FDI, like any potential investment, is expected to generate returns into the future. The timing and rate of growth of these returns is an important factor in establishing the value of the investment. Just as the value of a particular investment project differs according to project characteristics (new product development, process technology, capacity expansion, merger, acquisition) and firm characteristics (cost of capital, market share, level of risk aversion), so does the value of FDI depend on country characteristics and the nature of the investment.

A coherent capital budgeting analysis of FDI, then, must address three specific areas:

1. country-specific conditions, such as current and expected levels of employment, workforce composition, domestic industry composition and, in some cases, political stability;
2. the type of FDI (market-seeking, efficiency-seeking, resource-seeking); and
3. the existence and timing of any MNE concessions, government subsidies, or other incentives.

[2] See Carkovic and Levine (2005)

[3] In certain cases, of course, the up-front expenditure might be negative.

Let us begin with the assumption that the host country (a developing economy) has a choice as to whether or not to accept a particular FDI proposal. The country undertakes a capital budgeting analysis to determine whether the project can be expected to generate positive economic value, measured by increases in real GDP per capita, and whether it represents the best use of host country resources, to the extent they must be utilized.

COUNTRY-SPECIFIC CONDITIONS

The section below clarifies how the capital budgeting approach illuminates the importance of country-specific conditions to the realization of growth benefits from FDI. Note that throughout the discussion, benefits refer to host country benefits and costs refer to host country expenditures or foregone opportunities.

Domestic Capital

Whether the FDI project in question is a greenfield investment, a merger with, or an acquisition of an existing firm in the host country, it will almost surely generate an inflow of foreign capital.[4] This influx of capital will supplement domestic savings, finance domestic investment and thereby stimulate economic growth. However, FDI does not represent the only alternative to a country seeking capital inflows. Alternatives include portfolio equity investments and portfolio loans. Several studies suggest that FDI has a stronger impact on domestic investment than loans or portfolio investment.[5] In addition, FDI is viewed as a more stable source of capital; witness the dramatic increase in FDI flows to developing countries after commercial bank lending virtually evaporated in the 1980's. However, it may also be the case that, in subsequent periods, the MNE seeks additional capital in the domestic market, crowding out indigenous firms. Moreover, depending on its expansion plans, tax strategy and other considerations, the MNE may repatriate most or all of its host country profits.

The capital budgeting framework processes these disparate results as follows. First, while the impact of FDI on the availability of capital in the host country is almost certainly positive, its value is reduced to the extent that portfolio equity investments and loans would also generate positive impacts on economic growth. Second, if FDI-based capital flows are indeed more stable than portfolio alternatives, the discount rate applied to future FDI flows should be lower than the rate applied to portfolio flows, increasing the net present value of FDI relative to other capital supplies. Finally, if the MNE is likely to seek additional capital domestically in future years, the net present value of FDI must include the cost of crowding out private domestic investment and the potential loss of MNE profits if they are repatriated to the home country. On balance, it is likely that the net benefits of FDI with respect to domestic capital will be positive, but quite small.

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[4] A greenfield investment is an investment in plant, or office structure where no facilities previously existed. In the case of a merger or acquisition, the inflow of capital may (depending on whether the purchase is a share or cash transaction) replace some domestic capital, freeing it up for alternative uses.

[5] See, for example, Razin (2003). Capital inflows may be ranked in the same way as corporate capital structure components; some literature suggests that FDI is preferable to portfolio debt which, in turn, is preferred to portfolio equity.

Technology Transfer

The host country must analyze the benefits, if any, of acquiring the technology that the MNE offers. If the MNE is motivated to engage in FDI, technology represents an ownership advantage that allows the firm to operate profitably in a foreign market. Can the host country successfully access the technology and diffuse it throughout the domestic industry sector or will the MNE successfully limit its benefits to the subsidiary operation? If the workforce is not sufficiently skilled or educated, spillover benefits may not accrue even if the technology can be accessed.

In addition to forcing the host country to evaluate the absolute benefits of FDI with respect to technology transfers, the capital budgeting approach incorporates the opportunity cost of FDI-based technology acquisition. Specifically, the host country may have other options, including licensing the technology or developing functionally equivalent capabilities domestically. To be sure, these alternatives must be feasible: the host country government must have sufficient revenues or foreign exchange to license or finance research and development, and it must demonstrate a satisfactory level of intellectual property protection. Some studies suggest that licensing is more likely to be less costly and more feasible if the technology in question is likely to obsolesce rapidly or if it covers simple manufactured products.[6] Moreover, licensing may represent a more rapid mode of technology transfer. But it may also require an up-front expenditure on the part of the host country, while FDI-driven technology transfers do not necessarily impose direct costs on the host country government.[7]

The capital budgeting framework suggests that the net benefits of FDI with respect to technology transfer are lower, the simpler the product to be manufactured and/or the more rapidly the technology in question will become obsolete. Note that this is precisely the type of FDI that developing countries tend to attract.

Employment

If the host country has a surplus of unskilled labor, greenfield FDI that employs labor-intensive production processes should reduce unemployment, increase the country's wage bill and promote economic growth. However, merger- or acquisition-based FDI may negatively affect host country employment, since the MNE is likely to streamline local operations in order to increase production efficiency.

On the other hand, if the host country enjoys low unemployment rates, then FDI could contribute to rising wages for unskilled labor and consequent negative spillover effects for other domestic firms whose global advantage rests with a cheap supply of labor.

If the FDI results in increased utilization of skilled labor, it may reduce the loss of highly skilled workers to more developed economies as those workers take advantage of better opportunities at home. However, upward pressure on skilled labor costs may increase income inequality in the host country.

Even the potential for FDI to reduce host country unemployment comes at a cost. Those countries with high rates of unskilled labor unemployment frequently experience some labor force migration to developed countries. Many of these countries subsequently receive remittances from expatriate workers, which may be as high as 10 percent of workers' foreign

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[6] See, for example, Maskus (2000).

[7] Licensing arrangements frequently take the form of a royalty on product sales, in which case payments coincide with revenues.

earnings.[8] The loss of this income is recognized in a capital budgeting evaluation of FDI benefits.

In summary, the capital budgeting approach synthesizes the potential impacts of FDI on host country employment by examining existing employment levels and workforce composition. To the extent that there exists an unskilled labor surplus, employment benefits can be expected only in cases of greenfield FDI. Even then, these benefits must be weighed against the loss of remittances from expatriates. If the FDI results in increased demand for skilled labor, the cost of potential increases in income inequality must be considered.

Domestic Industry

In the case of greenfield FDI, if a domestic industry for the MNE's output already exists in the home country, then the impact of FDI may well be to "crowd out" domestic producers. The MNE brings with it more efficient production processes, as well as scale advantages that may not characterize local production. Consequently, local producers may be unable to compete and exit the industry. In the case of mergers with or acquisitions of local firms, all or some of the domestic producers will simply disappear. As many studies have concluded, contributions of FDI to economic growth may be overstated in these cases. Domestic production that would have occurred absent the MNE's presence must be subtracted from FDI output projections to accurately assess benefits. If an FDI-competing industry does not exist, then the MNE's presence may facilitate the development of a domestic industry, or the formation of firms up or down the industry supply chain. These benefits should accrue independent of the type of FDI (*i.e.* greenfield versus M&A).

The capital budgeting approach measures the domestic industry benefits of FDI net of output losses from domestic firms that exit the industry. It also incorporates the timing of these impacts; to the extent that a domestic supply chain evolves to support the MNE, the resulting returns will not accrue immediately. In contrast, contraction of the FDI-competing domestic sector could occur relatively quickly.

Political Stability

To the extent that the MNE negotiates the terms of FDI with a host country's incumbent government, it clearly has an incentive to maintain the political *status quo.* Thus it is not surprising that MNE's have been accused of becoming involved in host country elections and other political activities. It is also important to note, however, that the growth benefits of FDI are sensitive to the host country political system and its likely longevity. FDI contributions to employment, output and productivity growth can only occur if production takes place, economies of scale are realized and markets function more or less uninterrupted. In a capital budgeting approach, political stability enters the analysis primarily through the rate used to discount the future stream of benefits. Increased instability in the host country implies increased risk that the expected future benefits of FDI will not accrue.

General Conclusions

The capital budgeting approach generates some conclusions with respect to FDI that are independent of the motives of the MNE. In each of the areas in which FDI can accelerate economic growth, the capital budgeting approach suggests that when opportunity cost and timing are considered, country-specific characteristics may reduce the net benefits associated FDI.

[8] See, for example, Carasco and Ro (2007).

LOCATION-BASED MOTIVES FOR FDI

Use of the capital budgeting approach can illuminate the relationship between the likely growth benefits of FDI and the location-based motives of the MNE.

Market-Seeking FDI

A market-seeking MNE locates production facilities in a host country for one of the following reasons: to serve the market while avoiding tariffs, to reduce or eliminate transportation costs, and/or to establish its reputation as a "local" firm. Market-seeking FDI represents a "horizontal," or duplicative, plant investment on the part of the MNE; consequently, the foreign market must be large enough that the economies of scale sacrificed by duplicating production facilities are more than offset by the size of the foreign market and the expected revenues associated with the investment.

Since market-seeking MNEs are attracted to countries with relatively high incomes and large populations, this type of FDI has historically flowed between developed economies. Recently, however, China and India have received significant amounts of market-seeking FDI, largely due to their emerging status as two of the largest potential consumer markets in the world. Consequently, market-seeking FDI should be evaluated in the context of its contribution to economic development.

Because market-seeking FDI requires economies of scale to be profitable, it is likely to be characterized by relatively capital-intensive production processes.[9] Consequently, the growth contributions of market-seeking FDI are likely to center on capital flows, technology transfers and domestic industry impacts rather than on employment effects. Furthermore, market-seeking MNEs are more likely than their efficiency- or resource-seeking counterparts to encounter local competition in the host country. If the host country market is attractive to foreign investment, domestic sources of supply may already have emerged. Consequently, market-seeking FDI is likely to generate only marginal contributions to economic growth as a result of more efficient production processes and improved economies of scale.

Efficiency-Seeking FDI

In this case, the MNE is motivated to produce in the host country because of efficiencies such as low labor costs. MNE output is then exported, either back to the home country or to other foreign markets. Efficiency-seeking FDI is a common motivation for investment flows from developed to developing countries. Since many developing countries are characterized by low factor costs due to a surplus of unskilled labor, efficiency-seeking FDI can accelerate growth through several channels. First, it can significantly increase employment, particularly since it is likely to employ production techniques that intensively rely on the relatively abundant factor of production. Second, efficiency-seeking FDI tends to flow to relatively poor countries with low per capita incomes; as a result, domestic firms in the MNE sector typically do not exist. This is good news from both an output and a capital perspective; there should be little, if any, crowding out of domestic firms and greenfield FDI is more likely given the lack of merger or acquisition targets.

There are two principal drawbacks to efficiency-seeking FDI with respect to economic development. The first is that the surplus of unskilled labor suggests an undereducated

[9] The exception to the rule is retailing; however, retailing MNEs do not exhibit significant impacts on host country labor markets.

workforce that may not be able to absorb the technology the MNE brings with it. Technology transfer, therefore, may be limited. The second problem is that there may be more developing host countries with surplus labor than there are efficiency-seeking MNEs. As a result, host countries may find that they are forced to compete with other countries or regions for inbound FDI by offering concessions. These incentives include tax holidays, commitments to improve or expand domestic infrastructure, or production subsidies. Each type of concession requires either a direct expenditure of resources or a reduction in government revenues. In addition, concessions typically must be granted early in the life of the FDI project, while the benefits of the project may not accrue until years later.

Political instability may be a significant factor in the ability of efficiency-seeking FDI to generate economic value for the host country. To the extent that an MNE fears production disruptions, nationalization of firm assets, and the like, it may demand greater up-front commitments of resources from the host country government.

In comparison to market-seeking FDI, efficiency-based investments are likely to have greater impacts on employment and domestic output. Successful technology transfer is less likely with efficiency-seeking FDI, however, since the absorptive capacity of the host country is typically very low. Moreover, any long-term growth contributions must be weighed against the near-term expenditure of resources by host country governments.

Resource-Seeking FDI

In this case, the MNE seeks to locate in a country - whether for offensive or defensive purposes - because of its deposits of minerals or other natural resources. Like efficiency-seeking FDI, resource-seeking MNEs engage in vertical FDI, disaggregating stages of production and exporting from the host country market.

The operations of the resource-seeking MNE are extractive and therefore highly capital-intensive. Therefore, resource-seeking FDI should not be expected to significantly improve host country employment. The capital budgeting approach also focuses on host country alternatives to FDI; namely that the host country could opt to extract and sell the resource itself. If so, the host country might employ a more labor-intensive production process, and thereby contribute more than the MNE to domestic employment. Alternatively, the host country might license extraction technology but retain the rights to sell the natural resource on world markets. In this case, the host country would receive some benefits from technology transfer depending, of course, on its absorptive capacity.[10]

The resource-seeking MNE may contribute to domestic production by facilitating the development of domestic firms either "up" or "down" the supply chain. However, this benefit must be assessed in light of the fact that such supply chain industrial development would occur even if resource extraction were handled domestically. That is, unlike market- and efficiency-seeking FDI that *create* value through production, resource-seeking FDI *extracts* value. Attributing backward and forward linkages to resource-seeking FDI is only appropriate, then, if the host country has no viable extraction alternatives to the MNE. This seems increasingly unlikely, particularly in the case of oil.

The capital budgeting approach suggests that the main advantage of selecting FDI over other extraction alternatives is that resource scarcity confers significant bargaining power upon the

[10] Some studies indicate that resource-abundant developing countries do not experience spillover benefits from resource-seeking FDI, since backward and forward linkages are minimal or nonexistent. See Alfaro (2003) for a summary.

host country. MNEs may well be willing to offer concessions such as building infrastructure, paying high royalties and otherwise contributing direct benefits to the host country economy. Potentially, then, resource-seeking FDI is the most likely to generate substantial economic value for the host country. Unfortunately, the host country's luck in this case is also its curse; resource-rich developing countries are more likely to experience economy-destroying civil wars, as rival factions compete for the resource rents that accrue. Moreover, once political power has been established, the controlling party is likely to appropriate resource rents to maintain power and crush any opposition. As noted earlier, political instability greatly reduces the net present value of future FDI benefit streams and may squander near-term MNE concessions.

A capital-budgeting analysis of resource-seeking FDI assesses the benefits of MNE concessions and royalty payments relative to alternatives such licensing extraction technology and maintaining domestic control over the resource. In this light, the net contributive impact of FDI in this context may not be as significant as previously anticipated.

CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The capital budgeting framework presented here synthesizes many of the case-specific results of previous studies regarding the growth impacts of FDI. The approach evaluates FDI from the host country perspective, not only in terms of likely benefits but also in terms of explicit and implicit costs. Once these factors are taken into account, benefits that were previously attributed to inbound FDI may be significantly reduced. The approach supports the results of earlier work that suggests that FDI is only beneficial under certain circumstances. Contrary to earlier studies, however, the framework introduced here allows policymakers to evaluate the economic value of FDI by employing a coherent focus on direct benefits and costs, timing, and the value of foregone opportunities. Hopefully, such a framework contributes to the understanding of the conditions under which FDI can be beneficial, and provides a coherent context for host country policy decisions.

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