

OCTOBER 2012

WORKING PAPER

The Effect of Outward FDI on Home Country Exports: A Framework for Analysis

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Executive Summary

Outward foreign direct investment (“FDI”) by U.S. multinational corporations (“MNCs”) is regularly the subject of discussion in the debate over off-shoring of U.S. manufacturing activity and its implications for U.S. exports and employment. The debate reflects a concern that MNCs substitute foreign activities for their home country activities; that U.S. production, employment, and investment are moving abroad; and that the sales of foreign affiliates substitute for exports from the United States. One distinct question within this debate is the effect of outward FDI on home country exports. The relationship between outward FDI and exports is the subject of this paper.

The key to addressing this question is to recognize that FDI comes in many shapes and sizes, and that each investment must be evaluated on a case-by-case basis. However, it is possible to draw some general conclusions on the likely effect on exports of different types of FDI. In this paper, we propose a framework consisting of four distinct groupings of FDI. The groups differ based on the motivation underlying the foreign investment decision and structure that the foreign investment can take. The expected impact of FDI can then be predicted based upon which group best fits a particular foreign investment. We subsequently employ this framework to evaluate the empirical studies that, over the last 30 years, have attempted to determine the effect of outward FDI on home country exports.

There are four basic motivations for FDI: market-seeking, natural resource-seeking, efficiency-seeking, and strategic asset-seeking. Our focus here is on the **market-seeking** and **efficiency-seeking** motivations: FDI motivated to better serve or expand an existing foreign market and/or expand to, or create, new markets versus FDI motivated to reduce production costs. Market-seeking and efficiency-seeking FDI both result from firms’ profit-maximizing behavior. This behavior can be in response to normal market forces, or it can be induced by government policy or trade barriers such as tariffs, quotas, or local content requirements. FDI decisions based on normal market forces are considered “voluntary,” while FDI that results from government actions is considered “policy-induced.”

The structure of FDI is typically characterized as either **horizontal** or **vertical**. Horizontal FDI is investment in the same industry abroad as at home.¹ This type of FDI is called “horizontal” because the MNC sets up operations in foreign countries to produce the same finished goods that are produced at home. Horizontal FDI is generally undertaken to serve a foreign market that had been previously served through exports. To use a hypothetical example, General Motors building a facility in China that produces finished automobiles would be considered horizontal FDI.

Vertical FDI has two forms: backward and forward. Forward FDI is investing in an industry in the foreign country that previously purchased the output of the MNC. For example, General Motors would be engaging in forward vertical FDI by acquiring or investing in an automobile distribution network in China. Backward FDI is investing in an industry that supplies the MNC parent with inputs. General Motors would be engaging in backward vertical FDI by building an engine manufacturing facility in Mexico that ships engines to its automobile manufacturing sites.

The differences in motivations for, and structure of, FDI lead us to distinguish between four basic categories of FDI: (i) **market-seeking horizontal**, (ii) **market-seeking vertical**, (iii) **efficiency-seeking horizontal**, and (iv) **efficiency-seeking vertical**. We identify the likely export-enhancing and export-inhibiting effects of each of these categories of FDI on the firm doing the FDI and on the home country as a whole. To provide an overview, these effects may be summarized by means of the matrix in **Figure ES-1**.

¹ Here the term “industry” can be nebulous. Throughout this paper we will define the industry by the finished goods produced by the MNC. Thus, while Ford may build various parts necessary to produce an automobile (i.e., engines, transmissions, etc.) and perform necessary product development activities, we will define the industry based on the finished good, an automobile.

Figure ES-1: Motivation/Structure of FDI and the Expected Impact on Exports

Structure of FDI

	Vertical	Horizontal
Market-Seeking	<p><i>Export-inhibiting effects:</i></p> <ul style="list-style-type: none"> • None <p><i>Export-enhancing effects:</i></p> <ul style="list-style-type: none"> • Increase in exports of finished goods, e.g. due to vertical investment in foreign distribution facilities • Creation of new products for host country market may give rise to new flows of intermediate goods • Increased demand in host country for other goods produced by the MNC or other home country firms 	<p><i>Export-inhibiting effects:</i></p> <ul style="list-style-type: none"> • Foreign affiliate production substitutes for home country exports <p><i>Export-enhancing effects:</i></p> <ul style="list-style-type: none"> • Imports of intermediate inputs from the MNC parent or from other home country firms • Intermediate goods exports may be further enhanced by growth in MNC sales in host country • Increased demand in host country for other goods produced by the MNC or other home country firms
Efficiency-Seeking	<p><i>Export-inhibiting effects:</i></p> <ul style="list-style-type: none"> • Foreign affiliate production substitutes for home country exports <p><i>Export-enhancing effects:</i></p> <ul style="list-style-type: none"> • Imports of intermediate inputs from the MNC parent or from other home country firms 	<p><i>Export-inhibiting effects:</i></p> <ul style="list-style-type: none"> • Foreign affiliate production substitutes for home country exports <p><i>Export-enhancing effects:</i></p> <ul style="list-style-type: none"> • Imports of intermediate inputs from the MNC parent or from other home country firms • Lower production costs may increase home country exports of finished good

The analytical framework developed in this paper generates a number of observations on the relationship between FDI and exports. We conclude that the different categories of FDI have different potential effects on both a firm's exports and the exports of its home country. In general, firm-level data and case analyses are required to adequately assess the likely effects of FDI on exports. Nevertheless, a few broad generalizations are possible:

- **Efficiency-seeking horizontal FDI** will tend to be export-inhibiting if the MNC previously exported the finished good that is now being produced abroad. While such investments may give rise to new export flows of intermediate goods, any such flows are unlikely to fully offset the reduction in prior exports of finished goods.
- **Market-seeking horizontal FDI** will tend to be export-inhibiting in the short to medium term for both the firm and its home country. As with efficiency-seeking FDI, market-seeking FDI may give rise to new export flows of intermediate goods. In addition, over time, such FDI could (further) increase demand for the ex-

ports of other firms in the home country through foreign market growth and “demand complementarities.”² The likelihood for a complete offset to the initial reduction in finished goods exports is thus greater for market-seeking horizontal FDI than for efficiency-seeking horizontal FDI.

- **Market-seeking vertical FDI** will not likely be export-inhibiting and in many circumstances could be export-enhancing for both the firm and its home country.
- **Efficiency-seeking vertical FDI** have both export-inhibiting and export-enhancing effects, and it is difficult to predict which effects are likely to dominate.

Most empirical studies by economists concerning the effect of outward FDI on exports find that outward FDI does not decrease and in fact may increase that country’s exports. This finding suggests that foreign direct investment and exports are complements - that an increase in one causes an increase in the other. At first glance, this conclusion is inconsistent with the a priori assumption that foreign direct investment and exports are substitutes — that serving foreign markets through foreign direct investment is a substitute for serving these markets through exports.

The analytical framework we develop suggests that these findings do not contradict a priori assumptions, but rather they indicate a mismatch between the theory underlying these assumptions and the structure of the empirical studies. When the motivation and structure of FDI are properly accounted for, theory does not necessarily suggest FDI will lead to the substitution of existing export flows. Further, the failure of most empirical studies to distinguish between the diverse types of FDI leads to weak and often inconsistent conclusions about the relationship between FDI and exports at the country and industry levels.

Finally, it is important to recognize that an evaluation of the effects of FDI on the exports of the firm making the FDI and its home country depends on an assessment of the counterfactual case — what would have happened to exports in the absence of FDI. For example, the policies of foreign governments may require a firm to serve their markets through FDI rather than through exports. In this case, FDI may appear to reduce exports (assuming there were in fact prior exports); however, exports would have declined (or never have existed) as a result of these policies, even in the absence of the FDI. Similarly, in the face of growing global competition, a firm may face declining exports or forego the opportunity to expand its global market share should it not engage in FDI to serve a foreign market or to bolster its efficiency. Country-level studies of the relationship between FDI and exports can be misleading because they overlook such counterfactual, dynamic effects.

² Demand complementarities exist when an increase in the consumption of one good leads to an increase in demand for some other good(s). FDI that increases foreign demand and consumption of Budweiser beer may, for example, increase the demand for other American beers. This would be an example of a demand complementarity in our context.

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I. Introduction

Outward foreign direct investment (“FDI”) occurs when a multinational corporation (“MNC”) sets up affiliate operations (such as manufacturing, distribution, or services) in a foreign country or acquires a substantial controlling stake in a foreign firm. U.S. MNCs are important participants in the U.S. economy. These firms account for approximately 20 percent of U.S. private-sector employment, 42 percent of U.S. goods exports, and 20 percent of U.S. private-sector GDP.³ In 2007, U.S. MNC parents accounted for 76 percent of total U.S. private sector expenditures on research and development. U.S. multinationals’ links to domestic suppliers have remained strong despite the expansion in their overseas activities. According to one estimate, in 2006 89 percent of parent purchases of intermediate inputs were from domestic suppliers.⁴

The importance of these corporations both within the U.S. and throughout the world naturally leads to questions and concerns over their activities. Consequently, it is no surprise that MNC FDI is regularly the subject of discussion in the debate over off-shoring of U.S. manufacturing activity and the corresponding effects on U.S. exports and employment.

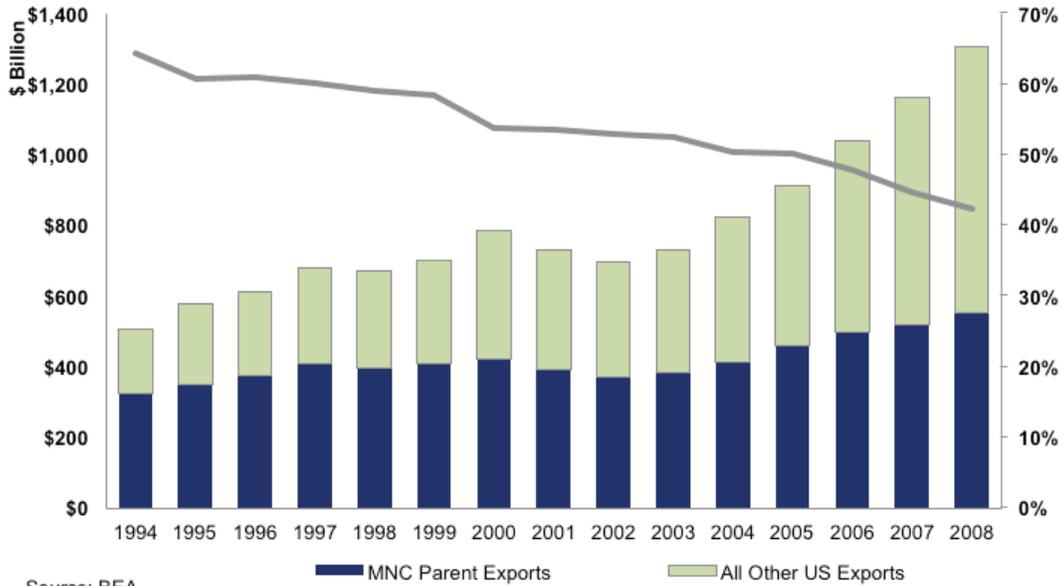
The debate reflects a concern that MNCs substitute foreign activities for their home country activities; that U.S. production, employment, and investment are moving abroad and that sales from foreign affiliates substitute for exports from the United States. One distinct question within this debate is whether outward FDI inhibits, enhances, or has no effect on home country exports. The answer to this question can potentially educate public policy decisions related to MNC activity.

A brief examination of the data on the operations of U.S. multinationals over the last 15 years identifies areas of potential concern. While the exports of parent MNCs still account for a significant portion of total U.S. goods exports, this share has declined from 64 percent in 1994 to 42 percent in 2008 (**Figure 1**).

³ Figures 1 and 2 are based on the most recent data from the BEA’s 2008 survey of U.S. multinationals. The shares of private-sector employment and GDP are for MNC parents only. Export share represents share of U.S. goods exports associated with U.S. parents and their foreign affiliates (exports from U.S. parents and exports to foreign affiliates).

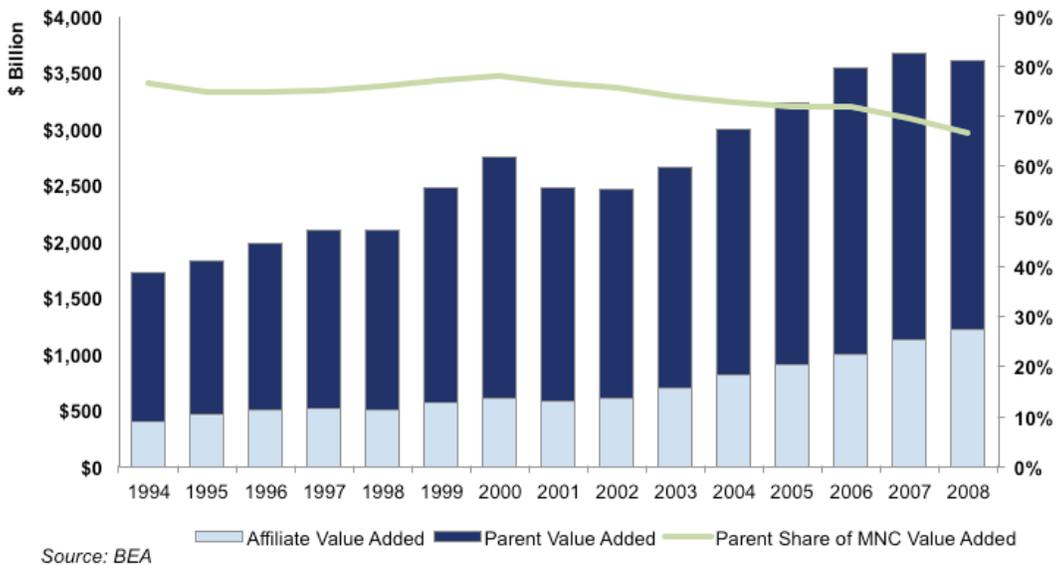
⁴ Slaughter (2009), p. 7.

Figure 1: U.S. MNC Share of U.S. Exports of Goods, 1994–2008



During the same time period, the total dollar value added of U.S. MNCs increased from \$1,717 billion to \$3,608 billion. Within this total dollar value added, the share generated by majority-owned foreign affiliates of the MNCs has increased from 24 percent to 34 percent (Figure 2). Thus, there is a simple correlation between the increasing MNC foreign operations and the relative decline in U.S. MNC exports.

Figure 2: Value Added of U.S. MNCs and Their Majority-Owned Affiliates, 1994–2008



While these data could be interpreted to imply that foreign affiliate production is replacing domestic production for export, such an inference should be met with caution. Indeed, the data in **Figure 2** also show that while the U.S. MNC relative share of U.S. exports has declined, the absolute dollar value of their exports has increased, though not at the same rate as the growth in their worldwide value added. Moreover, the concern that MNC foreign activity could be detrimental to exports is not new, and the question of the effect of FDI on exports has been studied empirically for over 30 years.

These empirical studies have sought to test the straightforward theoretical assumption that foreign production substitutes for exports from the MNC's home country.⁵ The initial studies, represented best by Lipsey and Weiss (1981), found that FDI and exports tend to complement, rather than substitute, for one another. This finding was surprising relative to general economic expectations. Subsequent theoretical and empirical analysis has attempted to resolve the apparent contradiction between this empirical finding and prior expectations.

Following Lipsey and Weiss (1981), empirical studies considered the data and specification issues thought to be behind the apparently contradictory result. Such issues included the level of observation basis of the data (i.e., industry-level vs. firm-level vs. product-level) and the possibility that unseen factors were acting on both FDI and exports (as opposed to FDI acting on exports). Additionally, many of the later empirical studies focused on specific country or industry FDI-export relationships as opposed to more generalized relationships.

Although the refinements in the empirical studies have not led to a clear consensus, the initial empirical findings that outward FDI and exports are complements still stand.⁶ Outward FDI from a country does not decrease that country's exports and, in fact, may increase that country's exports. The few studies that find that FDI substitutes for exports may overlook important export-enhancing effects of FDI. Even in the face of these results, however, there remains some debate as to whether the findings that outward FDI and exports are complements are due to an underlying causal relationship or are instead mainly a product of the authors' choice of methodology.⁷

Given that 30 years of empirical research has failed to resolve the issue of the effect of FDI on exports, we evaluate this work under a framework that accounts for both the motivations of firms engaging in FDI and the structure that such investments take. Such a framework is an important organizational tool given that theoretical models of MNCs predict that FDI will take different structural forms and be undertaken for a number of different reasons.

FDI may be motivated by a desire to enhance market access or enhance efficiency. Furthermore, FDI can involve foreign production of goods or services that are essentially the same as the finished goods produced in the home market ("horizontal FDI"), or can involve the MNC investing in an industry that supplies their firm with inputs ("backward vertical FDI") or that buys from the MNC parent ("forward vertical FDI"). To use a hypothetical example, General Motors building a facility in China that produces finished automobiles would be considered horizontal FDI. If, on the other hand, General Motors builds an engine manufacturing facility in Mexico that ships engines to its automobile manufacturing sites, this would be an

⁵ This assumption is based on a simple model of a single firm producing a single good faced with the decision of serving a foreign market through exports from the home country, or serving that market through the establishment of a foreign affiliate. In these models, if the firm decides to establish a foreign affiliate, exports will be replaced with goods produced by the foreign affiliate.

⁶ The theory of the MNC has also seen refinement. The initial theoretical assumption that FDI would substitute for exports derived from simplified models of the MNC. These models assumed a single-product firm operating in a no-growth environment. In addition -perhaps as a reflection of the structure of the then-current foreign investments -intermediate goods flows arising from FDI were discounted. And by assuming away multi-product MNC production and the potential for foreign market growth, these models failed to account for the potential that FDI could generate exports of other home country-produced MNC products. Dropping these simplifying assumptions provides a theoretical basis that suggests complementarity between FDI and exports should not be unexpected, depending upon the characteristics of a foreign investment decision.

⁷ See in particular Head and Ries (2004).

example of backward vertical FDI. Finally, if General Motors invests in an automobile distribution network in China, this is an example of forward vertical FDI.

The varied motivations, structures, and characteristics of FDI suggest potentially different impacts on exports from the MNC parent and from the home country. The effect on U.S. exports from a horizontal investment, for example, is likely to be different than the effect of a vertical investment because each type of investment affects different export flows. Horizontal FDI involves MNC investments in operations that produce the (previously exported) finished good. As such, a horizontal investment will likely be accompanied by a decrease in prior export flows. The decrease in prior export flows may be partially offset by new export flows of intermediate products from the MNC (or other home country firms).⁸ Vertical FDI, on the other hand, is less likely to replace existing export flows and thus less likely to negatively impact MNC parent or home country exports.⁹ In fact, vertical FDI may be more likely to generate new export flows from the MNC parent or home country. Forward FDI, for example, would be expected to grow and develop foreign markets, leading to an increase in exports. Similarly, if backward vertical FDI reduces production costs, the MNC may find it profitable to increase exports.

Thus, the potential influence of FDI on exports from any particular foreign investment may reflect a propensity to inhibit preexisting export flows of home country production (“export-inhibiting” effect), a propensity to enhance new export flows from home country companies to the foreign market (“export-enhancing” effect), or perhaps both. As any given foreign investment may affect home country exports differently, it should be no surprise that empirical studies that measure investment and export flows from an aggregate of investments that reflect both export-inhibiting and export-enhancing effects find neither strong nor consistent results.

In this paper, we create a framework comprising four distinct groups of FDI. The groups differ based on the motivation underlying the foreign investment decision and structure that the foreign investment can take. The expected impact of FDI can then be predicted based upon which group best fits that foreign investment. We subsequently employ this framework to evaluate the empirical studies that, over the last 30 years, have attempted to determine the effect of outward FDI on home country exports.

We conclude that the lack of consensus in the literature, as well as the disparate empirical findings, may be driven in large part by the fact that the empirical studies have, in general, not been organized to account for the diversity in the motivations underlying the FDI decision, the types of FDI undertaken, and the characteristics of the market in which the investment is made. Findings from empirical studies that use highly aggregated FDI data, such as Lipsey and Weiss (1981), that outward FDI and home country exports are complementary are not contrary to theory in so far as these studies blend instances of FDI that have expected net export-enhancing effects with FDI that have expected export-inhibiting effects. However, studies that use more disaggregated data, and that can be organized using the framework we create, find that the impact on home country exports from outward FDI are in line with expectations. We thus conclude that the failure of the empirical studies to isolate the diverse types of FDI (or to separate each instance of foreign investment using some analog of the framework we utilize) leads to overly generalized findings that may have little value in the analysis of any single FDI decision.

⁸ It is important to note that a horizontal foreign investment need not involve the duplication of all home country operations. When General Motors partners with a Chinese automobile manufacturer to locally produce a vehicle for the Chinese market, it may not duplicate its U.S. research and development activities in China, and it may not set up an engine manufacturing facility in China. Nevertheless, such an investment is categorized as “horizontal.”

⁹ Backward vertical FDI occurs when an MNC invests in an industry that serves as a supplier to the firm. Prior export flows could only be disrupted if the original (home-based) supplier was exporting its output. If the MNC invested in a foreign based supplier, prior exports from the home country would be negatively impacted. Forward vertical FDI occurs when the MNC invests in an industry that buys from the MNC. In this case, prior export flows from the MNC in the home country would not be negatively impacted; only the ownership of the downstream buyer has changed.

II. FDI and Exports: Theory-Based Expectations

A. Overview

The apparent contradiction between empirical studies of FDI and exports, and the initial theoretical presupposition of the relationship between the two, may stem in part from the fact that this presupposition was essentially based on an expectation that most FDI was horizontal in nature (with foreign duplication of all home country activities) and was intended to specifically replace home country exports.¹⁰ A diverse array of factors, however, can lead a firm to engage in multinational operations. Each firm's incentives for undertaking foreign investment may be different, and these incentives have implications for the resulting relationship between that investment and the home country's exports.

Some incentives will result in FDI that directly substitutes for finished product exports — the export-inhibiting effect — while other incentives will result in FDI that creates new and different export flows - the export-enhancing effect. Since the real-world observations that form the basis of the empirical studies reflect the diverse factors and incentives that underlie all outward FDI, these observations incorporate both export-inhibiting and export-enhancing effects. The apparent contradiction between the expectations and the empirical findings may therefore reflect a mismatch between theory and data.

In order to analyze and appreciate findings of complementarity between FDI and exports, a more robust theoretical framework or paradigm is required. This paradigm should incorporate the motives and incentives that underlie firms' geographic diversification decisions. A useful framework is provided by Dunning (1993) in which firms are motivated to undertake outward FDI for one of the following reasons: market-seeking, natural resource-seeking, efficiency-seeking, or strategic asset-seeking.

Dunning's categorizations are designed to facilitate the evaluation of any given foreign investment based on underlying firm motivations. For example, a foreign investment motivated by a desire to better serve an existing export market through a local presence is market seeking, while an investment that seeks to exploit more favorable factor costs available in a host country is considered efficiency-seeking. Given our goal in this paper to review the evidence concerning the impact of outward FDI on exports, we focus our attention on what Dunning characterizes as market-seeking and efficiency-seeking FDI.¹¹

Market-seeking FDI is motivated by a desire to maintain or protect market share in an existing market, or to grow existing markets and/or expand to new markets. To the extent the market-seeking investment locally produces a good that had been previously supplied through home country exports, the investment can be seen as designed to maintain or protect or grow the MNC's host or adjacent country market share. This type of investment would thus tend to disrupt prior export flows.

However, if the investment is made to expand to, or create, new markets, the MNC had no prior export flows — and the home country likely had no exports — that will be disrupted by the investment. Pitelis and Teece referred to the latter market-seeking motivation as market co-creation.¹² In such circumstances, the MNC works in partnership with “co-specialized”

¹⁰ The initial theoretical presupposition of FDI substituting for exports was the product of theoretical economic analysis based both on simplifying assumptions of a single product firm in a no-growth environment and the then-current nature of FDI — namely that it was predominantly horizontal FDI between developed countries. This analysis by definition excluded alternative reasons for FDI and export-enhancing outcomes.

¹¹ We ignore the natural resource-seeking motivation for FDI; setting up a foreign affiliate to gain access to a natural resource would not be expected to reduce home country exports. Additionally, Dunning (1993) separates FDI characterized by acquisition of an existing foreign entity (“strategic asset-seeking”) if that acquisition is designed to gain access to strategic resources such as technology, marketing expertise, managerial know-how, reputation, and brand names. In general, we consider the motivation to expand and grow the host market through acquisition of such assets as a subset of market-seeking FDI; obtaining the strategic asset provides a means through which the market-seeking motive may be satisfied and is not an end in and of itself. We do, however, discuss below the disparate implications on exports of FDI that is acquired versus built.

¹² See, for example, Pitelis and Teece (2009).

assets available only in the cross-border market.¹³ This combination of assets is necessary for the market creation activity. Pitelis and Teece (2009) suggest that the motivation for market co-creation is an underlying rationale for multinational business activity. The distinction between the two types of market-seeking behavior is important not only because of an anticipated differential effect on exports, but also because of our belief that market-seeking FDI designed to expand to new markets and/or create new markets is growing in importance.¹⁴

Market-seeking foreign investments can be either voluntary or policy induced. Policy-induced FDI might include affiliate production motivated by tariffs, quotas, or local content restrictions that, but for a local presence, would restrict MNC access to that market. Voluntary FDI, by contrast, refers to foreign operations motivated by normal economic or market conditions that are not influenced by specific policy constraints. The impact of market-seeking FDI on home country exports will likely be different if the underlying motivation is policy induced versus voluntary. If the FDI is voluntary, it is more likely that the existing export flow would remain but for the FDI. By contrast, the existing export flow is likely to disappear regardless of the FDI if the host market policy is designed to eliminate or reduce that flow.

A market-seeking MNC engages in FDI as an alternative mode of entry to serve a foreign market or as means to expand to or create new markets. Other FDI, however, is motivated not by market-seeking considerations, but rather by supply chain and cost considerations. These considerations are examples of the **efficiency-seeking** motive. More specifically, efficiency-seeking FDI exploits economies of scale and scope, as well as international differences in factor prices, through its geographical diversification decisions.

In general, both market and efficiency-seeking FDI can be structured as horizontal or vertical investments. Efficiency-seeking FDI, however, is more likely to be vertical, while market-seeking FDI is more likely to be horizontal.¹⁵ If the FDI is horizontal, it is more likely to substitute for exports; horizontal investment occurs when a firm establishes facilities in multiple countries, all producing essentially the same product for their respective domestic or nearby markets. Production in the foreign market will thus substitute for exports from the home country. If the FDI is vertical, it may or may not displace exports. A forward vertical investment in distribution would not be expected to displace prior export flows, while a backward vertical investment would be expected to replace prior exports only if a home country firm had previously exported this upstream product and the MNC replaced these exports through investment in supplier operations abroad.

Even in circumstances where FDI displaces MNC parent or home country exports, these displaced flows may be offset by new export flows of intermediate goods. Such new export flows can result from both horizontal and vertical investments. The economics literature, however, generally attributes such offsets to vertical foreign investments.¹⁶ This attribution hinges on a narrow definition of horizontal FDI that precludes any intermediate goods flows from the parent to the horizontal affli-

¹³ An asset is “co-specialized” or “complementary” if the value of the asset is a function of its use in combination with other assets. Co-specialized assets are specific in the sense that there is no market in which these assets can be sold for their full value (Pitelis and Teece, 2009, p. 14).

¹⁴ Jackson (2011) provides an excellent overview of trends in U.S. FDI. He finds that “U.S. firms have placed the largest share of their annual investments in developed countries, primarily in Western Europe, but this tendency has increased since the mid-1990s.” He further finds that as the U.S. economy has shifted toward high technology services and financial services, “U.S. direct investment abroad focused less on the extractive, processing, and basic manufacturing industries in developing countries and more on high technology, finance, and services industries located in highly-developed countries with advanced infrastructure and communications systems.” Such investments indicate market-seeking motives.

¹⁵ The “efficiencies” that may be exploited by FDI are most likely to benefit only one stage of an MNC’s overall business activity. Accordingly, it should be expected that such motivations will generally result in a vertical investment. If the motive of the FDI is to better serve the country (or nearby countries) of final consumption, then FDI in that country is most likely to involve the production of the finished good—the definition of horizontal FDI. As discussed in more detail below, there are exceptions to these generalizations. Most instances of FDI, however, will fall into these categories.

¹⁶ The economic models that explicitly distinguish between horizontal and vertical FDI tend to indicate that “horizontal” FDI is a substitute for trade, and “vertical” FDI serves to promote trade. See, for example, Brainard (1993), Markusen (1997, 2002), and Clausing (2000). In Markusen’s model, “vertical” FDI is characterized by large quantities of intra-firm trade, with the home country exporting headquarter services (intermediate inputs) and importing finished goods. These flows may result in a net increase in exports.

ate. We believe that such a narrow definition is unrealistic and ignores the fact that many vertically integrated MNCs do not replicate all aspects of their home country production operation in foreign countries when they establish foreign affiliates that produce the previously exported finished good. In this paper, we do not ignore the vertical structure of most MNC operations, and we allow for new home country intermediate goods export flows to “horizontal” foreign affiliates. Thus, the expected export-inhibiting impact of vertical *and* horizontal investments must be evaluated in light of the export-enhancing effect of any intermediate goods flows.

New intermediate goods flows, in the absence of market growth, are not likely to be sufficient to overcome the export-inhibiting effect of an investment. FDI, however, may lead to market growth and, in turn, to increased intermediate goods flows.¹⁷ Consider market-seeking FDI, for example. Market-seeking FDI is not undertaken simply to maintain existing foreign market sales. It is also likely intended to grow and expand the foreign market, especially if the firm believes that foreign market sales growth is not economically feasible through growth in exports.¹⁸ Though a market-seeking investment displaces existing exports of the finished product, the foreign market for the MNC product may grow as a result of the investment. Accordingly, any new intermediate goods export flow will serve a larger base than previous exports. The volume of intermediate goods to this larger base may be adequate to overcome the value of the lost export flow.

Early economic theory of the MNC expected market-seeking FDI to be horizontal. This expectation led to the belief that FDI substitutes for exports. The empirical findings that contradict this expectation suggest that market-seeking FDI may take other forms and that some such investments may be more aptly characterized as vertical, and perhaps more importantly, that a horizontal investment need not involve duplication of all aspects of the production process.

Early models of the MNC tended to assume a single-product firm operating in either the home or host country and fixed foreign demand for home country goods.¹⁹ By ignoring exports of intermediate products to foreign affiliates by the parent MNC and other domestic input suppliers, as well as the effect of FDI on demand for the home country’s products, these models failed to account for potential intermediate goods flows or the potential that FDI could generate exports of other home country–produced goods.²⁰ With the possibility of new export flows excluded, it is not surprising that these early models predicted that FDI substitutes for exports.²¹

¹⁷ Many theories of the MNC assume market share is unrelated to a local presence (or FDI). Instead, such studies assume MNC market shares at home and abroad are determined by the relative size of their investments in strategic assets such as research and development, marketing, and physical capital. See, for example, Yamawaki and Audretsch (1988). The likelihood of market-share growth from FDI is, however, frequently cited as an explanation for the observed absence of export substitution. See, for example Lipsey and Weiss (1984); Blomstrom, Lipsey, and Kulchycky (1988); Belderbos and Sleuwagen (1998); Swendenborg (2001); and Kokko (2006).

¹⁸ Export growth may be constrained because of cost or public policy considerations. Local access through the foreign investment may also lead to an increase in market size, as a local presence may provide signals of quality and reliability, ease adaption of the MNC product to host market preferences, and enable the firm to improve its provision of after-sales services. Brainard (1997) finds evidence suggesting that advertising-intensive products require a local presence; based on U.S. data from 1989, more advertising-intensive industries are associated with higher FDI (affiliate sales) and lower exports.

¹⁹ Lipsey and Weiss (1984).

²⁰ As consumers in the foreign market become acquainted with the firm’s brand and reputation, a multi-product MNC may benefit from increased demand for other products produced by the parent. Similarly, consumers in the foreign market may increase their demands for goods originating from the same home country as the MNC. This is an example of so-called “demand complementarities.” See, for example, Lipsey and Weiss (1984); Belderbos and Sleuwagen (1998); and Head and Ries (2004).

²¹ These early models also assumed constant market size (i.e., no market growth occurs with host market production). This simplifying assumption eliminated the possibility that host country market growth could result in any new or incremental export flows.

Later economic theory moved beyond these simplifying assumptions and sought to incorporate vertical FDI (and/or horizontal FDI associated with intermediate goods flows), as well as multi-product firms and market growth. This more robust modeling tends to be more able to account for the variety of firm motivations that lead to FDI and provides a theoretical basis to suggest that the export-inhibiting impact of FDI may be partially, or totally, offset by the rise of new export channels.

In summary, the addition of trade in intermediate goods and market growth in models of MNC behavior results in predictions of new export channels from market- and efficiency-seeking FDI. The export-enhancing effect of these new export channels will partially offset the export-inhibiting effect from foreign production of finished goods. And if the investment leads to foreign market growth and demand complementarities (i.e., growth in the demand for other goods produced in the home country), the new export flows (of intermediate goods or complementary finished goods) may dominate the decline in prior export flows.

B. Expectations

The preceding discussion suggests that home country exports may be affected by FDI motivated by market- or efficiency-seeking concerns, and that investments will be structured as either horizontal or vertical operations. These motivations and structures imply that foreign investments can be categorized within one of four groups: (i) market-seeking horizontal, (ii) market-seeking vertical, (iii) efficiency-seeking horizontal, or (iv) efficiency-seeking vertical.²² Within each grouping, we expect to find the potential for both export-inhibiting and export-enhancing characteristics. The expected net effect of any foreign investment on home country exports from the investing firm and from other home country firms, therefore, depends on the group and the evaluation of specific characteristics within that group.

It is important to note that the evaluation of the net effect on exports is not limited only to the group or characteristics of a given investment, but is also affected by the baseline expectation of exports against which the investment effect is measured. This “counterfactual” is very important to consider, because the baseline is not likely to have common characteristics across individual foreign investments.²³ For example, suppose an MNC facing a declining worldwide market share invests in an overseas production facility that exports the finished goods to third countries in order to maintain its worldwide market share. The counterfactual for this investment may be that the MNC loses home country exports without the foreign production affiliate. Alternatively, a different MNC may not face such a loss of existing market share, but may make a similar investment to expand that existing share. While both of these foreign investments would displace existing export flows, only the latter would inhibit exports, because in the case of the former those flows would have nonetheless disappeared.

1. Market-Seeking Motivation

As discussed above, market-seeking FDI may be structured as either a horizontal or a vertical investment. Each structure can include foreign affiliates whose operations may inhibit or enhance exports from the home country parent

²² This framework for evaluating MNC foreign investments is obviously a simplification, as multiple motivations can underlie a given investment decision, and the structure of actual business enterprises is not readily allocable to the “horizontal” and “vertical” designations. The framework, however, provides valuable insight into the likely impacts of foreign investment on exports.

²³ The need to evaluate the counterfactual is acknowledged in the empirical literature. For example, some studies have attempted to calculate the proportion of foreign affiliates’ market share that could have been served by exports from the home country (so-called “export survival rates”), but the estimates vary greatly. See, for example, Barba Navaretti and Castellani (2004).

Market-seeking horizontal affiliates would likely *inhibit* exports in the following circumstance:

- **Export substitution: Host and adjacent** – Such investments that are voluntary will displace exports of finished goods produced by the MNC to the host country and potentially to adjacent countries.

Market-seeking horizontal affiliates would likely *enhance* exports in the following circumstance(s):

- **New intermediate goods flows** – Investments that do not fully replicate the home country activities but instead import intermediate goods from the MNC parent or from other home country firms that supply the parent will lead to new export flows.²⁴
- **Market growth: Local presence** – To the extent that FDI leads to foreign market growth for the MNC, the export-enhancing effect of intermediate goods flows will be magnified.
- **Demand complementarities** – FDI that creates new demands for other goods produced by the MNC or other home country firms (demand complementarities) would enhance exports.

As discussed above, one must also consider the counterfactual in order to appropriately evaluate the net effect of FDI on exports. In the case of the market-seeking horizontal investment, this consideration applies to policy-induced FDI, which may not inhibit future exports of finished goods, as the existing export flow is likely to disappear regardless of the FDI if the host market policy is designed to eliminate or reduce that flow. Thus, while the data may indicate such FDI to be export inhibiting, when evaluated against the appropriate counterfactual, export substitution from such an investment is likely to be much more limited. In fact, the investment may be found to be export enhancing if it boosts exports of other home country firms through demand complementarities.

²⁴ This effect may be time and market sensitive. The MNC may replicate the means to acquire such intermediate goods through either follow-on investment or host market suppliers over time.

Example: Market-Seeking Horizontal FDI

Manufacturing power generation equipment in Russia

In November 2010, GE opened an energy technology center in the Kaluga region of Russia. The new facility manufactures advanced power generation equipment and provides services for GE power generation equipment that is installed in Russia and the Commonwealth of Independent States. GE believes that the initiative enables it to tailor its products and services to the local market by “bringing its business closer to its customers throughout the region.” A GE executive noted at the opening ceremony:

“The opening of the Energy Technology Center [...] is a key part of our strategy to support our customers in Russia with the latest technologies and services across the full spectrum of the energy landscape, including power generation, water, energy services and oil and gas. It also supports our global initiative to invest and expand our presence in promising growth regions worldwide. We are accelerating the localization of our capabilities to better compete and partner for success.”

This investment appears to be market-seeking horizontal. It is motivated by a desire to expand and serve the host and adjacent country markets. Additionally, it involves the manufacture of finished products (power generation equipment) and services.

Source: General Electric (2010d)

Market-seeking vertical affiliates would likely *inhibit* exports in the following circumstance:

- **None.**²⁵

Market-seeking vertical affiliates would likely *enhance* exports in the following circumstance(s):

- **Market growth: Local presence** – To the extent that FDI leads to foreign market growth for the MNC (such as through the vertical investment in foreign distribution facilities), finished goods exports will be enhanced.
- **Market Co-creation** – To the extent FDI leads to creation of new markets for MNC or home country products (either existing or newly created for the new market), the investment may give rise to new flows of intermediate goods produced by the MNC, or other home country firms.
- **Demand complementarities** – FDI that creates new demands for other goods produced by the MNC or other home country firms would enhance exports.

For both horizontal and vertical structures, the nature of the market-seeking affiliate creation mechanism (i.e., make versus buy) may enhance or inhibit exports, depending on the other operational characteristics. Acquisition of existing host country firms could minimize the export-enhancing effect if some intermediate goods are sourced locally. Acquisition could, howev-

²⁵ A common example of a market-seeking vertical foreign investment is investing in a foreign distribution network. Such an investment would have no export-inhibiting effects on prior export flows of finished goods; its goal is to grow the foreign market for home country exports. We would also characterize market-seeking FDI motivated to expand to new markets or create new markets as vertical investments. To the extent that they are intended to showcase the MNC's products and competencies, and thereby create demand in new markets, such investments are similar to an investment in a foreign distribution network. To the extent the FDI is a joint venture in which the MNC works in partnership with co-specialized assets available only in the cross-border market to “co-create” a new market, the investment is again best characterized as vertical. Such an investment is not in the production of a finished good abroad to substitute for the production of that same good at home. Rather, it is a vertical investment necessary for the production of a finished good.

er, provide the MNC with other benefits such as brand names, distribution networks, and exclusive customer relationships.²⁶ These other benefits could lead to market growth (both for the produced good or other MNC goods). Any such growth would magnify the export-enhancing effect. Thus, the net impact of the make-versus-buy decision is case specific.

Examples: Market-Seeking Vertical FDI

1. *Manufacturing wind turbine gears in China*

In 2009, GE Drivetrain Technologies formed a joint venture company with Chongqing XinXing Gear of China to manufacture large-diameter gears for the wind turbine industry. The Chinese gear plant was intended to supply parts for GE's gearbox assembly plant in Shenyang, China. According to GE, the joint venture reflected its commitment to the development of a local Chinese supply chain.

This joint venture appears to be a market-seeking vertical investment. It is market-seeking because the apparent motivation is to expand GE's drive train business in the host and adjacent country markets. This apparent motivation may be the result of voluntary profit-maximizing behavior, or it could be policy induced. The investment is vertical because it provides an input (large-diameter gears) for a downstream assembly operation (gearboxes).

Source: General Electric (2009)

2. *Wind turbine partnerships in Norway and Sweden: Market co-creation investments*

In June 2010, GE announced plans to install up to five offshore demonstration wind turbines through two separate partnerships in Norway and Sweden. In their announcement, GE stated, "We remain optimistic about the potential of the offshore wind industry, and we believe that our partnering strategy will increase our potential for growth in this sector, particularly in Europe where we see tremendous opportunities."

As in the previous example, this joint venture can be characterized as a market-seeking vertical investment. Its main motivation is to grow or develop new markets. The investment is vertical because it is intended to demonstrate the new technology in hopes of creating and growing a market. It is not an investment in the production of the finished good. Since this market-seeking FDI is undertaken in partnership with foreign firms, we define it as market co-creation FDI.

Source: General Electric (2010b)

²⁶ See Belderbos and Sleuwagen (1998). Insofar as the acquisition motivation was to gain such access, this corresponds to Dunning's (1993) strategic asset-seeking motivation of the firm.

2. *Efficiency-Seeking Motivation*

The structure of an efficiency-seeking foreign investment can be either horizontal or vertical. The primary motivation for an efficiency-seeking investment is to exploit lower factor costs in the host country. For example, the MNC may decide to set up final assembly operations overseas if these activities are highly labor intensive and the firm faces competition from low-wage countries. We characterize this as an efficiency-seeking horizontal investment; it is not market-seeking because the investment is not intended to serve host country or adjacent country demand for the product — the definition of market-seeking. The efficiency-seeking horizontal investment would likely inhibit home country exports because the new affiliate's exports would replace home country exports to other global markets (i.e., markets other than the host country or countries adjacent to the host country). This type of investment would enhance exports if the new affiliate sources intermediate goods from the home country.

Efficiency-seeking horizontal affiliates would likely *inhibit* exports in the following circumstance:

- **Export substitution: Third country** – FDI will reduce existing export flows of the finished good(s) to non-adjacent third countries.

Efficiency-seeking horizontal affiliates would likely *enhance* exports in the following circumstance:

- **New intermediate goods flows** – FDI may give rise to new exports of intermediate goods.

Example: Efficiency-Seeking Horizontal FDI (*with additional Market-Seeking Motivations*)

Manufacturing steam turbines in India

In 2010, GE Oil & Gas entered into a joint venture agreement with Triveni Engineering & Industries Limited to manufacture advanced technology steam turbines in India. The turbines would be sold for use in power generation applications in India and also exported worldwide. In a press release, GE cited Triveni's "excellent supply-chain and established presence in India." GE also noted that the joint venture would enable the firm to offer its worldwide customers an "optimum efficiency and best-value power generation solution" of high quality.

This investment can be considered to have *both* an efficiency-seeking and a market-seeking motivation. GE apparently views the Indian manufacturing facility as a means of offering competitively priced ("best-value") power generation products that can be exported worldwide, presumably through the use of lower cost intermediate inputs obtained through Triveni's supplier relationships. GE's co-specialization with Triveni in order to produce finished goods for export outside of India reflects an efficiency-seeking motivation. The plant will also produce for the domestic Indian market, and Indian sales of GE-Triveni turbines were expected to benefit from Triveni's "established presence" in India. The production of the finished product for the host country market reflects a market-seeking motivation. The joint-venture is apparently horizontal in structure, as it will produce finished steam turbines.

Source: General Electric (2010a)

On the other hand, if the MNC performs an intermediate production stage abroad in order to access lower-cost components, we characterize this as an efficiency-seeking vertical investment.

Efficiency-seeking vertical affiliates would likely *inhibit* exports in the following circumstance:

- **Export substitution** – FDI will potentially displace exports of home country produced intermediate good(s) to existing foreign affiliates.

Efficiency-seeking vertical affiliates would likely *enhance* exports in the following circumstances:

- **New intermediate goods flows** – FDI may give rise to new exports of intermediate goods from the parent MNC or from other home country firms to the extent that the overall firm production process includes multiple vertical stages that are geographically diversified.
- **Market growth: Cost efficiencies** – FDI may expand home country exports of the finished good if the efficiency-seeking vertical investment produces intermediate components at a lower cost.

Example: Efficiency-Seeking Vertical FDI

Manufacturing wind turbine components in Vietnam

In May 2010, GE opened a new factory in Hai Phong, Vietnam, to manufacture wind turbine components “to help support the global demand for GE’s wind turbine technology.” GE also considered a later expansion of the plant’s manufacturing scope to include the company’s full range of power generation equipment. A GE press release cites the availability of a “skilled workforce” as a key factor behind the decision to locate production in Vietnam. By October 2010, the plant had exported in excess of 200 units of generator systems.

The apparent motivation for this foreign investment is efficiency-seeking, because the stated motivation is to exploit the “skilled workforce,” and Vietnam is currently a low labor-cost environment for MNCs. Additionally, the investment is intended to provide output destined for the “global” market rather than the host or adjacent country markets. The investment appears to be vertical in structure, as the output of the operation is components for turbines rather than the finished turbines themselves.

Source: General Electric (2010c)

The effect of FDI on home country exports from the different motivation-structure combinations is summarized in the matrix shown in **Figure 3**. In the figure, we identify those effects that are expected to apply to the exports of the investing MNC, other home country firms (“HC”), or both.

Figure 3: Motivation/Structure of FDI and the Expected Impact on Exports

Structure of FDI

	Vertical	Horizontal
Market-Seeking ¹	<p><i>Export-inhibiting</i></p> <ul style="list-style-type: none"> • None <p><i>Export-enhancing</i></p> <ul style="list-style-type: none"> • Market Growth: Local Presence (MNC) • Market Co-creation (MNC & HC) • Demand Complementarities (MNC & HC) 	<p><i>Export-inhibiting</i></p> <ul style="list-style-type: none"> • Export Substitution: Host and Adjacent (MNC) <p><i>Export-enhancing</i></p> <ul style="list-style-type: none"> • New Intermediate Goods Flows (MNC & HC) • Market Growth: Local Presence (MNC) • Demand Complementarities (MNC & HC)
Efficiency-Seeking ²	<p><i>Export-inhibiting</i></p> <ul style="list-style-type: none"> • Export Substitution: Third Country (MNC) <p><i>Export-enhancing</i></p> <ul style="list-style-type: none"> • New Intermediate Goods Flows (MNC & HC) • Market Growth: Cost Efficiencies (MNC) 	<p><i>Export-inhibiting</i></p> <ul style="list-style-type: none"> • Export Substitution: Third Country (MNC) <p><i>Export-enhancing</i></p> <ul style="list-style-type: none"> • New Intermediate Goods Flows (MNC & HC)

¹ Common features of Market-Seeking FDI:

- * Major motivations: a) voluntary (e.g. growth/international expansion) b) policy-induced (e.g. tariff-jumping)
- * Majority of affiliate output is for sale in host country or adjacent countries
- * Host country (and adjacent countries) previously served by home country exports

² Common features of Efficiency-Seeking FDI:

- * Major motivations: a) international factor price differentials b) economies of scale and scope
- * Output is primarily for export to home or third countries (“export platform”)

While it is necessary to evaluate the likely effects of each foreign direct investment by an MNC on its exports and on total exports from the home country on a case-by-case basis, certain observations are apparent from the preceding analysis. First, if an investment is horizontal and if the MNC previously exported the finished good that is now being produced abroad, the horizontal investment will have an export-inhibiting effect regardless of whether it is efficiency or market seeking. In both cases, new export flows of intermediate goods, to the extent that they exist, will partially or totally offset the reduced home country exports. The likelihood of a complete offset is greater for a market-seeking horizontal than for an efficiency-seeking horizontal, because the intent of a market-seeking investment is to grow the foreign market, and growth is a necessary condition for any new export flows (of either intermediate goods or other home country products) to be large enough for a complete offset.

An additional observation that emerges from the analysis is that **market-seeking vertical** investments are not likely to be export-inhibiting and in many circumstances could be export-enhancing. There is no clear export-inhibiting effect from such investments. As we discussed above, the most likely market-seeking vertical investments are forward integration of foreign distribution activities or other activities designed to showcase a firm's product line. In addition, such investments could be designed to take advantage of co-specialized assets available only in the cross-border market. This combination of assets may be necessary for the market creation activity. These market-seeking investments will not replace existing export flows. Moreover, the intent of such investments is to grow the foreign market and/or expand sales to new markets through, at least initially, greater home country exports. Accordingly, market-seeking vertical investments are expected to be export-enhancing on net.

There is no clear observation to be drawn from **efficiency-seeking vertical** investments. Such investments could have an export-inhibiting effect if the good produced (likely an intermediate input to the finished good) had been previously exported from the home country. On the other hand, such investments could enhance exports to the extent that the investment creates new export flows or enables an increase in finished goods exports from the home country. Thus, the overall net effect of an **efficiency-seeking vertical** investment will be case specific.

Finally, it is important to reiterate that any determination of the net effect of FDI on exports depends on an appropriate characterization of the counterfactual case. Regardless of the structure or motivation of FDI, likely changes in exports must be measured against changes that would likely occur in the absence of the investment. For example, host country policies designed to reduce imports or increase competition from abroad may suggest that without the foreign investment, foreign market demand—and thus home country exports—would be inhibited. Thus, while the data may in some instances indicate that FDI is export-inhibiting, different conclusions may be drawn when data is evaluated against the appropriate counterfactual.

Overall, the expected effect of specific foreign investments on exports is a function of individual firm behavior; the unique motivations for, and structure of, a foreign investment; and appropriate consideration of the counterfactual case. The framework described above organizes the motives, structure, and other characteristics of a foreign investment such that general predictions can be drawn for a given investment based on how it fits into the framework.

The framework also provides a roadmap to evaluate the empirical literature on the question of the impact of FDI on exports. Most empirical studies rely on aggregate country- and industry-level data, which tends to blend the motivations and structures of FDI, thus conflating the export-enhancing and export-inhibiting effects. Our framework suggests that such a blend of FDI will likely include investments in multiple quadrants of our motivation/structure matrix. And as such, these studies will likely include both export-inhibiting and export-enhancing investments. Some other studies focus on specific investments and more narrow export flows. The foreign investments examined in these studies are more apt to be able to fit within a single quadrant in our matrix. Such studies can thus be evaluated more readily in the context of the expected net effect on exports for investments in that quadrant.

III. Empirical Research

This section reviews the empirical economic literature that evaluates the relationship between home country exports and outward FDI. Following the work of Lipsey and Weiss (1981)—who found sales of foreign affiliates of U.S. MNCs to be positively and significantly related to U.S. exports—much of the empirical work in this area has sought to either confirm this finding thought to contradict economic expectations, or debunk it based on more rigorous analyses.²⁷ Our first step is to sort the literature into two general “buckets” that facilitate discussion and provide some context to interpret differences between these studies. In the first bucket are the analyses based on industry- or country-level data.²⁸ The second bucket contains the studies that utilize firm- and even product-level data. For example, the second bucket includes a study that examines and compares Japanese auto parts–manufacturer FDI and corresponding export flows into the United States.

A. *Country-and Industry-Level Data Studies*

Empirical studies employing industry- or country-level data, in general, find a positive or complementary relationship between FDI and exports. These studies are summarized in **Figure 4**. Much of the attention received by this literature has revolved around an apparent contradiction between the analytical assumption that foreign direct investment is a substitute for exports and the empirical evidence that foreign direct investment is a complement to exports. Our framework, however, suggests that the results of complementarity are not necessarily contradictory. Since these studies combine data on investments across motivations and structures (i.e., they include all of the quadrants in our matrix), there should not necessarily be a presumed finding of either export-inhibition or export-enhancement. To the extent that these studies do tend to find FDI is export-enhancing could simply reflect the fact that the data included in these studies is more likely to fall into the market-seeking vertical quadrant of our matrix, or that horizontal investments give rise to greater flows of intermediate or other goods than was anticipated.²⁹

²⁷ Head and Ries (2004) exemplify the latter school of thought. They refer to the many empirical findings of complementarity as “statistical complementarity,” as contrasted with “economic complementarity.” See also Grubert and Mutti (1991).

²⁸ Most such studies evaluate the relationship between outward FDI and exports for U.S., Japanese, and Swedish manufacturing MNCs. One reason for the focus on these countries is related to data availability. Sweden and the United States have been systematically collecting data on outward FDI by national firms since the 1970s (Kokko, 2006).

²⁹ Vertically integrated firms may benefit from increased exports of intermediate goods to their overseas subsidiaries, while non-vertically integrated firms are more likely to exhibit substitution. The net effect at industry level would then depend on the proportion of vertically integrated firms in the industry (e.g., Lipsey (2002), Head and Ries (2004), Kokko (2006), and Blonigen (2001)).

Figure 4: Summary of Studies Using Country and Industry-Level Data

Author	Data	Findings
Lipsey & Weiss (1981)	U.S. manufacturing exports in 1970 to 44 countries; net sales of manufacturing affiliates	Export-enhancing: sales of foreign affiliates of U.S. MNCs are positively and significantly related to U.S. exports
Blomstrom et al. (1988)	Swedish exports in 1978 to 19 countries; U.S. exports to 15 countries in 1982; affiliate net sales	Export-enhancing: the higher the level of Swedish affiliate production in a country, the greater the level of Swedish exports to that country in a particular industry
Grubert & Mutti (1991)	U.S. manufacturing exports to cross-section of 33 countries in 1982; corporate income taxes in host country	Export-enhancing: high corporate income taxes (part of the cost of FDI) in the destination country tend to lower exports to that country
Brainard (1997)	U.S. exports in 1989 to 27 countries; U.S. affiliate sales in manufacturing and primary industries; country openness to FDI	Export-inhibiting: decline in barriers to FDI is associated with a decrease in exports, suggesting substitution between exports and FDI
Clausing (2000)	U.S. exports to 29 countries in 1977-1994; affiliate sales; average employee compensation in host country	Export-enhancing: high wages in the destination country tend to lower exports, suggesting complementarity
Lipsey & Ramstetter (2003)	Japanese exports in manufacturing sector, 1986-1995; employment in Japanese manufacturing affiliates	Export-enhancing: Japanese affiliate employment in a given country is positively related to exports
Amiti & Wakelin (2003)	U.S. exports to 36 countries, 1986-1994; cost of FDI	Export-enhancing: Vertical FDI is complementary to exports Export-inhibiting: horizontal FDI (motivated by high trade barriers) substitutes for exports

Alternatively, some economists (in particular Head and Ries) have suggested that the empirical findings of complementarity between FDI and exports in these industry-level studies are misleading due to methodological shortcomings. These studies rely on regressions of exports on foreign direct investment and leave out factors like openness to trade, political objectives, and institutional influences that may simultaneously affect both host country imports and inward FDI. Omission of such variables may lead to biased estimates of the relationship between FDI and exports.

High trade costs in some countries due to tariffs or other import restrictions might, for example, encourage inward FDI while simultaneously discouraging imports. While empirical observation of this situation could show a negative correlation between home country exports and FDI, there would not be a causal relationship between the two.³⁰ Alternatively, a high level of demand for the home country's products in a particular foreign market may encourage both exports and FDI, resulting in a spurious finding of complementarity.³¹

While most empirical papers on the relationship between foreign investment and exports make some attempt to control for statistical challenges in isolating a causal linkage between FDI and exports, the literature reveals persistent doubt as to the success of these methods. Thus, many economists consider it an open question whether the findings of a complementary relationship between FDI and exports are reliable.

³⁰ Belderbos and Sleuwagen (1998) specifically address the issue of "tariff-jumping" FDI.

³¹ For example, see Head and Ries (2001).

B. Firm- and Product-Level Data Studies

Other studies that have examined the question of FDI and exports have utilized firm- and product-level data instead of country- or industry-level data. These studies relate to our framework differently, as they tend to evaluate FDI that is more likely to fit into a single quadrant of our matrix rather than blend FDI that crosses multiple quadrants. Accordingly, it should be anticipated that the findings of these studies would be more mixed than those of the aggregate studies.

We reviewed six empirical studies that utilized firm- or product-level data. These studies evaluate the relationship between exports and FDI in foreign markets previously served by home country exports from the MNC. As such, it is more likely than not that the investments so evaluated would be considered market seeking as opposed to efficiency seeking. The studies are summarized in **Figure 5**.³²

Five of the studies find that FDI inhibits exports of the finished product.³³ These same studies also find that FDI enhances flows of intermediate goods from the home country. These two findings are consistent with the expectations in our framework. On net, some of the studies find export-enhancement while others find export-inhibition. In fact, the net impact appears to depend on the relative magnitudes of the enhancing and inhibiting effects. Head and Reis's (2001) finding is illustrative: while FDI is on net export-enhancing, it is export-inhibiting for those firms that are less likely to export intermediate goods.

It is important to note that the studies that employ firm-level data may also suffer from the same type of statistical problems caused by unobserved factors that create bias in the studies that employ country-level data. For example, firms that are more productive or possess significant intellectual property advantages may tend to both increase exports from the home country and engage in significant foreign direct investment. In a statistical analysis, this situation results in a positive relationship between exports and FDI, though it would be incorrect to interpret this fact to mean that FDI is creating additional exports. At the firm level, there may also be reverse causation from exports to FDI, as noted by Lipsey (2002). For example, declining exports may prompt a firm to invest in overseas manufacturing plants in an effort to stay competitive and avoid further losses in market share. (This example highlights the need to incorporate the appropriate counterfactual case. Here, the foreign investment may lead to further decreases in exports, though this outcome would have occurred with or without the investment. Thus, the investment should not be considered export-inhibiting.)

³² Lipsey and Weiss (1984) examine U.S. MNC FDI to developed countries. Such FDI is unlikely to be motivated by factor price advantages and is much more likely to be motivated by growing existing export markets. Belderbos and Sleuwagen (1998), Head and Ries (2001), and Blonigen (2001) examine instances of Japanese FDI, motivated by the desire to maintain markets in the face of trade barriers (i.e., instances of policy-induced market-seeking FDI). Svensson (1996) and Swedenborg (2001) examine Swedish FDI undertaken to grow and serve export markets that are too large to serve solely through home country production.

³³ The exception is Lipsey and Weiss (1984), who find FDI is export-enhancing.

Figure 5: Summary of Studies Using Firm- and Product-Level Data

Author	Data	Findings
Lipsey & Weiss (1984)	U.S. parent MNC exports to 5 geographic areas (developed countries only) in 1970 & affiliate output	Export-Enhancing: Increased affiliate output associated with increased parent MNC exports to the area where the production took place. This positive relationship is stronger for intermediate goods exports than for final goods exports.
Svensson (1996)	Swedish parent MNC exports, 1970-1990 & net sales of affiliates producing abroad	Export-Inhibiting: Increased foreign affiliate production replaces parent exports of finished goods but enhances parent exports of intermediates. Strong export-inhibiting effect of foreign affiliate production for export to third countries.
Belderbos & Sleuwagen (1998)	Japanese electronics exports to Europe, early 1990s & number of manufacturing subsidiaries in Europe	Export-Inhibiting: Policy-induced foreign affiliate (horizontal) production of Japanese electronics in Europe are associated with a reduction in home country exports. However, FDI by vertically integrated Japanese firms, whether in the form of distribution activities, acquired European firms, or component production, was export-enhancing for Japan.
Head & Ries (2001)	Japanese parent MNC manufacturing exports, 1966-1990 & number of foreign affiliates	Export-Enhancing: However, for those firms less likely to export intermediate goods, FDI found to be export-inhibiting.
Blonigen (2001)	Japanese automobile parts exports to the US & Japanese affiliate production of auto parts in the U.S., 1970s-1990s	Export-Inhibiting: (Likely) policy-induced U.S. affiliate production of auto parts leads to fewer home country exports of auto parts. Similar finding for 11 other Japanese final goods. Note: Also found export-enhancing impact of production of Japanese automobiles in the U.S., as such production lead to increased exports of Japanese auto parts.
Swedenborg (2001)	Parent exports of Swedish MNCs in the manufacturing sector, 1965-1994 & net local sales of foreign affiliates	Export-Enhancing: Swedish outward FDI has led to market growth. There is a small negative impact of foreign affiliate production on exports to non-affiliates, but this is outweighed by a strong positive effect on home country exports to foreign affiliates. Note: Swedenborg specifically rejects the findings by Svensson (1996) that Swedish outward FDI is export-inhibiting.

IV. Conclusions

Empirical economic literature generally finds that outward FDI does not decrease home country exports in aggregate, and, if anything, increases those exports. These findings are contrary to economic expectations that FDI should substitute for exports. Studies that have found evidence suggesting FDI substitutes for exports have generally examined narrowly defined trade flows in which the export-enhancing indirect effects of outward FDI are less prevalent and thus less likely to dominate the export-inhibiting direct effects on those specific flows.

One reason why the general findings run counter to expectations is that these expectations derive from a focus on the direct export-inhibiting impact of a foreign direct investment on existing bilateral trade flows. This focus tends to ignore or inadequately account for the indirect export-enhancing impacts of FDI on future trade flows. And at an aggregate level, we find that complementarity between FDI and exports should not be unexpected to the extent that the observations incorporated in the analyses span foreign investments initiated for distinct economic reasons.

The evaluation of the net effect of FDI is not a straightforward exercise. FDI is not unique; the foreign investment can take many forms. The affiliate can represent one stage in a geographically vertically integrated production process located in a country with a cost advantage, or it can be a horizontal operation producing the finished goods in the host market. It could be encouraged by home or host country trade policies, or it could be strategically located to retain or gain worldwide market share. Moreover, the FDI could take the form of ownership of existing host country plant(s) and equipment, or it could require the establishment of new host country facilities. In short, a firm may engage in FDI for a number of different economic reasons, and these investments may be implemented through a number of different methods. Each of these reasons and methods may have different export-inhibiting and export-enhancing impacts. Therefore, in order to accurately assess the impact of FDI on exports from a given data sample, all relevant trade flow must be captured in the analysis.

Finally, even if every trade flow is captured in an empirical analysis, and the net effect is thus accurately determined from a given data sample, the finding of complementarity or substitution between FDI and exports is meaningless unless measured against the home country export outcome that would have occurred had these foreign investments not been undertaken.

In order to draw meaningful conclusions about the impact of outward FDI on exports, empirical studies must distinguish between the motivation(s) underlying the investment; they must incorporate all resulting export flows; they should include all those factors that would be expected to influence FDI and exports; and they must use an appropriate baseline (i.e., counterfactual) measure from which to derive conclusions. Given the changing nature of outward FDI, this requires up-to-date time series data and preferably disaggregated data allowing for a focus on specific case studies.

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