

Regional Integration: *NAFTA and the Reconfiguration of North American Industry*

Lorraine Eden and Antoine Monteils

1. Introduction

Multinational enterprises (MNEs) are agents of change in the global economy: they are the largest source of technology creation, transfer, and diffusion; their activities tie countries together in terms of production, trade, and investment flows; and they dominate most industries at the national and international levels. Over the last twenty years multinationals have changed their strategies for investment and production, shifting from simple stand-alone strategies (whereby the parent firm set up miniature replicas of itself, designed to serve local markets) to simple integration strategies (shifting labour-intensive stages of production to developing countries, e.g. subcontracting, using export-processing zones). More recently, these enterprises have begun to develop complex or deep integration strategies (rationalizing production on a regional or worldwide basis, integrating MNE across locations, placing greater reliance on created assets such as work-force quality and organizational innovations) (UNCTC 1993).

An important causal factor in the development of complex integration strategies has been regional integration. When two or more countries move to set up a free trade area (FTA), eliminating trade barriers on intra-FTA trade, the change in policy rules affects the MNE's plant location choices. For example, if tariff barriers had induced earlier defensive, tariff-jumping foreign direct investment (FDI) in order to access a local market, the removal of the barriers could lead to plant closures or rationalizations. Given the type of regional integration (which barriers are eliminated and how fast, the degree of harmonization), *ceteris paribus*, we argue that the location effects will vary depending on the motivations behind the plant location decision (the value-adding activity) and the nature of the firm (insider, outsider, domestic).

Dunning (1993) has stressed that there are four major motivations to invest in foreign countries: market-seeking, resource-seeking, efficiency-seeking, and strategic asset-seeking FDI. Building on Dunning's list of FDI motivations, we develop a micro approach to plant location that focuses on the value-adding activity which the foreign plant is expected to perform within the MNE group. Using

value-chain analysis, we explore the links between the firm's general motivation for setting up a plant within an FTA, the value-adding activity to be performed by the plant, and the plant location decision. We also argue that the firm's position prior to the FTA is critical for predicting its location choices post-FTA. If the firm already has investments in the other FTA partner countries, its responses are likely to be quite different from a firm with no intraregional trade or investment linkages. Thus the type of firm (insider, outsider, domestic) will be important for predicting firm responses to regional integration. The first part of the chapter develops a theoretical framework linking plant location motivation and firm characteristics to the MNE plant location strategies in a free trade area.

As an example of the impact of FTA formation on plant location, we examine regional integration in North America, where the 1989 Canada–US Free Trade Agreement (CUSFTA) and the 1994 North American Free Trade Agreement (NAFTA) have lowered trade and investment barriers, making it possible and necessary for firms to adapt to changes in government policies. The regional integration process in North America is liberalizing intraregional trade not only in goods, but also in business services and investment (Rugman and Gestrin 1993a, 1993b; Globerman and Walker 1993; Hufbauer and Schott 1993; Eden 1994a; Lipsey, Schwanen, and Wonnacott 1994). As these barriers fall, MNEs have begun to integrate their international production decisions at the regional level. Such deep integration strategies are most noticeable in the automotive and consumer electronics industries, but are diffusing to other industries.

We investigate the impacts of regional integration on firm location strategies post-1989 in North America using three different data sets. First, *World Investment Report* data (UNCTAD 1998) show changes in the stock of North American inward and outward FDI over the 1985–97 period. Second, two-way FDI stock data from the OECD (1997) provide a snapshot of intraregional and extraregional North American in 1989 and 1994. Third, using US inward FDI data for the 1989–94 period, we compare the investment patterns of insider firms (Canada and Mexico) with outsider firms (all others) along four dimensions: timing of FDI, mode of entry, state location, and industry choice. Since NAFTA took effect on 1 January 1994, our data should be seen as more reflective of the Canada–US Free Trade Agreement. However, we find some interesting patterns of responses to regional integration that suggest the regional integration process in North America is significantly affecting plant location decisions.

The chapter is organized as follows. First, we develop a theoretical framework for predicting MNE location responses to the formation of an FTA, in terms of the plant location motivation and firm characteristics. We apply the model to the case of North American free trade. Lastly, we provide some evidence on MNE location decisions in North America over the 1985–97 period, looking at intra-NAFTA FDI patterns and inward FDI patterns in the USA, in order to draw some conclusions about the impact of regional integration on firm location patterns.

2. Plant Location Strategies in a Free Trade Area

There are four major types of foreign direct investment, according to Dunning (1993): market-seeking, resource-seeking, efficiency-seeking, and strategic-asset seeking FDI. In this section, we expand on Dunning's explanation for FDI by developing a micro approach to the plant location decision in a free trade area (FTA). We argue that the location decision depends on: (i) the value-adding activity which the foreign plant is expected to perform within the MNE group, and (ii) the position of the firm prior to introduction of the FTA. When these are placed in the context of the locational advantages of the FTA member countries, together with the specific form of free trade area, we can hypothesize how firms will make their location decisions in response to regional integration. We conceptualize the process as one of shocks and responses: introduction of a free trade area is a policy shock (e.g. elimination of tariff and non-tariff barriers) to which firms adjust through short-run and long-run responses. Changes in locational strategies are one form of response to the shock of regional integration.

Figure 7.1 outlines our model of plant location decisions in a free trade area. The formation of an FTA is a policy shock to which businesses must adjust. The size of the shock depends upon the type (depth, breadth, rapidity of reform phase-in) of the FTA, the existing trade and investment linkages among the member and non-member countries, and the country and region-specific advantages of the FTA. Given the FTA shock, how firms respond depends upon (i) the firm's underlying motivation for investing in the region, (ii) the actual value-adding activity under consideration for location or relocation within the region, and (iii) the type of the firm making the location decision. Each firm, based on its perception of the policy shock and its own goals, value chain, and characteristics, must decide where its plants are most efficiently and effectively located within the new FTA.

The location decision is not just 'Which value-adding activity in which country?', but also involves making decisions on whether value-adding activities should be centralized or dispersed through the region, and whether certain activities should be clustered with other firms (and if so, where). Since the locational response to the FTA is expected to vary over time (e.g. FTA provisions are phased in; sector-specific investments and immobile assets are constraints in the short run), our analysis needs to include both short-run and long-run locational responses to the formation of a free trade area. We explore the model below.

2.1. Value-Adding Activity

The plant location choices of multinationals—that is, how and where the enterprise places its value-adding activities—involve developing entry and expansion strategies for engaging in foreign production, deciding where to put different stages of production (the firm's value chain), and how many plants to have at each stage.

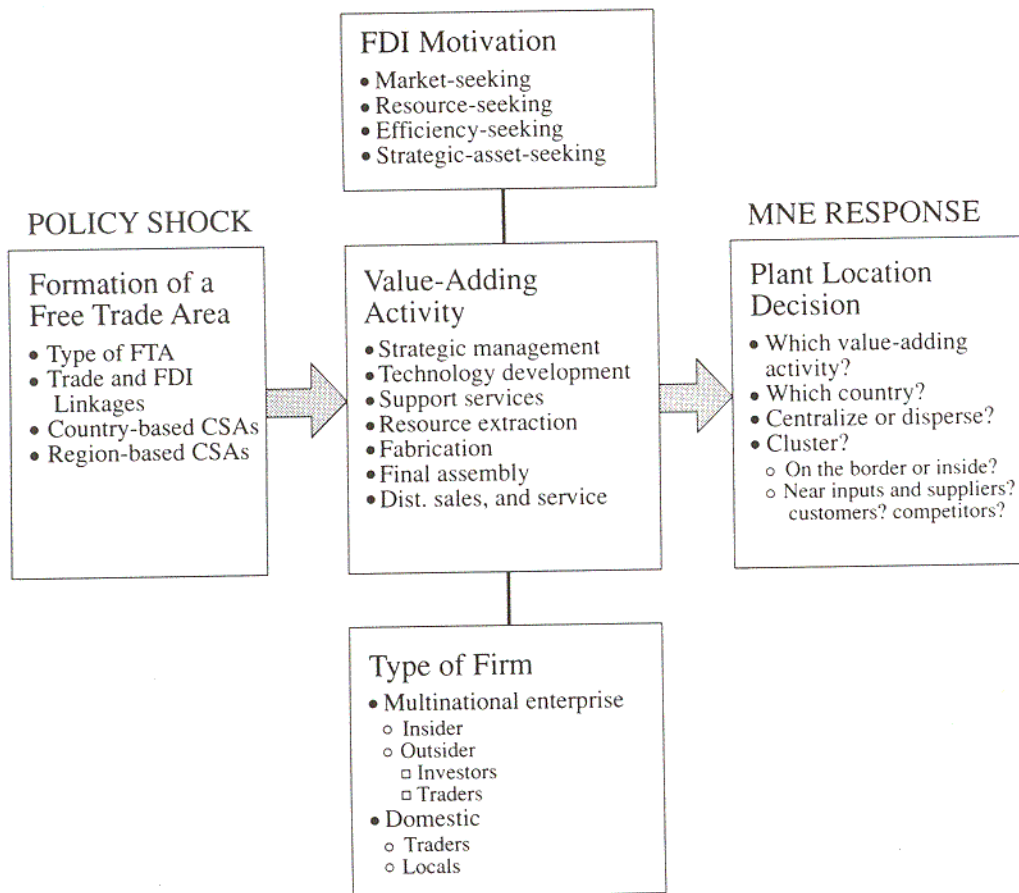


FIG. 7.1. Plant-location decision in a free trade area

The line of causation runs from the MNE's choice of the value-adding activity to its choice of plant location and then to foreign direct investment in this plant. The location selected for an affiliate therefore depends on the affiliate's role in the value chain of the firm. Plant function drives the FDI choice (Eden 1994b). In this section, we explore the types of value-adding activity and the general factors that influence plant location. We then hypothesize how a regional integration shock will affect the plant location decision.

2.1.1. Value-Adding Activities and Plant Location

Figure 7.2 shows the components of a typical value chain. It illustrates the *primary activities* (resource extraction and processing; the manufacture of parts, components, and sub-assemblies; final assembly; distribution, sales and service) and *support activities* (strategic management; technology development; business support services) that may make up the firm's value chain. The MNE must choose how many of the stages of production are to be internalized within the firm (i.e. the degree of vertical integration) versus carried on at arm's length with

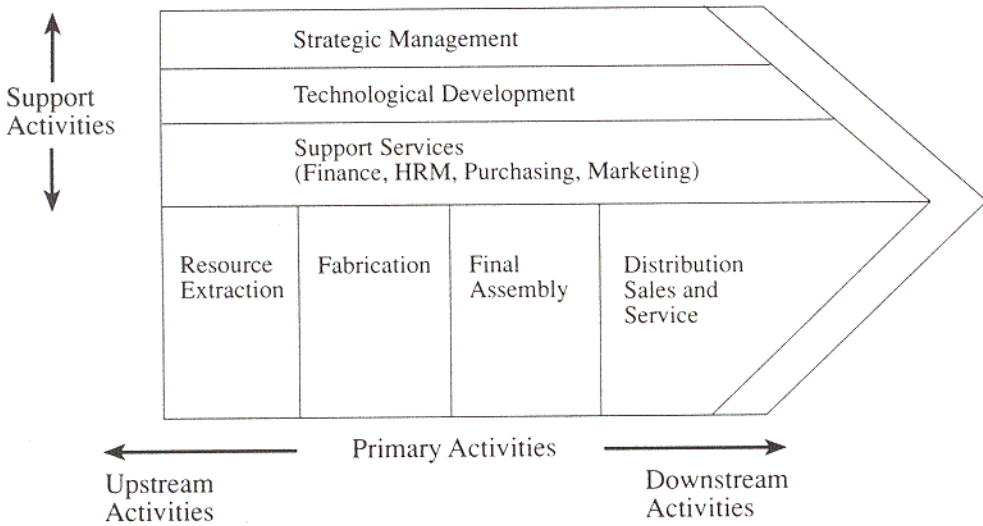


FIG. 7.2. Value-adding activities

unrelated firms. Within each of the production stages, the MNE must determine product scope (the number, type, and technological sophistication of the product lines) and geographic scope (the market served by each plant and the number and location of plants). The latter determines the degree of horizontal integration of the MNE. Both vertical and horizontal integration imply intrafirm trade flows within the MNE group.

There are four basic motivations for going abroad: resource-seeking, market-seeking, efficiency-seeking, and strategic asset-seeking FDI. The first two motivations (resource- and market-seeking) can be either first-time or sequential investments; the latter two (efficiency- and strategic asset-seeking), however, are sequential investments generally taken once the MNE is established in foreign markets. Given these four general locational motivations for FDI, we argue that multinationals construct their overall production structure by choosing among a range of locational structures for their foreign affiliates. We argue that, paralleling the value-chain analysis, we can develop a theoretical framework for analysing the MNE's plant location decision. Each stage in the value chain corresponds to a value-adding motive for establishing a foreign plant. Each MNE, depending on the length of its value chain and the nature of the industry, can therefore be seen as a set of foreign plants (or affiliates), strategically located according to their underlying value-adding function within the MNE organization. Our analysis should therefore be seen as supplementing Dunning's fourfold list of motivations for FDI, with a narrower focus on plant's value-adding function within the MNE group. We outline the basic types of value-adding foreign plants below, and summarize these in Table 7.1.¹

Resource extraction. Resource extraction plants are set up to extract and process renewable and non-renewable natural resources; this is Dunning's

resource-seeking motivation for FDI. The key factor driving location of extractor plants is a source of high-quality raw materials in abundant supply. Since processing plants turn natural resources into fabricated materials, inputs needed for processing are key to location of these plants. Where the weight/value ratio is high, economies of scale at the two stages are similar, and foreign tariffs on processed imports are not high, extracting and processing may occur in the same plant.

Fabrication. Downstream from the resource extraction stage is the production of parts and sub-assemblies. Plant location decisions are normally driven by general resource- or efficiency-seeking motivations. The simplest of these plants, offshore factories, are set up to use cheap local inputs, particularly labour, to assemble simple parts for the parent company. Export-processing zones (EPZs) generally attract such plants (e.g. Mexican *maquiladoras* along the US border). Fabrication plants, on the other hand, use low-cost labour to produce specific components and sub-assemblies for the MNE. They are globally or regionally rationalized plants in a vertical integration sense since the plant produces one segment of the value chain which is then sold for further assembly and final sale elsewhere in the MNE network. Sometimes offshore and fabricator activities are contracted out to unrelated firms rather than in-house. For example, subcontracting to OEMs (original equipment manufacturers) has been extensively used by US MNEs such as NIKE as part of a worldwide sourcing strategy.

Final assembly. The final assembly state of production can be met in a variety of forms. The motivation for establishing foreign assembly plants is generally market-seeking FDI. Once established, sequential investment often occurs, particularly in an FTA, for efficiency (rationalization) reasons. The simplest foreign plants are local assemblers, import-competing factories that assemble components for domestic sale (e.g. bottling plants, drug preparation, and packaging). Local assemblers are often set up in response to government regulations requiring a local presence, such as content legislation. Higher up the technology ladder are focused factories, globally or regionally rationalized subsidiaries that produce one or two product lines in mass production runs for final sale in both local and foreign markets, purchasing other product lines in horizontal intrafirm trade from sister affiliates. These plants can be rationalized on a region or global basis.² One final assembly plant that is now seen less often, but was frequent in the 1950s and 1960s, is the miniature replica (copycat) plant. When national trade barriers were high, US MNEs used tariff-jumping FDI to set up assembly plants behind the trade walls. Such plants were nationally responsive, with a high degree of local autonomy, generally assembling and selling locally a full range of products similar to their parent's production line. Such plants tend to be high cost when domestic markets are small, with excess product variety and short production lines.

Distribution, sales, and service. The stage theory of foreign direct investment hypothesizes that distribution affiliates are the first form of FDI, replacing exporting when foreign market sales are sufficiently large to support a local plant.

TABLE 7.1. Value-adding activities and motivations for going abroad

Value-adding activity	Motivations for setting up foreign plant	Examples of value-adding foreign plants
Resource extraction	<ul style="list-style-type: none"> • search for higher-quality, lower-cost, or more secure sources of natural resources • process natural resources (processing, refining, smelting, fabricating) • avoid government regulations that raise costs • diversify the MNE's resource base 	<p>MNEs set up foreign plants to extract natural resources (e.g. copper, bauxite, crude oil, natural gas) and/or process natural resources (e.g. alumina).</p>
Fabrication	<ul style="list-style-type: none"> • access cheaper inputs in the production process (e.g. labour, energy) • avoid government regulations (e.g. taxes, tariffs, environmental regulations) 	<p>MNEs set up foreign plants or use subcontractors in export-processing zones to manufacture parts or sub-assemblies. MNEs set up fabricator plants to manufacture more sophisticated parts and sub-assemblies (e.g. engines) for use within the MNE or for sale to downstream customers.</p>
Final assembly	<ul style="list-style-type: none"> • enter new or expanding markets • avoid tariff and non-tariff barriers • meet foreign government requirements for local assembly 	<p>Local bottling and packaging plants set up to fulfil domestic content regulations. In a multidomestic strategy, the MNE might use miniature replica plants to manufacture complete product lines for sale in the host country market. Under a transnational strategy, the MNE sets up globally rationalized plants that assemble final products for sale in a regional or global market, using world product mandates.</p>

<p>Distribution, sales, and service</p>	<ul style="list-style-type: none"> • enter new markets and be close to consumers • capture economies of scale and scope in distribution • avoid tariff and non-tariff barriers • provide after-market service to customers 	<p>New MNEs often use simple distributors as a first mode of entry into foreign markets, with the distributors importing finished products for sale in host market. Retailers provide a full line of MNE products for sale to final customers in the local market. Trading companies provide a full range of trading services to the MNE's manufacturing affiliates.</p>
<p>Technology development</p>	<ul style="list-style-type: none"> • be a window on innovations in other countries • access strategic assets (high-skilled labour and other inputs such as software programmers) 	<p>R&D centres may perform basic and applied research, clinical testing, and engineering services in the host country. R&D outposts may be established as a window on foreign science and on key competitors. Technology strategic alliances may be used to access complementary strategic assets.</p>
<p>Support services</p>	<ul style="list-style-type: none"> • follow their downstream customers • enter new or expanding markets • avoid government regulations (e.g. taxes, financial, environmental) 	<p>Foreign affiliates may provide support services to the MNE group (e.g. advertising and marketing, accounting and financial). At least one unit may be set up in a tax haven for the purpose of minimizing global taxes.</p>
<p>Strategic management</p>	<ul style="list-style-type: none"> • provide strategic management of the MNE's affiliates within a regional grouping 	<p>In free trade areas, the MNE may set up a regional headquarters to coordinate affiliates within the region.</p>

Thus one would expect the size (population, income level, sophistication) of market would be a key location factor attracting distribution plants. Distributors can provide a variety of services: distribution, marketing, sales, service, and warehousing facilities.

Support services. As the MNE network grows, affiliates that can provide support services to parts or all of the MNE family (e.g. finance, centralized purchasing, accounting) can be set up to serve the MNE group as a whole, or a regional network (e.g. a Belgium international financial centre may service all the MNE affiliates within the European Union). Infrastructure, tax breaks, and skilled labour are country attributes that attract such plants. In addition, many MNEs have affiliates in tax haven or entrepôt countries that engage in tax planning and tax-avoidance activities and in channelling financial flows among affiliates at the lowest possible cost. The primary determinants affecting the location of tax haven affiliates are differences in national tax rates, tax deferral or exemption from home country taxation for foreign source income, and the existence or absence of bilateral tax treaties and information exchange agreements.

Technology development. The evidence is very strong that MNEs, particularly US ones, prefer to centralize R&D units in the home country. However, since the early 1990s, both US and foreign MNEs have been setting up R&D units in Triad markets, outside the home country. The primary reason appears to be strategic asset-seeking FDI. For example, the MNE may decentralize some of its technology development activities to an R&D outpost. These outposts can provide a window on competitors' technological activities in host countries, take advantage of differences in human capital endowments among countries (e.g. lower-cost engineers and computer scientists in India), facilitate foreign sales by adapting MNE products to local market conditions and tastes, and meet host-country regulations in the clinical testing and health areas.

Strategic management. Under a simple integration strategy, strategic management of the MNE is located in the enterprise's home-country headquarters. Decisions are top-down, with local plants implementing directives from the parent firm. However, under a complex integration strategy, the MNE may have one or more lead plants that are effectively equal partners with the parent firm, placed in strategic locations within the Triad. Lead plants are responsible for technology and product creation, and distribution of lead products in each Triad market. Lead plants may also function as a regional headquarters for the foreign affiliates in a regional trade area, with the affiliates reporting to the lead plant which reports to the MNE parent.

In summary, each MNE has a value chain of primary and support activities that is some part of the industry value chain. Each firm decides how extensive its own value chain is relative to the complete industry value chain. The motivations for establishing parts of the value chain in foreign countries are fourfold: resource-, market-, efficiency-, and strategic asset-seeking FDI. The MNE's network of affiliates is organized around the various primary and support value-adding functions that foreign affiliates perform within the MNE.

2.1.2. Plant Location in a Free Trade Area

Table 7.2 provides some hypotheses about the likely impacts of the introduction of a free trade area on plant location decisions. The table outlines each of the value-adding types of plants, the locational advantages that should attract each type of plant, and the impact of the formation of a free trade area on the location decision.

In terms of the MNE's value-adding activities, an FTA should cause rationalization of *resource extraction* plants within the region. There should be more investment in endowment-rich areas where inward FDI has been previously restricted or closed to foreign firms. In addition, one can expect general upgrading of resource-based plants from simple extraction to processing activities as downstream tariff and non-tariff barriers fall.

Reduction of trade barriers should increase the importance of economic factors such as unit labour costs as influences on the location of *fabrication* plants. MNEs with labour-intensive parts plants located outside the FTA may close those plants and shift production to the FTA, thus causing investment diversion. Tight rules of origin in the FTA should also encourage more onshore sourcing of parts and components. Rationalization of parts plants and sub-assemblies based on lowest-cost location (including subsidies) is likely as MNEs move to set up new plants in the most cost-effective location. This should lead to increased vertical integration, and the possible closure of inefficient plants both inside and outside the region.

The days of 'copycat' or miniature replica *final assembly* plants are gone; a plant has to fit into existing structure of the MNE by playing a role in its overall strategy. If the FTA brings a previously closed economy into the trading area, any miniature replica plants are likely to be either closed or rationalized for the regional market as the FTA reduces the need to be located in a specific national market. Rationalization of existing plants in terms of products and/or processes is therefore likely, increasing the degree of horizontal and vertical integration within the MNE, and thus the amount of intrafirm trade flows within the region. Where economies of scale are important, these will favour the location of production within the largest market or where costs are the lowest; in such cases, we expect closure of inefficient plants in small markets. On the other hand, where a local presence is important for local sale, as, for example, in *distribution, sales, and service*, or where consumer tastes vary widely between national markets, the activities are not footloose so that the FTA should not shift such activities.

If firm-level economies of scale favour centralizing the activity, *support activities* formerly performed in each country (local management, business services, and technology development) may be closed and their staff relocated to a regional office. The removal of local content rules and performance requirements may similarly lead to closure of R&D labs set up to meet domestic regulations. Where sectors have been closed to inward FDI prior to the FTA, there should be increased inward FDI into these sectors, particularly if strong market growth is expected. This may be particularly true in business services where non-tariff barriers tend to be high and firms are often nationalized or FDI is limited.

TABLE 7.2. Value-adding activities and plant location in a free trade area

Value-adding activity	Function of plant	Factors affecting plant location decision	Impact of formation of free trade area
Resource extraction	Extracts and processes natural resources	Abundant, cheap natural resources (including energy and capital). Low transport costs	FTA encourages rationalization for larger market. Shift FDI and production to resource-rich countries. More FDI into endowment-rich countries that had restricted inward FDI prior to FTA. Upgrading of plants from simple extraction to processing. More interregional vertical intrafirm trade.
Fabrication	Manufactures parts and sub-assemblies	Low-cost labour and capital. Geographic proximity to downstream firms where lean production technologies important. Trade preferences that encourage offshore production (e.g. EPZs).	FTA encourages rationalization based on lowest-cost location to achieve economies of scale. New FDI in cost-effective locations. Closure of inefficient plants. Upgrading of efficient plants. More intraregional vertical intrafirm trade flows. Need to meet rules of origin requirements for intra-FTA trade. Expect EPZs to either upgrade from simple assembly or close.
Final assembly	Simple (packaging and/or bottling) or complex (automotive) assembly for final sale	Size and attractiveness of local market, access to Triad. Local content rules that require local production to access local market. Tariffs and NTBs that hinder access to local market. Good transportation network.	FTA encourages closure of tariff factories and replacement with exports from hub country where EOS important and need for national responsiveness low. Shift of remaining plants from focus on national to regional market. Possible world product mandates. Rationalization of product lines, leading to more intraregional horizontal intrafirm trade.

Distribution, sales, and service	Imports and/or distributes products in local market	Physical presence in local market important for sales.	FTA encourages downstream FDI into previously closed markets. Since local responsiveness is important at downstream stages, expect decentralization of plants to each country, but may be clustered within country borders.
Support services	Provide support to MNE group (e.g. advertising, HRM, tax), supply services to local customers	Location in Triad market. Skilled labour. Telecommunications infrastructure. Physical presence necessary for local delivery of services to consumers.	FTA encourages downstream FDI into previously closed markets. Support services provided on regional level to MNE group; may be centralized in one location. Local services (e.g. marketing) may be closed and consolidated in hub country unless local responsiveness important. May cluster where best available infrastructure and related and supporting industries.
Technology development	R&D centre, window on technology in foreign markets, local content regulations	Presence of other high-tech firms, related and supporting industries. Skilled labour. Location in Triad market. Government R&D subsidies.	FTA encourages clustering of high-tech activities where agglomeration externalities are important. If local content requirements are eliminated under the FTA, may close and centralize local R&D activities (e.g. clinical testing).
Strategic management	Strategy formulation and implementation	Location in Triad market. Access to world markets.	FTA encourages closing of national headquarters and replacement by regional HQ, unless national responsiveness important. May cluster with other regional headquarters in lead centres.

2.2. Type of Firm

A second factor affecting firm location decisions in response to a free trade area is the type of firm. We argue that the strategic responses to an FTA will be partly determined by (i) whether the firm is headquartered inside or outside the area and (ii) whether the firm has significant investments inside the region.

Following Eden and Molot (1993) and Vernon (1994), we identify three categories of firms that are likely to have different responses to regional integration: *insiders* (well-established multinationals located inside a free trade area with significant investments in the partner countries prior to the agreement), *outsiders* (foreign firms outside the area, which may have been exporting into the area or may have investments inside the area), and *domestics* (local firms inside the area that are primarily focused on their national market (or a subunit within that market) without significant investments in the other partner countries; they may or may not already be exporting to these countries). The likely responses, by type of firm, are outlined in Table 7.3.

Insiders should see benefits from lower intraregional barriers and respond by rationalizing product lines (horizontal integration) and/or production processes (vertical integration) to better exploit economies of scale and scope across the region. There is both a short-run response as MNEs engage in locational reshufflings in response to the falling trade barriers, and a long-run response where insiders locate, close and/or expand their plants with the whole regional market in mind. The result should be reduced numbers of product lines in various plants and increased horizontal trade among plants. MNEs are also likely to segment their production process among plants so that more vertical intrafirm trade takes place. Certain product lines, industry segments, and plant functions will shift among the three countries and these will cause job losses and plant closures in certain locations. Where country sizes are very different, in the short run, there may be a tendency for firms to shift their activities to the largest market. As a result, insider firms should respond by creating more cross-border vertical and horizontal intrafirm trade flows.

The formation of an FTA leaves tariff and non-tariff barriers against non-member countries unchanged while new and possibly more restrictive rules of origin are introduced. *Outsider firms* exporting into the FTA may face trade and investment diversion as the FTA gives preferential treatment to member countries in terms of products and investment locations. For defensive reasons, outsiders that are currently exporting into the FTA may shift to foreign direct investment; they are likely to locate in the largest market or where costs are the lowest, depending on whether they represent efficiency- or market-seeking FDI. The larger, regional market is also more attractive as an investment location for market-seeking FDI. Outsider firms that are unlikely to meet the rules of origin tests are more likely to cluster in the largest country, thus reducing their intra-FTA tariff duties.

TABLE 7.3. Plant location responses to the formation of a free trade area

Firm type	Definition	Responses to formation of free trade area
Insiders	MNEs in the FTA that already have FDI in the other FTA member countries.	Closure of tariff factories and inefficient plants; replacement with exports from hub country where economies of scale important and need for national responsiveness low. New FDI in cost-effective locations. Upgrading of efficient plants, and shift from focus on national to regional market. Possible regional/world product mandates for FTA subsidiaries. Rationalization of product lines for regional market and more intraregional horizontal intrafirm trade across product lines with sister affiliates. Increased interregional vertical intrafirm trade from upstream to downstream affiliates. May shift from non-FTA imports to local inputs to meet rules of origin requirements (trade diversion). May also shift investments from outside to inside the FTA (investment diversion). MNEs located in the 'hub' country may already see the FTA as their natural market; MNEs in the 'spoke' economies will need to adopt a 'double diamond' perspective on competitive advantage, seeing the FTA as one regional market.
Outsiders	Firms headquartered outside the FTA. They may be either INVESTORS (MNEs with investments in one or more FTA partner countries) or TRADERS (foreign firms that trade with unrelated firms but have no investments in FTA countries).	<p data-bbox="530 902 555 1106"><i>Outsider investors</i></p> <p data-bbox="559 569 670 1106">Similar responses as insiders except that need to meet rules of origin requirement may more strongly affect outsider firms since more inputs tend to be sourced outside FTA.</p>
Domestics	Firms inside the FTA that do not have investments in other FTA countries. These firms may be either TRADERS with other FTA members or LOCALS (firms with no international trade experience).	<p data-bbox="777 939 802 1106"><i>Insider traders</i></p> <p data-bbox="805 569 1036 1106">See increased trading opportunities from larger FTA market. Shift from trade to FDI if costs warrant and regional market is attractive to firm. Entry into previously closed markets (e.g. where FDI restrictions are lifted). Setting up of new plants based on low-cost location and/or access to largest market. Market-seeking plants will most likely be located in hub market. Competitive firms in the spoke countries are likely to set up new plants in the hub country.</p> <p data-bbox="777 351 802 538"><i>Locals/Nationals</i></p> <p data-bbox="805 63 1097 538">Fear of new competitors (both from FDI and imports). If not protected by local barriers, may be bought up (M&A). Inefficient firms likely to close. Some firms can shift to trade/investment in other FTA country, possibly through joint ventures. Export assistance may be needed to penetrate other FTA markets, especially where complementary assets (e.g. distribution network) are important.</p>

Outsiders that have already established transplant operations within the region, if not deterred by the FTA's rules of origin or any remaining investment barriers, are likely to also expand and rationalize their investments to take advantage of the larger market size. If rules of origin are tightened, transplants will have to upgrade production and source more inputs locally or restrict their sales to the largest market. Parts plants may be induced to follow distributors and assembly plants in order to meet these rules of origin.

For *domestics*, firms without established links to other potential FTA members, a free trade area will be seen as both an opportunity (i.e. new markets, access to lower cost inputs) and a threat (i.e. more competition). Such firms, with encouragement, may start or increase their exports within the region and possibly open up distributors or offshore plants where market size or costs warrant. They will, however, have to face the difficult task of breaking into established distribution networks of domestics and MNEs already located in the other FTA markets. The key question is whether to 'go regional' and branch outside the home country into other parts of the region, or stay at home and become less competitive.

2.3. MNE Response to the Formation of a Free Trade Area

As Figure 7.1 shows, our model argues that the formation of a free trade area is a policy shock. Firms will alter their plant location choices in response to this shock, depending on their motivation for FDI, the nature of the value-adding activity, and their own characteristics. The plant location response requires deciding, 'Which value adding activity should be located in which country?' The location decision depends initially on the country-specific advantages (CSAs) of each of the member countries and the region-specific advantages that will be available once the FTA is fully phased in (Rugman and Gestrin 1993*b*). But implicit in this question are two others: (i) Should the activity be centralized or dispersed? and (ii) Should the activity be clustered with other firms? The plant location decision involves both centralization and clustering choices.

In deciding where to locate a plant, the firm must first choose whether to centralize the activity by locating it at home (with the parent firm) or decentralize the activity to a foreign location. Economies of scale at the plant level encourage centralization of production in one location with exports being used as the mode to supply foreign markets. Transportation and communication costs, on the other hand, raise the costs of exporting and encourage decentralization. High tariffs act like transport costs, discouraging foreign firms from locating production in one central place and exporting to a variety of foreign markets. Tariff-jumping FDI is likely to occur as foreign firms set up domestic plants in order to supply the local market, particularly where the market is large and attractive.

Where firms are likely to locate is also partly dependent on agglomeration economies, or the advantages of firms clustering in one location.³ A second component of the plant location decision is therefore whether or not to locate near

other firms (upstream suppliers, downstream customers, or competitors). External economies and the benefits of information-sharing encourage clustering of firms, particularly in knowledge-intensive sectors. Access to natural resources or specialized assets and infrastructure will also encourage resource-seeking firms to cluster in one location. The benefits of labour-pooling can similarly encourage clustering, for example, where highly specialized workers are needed. Horizontal clusters, firms engaged in similar lines of activity, are likely to form in these circumstances.

The shift from mass to lean production methods can also cause clustering. New process technologies have reduced the importance of labour, transport, and communications costs; shortened the minimum efficient scale of production (thus reducing the importance of economies of scale at the plant level); and increased the need for supplier firms to locate close to their downstream customers in order to use just-in-time production and delivery methods. Lean production therefore encourages the formation of vertical clusters of suppliers and buyers. In many cases, these clusters may form around one or more flagship firms, with upstream and downstream firms as satellites around them.

Regional integration can therefore affect the location of economic activity inside countries. As tariff rates fall in a free trade area, where plant-level economies of scale are important, firms that had tariff-jumping factories may close down smaller plants and shift production to the largest, most efficient plant, relying on exports to reach the smaller markets. If the FTA is also accompanied by a decline in transportation costs (e.g. liberalization of cross-border transport routes is part of the FTA package), this also encourages centralization of production. This suggests that insider MNEs with investments throughout the FTA are more likely to rationalize production by closing inefficient plants and centralizing production, where economies of scale gains are significant and transport costs low. Alternatively, rationalization of product lines between plants and increased intraindustry horizontal trade is an alternative solution for differentiated product industries.

Outsider firms may be induced by the FTA to locate inside the region. Their locational patterns may also cluster if they are following downstream producers (particularly where lean production techniques are prevalent), choose to locate their market-seeking FDI in urban centres, or are attracted to knowledge-based clusters for their external economies and information-sharing. Such firms may be more likely to see the region as a whole and make decisions from a regionally efficient perspective, thus increasing their competitiveness relative to member firms.⁴ On the other hand, outsider firms may be less well equipped to take advantage of clustering, particularly where the advantages are based on knowledge spillovers (Enright 1996: 204).

For domestics, an FTA expands the set of markets available to firms if they had not previously engaged in exports or FDI to the member countries. In order to access these new markets, these firms are likely to move to locations with good access to the other markets, such as border areas and port cities. As

firms move to border locations, a self-reinforcing movement may occur due to agglomeration economies, creating new regional centres. Thus, some regions should expand as a result of an FTA while other regions will shrink.

Hanson (1998) argues that two types of border clusters may be encouraged by the formation of an FTA. Small cities along the border may develop into transportation and wholesale trade hubs, facilitating cross-border flows of goods and services liberalized under the FTA. Large cities, on the other hand, may develop into full-sized regional production-sharing networks, where firms from both countries specialize their value-adding activities along the value chain, and engage in sophisticated subcontracting strategies and crossborder alliances.

When the FTA consists of countries with very different market sizes (in terms of population and income), clustering decisions may differ for firms headquartered in the 'hub' economy (the largest market in the region) and those in the 'spoke' economies (small countries) (Eden and Molot 1993). The formation of a free trade area may lead to clustering within the largest market, as MNEs headquartered in the hub economy close tariff factories in the smaller markets, and retreat to supplying these market with exports from large-scale hub plants.

Firms located in the spoke economies with investments in the hub market prior to the FTA might be expected to open or expand their operations in the hub economy and begin to serve the region as a whole from the hub. Although they may need to change their market focus from the national to the regional market, adapting to what Rugman and D'Cruz (1991) call the 'double diamond' model of competitive advantage. On the other hand, firms located in the spoke economies that have not invested in the hub market (the domestics) are likely to respond to an FTA by moving closer to the border. The move to relocate to border areas and port cities should be more pronounced for firms in small countries owing to the relatively stronger pull of the larger market.

In summary, we have outlined a model of shocks and responses: the creation of a free trade area is a policy shock that causes firms, both inside and outside the FTA, to respond by altering their locational decisions. We have argued that the nature of the value-adding activity and the type of firm are two key determinants in predicting that response. Let us now turn to the case of North American free trade and see what light this model can shed on plant location decisions within North America.

3. Plant Location Decisions after NAFTA

3.1. The Emerging North American Trade and Investment Regime

NAFTA, which became law in Canada, the USA, and Mexico on 1 January 1994, will eliminate tariffs and reduce most non-tariff barriers within the region by the year 2003. Each country maintains its own trade barriers vis-à-vis non-member countries, but intracontinental trade barriers are falling dramatically. Thus tariffs

will cease to be a major factor influencing intra-NAFTA where rules of origin tests are satisfied. Where these tests are not met, tariffs continue to apply.

NAFTA is more than a free trade agreement; it has the most extensive regulations on investment of any trade agreement.⁵ The key commitments in the investment chapter are to national treatment (NAFTA partners must be treated at least as well as domestic investors) together with most-favoured-nation treatment (NAFTA investors must be treated at least as well as any foreign investor) for all North American investments and investors, including firms controlled by non-North Americans. There are some exceptions (investments in financial services are covered elsewhere in the agreement; many existing federal measures such as Canadian cultural industries are exempt; existing practices in the states and provinces are grandfathered if listed; public procurement and investment incentives are not included, nor are FDI restrictions on national security grounds). However, the protection for investors and investments is unprecedented in a trade agreement.

NAFTA extends the list of proscribed performance requirements and mandates that most existing requirements be phased out over ten years. NAFTA forbids restrictions on capital movements, including all types of payments and profit remittances, except for balance of payments reasons. Expropriation is outlawed, except for a public purpose and on a non-discriminatory basis, and full and prompt payment of fair compensation is required. Investors can also seek binding arbitration against a host government for violations of NAFTA obligations, using either the World Bank's International Centre for the Settlement of Investment Disputes or the United Nations Commission on International Trade Law.

Thus, the trade and investment rules within North America have moved far beyond shallow integration (the removal or reduction of tariff barriers on goods) into deep integration (the removal or reduction of most barriers to flows of goods, services, and investments) (Eden 1996). One can argue that an international trade and investment regime is emerging in North America. How will MNEs configure their value-adding activities in this emerging NAFTA regime?

3.2. Plant Location Strategies under NAFTA

In the year 2004, NAFTA will be fully phased in, all tariffs should have been eliminated, and most non-tariff barriers either reduced or harmonized. National treatment and MFN status, together with sophisticated dispute settlement techniques, should complete the level playing-field. What impacts will the NAFTA regime have on multinational decision-making?

We argue that the NAFTA regime means that multinationals must alter their existing configuration and coordination strategies, developed when the three countries were separated by tariffs, non-tariff barriers and tax differentials, to take advantage of a more level playing-field. Prior to the mid-1980s, MNEs in North America established their own configuration of value-adding activities in domestic and foreign plants, based on the historical 'blocks' national governments had

positioned on the North American 'chessboard' (Eden 1994b).⁶ With governments removing these blocks, the underlying economic factors will have more impact on MNE configuration and coordination strategies. Because MNEs are international oligopolists, concerned about their shares of global and regional markets, they will change the configuration of their activities so as to increase their international competitiveness. Both plant functions and locations—through decisions on new and reinvestments—can be expected to change.

Based on our model developed above, we argue that two factors are likely to be key influences on plant location strategies in response to NAFTA: The type of firm and the motivation for plant location. We discuss each in turn below.

3.2.1. *The Type of MNE: Insiders, Outsiders, and Domestic*

The key to investment decisions is the reduction in policy risk for firms provided by a free trade area (Eaton, Lipsey, and Safarian 1994; Eden 1994b; Vernon 1994). In general, security of market access should be improved by the elimination of tariffs and non-tariff barriers under NAFTA. The investment chapter guaranteeing national treatment should also reduce the risk for firms so that intra-NAFTA FDI flows should increase. Thus, FDI should increase as MNEs move to consolidate their positions on a regional basis. In addition, where sectors have been previously closed to FDI, the desire for first-mover advantages should generate inward FDI, with possible bunching as firms follow the leader MNE. The strategic responses of firms to NAFTA will be partly determined by factors such as: (i) whether the firm is headquartered inside or outside the area; (ii) whether the firm has significant investments inside the region; and (iii) the industry(ies) in which the firm competes.

Insiders. Firms inside NAFTA will see benefits from lower intraregional barriers and will rationalize product lines (horizontal integration) and/or production processes (vertical integration) to better exploit economies of scale and scope. There should be both a short-run response as MNEs engage in locational reshufflings in response to the falling trade barriers, and a long-run response. US multinationals are best placed to take advantage of the falling tariff and non-tariff barriers because the firms are already located in all three countries. The configuration of US subsidiaries in North America was historically based on the 'blocks' governments had positioned on the North American 'chessboard'. With governments now removing these blocks, the underlying economic factors will have more impact on location decisions. These veterans will locate, close, and/or expand their plants with the whole North American market in mind. This should lead to reduced numbers of product lines in various plants and increasing horizontal trade among plants. MNEs are also likely to segment their production process among plants so that more vertical intrafirm trade takes place. As a result there should be more cross-border vertical and horizontal intrafirm trade flows. In the short run, there may be a tendency for firms to shift their activities to the largest market, i.e. the USA.

Veteran multinationals that are resource-seeking are likely to use NAFTA to relocate extractor and processor affiliates where resources are relatively more abundant and capital and energy costs lower. Cost-reducing affiliates may be induced to relocate to North American countries with lower unit labour costs. Market-driven affiliates are likely to rationalize production in existing plants, creating more vertical integration through fabricator factories and more horizontal integration through focused factories. MNEs that have not yet opened up branch plants in potential NAFTA members may do so.

In terms of the support activities in the value chain (head office, R&D, support services), veteran MNEs engaged in integrated production on a North American basis are likely to centre such activities in one head office. With the reduction in tariff and non-tariff barriers, there is less need for a fully autonomous and large national head office; in fact, such an office can be non-productive in a centralized, regionalized MNE. Thus, for US multinationals, we expect headquarters functions in the Canadian and Mexican spokes to become less important over time, as their activities are centralized in their US parents.

In many ways, what we are predicting has already happened in the auto industry as a result of the 1965 Auto Pact. Production is organized on a continental basis (defined, until NAFTA, as Canada and the USA) with assembly plants responsible for individual product lines, exchanging models with each other to fill out the product range, and with a wide variety of parts and components plants supplying inputs to the assembly operations. The Canadian head offices of the Big Three are small, little R&D is done here, and key decisions are made in the USA (see Eden and Molot 1993). This process of vertical and horizontal rationalization, as a result of CUSFTA and NAFTA, will now occur in other industries.

Therefore the responses of parents and affiliates will involve relocation and expansion, taking advantage of lower trade and investment barriers to develop a more integrative regional strategy. In the short run, existing plants are unlikely to be closed but in the longer term economic efficiency will determine locational decisions within North America. The key here is rationalization of demand for the regional market as a whole, and of supply to capture specialization and economies of scale.

Outsiders. Outsiders, non-North American MNEs that have already established transplant operations within North America, if not deterred by investment barriers, are likely to also expand and rationalize their investments to take advantage of the larger market size. As rules of origin are tightened, in order to meet North American content, transplants may be forced to upgrade production and source more inputs locally. Thus parts plants may be induced to follow distributors and assembly plants. Outsiders that are currently exporting to North America may shift to foreign direct investment. They are likely to be drawn to the larger market, the US market, or the *hub*, unless cost differentials make location in the *spokes* (Canada and Mexico) more attractive and/or interregional barriers are completely eliminated.

Domestics. For domestics, firms without established links to other potential NAFTA members, a free trade area will be seen as both an opportunity (i.e. new markets, access to lower cost inputs) and a threat (i.e. more competition). Such firms, with encouragement, may start or increase their exports within North America and possibly open up distributors or offshore plants where market size or costs warrant. They will, however, have to face the difficult task of breaking into established distribution networks of domestics and MNEs in the North American markets. The key question is whether to 'go regional' and branch outside the home country into other parts of North America, or stay at home and most likely be acquired by a NAFTA multinational.

Summary. From the above, we conclude that multinational strategies in a regional trade area, such as the emerging North American trade and investment regime, are the following: (i) for the insiders, rationalizing and extending existing investments throughout the region; (ii) for the outsiders, new investments and deepening of existing investments within the region as the firms, particularly Asian and European MNEs, seek to become true regional insiders; and (iii) for the domestics, their first steps across the border, either directly or indirectly through their supplier relationships to insider and outsider MNEs. US multinationals dominate, and will continue to dominate, these trends. Thus, we predict that the hub-and-spoke nature of the economic relationships in North America will continue to strengthen, and that the pattern we see within the North American auto industry will be a bell-wether for change in other North American industries.

3.2.2. *The Type of Plant: NAFTA and Plant Location Decisions*

In general, security of market access for North American firms should be improved by the elimination of tariffs under the NAFTA. The NAFTA investment rules also reduce the risk for firms investing within North America so that intra-North American FDI flows should increase. Thus strategic risk-reducing FDI should increase as MNEs move to consolidate their positions on a North American basis. In addition, where sectors have been previously closed to FDI, as in the Mexican financial and telecommunications sectors, the desire for first-mover advantages should generate inward FDI, with possible bunching as firms follow the leader MNE. More FDI should occur over the longer term, particularly in sectors that had been closed to FDI.

NAFTA should cause insider MNEs to rationalize their *resource extraction* plants within North America. There should be more investment in endowment-rich areas where inward FDI has been previously restricted in Mexico. FDI should flow into the Mexican petrochemical sector, but not directly into petroleum extraction due to Mexican constitutional restrictions. In addition, one can expect general upgrading of resource-based plants from extraction to processing activities as downstream tariff and non-tariff barriers fall. Where resource-based industries are pollution-intensive, such as the mining and petrochemical industries, the NAFTA's environmental side agreement should tighten the application of these

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rules in Mexico, reducing its attractiveness as a haven for polluting activities (Mayer 1994).

Where agglomeration effects and economies of scale are important, these will favour location of production within the largest market, the US hub, rather than the Canadian or Mexican spokes. In such cases, we expect closure of inefficient plants in small markets and their replacement with local distributors. Related to this, where the MNE is using lean production technologies based on just-in-time delivery and production, parts plants are likely to follow downstream firms. Thus the first-round location decisions of market-driven assembly plants are likely to be followed by a second round of parts plants investments (e.g. auto parts are likely to follow assemblers). On the other hand, where a local presence is important for local sale (e.g. distribution, consumer services) or consumer tastes vary widely between national markets, the activities are not footloose so that the NAFTA should not shift such activities.

Reduction of trade barriers under the NAFTA should increase the importance of economic factors such as unit labour costs as influences on the location of *fabrication* and *final assembly* plants. MNEs with labour-intensive parts plants located in the ASEAN and Caribbean countries are closing their plants and shifting production to Mexico. Tight rules of origin, particularly in the autos and textile sectors, should also encourage more onshore sourcing of parts and components. Rationalization of parts plants and sub-assemblies based on lowest-cost location (including subsidies) is likely as MNEs move to set up new plants in the most cost-effective location. This should lead to increased vertical integration, and the possible closure of inefficient plants both inside and outside North America. For Canadian and Mexican MNEs, the opening of the US market should lead to the setting up of US *sales and distribution* affiliates.

NAFTA should encourage the rationalization of *support services* on a North American basis. Marketing services, for example, may be directed at the North American market as a whole. For US multinationals, this means closing of some business service affiliates (e.g. advertising, purchasing) and the reallocation of these functions to the US parent. Centralization of *technology development* in the parent firm is likely to continue since the NAFTA prohibits the use of non-tariff barriers such as local content rules and performance requirements that encourage location of some R&D to host countries.

3.2.3. Summary: Plant Location Strategies under NAFTA

In summary, two factors are likely to be key influences on MNE investment strategies after NAFTA: the type of firm and the motivation for setting up a foreign plant. We expect that the NAFTA will induce substantial rationalization and possibly some downsizing and closure of inefficient foreign affiliates in North America. As a result, the degree of horizontal and vertical integration of these MNEs should increase, creating more intrafirm trade and investment flows inside NAFTA, and perhaps smaller trade and investment flows between North

America and Europe and Asia. We anticipate substantial investments in Mexico because its barriers to trade and investment prior to NAFTA were the highest. This investment should occur primarily in market-seeking and resource-seeking investments in sectors where FDI has been restricted.

3.3. Literature Review: MNE Responses to NAFTA

MNE rationalization of operations within North America is not new. Spurred initially by reductions in tariffs under the Tokyo Round of the GATT and then by the 1989 Canada–US Free Trade Agreement (CUSFTA), many manufacturers have already organized themselves for production in a North American market (Litvak 1991; Blank *et al.* 1995). There have been at least two different types of empirical studies of the impact of NAFTA on MNE configuration and coordination strategies: survey research and econometric studies. We briefly review these studies below.

3.3.1. Survey Research

There have been at least four surveys of MNE responses to North American free trade. The first by Rugman (1990) focused on the anticipated responses of MNEs in Canada and the USA to the Canada–US FTA. His work showed the expected support of large firms in both countries for free trade, their anticipation of few adjustment problems, and their attention to issues of competitiveness. Soon afterwards, the Conference Board of Canada (Krajewski 1992) posed questions to its members about the likely impact of CUSFTA on plant structure in Canada. The study looked at two groups: Canadian parents with US subsidiaries and Canadian subsidiaries of US parents. CUSFTA was seen by the respondents as a primary driver, in addition to globalization of markets in general, pushing multinationals in Canada to rationalize their production and sales for the North American market. The firms had a sense of new opportunities in the US market and/or felt the necessity to compete globally to survive.

In 1993, Johnson *et al.* (1995) surveyed senior operations executives at 139 North American manufacturers. The managers were asked to assess the impact of free trade on their operations strategies and to outline the responses to free trade undertaken in the previous two years. The survey results showed that Canadian firms did not expect to meet global competition through low manufacturing costs, but through superior customer service, dependable deliveries, and high quality. Their response was to improve capacity in these areas, seek more international customers, and avoid markets where fast deliveries and product proliferation were critical. Canadian firms (like their Mexican counterparts) saw their greatest potential in the US market, but also saw their US competitors as their greatest threat.

Lastly, Blank *et al.* (1995) surveyed thirty-four US Conference Board member multinationals about their strategies after NAFTA. The survey confirmed that US MNEs were moving towards a North American strategy and structure, and

that Canadian subsidiaries were being integrated more rapidly than Mexican ones into a continental production system. The drivers for change were the emerging 'architecture' of North America: a North American economic space as well as intensified global competition, the recession of the early 1990s, and technological change. For Canadian subsidiaries, the impact of continental reorganization was unclear: many predicted a rise in intrafirm trade as fewer goods will be produced in Canadian plants; a decrease in subsidiary autonomy; a loss of production capacity and jobs along with the redefinition of their role within the corporate network; and growing intrafirm competition for product and marketing mandates (Blank *et al.* 1995: 46–55).

3.3.2. *Econometric Studies*

While there have been several econometric studies of CUSFTA and NAFTA focusing on trade flows and/or economic welfare gains from regional integration, there have not been many analyses of how firms (MNEs or otherwise) are responding to regional integration.

Using a database of trade and FDI flows at the state and provincial level, Little (1996) examined the US and Canadian responses to CUSFTA. She found that US and Canadian firms tend to rely on trade rather than FDI to serve the integrating market between the USA and Canada. More specifically, there are important changes in the industrial composition of trade at the regional level, which tend to be disguised when national-level data are employed. For instance, New England has maintained a favourable export base with Canada in the years studied. Inward FDI from Canada and geographic shifts in the US industry activity significantly affect New England's export performance, because trade activity has shifted to the South and West with the implementation of CUSFTA.

Schwanen (1997) compared the growth rates in sectors liberalized by CUSFTA, relative to those which were already basically free from barriers, over the 1988–95 period. Canada–US bilateral trade grew more quickly in the liberalized sectors. Intraindustry specialization, as evidenced by rapid growth in two-way trade, occurred in several sectors. On the other hand, North America's share of global FDI fell over the period, as did the importance of Canada and US in each other's FDI portfolio. Schwanen concluded that external events (e.g. liberalization and privatization in South America, rapid growth in Asia) attracted FDI outside of North America.

Hanson (1996), studying economic activity in the US–Mexico border cities, found evidence that export-manufacturing expansion in these border cities has increased manufacturing employment in the US border cities, suggesting that NAFTA can positively influence the relocation of US manufacturing production to the US–Mexico border region, especially when transport costs are an important consideration for industry location. In a recent paper summarizing the results of several earlier studies, Hanson (1998) found that, parallel to US manufacturing relocation, is a similar pattern of relocation in Mexico. Manufacturing employment

has increased in northern Mexico and decreased in central Mexico, suggesting relocation to the border cities with the USA. Even though NAFTA is eliminating the duty drawback programmes which gave the *maquiladoras* preferential status, the border plants continue to receive the bulk of inward FDI in Mexico, and Mexican manufacturing firms continue to be drawn north towards the US border. The author concludes that NAFTA will have more impact on Mexican industry location than on US or Canadian location decisions.

The US International Trade Commission (ITC) conducted a major three-year review of the impacts of NAFTA on the US economy and on nearly 200 industrial sectors (ITC 1997; see also the analysis in GAO (1997)). The ITC concluded that NAFTA has minimal impacts on the US economy in terms of trade, employment, or hourly earnings. *Maquiladora*-related trade expanded sharply, leading the ITC to conclude that production-sharing along the US–Mexico border would continue to expand due to the complementarities of the US and Mexican economies. Intraindustry trade, both Canada–US and Mexico–US, increased in sectors characterized by product differentiation and a high percentage of manufactured components. US–Mexico integration is perhaps proceeding fastest in the auto sector, where high Mexican trade barriers (tariffs on autos, domestic content regulations, trade-balancing requirements) are being dismantled and the potential gains from continental integration are large (USTR 1998).

What is evident from these studies is that, in response to NAFTA, multinationals are engaged in locational reshuffling, as Vernon (1994) predicted, designed to integrate Mexican industry into a regional production network—at least in the manufacturing sector. This is proceeding fastest in the automotive, electronic equipment, and textile sectors, as evidenced by the rapid growth in two-way trade in components and finished manufactured goods and the movement of Mexican and US firms to the border region.

In the next section, we provide some new evidence on multinationals and their plant location choices in North America post-1989. These statistics both confirm, and shed some new light on, these trends.

4. MNE Location Patterns in North America, 1989–94

We now turn to some evidence on how insider and outsider MNEs have been responding to the pressures for regional integration in North America. Our data are for the 1989–94 time-period only so that our evidence applies primarily to the impact of the 1989 CUSFTA. However, we argue that it is indicative of the impact that regional integration should have on plant location strategies. We use three data sets. The first is UNCTAD data from the 1998 *World Investment Report*. The second is OECD data on two-way FDI stocks in 1989 and 1994 (OECD 1997). Third, the US International Trade Administration (ITA) for several years, until the series ended in 1994, published data on US FDI entries by state location (ITA 1989–94). We analyse US inward FDI location patterns over the 1989–94 period, using the ITA data.

4.1. FDI Stocks and Crossborder M&A Purchases, 1985–97

UNCTAD (1998) provides data on FDI inward and outward stocks, by country, for the years 1985–97 (the 1997 data are preliminary). Analysis of these data in Table 7.4 shows that even though inward FDI (IFDI) in Canada increased by an average of 9.34 per cent per year over the period, its share of world IFDI fell from 8.55 per cent in 1985 to 3.97 per cent in 1997. The US share has also fallen from 24.40 per cent in 1985 to 20.86 per cent in 1997, even though US IFDI increased by an annual rate of 24.2 per cent. Only Mexico has maintained its share (approximately 2.5 per cent) of world IFDI. Because world IFDI grew at an average annual rate of 29.72 per cent, compared to 21.03 per cent for NAFTA, the region's share fell from 35.43 to 27.34 per cent over the same period. Thus, NAFTA has become a less attractive region, in a relative sense, for world FDI. This may reflect the reduced attractiveness of NAFTA as an investment location or, more likely, the increased attractiveness of other regions.

The same patterns hold for NAFTA's share—and for the individual country's shares—of outward FDI. As a percentage of world outward FDI (OFDI), in 1989 NAFTA's share was 42.78 per cent, but by 1997 it had fallen to 29.61 per cent. Even though OFDI stocks by NAFTA countries have grown at an annual average rate of 21.3 per cent, the region's share has declined steadily because foreign countries have expanded their outward stocks faster than North American investors. The one exception is Mexico; its OFDI has grown more rapidly (42.9 per cent on an annual basis) than world OFDI (34.50 per cent).

UNCTAD (1998) also provides data on cross-border mergers and acquisitions for the 1990–7 period. The pattern is very different: North America dominates other countries both as a purchaser and seller of M&As. Looking at North America as a purchaser of M&As, its share rose from 16.4 per cent in 1990 to 31.29 per cent in 1997. Both the US and Canadian shares increased significantly over the period, driving up NAFTA's share of world M&A purchases. M&A purchases grew at an annual rate of 16.23 per cent over 1990–7 for all countries, compared with 43.92 per cent for NAFTA countries. On the other hand, from the seller's perspective, NAFTA's share fell from 38.59 per cent in 1990 to 24.94 per cent in 1997; this was due primarily to a drop in US sales from 33.94 to 19.07 per cent. Again, this suggests the declining attractiveness of NAFTA as a location for investments, relative to other regions.

4.2. Cross-border Patterns in North American FDI Stocks, 1989 and 1994

The OECD collects data on inward and outward FDI flows and stocks by year, for OECD member countries. Tables 7.5 and 7.6 show the FDI stocks, by home and host country for the years 1989 and 1994. In both cases, we show the numbers and percentages for each NAFTA member country, all others, and all countries. The table allows us to see whether FDI is becoming more or less

TABLE 7.4a. FDI stocks, by country, 1985-1997 (\$US millions)

Year	1985		1990		1995		1997		Avg. annual % change 1985-97
	Total	% Dist.	Total	% Dist.	Total	% Dist.	Total	% Dist.	
<i>Inward FDI Stock</i>									
Canada	64,657	8.55	113,054	6.51	122,469	4.48	137,113	3.97	9.34
Mexico	18,802	2.48	32,523	1.87	66,566	2.44	86,836	2.51	30.15
USA	184,615	24.40	394,911	22.74	560,850	20.52	720,793	20.86	24.20
NAFTA	268,074	35.43	540,488	31.13	749,885	27.44	944,742	27.34	21.03
All others	488,589	64.57	1,195,838	68.87	1,982,764	72.56	2,510,767	72.66	34.49
World	756,663	100.00	1,736,326	100.00	2,732,649	100.00	3,455,509	100.00	29.72
<i>Outward FDI Stock</i>									
Canada	43,143	6.26	84,807	4.98	117,576	4.21	137,715	3.89	18.27
Mexico	533	0.08	575	0.03	2,564	0.09	3,282	0.09	42.98
USA	251,034	36.44	435,219	25.53	714,631	25.58	907,497	25.63	21.79
NAFTA	294,710	42.78	520,601	30.54	834,771	29.88	1,048,494	29.61	21.31
All others	394,198	57.22	1,183,943	69.46	1,958,771	70.12	2,492,890	70.39	44.37
World	688,908	100.00	1,704,544	100.00	2,793,542	100.00	3,541,384	100.00	34.50

TABLE 7.4b. FDI cross-border M&A purchasers and sellers, by country, 1990-1997 (\$US millions)

	1990		1995		1997		Avg. annual % change 1990-7
	Total	% Dist.	Total	% Dist.	Total	% Dist.	
<i>Purchaser, All Cross-border M&As</i>							
Canada	4,544	2.84	14,806	6.24	24,707	7.23	63.39
Mexico	—	—	169	0.07	743	0.22	169.82
USA	21,691	13.56	65,580	27.65	81,442	23.84	39.35
NAFTA	26,235	16.40	80,555	33.96	106,892	31.29	43.92
All others	133,724	83.60	156,629	66.04	234,761	68.71	10.79
World	159,959	100.00	237,184	100.00	341,653	100.00	16.23
<i>Seller, All Cross-border M&As</i>							
Canada	5,746	3.59	11,115	4.69	12,016	3.52	15.59
Mexico	1,681	1.05	1,435	0.61	8,034	2.35	53.99
USA	54,297	33.94	62,903	26.52	65,151	19.07	2.86
NAFTA	61,724	38.59	75,453	31.81	85,201	24.94	5.43
All others	98,235	61.41	161,731	68.19	256,452	75.06	23.01
World	159,959	100.00	237,184	100.00	341,653	100.00	16.23

Note: Average annual per cent change for Mexico's M&A calculated for 1995-7 only.

Source: Authors' calculations based on data in the appendices of UNCTAD (1998).

TABLE 7.5. FDI stocks by home and host country, 1989 (\$US millions)

Host country	Canada		Mexico		USA		NAFTA		All others		Total home	
	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.
Canada	Stock USD		8.00	n.a.	63,948	16.75	63,956	n.a.	12,849	n.a.	76,805	n.a.
	% Dist.		0.01		83.26		83.27		16.73		100.00	
Mexico	Stock USD	300	0.63		8,264	2.16	8,564	n.a.	8,261	n.a.	16,825	n.a.
	% Dist.	1.78			49.12		50.90		49.10		100.00	
USA	Stock USD	30,370	63.72	350	n.a.		30,720	n.a.	338,204	n.a.	368,924	n.a.
	% Dist.	8.23		0.09			8.33		91.67		100.00	
NAFTA	Stock USD	30,670	64.34	358	n.a.	72,212	18.91	103,240	n.a.	359,314	462,554	n.a.
	% Dist.	6.63		0.08		15.61		22.62		77.68	100.00	
All others	Stock USD	16,995	35.66	n.a.	n.a.	309,569	81.09	n.a.	n.a.	n.a.	n.a.	n.a.
	% Dist.											
Total host	Stock USD	47,665	100.00	n.a.	n.a.	381,781	100.00	n.a.	n.a.	n.a.	n.a.	n.a.
	% Dist.											

Note: Some Mexican data calculated by construction from other data in the table.

Source: Authors' calculations based on *OECD International Direct Investment Statistics Yearbook* (1997).

TABLE 7.6. FDI stocks by home and host country, 1994 (\$US millions)

Host country	Canada		Mexico		USA		NAFTA		All others		Total home	
	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.	Stock USD	% Dist.
Canada	Stock USD		109	n.a.	74,987	12.07	75,096	n.a.	18,454	n.a.	93,550	n.a.
	% Dist.		0.00		80.16		80.27		19.73		100.00	
Mexico	Stock USD	692	0.86	15,714	2.53	16,406	n.a.	18,377	n.a.	34,783	n.a.	
	% Dist.	1.99		45.18		47.17		52.83		100.00		
USA	Stock USD	42,133	52.34	2,342	n.a.	44,475	n.a.	457,935	n.a.	502,410	n.a.	
	% Dist.	8.39		0.47		8.85		91.15		100.00		
NAFTA	Stock USD	42,825	53.20	2,451	n.a.	90,701	14.60	135,977	n.a.	494,766	n.a.	
	% Dist.	6.79		0.39		14.38		6.36		78.44		
All others	Stock USD	37,670	46.80	n.a.	n.a.	530,343	85.40	n.a.	n.a.	n.a.	n.a.	
	% Dist.											
Total host	Stock USD	80,495	100.00	n.a.	n.a.	621,044	100.00	n.a.	n.a.	n.a.	n.a.	
	% Dist.											

Note: Some Mexican data calculated by construction from other data in the table.

Source: Authors' calculations based on *OECD International Direct Investment Statistics Yearbook* (1997).

concentrated inside the North American region, and whether the 'spoke' economies (Canada and Mexico) are becoming more or less dependent on the 'hub' economy (the USA).

Comparing the two tables, we can see that in 1989, 83.26 per cent of inward FDI (IFDI) in Canada came from the USA. Mexico was much less dependent on US FDI at 49.12 per cent of all Mexican IFDI. By 1994, even though US FDI in both countries had increased in value terms, the percentages had fallen to 80.16 per cent for Canada and 45.18 per cent for Mexico. Looking at the same numbers but from the US perspective, US outward FDI (OFDI) to Canada fell from 16.75 per cent of all US OFDI in 1989 to 12.07 per cent in 1994; however, it rose slightly to Mexico from 2.16 per cent in 1989 to 2.53 per cent in 1994. Given the small stock of US FDI in Mexico relative to Canada, it is not surprising that the Mexican share increased; what is surprising is the small extent of the increase.

In general, North American economic integration does not appear to have increased the US FDI stock in its North American partners in relative terms. One reason could be that the underlying economies of scale and agglomeration economies favour centralization of production in the US hub with exports to Canada and Mexico. Thus, elimination of trade barriers is causing US firms to close inefficient plants in the two spoke economies, replacing that production with exports from the USA. Another explanation could be simply that investments elsewhere (e.g. Asia, the former Soviet Union, Latin America) were more attractive over this period than investments in North America.

Looking at the FDI destined for the USA, the tables show that Canadian OFDI to the USA fell significantly in relative terms from 63.72 per cent in 1989 to 52.34 per cent in 1994, as a share of all Canadian OFDI, although the stock rose in US dollar terms. From the US perspective, Canadian FDI, as a share of all inward FDI in the USA, rose slightly from 8.23 per cent in 1989 to 8.39 per cent in 1994. Canada's FDI in Mexico increased very slightly from 1.78 to 1.99 per cent of Canadian OFDI over the same period. (Unfortunately, the statistics are not available for Mexican OFDI.) Thus, both Canada and the USA diversified their outward FDI away from each other, in relative terms, over this period. On the other hand, Mexico's share of US inward FDI, while minuscule, rose from 0.09 per cent in 1989 to 0.47 per cent in 1989.

Evidence from FDI stock data within North America over 1989–94 therefore suggests decreasing integration; however, this may not be a response to the Canada–US FTA but rather the relative attractiveness of investments outside the region.

4.3. US Inward FDI Patterns, by Home Country, 1989–94

Our second data set focuses on FDI entries into the USA over the 1989–94 period. The FDI statistics are 'counts', that is, number of FDI entries. As such, they do not reflect the size or value of the FDI flow, simply that it occurred.⁷ There were

4,433 individual investments made by foreign firms in the USA over the 1989–94 period; of these, 318 were made by Canadian firms and only twenty-six by Mexican investors. The small number of Mexican investments suggests the statistical pattern should be interpreted cautiously.

Tables 7.7 through 7.12 provide some evidence on FDI flows in the USA, for all industries and for manufacturing only, over the 1989–94 period.⁸ The data are reported for the following home countries: Canada, Mexico, and all others. Four patterns are illustrated by these tables: timing of inward FDI (Table 7.7), the mode of entry (Table 7.8), the choice of state location (Tables 7.9, 7.10, and 7.11), and the choice of industry (Table 7.11). We can use this data set to address some of the locational questions raised by our model:

- Do FDI entries in response to the formation of a free trade area tend to cluster in time, state location, and industry choice?
- Do insiders (Canada; Mexico can be seen as a quasi-insider over this time-period) respond differently to the formation of a free trade area from outsiders in terms of their location decisions?
- Do FDI entries in manufacturing behave differently from all FDI entries?

To test whether insiders behave differently from outsiders, for each table, we calculate an Index of Revealed Comparative Advantage (RCA). This is simply Canada's percentage for the relevant variable divided by the all home country percentage. Where the RCA index is significantly above (below) one, this suggests that the patterns of FDI entries is quite different for Canada than for all home countries.

4.3.1. *Timing of Entry*

Table 7.7 shows that Canadian FDI entries were highest in the first year of the Canada–US FTA (eighty-eight entries) and fell steadily through 1993, rising slightly in 1994. The same pattern is observable in the manufacturing data. Our earlier tables suggest that the total dollar amount of Canadian FDI into the USA increased over this period, suggesting that perhaps larger investments were made in the later periods. The RCA index for Canada does not vary significantly from 1, suggesting that Canada's investment pattern was similar to non-member countries in terms of timing of FDI over the period.

Looking now at Mexico, although the number of entries for all industries and for manufacturing are both small, the RCA index suggests that 1993 (the year before NAFTA takes effect) was a banner year (RCA exceeds 2 in both cases) as Mexican firms geared up for NAFTA by increasing their investments in the US market.

4.3.2. *Mode of entry*

Table 7.8 breaks the US FDI entries into groups by mode of entry: new plants, equity increases, plant expansions, mergers and acquisitions, and joint ventures.

TABLE 7.7. Timing of US inward FDI, by home country, 1989-1994

	Canada		Mexico		All others		All home countries		RCA CA-All	RCA MX-All
	No. of entries	% Dist.	No. of entries	% Dist.	No. of entries	% Dist.	No. of entries	% Dist.		
<i>All Industries</i>										
1989	88	27.67	7	26.92	1,008	24.65	1103	24.88	1.11	1.08
1990	46	14.47	2	7.69	970	23.72	1018	22.96	0.63	0.33
1991	50	15.72	3	11.54	672	16.43	725	16.35	0.96	0.71
1992	32	10.06	2	7.69	478	11.69	512	11.55	0.87	0.67
1993	42	13.21	6	23.08	443	10.83	491	11.08	1.19	2.08
1994	60	18.87	6	23.08	518	12.67	584	13.17	1.43	1.75
All Years	318	100.00	26	100.00	4,089	100.00	4,433	100.00	1.00	1.00
<i>Manufacturing</i>										
1989	35	28.46	4	26.67	488	25.89	527	26.05	1.09	1.02
1990	22	17.89	1	6.67	407	21.59	430	21.26	0.84	0.31
1991	18	14.63	2	13.33	305	16.18	325	16.07	0.91	0.83
1992	16	13.01	1	6.67	219	11.62	236	11.67	1.11	0.57
1993	12	9.76	4	26.67	189	10.03	205	10.13	0.96	2.63
1994	20	16.26	3	20	277	14.69	300	14.83	1.10	1.35
All years	123	100.00	15	100.00	1,885	100.00	2,023	100.00	1.00	1.00

Source: Authors' calculations from US Dept. of Commerce (1989-94).

TABLE 7.8. Mode of entry for US inward FDI by home country, 1989-1994

Mode of entry	Canada		Mexico		All others		All home countries		RCA	RCA
	No.	Rank	No.	Rank	No.	Rank	No.	Rank	CA-All	MX-All
<i>All Industries</i>										
New plant	27	3	1	4	410	3	438	3	0.86	0.39
Plant expansion	8	6	1	4	333	4	342	5	0.33	0.50
Equity increase	20	4	0	6	190	6	210	6	1.33	0.00
Joint venture	17	5	3	3	331	5	351	4	0.68	1.46
A&M	159	1	16	1	1,685	1	1,860	1	1.19	1.47
Other FDI	87	2	5	2	1,140	2	1,232	2	0.98	0.69
Total, All Industries	318		26		4,089		4,433		1.00	1.00
<i>Manufacturing</i>										
New plant	26	2	1	3	362	2	389	2	1.10	0.35
Plant expansion	7	4	1	3	304	3	312	3	0.37	0.43
Equity increase	7	4	0	5	111	6	118	6	0.98	0.00
Joint venture	3	6	3	2	150	5	156	5	0.32	2.59
M&A	66	1	10	1	767	1	843	1	1.29	1.60
Other FDI	14	3	0	5	191	4	205	4	1.12	0.00
Total, Manufacturing	123		15		1,885		2,023		1.00	1.00

Source: Authors' calculations from US Dept. of Commerce (1989-94).

Equity increases and plant expansions are clearly sequential investments. New plants could be seen either as first-time investments or the building of new facilities; similarly, M&A and joint ventures could be either new or sequential investments. In the case of Mexico, probably most of the investment entries are first-time entries; this will be less true for Canada where the history of investment in the US economy is much longer.

M&As were the top-ranked mode of entry for Canada, Mexico, and all others, for both all industries and manufacturing. Half of all Canadian entries were M&As compared to two-thirds of all Mexican entries. In manufacturing, the second-ranked mode of entry was new plants for Canada and joint ventures for Mexico.

In terms of RCA indexes, the only statistic which suggests a significantly different pattern from that for all home countries is the Mexican joint-venture statistic in manufacturing, which is more than twice the percentage share for all home countries. The international business literature suggests that firms from small developing countries tend to use joint ventures because of limited resources and the need to source technology. This statistic provides some support for this hypothesis.

4.3.3. Location of Entry

Here we present three tables. Table 7.9 shows the state location of FDI entries, for all industries, over the 1989–94 period. Table 7.10 repeats the table for manufacturing entries only. Table 7.11 addresses the question of border FDI: do Canadian FDI entries tend to cluster along the US–Canada border, and Mexican entries along the US–Mexico border, as argued by Hanson (1998)?

Table 7.9 shows the percentage distribution of FDI entries, for all industries, across the fifty US states, Puerto Rico, and the District of Columbia (DC), and ranks the top ten states by number of entries. Mexican entries cluster in nine states only, while Canadian entries are spread across forty-three out of fifty-two states. Only North Dakota has no entries. The top four state location choices for Canada and Mexico are the same: New York, Texas, Florida, and California. The high RCA indexes for Canada and for Mexico are misleading, given that in each of the cases the number of actual entries is small.⁹ This suggests that the overall pattern for Canada and Mexico, on a state-by-state basis, is not much different from that of all home countries.

Table 7.10 looks at state location for manufacturing FDI only. Canadian FDI entries are more concentrated for manufacturing than for all industries (twenty-nine versus forty-three states); the same is true for Mexico (seven versus nine states). Four locations have no FDI entries: Montana, North Dakota, Puerto Rico, and Wyoming. For Canada, the top five state locations are, in order: New York, Ohio and North Carolina (tied), and California and Florida (tied). For Mexico, the top locations are: Texas, California, Florida and New York (tied), and North Carolina, Missouri, and Arizona (all three tied). Canada and Mexico share five of their ten top states in common. The RCA indexes for manufacturing have

TABLE 7.9. State location of US inward FDI, all industries, by home country, 1989-1994

State	Canada		Mexico		All others		All home countries		RCA CA-All	RCA MX-All
	No.	% Dist.	No.	% Dist.	No.	% Dist.	No.	% Dist.		
AK	1	0.32	0	0	15	0.37	16	0.36	0.89	0
AL	2	0.63	0	0	23	0.56	25	0.57	1.11	0
AR	0	0	0	0	16	0.39	16	0.36	0	0
AZ	6	1.89	1	3.85	36	0.88	43	0.97	1.95	3.97
CA	25	7.89	5	19.23	742	18.2	772	17.46	0.45	1.10
CO	9	2.84	0	0	71	1.74	80	1.81	1.57	0
CT	4	1.26	1	3.85	56	1.37	61	1.38	0.91	2.79
DC	3	0.95	0	0	47	1.15	50	1.13	0.84	0
DE	5	1.58	0	0	10	0.25	15	0.34	4.65	0
FL	28	8.83	3	11.54	230	5.64	261	5.9	1.50	1.96
GA	5	1.58	0	0	128	3.14	133	3.01	0.52	0
HI	0	0	0	0	84	2.06	84	1.9	0	0
IA	1	0.32	0	0	21	0.51	22	0.5	0.64	0
ID	1	0.32	0	0	2	0.05	3	0.07	4.57	0
IL	11	3.47	1	3.85	125	3.07	137	3.1	1.12	1.24
IN	3	0.95	0	0	73	1.79	76	1.72	0.55	0
KS	4	1.26	0	0	19	0.47	23	0.52	2.42	0
KY	6	1.89	0	0	71	1.74	77	1.74	1.09	0
LA	5	1.58	0	0	48	1.18	53	1.2	1.32	0
MA	14	4.42	0	0	121	2.97	135	3.05	1.45	0
MD	2	0.63	0	0	67	1.64	69	1.56	0.40	0
ME	2	0.63	0	0	4	0.1	6	0.14	4.50	0
MI	15	4.73	0	0	108	2.65	123	2.78	1.70	0
MN	3	0.95	0	0	41	1.01	44	1.00	0.95	0
MO	5	1.58	1	3.85	34	0.83	40	0.9	1.76	4.28
MS	2	0.63	0	0	6	0.15	8	0.18	3.50	0

TABLE 7.9. (cont'd)

State	Canada		Mexico		All others		All home countries		RCA CA-All	RCA MX-All
	No.	Top 10	% Dist.	No.	Top 10	% Dist.	No.	Top 10		
MT	2		0.63	0		0	2	4	0.05	0
NC	13	7	4.1	1	5	3.85	126	140	3.09	1.21
ND	0		0	0		0	0	0	0	1.00
NE	0		0	0		0	1	1	0.02	0
NH	1		0.32	0		0	11	12	0.27	0
NJ	6		1.89	0		0	173	179	4.24	0
NM	1		0.32	0		0	8	9	0.2	0
NV	2		0.63	0		0	15	17	0.37	0
NY	47	1	14.83	4	3	15.38	504	555	12.36	1.18
OH	10	9	3.15	0		0	140	150	3.43	1.23
OK	2		0.63	0		0	19	21	0.47	0
OR	3		0.95	0		0	53	56	1.3	0
PA	8		2.52	0		0	109	117	2.67	0
PR	1		0.32	0		0	7	8	0.17	0
RI	1		0.32	0		0	9	10	0.22	0
SC	6		1.89	0		0	48	54	1.18	0
SD	0		0	0		0	1	1	0.02	0
TN	5	8	1.58	0		0	78	83	1.91	0
TX	34	2	10.73	9	1	34.62	305	348	7.48	0.84
UT	0		0	0		0	17	17	0.42	4.40
VA	6		1.89	0		0	125	131	3.07	0
VT	0		0	0		0	6	6	0.15	0
WA	6		1.89	0		0	73	79	1.79	0
WI	0		0	0		0	28	28	0.69	0
WV	1		0.32	0		0	14	15	0.34	0
WY	0		0	0		0	8	8	0.2	0
Total	317		100	26		100	4,078	4,421	100	1.00

Note: Some state locations not identified in the data so the total sums to less than the total number of entries.

TABLE 7.10. State location of US inward FDI in manufacturing, by home country, 1989-1994

State	Canada		Mexico		All others		All home countries		RCA	RCA
	No.	% Dist.	No.	% Dist.	No.	% Dist.	No.	% Dist.	CA-All	MX-All
AK	0	0	0	0	3	0.16	3	0.15	0	0
AL	1	0.81	0	0	18	0.96	19	0.94	0.86	0
AR	0	0	0	0	11	0.59	11	0.55	0	0
AZ	0	0	1	6.67	12	0.64	13	0.64	0	10.34
CA	7	5.69	3	20	319	16.99	329	16.32	0.35	1.23
CO	2	1.63	0	0	28	1.49	30	1.49	1.10	0
CT	2	1.63	0	0	25	1.33	27	1.34	1.22	0
DC	0	0	0	0	8	0.43	8	0.40	0	0
DE	4	3.25	0	0	4	0.21	8	0.40	8.19	0
FL	7	5.69	2	13.33	45	2.4	54	2.68	2.12	4.98
GA	3	2.44	0	0	55	2.93	58	2.88	0.85	0
HI	0	0	0	0	2	0.11	2	0.10	0	0
IA	1	0.81	0	0	13	0.69	14	0.69	1.17	0
ID	1	0.81	0	0	0	0	1	0.05	16.33	0
IL	6	4.88	0	0	61	3.25	67	3.32	1.47	0
IN	2	1.63	0	0	61	3.25	63	3.13	0.52	0
KS	4	3.25	0	0	14	0.75	18	0.89	3.64	0
KY	6	4.88	0	0	57	3.04	63	3.13	1.56	0
LA	1	0.81	0	0	20	1.06	21	1.04	0.78	0
MA	5	4.07	0	0	69	3.67	74	3.67	1.11	0
MD	0	0	0	0	26	1.38	26	1.29	0	0
ME	0	0	0	0	2	0.11	2	0.10	0	0
MI	5	4.07	0	0	84	4.47	89	4.41	0.92	0
MN	2	1.63	0	0	21	1.12	23	1.14	1.43	0
MO	3	2.44	1	6.67	20	1.06	24	1.19	2.05	5.60
MS	1	0.81	0	0	4	0.21	5	0.25	3.27	0

TABLE 7.10. (cont'd)

State	Canada		Mexico		All others		All home countries		RCA CA-All	RCA MX-All
	No.	Top 10	% Dist.	No.	Top 10	% Dist.	No.	Top 10		
MT	0		0	0	0	0	0	0	1.00	1.00
NC	8	2	6.5	1	5	6.67	89	5	4.86	1.34
ND	0		0	0	0	0	0	0	1.00	1.00
NE	0		0	0	1	0	1	1	0.05	0
NH	0		0	0	2	0	2	2	0.10	0
NJ	0		0	0	84	0	84	7	4.17	0
NM	0		0	0	6	0	6	6	0.30	0
NV	0		0	0	6	0	6	6	0.30	0
NY	23	1	18.7	2	3	13.33	150	2	8.68	2.15
OH	8	2	6.5	0		0	107	4	5.70	1.14
OK	0		0	0	7	0	7	7	0.35	0
OR	1		0.81	0	20	0	20	21	1.04	0.78
PA	2		1.63	0	76	0	76	8	3.87	0.42
PR	0		0	0	0	0	0	0	—	1.00
RI	0		0	0	7	0	7	7	0.35	0
SC	3		2.44	0	38	0	38	41	2.03	1.20
SD	0		0	0	1	0	1	1	0.05	0
TN	5	8	4.07	0	58	0	58	63	3.13	1.30
TX	5	8	4.07	5	1	33.33	109	3	5.90	0.69
UT	0		0	0	6	0	6	6	0.30	0
VA	3		2.44	0	60	0	60	63	3.13	0.78
VT	0		0	0	1	0	1	1	0.05	0
WA	2		1.63	0	36	0	36	38	1.88	0.86
WI	0		0	0	20	0	20	20	0.99	0
WV	0		0	0	12	0	12	12	0.60	0
WY	0		0	0	0	0	0	0	—	1.00
Total	123		100	15	1,878	100	1,878	2,016	100.00	1.00

Note: Some states not identified so the total sums to less than the total number of entries.

TABLE 7.11. Border state location of US inward FDI by home country, 1989-1994

State location	Canada		Mexico		All others		All home countries		RCA	RCA
	No. of states	No. of entries	% Dist.	No. of entries	% Dist.	No. of entries	% Dist.	No. of entries	CA-All	MX-All
<i>All Industries</i>										
Border Canada	16	110	34.70	5	19.23	1,241	30.43	1,356	1.13	0.63
Center States	27	103	32.49	3	11.54	1,432	35.12	1,538	0.93	0.33
Border Mexico	9	104	32.81	18	69.23	1,405	34.45	1,527	0.95	2.00
Total, All Industry	52	317	100.00	26	100.00	4,078	100.00	4,421	1.00	1.00
<i>Manufacturing</i>										
Border Canada	16	51	41.46	2	13.33	624	33.23	677	1.23	0.40
Center States	27	50	40.65	2	13.33	721	38.39	773	1.06	0.35
Border Mexico	9	22	17.89	11	73.33	533	28.38	566	0.64	2.61
Total, Mfg.	52	123	100.00	15	100.00	1,878	100.00	2,016	1.00	1.00

Source: Authors' calculations based on US Dept. of Commerce (1989-94).

more variation than for all industries; in particular, note the high RCA scores and number of entries for Canada in Delaware, and for Mexico in Texas. However, the small number of entries suggests that these RCAs should be discounted.

A different way to ask the question about clustering, and whether insider states like Canada and Mexico have a different pattern of entry from investors from non-member states, is to look at border states. Are Canadian investments clustered along the US–Canada border, and Mexican investments along the US–Mexico border? Has CUSFTA—and is NAFTA—pulling spoke country investments to their border with the hub? Table 7.11 provides some evidence that this, in fact, is the case. For Canada, 34.7 per cent of all investments over the 1989–94 period were made in US–Canada border states; in manufacturing, the percentage jumps to 41.48 per cent. In the case of Mexico, the pattern is even more pronounced: 69.24 per cent of all investments and 73.3 per cent of manufacturing investments were made along the US–Mexico border. Relative to all countries, Mexican investors were more than twice as likely to invest along the US–Mexico border than were all country investors (RCA =2.01 for all industries and 2.61 for manufacturing). This trend is very significant because it provides evidence in support of the theory that manufacturing FDI will tend to cluster near a country's borders, especially when transport costs are significant (Hanson 1996).

4.3.4. Industry Choice

Table 7.12 shows the allocation of FDI entries by two-digit SIC code. Both all industries and manufacturing (SIC 20 through SIC 39) are represented in the table. The top industries for Canadian FDI entries are, in order, printing and publishing (SIC 27), chemicals (SIC 28), electricity, gas, and sanitation services (SIC 49), business services (SIC 73), metal mining (SIC 10), oil and gas extraction (SIC 13), electric and electronic (SIC 36), communication (SIC 48), food (SIC 20), and real estate (SIC 65). Only four of the top ten are in manufacturing. For Mexico, the top industries are stone, clay, and glass (SIC 32), communication (SIC 48), security brokers (SIC 62), and printing and publishing (SIC 27). Looking at the RCA indexes, Canada is relatively more heavily invested in metal mining (SIC 10), railroad transport (SIC 40), and personal services (SIC 72), and Mexican investments are relatively clustered in stone, clay, and glass (SIC 32).¹⁰ Looking at manufacturing as a whole, 27.9 per cent of Canadian and 36.6 per cent of Mexican entries went into this sector, compared with 31.3 per cent for all home countries. Thus, Mexican FDI is relatively more concentrated in manufacturing, and Canada less; which is perhaps to be expected from the complex production-sharing arrangements developing along the US–Mexico border.

5. Discussion and Conclusions

The literature on North American economic integration is voluminous, but highly focused on trade patterns, particularly for goods trade. Much less work

TABLE 7.12. Industry choice for US inward FDI, all industries by home country, 1989-1994

SIC	Industry	Canada			Mexico			All others			All home countries			RCA	RCA
		No.	Top 10	% Dist.	No.	Top 10	% Dist.	No.	Top 10	% Dist.	No.	Top 10	% Dist.	CA-All	MX-All
**	Non-specified	32		7.26	1		2.44	307		5.14	340		5.27	1.38	0.46
01	Agric. prod. crops	1		0.23	0		0.00	6		0.1	7		0.11	2.09	0
02	Agric. pr. livestock	0		0.00	0		0.00	4		0.07	4		0.06	0	0
07	Agric. services	0		0.00	0		0.00	1		0.02	1		0.02	0	0
10	Metal mining	12	5	2.72	0		0.00	21		0.35	33		0.51	5.33	0
12	Coal mining	0		0.00	0		0.00	18		0.3	18		0.28	0	0
13	Oil gas extraction	12	5	2.72	0		0.00	79		1.32	91		1.41	1.93	0
14	Non-metallic minerals	0		0.00	0		0.00	14		0.23	14		0.22	0	0
15	Building construction	0		0.00	0		0.00	5		0.08	5		0.08	0	0
16	Heavy construction	0		0.00	0		0.00	7		0.12	7		0.11	0	0
17	Special trade contra.	0		0.00	0		0.00	3		0.05	3		0.05	0	0
18	n.a.	0		0.00	0		0.00	1		0.02	1		0.02	0	0
<i>Manufacturing SIC 20-39</i>															
20	Food	9	10	2.04	0		0.00	128	8	2.14	137	8	2.12	0.96	0
21	Tobacco	0		0.00	0		0.00	1		0.02	1		0.02	0	0
22	Textiles	4		0.91	1	6	2.44	29		0.49	34		0.53	1.72	4.60
23	Apparel	1		0.23	0		0.00	24		0.4	25		0.39	0.59	0
24	Lumber	4		0.91	0		0.00	10		0.17	14		0.22	4.14	0
25	Furniture	2		0.45	0		0.00	6		0.1	8		0.12	3.75	0
26	Paper	7		1.59	1	6	2.44	26		0.44	34		0.53	3.00	4.60
27	Printing, publishing	26	1	5.9	2	3	4.88	104		1.74	132	10	2.04	2.89	2.39
28	Chemicals	16	2	3.63	0		0.00	330	1	5.52	346	1	5.36	0.68	0
29	Petroleum, coal	1		0.23	1	6	2.44	14		0.23	16		0.25	0.92	9.76
30	Rubber, plastics	3		0.68	0		0.00	84		1.41	87		1.35	0.50	0
31	Leather	0		0.00	0		0.00	8		0.13	8		0.12	0	0
32	Stone, clay, glass	2		0.45	6	1	14.63	65		1.09	73		1.13	0.40	12.95

TABLE 7.12. (cont'd)

SIC	Industry	Canada		Mexico		All others		All home countries		RCA	RCA
		No.	Top 10 % Dist.	No.	Top 10 % Dist.	No.	Top 10 % Dist.	No.	Top 10 % Dist.	CA-All	MX-All
33	Primary metal	12	5	0	0.00	118	10	130	2.01	1.35	0
34	Fabricated metal	6	1.36	0	0.00	80	1.34	86	1.33	1.02	0
35	Comput equip, mach.	6	1.36	0	0.00	298	2	304	4.71	0.29	0
36	Electric, electronic	10	8	1	2.44	290	3	301	4.66	0.49	0.52
37	Transportation equip.	9	10	3	7.32	135	7	147	2.28	0.89	3.21
38	Instruments	2	0.45	0	0.00	108	1.81	110	1.7	0.26	0
39	Misc. manufacturing	3	0.68	0	0.00	27	0.45	30	0.46	1.48	0
SUM	All mfg. as % of total	123	27.89	15	36.59	1885	31.55	2023	31.34	0.89	1.17
40	Railroad transport.	7	1.59	0	0.00	2	0.03	9	0.14	11.36	0
41	Passenger transit	0	0.00	0	0.00	1	0.02	1	0.02	0	0
42	Trucking warehousing	6	1.36	1	2.44	44	0.74	51	0.79	1.72	3.09
44	Water transportation	9	10	0	0.00	114	1.91	123	1.91	1.07	0
45	Transportation by air	3	0.68	1	2.44	45	0.75	49	0.76	0.89	3.21
47	Transport. services	6	1.36	0	0.00	55	0.92	61	0.94	1.45	0
48	Communication	10	8	2	4.88	57	0.95	69	1.07	2.12	4.56
49	Elect. gas sanit. serv.	14	3	0	0.00	27	0.45	41	0.64	4.95	0
50	Whol. tr. durable good	2	0.45	1	2.44	249	4	252	3.9	0.12	0.63
51	Whol tr. non-durable	3	0.68	0	0.00	101	1.69	104	1.61	0.42	0
52	Build mat garden sup.	1	0.23	0	0.00	4	0.07	5	0.08	2.88	0
53	Gen marchand stores	0	0.00	0	0.00	16	0.27	16	0.25	0	0
54	Food stores	1	0.23	1	2.44	22	0.37	24	0.37	0.62	6.59
55	Auto deal. serv. stat.	1	0.23	0	0.00	14	0.23	15	0.23	1.00	0

56	Apparel access. stores	7	1.59	0	0.00	128	8	2.14	135	9	2.09	0.76	0
57	Furniture stores	1	0.23	0	0.00	28		0.47	29		0.45	0.51	0
58	Eating drinking places	5	1.13	0	0.00	33		0.55	38		0.59	1.92	0
59	Miscellaneous retail	3	0.68	0	0.00	62		1.04	65		1.01	0.67	0
60	Banking	3	0.68	1	2.44	41	6	0.69	45		0.7	0.97	3.49
61	Other credit agencies	1	0.23	0	0.00	16		0.27	17		0.26	0.88	0
62	Secur. com. broker	3	0.68	2	4.88	49	3	0.82	54		0.84	0.81	5.81
63	Insurance carriers	1	0.23	0	0.00	40		0.67	41		0.64	0.36	0
64	Ins. agent broker serv.	0	0.00	0	0.00	11		0.18	11		0.17	0	0
65	Real estate	9	2.04	0	0.00	22		0.37	31		0.48	4.25	0
67	Holdings other invest.	5	1.13	0	0.00	20		0.33	25		0.39	2.90	0
70	Hotels, lodging	3	0.68	0	0.00	142	6	2.38	145	7	2.25	0.30	0
72	Personal services	3	0.68	0	0.00	0		0.00	3		0.05	13.60	0
73	Business services	14	3.17	0	0.00	151	5	2.53	165	5	2.56	1.24	0
75	Auto repair garages	2	0.45	0	0.00	10		0.17	12		0.19	2.37	0
76	Misc. repair services	0	0.00	0	0.00	2		0.03	2		0.03	0	0
78	Motion pictures	2	0.45	0	0.00	45		0.75	47		0.73	0.62	0
79	Amus. recre. services	2	0.45	0	0.00	50		0.84	52		0.81	0.56	0
80	Health services	4	0.91	0	0.00	12		0.2	16		0.25	3.64	0
81	Legal services	0	0.00	1	2.44	2	6	0.03	3		0.05	0	48.80
82	Educat. services	0	0.00	0	0.00	16		0.27	16		0.25	0	0
86	Membership orgs.	0	0.00	0	0.00	1		0.02	1		0.02	0	0
87	Ing. acc. mgmt serv.	2	0.45	0	0.00	87		1.46	89		1.38	0.33	0
91	Exec. legisl. gvt.	0	0.00	0	0.00	1		0.02	1		0.02	0	0
92	n.a.	0	0.00	0	0.00	1		0.02	1		0.02	0	0
96	Admin. econ programme	5	1.13	0	0.00	17		0.28	22		0.34	3.32	0
Total		441	100.00	41	100.00	5,974		100.00	6,456		100	1.00	1.00

Source: authors' calculations from US Dept. of Commerce (1989-94).

has been done on the impacts of regional integration on foreign direct investment, and, in particular, on the production decisions and location patterns of multinational enterprises in response to the formation of a free trade area.

One of the underlying research questions which motivates this book is: *In what ways is the spatial unit changing from the nation state to the macroregion?* We have argued in this chapter that the location strategies of multinationals are affected by the formation of an FTA because the FTA causes the appropriate spatial unit for strategic decision-making to broaden from the nation to the region as a whole. Given the degree of integration within the FTA and the location advantages of each country, *ceteris paribus*, MNE location responses to a free trade area should be influenced by two factors: (i) the value-adding activity to be undertaken in the foreign plant and (ii) the characteristics of the firms.

First, the plant location decision is related to the underlying motivations for setting up a foreign plant (market-, resource-, efficiency-, and strategic-asset-seeking FDI). Our analysis supplements these general motivations by focusing directly on the actual value-adding activity to be undertaken in the host country. We show that plant function (whether final assembly, support services, or technology development, for example) matters in terms of firm responses to regional integration pressures. Second, we argued that the type of firm (insider, outsider, domestic) should affect the nature of the firm response to regional integration. For example, insider firms with affiliates in the member countries are best placed to take advantage of the opportunities for rationalization and specialization. We have also shown that the relative sizes of country markets are important in influencing MNE location patterns, with 'spoke' firms more likely to engage in new investments in the 'hub' market.

In the case of CUSFTA and NAFTA, the answer to the question: 'In what ways is the spatial unit changing from the nation state to the macroregion?' is that the appropriate spatial unit is no longer the individual member country but the region as a whole. For firms located in the US hub, the definition of 'home base' has historically been defined by the US borders. The one exception to this rule is the auto sector where the 1965 Auto Pact has created one integrated US-Canada auto sector. The Canada-US FTA enables both US and Canadian firms to define 'home base' as including both countries. With the passage of NAFTA, Mexico is now being redefined as part of the definition of North American economic space. This is most clearly seen along the US-Mexico border where production-sharing arrangements are integrating Mexican manufacturing into the US economy.

While our empirical work provides some evidence that North America became a relatively less attractive region for foreign direct investment over the 1985-97 period, we argue that this is mostly due to the relative attractiveness of investments in other parts of the world after 1989 (e.g. in East Asia and the former Soviet Union). CUSFTA and NAFTA, on the other hand, do not appear to have resulted in significantly increased investments. Although the dollar value of the FDI stock increased among all the NAFTA partners and in both directions, relatively more investments were directed outside of North America.

Looking specifically at inward FDI entries to the USA we provided some evidence that insider firms in a spoke economy (Canadian MNEs) invested more frequently at the beginning of the Canada-US Free Trade Agreement, and engaged in relatively more new FDI entries, primarily through mergers and acquisitions. Insider FDI entries, for Canada, while more clustered in geography and industry than FDI entries from non-NAFTA countries, were overall similar in terms of the top ten destinations for inward FDI. Mexican investors, reflecting Mexico's joining the FTA only in 1994, its higher trade barriers, and developing country status, engaged in small numbers of new investments in the US market which were geographically and industrially clustered. Mexico, in particular, invested more heavily along the US-Mexico border and in manufacturing industries relative to all home-country entries.

The evidence presented here suggests that North American firms have been making their locational decisions from a macroregional perspective, but that in the 1990s this has meant primarily locational reshufflings as firms have rationalized their investments on a continental basis. Over the longer term, once NAFTA is fully phased in, we expect new investment decisions to be made treating the North American macroregion as the 'home base'.

In subsequent work on this topic, we hope to explore the location patterns of MNEs within North America in more depth. Our data do not distinguish the motivation behind each FDI entry so we are unable, for example, at present to link our theoretical framework on the value-adding motivation behind each plant decision to the US FDI entry data. Perhaps other authors will be able to explore this topic more fully.

NOTES

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1. See Ferdows (1989), Eden (1994*b*), and Brush, Maritan, and Karnani (forthcoming) for various topologies of plant functions.
2. Somewhat similar to a focused factory is a foreign plant with a regional or world product mandate (WPM). WPMs are plants with the full responsibility for all, or at least all downstream, stages of the value chain for a single product line within the MNE. The WPM is different from the focused factory since the responsibility for technology development, and for final sale, is shifted to the subsidiary under a WPM but not in a focused factory.

3. On the theory of clustering and agglomeration economies, see Krugman (1991), Eaton, Lipsey, and Safarian (1994a), Enright (1995, 1996, 1998), Markusen (1996), Dunning (1997a), Puga and Venables (1997), Hanson (1998), and Porter (1998a, 1998b).
4. e.g. Dunning argues that US multinationals were the major beneficiaries from Mark I regional integration in the European Community because they 'were able to take advantage of the removal of tariff barriers, and surmount the transactions costs of the remaining non-tariff barriers better than their EC equivalents' (1997a: 5).
5. The recent failure of the Multilateral Agreement on Investment (MAI) talks makes NAFTA's Ch. 11 even more exceptional among trade agreements.
6. Except in the auto industry where the Canada-US auto pact enabled producers to rationalize production on a Canada-US basis.
7. The ITA data set has been used previously by Kogut and Singh (1998) and Kogut and Chang (1991). Kogut and Chang (1991: 404) found the correlation between the ITA data set and FDI balance of payments data to be 0.89. Kogut also found the ITA data highly correlated with Bureau of Economic Analysis (BEA) FDI data and unpublished plant and equipment data (unpublished correspondence with the author).
8. The 'Manufacturing Only' data exclude from the data set mainly three categories of industry: natural resources (agriculture and extraction), services (transportation, communication, retailing, banking, education, legal, health), and real estate.
9. For example, there were only three FDI entries for Idaho over the whole period, one of which was from Canada. This gives Canada an RCA of 4.57, suggesting that Canada invests almost five times as much as all countries in Idaho, but the numbers are so small the index has little meaning in this case.
10. While other RCAs are high, the number of investments are very low and so are not mentioned here (e.g. Mexico's RCA of 55.00 in legal services where one of three total investments was made by a Mexican firm).

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