

Canadian Inward and Outward Direct Investment: Assessing the Impacts

Someshwar Rao, Malick Souare and Weimin Wang [♦]

Abstract: This paper reviews trends in inward foreign direct investment (FDI) and multinational production in Canada as well as Canada's direct investment abroad (CDIA), and provides an assessment of their impact on the Canadian economy. It pulls together a large body of existing empirical literature in Canada and other countries on the economic costs and benefits of FDI. The main conclusion of the paper is that both inward and outward FDI provide significant net long-term economic benefits to both home and host countries, provided they have competitive and dynamic product and factor markets as well as a good and competitive business climate. In addition, there is little evidence of hollowing-out of corporate Canada in terms of movement out of Canada of key corporate headquarter functions of multinational enterprises operating in Canada.

Key Words: Foreign Direct Investment, Multinationals, Economic Growth, Productivity, Hollowing-out

JEL No.: F21, F23, O40

[♦] Economic Research and Policy Analysis Branch, Industry Canada. The views expressed in this paper are those of the authors and do not reflect in any way those of Foreign Affairs and International Trade Canada, Industry Canada or the Government of Canada. We would like to thank Jianmin Tang of Industry Canada, Wulong Gu of Statistics Canada and Shenji Chen of Foreign Affairs and International Trade Canada for their many useful comments and suggestions on an earlier draft of the paper.

1. Introduction

Thanks to multinational enterprises (MNEs), the world economy is much more integrated today than 20 years ago. A number of key global economic trends have facilitated as well as necessitated the organization of MNEs' economic activities on a global basis, with a view to minimising costs and improving the quality of their products and services. These include: steep reductions in transportation and communication costs; liberalization of trade and foreign investment regimes in both industrialised and developing economies; rapid improvements in production processes; intense global competition among countries and companies for markets, skilled personnel, capital and innovation activities; and the emergence of China and India as major economic players on the world stage.

Canada too has participated actively in the globalization process by increasing its foreign direct investment (FDI) links with other countries. Indeed, Canada's inward and outward FDI orientations are higher than in many OECD countries.

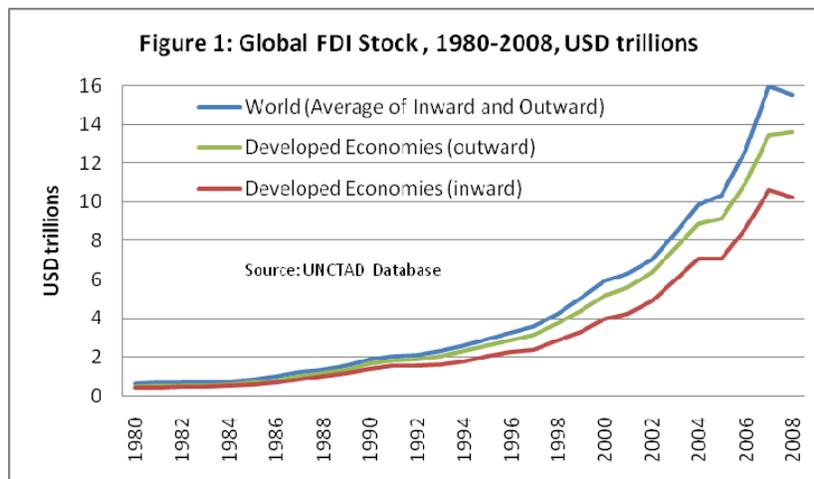
The main objective of this paper is to review the recent trends in Canada's inward and outward FDI, and the literature assessing their impact on the Canadian economy. The paper concludes that both inward and outward FDI provide significant net long-term economic benefits to both home and host countries, provided they have competitive and dynamic product and factor markets as well as a good and competitive business climate. Little evidence is found of hollowing-out of corporate Canada in terms of moving out of Canada key corporate headquarter functions of MNEs operating in Canada.

The paper is organized as follows. The next section describes recent trends in FDI and MNE activity, both globally and in Canada. Section 3 discusses the determinants of FDI and their impact on the amount and nature of direct investment in Canada. Section 4 discusses the impact of inward and outward FDI on the Canadian economy, including the issue of whether FDI trends have resulted in a "hollowing-out" of corporate Canada. Section 5 summarizes the main findings.

2. Trends in FDI, Globally and in Canada

2.1 Global Trends in FDI and MNE activity

Global FDI stocks (as measured by the average of reported inward and outward stocks) increased from just USD 0.63 trillion in 1980 to about USD 15.6 trillion in 2008, an average annual growth rate of 12.2 percent (see figure 1). Developed countries accounted for just under 70 percent of inward global FDI and about 88 percent of outward global FDI on average during this period. Nevertheless, the share of developing countries has been increasing. The rise in developing countries' share of inward global FDI steepened sharply in 2008 and in the early part of 2009 as the global financial crisis resulted in a steep decline in inward FDI into the developed world (UNCTAD, 2009).



The three types of FDI are: greenfield investments; mergers and acquisitions; and re-investment of retained earnings. In developed economies, mergers and acquisitions (M&As) have been the dominant drivers of FDI inflows. During 1987 to 2007, on average, M&As accounted for more than 70 percent of developed countries' FDI inflows. On the other hand, greenfield investment and retained earnings were the dominant sources of

FDI inflows in developing economies. In these countries, M&As accounted for less than one-third of total FDI inflows¹.

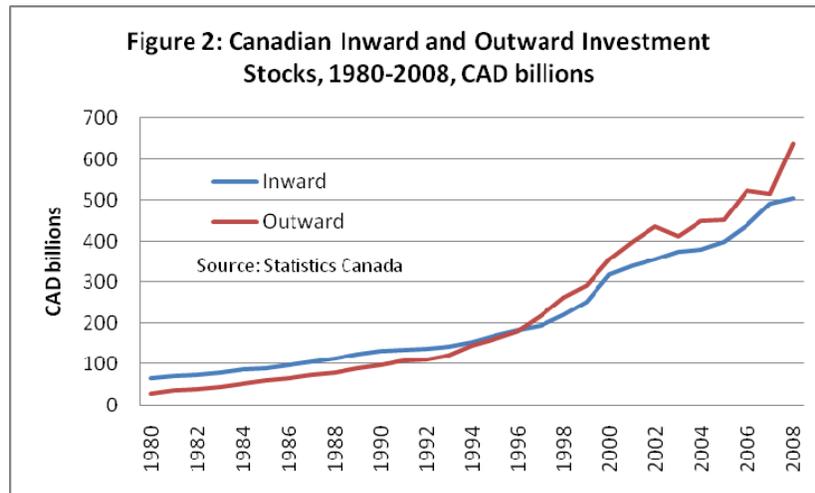
Currently there are over 82 thousand MNEs, with over 807 thousand foreign affiliates, operating all over the world – more than a four-fold increase since 1990 (UNCTAD, 2009). Mergers and acquisitions activity has been the preferred MNE strategy of gaining entry into foreign markets. In 2008, MNEs employed about 77 million people around the globe and accounted for over one-third of global trade, primarily through intra-company trade (UNCTAD, 2009). In addition, sales of foreign affiliates totalled USD 30 trillion in 2008 (UNCTAD, 2009).

2.2 *FDI and Multinational Activities in Canada*

Both Canada's inward and outward FDI stocks have increased steadily since 1980 (see figure 2). Canada's inward FDI stock increased from CAD 64.7 billion in 1980 to CAD 504.9 billion in 2008, while Canada's outward FDI stock increased from CAD 28.4 billion to CAD 637.3 billion during this period. With outward FDI growing faster than inward FDI, Canada has been a net exporter of FDI since 1996, a dramatic shift from being a large net importer in the 1970s and 1980s. In 2008, Canada's net direct investment position (the difference between outward and inward FDI stocks) was about CAD 132 billion.

Despite a large increase in both inward and outward FDI stocks, Canada has fallen behind the global FDI trends. Over the period 1980-2008, Canada's inward FDI stock (in current US dollars) grew at a rate of 7.5 percent per year, the lowest growth rate among G7 countries and Australia. During the same period, Canada's outward FDI stock (in current US dollars) grew at a rate of 11.7 percent per year, the third lowest rate among G7 countries and Australia.

¹ The share of M&As in total FDI inflows into developing countries rose from virtually nil in the late 1980s to one-third of the total in the late 1990s, largely due to the wave of privatization of public assets, and particularly in Latin America. See Calderón, Loayza and Servén (2002) and World Bank (2001).



The geographic sources of Canada's inward FDI have become more diversified since 1990. The United States is still the dominant foreign investor in Canada; in 2008, it accounted for about 58 percent of Canada's inward FDI stock, compared to 64.2 percent in 1990. The share of all countries other than the United States, the United Kingdom, France, Germany, and Japan increased from 15.3 percent in 1990 to 24.7 percent in 2008. Similarly, the United States is also the major recipient of Canadian direct investment abroad (CDIA). It accounted for about 49 percent of Canada's total outward FDI stock in 2008; however, this represents a reduction of more than 10 percentage points since 1990. The destination of Canada's outward FDI has become more diversified since 1990 than its inward FDI. The share of all countries other than the United States, the United Kingdom, France, Germany and Australia has almost doubled since 1990, from about 20 percent in 1990 to 37 percent in 2008.

The manufacturing, mining, and finance and insurance sectors are the top three contributors to both inward and outward FDI in Canada. The manufacturing sector still receives the biggest share of Canada's inward FDI, but its share has been declining. In 2008, the manufacturing sector accounted for 34.6 percent of Canada's inward FDI stock, while it was 42.6 percent in 1999. On the other hand, the share of the mining sector has more than doubled since 1999, reaching 20 percent in 2008. The finance

and insurance sector has the biggest share of CDIA. Its share increased to 40.3 percent in 2008 from 31.1 percent in 1990. In the meantime, the manufacturing sector share in the outward FDI stock dropped from 28.1 percent in 1990 to 18.3 percent in 2008, while the share of the mining sector remained stable.

Foreign-controlled companies play a major role in the Canadian economy. For instance, in 2005, they accounted for about 30 percent of corporate operating revenue (see Table 1). In the manufacturing sector, their share of operating revenue was more than 50 percent. Based on this information, we deduce that about 30 percent of Canada's GDP is contributed by companies which are foreign-controlled. In terms of employment, foreign-controlled firms are, on average, more productive than Canadian-controlled firms; consequently, their employment share would be somewhat lower than their GDP share. In 2004, foreign affiliates also accounted for over 35 percent of total Canadian business sector R&D spending.

Table 1: Foreign Affiliates' Activities in Canada

	1990	1995	2000	2005*
Manufacturing				
Production				
Level (CAD billions)	179.1	254.5	331.9	375.5
As percent of national total	47.1	51.2	49.9	51.2
Gross Operating Surplus				
Level (CAD billions)	9.3	19.2	29.3	25.3
As percent of national total	52.6	50.2	54.7	55.2
R&D spending				
Level (CAD billions)	1.6	1.8	2.6	2.9
As percent of national total	45.3	37.2	31.0	38.3
Total non-agricultural business				
Production				
Level (CAD billions)	318.9	447.6	694.5	851.3
As percent of national total	30.3	30.1	30.1	29.9
Gross Operating Surplus				
Level (CAD billions)	22.8	31.2	58.0	76.2
As percent of national total	30.0	26.7	30.2	30.5
R&D spending				
Level (CAD billions)	1.9	2.4	3.6	4.4
As percent of national total	37.1	29.7	29.3	34.9

Source: OECD. * Data for R&D spending are for 2004

The economic importance of foreign affiliates in Canada varies considerably across industries. The production shares of foreign affiliates varied between more than 85 percent in motor vehicle manufacturing and 76 percent in pharmaceuticals, to less than 16 percent in utilities and construction.

3. Determinants of FDI and the Location Decisions of MNEs

The conventional paradigm for explaining the existence of multinational firms developed in the business management literature involves advantages related to ownership, location and internalization—the OLI or “eclectic” paradigm (see, e.g., Dunning, 1977). Firm-specific intangible assets, such as unique technologies and superior managerial practices, enable foreign firms to succeed notwithstanding local firms’ superior knowledge of the local domestic market (Hymer, 1960/1976)². These intangible assets, which constitute the “ownership” element in this paradigm, can be used in multiple plants within a firm without being diminished (see Blonigen, 2005).

Furthermore, because of potential market failures³, a firm may not be able to fully capture rents from these assets through

² For a restatement of the ownership advantage in the framework of modern heterogeneous firm theory, see Helpman, Melitz and Yeaple (2004). In their framework, low-productivity firms produce only for the domestic market; firms with higher productivity incur the fixed costs of entering export markets, while firms with the highest level of productivity incur the still higher fixed costs entailed in FDI. Dunning’s “ownership advantage” is captured in the higher level of productivity of outward investing firms.

³ A range of potential market imperfections or failures have been noted in the literature as possibly providing incentives for MNE formation. For example, in a seminal paper, Buckley and Casson (1976) argued that external markets for transactions in intermediate products that embody firm-specific intangible assets may be inefficient and costly or not even exist. Difficulty of ensuring firm reputation for quality may also dissuade a firm from licensing production to a foreign agent (Horstmann and Markusen, 1987). Preventing knowledge spillovers to potential rivals has also been widely recognized as an important consideration in motivating MNE formation and conditioning their behaviour.

other economic options such as exporting and licensing. Hence, it may be optimal for a firm to establish a presence abroad, thus “internalizing” its global economic transactions.

Historical evidence supporting the ownership and internalization aspects of this paradigm is abundant. For example, as regards the ownership advantage, Markusen (1995; p. 172) notes that industries in which multinationals are prevalent tend to feature firms with “high levels of R&D relative to sales; a large share of professional and technical workers in their workforces; products that are new and/or technically complex; and high levels of product differentiation and advertising.” Consistent with this, multinationals tend to be firms whose intangible assets constitute a large share of their market value and, given the potential for spillovers to rival firms, seek to internalize these advantages by expanding their presence abroad through FDI rather than using market mechanisms (Morck & Yeung, 1991, 1992). At the same time, the recent explosive growth of outsourcing and offshoring at a time of growing importance of knowledge capital calls into question the relevance of ownership and internalization advantages; as noted by Doh (2005; p. 698): “By disintegrating production stages along the supply chain and transferring them to other geographic locations, firms may create conditions for the erosion of ownership and internalization advantages.” Indeed, Lewin, Massini and Peeters (2008; p. 6) see offshoring as a competing paradigm: “offshoring can be seen as a new form of internationalization by which firms disaggregate their value chain across multiple locations, potentially externalizing portions of it to third party service providers.”

FDI location decisions of MNEs, the third leg of the OLI paradigm, depend on country-specific factors such as the size of the economy, factor endowments, costs to trade and FDI, trade and investment barriers, taxes, exchange rates, and other considerations. Firms make location decisions by comparing costs and benefits of affiliates’ production across various jurisdictions. Firms with different production structures may respond differently to country-specific factors. By itself, the OLI framework has provided few insights into the spatial

patterns and trends of FDI (e.g., McCann and Mudambi, 2004; Bevan and Estrin, 2004). Accordingly, a range of hypotheses have been developed in the economics literature to help explain FDI developments.

Generally, the economics literature distinguishes between two types of multinational firms. A vertically integrated MNE locates its production in different countries based on differences in relative factor proportions across countries (see Helpman, 1984). This is consistent with the Heckscher-Ohlin model which predicts that FDI will flow from capital- or skills-rich countries to capital- or skills-poor countries. Vertically integrated MNEs usually increase host countries' imports of intermediate materials while raising exports of final products. Hence, economic activities of vertically integrated MNEs result in a complementary relationship between inward FDI and trade in host countries (see Johnson, 2005). By the same token, vertical FDI requires trade costs in host countries to be low and the savings from lower cost of production (net of extra trade costs) to be substantial.

On the other hand, a horizontally integrated MNE bases its production decisions on a tradeoff between geographic proximity to markets for its products and concentration of production to realize economies of scale; see Krugman (1983), Markusen (1984), Brainard (1993), and Horstmann and Markusen (1992). When the economic benefits of geographic proximity to markets are substantial, MNEs will split up their production across countries to serve local markets. The horizontal model of MNEs is motivated by large local markets, high trade costs, similar factor endowments across countries, low set-up costs and low plant-level economies of scale relative to firm-level economies of scale⁴, whereby trade cost savings more than offset higher costs of foreign production.

⁴ Note: knowledge capital that can be deployed simultaneously in multiple plants is a source of firm-level economies of scale independently of the importance of plant-level economies of scale. On this point, see Chellaraj, Maskus and Mattoo (2009).

The knowledge capital model of FDI, first articulated by Markusen (1997), encompasses both horizontal and vertical motivations for FDI and provides testable predictions about firm choices between FDI and outsourcing based on the relative importance of knowledge capital to physical capital in their operations. The core idea of this model is that knowledge-intensive activities are intensive in skilled labour compared to factory-floor production and hence motivate the formation of vertical multinationals that invest abroad based on relative prices and availability of key factors of production. At the same time, knowledge-based assets (e.g., specific technologies) have a joint-input characteristic in that they can be used in multiple production facilities at relatively low cost, which facilitates the formation of horizontal multinationals that produce the same goods or services in multiple locations based on proximity to markets. Carr, Markusen and Maskus (2001) test this model on U.S. data and find that both vertical and horizontal investments are important and are related to country characteristics, as the model predicts. Testing this model on Singapore data, Chellaraj, Maskus and Mattoo (2009) demonstrate that, as Singapore built up the skill intensity of its workforce, its inward FDI shifted from a vertical orientation to a skill-seeking orientation, while its outward FDI shifted to horizontal types into developed countries and to vertical types into less-developed Asian neighbours.

Most empirical studies find that horizontal FDI dominates vertical FDI among developed countries; see Carr, Markusen and Maskus (2001), Markusen and Maskus (2002), and Gao (2003). But the Canadian evidence indicates that FDI in Canada is comprised more of the vertical type. Wang (2009) found that foreign multinational production in Canada fits well with the factor-proportions hypothesis—for example, foreign MNE production in Canada is increasing in the relative skills difference between investing countries and Canada and is decreasing in the trade costs in Canada.

Most empirical studies using data for developed countries find a positive link between GDP (a proxy for economic size) and inward FDI; see Ghosh, Syntetos and Wang (2007),

Nicoletti et al. (2003) and Gao (2003) for OECD countries; and Carr, Markusen and Maskus (2001) and Markusen and Maskus (2002) for the United States. Canadian studies also come to similar conclusions (see Globerman and Shapiro, 1998; and Wang, 2009). This feature in the pattern of global FDI is consistent with the above-mentioned fact that FDI into developed countries is largely horizontal. For example, Markusen et al. (1996) and Markusen (1997) show that horizontal multinational activities increase with host country economic size while vertical multinational activities are not correlated with host country economic size.

The relationship between FDI and trade depends on the underlying motivations for FDI. FDI and trade are predicted to be substitutes under the proximity-concentration hypothesis and complements under the factor-proportions hypothesis. Some studies have found that they are substitutes, at least to some extent⁵; however, more studies report complementarity⁶. These two different relationships do not necessarily contradict each other, as explained by Head and Ries (2004), “studies with focus on narrow product lines can detect the substitutive relationship, while the complementarity can be found upstream

⁵ Head and Ries (2001), using a panel dataset on 932 Japanese manufacturing firms over 1965-1989, find a complementary relationship between direct investment abroad and exports for the full sample. However, firms that are unlikely to ship intermediate products to overseas production affiliates exhibit substitution. Belderbos and Sleuwaegen (1998) examining Japanese electronics firms exports to Europe found that ‘tariff jumping’ investment induced by EC anti-dumping measures substituted for exports from Japan but firms which invested in EC distribution activities, acquired EC firms, or produce components within a vertical Keiretsu, exported relatively more to Europe. Blonigen (2001), studying Japanese auto parts exports to the U.S. using product-level data, which more closely fits the assumption of a single-product firm that underpins the traditional theory of the MNE, also finds substantial evidence for both a substitution and a complementarity effect between Japanese affiliate production in the U.S. and exports to the U.S.

⁶ See Head and Ries (2004) for Japan, Lipsey and Weiss (1981, 1984), Brainard (1997), Brainard and Riker (1997a) and Head, Ries and Spencer (2004) for the U.S., Blomström, Lipsey and Kulchycky (1988) for Sweden, and Fontagné and Pajot (2002) for France.

products of home countries are still attractive to their downstream affiliates abroad.” In Canada, outward FDI and exports are found to be complements (see Hejazi and Safarian, 1999). Likewise, inward FDI and host country exports are more likely to be complements than substitutes as foreign affiliates add their production to host countries’ exports. For Canadian evidence, see Hejazi and Safarian (1999), Cameron and Cross (1999), Cross (2002), Baldwin, Beckstead and Caves (2001), and Baldwin, Caves and Gu (2005).

The impact of trade costs and barriers on FDI depends on the production structure of MNEs. When trade costs are high, firms might choose FDI as a substitute for exports and become horizontal multinationals. In this case, trade costs have a positive impact on FDI. On the other hand, vertical FDI induces more imports of intermediate inputs and increases exports of final goods in host countries. Hence, high trade costs in host countries would discourage vertical FDI. The empirical evidence is mixed. A positive relationship is found in Ghosh, Syntetos and Wang (2008) and Nicoletti et al. (2003) for OECD countries, and in Markusen and Maskus (2002) for U.S. bilateral FDI, suggesting horizontal motivations for FDI. However, as noted above, a negative relationship is reported in Wang (2009) for Canada’s inward FDI, suggesting vertical motivations.

Investment costs and barriers discourage inward FDI. Many factors impact on the cost of investing in a host country such as legal, legislative and regulatory frameworks, foreign ownership restrictions, bureaucracy, and infrastructure. Ghosh, Syntetos and Wang (2008) and Nicoletti et al. (2003) found that, in OECD countries, FDI restrictions reduce inward FDI dramatically while better infrastructure attracts more FDI. Wang (2009) found a negative relationship between the costs of undertaking foreign investment and inward FDI in Canada.

Theoretically, it is fair to say that high corporate taxes discourage inward FDI. However, there is limited empirical evidence in support of this prediction. For example, Ghosh, Syntetos and Wang (2008) found that corporate taxes have no significant negative impact on inward FDI in OECD countries.

However, the lack of empirical evidence on the impact of corporate taxes on FDI might be because the actual tax rates facing foreign affiliates are either not properly measured due to the complexity of tax treatment of these investments or because corporate tax rates do not vary much across OECD countries and over time. Becker, Egger and Merlo (2009) do find evidence of a negative relationship between business taxes (gewerbesteuer) levied at the municipal level and MNE headquarter locations in Germany.

Volatility as well as the level of exchange rates may also impact FDI. High volatility of a host country's currency means high market risk in respect of future returns to investment in that country and thus would discourage inward FDI. Amuedo-Dorantes and Pozo (2001) for U.S. inward FDI, Kiyota and Urata (2004) for Japanese inward FDI, and Nicoletti et al. (2003) for inward FDI in OECD countries provide empirical support for the negative relationship between inward FDI and exchange rate volatility in host countries. The level of the exchange rate might impact inward FDI through two channels: first, as emphasized in Froot and Stein (1991), capital market imperfections lead firms to invest more abroad when their home currency appreciates because their relative wealth increases and the internal cost of capital will be lower than borrowing; and second, currency movements will affect relative labour costs across countries. Both channels imply that a depreciation of a host country's currency encourages inward FDI, and vice versa. Froot and Stein (1991) and Klein and Rosengren (1994) found that US dollar depreciation increases U.S. inward FDI. The same conclusion was reached in Ghosh, Syntetos and Wang (2008) for OECD countries.

4. The Impact of FDI on the Canadian Economy

In this section we pull together the empirical findings on the impact of FDI on Canada's productivity performance and economic growth, as well as the implications for head office activity in Canada.

4.1 FDI and Productivity

There are three main channels through which inward FDI impacts a host country's productivity (see Lipsey, 2002).

First, because of superior technological know-how and management practices, foreign-controlled plants tend to have higher productivity levels than domestic firms in the host countries. As a result, the overall productivity level of host countries would tend to increase, the higher the share of foreign-controlled plants in the host economy. This represents a *direct* contribution to host economy productivity (Criscuolo, 2005). There is a large body of empirical literature comparing productivity levels of foreign-controlled and domestic firms. Most studies find evidence in support of this hypothesis; however, there is considerable variation from sector to sector and from country to country⁷. For Canada, higher productivity levels of foreign-controlled firms were reported by Globerman, Ries and Vertinsky (1994), Baldwin and Dhaliwal (2001), Rao and Tang (2005) and Baldwin and Gu (2005). For example, Rao and Tang (2005) found that foreign-controlled firms in Canada, on average, are about 20 percent more productive (in terms of multifactor productivity) than domestic firms.

By the same token, MNEs can contribute disproportionately to productivity growth. Corrado et al. (2009) report that, in the United States, MNEs (both U.S.-owned and foreign-owned) accounted for between 50 and 75 percent of productivity growth in the U.S. non-farm, non-financial corporate sector between 1977 and 2000, and *all* of the productivity growth in this sector in the late 1990s, despite accounting for only about 40 percent

⁷ For example, foreign affiliates in OECD countries have higher levels of productivity than domestic firms in manufacturing, but not always in services. Moreover, the productivity advantage of foreign affiliates in manufacturing ranges from very modest levels in some countries (e.g., Finland, France and the United States) to large levels in a wide range of countries (on the order of 50% to 100% higher) to very large levels in a few countries (on the order of 3 time greater in the United Kingdom and Hungary. See Criscuolo (2005), figures 3 and 4. The extent of dispersion of productivity differentials is very large; *ibid*, figures 5 and 6.

of the output of this sector. For Canada, Baldwin and Gu (2005) reported that there was a 1.7 percentage-point jump in labour productivity growth between the 1980s and the 1990s in the Canadian manufacturing sector, of which 1.1 percentage points were attributable to the activities of foreign MNEs in Canada.

Second, there could be intra-industry productivity spillovers from foreign-controlled firms to domestic firms—i.e., *indirect* contributions to host country productivity levels. MNEs in general tend to use more advanced technologies and have superior managerial practices, and these may impact on domestic firms within the same industry, resulting in (unintended) productivity spillovers in the industry. Canadian evidence again strongly supports this hypothesis. Gera, Gu and Lee (1999) found that inward FDI has a positive and significant impact on TFP growth in Canadian industries, mainly through reduction of production costs, technology transfer and international R&D spillovers. Baldwin and Gu (2005) and Rao and Tang (2005) also found that domestic firms in industries characterized by larger market shares of foreign producers or with higher FDI penetration tend to have better productivity performance, suggesting positive productivity spillovers from foreign-controlled firms to domestic firms within the same industry.

Third, foreign-controlled firms in one industry could also influence positively productivity performance of the supplier (upstream) and the user (downstream) industries in host countries via inter-industry linkages. As discussed in Gu and Wang (2006), domestic firms in the downstream industries could benefit from FDI via improvements in variety and quality of intermediate inputs, lower input costs and better customer service. Similarly, domestic firms in the upstream industries might receive management training and technical assistance from the foreign-controlled firms and also demand higher product quality from their suppliers. Blomström and Kokko (1998) note that productivity spillovers could also come from increased competition among local firms seeking to become suppliers to multinationals.

The empirical literature on spillovers is mixed: various studies utilizing different methods, examining different economies, and using data at different levels of industrial disaggregation find alternatively positive, nil and in some cases even negative spillovers⁸. Reflecting the mixed results found in the empirical literature, surveys of the literature by Hanson (2001) and Görg and Greenaway (2004) concluded that there is at best mixed evidence for such spillovers. Conversely, more recent studies based on micro data suggest that there are indeed spillovers. In some cases, these are found to be economically large, namely in sectors that are relatively high technology sectors but not in low technology sectors where FDI is seeking cheaper labour; see, Keller (2004) for a survey. Bitzer, Geishecker and Görg (2008) using industry-level data for 17 OECD countries find evidence for spillovers through vertical backward linkages (but not forward, downstream linkages) between multinationals and domestic firms for all countries, but that this effect is much higher for the Central and Eastern European Countries (CEECs) in this group than the other OECD countries. They also find some evidence for positive horizontal spillovers.

As regards the Canadian evidence, using data on Canadian manufacturing industries from 1973 to 1997, Gu and Wang (2008) reported strong and significant inter-industry productivity spillovers via both the forward (downstream) and the backward (upstream) production linkages. Lileeva (2006), meanwhile, reported significant productivity spillovers from FDI in the Canadian manufacturing sector because of strong forward linkages. In particular, the presence of foreign

⁸ A possible negative impact of inward FDI on the host country's productivity might come from the takeover of more efficient domestic firms by foreign MNEs and the increased demand for imported inputs, forcing domestic firms to move down the value chain. This issue is rarely explored empirically and there are no Canada-specific empirical studies. In an empirical study of the impact of FDI in Venezuela, Aitken and Harrison (1999) found that FDI impacted positively on smaller foreign-invested domestic firms but negatively on non-foreign-invested firms. On balance they found the impact on Venezuela to be negligible.

producers in supplier sectors was found to have a strong positive association with productivity growth in domestically-controlled plants in downstream sectors, with the effects being especially important for science-based manufacturing industries. At the same time, negative own-industry spillovers were observed, suggestive of market-stealing by foreign-controlled producers.

Overall, therefore, the empirical literature tends to support, on balance, that FDI spillovers are likely to increase productivity in host countries, although the scale of the impact depends on the industry and the economy and various factors that bear on the absorptive capacity of the economy (Durham, 2004).

As regards the channel through which FDI impacts on domestic productivity, De Mello (1999) concluded that the enhanced labour productivity growth in developed countries was generated through the TFP growth channel, while in developing countries it came via the capital deepening route.

As regards source countries, there has been little emphasis on whether there are differences in productivity impacts of inward FDI in host countries by country of origin. A recent Canadian study by Ng and Souare (2009) found that only U.S.-originated FDI had a significant positive impact on the TFP growth of Canadian industries. This is consistent with findings in previous studies for other countries that U.S.-owned firms or U.S. MNEs tend to outperform both domestically owned firms and non-U.S. MNEs. For example, Doms and Jensen (1998) for the United States and Criscuolo and Martin (2004) for the United Kingdom found that affiliates of U.S. MNEs tended to be more productive than those from other countries. See Ng and Souare (2009) for a brief review of this literature.

Home countries may also receive productivity benefits from outward FDI. MNEs could improve their overall productivity performance by their direct investment abroad from a more efficient allocation of their productive resources globally and their increased exposure to intense global competition. Baldwin and Gu (2005) found no significant difference in the productivity performance of Canadian MNEs and foreign

MNEs, indicating that Canadian firms with international orientation are as productive as foreign firms operating in Canada (this is consistent with earlier findings by Doms and Jensen, 1998, that the important factor underlying the productivity of a plant was not whether it was foreign-owned but whether it was part of multinational enterprise, domestic or foreign). The productivity advantage of home-based MNEs may spill over to domestic firms via the same channels of technology spillovers, business model copying, enhanced domestic competition and increased inter-industry linkages found to be important for foreign-owned MNEs. Empirical evidence on these issues is, however, scarce. Rao and Tang (2005) found that domestically oriented Canadian firms in a given industry do not get a productivity dividend advantage from Canada's outward FDI in that industry. Another channel through which the source economy could benefit from outward vertical FDI would be from the transfer of unskilled labour to the low-wage foreign host countries, which would in turn induce increased capital deepening and skills upgrading in the source economy. Again, however, no strong empirical evidence has been found in support of this argument.

4.2 *FDI and Economic Growth*

Inward FDI could also impact on the host country's economic growth through capital deepening and increased investments in R&D, intangibles and human capital. This might be reinforced by increased technology diffusion and acquisition of new skills and better management practices, which are conducive to growth (see, for example, De Mello, 1999, and Romer, 1993).

The impact of inward FDI on growth through its impact on domestic capital formation has been extensively studied at various levels and using various types of data—national balance of payments data, industry statistics and firm-level data. Inward FDI, especially “greenfield” investment, increases capital stock in the host countries to the extent that it does not crowd-out local investment on a one-for-one basis, thereby leading to higher output (Ries, 2002). Studies using national-level data

arrive at differing conclusions, depending on the country and the type of data used. Hejazi and Pauly (2002) showed that, on average, a one dollar increase in inward FDI raises domestic capital formation in Canada by about 45 cents in non-services industries, but found no significant impact on domestic capital formation in services industries. On the other hand, using data from 22 OECD countries for the years 1975 to 1995, Lipsey (2000) found that the ratio of inward FDI flows to GDP is only significantly related to the next year's capital formation in eight countries, including Canada. In six other countries, the relationship was negative—that is to say, inward FDI crowds-out more domestic investment than its positive contribution to capital formation. Morley (2008) obtains a similar crowding out result for FDI into China.

Foreign MNEs play a major role in business R&D in many countries. For example, in 2005, 75 percent of Ireland's manufacturing business R&D was performed by foreign MNEs. In Canada, foreign affiliates accounted for about 38 percent of business R&D in the manufacturing sector and 35 percent in the total business sector in 2004 (see Table 1 above). Baldwin and Gu (2005) reported that foreign-controlled firms are more likely to perform R&D on an ongoing basis, to introduce product and process innovation, and to adopt new advanced technologies than domestic firms in Canada.

Inward FDI is also an important source of new technologies in host countries. Countries with higher inward FDI tend to have higher technology payments, pointing to intra-firm technology transfer from parent companies to their subsidiaries abroad. Baldwin and Sabourin (2001) found a positive relationship between technology payments and inward FDI stock across OECD countries, which is consistent with Canadian micro evidence showing that foreign-controlled manufacturing plants use more advanced technologies than Canadian-controlled plants.

Empirical studies done at the economy level generally suggest that inward FDI plays a positive role in stimulating host countries' economic growth; however, the size of the growth effect depends on host countries' trade and investment policies,

human capital, general business climate and the state of financial markets. Bhagwati (1978) suggested that the growth effect of inward FDI is positively related to export promotion policies and negatively related to import substitution policies of host countries. This prediction is supported by the tests done by Balasubramanyam, Salisu and Sapsford (1996). Blomström, Lipsey, and Zejan (1994) reported that the growth effect of inward FDI is positive in developing countries with high per-capita income, but insignificant in countries with low per-capita income. Borensztein, De Gregorio, and Lee (1995) argued that the growth effect of FDI is positively related to the education level of host country workforce. Xu (2000) also found that the positive growth effect of FDI occurs only when the host country has a minimum threshold level of human capital. Alfaro et al. (2004), Durham (2004), and Hermes and Lensink (2003) reported that countries with well-developed financial markets gain significantly from FDI in terms of economic growth. On the other hand, Carkovic and Levine (2005) argue that many of these studies failed to control for, *inter alia*, simultaneity bias and country-specific effects, resulting in biased estimates of the impact of FDI on growth. Controlling for joint determination of FDI inflows and economic growth, they found that the exogenous component of FDI does not exert a robust positive influence on economic growth.

All studies mentioned above are mostly based on the experiences of developing countries. Studies explicitly based on the experiences of developed countries are rare. Using a panel data for 25 OECD countries over 1980-2004, Ghosh and Wang (2009) found that both inward and outward FDI are positively correlated with host and source country economic growth; however, the impact of FDI on economic growth is moderate, with an elasticity of GDP growth with respect to both inward and outward FDI in the host and source countries of only about 0.01.

Although there are a number of empirical studies on the impact of inward FDI on economic growth in host countries, empirical research on the impact of outward FDI on home country economic growth is scarce. Outward FDI may also

impact positively economic growth by raising home countries' trend productivity growth. As noted above, Ghosh and Wang (2009) found a positive but very small growth impact of outward FDI in home countries, with the elasticity of growth to outward FDI being only 0.01.

4.3 *Outward FDI and Home Country Employment*

There seems to be no consensus among researchers about the impact of outward FDI on home country's factor demands, especially employment (see Baldwin, 1994). Some have argued that there will be a loss of either actual or potential jobs when firms invest abroad. Outward FDI may also influence home country factor demands and factor prices by allocating more labour-intensive production to affiliates in labour-abundant countries and concentrating more capital-intensive or skill-intensive operations at home. Lipsey (2002) argued that larger affiliate output relative to parent output should be associated with lower labour intensity in home production. Others, meanwhile, have argued that firms' investment decisions are based on the efficient use of factors of production globally and much of their investment abroad is induced by the growing competitiveness of foreign producers. Therefore, direct job losses in the activities moving offshore may not be avoided even if firms do not invest abroad. At the same time, outward FDI could increase home countries' exports of intermediate products and capital goods, as well as headquarter services, and thus stimulate job creation at home.

Empirical work bearing on this issue includes both studies assessing the substitutability of employees in MNEs' home countries and foreign workers; and whether outward FDI reduces investment and thus growth in the domestic economy.

Glickman and Woodward (1989) estimated the employment impacts of outward FDI in the United States and concluded that there was on average a net annual loss of 274,000 U.S. jobs (0.5 percent of U.S. jobs) between 1977 and 1986 as a result of U.S. investment abroad. Andersen and Hainaut (1998) investigated the relationship between outward FDI and home country

employment using panel data on 21 countries over 1985-1995 as well as time series for the United States, Japan, Germany and the United Kingdom. They found only limited evidence in support of the notion that outward FDI leads to job losses in source countries. Brainard and Riker (1997) and Riker and Brainard (1997) also estimated substitution elasticities between employment in parent companies and their foreign affiliates, based on panel data for U.S. multinationals and their affiliates in 90 countries. They too discovered a very low degree of substitution between parent and affiliate employment. Using data on U.S. manufacturing multinationals in the 1980s, Slaughter (1995) reported that home and foreign production workers are at best weak substitutes and they might be complements. By contrast, Hatzius (1998) concluded there is qualified support for substitutability between foreign labour and home country employment of Swedish MNEs. Pain and Van Welsum (2004) meanwhile found that international production relocation in non-service sectors is more likely to provide a positive stimulus to services exports than is relocation in service sectors, which tends to reduce services exports. Taking these various findings into account, the generally weak degree of substitutability between employment in parent companies and their foreign affiliates in non-service sectors, together with the potential for gains in service sector exports, suggests that the displacement of home country workers via outward FDI in goods-producing industries is likely to be small. This conclusion may not apply to outward direct investment in services.

As regards the issue of outward FDI and domestic capital formation, a range of studies have arrived at different conclusions, depending on the empirical approach, and in particular on the level of aggregation of the data and the country studied. Desai et al. (2005), using national-level data, found that, for most OECD countries, high rates of outward FDI were associated with lower domestic investment, suggesting that outward FDI and domestic investment are substitutes. For the United States, however, they found that years in which American MNEs expanded investment abroad coincided with

even greater domestic capital spending, suggesting a complementary relationship between outward FDI and domestic capital formation. In a follow-up study using firm-level data, Desai et al. (2008) confirmed a complementary relationship, finding that 10% greater foreign investment by U.S. MNEs was associated with 2.6% greater domestic investment by those MNEs, and 10% greater foreign employee compensation was associated with 3.7% greater domestic employee compensation.

As regards the hypothesis linking outward FDI to increased skill intensity in source countries, there is no strong empirical support. Kravis and Lipsey (1988) did not find a consistent positive correlation between affiliates output and skill intensity (measured by hourly wages) of employees of the U.S. MNEs at home. Using data on U.S. manufacturing industries, Slaughter (2000) also did not find a significant impact of affiliate activities on skills upgrading at home. Industry-level analysis by Head and Ries (2002) reached similar conclusions for Japan, but their firm-level analysis suggested that affiliate activities in low-wage countries tend to raise parent firms' demand at home for skilled workers relative to the demand for unskilled workers.

4.4 Is Corporate Canada Hollowing out?

“Hollowing out” refers to the move of head offices out of an economy. Head offices are important to an economy because of the concentration of key management functions and activities. These include: human resource planning; marketing; R&D; financial management; international operations; and information acquisition and filtering. Concentration of these activities could raise the overall skill levels and wages of employees at firm headquarters, resulting in productivity spillovers in home countries.

There has been a great deal of public discussion and debate in Canada over recent foreign takeovers of large and established Canadian companies, and their potential adverse impact on the Canadian economy. Therefore, empirical investigation of the hollowing-out of corporate Canada has important policy implications.

As noted in Acharya and Rao (2007), the positive effects of head offices are expected to stem largely from the concentration of R&D activities and skilled workers associated with the head office functions. R&D activities generate and accumulate knowledge capital that benefits the local economy through knowledge transfer and knowledge spillovers. Such activities also could attract other foreign firms to the country. Since the overall business climate is an important determinant of R&D activities of MNEs and since R&D and skills are complements, the availability of skilled workers and competitive market framework policies in host countries are crucial for attracting and retaining R&D activities of foreign as well as domestic MNEs.

To understand well the extent and nature of hollowing-out in corporate Canada, empirical attempts are needed to investigate the long-term trends and dynamics of head office activities and head office employment in Canada. A number of recent Statistics Canada studies shed light on this important policy issue.

Baldwin, Beckstead and Brown (2003) found little evidence that head office functions were being scaled down during the late 1990s and early 2000s. The authors actually reported that the number of head office units increased from 3,936 to 3,969 between 1999 and 2002, and employment in head offices during the same period increased at an annual rate of about 1 percent. Baldwin and Brown (2005) examined the long-run trends in head office employment in the Canadian manufacturing sector over the last three decades and again found little evidence of hollowing-out. A more recent paper by Beckstead and Brown (2006) also came to the conclusion that hollowing-out of corporate Canada is not happening. Instead, the authors reported that, over 1999-2005, both the number of head offices and head office employment in Canada grew at an annual rate 4.2 percent and 11 percent, respectively.

Another interesting question is whether management functions of Canadian firms that are taken over by foreign firms are moving abroad, resulting in the loss of head offices and head office employment. Beckstead and Brown (2006)

investigated the dynamics of head offices in Canada and found that foreign-controlled firms were actually the main driving force behind the growth in the number of head offices and head office employment in Canada during 1999-2005, accounting for six out of ten new head-office jobs created during the period. In addition, over this period, the number of head offices of Canadian-controlled firms actually fell slightly, while counts of head offices in foreign-controlled firms rose; the head office employment of foreign-controlled firms increased by 21 percent, while the corresponding figure for Canadian-controlled firms grew by only 6 percent.

In short, the empirical evidence to date show that foreign takeovers have reduced neither the number of head offices nor the head-office employment in Canada. On the contrary, more new head offices were created than lost and the overall head office employment was just as high after the takeovers, if not higher, as before the takeovers.

Based on a detailed survey of senior managers of 62 MNEs operating in Canada during the post-NAFTA period, including foreign-owned as well as Canadian-owned firms, the Conference Board of Canada concluded that many foreign-owned subsidiaries in Canada have become strategic leaders in their company's global network (Hodgson, 2007). This result is contrary to the fear that foreign affiliates might move out of Canada and make Canada a "warehouse economy".

5. Conclusions

Canada has actively participated in the globalization process. Canada's inward and outward FDI stocks increased dramatically over the last three decades and Canada has been a net exporter of capital since 1996. Multinational production accounts for about 30 percent of total business output and more than 50 percent of total manufacturing production in Canada.

To understand better the impact of FDI on Canadian economy, this paper reviews available empirical evidence on the home and host country effects, with a focus on the Canadian experience.

The available empirical Canadian evidence suggests the following: inward FDI expands Canadian exports and the impact increases with reductions in trade and investment barriers worldwide; foreign-controlled firms, on average, have higher productivity levels than Canadian-owned firms, although this is mainly because of the difference in outward orientation (Canadian MNEs are as productive as their foreign-owned counterparts); intra- and inter-industry productivity spillovers from FDI are also significant; and inward FDI also raises economic growth in Canada through increased investments in physical and knowledge capital and skills upgrading, technology transfer and knowledge spillovers.

An important recent policy concern has been the hollowing-out of corporate Canada. A number of studies examined this issue and found no evidence in support of the hollowing-out of corporate headquarter functions. Instead, these studies showed that head office functions in Canada have actually increased in recent years.

On balance, all the empirical evidences indicate that FDI provides significant net economic benefits to Canada. The policy implication of these findings is that Canada would benefit further by liberalizing its regulatory regime relating to FDI and foreign ownership. For instance, research done at the OECD (Nicoletti et al. 2003) and Industry Canada (Ghosh, Syntetos and Wang, 2008) suggest that by reducing its FDI and foreign ownership restrictions to the low levels in the United Kingdom, Canada could increase its inward FDI stock by as much as 50 percent over a 5 to 10 year period and raise its aggregate total factor productivity by between 3 percent to 5 percent.

Although there is ample empirical research on the positive impact of inward FDI on trade, capital formation, R&D, productivity and economic growth in Canada, the evidence on the impact of outward FDI on the Canadian economy is very scarce, see Table 2. Future research efforts should concentrate in closing this important knowledge gap.

Table 2: A Summary of the Empirical Research

Variables	Inward FDI (host country impacts)	Outward FDI (home country impacts)
Trade (exports and imports)	(+)	(+)
Capital formation	(+)	?
R&D	(+)	?
Skills	(+)	?
Technology adoption	(+)	?
Productivity level	(+)	(+)
Intra-Industry productivity spillovers	(+)	?
Inter-Industry productivity spillovers	(+)	?
Economic growth	(+)	?

References

- Acharya, Ram C. and Someshwar Rao. 2007. "Foreign Direct Investment Trends: A Canadian Perspective," *Industry Canada Working Paper 2008-13*.
- Alfaro, Laura, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek. 2004. "FDI and Economic Growth: The Role of Local Financial Markets," *Journal of International Economics* 64(1), October: 89-112.
- Amuedo-Dorantes, Catalina and Susan Pozo. 2001. "Foreign Exchange Rates and Foreign Direct Investment in the United States," *International Trade Journal* 15(3), July: 323-343.
- Andersen, Palle Schelde and Hainaut, Philippe. 1998. "Foreign Direct Investment and Employment in the Industrial Countries," *BIS Working Paper No. 61*.
- Balasubramanyam, V.N., M. Salisu and David Sapsford. 1996. "Foreign Direct Investment and Growth in EP and IS Countries," *The Economic Journal* 106(434), January: 92-105.
- Baldwin, John R. and W. Mark Brown. 2005. "Foreign Multinationals and Head Office Employment in Canadian Manufacturing Firms," *Economic Analysis (EA) Research Paper Series*, Statistics Canada Catalogue no. 11F0027MIE, No. 034.

- Baldwin, John R. and Wulong Gu. 2005. "Global Links: Multinationals, Foreign Ownership and Productivity Growth in Canadian Manufacturing," *The Canadian Economy in Transition Series*, Statistics Canada Catalogue no. 11-622-MIE No. 009.
- Baldwin, John R., Richard E. Caves and Wulong Gu. 2005. "Responses to Trade Liberalization: Changes in Product Diversification in Foreign- and Domestic-controlled Plants", *Economic Analysis (EA) Research Paper Series*, Statistics Canada, Catalogue no. 11F0027MIE No. 031.
- Baldwin, John R., Desmond Beckstead and W. Mark Brown. 2003. "Hollowing-out, trimming down, or scaling-up? An analysis of head offices in Canada: 1999–2002," *Economic Analysis (EA) Research Paper Series*, Statistics Canada, Catalogue no. 11F0027MIE No. 019.
- Baldwin, John R., Desmond Beckstead and Richard E. Caves. 2001. "Changes in the Diversification of Canadian Manufacturing Firms and Plants (1973–1997): A Move to Specialization," *Analytical Studies Branch Research Paper Series*, Statistics Canada Catalogue no. 11F0019MIE No. 179.
- Baldwin, John R. and Naginder Dhaliwal. 2001. "Heterogeneity in Labour Productivity Growth in Manufacturing: Differences between Domestic and Foreign-Controlled Establishments," in Statistics Canada, *Productivity Growth in Canada*, Statistics Canada Catalogue no. 15-204-XPE.
- Baldwin, John R. and David Sabourin. 2001. "Impact of the Adoption of Advanced Information and Communication Technologies on Firm Performance in the Canadian Manufacturing Sector," Statistics Canada Catalogue no. 11F0019MIE No. 174.
- Baldwin, Robert E. 1994. "The Effects of Trade and Foreign Direct Investment on Employment and Relative Wages," *OECD Economic Studies No. 23*.
- Becker, Sascha O., Peter Egger and Valeria Merlo. 2009. "How Low Business Tax Rates Attract Multinational Headquarters: Municipality-Level Evidence from Germany," *CESIFO Working Paper No. 2517*.

- Beckstead, Desmond and W. Mark Brown. 2006. "Head Office Employment in Canada: 1999 to 2005," *Insights on the Canadian Economy*, Statistics Canada Catalogue no. 11-624-MIE No. 014.
- Belderbos, René and Leo Sleuwaegen. 1998. "Tariff Jumping DFI and Export Substitution: Japanese Electronics Firms in Europe," *International Journal of Industrial Organization* 16(5), September: 601-638.
- Bevan, Alan A. and Saul Estrin. 2004. "The determinants of foreign direct investment into European transition economies," *Journal of Comparative Economics* 32: 775-787.
- Bhagwati, Jagdish N. 1978. "Anatomy of Exchange Control Regimes," in *Anatomy and Consequences of Exchange Control Regimes*. Cambridge, MA: Ballinger, for NBER: 7-52.
- Blomström, Magnus, Robert E. Lipsey and Ksenia Kulchycky. 1988. "U.S. and Swedish Direct Investment and Exports," in Robert E. Baldwin (ed.), *Trade Policy Issues and Empirical Analysis*. Chicago: University of Chicago Press: 259-297.
- Blomström, Magnus and Ari Kokko. 1998. "Multinational Corporations and Spillovers," *Journal of Economic Surveys* 12(3), July: 247-277.
- Blomström, Magnus, Gunnar Fors and Robert E. Lipsey. 1997. "Foreign Direct Investment and Employment: Home Country Experience in the United States and Sweden," *Economic Journal* 107(445): 1787-1797.
- Blomström, Magnus, Robert E. Lipsey, and Mario Zejan. 1994. "What Explains the Growth of Developing Countries?" in William J. Baumol, Richard R. Nelson, and Edward N. Wolff (eds.), *Convergence of Productivity: Cross-National Studies and Historical Evidence*. Oxford: Oxford University Press: 243-259.
- Blonigen, Bruce A. 2005. "A Review of the Empirical Literature on FDI Determinants", *NBER Working Paper No. 11299*.

- Blonigen, Bruce A. 2001. "In Search of Substitution between Foreign Production and Exports," *Journal of International Economics* 53(1), February: 81-104.
- Borensztein, Eduardo, Jose De Gregorio, and Jong-Wha Lee. 1998. "How Does Foreign Direct Investment Affect Economic Growth?" *Journal of International Economics* 45(1), June: 115-135.
- Brainard, S. Lael. 1997. "An Empirical Assessment of the Proximity-Concentration Trade-off between Multinational Sales and Trade," *American Economic Review* 87(4), September: 520-544.
- Brainard, S. Lael. 1993. "A Simple Theory of Multinational Corporations and Trade with Trade-off between Proximity and Concentration," *NBER Working Paper No. 4269*.
- Brainard, S. Lael and David A. Riker. 1997. "Are U.S. Multinationals Exporting U.S. Jobs?" *NBER Working Paper No. 5958*.
- Buckley, Peter J. and Mark Casson. 1976. *The Future of the Multinational Enterprise*. London: Macmillan.
- Calderón, César, Norman Loayza and Luis Servén. 2004. "Greenfield foreign direct investment and mergers and acquisitions: Feedback and macroeconomic effects," *World Bank Policy Research Working Paper 3192*.
- Cameron, Grant, and Philip Cross. 1999. "The Importance of Exports to GDP and Jobs," *Canadian Economic Observer* 12(11), November. Statistics Canada Catalogue no. 11-010-XPB.
- Carkovic, Maria and Ross Levine. 2005. "Does Foreign Direct Investment Accelerate Economic Growth?" in Theodore H. Moran, Edward M. Graham, and Magnus Blomström (eds.), *Does Foreign Direct Investment Promote Development?* Peterson Institute for International Economics: 195-220.
- Carr, David L., James R. Markusen and Keith E. Maskus. 2001. "Estimating the Knowledge-Capital Model of the Multinational Enterprise," *American Economic Review* 91(3), June: 693-708.

- Chellaraj, Gnanaraj, Keith E. Maskus and Aaditya Mattoo. 2009. "Labor Skills and Foreign Direct Investment in a Dynamic Economy: Estimating the Knowledge-Capital Model for Singapore," *East West Center Working Paper, Economics Series, 100*.
- Criscuolo, Chiara. 2005. "Foreign Affiliates in OECD Economies: Presence, Performance, and Contribution to Host Countries," *OECD Economic Studies* 41(2): 109-139.
- Criscuolo, Chiara and Ralf Martin. 2004. "Multinationals and U.S. Productivity Leadership: Evidence from Great Britain," *OECD Science, Technology and Industry Working Papers, 2004/5*, Paris: OECD Publishing.
- Cross, Philip. 2002. "Cyclical Implications of the Rising Import Content in Exports", *Canadian Economic Observer* 15(12), December. Statistics Canada Catalogue no. 11-010-XPB.
- De Mello, Jr., Luiz R. 1997. "Foreign Direct Investment in Developing Countries and Growth: A Selective Survey," *Journal of Development Studies* 34(1): 1-34.
- De Mello, Jr., Luiz R. 1999. "Foreign Direct Investment-led Growth: Evidence from Time Series and Panel Data," *Oxford Economic Papers* 51(1), January: 133-151.
- Department of Foreign Affairs and International Trade (DFAIT). 2009. *Canada's State of Trade: Trade and Investment Update – 2009*. Ottawa: Public Works and Government Services Canada.
- Department of Foreign Affairs and International Trade (DFAIT). 2008. *Canada's State of Trade: Trade and Investment Update – 2008*. Ottawa: Public Works and Government Services Canada.
- Desai, Mihir A., C. Fritz Foley and James R. Hines, Jr. 2009. "Domestic Effects of the Foreign Activities of US Multinationals," *American Economic Journal: Economic Policy* 1(1), February: 181-203.
- Desai, Mihir A., C. Fritz Foley and James R. Hines, Jr. 2005. "Foreign Direct Investment and the Domestic Capital Stock," *American Economic Review* 95(2), May: 33-38.

- Doh, Jonathan P. 2005. "Offshore Outsourcing: Implications for International Business and Strategic Management Theory and Practice," *Journal of Management Studies* 42(3), May: 695-704.
- Doms, Mark E. and J. Bradford Jensen. 1998. "Comparing Wages, Skills, and Productivity between Domestically and Foreign-Owned Manufacturing Establishments in the United States," in Robert E. Baldwin, Robert E. Lipsey, and J. David Richardson (eds.), *Geography and Ownership as Bases for Economic Accounting*, NBER Studies in Income and Wealth, Volume 59. Chicago: University of Chicago Press: 235-258.
- Dunning, John H. 1977. "Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach," in Bertil Ohlin, Per Ove Hesselborn and Per Magnus Wijkman (eds.), *The International Allocation of Economic Activity*, London: Macmillan.
- Durham, J. Benson. 2004. "Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment on Economic Growth," *European Economic Review* 48(2), April: 285-306.
- Fontagné, Lionel and Michaël Pajot. 2002. "Relationships between Trade and FDI Flows within Two Panels of US and French Industries," in Robert E. Lipsey and Jean-Louis Mucchielli (eds.), *Multinational Firms and Impacts on Employment, Trade, and Technology: New Perspectives for a New Century*. London and New York: Routledge: 43-83.
- Froot, Kenneth A. and Jeremy C. Stein. 1991. "Exchange Rates and Foreign Direct Investment: An Imperfect Capital Markets Approach," *Quarterly Journal of Economics* 106(4), November: 1191-1217.
- Gao, Ting. 2003. "Multinational Activity and Country Characteristics in OECD Countries," *Applied Economics Letters* 10(4), March: 255-258.
- Gera, Surendra, Wulong Gu and Frank C. Lee. 1999. "Foreign Direct Investment and Productivity Growth: The Canadian Host-Country Experience," *Industry Canada Working Paper No. 30*.

- Ghosh, Madanmohan and Weimin Wang. 2009. "Does FDI Accelerate Economic Growth? The OECD Experience Based on Panel Data Estimates for the Period 1980-2004," *Global Economy Journal* 9(4): 1-21.
- Ghosh, Madanmohan, Panagiotis Syntetos and Weimin Wang. 2008. "Impact of FDI Restrictions on Inward FDI in OECD Countries," *Industry Canada Working Paper 2008-02*.
- Glickman, Norman J. and Douglas P. Woodward. 1989. *The New Competitors: How Foreign Investors Are Changing the US Economy*. New York: Basic Books.
- Globerman, Steven, John C. Ries and Ilan Vertinsky. 1994. "The Economic Performance of Foreign Affiliates in Canada," *Canadian Journal of Economics* 27(1), February: 143-156.
- Globerman, Steven and Daniel Shapiro. 1998. "Canadian Government Policies Toward Inward Foreign Direct Investment," *Industry Canada Working Paper No. 24*.
- Gu, Wulong and Yanling Wang, 2006. "FDI, Absorptive Capacity, and Productivity Growth: The Role of Inter-Industry Linkages," SSRN: <http://ssrn.com/abstract=924771>
- Hatzius, Jan. 1998. "Domestic Jobs and Foreign Wages," *Scandinavian Journal of Economics* 100(4): 733-746.
- Head, Keith and John Ries. 2001. "Overseas Investment and Firm Exports," *Review of International Economics* 9(1), February: 108-122.
- Head, Keith and John Ries. 2002. "Offshore Production and Skill Upgrading by Japanese Manufacturing Firms," *Journal of International Economics* 58(1), October: 81-105.
- Head, Keith and John Ries. 2004. "Exporting and FDI as Alternative Strategies," *Oxford Review of Economic Policy* 20(3): 409-423.
- Head, Keith, John C. Ries and Barbara J. Spencer. 2004. "Vertical Networks and U.S. Auto Parts Exports: Is Japan Different?" *Journal of Economics and Management Strategy* 13(1), March: 37-67.
- Hejazi, Walid and Peter Pauly. 2002. "Foreign Direct Investment and Domestic Capital Formation," *Industry Canada Working Paper No. 36*.

- Hejazi, Walid and A. Edward Safarian. 1999. "Modeling links between Canadian Trade and Foreign Direct Investment," *Industry Canada Working Paper, Perspectives on North American Free Trade Series, No. 2*.
- Helpman, Elhanan, Marc J. Melitz and Stephen R. Yeaple. 2004. "Export versus FDI with Heterogeneous Firms," *American Economic Review* 94(1), March: 300-316.
- Helpman, Elhanan. 1984. "A Simple Theory of International Trade with Multinational Corporations," *Journal of Political Economy* 92(3), June: 451-471.
- Hermes, Niels and Robert Lensink. 2003. "Foreign Direct Investment, Financial Development and Economic Growth," *Journal of Development Studies* 40(1), October: 142-163.
- Hodgson, Glen. 2007. *Is Corporate Canada being Hollowed Out? It All Depends on Where You Are*. Ottawa: Conference Board of Canada.
- Horstmann, Ignatius J. and James R. Markusen. 1992. "Endogenous Market Structure in International Trade (natura facit saltum)," *Journal of International Economics* 32(1-2), February: 109-129.
- Horstmann, Ignatius and James R. Markusen. 1987. "Licensing versus Direct Investment: A Model of Internalization by the Multinational Enterprise," *Canadian Journal of Economics* 20(3), August: 464-481.
- Hymer, Stephen H. 1960/1976. *The International Operations of National Firms: A Study of Direct Foreign Investment*. PhD Dissertation. Published posthumously. Cambridge, Mass.: The MIT Press.
- Johnson, Andreas. 2005. "Host Country Effects of Foreign Direct Investment: The Case of Developing and Transition Economies," *Dissertation Series No. 031*, Jönköping International Business School.
- Kiyota, Kozo and Shujiro Urata. 2004. "Exchange Rate, Exchange Rate Volatility and Foreign Direct Investment," *The World Economy* 27(10), November: 1501-1536.

- Klein, Michael W. and Eric Rosengren. 1994. "The Real Exchange Rate and Foreign Direct Investment in the United States: Relative Wealth vs. Relative Wage Effects," *Journal of International Economics* 36(3/4), May: 373-389.
- Kravis, Irving B. and Robert E. Lipsey. 1988. "The Effect of Multinational Firms' Foreign Operations on Their Domestic Employment," *NBER Working Paper No. 2760*.
- Krugman, Paul R. 1983. "The 'New Theories' of International Trade and the Multinational Enterprise," in Charles P. Kindleberger and David B. Audretsch (eds.), *The Multinational Corporation in the 1980s*. Cambridge: MIT Press.
- Lewin, Massini and Peeters. 2008. "Why Are Companies Offshoring Innovation? The Emerging Global Race for Talent," *CEB Working Paper N° 08/009*, Université Libre de Bruxelles – Solvay Brussels School of Economics and Management, Centre Emile Bernheim.
- Lileeva, Alla. 2006. "Global Links: The Benefits to Canadian Plants from Inward Foreign Direct Investment—The Role of Vertical Linkages," *The Canadian Economy in Transition Series*, Statistics Canada Catalogue No. 11-622-MIE, No. 010.
- Lipsey, Robert E. 2002. "Home and Host Country Effects of FDI," *NBER Working Paper No. 9293*.
- Lipsey, Robert E. 2000, "Interpreting Developed Countries' Foreign Direct Investment," *NBER Working Paper No. 7810*.
- Lipsey, Robert E., Eric Ramstetter and Magnus Blomström. 2000. "Outward FDI and Parent Exports and Employment: Japan, the United States, and Sweden," *Global Economic Quarterly* 1(4), October-December: 285-302.
- Lipsey, Robert E. and Merle Yahr Weiss. 1981. "Foreign Production and Exports in Manufacturing Industries," *Review of Economics and Statistics* 63(4), November: 488-494.
- Lipsey, Robert E. and Merle Yahr Weiss. 1984. "Foreign Production and Exports of Individual Firms," *Review of Economics and Statistics* 66(2), May: 304-308.

- Markusen, James R. 1995. "The Boundaries of Multinational Enterprises and the Theory of International Trade," *Journal of Economic Perspectives* 9(2), Spring: 169-189.
- Markusen, James R. 1984. "Multinationals, Multi-Plant Economies, and the Gains from Trade", *Journal of International Economics* 16(3-4), May: 205-226.
- Markusen, James R., Anthony J. Venables, Denise Eby Konan and Kevin H. Zhang. 1996. "A Unified Treatment of Horizontal Direct Investment, Vertical Direct Investment, and the Pattern of Trade in Goods and Services," *NBER Working Paper No 5696*.
- Markusen, James R. 1997. "Trade versus Investment Liberalization," *NBER Working Paper No. 6231*.
- Markusen, James R. and Keith E. Maskus. 2002. "Discriminating Among Alternative Theories of the Multinational Enterprise," *Review of International Economics* 10(4): 694-707.
- McCann, Philip and Ram Mudambi, 2004. "The Location Behavior of the Multinational Enterprise: Some Analytical Issues," *Growth and Change* 35(4): 491-524.
- Morck, Randall and Bernard Yeung. 1992. "Internalization: An Event Study Test," *Journal of International Economics* 33(1-2): 41-56.
- Morck, Randall and Bernard Yeung. 1991. "Why Investors Value Multinationality," *Journal of Business* 64(2), April: 165-187.
- Morley, Bruce. 2008. "Tobin's Q and the Location of Foreign Direct Investment in China," *International Journal of Business and Management* 3(3), March: 24-29.
- Ng, Eric and Malick Souare. 2009. "Country Sources of FDI and Productivity Performance in Canadian Industries," mimeo, Industry Canada.
- Nicoletti, Giuseppe, Steve Golub, Dana Hajkova, Daniel Mirza and Kwang-Yeol Yoo. 2003. "Policies and International Integration: Influences on Trade and Foreign Direct Investment," *OECD Economics Department Working Paper No. 359*. Paris: OECD Publishing.

- Pain, Nigel and Desirée van Welsum. 2004. "International Production Relocation and Exports of Services," *NIESR Discussion Paper No. 237*.
- Rao, Someshwar and Jianmin Tang. 2005. "Foreign Ownership and Total Factor Productivity," in Lorraine Eden and Wendy Dobson (eds.), *Governance, Multinationals and Growth*, UK and USA: Edward Elgar: 100-121.
- Ries, John. 2002. "Foreign Investment, Trade and Industrial Performance: Review of Recent Literature", in Someshwar Rao and Andrew Sharpe (eds.), "Productivity Issues in Canada," *Industry Canada Research Series*, Volume 10, Calgary: University of Calgary Press: 517-536.
- Riker, David A. and S. Lael Brainard. 1997. "U.S. Multinationals and Competition from Low Wage Countries," *NBER Working Paper No. 5959*.
- Romer, Paul M. 1993. "Idea Gaps and Object Gaps in Economic Development," *Journal of Monetary Economics* 32(3), December: 543- 573.
- Slaughter, Matthew J. 2000. "Production Transfer within Multinational Enterprises and American Wages," *Journal of International Economics* 50(2): 449-472.
- Slaughter, Matthew J. 1995. "Multinational Corporations, Outsourcing and American Wage Diversion," *NBER Working Paper No. 5253*.
- UNCTAD. 2009. *World Investment Report 2009: Transnational Corporations, Agricultural Production and Development*. New York: United Nations.
- UNCTAD. 2008. *World Investment Report 2008: Transnational Corporations, and the Infrastructure Challenge*. New York: United Nations.
- Wang, Weimin. 2009. "Foreign Multinational Production in the Canadian Manufacturing Sector", mimeo, Industry Canada.
- World Bank. 2001. *Global Development Finance: Building Coalitions for Effective Development Finance*. Washington, D.C.: The World Bank.
- Xu, Bin. 2000. "Multinational Enterprises, Technology Diffusion, and Host Country Productivity Growth," *Journal of Development Economics* 62: 477-493.

