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**CANADIAN-BASED MULTINATIONALS:
AN ANALYSIS OF ACTIVITIES AND
PERFORMANCE**

*Working Paper Number 2
July 1994*



Industry Canada Industrie Canada

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**CANADIAN-BASED MULTINATIONALS:
AN ANALYSIS OF ACTIVITIES AND
PERFORMANCE**

*by Industry Canada, Micro-Economic Policy Analysis staff,
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*Working Paper Number 2
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Aussi disponible en français

ACKNOWLEDGEMENTS

We are grateful to Ross Preston, John Knuble and Steven Globerman for their support with the project and their comments on the draft paper. We would also like to thank Chris Roth and Phillip Massé for their assistance throughout the project.

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EXECUTIVE SUMMARY

Rapid changes in technology and the comparative advantage position of firms and nations, and fierce global competition among firms for markets, capital, skilled labour and technology have both facilitated and necessitated the internationalization of the activities of transnational corporations. These companies are therefore adopting a variety of complementary strategies to improve their competitive positions and reduce the risks and uncertainties associated with their investments in physical and human capital and R&D. These strategies include mergers and acquisitions, greenfield investment, minority ownership, joint ventures and strategic alliances, subcontracting, and licensing, among others.

The role of transnational corporations (TNCs) in the world economy has increased dramatically in the past decade or so and this trend is expected to continue in the future. For instance, the stock of world outward direct investment increased almost fourfold from US\$ 519 billion in 1980 to US\$ 2 trillion in 1992, considerably outpacing the growth of world output and trade.

Canadian-based transnationals have also participated actively in the process of globalization. In the 1980s, the stock of Canadian direct investment abroad (CDIA) increased much more rapidly than the stock of world direct investment - from C\$ 27 billion in 1980 to C\$ 99 billion in 1992. As a result, the share of CDIA stock in Canadian GDP increased from 8.7 percent to 14.4 percent during this period.

The effect of foreign direct investment on the Canadian economy has been studied extensively. By comparison, however, there has been little analysis of the potential consequences of CDIA for Canada. The broad objective of this study is to examine the recent trends in CDIA, to analyze the performance of outward-oriented Canadian firms and to assess the impact of their activities on the Canadian economy.

Our major findings are:

- In the 1980s, Canadian TNCs actively participated in the process of globalization. From 1980 to 1992, the stock of CDIA increased at a faster pace than the global stock of direct investment as well as Canadian GDP, reaching C\$ 99.0 billion in 1992. The increased outward orientation is pervasive across all major Canadian industries.
- The relationship between inward and outward direct investment has become much more balanced in the last 25 years. The ratio of outward to inward stock increased from 0.23 in 1970 to 0.72 in 1992. This trend is also pervasive across all major Canadian industries.

- The share of Europe and the Asia Pacific Rim in CDIA has increased significantly since 1985, primarily at the expense of a declining share of the United States. However, the United States is still the dominant location for CDIA.
- Resources, and resource-based manufacturing industries still account for over 40 percent of CDIA. However, the shares of financial services and technology-intensive industries (such as chemicals and chemical products, communication and communication equipment, and non-electrical machinery) have increased dramatically over the last 30 years.
- In the past 15 years, the relatively high sensitivity of CDIA to foreign economic activity, the higher profitability and faster rate of capital accumulation in the United States and United Kingdom relative to Canada, and the increased outward orientation of Canadian firms have all contributed to the rapid growth of CDIA.
- Similarly, a number of pull factors such as the fast rate of growth of real aggregate demand in Europe and the Asia Pacific Rim, the significant improvement in the relative profit position of the United Kingdom, the opportunities and fears associated with the creation of Europe 1992, and improvements in the U.S. savings-investment imbalance appear to have contributed to the recent decline in the importance of the U.S. market for CDIA. However, the U.S. continues to be the dominant location for CDIA. With the successful conclusion of the North American Free Trade Agreement (NAFTA), however, investment linkages between Canada and the United States could strengthen further in the future.
- The rising share of financial and technology- and information-intensive industries in world GDP, especially in the industrialized countries, partly explains the growing importance of these industries in CDIA.
- The foreign activities of Canadian TNCs are highly concentrated. The top 159 Canadian MNEs, identified in this study, account for about 50 percent of all the foreign assets of Canadian-based firms. In addition, about 80 percent of the foreign assets of the 159 Canadian firms belong to the top 20 firms.
- The industrial and geographic distribution of the foreign assets and sales of the top Canadian firms are similar to the distribution of CDIA and foreign assets of all Canadian firms.
- On average, the top firms are relatively more outward-oriented (as measured by the higher proportion of foreign assets and sales in their total assets and sales) in manufacturing (especially in printing and publishing, textiles and technology-intensive manufacturing) and in mining industries.

- A priori, there is either a positive or no relationship between trends in CDIA and domestic investment spending. Our econometric analysis of the determinants of domestic capital formation in Canada and the selected G7 countries supports this view.
- The investment income receipts associated with a rapidly expanding CDIA made a contribution to the real income growth and improvements in the Canadian current account balance during the 1980s.
- The increased outward orientation of firms could contribute significantly to the future enhancement of Canada's trade performance because of the complementarity between exports and CDIA. Moreover, CDIA contributes to the expansion of foreign sales. In fact, the importance of foreign sales relative to exports has increased substantially in the past 15 years or so.
- Our analysis indicates that the large and growing importance of Canadian TNCs in the United States can be attributed largely to the superior productivity performance of their subsidiaries in the United States relative to other foreign affiliates. Canadian subsidiaries outperform the affiliates of other foreign countries in the United States.
- The growth, productivity and profit performance of the outward-oriented Canadian firms, on average, has been superior to the performance of the domestically oriented firms.
- Between 1986 and 1991 employment growth in the outward-oriented firms was significantly lower than in the domestically oriented firms. This may be largely a reflection of greater restructuring and rationalization by the outward-oriented firms, due to intense global competition for markets measured in terms of costs, quality, variety and service. Nevertheless, over the longer term, the improved competitive position of outward-oriented firms might actually enhance their employment growth. In any case, an increase in outward direct investment is expected to be neutral with respect to the level of employment in the long run. However, the foreign activities of outward-oriented firms are likely to influence the composition of output and employment.

CANADIAN-BASED MULTINATIONALS: AN ANALYSIS OF ACTIVITIES AND PERFORMANCE

Introduction

Through their trade, investment and innovation activities, transnational corporations (TNCs) play an important role in sustaining Canada's economic growth and development, as they do in many other developed and developing countries. While some concern has been expressed about the oligopolistic characteristics of transnational firms and the markets in which they operate, there is strong evidence that during the post-war period TNCs have made significant contributions to the integration and prosperity of the world economies. This was achieved by improving the efficiency and the allocation of the world's productive resources, and by increasing the flexibility and adaptability of product and factor markets around the globe. This study supports this view in its examination of Canadian-based TNCs abroad.

According to the United Nations Centre for Transnational Corporations (UNCTC, 1993), there are at present over 37,000 transnational corporations world wide, controlling some 170,000 foreign affiliates. However, a small number of transnational firms represent half of the foreign activity of these firms. In 1992 the top 1 percent of these transnationals accounted for almost 50 percent of the total stock of world outward direct investment (US\$ 2 trillion).

Canada's share of the world's transnational population is about 3.5 percent. Because of the rapid pace of internationalization of business by Canadian firms during the 1980s, the stock of Canadian direct investment abroad (CDIA) grew at a relatively faster rate than the global stock of outward direct investment. Consequently, Canada's share of world outward direct investment stock increased from 4.0 percent in 1980 to over 4.5 percent in 1990 (Rutter, 1992). In other words, Canada is today a major host and home country for foreign direct investment (FDI).

In the 1980s, a variety of interrelated trends in the world economy increased the pace of globalization by transnational companies. These trends included: shifts in the comparative advantage position of firms and nations; marked reductions in transportation and communication costs; rapid changes in product and process technologies; shorter product cycles; increased convergence of consumer tastes across countries; the emergence of newly-industrialized Asian countries as important forces in the world economy; the liberalization of trade, investment and financial flows; increased need for large investments in R&D and the increased uncertainty and risk associated with the returns on these investments; and fierce and increased international competition for markets. Furthermore, in order to stimulate growth of their economies, national governments focused their promotional efforts on attracting the investment and innovation activities of transnational corporations. All these developments both necessitated and facilitated the rapid pace of internationalization of business.

Transnational corporations are also becoming increasingly footloose by carrying out their production, sourcing, financing, investment and innovation activities on a regional and global

basis. In fact, transnationals are increasingly oriented toward integrating their business activities on a global scale in an effort to improve efficiency, minimize costs, maximize performance and increase global market share.

Transnationals are adopting a range of complementary strategies for obtaining access to international markets and complementary new technologies, for improving their competitive position, and for properly managing the uncertainty and risk associated with huge investments in physical and human capital and R&D. These include mergers and acquisitions, greenfield investments, minority ownership, joint ventures and strategic alliances, subcontracting and licensing, among others.

In short, the role of transnational corporations in the world economy has increased dramatically over the past decade and this trend is expected to continue in the future. For instance, the stock of world outward direct investment increased almost fourfold from US\$ 519 billion in 1980 to US\$ 2 trillion in 1992, outpacing the growth in world output and trade. According to UNCTC estimates, transnationals account for over one-third of world private sector GDP.

Canadian transnationals have also actively participated in the globalization process; there are over 1,300 TNCs based in Canada today. As with global direct investment, the stock of CDIA increased rapidly in the 1980s, increasing from C\$ 27 billion in 1980 to C\$ 99 billion in 1992. Consequently, the ratio of CDIA stock to the Canadian foreign direct investment stock (CFDI) increased from 0.40 in 1980 to 0.73 in 1992.

The influences of FDI on the Canadian economy have been studied extensively (Investment Canada, 1992). By comparison, little attention has been devoted to studying the potential consequences of CDIA and its effect on Canada's competitive position and welfare. However, earlier research of Litvak & Maule (1981), Matheson (1987), Rugman (1987), and Knubley, Krause & Sadeque (1991) examined the motivations of CDIA in some detail.

The broad objectives of this study are to examine the recent trends in CDIA, to analyze the performance of outward-oriented Canadian firms and to assess the effect of their activities on Canada. In particular, our research attempts to answer the following questions:

- How has the geographic and industrial distribution of CDIA changed over the last 20 years?
- What factors account for the dramatic increase in CDIA?
- What are the characteristics of top Canadian transnational corporations?
- Does an increase in CDIA crowd out investment in Canada?
- Are exports and direct investment abroad substitutes or complements?

- How well are the U.S. affiliates of Canadian TNCs performing in the United States relative to those from other countries?
- Do outward-oriented Canadian firms perform better than domestically oriented firms?
- What are the possible costs and benefits of CDIA to Canada?

The organization of this study is as follows: the next section describes the recent trends in the geographic and industrial distribution of CDIA and identifies the broad macroeconomic factors that could explain the emerging trends. We go on to link the industrial and geographic distribution of CDIA to the structure and characteristics of the top outward-oriented Canadian firms. Next, we analyze the consequences of rapid growth of CDIA on a number of other economic indicators in Canada such as direct investment income, trade flows, foreign sales and competitiveness. The effect of CDIA on Canada's competitive position is analyzed by comparing the growth of sales and assets, productivity, and the profitability performance of the top outward-oriented Canadian companies *vis-à-vis* the top domestically oriented Canadian companies. The relative productivity, trade and R&D performance of the U.S. affiliates of Canadian TNCs, in relation to the affiliates of other countries in the United States, is also examined. Finally, we summarize our main findings and briefly examine their policy implications.

Our empirical analysis of the determinants of domestic capital formation in Canada and other G-7 countries suggests that an increase in direct investment abroad need not necessarily reduce investment in home countries. By the same token, our analysis indicates that trade flows and direct investment are complements rather than substitutes. More importantly, the growth and productivity performance of outward-oriented Canadian-based firms, on average, tend to be superior to the performance of domestically oriented Canadian-based firms. These results imply that an increase in CDIA could be of benefit to Canada.

CDIA Trends and Determinants

In this section we examine the broad trends in world direct investment and Canadian direct investment abroad (CDIA). We then analyze the macro determinants of these developments and conclude with a discussion of micro factors, including the structure and characteristics of top Canadian-based TNCs. Before proceeding, however, a brief review of the major trends in world foreign direct investment (FDI) should be useful.

Global Trends

The growth of world outward investment stock increased on average by over 10 percent per year between 1980 and 1992, almost double the rate of growth of world output and trade. Consequently, the stock of world outward direct investment increased from US\$ 519 billion in 1980 to approximately US\$ 2 trillion in 1992. The international production activities of TNCs generated about US\$ 5.5 trillion of foreign sales in 1992, much of which is attributable to the large and growing role of intra-firm trade. According to the UNCTC estimates, TNCs account for about 80 percent of world trade.

Another global development has been the dramatic increase in the U.S. dependence on FDI in the 1980s. As a result, the U.S. share of world FDI stock increased from 16 percent in 1980 to over 25 percent in 1992, making the United States the largest host country of FDI in the period. In sharp contrast, Japan's share of world outward investment stock increased from a mere 4 percent in 1980 to almost 15 percent in 1992. A large portion of the increase in FDI in the United States came from Japan, raising the Japanese share of FDI in America from 6.2 percent in 1980 to 21.3 percent in 1991.

The rapid increase in world FDI has been accompanied by marked shifts in its industrial composition – away from primary and resource-based manufacturing industries toward services and technology-intensive manufacturing industries. These shifts have been pervasive across most industrialized countries. For instance, in six of the seven G-7 countries (excluding the United Kingdom), the share of service industries in FDI has increased considerably in the last decade (UNCTC, 1993; Ostry & Gestrin, 1993).

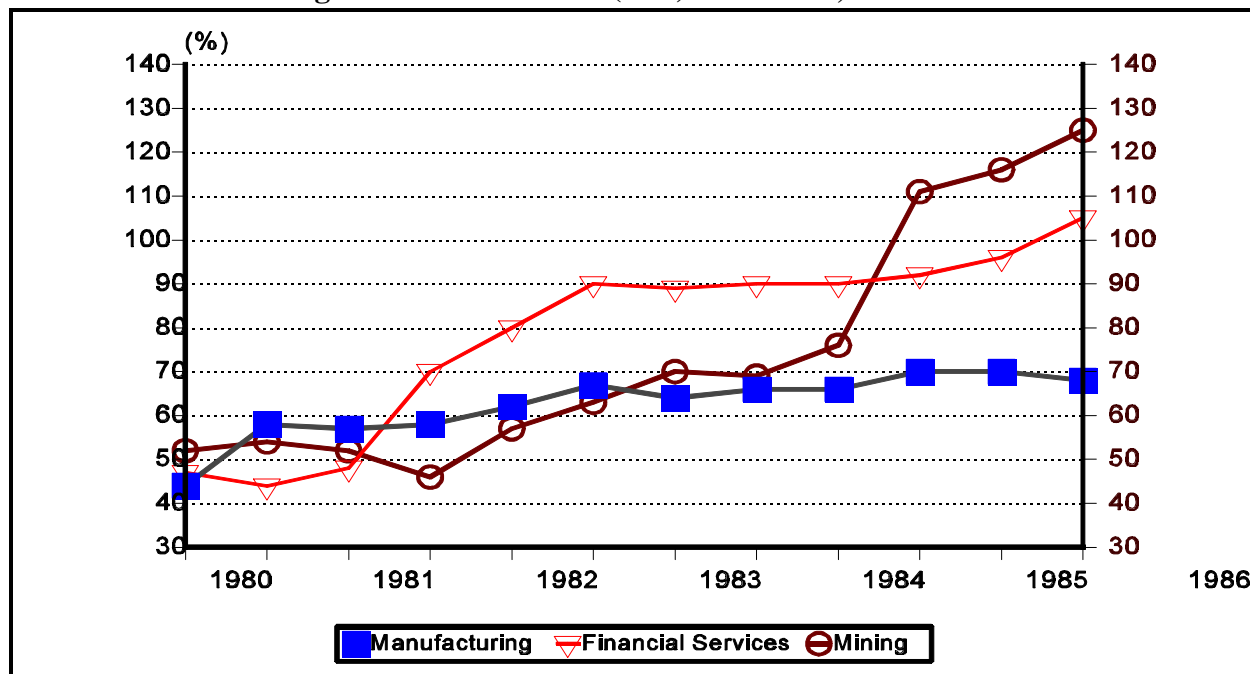
Huge investment/savings imbalances in the United States and Japan (as reflected by their current account imbalances), the large depreciation of the Japanese yen *vis-à-vis* the U.S. dollar, the threat of increased protectionism in the United States, and growing labour shortages in Japan all contributed to the emergence of Japan as a major home country and the United States as the largest host country of world FDI stock in the 1980s (Ostry, 1990; Dobson, 1993).

Large shifts in domestic economic activity toward service industries, rapid advances in information technology, privatization, and the liberalization of services' trade and investment (especially financial services) all help to explain the changes in the industrial composition of world FDI stock.

Trends in CDIA

Canadian TNCs have participated very actively in the process of globalization. Between 1980 and 1992 the stock of CDIA increased at a faster pace than world outward direct investment stock, reaching \$ 99 billion in 1992. As a result, the Canadian share of world outward investment stock increased from 4.0 percent in 1980 to almost 5 percent in 1992. During this period the share of CDIA in Canadian GDP also increased from 8.7 percent to 14.4 percent. The increased outward orientation is pervasive across all major Canadian industries.¹

Figure 1
Ratio of Stock of Canadian Direct Investment Abroad (CDIA) to
Foreign Direct Investment (FDI) in Canada, 1980 to 1991



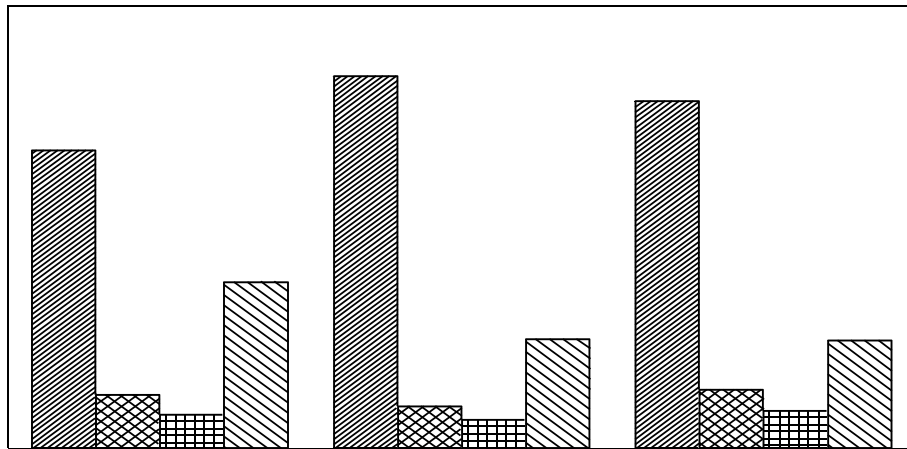
Source: Industry Canada compilations based on Statistics Canada data.

Moreover, the relationship between CDIA and FDI stocks has become much more balanced in the last 25 years. The ratio of outward to inward investment stock increased steadily from 0.23 in 1970 to 0.72 in 1992.² Similar outward orientation has occurred in all major Canadian industries, although in the financial services and mining industries the stock of Canadian outward direct investment currently exceeds the corresponding stock of inward direct investment. For instance, in the financial services industry, the ratio of outward to inward direct investment stock increased from a meagre 0.47 in 1980 to 1.05 in 1991 (Figure 1). Similarly, Canada's investment relations with all its major commercial partners have also become more balanced during this period.

Geographic Distribution

As with trade, Canada's investment linkages with the United States are very strong, accounting for over 65 percent of Canada's inward direct investment stock. The United States is also the largest host country for CDIA. The U.S. share of CDIA declined significantly from its peak of 68.5 percent in 1980 to 58 percent in 1992.

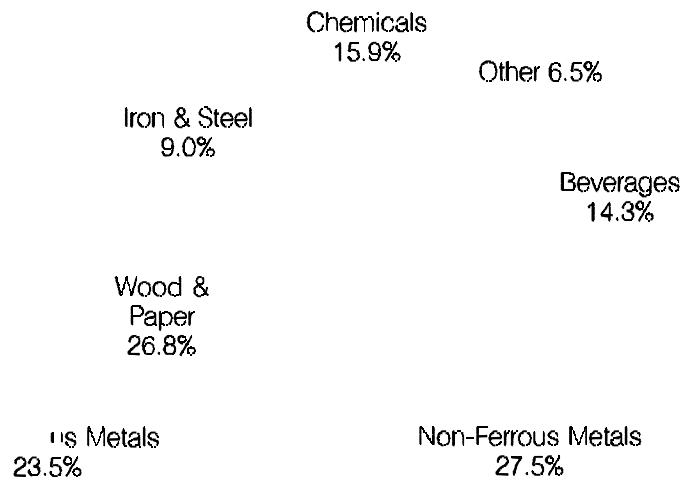
(%)



91 CDIA Value = \$94.4 Billion

1960 Value = \$1.4 Billion

1991 Value = \$41.4 Billion



more effective use of their (country-specific) locational advantages. The ownership advantages of firms include: up-to-date and superior technology, management know-how, large pools of capital and skilled labour, and a superior knowledge of markets and consumer tastes, as well as knowledge of emerging products and process innovations. Firms try to maximize the returns to these ownership advantages by undertaking production, investment and innovation activities in countries that offer superior locational advantages.

The country-specific advantages include factors such as the availability/proximity of natural resources and raw materials, availability of skilled labour, market size, proximity to larger markets, well developed physical and technological infrastructure, lower factor prices (labour and capital costs), flexible and dynamic factor and product markets, and competitive government incentives and market framework policies. In short, internationalization of production and innovation activities permits firms to minimize and diversify risks, minimize costs and maximize the benefits of ownership advantages.

A number of other complementary and interrelated global trends have both necessitated and facilitated the rapid expansion of direct investment and production by Canadian-based and non-Canadian-based transnationals, thus contributing to the creation of a cycle of globalization. These developments are: fierce and growing international competition for markets; removal of tariff barriers and the liberalization of capital flows across many countries; increasing use (actual and perceived) of non-tariff barriers to trade by national governments; increased risks and uncertainty associated with returns to large investments in physical capital and R&D; the presence of significant scale and scope economies; dramatic reduction in transportation and communication costs; and the emergence of niche markets.

Rapid Expansion of CDIA

The marked growth of CDIA stock relative to the growth of CFDI stock can be examined in terms of a number of important push and pull factors (Rugman, 1987). Deteriorating domestic economic conditions and unfavourable economic policies at home can push investments away from home countries and encourage firms to seek investment opportunities abroad. Conversely, a favourable economic climate and increased investment opportunities in foreign markets, rapid changes in technology, and firm-specific and country-specific comparative economic advantages can also pull investments toward host countries.

Among other factors, push and pull factors might include: an increased outward-orientation of Canadian firms (necessitated and facilitated by rapid structural changes in the global economy); relatively faster growth of real aggregate demand in Canada *vis-à-vis* other countries (especially the United States and the United Kingdom); large investment-savings imbalances in Canada and other industrialized countries; changes in the relative profitability position of various locations; variations in exchange rates and unit labour costs; increased use of non-tariff barriers (NTBs); and procedural protection in the United States and Europe 1992.



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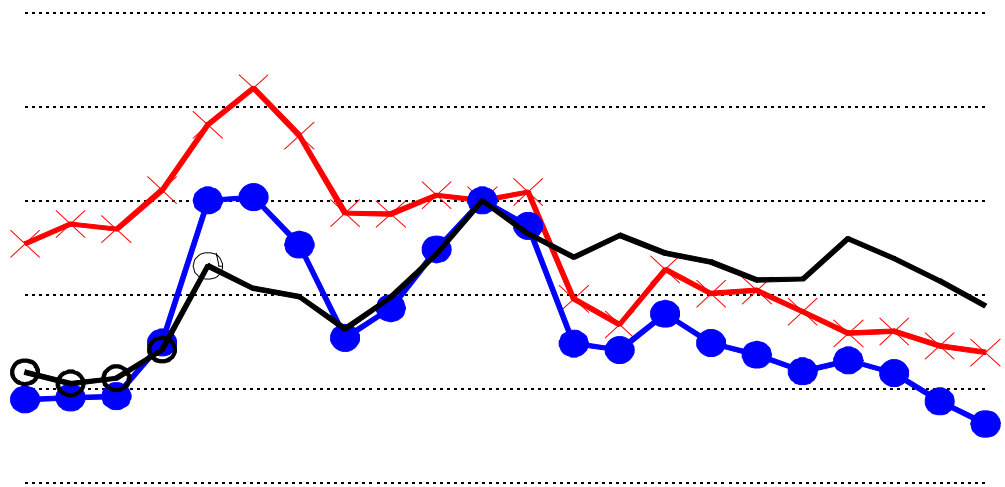
stock between 1986 and 1991 might be attributed to a faster growth of capital stock in the United States and the United Kingdom relative to Canada (Figure 5).

Table 1
Elasticity of CDIA and FDI to Private Non-Residential Capital Stock
1970 to 1991

Elasticity of CDIA to Foreign Private Non-Residential Capital Stock							
Period	Total	U.S.	U.K.	France			
1970-1980	1.22	1.39	0.90	0.85			
1981-1986	2.02	2.36	1.68	0.46			
1986-1991	2.13	1.00	3.40	5.84			
Elasticity of FDI to Canadian Private Non-residential Capital Stock							
Period	Canada	U.S.	U.K.	France	Other EC	E.C.	Germany
1970-1980	0.65	0.63	0.59	0.76	0.90	0.72	1.26
1981-1986	0.92	0.74	1.80	0.87	0.59	1.28	0.75
1986-1991	1.34	0.83	1.62	3.34	2.63	2.03	2.88
Ratio of the Elasticity of CDIA to the Elasticity of FDI							
Period	Total	U.S.	U.K.	France			
1970-1980	1.87	2.21	1.53	1.12			
1981-1986	2.20	3.19	0.93	0.53			
1986-1991	1.59	1.20	2.10	1.75			

Source: Compilations by Industry Canada.

Thus, the differences in the size of the two direct investment stock elasticities and their relative variation over time could, to a large extent, explain the rapid expansion of CDIA stock relative to CFDI stock. The CDIA stock elasticity is well above the CFDI stock elasticity in all three periods. However, Table 1 shows that the gap between the two elasticities narrowed significantly over the second half of the 1980s. This development may also have contributed to slow the rate of growth of aggregate CDIA/CFDI ratio since the mid-1980s.



(%)

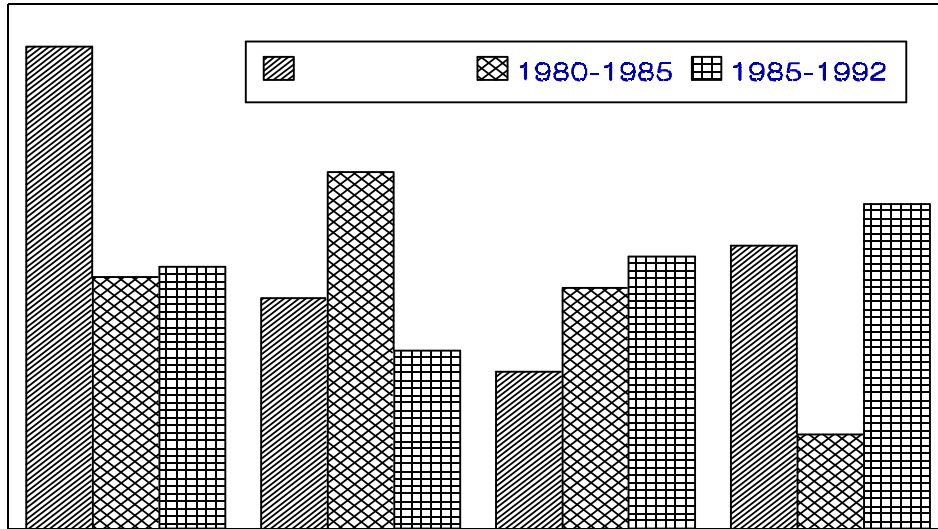
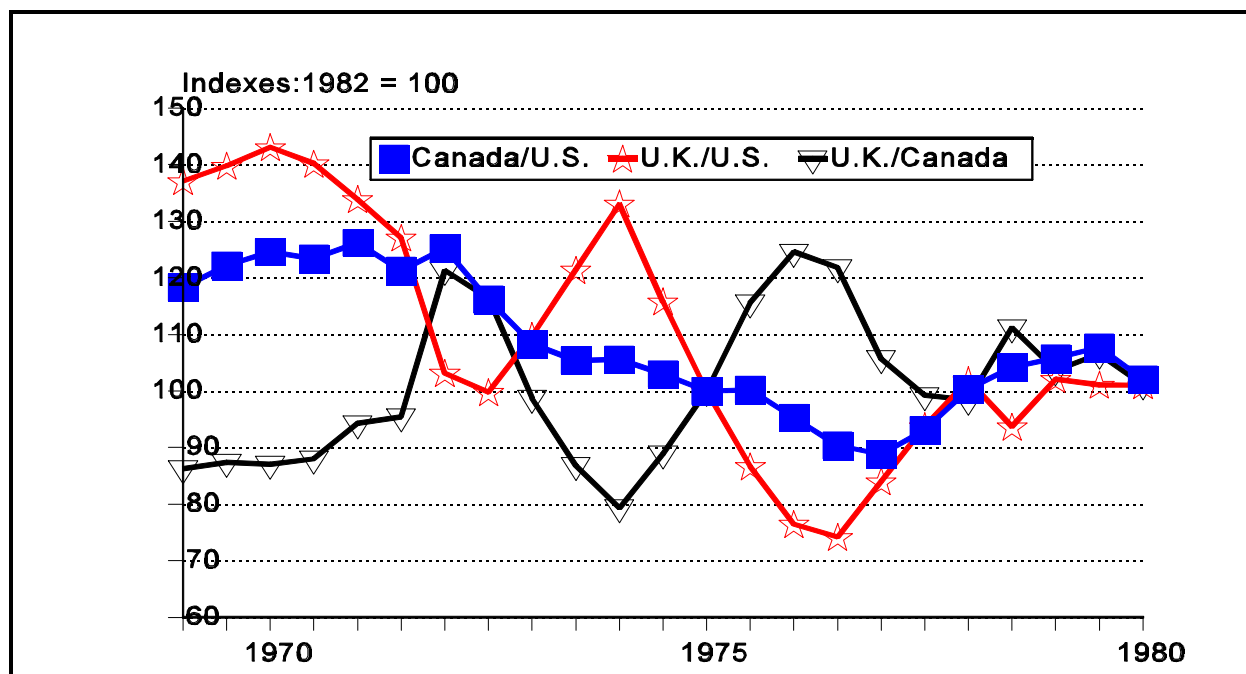


Figure 8
Exchange Rates^a, Canada, the United Kingdom and the United States,
1970-1992



^a Value of U.K. and Canadian currency relative to U.S. dollar and value of U.K. currency relative to Canadian dollar.
 Source: U.S. Department of Labor, Bureau of Labor Statistics.

Increased Regional Diversification

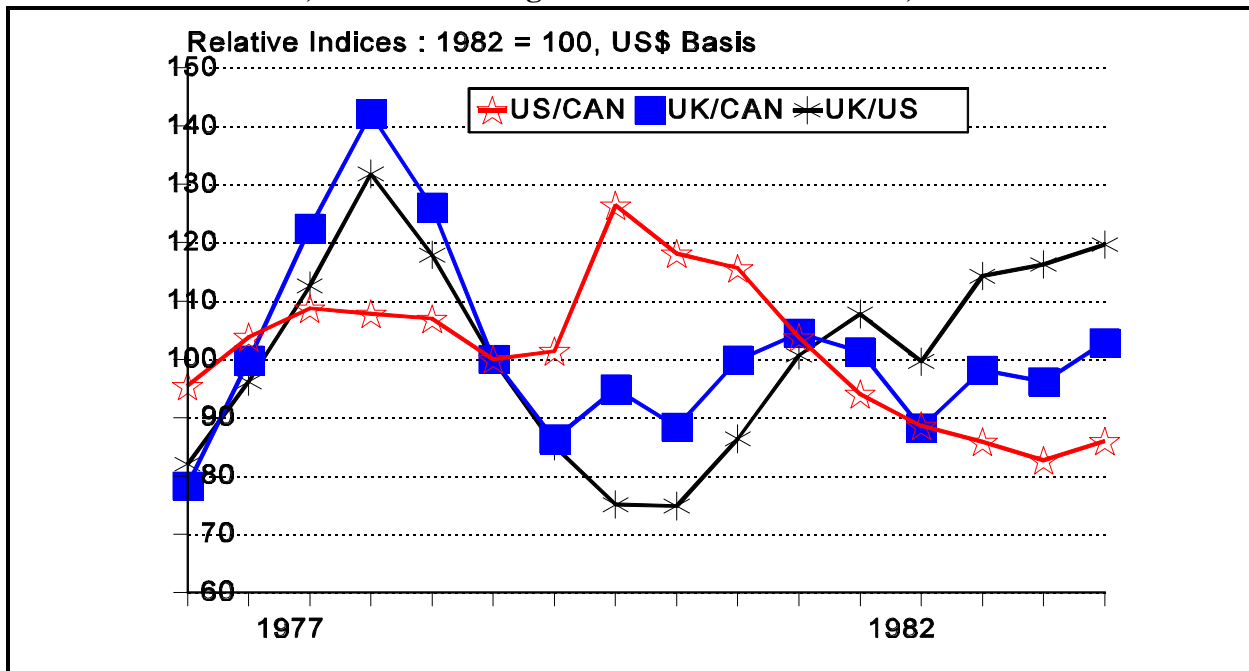
The above framework can also be used to analyze trends in the geographic distribution of CDIA. Differences among host countries with respect to trends in economic activity, profitability, liberalization of trade and capital flows, exchange rates, threat of protectionism, availability of skilled people, factor costs, tax and regulatory burden, investment incentives, and the need for an increased and broader outward orientation by Canadian TNCs help to explain the temporal changes in the geographic composition of CDIA.

Real aggregate demand in the United States increased by 3.4 percent per year between 1980 and 1985, compared to only about 0.9 percent in the E.C. (Figure 7), suggesting that it may have contributed to the increased importance of the U.S. market to CDIA. The increased use of non-tariff barriers (NTBs) and the threat of increased protection in the United States might have also contributed to the rise in U.S. share of CDIA. On the other hand, a reversal of the GDP trends in the second half of the 1980s may also have contributed

to the growing importance of the E.C. to CDIA since 1986. A significant improvement in the relative profit position of the United Kingdom, the major host of CDIA in Europe, might also explain some of the increase in the share of CDIA going to the E.C. during this period (Figures 6 and 7).

The sharp increase in the sensitivity of CDIA to increases in capital stock in the United Kingdom and France during this period suggests that other factors could also have played a significant role in the growing importance of CDIA to Europe since 1986. These include expanded market opportunities associated with the formation of Europe 1992, the fear of fortress Europe, and the increased global orientation of Canadian TNCs.⁷ Nonetheless, the relative trends in exchange rates and unit labour costs suggest that these factors may have played little or no role in influencing the trends in the geographic distribution of CDIA in the 1980s. As mentioned earlier, labour costs are a minor consideration for Canadian TNCs in their location decisions. Furthermore, labour and low-skill-intensive portions of the production chain are expected to move to the developing and newly industrialized countries with lower unit labour costs, rather than to high-wage economies like the United Kingdom and France.

Figure 9
Relative Unit Labour Cost in Manufacturing,
Canada, the United Kingdom and the United States, 1977-1992



Source: U.S. Department of Labor, Bureau of Statistics.

The Increased Importance of Services

The growing share of services and technology-intensive manufacturing industries in the CDIA stock is consistent with the global trends discussed earlier. Structural changes in the industrial composition of output in all countries (the increased importance of service and technology-intensive manufacturing industries in GDP and employment), the declining trend in real prices of resources and resource-based manufacturing products, and the liberalization of financial services help to explain the trends in the industrial composition of world direct investment and CDIA stocks. However, resources and resource-based manufacturing industries still account for a large share of CDIA which primarily reflects the structure and characteristics of Canadian TNCs, as discussed in the next section.

In short, our analysis suggests that a number of pull factors have contributed largely to the rapid growth of CDIA relative to the growth of CFI in the last 20 years or so. We must allow, however, that the effects of changes in exchange rates and unit labour costs have been difficult to assess and that they may not have played a significant role in the determination of CDIA trends. As discussed at the outset, however, our conclusions are largely tentative and a more rigorous empirical testing of our hypotheses is required.

The Role of Top Canadian TNCs

According to the UNCTC (1993) the top 1 percent of TNCs in the world own approximately 50 percent of the world's direct investment stock. A recent Industry Canada study (1993) also reported a similar concentration of economic activity by large firms in the United States and Canada. For example, in 1991 the top 1,000 North American firms had combined total assets and sales of US\$ 9.2 trillion and US\$ 4.4 trillion, respectively. Their combined sales accounted for nearly 50 percent of the gross sales of the three countries combined. Given their strong presence, the top 1,000 North American firms play a major role in shaping the comparative advantages and competitive positions of the three North American economies.

Although there are at present over 1,300 Canadian-based TNCs, accounting for 3.5 percent of all TNCs world wide, they represent less than 0.2 percent of all Canadian non-financial business establishments. This section analyzes the structure and characteristics of the top Canadian TNCs and relates them to the industrial and geographic distribution of CDIA, discussed earlier.

Characteristics

Using the Disclosure/Worldscope Global Database as the source, we developed a consistent set of data for 447 large Canadian-based firms. Of these, 159 firms are outward-oriented, i.e., firms with foreign assets and sales. The remaining 288 companies are domestically oriented (with no foreign assets or sales). A brief description of this database is given in Appendix 1. Names of the top outward oriented and domestically oriented Canadian based firms are provided in Appendix 2 and Appendix 3, respectively.

Twelve of the 159 outward-oriented firms are foreign-controlled, i.e., more than 50 percent of their assets are owned and/or controlled by foreigners. The remaining 147 firms are domestically controlled, i.e., with more than 50 percent of their assets owned and/or controlled by Canadians.

The top 159 outward-oriented Canadian firms command enormous financial resources. Their combined total assets and sales in 1991 were US\$ 416.3 billion and US\$ 198.4 billion, respectively. Total foreign assets of these firms were US\$ 160.8 billion or 39 percent of their total assets. Similarly, foreign sales account for 43 percent of their total sales (Table 2). More importantly, these top Canadian-based TNCs account for almost 50 percent of all the foreign assets of Canadian-based companies.

The foreign activities of the top Canadian firms are highly concentrated. In 1991, the top 20 firms contributed about 80 percent to the total foreign assets and sales of the top Canadian TNCs (Table 3). In addition, the top three firms in each major industry group account for nearly 75 percent of total foreign assets of all 159 top outward-oriented Canadian-based firms. Only nine of the top 73 manufacturing Canadian TNCs (Seagram Co. Ltd., Thomson Corporation, Northern Telecom, Noranda Inc., Bombardier Inc., Varsity Corporation, Moore Corporation, Thomson Newspapers Ltd. and MacMillan Bloedel Ltd.) account for between 70 percent and 80 percent of the total foreign assets of the top manufacturing companies. Similarly, Alcan Aluminium Limited, Inco Limited, and Placer Dome Inc. hold 59 percent of the total foreign assets of the top 32 mining TNCs (Table 4).

The average annual sales and assets of top outward-oriented Canadian-based firms are US\$ 1.2 billion and US\$ 2.6 billion, respectively. However, the average firm size of the same firms, measured by either sales or assets, varies considerably across industries. For instance, the average annual sales range from a low of US\$ 0.13 billion in miscellaneous manufacturing to a high of US\$ 4.5 billion in depository institutions (Table 5).

The average size of top Canadian firms is only half the American level in most industries. The size disadvantage is acute in mining, construction, resource- and technology-intensive manufacturing, and communications industries. Conversely, the average size of Canadian firms compares favourably with their U.S. counterparts in labour-intensive manufacturing and financial services (Industry Canada, 1993).

Table 2
Industrial Distribution of Sales, Assets, Foreign Sales and Foreign Assets
of Outward-Oriented Canadian-Based Firms (%)

Major Industry Grouping	Industry	No. of Firms	Total Sales (%)	Total Assets (%)	Foreign Sales (%)	Foreign Assets (%)
	Agriculture, Fish & Forestry	1	0.24	0.07	0.41	0.01
	Mining	32	11.12	10.53	17.21	11.16
	Construction	3	1.00	0.51	1.64	0.71
	Labour-Intensive Manufacturing	12	8.49	5.04	13.01	8.94
	Textiles	2	0.76	0.32	1.27	0.63
	Clothing	0				
	Printing & Publishing	9	7.67	4.69	11.67	8.28
	Miscellaneous Manufactured Goods	1	0.07	0.02	0.07	0.02
	Resource-Intensive Manufacturing	34	19.62	12.87	22.73	14.03
	Food & Products	4	5.07	3.64	8.56	7.27
	Tobacco	1	0.01	0.01	0.02	0.01
	Lumber & Wood	4	5.35	4.25	6.00	2.81
	Paper & Allied	7	4.41	2.57	4.34	1.81
	Petroleum Refining	0				
	Non-Metallic Minerals	3	0.58	0.33	0.30	0.18
	Primary Metals	11	3.48	1.80	3.03	1.73
	Fabricated Metals	4	0.71	0.28	0.48	0.22
	Technology-Intensive Manufacturing	27	16.31	5.88	17.36	8.71
	Chemicals & Allied	4	0.60	0.28	0.87	0.36
	Rubber & Products	2	0.26	0.08	0.14	0.06
	Machinery excluding Electrical	5	2.22	0.94	4.21	1.57

	Computer & Office	2	0.37	0.13	0.63	0.23
	Electrical Products	3	0.15	0.07	0.10	0.05
	Communications Equipment	3	4.37	2.39	5.77	3.82
	Miscellaneous Electrical Products	1	0.14	0.08	0.09	0.04
	Motor Vehicles & Equipment	2	6.31	1.00	3.12	0.96
	Aircraft & Parts	3	1.41	0.66	1.81	1.12
	Light Machinery	2	0.48	0.26	0.62	0.51
Transportation		5	5.89	5.65	4.78	3.70
Communications		5	9.03	9.89	8.18	5.63
Utilities		1	0.77	0.57	0.11	0.02
Trade		14	13.52	2.79	7.17	2.24
	Wholesale Trade	7	5.77	1.49	3.81	1.33
	Retail Trade	7	7.75	1.30	3.37	0.91
Finance		12	11.97	45.10	5.14	43.49
	Depository Institutions	4	9.02	36.56	3.69	37.15
	Non-Depository Institutions	0				
	Securities & Brokers	0				
	Insurance	1	1.04	2.33	0.39	0.85
	Other Financial Services	7	1.91	6.22	1.06	5.50
Services		13	2.04	1.08	2.26	1.36
	Commercial Services	9	1.18	0.63	1.45	0.96
	Health Services	1	0.35	0.21	0.56	0.24
	Other Services	3	0.51	0.23	0.25	0.15
Total		159	100.00	100.00	100.00	100.00
Total (US\$ Millions)			198,381	416,279	82,217	160,805

Source: Compilations by Industry Canada

Industrial Distribution

The industrial distribution of foreign sales of the top outward-oriented Canadian firms is similar to the distribution of their total sales. The industrial composition of foreign and total assets are also similar. For instance, resources, resource-intensive manufacturing, and printing and publishing industries accounted for over 50 percent of the total foreign sales of the outward-oriented firms in 1991, compared with a share of 40 percent in total sales (Table 2). Equally important, the distribution of foreign assets of the top outward-oriented Canadian firms is similar to the industrial distribution of CDIA as discussed previously. The total foreign assets share of mining, resource-intensive manufacturing, printing and publishing, and financial services industries of the outward-oriented firms is almost 75 percent, similar to their share of total CDIA in 1991. Technology-intensive manufacturing, communication and transportation industries account for the rest of the foreign assets of the top Canadian TNCs (Table 2).

The top Canadian TNCs also play a vital role in determining the industrial distribution of total foreign sales of Canadian TNCs. Manufacturing industries account for 53 percent of the foreign sales of the top Canadian TNCs. Resource-intensive manufacturing and printing and publishing industries contribute over 70 percent to the total foreign manufacturing sales. Technology-intensive manufacturing industries account for most of the remaining manufacturing sales (Table 2). This distribution is similar to the industrial composition of manufacturing sales of the U.S. affiliates of Canadian TNCs.

Similarly, the structure of non-manufacturing industries' foreign sales of the top Canadian firms has a major role in influencing the industrial distribution of foreign sales of all Canadian companies. For instance, the share of mining (17.2 percent), communication (8.2 percent), trade (7.2 percent), financial services (5.1 percent) and transportation (4.8 percent) industries account for over 80 percent of all the foreign sales of top Canadian TNCs outside manufacturing (Table 2). These industries are also the primary contributors to non-manufacturing sales of the U.S. affiliates of Canadian TNCs.

Degree of Outward Orientation and Geographic Distribution

The degree of outward orientation, as measured by the share of foreign assets in total assets, varies a great deal across industries, from a low of 1.4 percent in utilities to a high of 77.2 percent in food and food products industry. Given our comparative advantage, it is not surprising that Canadian firms in manufacturing (especially in printing and publishing, food and beverages, textiles and chemicals and chemical products) and mining industries are more outward-oriented than firms in other industries (Table 6). The United States accounts for 63.9 percent of all foreign assets and 64.7 percent of foreign sales of the top Canadian TNCs. Europe contributes between 27 percent and 30 percent to their foreign assets and sales. All other countries, mostly from Asia Pacific Rim and Latin America, account for the remaining foreign assets and sales of the top Canadian TNCs.

Table 3
Top 20 Outward-Oriented Canadian-Based Firms

Company Name	Major Industry Grouping	Industry	Foreign Assets (US\$ 000)	Total Foreign Assets as a % of Total Assets	U.S. Assets as a % of Total Foreign Assets
THE BANK OF NOVA SCOTIA	Finance	Depository Institutions	32,770,742	41.52	n/a
TRILON FINANCIAL CORP.	Finance	Depository Institutions	12,895,795	35.87	61.92
ROYAL TRUSTCO LIMITED	Finance	Depository Institutions	12,489,938	38.40	60.80
SEAGRAM CO. LTD.	Resource-Intensive Manufacturing	Food & Products	11,224,766	96.07	22.90
BCE INC.	Communications		8,618,901	21.80	47.20
THOMSON CORPORATION	Labour-Intensive Manufacturing	Printing & Publishing	7,591,114	92.96	62.91
ALCAN ALUMINIUM LIMITED	Mining		7,430,400	68.70	22.34
NORTHERN TELECOM LIMITED	Technology-Intensive Manufacturing	Communications Equipment	5,839,698	61.25	n/a
CARENA DEVELOPMENTS LIMITED	Finance	Other Financial Services	4,632,077	36.84	n/a
CANADIAN PACIFIC LIMITED	Transportation		3,987,406	22.39	80.55
NORANDA INC.	Resource-Intensive Manufacturing	Lumber & Wood	3,065,451	24.30	72.73
VARITY CORPORATION	Technology-Intensive Manufacturing	Machinery excluding Electrical	2,235,079	75.26	n/a
LAIDLAW INC.	Transportation		1,835,687	50.17	98.87
INCO LIMITED	Mining		1,825,086	40.76	31.42
BOMBARDIER INC.	Technology-Intensive Manufacturing	Aircraft & Parts	1,780,214	68.12	49.42
FIRST CITY FINANCIAL CORP. LTD	Finance	Depository Institutions	1,586,732	33.13	99.40
BRAMALEA LIMITED (CANADA)	Finance	Other Financial Services	1,565,188	28.58	98.11
MOORE CORPORATION LIMITED	Labour-Intensive Manufacturing	Printing & Publishing	1,539,886	72.74	70.47
CADILLAC FAIRVIEW CORPORATION	Finance	Other Financial Services	1,498,592	48.24	n/a
THOMSON NEWSPAPERS LTD.	Labour-Intensive Manufacturing	Printing & Publishing	1,403,963	83.37	n/a
Total			125,816,714		

Source: Compilations by Industry Canada.

**Table 4
Top Three Outward-Oriented Canadian-Based Firms**

Major Industry Grouping	Company Name	Industry	Foreign Assets (US\$ 000)	Concentration of Foreign Assets ^a (%)	Total Foreign Assets as a % of Total Assets	US Assets as a % of Total Foreign Assets
Agriculture & Fish			17,862			
	FISHERY PRODUCTS INTERNATIONAL		17,862	100.00	6.35	n/a
Mining			17,938,664			
	ALCAN ALUMINIUM LIMITED		7,430,400	41.42	68.70	22.34
	INCO LIMITED		1,825,086	10.17	40.76	31.42
	PLACER DOME, INC.		1,337,329	7.45	83.37	n/a
Construction			1,138,991			
	COSCAN DEVELOPMENT		713,840	62.67	64.59	100
	UNITED DOMINION INDUSTRIES LTD		410,390	36.03	46.98	68.50
	BANISTER INC.		14,761	1.29	10.33	n/a
Labour-Intensive Manufacturing			14,370,964			
	THOMSON CORPORATION	Printing & Publishing	7,591,114	52.82	92.96	62.91
	MOORE CORPORATION LIMITED	Printing & Publishing	1,539,886	10.71	72.74	70.48
	THOMSON NEWSPAPERS LTD.	Printing & Publishing	1,403,963	9.77	83.37	n/a
Resource-Intensive Manufacturing			22,555,667			
	SEAGRAM CO. LTD.	Food & Products	11,224,766	49.76	96.07	22.90
	NORANDA INC.	Lumber & Wood	3,065,451	13.59	24.30	72.78
	MACMILLAN BLOEDEL LTD	Lumber & Wood	853,858	3.78	25.84	87.16
Technology-Intensive Manufacturing			12,231,364			
	NORTHERN TELECOM LIMITED	Communications Equipment	5,839,698	47.74	61.25	n/a
	VARITY CORPORATION	Machinery excluding Electrical	2,235,079	18.27	75.26	n/a
	BOMBARDIER INC.	Aircraft & Parts	1,780,214	14.55	68.12	49.42



Table 5
Average Firm Size by Sales and Assets of Outwardly-oriented Firms

Industry Grouping	Industry	No. of Firms	Sales	Assets	Employment
Agriculture, Fish & Forestry		1	469,668	281,296	7,200
Mining		32	689,354	1,370,080	3,638
Construction		3	662,758	707,209	3,265
Labour-Intensive Manufacturing		12	1,404,231	1,748,782	12,101
	Textiles	2	757,871	672,529	6,400
	Clothing	0			
	Printing & Publishing	9	1,689,564	2,171,312	14,557
	Miscellaneous Manufactured Goods	1	128,950	98,519	1,400
Resource-Intensive Manufacturing		34	1,144,620	1,575,942	6,668
	Food & Products	4	2,516,671	3,784,660	8,500
	Tobacco	1	26,390	23,875	500
	Lumber & Wood	4	2,655,299	4,419,739	17,707
	Paper & Allied	7	1,248,781	1,530,611	7,665
	Petroleum Refining	0			
	Non-Metallic Minerals	3	384,357	460,901	3,199
	Primary Metals	11	627,522	679,911	4,264
	Fabricated Metals	4	351,382	291,140	2,806
Technology-Intensive Manufacturing		27	1,198,418	907,219	6,913
	Chemicals & Allied	4	298,368	288,189	2,252
	Rubber & Products	2	262,119	171,547	3,106
	Machinery excluding Electrical	5	879,989	783,891	4,706
	Computer & Office	2	368,091	268,930	2,250

	Electrical Products	3	96,837	98,836	983
	Communications Equipment	3	2,890,202	3,310,033	20,812
	Miscellaneous Electrical Products	1	274,013	316,190	1,959
	Motor Vehicles & Equipment	2	6,263,399	2,083,331	18,800
	Aircraft & Parts	3	929,528	920,752	9,486
	Light Machinery	2	476,463	535,016	5,000
Transportation		5	2,338,509	4,705,633	23,911
Communications		5	3,582,496	8,235,330	25,882
Utilities		1	1,522,142	2,387,365	
Trade		14	1,916,082	830,823	7,611
	Wholesale Trade	7	1,635,945	887,375	7,079
	Retail Trade	7	2,196,219	774,271	8,143
Finance		12	1,978,861	15,646,035	5,898
	Depository Institutions	4	4,473,494	38,048,594	14,829
	Non-Depository Institutions	0			
	Securities & Brokers	0			
	Insurance	1	2,063,623	9,686,097	9,161
	Other Financial Services	7	541,248	3,695,992	329
Services		13	310,832	345,833	6,033
	Commercial Services	9	259,425	293,552	3,611
	Health Services	1	698,332	882,990	31,800
	Other Services	3	335,886	323,624	4,711
Total		159			
Average			1,247,685	2,618,112	7,527

Note: Blank cells indicate data is not available.

Source: Compilations by Industry Canada.

Table 6
Geographic Distribution of Assets and Sales of Outwardly-oriented Firms

Industry Grouping	Industry	No. of Firms	Foreign Assets to Total Assets	Foreign Sales to Total Sales	U.S. Assets to Total Foreign Assets	U.S. Sales to Total Foreign Sales
	Agriculture, Fish & Forestry	1	6.35	71.61		
	Mining	32	40.92	64.13	41.91	44.84
	Construction	3	53.68	67.68	88.28	77.64
	Labour-Intensive Manufacturing	12	68.48	63.45	69.11	57.03
	Textiles	2	75.32	68.69	65.00	70.23
	Clothing	0				
	Printing & Publishing	9	68.16	63.10	69.49	55.30
	Miscellaneous Manufactured Goods	1	38.91	43.17	63.83	66.58
	Resource-Intensive Manufacturing	34	42.10	48.02	63.22	66.61
	Food & Products	4	77.22	69.91	42.27	52.66
	Tobacco	1	67.88	59.36	100.00	100.00
	Lumber & Wood	4	25.52	46.45	96.83	83.46
	Paper & Allied	7	27.24	40.78	60.68	62.52
	Petroleum Refining	0				
	Non-Metallic Minerals	3	21.14	21.24	100.00	100.00
	Primary Metals	11	37.16	36.10	68.48	79.10
	Fabricated Metals	4	29.96	28.30	100.00	100.00
	Technology-Intensive Manufacturing	27	57.20	44.11	56.78	44.49
	Chemicals & Allied	4	49.97	60.12	77.05	83.67
	Rubber & Products	2	28.68	21.79		
	Machinery excluding Electrical	5	64.32	78.72	61.49	60.24

	Computer & Office	2	69.27	70.37	100.00	100.00
	Electrical Products	3	27.62	28.36	100.00	100.00
	Communications Equipment	3	61.80	54.75	45.92	52.20
	Miscellaneous Electrical Products	1	21.74	26.64	100.00	100.00
	Motor Vehicles & Equipment	2	36.87	20.47	24.20	24.74
	Aircraft & Parts	3	65.20	53.22	50.70	21.06
	Light Machinery	2	76.52	53.36	100.00	100.00
Transportation		5	25.29	33.63	100.00	100.00
Communications		5	22.00	37.57	50.46	77.42
Utilities		1	1.43	6.15	100.00	100.00
Trade		14	31.04	21.99	80.53	89.46
	Wholesale Trade	7	34.54	27.34	79.75	86.41
	Retail Trade	7	27.02	18.00	82.01	94.51
Finance		12	37.25	17.79	67.14	69.13
	Depository Institutions	4	39.25	16.95	63.09	56.59
	Non-Depository Institutions	0				
	Securities & Brokers	0				
	Insurance	1	14.04	15.58		
	Other Financial Services	7	34.16	22.91	96.33	99.59
Services		13	48.47	46.05	86.86	81.74
	Commercial Services	9	58.53	51.10	87.61	77.55
	Health Services	1	44.46	66.05	100.00	100.00
	Other Services	3	24.73	20.48	29.92	34.72
Total		159				
Average			38.63	41.44	63.90	64.73

Source: Compilations by Industry Canada.

The U.S. share of foreign assets and sales of the top Canadian TNCs varies considerably across industries. In the case of assets, it varies from a low of 24.2 percent in motor vehicles and equipment industries to a high of 100 percent in transportation and electrical products (among others). Similarly, the U.S. share of foreign sales varies between 24.7 percent and 100 percent (Table 6).

The overall concentration of foreign sales and assets in the U.S. market is greater than the average concentration of foreign sales and assets in the mining, food and products, paper and allied products, technology-intensive, depositary institutions and other services industries. On the other hand, firms in the textiles, tobacco, lumber and wood, metals, transportation, finance and service industries, among others, are more dependent on the U.S. market than the overall average. This greater reliance of Canadian firms in the finance and service industries is largely due to their close proximity to the world's wealthiest and most dynamic market and the greater need to service customers.

In summary, the top TNCs have played a dominant role in determining both the overall industrial and the geographic distribution of the foreign activities of Canadian TNCs. These foreign activities are therefore responsible for the further integration of the Canadian economy, both within North America and in the world at large. Previous work (Knubley, Legault & Rao, 1994) has also demonstrated that the larger TNCs play a major role in the domestic economy.

Consequences of CDIA

Historically, Canada has relied heavily on FDI and foreign technology for its economic development. As a result, nearly 30 percent of the assets and sales of all non-financial corporations in Canada are now owned and controlled by foreign firms. In addition, in the manufacturing sector, which accounts for over 80 percent of Canadian merchandise exports, foreign-controlled firms contribute about 50 percent to its output and employment.

To date, there has been only limited analysis of the economic consequences of large and growing CDIA for domestic economic growth, jobs and real incomes in Canada. In public debate the subject has been largely forgotten, although when large outward investments are announced, concerns are always expressed about lost jobs and technology. The relatively scant literature on CDIA may reflect the fact that as an economic phenomenon it has only gained prominence in the recent past and its effect on activities at home and abroad has not yet been fully explored. The following section examines some of the issues concerning the potential effect of CDIA on the Canadian economy. The total effect of CDIA on the Canadian economy depends on the relative size of its direct and indirect influences on Canada's productivity, costs, trade, jobs, real incomes and the current account balance.

Direct Effects

The direct consequences of CDIA on the Canadian economy depend upon two opposing influences: domestic capital formation and direct investment income receipts.

Domestic Capital Formation

It is difficult to assess the direct effect of CDIA on investment expenditure and jobs in Canada. An increase in CDIA does not necessarily imply reduced investment spending in Canada for two reasons: first, an expansion of production and research facilities abroad (pull factors) may stimulate capital formation at home due to an improved international competitive position of Canadian firms and increased activity both at home and abroad. Second, reduced investments at home by some firms may be offset by increased investment by Canadian and foreign firms. An increase in CDIA could reduce domestic capital formation only if the investments abroad are the result of increased barriers to Canadian exports in foreign markets (Caves, 1982). In short, if the increase in CDIA is largely the result of new and improved investment opportunities abroad, it will have no direct negative impact on investment spending, and hence no effect on jobs and real incomes in Canada. On the other hand, if a weak domestic investment climate (push factor) is the main cause of a surge in CDIA, this could have an adverse effect on capital accumulation in Canada. However, possible offsetting investments by both federal and provincial governments and other private (domestic and foreign) investors could completely negate the effect of CDIA on domestic investment spending.

The rapid pace of expansion of CDIA in the 1980s coincided with a strong investment performance in Canada and the other G-7 countries. Our extensive regression analysis of the determinants of the trends in capital formation in Canada during the years between 1970 and 1991, disaggregated by major sectors, suggests that CDIA had no significant effect on capital formation in Canada. Similarly, our regression results for the United States, the United Kingdom, Germany and Japan for the same time period imply that direct investment abroad either had no significant influence or that it had a positive effect on domestic capital formation.⁸

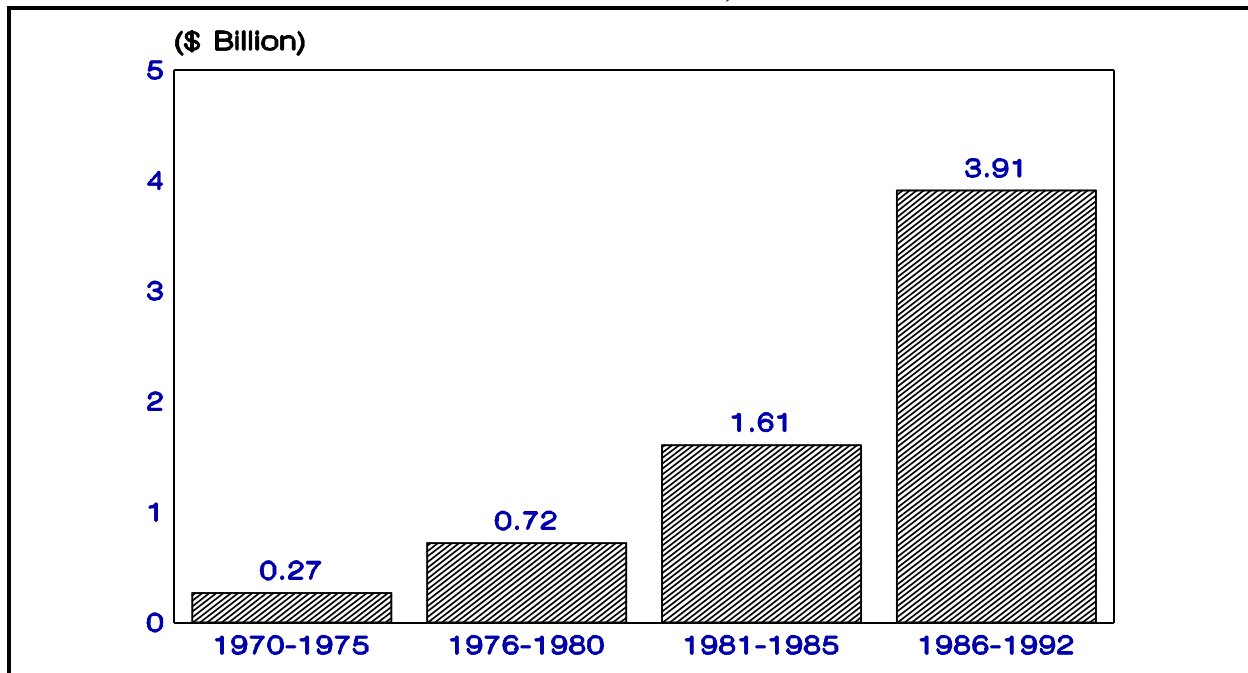
Investment Income

Investment income associated with CDIA can contribute positively to the growth in output and employment in Canada by stimulating consumer and investment spending, and by having a positive effect on the current account balance, the exchange rate, and real interest rates.

Over the last 20 years or so, direct investment income has increased significantly in conjunction with the dramatic rise in the level of CDIA activity. It averaged C\$ 3.91 billion per year between 1986 and 1992, compared to a meagre C\$ 0.27 billion between 1970 and 1975 (Figure 10). CDIA has therefore made a significant direct contribution to output and employment expansion in Canada. Moreover, the relationship between Canadian direct investment income receipts and payments has become more balanced in Canada's favour. The ratio of receipts to payments averaged 0.63 between 1986 and 1992, compared to only 0.25 between 1970 and

1975. These results imply that CDIA has also contributed significantly to improving Canada's current account position.

Figure 10
Investment Income from CDIA, Selected Periods



Source: Industry Canada compilations using data from Statistics Canada.

In summary, there is *a priori* either a positive relationship or no direct relationship between trends in CDIA and domestic investment spending. The limited empirical evidence from Canada and other host countries generally supports these hypotheses.

Indirect Effects

In addition to its direct effects, CDIA can improve Canada's competitive position through its potentially positive influence on trade flows, the performance of Canadian TNCs at home and abroad, and by exerting positive spillovers on domestically oriented firms.

Trade Effects

Historically, trade and FDI have been viewed as substitutes for one another because much of the direct investment was the result of trade protection in host countries. It was argued that multinational firms were compelled to locate production facilities abroad in response to tariff and non-tariff barriers set up as impediments to make it difficult for them to serve international markets.

However, as already discussed, trade protection does not appear to have played any significant role in the rapid growth of the global stock of FDI over the last 15 years or so. Instead, the increased globalization of production is largely the result of the decisions of TNCs to diversify risk, minimize costs and maximize performance through increased specialization and to take advantage of scale and scope economies. The globalization strategies of transnational firms can therefore be expected to stimulate world trade, especially because of the increased intra-firm trade activities between parents and their subsidiaries (Rugman, 1987; Caves, 1982; Encarnation, 1993; and Globerman, 1993).

Increased world trade could in turn increase the level of world output and real incomes by improving the allocation of the world's productive resources, by reaping more effectively the benefits of scale and scope economies, by rapidly diffusing new and state-of-the-art technologies, by increasing innovation, and by improving the adaptability and flexibility of product and factor markets. In short, more and better investment linkages could strengthen the trade linkages between countries and set in motion a cycle of increased global economic integration which could improve the economic performance of all nations. By the same token, growth of CDIA can potentially strengthen the trade linkages between Canada and its trading partners, thereby improving our competitive position.

The past trends in CDIA and CFDI stocks, and Canada's exports and imports by industry and by major geographic region, suggest complementarity between trade and direct investment activity. Our estimates of total elasticities of Canadian exports with respect to CDIA stock for the two sub-periods – 1971-1980 and 1981-1989 are positive.⁹ The total export elasticity averaged 0.48 during the second period, implying that a 10 percent increase in CDIA stock, on average, will increase Canadian exports by 4.8 percent. The trade elasticity is somewhat higher (0.67) in the manufacturing sector (Table 7). The decline in the magnitude of trade elasticities in the second period could be attributed in part to the slowdown in world output during this period.

Our estimates of Canadian import and total trade (exports plus imports) elasticities with respect to CFDI and total direct investment stock (inward plus outward) for the two sub-periods are also positive. As with the export elasticities, Table 7 shows that the import elasticities declined during the second period. However, on average, the import elasticity is significantly larger than the export elasticity. The difference in the two elasticities could be attributed to differences in the length of Canada's experience with the two types of direct investment activity; CDIA is a recent phenomenon relative to CFDI.

Although our estimates of trade elasticities do not take into account the influence of other factors on trade flows, the results for Canada and other countries from other studies

generally support the view that trade and direct investment are complements rather than substitutes (Rao & Lemprière, 1992; Graham, 1993; Blomström & Kokko, 1993; Ries & Head, 1993; and Lipsey & Weiss, 1981).

Table 7
Elasticities of Trade to Investment Stock^a, Selected Periods

Major Industry Grouping	Exports to CDIA Stock		Imports to CFDI Stock		Total Trade to Inward and Outward Investment Stock	
	1971-1980	1981-1989	1971-1980	1981-1989	1971-1980	1981-1989
Manufacturing	1.12	0.67	1.67	0.89	1.48	0.79
Primary Metals	1.03	0.48	1.35	0.32	1.32	0.45
Wood & Paper	1.06	0.41	2.34	0.86	1.69	0.54
Chemicals	0.95	0.36	1.55	0.88	1.61	0.60
All Industries	1.02	0.48	1.86	1.26	1.56	0.82

Source: Compilations by Industry Canada.

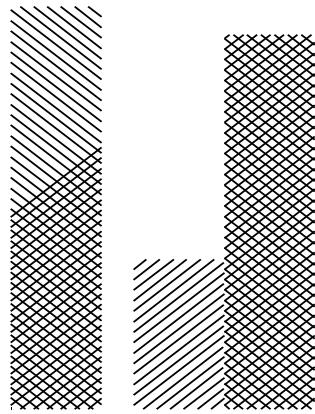
a: Not controlled for the influences of other factors such as economic activity, comparative advantage and cost competitiveness.

In short, an increase in CDIA could expand Canada's trade flows, primarily through increased intra-firm trade. For instance, intra-firm imports (imports from the parent company and from other foreign affiliates of the parent) accounted for 78 percent of all imports of U.S. affiliates of Canadian TNCs in 1990. Similarly, intra-firm exports (exports to the parent company and to other foreign affiliates of the parent) contributed about 50 percent to their total exports. As well as enhancing trade flows, increased CDIA could contribute to the expansion of foreign sales. As a matter of fact, the importance of foreign sales relative to Canadian exports has increased considerably over the last 15 years. For example, the ratio of sales made by Canadian subsidiaries in the United States to Canadian exports to that country increased from 0.72 in 1977 to 1.35 in 1990.

Performance of U.S. Affiliates: Canadian and Other Foreign Affiliates

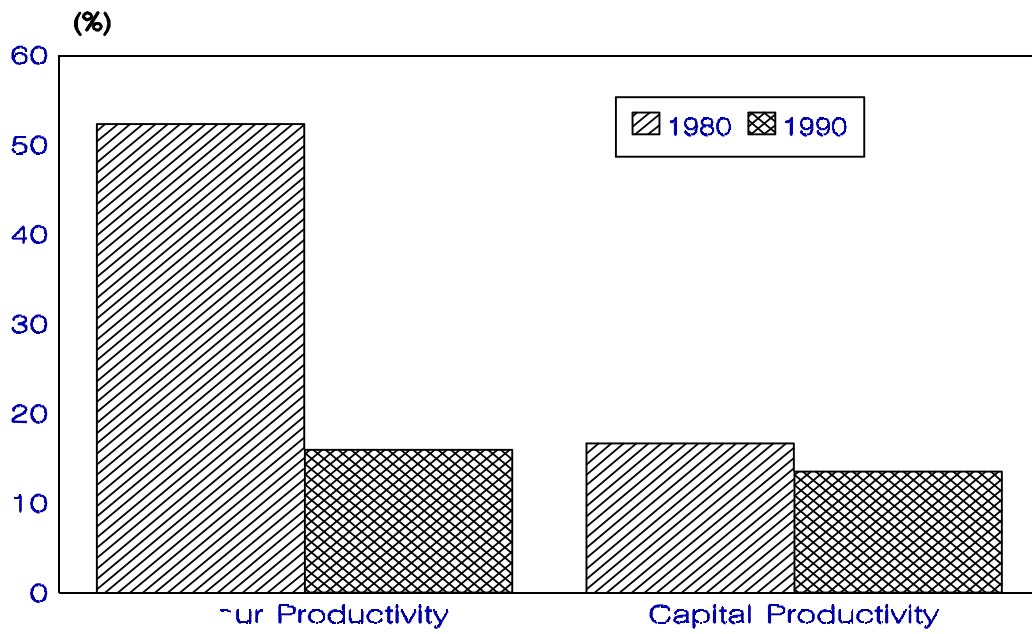
In 1990, the American affiliates of foreign companies accounted for about 4.5 percent of employment and output of the U.S. non-bank private sector, compared with only 2 percent in 1977.¹⁰ In addition, affiliates of foreign TNCs in the United States also make significant contributions to overall manufacturing output and the merchandise trade. For instance, they account for between 10 percent and 15 percent of all U.S. manufacturing assets, sales, employment and R&D. In addition, they contribute about 20 percent to total American merchandise exports and 35 percent to the imports.

(%)



)

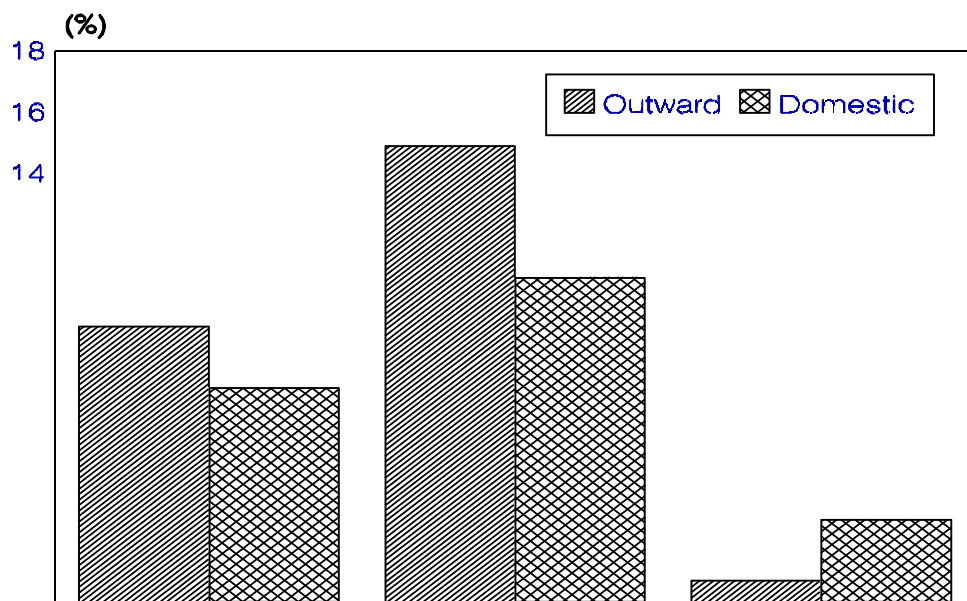
N/A



(%)

rts

Imports





r

a

Table 8
Five-Year Growth Performance of Domestically Oriented and Outward-Oriented Canadian-Based Firms, 1986-1991

Major Industry Grouping	No. of Firms		Sales Growth (%)		Asset Growth (%)		Employment Growth (%)	
	Domestic	Outward	Domestic	Outward	Domestic	Outward	Domestic	Outward
Agriculture, Fish & Forestry	1	1		6.91		7.73		(3.49)
Mining	59	29	7.48	5.10	8.33	2.80	8.76	(4.66)
Construction	3	3	8.45	5.34	12.77	4.25	8.75	(0.19)
Labour-Intensive Manufacturing	2	12	(3.52)	12.14	0.95	19.74	(2.64)	5.77
Resource-Intensive Manufacturing	31	31	4.40	7.25	8.40	10.91	3.90	(0.41)
Technology-Intensive Manufacturing	10	24	4.24	12.22	2.96	14.88	(1.16)	3.58
Transportation	10	5	12.76	(1.04)	6.47	5.03	4.25	(0.17)
Communications	17	4	7.93	8.26	10.01	15.82	(1.04)	2.84
Utilities	19	1	4.46		6.18		1.41	
Trade	36	13	3.33	5.69	6.14	6.86	0.38	(4.42)
Finance	44	12	11.97	33.13	14.93	28.73	3.76	
Services	6	12	22.35	12.70	28.68	8.14	9.15	2.14
Total	238	147						
Average			7.03	8.96	10.63	14.93	2.73	0.73

Source: Estimates based on data from Disclosure Inc.

Table 9
R&D Intensity and Profitability of Domestically Oriented
and Outward-Oriented Canadian-Based Firms

Major Industry Grouping	No. of Firms 1991		R&D as a % of Sales 1991		Return on Assets 1986-1991	
	Domestic	Outward	Domestic	Outward	Domestic	Outward
Agriculture, Fish & Forestry	1	1				6.57
Mining	59	29	0.98	1.83	5.50	5.18
Construction	3	3			6.93	3.07
Labour-Intensive Manufacturing	2	12		1.50	2.93	9.66
Resource-Intensive Manufacturing	31	31	0.35	0.46	5.21	6.00
Technology-Intensive Manufacturing	10	24	1.42	6.83	4.54	6.94
Transportation	10	5			2.71	4.75
Communications	17	4			8.89	6.00
Utilities	19	1			6.10	
Trade	36	13	0.62		5.45	5.93
Finance	44	12			1.26	2.35
Services	6	12	1.48	2.50	10.87	2.39
Total	238	147				
Average			0.63	4.12	2.93	4.88

Source: Estimates based on data from Disclosure Inc.

More importantly, after controlling for inter-firm differences in the characteristics of the outward-oriented and inward-oriented firms (such as firm size, the degree of leverage and the average growth of sales), the estimated marginal productivity of capital of the outward-oriented firms was calculated to be more than twice the productivity of the domestically oriented firms.¹⁴

In a majority of industries, the average growth of sales, assets, and productivity of the outward-oriented firms during the years between 1986 and 1991 was significantly higher than the growth record of the domestically oriented firms (Tables 8 and A6-1). On average, sales and assets of the outward oriented firms increased by 9.0 percent and 14.9 percent annually, respectively, compared with 7.0 percent and 10.6 percent for the domestically oriented firms.

Outward-oriented firms also outperformed domestically oriented firms by a large margin in terms of the average rate of return on capital from 1986 to 1991 and the R&D performance (R&D/sales ratio), as may be seen in Tables 9 and A6-2. However, the average employment growth of the outward-oriented firms during this period was significantly lower, implying a faster pace of adjustment and rationalization by the outward-oriented firms relative to the domestically oriented firms (Tables 8 and A6-1). The difference in the pace of economic adjustment could well be a reflection of the fierce and intensified global competition for markets faced by the outward-oriented firms. Finally, the increased internationalization of production and innovation activities of Canadian firms does contribute to the enhancement of Canada's economic performance.¹⁵

Conclusions

The primary objective of this study has been to analyze the recent trends in CDIA and their consequences for Canada's economic performance. Our research suggests that the growing outward orientation of Canadian firms is mainly the result of new and improved economic opportunities abroad and a growing need to gain access to foreign markets and foreign technology. With such access Canadian firms should improve their cost and productivity performance. As Canadian firms become increasingly globalized Canada's overall competitive position should also improve, as should its international commercial linkages.

Available evidence strongly suggests that the outward-orientation of Canadian firms will continue and probably intensify in the future. Recent trends in geographic and industrial distribution of CDIA are also expected to persist. However, significant changes to present patterns could occur if economic conditions in Europe deteriorate unexpectedly or if the NAFTA provides Canadian firms with a significant impetus to expand their activities in North America. Nonetheless, our conclusions as to the determinants of the trends in CDIA are only tentative; a more rigorous empirical testing would be a useful next step.

Existing evidence also suggests that CDIA has a high potential to contribute to the expansion of trade and real incomes and help to improve Canada's competitive position and

current account balance, efforts should be made through multilateral and bilateral negotiations to remove barriers to trade and direct investment flows.

Since the foreign activities of Canadian firms are highly concentrated, the activities and performance of the top Canadian TNCs are clearly important for enhancing Canadian trade and real incomes. A better understanding of the structure, characteristics, strategies, governance, and the determinants of the productivity and cost performance of the top TNCs could be useful in formulating effective public policies for improving Canada's competitive position.

ENDNOTES

- 1 For a descriptive analysis of trends in the micro aspects of CDIA, see Chow (1993) and Gorecki (1990). The paper deals with a variety of CDIA issues including the following: gross inflows and outflows of CDIA; the percentage distribution of Canadian and foreign controlled Canadian enterprises and CDIA; third party investments; long-term capitalization rate; size distribution of firms undertaking CDIA; and origin and destination of CDIA by industry.
- 2 CDIA and CFDI stocks are measured in book value rather than in market value terms. Consequently, CFDI stock might be underestimated relative to CDIA stock given that much of CFDI stock is of relatively older vintage than CDIA stock. Thus, the fact that CFDI is denominated in book value terms and not in market value terms means that the ratio of CDIA to CFDI stock is likely biased upwards.
- 3 Gross fixed non-residential capital stock data for the U.S. and U.K. were compiled from OECD publication *Flows and Stocks of Fixed Capital, 1964-1989*. Updates and revisions to the data were obtained directly from the Economic Statistics and National Accounts Division of the OECD. The data for Canada was obtained from Statistics Canada. The capital stock data used for the analysis were denominated in national currency units at current prices.
- 4 To make an empirical analysis of the broad macro-economic determinants of the rapid growth of Canadian outward direct investment stock relative to inward direct investment stock, we estimated two separate equations for CDIA and CFDI of the following form.

EQUATION I

$$\begin{aligned} \ln(\text{CDIA}) = & a_0 + a_1 \ln(\text{GDP}^f / \text{GDP}^c) + a_2 \ln(\text{PROF}^f / \text{PROF}^c) + \\ & a_3 \ln(\text{EXCHR}) + a_4 \ln(\text{CAPSTK}^f / \text{CAPSTK}^c) + a_5 (\text{TREND}) + \\ & a_6 (\text{DUMFTA}) \end{aligned}$$

EQUATION II

$$\ln(\text{CFDI}) = a_0 + a_1 \ln(\text{GDP}^f / \text{GDP}^c) + a_2 \ln(\text{PROF}^f / \text{PROF}^c) + \\ a_3 \ln(\text{EXCHR}) + a_4 \ln(\text{CAPSTK}^f / \text{CAPSTK}^c) + a_5 (\text{TREND}) + \\ a_6 (\text{DUMFTA})$$

where,

$\ln(x)$ = The natural logarithm of the variable concerned.

CDIA = The stock of CDIA (in C\$ billion).

CFDI = The stock of CFDI (in C\$ billion).

$\text{GDP}^f, \text{GDP}^c$ = Gross domestic product of foreign countries (United States and the European Community) and Canada, respectively (in US\$ billion in price levels and exchanges rates of 1985).

$\text{PROF}^f, \text{PROF}^c$ = The ratio of operating surplus to GDP, for foreign countries (United States and E.C.) and Canada, respectively.

EXCHR = The Canadian dollar per SDR (year-end rate).

$\text{CAPSTK}^f, \text{CAPSTK}^c$ = Non-residential capital stock (private sector), for foreign countries (United States, United Kingdom, France, & Germany) and for Canada, respectively (in US\$ billion).

TREND = Time trend.

DUMFTA = Dummy variable for Canada-U.S. Free Trade Agreement
(0 = prior to 1985, 1 = for post 1985).

This specification allows for differences in the estimated elasticities of outward and inward direct investment stocks with respect to the independent variables.

The following are the final estimated equations, with the t-statistics of the estimated coefficients shown in parentheses.

EQUATION I'

$$\begin{aligned} \Delta \text{CDIA} = & 0.06723 + 0.53123 * \Delta \text{CDIA}[-1] + 2.89831 * \Delta \text{IGDP}^f[-1] \\ & (2.0) \quad (2.9) \quad (2.8) \\ & + 0.00876 * \Delta \text{EXCHR}[-1] - 1.60245 * \Delta \text{IGDP}^c[-1] \\ & (0.1) \quad (2.1) \\ & - 0.05959 * \text{DUMFTA} \\ & (2.5) \end{aligned}$$

$$R^2 = 0.58$$

$$\text{D.W.} = 2.16$$

Estimation period = 1972-1991

Δ l = The first difference of the natural logarithm of the variable concerned.

EQUATION II'

$$\begin{aligned} \Delta \text{CFDI} = & 0.07597 - 0.31223 * \Delta(\text{PROF}^f / \text{PROF}^c) \\ & (15.8) \quad (3.8) \end{aligned}$$

$$R^2 = 0.43$$

$$\text{D.W.} = 1.39$$

Estimation period = 1971-1991

These two equations imply that the rapid pace of expansion of CDIA *vis-à-vis* CFDI in recent years is due to the relatively higher sensitivity of Canadian outward investment to foreign activity, the relatively higher profitability in foreign countries, and the greater participation of Canadian firms in the globalization process during the estimation period (as reflected by the differences in the constant terms).

The estimated coefficient for DUMFTA implies that, other things remaining constant, the FTA reduced the pace of CDIA, implying higher domestic participation by Canadian-based firms.

- 5 An indicator of aggregate profitability for the selected countries was measured by taking the ratio of gross operating surplus to gross domestic product (*National Accounts, Main Aggregates, Volume I, 1960-1991*, OECD). Operating surplus equals gross output at producers' values less the sum of intermediate consumption, compensation of employees, consumption of fixed capital and indirect taxes reduced by subsidies.
- 6 Nevertheless, changes in exchange rates directly affect the book value of CDIA stock denominated in Canadian dollars. An appreciation of the Canadian dollar will raise the CDIA stock; a depreciation of Canadian currency would have the opposite effect.

7 To analyze the changes in the regional composition of CDIA, we estimated an equation of the following form.

$$\ln(\text{CDIA}^{\text{US}}/\text{CDIA}) =$$

$$a_0 + a_1 \ln(\text{GDP}^{\text{US}}/\text{GDP}^{\text{EC}}) + a_2 \ln(\text{PROF}^{\text{US}}/\text{PROF}^{\text{EC}}) +$$

$$a_3 \ln(\text{EXCHR}^*) + a_4 (\text{CABGDPUS}) + a_5 (\text{TREND}) +$$

$$a_6 (\text{DUMEC92})$$

where,

$\ln(x)$ = The natural logarithm of the variable concerned.

CDIA^{US} = The Stock of CDIA in the U.S. (in C\$ billion).

CDIA = The stock of CDIA (in C\$ billion).

GDP^{US} , GDP^{EC} = Gross domestic product of the United States and the European Community, respectively (in US\$ billion in price levels and 1985 exchanges rates).

PROF^{US} , PROF^{EC} = The ratio of operating surplus to GDP, for the United States and the European Community, respectively.

EXCHR^* = The U.S. dollar per U.K. pound sterling (average for year).

$\text{CABGDP}^{\text{US}}$ = The ratio of U.S. current account deficit to U.S. GDP.

TREND = Time trend.

DUMEC92 = Dummy variable for the European Community 1992
(0 = prior to 1988, 1 = for post 1988).

The final estimated equation, with t-ratios in parentheses, is as follows:

$$\Delta \ln(\text{CDIA}^{\text{US}}/\text{CDIA})$$

$$= 0.01627 + 0.02148 * \Delta(\text{CABGDP}^{\text{US}}) - 0.06409 * \text{DUMEC92}$$

$$(2.2) \quad (2.2) \quad (3.3)$$

$R^2 = 0.38$

D.W.= 1.23

Estimation period = 1971-1991

The coefficients of the estimated equation imply that the recent decline in the U.S. share of CDIA can be attributed to the increased Canadian direct investment activity in the European Community associated with the formation of the E.C. 1992, and the improvement in the U.S. savings-investment imbalance as reflected in improvements in the U.S. current account position. These results also suggest that the U.S. share of CDIA will continue to decline in future unless the U.S. current account deficit position deteriorates.

8 To examine the relationship between changes in domestic capital formation and CDIA stock, we first computed the simple correlation coefficient between the two variables at the aggregate and sectoral (manufacturing, mining and financial services). The three sectors accounted for almost 85 percent of total CDIA stock in 1991. In all four cases, the correlation coefficient is large and positive and highly significant statistically. The simple bi-variate regressions suggest that CDIA stimulates rather than displaces capital formation at home.

However, once the influence of other factors (economic activity, profitability and technical change) on domestic capital formation is accounted for, the coefficient on CDIA is not statistically significant in all four equations. These results imply that on average an increase in CDIA neither crowds out nor stimulates capital formation at home.

The following are the regression equations of domestic capital formation in Canada from 1970 to 1990, with t- ratios in parentheses:

All industries: Canada

$$\begin{aligned} \Delta \text{cap} = & 1.48 \Delta \text{lgdp} + 0.08 \Delta \text{dia} + 0.0057 \text{prf} (-1) + 0.0044 \text{prf} (-2) + \\ & (2.25) \quad (0.55) \quad (1.63) \quad (1.04) \\ & 0.0029 \text{prf} (-3) + 0.0008 * \text{prf} (-4) - 0.12 \\ & (1.98) \quad (1.98) \quad (1.72) \\ R^2 = & 0.771 \quad D.W. = 1.80 \end{aligned}$$

where,

Δ l = The first difference of the natural logarithm of the variable concerned.

cap = Gross fixed non-residential capital stock.

dia = The stock of direct investment abroad.

prf = The ratio of profits to gross domestic product at factor cost (all industries or by sector).

Constant term in each equation represents the influence of technical change.

Manufacturing sector: Canada

$$\Delta \text{Icap} = 0.72 \Delta \text{IgdP} + 0.04 \Delta \text{Idia} + 0.0071 \text{prf}(-1) + 0.0040 \text{prf}(-2) +$$

(1.41) (0.26) (1.90) (1.98)

$$0.0015 \text{prf}(-3) - 0.0004 \text{prf}(-4) - 0.11$$

(0.80) (0.11) (1.20)

$R^2 = 0.511$ D.W. = 1.18

Mining, Petroleum and Natural Gas sector: Canada

$$\Delta \text{Icap} = 0.27 \Delta \text{IgdP} - 0.09 \Delta \text{Idia} + 0.0030 \text{prf}(-1) + 0.0017 \text{prf}(-2) +$$

(1.90) (0.96) (2.96) (2.08)

$$0.0001 \text{prf}(-3) + 0.025$$

(0.15) (1.44)

$R^2 = 0.795$ D.W. = 1.48

Financial sector: Canada

$$\Delta \text{Icap} = 0.91 \Delta \text{IgdP} - 0.097 \Delta \text{Idia} + 0.0168 \text{prf}(-1) + 0.0041 \text{prf}(-2) -$$

(1.70) (1.22) (4.12) (1.40)

$$0.0011 \text{prf}(-3) + 0.0013 \text{prf}(-4) - 0.099$$

(0.40) (3.06) (1.28)

$R^2 = 0.827$ D.W. = 1.82

Similar regressions were run for the United States, the United Kingdom, Germany and Japan at the aggregate level of industry. The following are the results of the regressions from 1975 to 1990 with the t-statistics of the coefficients in parentheses.

All industries: United States

$$\Delta \text{Icap} = 1.33 \Delta \text{IgdP} - 0.31 \Delta \text{Idia} + 0.0089 \text{prf}(-1) + 0.0142 \text{prf}(-2) +$$

(3.54) (1.36) (0.89) (0.84)

$$0.0133 \text{prf}(-3) - 0.75$$

(1.27) (2.50)

$R^2 = 0.745$ D.W. = 2.20

where,

Δl = The first difference of the logarithm of the variable.

dia = The stock of direct investment abroad in units of national currency.

prf = The ratio of gross operating surplus to gross domestic product.

Constant term in each equation represents the influence of technical change.

All industries: United Kingdom

$$\Delta lcap = 1.45 \Delta lgdp + 0.10 \Delta ldia + 0.0055 \text{prf} (-1) + 0.0033 \text{prf} (-2) + \\ (9.41) \quad (2.63) \quad (2.23) \quad (1.61) \\ 0.0001 \text{prf} (-3) - 0.0040 \text{prf} (-4) - 0.18 \\ (0.04) \quad (1.44) \quad (3.42)$$

$$R^2 = 0.971 \quad D.W. = 1.44$$

All industries: Germany

$$lcap = 0.14 lgdp + 0.48 ldia + 7.45 \\ (0.76) \quad (5.91) \quad (4.64)$$

$$R^2 = 0.995 \quad D.W. = 1.42$$

All industries: Japan

$$inv = 0.96 gdp + 0.50 \Delta ldia - 11853.4 \text{trend} + \text{Constant} \\ (8.82) \quad (2.22) \quad (6.36)$$

$$R^2 = 0.992 \quad D.W. = 1.47$$

where all variables are as previously defined for the United States, the United Kingdom and Germany, and where

inv = Gross fixed capital formation

trend = Time trend variable.

In conclusion, our regression results for Canada and the other G-7 countries suggest that the relationship between domestic capital formation and direct investment abroad is either not significant or positive.

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- 9 These are total rather than partial trade elasticities with respect to CDIA. Hence, they are expected to be biased upward, because the influence of other factors on trade flows is not taken into account in computing these elasticities. Other determinants of trade flows include: economic activity; liberalization of trade barriers; technical change; cost structure; geographic and industrial distribution of exports and imports, exchange rate variability; capacity utilization, etc. However, the complementarity between Canadian trade flows and direct investment stocks (CDIA and CFDI), as found in our study, is consistent with the conclusions of other researchers (Graham, 1993; Rao & Lemprière, 1992a; Blomström and Kokko, 1993; Ries & Head, 1993; Lipsey & Weiss, 1981; Hufbauer & Adler, 1968).
- 10 The data on U.S. affiliates of foreign companies were obtained from the U.S. Department of Commerce, *Benchmark Survey for 1980 and 1990*. The country of origin was determined using the criterion of Ultimate Beneficial Owner (UBO). The UBO consists of the person (or entity), proceeding up a U.S. affiliate's ownership chain, that is not owned more than 50 percent by another person (or entity); it consists of only the ultimate owner.
- The industry details on labour and capital productivity, capital intensity, average wage, investment intensity, labour productivity-average wage gap, net income/sales ratio and export and import propensities (including intra-firm) for Canadian and other foreign subsidiaries in the United States for 1980 and 1990 are provided in a forthcoming Industry Canada Working Paper.
- 11 The effect of differences in industrial structure between Canadian and other foreign affiliates in the United States on *aggregate* labour and capital productivity of Canadian affiliates was measured in the following manner: first, the relative shares of sales and assets of all foreign affiliates in the United States were multiplied by the actual productivity levels of Canadian subsidiaries in *individual industries* to obtain pseudo-estimates of aggregate capital and labour productivity levels. Next, the ratio of actual to the estimated aggregate productivity levels was computed to account for the influence of the differences in industrial structure (for a detailed discussion of the methodology, see Rao & Lemprière, 1992b).
- 12 We estimated the sales-employment ratio (S/E) as a function of the capital-labour ratio (K/E) and the average wage rate (AW), a proxy for the skill level of the work force. Results for this equation in level and logarithmic form are as follows (the t-ratios are in parenthesis):

Level Equation:

$$S/E = 35.26 + 0.49 K/E + 2.16 AW \quad (1)$$

(4.38) (3.05) $R^2 = 0.560$

Logarithmic Equation:

$$\ln S/E = 2.03 + 0.34 \ln K/E + 0.42 \ln AW \quad (2)$$

(4.98) (3.17) $R^2 = 0.700$

The two equations were estimated using the pooled cross-section (for 20 manufacturing industries for four countries (Canada, Germany, United Kingdom, Japan) and time-series data (1980 and 1990).

The two equations explain a large proportion (between 55 percent and 70 percent) of inter-industry and inter-country variance of manufacturing productivity levels. Equation (2) implies that a 10 percent increase in the capital-labour ratio, other things being constant, will increase labour productivity by 3.4 percent.

- 13 To avoid any possible bias of intra-firm trade on the performance measures, foreign-controlled firms are *excluded* from the two sets of examples.
- 14 Regression analysis was performed on the cross-section data for the outward-oriented and domestically oriented firms, grouped into 34 major industries. We estimated the sales-employment ratio (S/E) as a function of sales (S), equity as a percentage of total capital stock (EQ/CAP stock) and the asset-employment ratio (A/E) for both domestically oriented and outward-oriented firms. Regression results, with t-ratios in parenthesis, are as follows:

Domestically oriented Firms

Level Equation

$$S/E = 200.28 + 1.44 S + 1.26 (EQ/CAP.STOCK) + 0.064 (A/E) \quad (1)$$

(0.69) (0.85) (31.20) $R^2 = 0.845$

Logarithmic Equation

$$\ln (S/E) = -1.57 + 0.26 \ln (S) + 0.22 \ln (EQ/CAP.STOCK) +$$

(7.48) (2.81)

$$0.46 \ln (A/E) \quad (1)$$

(11.23) $R^2 = 0.500$

APPENDIX 1: DESCRIPTION OF THE MICRO DATA

Two types of microeconomic analysis on Canadian-based TNCs are provided in this study. The first describes the characteristics, activities and performance of the top Canadian-based TNCs, drawing from the Disclosure/Worldscope Global Database. The second type of analysis describes the performance of the U.S. affiliates of Canadian-based TNCs, using data from the U.S. Department of Commerce. The first represents only a small sample of Canadian-based firms operating globally, whereas the second analysis represents the entire population of all affiliates of Canadian-based TNCs operating only in the United States. For these reasons the two approaches are not readily comparable; however, they do complement each other.

Top Canadian-Based TNCs

The sample of top 447 Canadian-based firms was selected from the Canadian portion of the Disclosure/Worldscope Global Database. This database contains data on 9,832 public companies from 40 countries. The data for the Canadian-based firms were obtained from annual and periodic reports filed with all Canadian stock exchanges. Data on the federally incorporated private firms are supplemented by financial filings from the Department of Consumer and Corporate Affairs.

The following criteria were used by Disclosure to select the Canadian companies:

- Inclusion in Canada's national index (i.e. Financial Post 500).
- High profile or visibility of firm.
- Request for information by Disclosure clients.

Because of the *ad-hoc* nature of firm selection for the Disclosure database, as well as the small size of the sample, the firms used in this study may not accurately represent the population of all Canadian-based firms. However, it is not clear whether the sample of firms introduces any systematic bias into the results.

The 447 large Canadian-based firms were further divided into two broad groups: 159 outward-oriented firms and 288 domestically oriented firms – depending upon whether or not foreign assets were reported. Although this sample of 159 outward-oriented firms is small in comparison to the UNCTC list of 1,300 Canadian-based TNCs, the foreign assets of the 159 firms represents approximately 50 percent of the foreign assets of all Canadian TNCs.

The study also identifies the degree of outward orientation of the Canadian-based TNCs. It should be noted, however, that the financial statements of the firms do not all report foreign located assets and sales. For this reason, both the number of outward-oriented firms, as well as the degree of outward orientation, may be under-reported.

The study also distinguishes between Canadian-controlled and foreign-controlled Canadian-based TNCs. Foreign control was assigned whenever more than 50 percent of a firm's market capitalization was owned by foreign interests. As a result, 12 of the 159 outward-oriented firms are foreign-owned and 50 of the 288 domestically oriented firms are foreign-owned.

For analytical purposes, the top firms are grouped into 45 industries, according to their primary line of business, as determined by Disclosure's 1986 U.S. Standard Industrial Classification (SIC) system. The 25 manufacturing industries are further aggregated into three major groups: labour-, resource- and technology-intensive industries, similar to the Economic Council of Canada's (1992) aggregation, based upon factor input and technology intensities.

A definition of the financial variables as well as the calculated ratios contained in this study are available in the Industry Canada Working Paper, *Economic Integration in North America: Trends in Foreign Direct Investment and the Top 1,000 Firms*.

U.S. Affiliates of Canadian-Based TNCs

The data used to calculate the performance of U.S. affiliates of Canadian-based TNCs was drawn from the U.S. Department of Commerce Survey of foreign direct investment in the United States.

A U.S. affiliate is defined as a U.S. business enterprise in which there is foreign direct investment into the United States – that is, in which a single foreign person owns or controls, directly or indirectly, at least 10 percent of the voting securities if the enterprise is incorporated, or an equivalent interest if the enterprise is unincorporated.

In order to identify fully the nationality of ownership or control of the U.S. affiliates, as well as to establish which transactions are to be included in the reported transactions of U.S. affiliates, three concepts are used: foreign parent, ultimate beneficial owner (UBO), and foreign parent group. The foreign parent is the first person outside the United States in the U.S. affiliate's ownership chain which has a direct investment interest in the affiliate (10 percent rule as defined above). The foreign parent must be identified in order to ascertain that the foreign direct investment actually exists.

Proceeding up the affiliate's ownership chain, the UBO is the first person not more than 50 percent owned by another person. This is used to establish who owns and controls (and ultimately derives benefit from owning or controlling) the U.S. affiliate.

Finally, the foreign parent group consists of the foreign parent, any foreign person, proceeding up the foreign parent's ownership chain, who owns more than 50 percent of the person below it, up to and including the UBO, and any foreign person, proceeding down the ownership chain(s) of each of these members, that is more than 50 percent owned by the person above it. This last classification is used to distinguish between foreign persons that are affiliated with the U.S. affiliate (as either a parent, UBO, or other member of its foreign parent group) from those that are not.

The Bureau of Economic Analysis of the U.S. Department of Commerce publishes data on the following three groups of U.S. affiliates: all affiliates, non-bank affiliates, and bank affiliates. The data and analysis presented in this study reflects only the activities of non-bank U.S. affiliates.

Additional definitions of the U.S. affiliates of Canadian-based TNCs may be obtained from the following publication of the U.S. Department of Commerce, Bureau of Economic Analysis: *Foreign Direct Investment in the United States: 1987 Benchmark Survey, Final Results*.

APPENDIX 2
List of Top Outwardly-Oriented Canadian-Based Firms

Rank by Sales	Rank by Assets	Company Name	Industry
1	2	BCE INC.	Communications
2	22	FORD MOTOR CO. OF CANADA LTD.*	Motor Vehicles & Equipment
3	5	CANADIAN PACIFIC LIMITED	Transportation
4	1	THE BANK OF NOVA SCOTIA	Depository Institutions
5	11	NORTHERN TELECOM LIMITED	Communications Equipment
6	9	ALCAN ALUMINIUM LIMITED	Mining
7	37	LOBLAW COMPANIES LIMITED	Retail Trade
8	6	NORANDA INC.	Lumber & Wood
9	8	SEAGRAM CO. LTD.	Food & Products
10	49	UNIVA INC.	Wholesale Trade
11	12	THOMSON CORPORATION	Printing & Publishing
12	3	TRILON FINANCIAL CORP.	Depository Institutions
13	4	ROYAL TRUSTCO LIMITED	Depository Institutions
14	50	STEINBERG INC.	Retail Trade
15	23	VARITY CORPORATION	Machinery excluding Electrical
16	24	JOHN LABATT LIMITED	Food & Products
17	15	INCO LIMITED	Mining
18	27	BOMBARDIER INC.	Aircraft & Parts
19	35	MOORE CORPORATION LIMITED	Printing & Publishing
20	39	ABITIBI-PRICE INC.	Paper & Allied
21	19	MACMILLAN BLOEDEL LIMITED	Lumber & Wood
22	16	POLYSAR ENERGY & CHEMICAL CORP	Mining
23	10	LAURENTIAN GROUP	Insurance
24	31	QUEBECOR INC.	Printing & Publishing
25	7	CARENA DEVELOPMENTS LIMITED	Other Financial Services
26	53	MAGNA INTERNATIONAL INC.	Motor Vehicles & Equipment
27	38	CONSOLIDATED-BATHURST INC.	Paper & Allied
28	17	LIDLAW INC.	Transportation
29	61	UNITED WESTBURNE INC.*	Wholesale Trade

Rank by Sales	Rank by Assets	Company Name	Industry
30	32	FALCONBRIDGE LIMITED	Mining
31	29	DOMTAR INC.	Paper & Allied
32	74	DYLEX LTD.	Retail Trade
33	28	UNICORP ENERGY CORP.	Utilities
34	58	ONEX CORPORATION	Wholesale Trade
35	65	UNITED DOMINION INDUSTRIES LTD	Construction
36	43	MACLEAN HUNTER LIMITED	Printing & Publishing
37	71	FEDERAL INDUSTRIES LTD.	Primary Metals
38	44	ALGOMA STEEL	Primary Metals
39	20	DOME PETROLEUM LTD.	Mining
40	59	DOMINION TEXTILE INC.	Textiles
41	34	COMINCO LTD.	Primary Metals
42	55	IVACO INC.	Primary Metals
43	67	LAWSON MARDON GROUP	Paper & Allied
44	52	SOUTHAM INC.	Printing & Publishing
45	40	THOMSON NEWSPAPERS LTD.	Printing & Publishing
46	30	PLACER DOME, INC.	Mining
47	41	FLETCHER CHALLENGE CANADA LTD.*	Lumber & Wood
48	45	RIO ALGOM LIMITED	Wholesale Trade
49	60	CAE INDUSTRIES LTD.	Light Machinery
50	70	SCOTT'S HOSPITALITY INC.	Retail Trade
51	83	EMCO LIMITED	Fabricated Metals
52	26	NORCEN ENERGY RESOURCES LIMITE	Mining
53	81	INDAL LTD.*	Primary Metals
54	25	REPAP ENTERPRISES INC.*	Paper & Allied
55	13	BRAMALEA LIMITED (CANADA)	Other Financial Services
56	66	FINNING LTD	Wholesale Trade
57	62	TORSTAR CORP	Printing & Publishing
58	73	CO-STEEL INC.	Primary Metals

Rank by Sales	Rank by Assets	Company Name	Industry
59	18	GULF CANADA RESOURCES LIMITED	Mining
60	63	CROWNX INC.	Health Services
61	68	CASCADES INC	Paper & Allied
62	14	FIRST CITY FINANCIAL CORP. LTD	Depository Institutions
63	46	HOLLINGER INC.	Printing & Publishing
64	122	SILCORP LTD	Retail Trade
65	110	THE JEAN COUTU GROUP (PJC) INC	Retail Trade
66	79	SHL SYSTEMHOUSE INC.	Commercial Services
67	89	REDPATH INDUSTRIES LTD.	Chemicals & Allied
68	82	INTER-CITY PRODUCTS CORPORATIO	Computer & Office
69	42	INTERPROVINCIAL PIPE LINE SYST	Transportation
70	69	CINEPLEX ODEON CORPORATION	Commercial Services
71	80	CCL INDUSTRIES LTD.	Chemicals & Allied
72	78	SNC GROUP	Other Services
73	116	GRAFTON GROUP LTD.	Retail Trade
74	47	LAC MINERALS LTD.	Mining
75	21	CADILLAC FAIRVIEW CORPORATION	Other Financial Services
76	105	FISHERY PRODUCTS INTERNATIONAL	Agriculture & Fish
77	90	CONSUMER'S PACKAGING INC.	Non-Metallic Minerals
78	107	NOMA INDUSTRIES LIMITED	Wholesale Trade
79	109	CANRON INC.	Rubber & Products
80	75	ST. LAWRENCE CEMENT INC.*	Non-Metallic Minerals
81	91	ALBERTA NATURAL GAS CO. LTD.	Mining
82	108	TCG INTERNATIONAL INC.	Commercial Services
83	98	TRIMAC LIMITED	Transportation
84	113	NATIONAL SEA PRODUCTS LIMITED	Food & Products
85	51	TELEGLOBE INC.	Communications
86	94	AGRA INDUSTRIES LIMITED	Other Services
87	114	PEERLESS CARPET CORPORATION	Textiles
88	125	BANISTER INC.	Construction

Rank by Sales	Rank by Assets	Company Name	Industry
89	48	AMERICAN BARRICK RESOURCES COR	Mining
90	111	MITEL CORPORATION	Communications Equipment
91	84	HAWKER SIDDELEY CANADA INC.	Machinery excluding Electrical
92	95	CANADA MALTING CO., LTD.	Wholesale Trade
93	64	ECHO BAY MINING LTD.*	Mining
94	115	SLATER INDUSTRIES INC.	Primary Metals
95	88	DENISON MINES LTD.	Mining
96	101	TORONTO SUN PUBLISHING CORPORA	Printing & Publishing
97	57	COSCAN DEVELOPMENT	Construction
98	99	CANADIAN MARCONI COMPANY*	Miscellaneous Electrical Products
99	77	INTERNATIONAL CORONA CORP.	Mining
100	92	JANNOCK LIMITED	Non-Metallic Minerals
101	124	SHAW INDUSTRIES LTD.	Machinery excluding Electrical
102	123	PREMDOR INC.	Lumber & Wood
103	100	DERLAN INDUSTRIES LTD.	Fabricated Metals
104	54	ENCOR INC.	Mining
105	56	BOW VALLEY INDUSTRIES LTD.	Mining
106	36	MARKBOROUGH PROPERTIES INC.	Other Financial Services
107	87	BC SUGAR REFINERY, LIMITED	Food & Products
108	120	INTERNATIONAL INNOPAC INC.	Paper & Allied
109	102	CANAM MANAC GROUP	Fabricated Metals
110	85	THE LOEWEN GROUP INC.	Commercial Services
111	103	NOWSCO WELL SERVICE LTD.	Machinery excluding Electrical
112	141	DMR GROUP INC.	Commercial Services
113	143	HARRIS STEEL GROUP	Primary Metals
114	147	TOROMONT INDUSTRIES LTD	Computer & Office
115	96	PEGASUS GOLD INC.	Mining
116	72	METALL MINING CORPORATION*	Mining
117	131	LINAMAR CORPORATION	Aircraft & Parts

Rank by Sales	Rank by Assets	Company Name	Industry
118	130	GANDALF TECHNOLOGIES INC.	Communications Equipment
119	104	FOUR SEASONS HOTELS LTD.	Commercial Services
120	118	SELKIRK COMMUNICATION LTD.	Communications
121	152	MONENCO GROUP LTD.	Other Services
122	139	GSW INC.	Electrical Products
123	127	NEWBRIDGE NETWORKS CORPORATION*	Communications
124	134	CANSTAR SPORTS	Miscellaneous Manufactured Goods
125	119	ALGOMA CENTRAL CORPORATION	Transportation
126	133	COGNOS INC.*	Commercial Services
127	106	MACKENZIE FINANCIAL CORPORATIO	Other Financial Services
128	112	ASAMERA INC.	Mining
129	76	RANGER OIL LIMITED	Mining
130	154	INTERMETCO LTD.	Primary Metals
131	86	TVX GOLD INC.	Primary Metals
132	33	BF REALTY HOLDINGS LIMITED	Other Financial Services
133	138	UNICAN SECURITY SYSTEMS	Fabricated Metals
134	129	KAUFEL GROUP LTD	Electrical Products
135	117	GOLDCORP INC.	Mining
136	144	PCL INDUSTRIES LTD.	Rubber & Products
137	155	DRECO ENERGY SERVICES	Machinery excluding Electrical
138	93	CANADA NORTHWEST ENERGY LIMITE	Mining
139	128	METHANEX CORPORATION	Chemicals & Allied
140	135	LUMONICS INC.	Light Machinery
141	150	GEAC COMPUTER CORP. LTD.	Commercial Services
142	149	COMPUTALOG GEARHART LTD.	Mining
143	132	MOFFAT COMMUNICATIONS LTD.	Communications
144	126	RAYROCK YELLOWKNIFE RESOURCES	Mining
145	157	FCA INTERNATIONAL LTD.	Commercial Services
146	121	N-W GROUP INC	Other Financial Services
147	146	CINRAM LTD	Electrical Products

Rank by Sales	Rank by Assets	Company Name	Industry
148	97	CHIEFTAIN DEVELOPMENT	Mining
149	137	BREAKWATER RESOURCES LTD.	Mining
150	145	GRANGES INC.	Mining
151	140	COMINCO RESOURCES INTERNATIONAL	Primary Metals
152	158	HALEY INDUSTRIES	Aircraft & Parts
153	151	MINVEN GOLD CORP.*	Mining
154	156	GLAMIS GOLD LTD.	Mining
155	159	TECSYN INTERNATIONAL INC.	Tobacco
156	136	BIOCHEM PHARMA INC.	Chemicals & Allied
157	142	NORTHGATE EXPLORATION LTD.	Mining
158	153	BEMA GOLD CORPORATION	Mining
159	148	VICEROY RESOURCE CORPORATION	Mining

* Indicates foreign-control (i.e., Canadian-based firms with at least 50 percent of assets owned by non-Canadians).

Source: Disclosure Inc.

APPENDIX 3
List of Top Domestically-Oriented Canadian-Based Firms

Rank by Sales	Rank by Asset	Company Name	Industry
1	26	GENERAL MOTORS OF CANADA LIMITED*	Motor Vehicles & Equipment
2	1	ROYAL BANK OF CANADA	Depository Institutions
3	41	GEORGE WESTON LIMITED	Wholesale Trade
4	2	CANADIAN IMPERIAL BANK OF COMMERCE	Depository Institutions
5	16	IMPERIAL OIL LIMITED RANCHMEN'S*	Mining
6	36	BRASCAN LTD.	Mining
7	52	CHRYSLER CANADA LTD.*	Motor Vehicles & Equipment
8	3	BANK OF MONTREAL	Depository Institutions
9	8	SUN LIFE ASSURANCE CO. OF CANADA	Insurance
10	5	ONTARIO HYDRO	Utilities
11	10	MANUFACTURERS LIFE INSURANCE C	Insurance
12	19	MCDONALD'S CORPORATION*	Retail Trade
13	11	CONFEDERATION LIFE INSURANCE C	Insurance
14	48	I B M CANADA LTD.*	Computer & Office
15	6	HYDRO QUEBEC	Utilities
16	4	TORONTO DOMINION BANK (THE)	Depository Institutions
17	51	HUDSON'S BAY COMPANY	Retail Trade
18	13	GREAT WEST LIFE ASSURANCE CO.	Insurance
19	29	PETRO CANADA	Petroleum Refining
20	31	SHELL CANADA LTD.*	Mining
21	12	CANADA LIFE ASSURANCE CO.	Insurance
22	112	OSHAWA GROUP LIMITED	Wholesale Trade
23	9	CT FINANCIAL SERVICES INC.	Non-Depository Institutions
24	28	NORANDA FOREST INC.	Lumber & Wood
25	27	AMOCO CANADA PETROLEUM COMPANY*	Mining
26	61	SEARS CANADA INC.*	Retail Trade
27	24	CANADIAN NATIONAL RAILWAYS CO.	Transportation
28	60	CANADA POST CORP	Transportation
29	37	AIR CANADA	Transportation

Rank by Sales	Rank by Asset	Company Name	Industry
30	14	MUTUAL LIFE ASSURANCE CO. OF C	Insurance
31	34	IMASCO LIMITED	Tobacco
32	7	NATIONAL BANK OF CANADA	Depository Institutions
33	113	SOCANAV INC.	Retail Trade
34	25	TRANSCANADA PIPELINES LTD.	Utilities
35	32	NOVA CORPORATION OF ALBERTA	Rubber & Products
36	187	mitsui & co.*	Wholesale Trade
37	86	MAPLE LEAF FOODS INC.*	Food & Products
38	71	CANADIAN TIRE CORP. LTD.	Wholesale Trade
39	100	TOTAL PETROLEUM (NORTH AMERICA)*	Mining
40	58	PWA CORPORATION	Transportation
41	93	THE HORSHAM CORPORATION	Mining
42	23	CANADIAN WHEAT BOARD	Wholesale Trade
43	103	JIM PATTISON GROUP	Other Financial Services
44	18	LONDON LIFE INSURANCE CO.	Insurance
45	84	MCCAIN FOODS INC.	Food & Products
46	67	MOLSON COMPANIES LIMITED	Food & Products
47	132	HONDA CANADA INC.*	Motor Vehicles & Equipment
48	47	TEXACO CANADA INC.	Mining
49	119	F W WOOLWORTH CO. LTD	Retail Trade
50	157	CORE-MARK INTERNATIONAL INC.	Tobacco
51	152	KELLY, DOUGLAS & CO. LTD.	Wholesale Trade
52	88	EMPIRE CO. LTD.	Retail Trade
53	148	METRO-RICHELIEU INC.	Wholesale Trade
54	38	ANGLO-CANADIAN TELEPHONE CO.	Communications
55	46	DOFASCO INC.	Primary Metals
56	21	BRITISH COLUMBIA HYDRO & POWER	Utilities
57	64	STELCO INC.	Primary Metals
58	42	BRITISH COLUMBIA TELEPHONE COM	Communications

Rank by Sales	Rank by Asset	Company Name	Industry
59	20	CROWN LIFE INSURANCE CO.	Insurance
60	80	CANADIAN ULTRAMAR LTD.*	Transportation
61	137	SASKATCHEWAN WHEAT POOL	Wholesale Trade
62	147	CARGILL LTD.*	Wholesale Trade
63	96	PROCTER & GAMBLE INC.*	Chemicals & Allied
64	56	MOBIL OIL CANADA LTD.*	Mining
65	181	TOYOTA CANADA INC.*	Wholesale Trade
66	54	CANADIAN PACIFIC FOREST PRODUC	Paper & Allied
67	59	JAMES RICHARDSON & SONS LTD	Transportation
68	65	UNION ENERGY INC.	Mining
69	17	CENTRAL GUARANTY TRUSTCO LTD.	Depository Institutions
70	63	CONSUMER'S GAS CO. LTD.*	Utilities
71	40	WESTCOAST ENERGY INC	Utilities
72	15	NATIONAL TRUSTCO INC	Non-Depository Institutions
73	70	SUNCOR INC.*	Mining
74	139	FEDERATED CO-OPERATIVES LTD.	Retail Trade
75	104	G.E. CANADA INC.*	Aircraft & Parts
76	106	PRATT & WHITNEY CANADA INC.*	Aircraft & Parts
77	43	ATCO LTD.	Utilities
78	45	DOW CHEMICAL CANADA INC.*	Mining
79	127	KRAFT GENERAL FOODS CANADA INC.*	Food & Products
80	173	PCL CONSTRUCTION GROUP INC.	Construction
81	107	DU PONT CANADA*	Chemicals & Allied
82	150	K MART CANADA LTD.*	Retail Trade
83	151	COOPERATIVE FEDEREE DE QUEBEC	Wholesale Trade
84	76	UNION GAS LIMITED	Utilities
85	53	TELUS CORPORATION	Communications
86	109	C.I.L. INC.	Chemicals & Allied
87	39	TRANSALTA CORPORATION	Utilities

Rank by Sales	Rank by Asset	Company Name	Industry
88	50	CANADIAN UTILITIES LTD.	Mining
89	179	DIGITAL EQUIPMENT OF CANADA LTD.*	Computer & Office
90	205	MEDIS HEALTH & PHARMACEUTICAL	Wholesale Trade
91	265	MARUBENI CANADA LTD.	Wholesale Trade
92	171	AGROPUR COOPERATIVE AGRO-ALIME	Wholesale Trade
93	78	XEROX CANADA*	Computer & Office
94	159	ASEA BROWN BOVERI INC.*	Electrical Products
95	124	T.C.C. BEVERAGES LTD	Food & Products
96	182	UNITED GRAIN GROWERS LIMITED	Transportation
97	49	ROGERS COMMUNICATIONS INC.	Communications
98	143	UNILEVER CANADA LTD.*	Food & Products
99	177	ALBERTA WHEAT POOL	Wholesale Trade
100	99	GAZ METROPOLITIAN INC.	Utilities
101	174	NESTLE CANADA INC.*	Food & Products
102	85	CHEVRON CANADA RESOURCES LTD.*	Mining
103	220	ALBERTA & SOUTHERN GAS CO.*	Mining
104	87	NOVERCO INC.	Utilities
105	134	CROWN FOREST INDUSTRIES LTD.	Paper & Allied
106	213	SOBEYS STORES LTD.	Retail Trade
107	136	CARLING O'KEEFE	Food & Products
108	44	NEW BRUNSWICK POWER CORPORATIO	Utilities
109	111	LAFARGE CANADA INC.*	Non-Metallic Minerals
110	215	MAZDA CANADA INC.*	Wholesale Trade
111	98	WEYERHAEUSER CANADA LTD.	Paper & Allied
112	30	TRIZEC CORPORATION. LTD.	Other Financial Services
113	57	PANCANADIAN PETROLEUM LIMITED	Mining
114	97	CANFOR CORPORATION	Lumber & Wood
115	66	E-L FINANCIAL CORPORATION LIMI	Insurance
116	22	LAURENTIAN BANK OF CANADA	Depository Institutions

Rank by Sales	Rank by Asset	Company Name	Industry
117	178	GENDIS INC.	Retail Trade
118	161	CARA OPERATIONS LTD.	Retail Trade
119	81	BC GAS INC	Utilities
120	55	SASKATCHEWAN POWER CORP.	Utilities
121	175	CANADIAN TURBO INC.	Petroleum Refining
122	116	WELDWOOD OF CANADA LTD.*	Lumber & Wood
123	69	NOVA SCOTIA POWER CORPORATION	Utilities
124	33	GENERAL TRUSTCO OF CANADA INC.	Non-Depository Institutions
125	120	CONSOLIDATED ENFIELD CORPORATI	Other Financial Services
126	225	SCHNEIDER CORPORATION	Food & Products
127	201	WOODWARD'S LIMITED	Retail Trade
128	102	SASKATCHEWAN TELECOMMUNICATION	Communications
129	82	CANADIAN OCCIDENTAL PETROLEUM	Mining
130	160	INTERPROVINCIAL STEEL & PIPE (Primary Metals
131	79	LE GROUPE VIDEOTRON LTEE	Communications
132	128	WEST FRASER TIMBER CO.*	Lumber & Wood
133	91	MANITOBA TELEPHONE SYSTEM	Communications
134	35	HEES INTERNATIONAL BANCORP INC	Securities & Brokers
135	94	MARITIME TELEGRAPH & TELEPHONE	Communications
136	74	ALBERTA ENERGY CO. LTD	Mining
137	133	CENTRA GAS ONTARIO INC.	Utilities
138	209	CULINAR INC.	Wholesale Trade
139	110	DOMAN INDUSTRIES LTD.	Lumber & Wood
140	183	ROYAL LEPAGE LIMITED	Other Financial Services
141	115	VIA RAIL CANADA INC.	Transportation
142	121	DONOHUE INC.	Paper & Allied
143	202	SPAR AEROSPACE LIMITED	Communications Equipment
144	216	CAMCO	Electrical Products
145	200	FIBERGLASS CANADA INC.*	Chemicals & Allied

Rank by Sales	Rank by Asset	Company Name	Industry
146	192	UAP INC.	Wholesale Trade
147	198	CAMPBELL SOUP. CO. LTD.*	Food & Products
148	180	CELANESE CANADA INC.*	Chemicals & Allied
149	167	SCOTT PAPER LTD.	Paper & Allied
150	73	INVESTORS GROUP, INC.	Other Financial Services
151	172	ROTHMANS INC.*	Tobacco
152	226	INGLIS LTD.	Electrical Products
153	236	BECKER MILK COMPANY LIMITED (T	Food & Products
154	214	HUDSON BAY MINING & SMELTING*	Mining
155	145	MDS HEALTH GROUP LIMITED	Health Services
156	101	TECK CORPORATION	Mining
157	230	ROBIN HOOD MULTIFOODS INC.*	Food & Products
158	244	VERSA SERVICES LIMITED*	Retail Trade
159	125	SHERRITT GORDON LTD.	Mining
160	206	HAYES - DANA INC.*	Motor Vehicles & Equipment
161	126	BCE MOBILE COMMUNICATIONS INC.	Communications
162	156	UNIGESCO INC	Wholesale Trade
163	122	BRUNCOR INC.	Communications
164	142	FORTIS INC.	Utilities
165	238	UNITED FARMERS ALBERTA CO-OP L	Wholesale Trade
166	92	BRITISH COLUMBIA RAILWAY CO.	Transportation
167	89	SASKATCHEWAN OIL & GAS	Mining
168	95	POTASH CORP OF SASKATCHEWAN	Mining
169	105	NORTH CANADIAN OILS LIMITED	Mining
170	222	ACKLANDS LTD.	Wholesale Trade
171	237	ROLLAND INC.	Wholesale Trade
172	62	CAMBRIDGE SHOPPING CENTRES LIM	Other Financial Services
173	229	REITMAN'S LTD.	Retail Trade
174	129	ELDORADO NUCLEAR LTD.	Mining

Rank by Sales	Rank by Asset	Company Name	Industry
175	141	WIC WESTERN INTERNATIONAL COMM	Communications
176	210	ASTRAL COMMUNICATIONS INC.	Commercial Services
177	204	GREYHOUND LINES OF CANADA LTD.*	Transportation
178	135	NEWTEL ENTERPRISES LTD.	Construction
179	83	HOME OIL CO	Mining
180	140	TEMBEC	Paper & Allied
181	223	WAJAX LTD.	Primary Metals
182	185	INTERNATIONAL FOREST PRODUCTS	Lumber & Wood
183	154	FAIRFAX FINANCIAL HOLDINGS LIM	Insurance
184	163	QUEBEC-TELEPHONE	Communications
185	117	LA SAUVEGARDE, ASSURANCE SUR L	Insurance
186	227	NEWFOUNDLAND CAPITAL CORP. LTD	Transportation
187	235	CORPORATE FOODS LTD	Food & Products
188	149	RENAISSANCE ENERGY LTD.	Mining
189	77	STANDARD TRUST CO. LTD.	Other Financial Services
190	155	HEMLO GOLD MINES INC	Mining
191	275	XL FOODS LTD.	Food & Products
192	211	NORMICK PERRON INC.	Lumber & Wood
193	284	INTERPROVINCIAL CO-OPERATIVE L	Wholesale Trade
194	218	CHUM LIMITED	Communications
195	194	BATON BROADCASTING INC.	Communications
196	212	SLOCAN FOREST PRODUCTS LTD.	Forestry
197	219	PEOPLES JEWELERS	Retail Trade
198	164	BRUNSWICK MINING AND SMELTING	Mining
199	242	BUDD CANADA INC.	Motor Vehicles & Equipment
200	90	MUNICIPAL FINANCIAL CORP.	Depository Institutions
201	131	COUNSEL CORP	Health Services
202	240	SAMUEL MANU-TECH INC.	Fabricated Metals
203	245	CGC INC.*	Construction

Rank by Sales	Rank by Asset	Company Name	Industry
204	199	CRESTBROOK FOREST INDUSTRIES LTD.*	Paper & Allied
205	169	CAMBIOR INC.	Mining
206	114	ATOMIC ENERGY OF CANADA LTD.	Light Machinery
207	207	TELE-METROPOLE INC.	Communications
208	146	KERR ADDISON MINES LIMITED	Mining
209	144	TALISMAN ENERGY INC.	Mining
210	252	SICO INC.	Chemicals & Allied
211	123	POCO PETROLEUMS LTD.	Mining
212	153	SCEPTRE RESOURCES LTD.	Mining
213	203	CFCF INC.	Communications
214	217	MANITOBA POOL ELEVATORS	Wholesale Trade
215	267	MARK'S WORK WEARHOUSE LTD.	Clothing
216	266	SINTRA LTD.	Construction
217	269	GESCO INDUSTRIES INC.	Tobacco
218	162	WESTMIN RESOURCES LTD.	Mining
219	184	WESTAR GROUP LTD.	Lumber & Wood
220	75	GREAT LAKES POWER INC.	Utilities
221	256	GIANT YELLOWKNIFE MINES LTD.	Mining
222	276	DALMYS (CANADA) LTD.	Retail Trade
223	195	PHILIP ENVIRONMENTAL INC	Utilities
224	224	CORBY DISTILLERS	Wholesale Trade
225	255	ROYAL OAK MINES INC	Mining
226	197	CHAUVCO RESOURCES LTD.	Mining
227	280	ALGONQUIN MERCANTILE CORP.	Retail Trade
228	189	TRANS MOUNTAIN PIPE LINE CO. L	Transportation
229	264	REVELSTOKE COMPANIES LTD.	Wholesale Trade
230	166	MARK RESOURCES	Mining
231	188	CONSOLIDATED HCI HOLDINGS	Other Financial Services
232	168	CONWEST EXPLORATION COMPANY LT	Mining

Rank by Sales	Rank by Asset	Company Name	Industry
233	130	FIRST MARATHON	Securities & Brokers
234	138	CAMDEV CORPORATION	Commercial Services
235	247	AGNICO-EAGLE MINES LIMITED*	Mining
236	271	PENNINGTON'S STORES LTD.	Retail Trade
237	170	SCURRY-RAINBOW OIL LTD.	Mining
238	165	ANDERSON EXPLORATION LTD	Mining
239	108	GW UTILITIES LIMITED	Other Financial Services
240	72	POWER CORPORATION OF CANADA	Other Financial Services
241	234	DICKENSON MINES LTD.	Mining
242	118	PAGURIAN CORPORATION LIMITED	Other Financial Services
243	259	GALACTIC RESOURCES LTD.	Mining
244	208	ELAN ENERGY INC	Mining
245	260	COREL CORPORATION	Commercial Services
246	257	BOVAR INC.	Utilities
247	250	EQUITY SILVER MINES LTD.	Mining
248	274	CANADIAN SATELLITE COMMUNICATI	Communications
249	176	B.C. PACIFIC CAPITAL	Other Services
250	258	WHARF RESOURCES	Mining
251	231	RESOURCES LTD.*	Mining
252	228	MORGAN HYDROCARBONS INC	Mining
253	248	CAMPBELL RESOURCES INC.	Mining
254	196	NUMAC OIL & GAS LTD.*	Mining
255	281	SONORA GOLD CORP.	Mining
256	246	CANADIAN NATURAL RESOURCES	Mining
257	68	POWER FINANCIAL CORP.	Other Financial Services
258	241	MORRISON PETROLEUM	Mining
259	279	PHOTO ENGRAVERS & ELECTROTYPYER	Printing & Publishing
260	158	CENTRAL CAPITAL CORPORATION	Depository Institutions
261	243	CABRE EXPLORATION LTD	Mining

Rank by Sales	Rank by Asset	Company Name	Industry
262	249	COHO RESOURCES LIMITED	Mining
263	232	CANADIAN ROXY PETROLEUM LTD.	Mining
264	261	AUR RESOURCES	Mining
265	254	GOLDEN KNIGHT RESOURCES INC.	Mining
266	233	ULSTER PETROLEUM LTD.	Mining
267	268	CIMARRON PETROLEUM LTD	Mining
268	273	PINNACLE RESOURCES	Mining
269	190	ARGUS CORPORATION LTD.	Other Financial Services
270	286	CANADA TUNGSTEN INC	Mining
271	262	FRANCO NEVADA	Mining
272	191	CANADIAN GENERAL INVESTMENTS L	Other Financial Services
273	186	UNITED CORPORATIONS LTD.	Other Financial Services
274	277	QUEBEC STURGEON RIVER MINES LI	Mining
275	193	INT'L SEMI-TECH MICROELECTRONI	Other Financial Services
276	287	BELMORAL MINES LTD.	Mining
277	253	EURO-NEVADA MINING CORP.	Primary Metals
278	282	MUSCOCHO EXPLORATIONS LIMITED	Mining
279	239	BRENDA MINES LTD.	Mining
280	272	PAMOUR INC.	Other Financial Services
281	285	ARCHER COMMUNICATIONS	Communications Equipment
282	263	INTERNATIONAL PETROLEUM CORP.	Mining
283	283	CANADA SOUTHERN PETROLEUM LTD.	Mining
284	270	BGR PRECIOUS METALS	Other Financial Services
285	221	MCINTYRE MINES LTD.	Mining
286	288	CORNUCOPIA RESOURCES LTD.	Mining
287	251	CENTRAL FUND OF CANADA LTD.	Other Financial Services
288	278	QUADRA LOGIC TECHNOLOGIES INC.	Chemicals & Allied

* Indicates foreign-control (i.e., Canadian-based firms with at least 50 percent of assets owned by non-Canadians)

Source: Disclosure Inc.

APPENDIX 4

Table A4-1
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Sales/Employment Ratio (US\$ Thousands), 1990

	All Countries	Canada	Germany	U.K.	Japan
All Industries	248.33	171.75	209.47	181.73	507.76
Petroleum	929.32	1000.73	1755.00	369.17	48940.00
Manufacturing	168.56	155.26	164.55	126.78	227.27
Food and kindred products	194.80	n/a	282.41	125.94	163.97
Chemicals and allied products	164.45	n/a	185.69	120.34	187.89
Primary and fabricated metals	159.63	195.06	139.36	78.68	171.00
Primary metals	195.96	227.19	203.33	170.67	167.93
Machinery	149.44	173.78	133.67	119.39	222.52
Electrical products	136.81	153.01	101.26	101.67	311.63
Other manufacturing	180.11	167.20	165.16	147.04	284.05
Textile products and apparel	101.20	106.26	87.14	83.15	121.63
Lumber and furniture	159.85	230.00	88.73	126.13	254.00
Paper and allied products	188.07	362.20	204.38	255.93	194.29
Printing and publishing	131.18	97.42	n/a	118.28	n/a
Rubber products	122.51	n/a	n/a	n/a	n/a
Miscellaneous plastics products	260.78	631.71	221.47	191.39	201.43
Stone, clay, & glass products	125.82	n/a	122.28	115.11	149.02
Transportation equipment	370.49	n/a	427.38	131.92	685.00
Instruments and related products	194.22	1156.36	264.15	134.21	284.64
Other	236.16	174.62	n/a	n/a	219.74
Wholesale trade	778.81	451.30	446.42	662.39	1185.57
Motor vehicles and equipment	863.97	180.00	546.58	194.80	1378.74
Electrical goods	374.69	2508.89	n/a	620.91	338.13
Retail trade	110.66	79.94	147.89	142.33	141.52
Finance, except banking	597.51	0.00	1474.00	357.35	598.84
Insurance	485.39	1238.97	749.00	408.82	450.77
Real estate	388.80	261.40	540.00	1111.58	343.75
Services	81.84	62.54	220.10	68.83	96.95
Other industries	169.45	136.80	168.26	207.40	183.74
Agriculture, forestry, & fish	216.46	n/a	484.29	188.00	139.39
Mining	285.96	343.85	n/a	231.62	305.00
Construction	192.52	142.20	148.00	220.66	210.58
Transportation	141.19	141.23	114.38	187.68	139.67
Communication & public utilities	104.64	n/a	n/a	162.92	2720.00

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-2
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Sales/Assets (Ratio) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	0.76	0.56	1.06	0.72	0.85
Petroleum	1.38	1.75	1.65	0.77	18.42
Manufacturing	0.88	0.65	1.03	0.71	1.04
Food and kindred products	1.05	n/a	2.42	0.74	1.04
Chemicals and allied products	0.62	n/a	0.92	0.53	0.56
Primary and fabricated metals	0.87	1.27	0.92	0.52	0.77
Primary metals	0.91	1.27	1.26	0.70	0.78
Machinery	1.02	1.17	0.88	0.98	1.13
Electrical products	0.96	1.01	0.71	0.95	1.84
Other manufacturing	1.03	0.97	1.40	0.80	1.30
Textile products and apparel	1.09	1.13	1.47	1.07	0.81
Lumber and furniture	1.30	3.63	1.76	0.79	1.35
Paper and allied products	0.93	0.88	0.98	1.49	0.60
Printing and publishing	0.60	0.60	n/a	n/a	n/a
Rubber products	0.82	n/a	n/a	n/a	n/a
Miscellaneous plastics products	1.63	3.15	1.32	1.50	1.00
Stone, clay, & glass products	0.62	n/a	0.91	0.66	0.45
Transportation equipment	2.07	0.96	3.24	1.01	3.00
Instruments and related prods.	1.29	10.18	n/a	0.87	1.31
Other	1.36	2.08	n/a	1.92	n/a
Wholesale trade	2.09	1.76	1.59	3.01	2.11
Motor vehicles and equipment	1.40	n/a	0.88	1.02	1.67
Electrical goods	1.19	15.47	3.88	n/a	1.01
Retail trade	1.79	1.15	3.24	1.58	2.09
Finance, except banking	0.10	n/a	0.08	0.13	0.09
Insurance	0.30	0.28	0.25	0.36	0.42
Real estate	0.16	0.21	0.13	0.20	0.11
Services	0.55	0.95	3.18	0.64	0.28
Other industries	0.85	0.67	1.28	0.57	0.97
Agriculture, forestry, & fish	0.93	0.39	1.30	1.06	1.13
Mining	0.66	0.83	n/a	0.57	n/a
Construction	1.46	1.09	2.05	1.25	0.95
Transportation	1.08	0.57	0.79	n/a	1.19
Communication & public utilities	0.33	0.43	n/a	n/a	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-3
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Capital Stock/Employment (\$US Thousands) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	121.64	143.49	81.29	99.23	156.00
Petroleum	683.88	572.57	400.00	n/a	815.00
Manufacturing	100.01	158.94	96.29	70.46	127.97
Food and kindred products	65.73	n/a	64.48	51.06	90.26
Chemicals and allied products	168.33	n/a	137.56	120.07	143.12
Primary and fabricated metals	118.31	n/a	77.52	60.76	200.16
Primary metals	168.57	n/a	93.83	75.38	211.54
Machinery	55.84	52.64	71.92	41.37	74.14
Electrical products	55.30	51.48	75.49	38.33	84.41
Other manufacturing	86.73	80.80	68.83	62.88	133.45
Textile products and apparel	59.54	60.28	39.61	34.65	140.58
Lumber and furniture	72.11	n/a	27.27	86.13	94.00
Paper and allied products	175.65	390.17	171.88	170.34	289.52
Printing and publishing	51.09	55.13	n/a	n/a	n/a
Rubber products	78.30	n/a	n/a	n/a	n/a
Miscellaneous plastics products	89.32	69.71	124.12	53.98	158.00
Stone, clay, & glass products	133.41	n/a	98.81	123.81	188.39
Transportation equipment	89.30	n/a	68.36	39.78	164.31
Instruments and related prods.	44.24	62.73	46.91	35.70	77.86
Other	70.38	52.31	91.43	n/a	111.58
Wholesale trade	87.64	134.49	115.24	51.05	103.87
Motor vehicles and equipment	188.15	44.29	292.50	n/a	203.67
Electrical goods	63.74	n/a	n/a	n/a	68.04
Retail trade	29.67	30.29	27.67	n/a	34.91
Finance, except banking	73.10	67.27	108.00	75.21	63.17
Insurance	73.24	125.69	50.00	22.72	24.62
Real estate	1869.65	956.19	3593.75	4738.95	2047.00
Services	64.82	47.14	30.20	35.81	161.03
Other industries	140.02	191.16	79.44	201.17	103.00
Agriculture, forestry, & fish	177.97	n/a	348.57	94.40	94.69
Mining	376.20	373.36	n/a	341.44	n/a
Construction	53.92	36.48	22.22	115.79	62.98
Transportation	111.58	284.12	n/a	69.93	52.05
Communication & public utilities	120.46	n/a	n/a	152.17	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-4
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Average Wage (US\$ Thousands) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	34.29	32.23	34.31	32.04	37.20
Petroleum	42.93	26.06	48.57	33.11	35.00
Manufacturing	39.66	43.30	43.53	34.83	39.13
Food and kindred products	28.45	n/a	28.62	22.82	23.97
Chemicals and allied products	46.56	n/a	50.10	42.58	37.13
Primary and fabricated metals	43.21	38.79	44.08	35.22	48.59
Primary metals	46.11	41.12	37.00	36.73	51.17
Machinery	40.56	45.84	44.27	35.10	37.67
Electrical products	40.44	46.85	48.31	32.85	29.05
Other manufacturing	36.45	36.13	34.55	36.12	37.34
Textile products and apparel	24.14	24.86	22.99	23.85	22.33
Lumber and furniture	29.43	29.17	20.18	35.00	34.00
Paper and allied products	39.63	41.02	43.13	38.98	40.00
Printing and publishing	36.15	37.26	n/a	35.46	n/a
Rubber products	42.33	n/a	n/a	n/a	n/a
Miscellaneous plastics products	31.23	47.14	37.06	28.06	31.43
Stone, clay, & glass products	38.04	n/a	35.45	36.84	39.46
Transportation equipment	38.08	n/a	34.26	34.91	38.17
Instruments and related prods.	35.81	41.82	38.09	35.15	36.43
Other	42.96	29.23	31.43	n/a	29.47
Wholesale trade	37.31	36.96	39.02	34.82	38.57
Motor vehicles and equipment	44.08	21.43	50.33	22.00	48.14
Electrical goods	33.86	42.22	n/a	45.00	30.16
Retail trade	16.38	17.69	16.34	19.13	12.05
Finance, except banking	89.61	41.14	117.00	87.09	84.69
Insurance	40.13	42.93	48.00	42.69	41.54
Real estate	29.50	27.29	32.50	42.11	30.33
Services	23.84	18.71	33.37	22.96	26.90
Other industries	37.85	40.55	40.99	34.35	28.94
Agriculture, forestry, & fish	17.83	n/a	21.43	23.20	10.00
Mining	39.64	46.72	n/a	34.72	41.25
Construction	40.40	37.69	45.26	41.32	29.34
Transportation	41.98	62.49	32.81	31.13	34.59
Communication & public utilities	23.44	n/a	n/a	32.64	50.00

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-5
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Labour Productivity/Average Wage (Ratio) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	7.24	5.33	6.11	5.67	13.65
Petroleum	21.65	38.41	36.13	11.15	1398.29
Manufacturing	4.25	3.59	3.78	3.64	5.81
Food and kindred products	6.85	n/a	9.87	5.52	6.84
Chemicals and allied products	3.53	n/a	3.71	2.83	5.06
Primary and fabricated metals	3.69	5.03	3.16	2.23	3.52
Primary metals	4.25	5.53	5.50	4.65	3.28
Machinery	3.68	3.79	3.02	3.40	5.91
Electrical products	3.38	3.27	2.10	3.10	10.73
Other manufacturing	4.94	4.63	4.78	4.07	7.61
Textile products and apparel	4.19	4.27	3.79	3.49	5.45
Lumber and furniture	5.43	7.89	4.40	3.60	7.47
Paper and allied products	4.75	8.83	4.74	6.57	4.86
Printing and publishing	3.63	2.61	n/a	3.34	n/a
Rubber products	2.89	n/a	n/a	n/a	n/a
Miscellaneous plastics products	8.35	13.40	5.98	6.82	6.41
Stone, clay, & glass products	3.31	n/a	3.45	3.12	3.78
Transportation equipment	9.73	n/a	12.47	3.78	17.95
Instruments and related prods.	5.42	27.65	6.94	3.82	7.81
Other	5.50	5.97	n/a	n/a	7.46
Wholesale trade	20.87	12.21	11.44	19.02	30.74
Motor vehicles and equipment	19.60	8.40	10.86	8.85	28.64
Electrical goods	11.06	59.42	n/a	13.80	11.21
Retail trade	6.76	4.52	9.05	7.44	11.74
Finance, except banking	6.67	n/a	12.60	4.10	7.07
Insurance	12.10	28.86	15.60	9.58	10.85
Real estate	13.18	9.58	16.62	26.40	11.33
Services	3.43	3.34	6.60	3.00	3.60
Other industries	4.48	3.37	4.11	6.04	6.35
Agriculture, forestry, & fish	12.14	n/a	22.60	8.10	13.94
Mining	7.21	7.36	n/a	6.67	7.39
Construction	4.76	3.77	3.27	5.34	7.18
Transportation	3.36	2.26	3.49	6.03	4.04
Communication & public utilities	4.46	n/a	n/a	4.99	54.40

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-6
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Net Income/Sales (Percent) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	-0.42	1.30	0.20	1.27	-0.70
Petroleum	1.94	3.17	-1.75	6.15	-0.17
Manufacturing	0.10	6.65	0.20	2.85	-2.11
Food and kindred products	0.26	7.86	-0.49	0.28	-1.98
Chemicals and allied products	5.70	n/a	2.78	8.80	-2.36
Primary and fabricated metals	1.39	1.23	0.72	7.08	-0.39
Primary metals	1.20	n/a	1.15	1.52	0.13
Machinery	-4.51	1.02	-2.25	-3.07	-1.96
Electrical products	-5.08	1.78	-3.62	-2.70	-2.00
Other manufacturing	-1.45	n/a	-2.07	2.60	-2.81
Textile products and apparel	-2.92	-1.85	0.15	0.54	-8.80
Lumber and furniture	1.64	-1.09	n/a	5.88	1.97
Paper and allied products	1.55	-3.23	-0.61	7.35	7.97
Printing and publishing	-2.20	6.05	n/a	-9.63	n/a
Rubber products	-7.48	n/a	n/a	-1.03	n/a
Miscellaneous plastics products	0.15	0.54	3.45	n/a	n/a
Stone, clay, & glass products	-4.29	0.85	1.38	-1.67	-4.25
Transportation equipment	-2.50	-3.67	-3.11	0.17	-1.13
Instruments and related prods.	-0.68	0.79	-0.28	2.46	-4.39
Other	9.65	0.44	n/a	n/a	-5.03
Wholesale trade	-0.35	-0.19	-0.89	-1.17	n/a
Motor vehicles and equipment	-0.27	3.17	0.43	-0.92	n/a
Electrical goods	-1.57	2.97	-10.45	n/a	-0.20
Retail trade	-1.16	-2.32	0.68	-3.17	0.12
Finance, except banking	-4.58	n/a	7.26	0.98	0.78
Insurance	2.76	0.22	5.12	0.77	4.44
Real estate	-12.17	-13.15	0.23	-14.82	-7.35
Services	-4.63	-6.22	0.37	-4.29	-8.82
Other industries	-2.74	-3.18	1.31	6.88	1.07
Agriculture, forestry, & fish	0.52	n/a	2.51	9.79	n/a
Mining	4.69	-5.20	n/a	7.14	n/a
Construction	-0.43	4.79	0.35	-3.07	-0.31
Transportation	-10.57	-2.15	-1.64	-0.85	-7.22
Communication & public utilities	10.50	n/a	n/a	33.24	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-7
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Investment/Sales (Percent) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	7.13	10.29	5.97	5.76	6.00
Petroleum	8.24	n/a	3.66	11.52	n/a
Manufacturing	7.66	11.91	8.19	6.10	9.21
Food and kindred products	4.61	n/a	2.56	5.97	11.19
Chemicals and allied products	13.05	n/a	9.64	9.53	13.27
Primary and fabricated metals	8.69	9.06	5.86	11.97	12.79
Primary metals	9.51	9.75	4.92	0.00	12.94
Machinery	5.73	3.94	10.58	3.71	6.89
Electrical products	6.19	4.34	15.02	n/a	5.38
Other manufacturing	5.96	5.48	5.39	4.38	8.71
Textile products and apparel	6.03	6.07	5.96	5.89	9.75
Lumber and furniture	6.77	1.27	2.25	n/a	7.48
Paper and allied products	11.26	10.86	14.37	6.42	34.68
Printing and publishing	4.69	7.39	n/a	4.14	n/a
Rubber products	9.88	n/a	n/a	2.41	n/a
Miscellaneous plastics products	5.83	n/a	7.97	3.97	27.38
Stone, clay, & glass products	9.02	n/a	5.26	7.41	15.22
Transportation equipment	3.61	2.26	2.95	3.65	4.47
Instruments and related prods.	3.43	1.42	3.06	2.92	5.27
Other	5.46	3.52	n/a	n/a	20.60
Wholesale trade	2.67	3.62	6.39	1.05	2.89
Motor vehicles and equipment	6.78	2.78	16.03	n/a	5.59
Electrical goods	5.23	n/a	n/a	0.51	6.59
Retail trade	3.33	2.95	2.79	2.83	2.95
Finance, except banking	2.71	n/a	n/a	4.16	2.71
Insurance	3.40	n/a	n/a	0.95	0.68
Real estate	76.21	62.36	48.38	65.67	98.06
Services	16.89	7.05	1.21	6.33	27.22
Other industries	11.32	13.84	5.05	9.79	13.45
Agriculture, forestry, & fish	13.97	13.45	7.08	5.11	14.64
Mining	10.76	13.06	n/a	9.75	n/a
Construction	4.87	2.09	1.90	5.88	10.36
Transportation	12.22	n/a	n/a	n/a	6.75
Communication & public utilities	23.90	n/a	n/a	n/a	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-8
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Exports/Sales (Percent) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	7.80	4.88	6.55	4.20	12.50
Petroleum	2.08	n/a	n/a	n/a	n/a
Manufacturing	8.84	11.26	14.35	8.23	8.02
Food and kindred products	3.31	2.40	0.73	4.39	19.75
Chemicals and allied products	13.49	n/a	20.03	7.69	15.14
Primary and fabricated metals	6.15	n/a	10.90	9.07	2.66
Primary metals	6.35	n/a	n/a	5.41	2.90
Machinery	13.09	7.36	16.92	10.93	12.24
Electrical products	12.45	8.37	n/a	9.71	7.04
Other manufacturing	6.08	2.39	5.93	9.29	4.98
Textile products and apparel	4.65	n/a	4.17	3.97	n/a
Lumber and furniture	12.45	4.53	n/a	5.75	60.63
Paper and allied products	7.71	n/a	16.82	n/a	40.81
Printing and publishing	3.60	n/a	0.62	8.73	n/a
Rubber products	8.68	n/a	n/a	1.38	n/a
Miscellaneous plastics products	2.52	n/a	3.85	1.64	5.67
Stone, clay, & glass products	3.98	3.94	5.91	n/a	7.73
Transportation equipment	3.99	2.02	4.10	14.72	0.71
Instruments and related prods.	9.49	1.89	5.68	10.71	9.54
Other	14.78	n/a	n/a	n/a	18.68
Wholesale trade	15.31	5.72	2.94	2.72	18.47
Motor vehicles and equipment	6.81	n/a	n/a	n/a	8.13
Electrical goods	5.54	n/a	n/a	n/a	3.84
Retail trade	1.41	n/a	n/a	n/a	2.87
Finance, except banking	n/a	n/a	n/a	n/a	n/a
Insurance	n/a	n/a	n/a	n/a	n/a
Real estate	n/a	n/a	n/a	n/a	n/a
Services	1.15	n/a	n/a	0.65	n/a
Other industries	2.61	2.76	5.44	4.63	n/a
Agriculture, forestry, & fish	6.28	n/a	0.74	n/a	n/a
Mining	8.57	4.48	n/a	9.64	n/a
Construction	1.19	n/a	n/a	n/a	n/a
Transportation	n/a	n/a	n/a	n/a	n/a
Communication & public utilities	n/a	n/a	n/a	n/a	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-9
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Imports/Sales (Percent) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	15.46	8.29	16.61	7.00	28.01
Petroleum	13.43	12.11	n/a	n/a	n/a
Manufacturing	12.18	12.07	15.71	7.29	21.10
Food and kindred products	4.93	9.88	3.54	7.10	3.68
Chemicals and allied products	10.57	n/a	14.13	12.63	5.30
Primary and fabricated metals	11.74	23.91	19.59	6.27	7.65
Primary metals	14.59	n/a	17.79	n/a	7.43
Machinery	22.35	11.10	29.54	7.09	32.98
Electrical products	22.42	n/a	45.33	7.47	14.55
Other manufacturing	9.96	n/a	8.48	4.33	21.74
Textile products and apparel	6.39	n/a	13.56	2.22	7.84
Lumber and furniture	5.26	7.79	4.71	1.15	10.63
Paper and allied products	8.77	20.87	20.18	n/a	n/a
Printing and publishing	1.24	1.02	1.67	1.78	1.13
Rubber products	12.13	3.47	n/a	3.10	n/a
Miscellaneous plastics products	7.37	n/a	n/a	0.53	14.18
Stone, clay, & glass products	6.70	3.66	13.68	n/a	10.96
Transportation equipment	18.72	n/a	9.01	7.17	26.48
Instruments and related prods.	7.54	n/a	6.97	7.43	9.97
Other	9.67	n/a	n/a	4.46	28.50
Wholesale trade	33.35	32.70	37.34	13.32	40.48
Motor vehicles and equipment	63.70	n/a	77.51	n/a	61.44
Electrical goods	62.24	13.60	7.42	5.78	73.64
Retail trade	2.32	n/a	n/a	n/a	5.89
Finance, except banking	n/a	n/a	n/a	n/a	n/a
Insurance	n/a	n/a	n/a	n/a	n/a
Real estate	n/a	n/a	n/a	n/a	n/a
Services	0.86	0.52	n/a	0.60	n/a
Other industries	1.46	n/a	0.67	n/a	n/a
Agriculture, forestry, & fish	0.81	n/a	n/a	n/a	n/a
Mining	2.28	n/a	n/a	0.94	n/a
Construction	n/a	n/a	0.50	n/a	n/a
Transportation	n/a	n/a	n/a	n/a	0.59
Communication & public utilities	0.63	n/a	n/a	n/a	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-10
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Intra-Firm Exports/Exports (Ratio) 1990

	All Countries	Canada	Germany	U.K.	Japan
All industries	0.41	0.19	0.29	0.23	0.57
Petroleum	0.43	n/a	n/a	n/a	n/a
Manufacturing	0.25	0.14	0.28	0.22	0.37
Food and kindred products	0.33	0.20	0.50	0.02	0.75
Chemicals and allied products	0.25	n/a	0.26	0.33	0.27
Primary and fabricated metals	0.28	n/a	0.17	0.14	0.32
Primary metals	0.36	n/a	n/a	0.17	0.33
Machinery	0.24	0.40	0.35	0.28	0.31
Electrical products	0.21	0.39	n/a	0.14	0.36
Other manufacturing	0.25	n/a	0.31	0.20	0.40
Textile products and apparel	0.37	n/a	0.61	0.21	n/a
Lumber and furniture	0.17	n/a	n/a	0.11	0.01
Paper and allied products	0.36	n/a	0.13	n/a	0.60
Printing and publishing	0.13	0.91	0.30	0.07	0.50
Rubber products	0.36	n/a	n/a	0.25	n/a
Miscellaneous plastics products	0.37	n/a	0.07	0.06	0.15
Stone, clay, & glass products	0.16	n/a	0.21	n/a	0.40
Transportation equipment	0.18	n/a	0.32	0.06	0.86
Instruments and related prods.	0.19	0.21	0.41	0.24	0.14
Other	0.30	n/a	0.60	n/a	0.25
Wholesale trade	0.53	0.38	0.40	0.23	0.61
Motor vehicles and equipment	0.66	n/a	n/a	1.00	0.70
Electrical goods	0.54	n/a	n/a	n/a	0.71
Retail trade	0.14	0.10	0.50	n/a	0.06
Finance, except banking	0.67	n/a	n/a	n/a	n/a
Insurance	n/a	n/a	n/a	n/a	n/a
Real estate	0.57	n/a	n/a	n/a	n/a
Services	0.21	n/a	n/a	0.50	n/a
Other industries	0.32	n/a	0.15	n/a	n/a
Agriculture, forestry, & fish	0.34	n/a	n/a	n/a	n/a
Mining	0.31	0.95	n/a	0.28	n/a
Construction	0.30	n/a	n/a	n/a	n/a
Transportation	n/a	n/a	n/a	n/a	n/a
Communication & public utilities	n/a	n/a	n/a	n/a	n/a

* Intra-firm exports include exports to the parent company but excludes exports to other foreign affiliates of the parent.
Source: Estimates based on data from the U.S. Department of Commerce.

Table A4-11
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Intra-Firm Imports/Imports* (Ratio) 1990

	All Countries	Canada	Germany	U.K.	Japan
	0.75	0.70	0.83	0.52	0.83
				All industries	
Petroleum	0.60	0.41	n/a		n/a
Manufacturing	0.70	0.59	0.73	0.62	0.91
Food and kindred products	0.55	0.62	0.97	0.38	0.91
Chemicals and allied products	0.66	n/a	0.86	0.81	0.63
Primary and fabricated metals	0.54	0.96	0.38	0.27	0.26
Primary metals	0.57	n/a	0.66	n/a	0.14
Machinery	0.75	0.93	0.71	0.74	0.99
Electrical products	0.64	n/a	0.67	0.67	0.89
Other manufacturing	0.77	n/a	0.69	0.48	0.92
Textile products and apparel	0.50	n/a	0.54	0.49	0.96
Lumber and furniture	0.61	0.72	0.17	0.44	1.00
Paper and allied products	0.58	0.65	0.76	n/a	n/a
Printing and publishing	0.37	0.20	0.41	0.55	0.13
Rubber products	0.81	1.00	n/a	1.00	n/a
Miscellaneous plastics products	0.92	n/a	n/a	0.36	0.94
Stone, clay, & glass products	0.44	0.92	0.85	n/a	0.93
Transportation equipment	0.91	n/a	0.80	0.52	0.99
Instruments and related products	0.76	n/a	0.72	0.81	0.62
Other	0.31	n/a	0.67	0.14	n/a
Wholesale trade	0.80	0.91	0.91	0.60	0.82
Motor vehicles and equipment	0.85	n/a	0.98	n/a	0.79
Electrical goods	0.97	0.96	0.67	0.92	0.99
Retail trade	0.30	n/a	n/a	n/a	0.42
Finance, except banking	1.00	n/a	n/a	n/a	n/a
Insurance	n/a	n/a	n/a	n/a	n/a
Real estate	n/a	n/a	n/a	n/a	n/a
Services	0.61	0.80	0.60	0.55	0.06
Other industries	0.71	n/a	n/a	n/a	0.43
Agriculture, forestry, & fish	0.76	n/a	1.00	1.00	n/a
Mining	0.83	n/a	1.00	n/a	n/a
Construction	n/a	0.50	n/a	n/a	1.00
Transportation	n/a	n/a	n/a	1.00	0.30
Communication & public utilities	0.98	n/a	n/a	n/a	n/a

* Intra-firm imports includes imports from the parent, but excludes imports from other foreign affiliates of the parent company.
Source: Estimates based on data from the U.S. Department of Commerce.

APPENDIX 5

Table A5-1
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Sales/Employment Ratio (US\$ Thousands) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	202.76	122.25	121.37	220.46	730.60
Mining	134.19	149.69	n/a	124.49	n/a
Petroleum	551.74	210.23	n/a	n/a	22640.24
Manufacturing	88.84	102.68	80.26	79.67	110.19
Food and kindred products	99.34	135.42	95.55	82.72	92.57
Chemicals and allied products	99.39	234.43	84.43	105.43	146.20
Primary and fabricated metals	114.38	146.27	107.68	73.66	n/a
Primary metals	134.29	164.95	144.72	213.78	n/a
Machinery	72.80	83.66	74.17	62.87	98.69
Electric equipment	69.43	n/a	12.40	57.61	95.25
Other manufacturing	80.47	83.33	66.60	70.65	n/a
Textile products and apparel	52.16	76.27	62.83	43.06	66.94
Lumber and furniture	78.30	90.01	54.30	n/a	n/a
Paper and allied products	101.58	n/a	n/a	n/a	n/a
Printing and publishing	69.56	64.07	84.48	64.19	n/a
Rubber and plastics products	69.74	49.01	72.57	85.02	68.64
Stone, clay & glass products	89.98	124.82	74.94	56.14	n/a
Transportation equipment	98.13	73.59	n/a	61.73	n/a
Instruments & related products	62.22	n/a	56.03	n/a	84.68
Other	63.61	n/a	n/a	64.49	n/a
Wholesale trade	910.05	372.56	422.07	1405.03	1370.65
Motor vehicles and equipment	774.42	n/a	464.19	145.74	2118.92
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	77.16	63.58	n/a	n/a	51.28
Finance, except banking	191.81	n/a	216.42	80.55	n/a
Insurance	227.87	369.72	312.50	175.50	n/a
Real estate	199.16	165.87	922.28	266.60	254.76
Other industries	61.86	n/a	n/a	n/a	n/a
Agriculture	70.82	n/a	42.55	61.29	47.01
Forestry and fishing	342.11	n/a	n/a	n/a	n/a
Construction	107.21	111.62	81.40	n/a	251.26
Transportation	58.67	n/a	40.96	66.57	33.54
Communication & public utilities	61.63	75.10	n/a	n/a	n/a
Services	39.07	31.89	45.28	52.88	47.26

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-2
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Sales/Assets (Ratio) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	1.42	0.74	1.46	1.67	3.05
Mining	0.50	0.53	n/a	0.90	n/a
Petroleum	1.27	0.72	n/a	n/a	4.15
Manufacturing	1.20	1.17	1.08	1.22	1.03
Food and kindred products	1.46	1.00	1.07	1.79	1.28
Chemicals and allied products	1.08	1.84	1.10	0.91	1.00
Primary and fabricated metals	1.26	1.58	1.18	1.06	0.89
Primary metals	1.33	1.64	1.51	2.37	n/a
Machinery	1.20	1.07	0.97	1.16	1.34
Electric equipment	1.22	n/a	0.14	0.94	1.70
Other manufacturing	1.22	1.10	1.07	1.41	0.84
Textile products and apparel	1.48	1.44	1.28	1.59	1.74
Lumber and furniture	1.30	n/a	1.00	n/a	n/a
Paper and allied products	1.10	n/a	1.09	n/a	n/a
Printing and publishing	1.23	1.27	1.00	1.48	n/a
Rubber and plastics products	1.31	1.07	1.36	1.40	1.16
Stone, clay & glass products	0.94	0.81	0.67	1.10	n/a
Transportation equipment	1.47	n/a	1.13	1.43	n/a
Instruments & related products	1.20	n/a	1.05	n/a	0.96
Other	1.26	n/a	1.42	n/a	n/a
Wholesale trade	3.94	2.78	2.58	9.70	4.01
Motor vehicles and equipment	3.23	n/a	2.63	1.51	1.00
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	2.44	2.95	n/a	n/a	1.18
Finance, except banking	0.15	0.17	0.12	0.10	n/a
Insurance	0.40	0.31	0.31	0.49	n/a
Real estate	0.20	0.29	0.15	0.14	0.16
Other industries	0.98	0.71	1.62	n/a	n/a
Agriculture	0.41	n/a	0.16	0.57	0.50
Forestry and fishing	0.26	0.67	n/a	0.08	n/a
Construction	1.77	0.88	2.74	2.68	0.93
Transportation	0.96	n/a	1.14	n/a	n/a
Communication & public utilities	0.57	0.45	n/a	n/a	n/a
Services	0.77	0.80	0.79	0.87	0.87

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-3
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Capital Stock/Employment (\$US Thousands) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	62.85	79.79	38.86	57.49	45.87
Mining	195.63	225.25	n/a	105.26	n/a
Petroleum	376.19	275.84	123.25	n/a	60.98
Manufacturing	42.35	48.06	43.79	37.32	66.94
Food and kindred products	35.41	89.32	42.57	18.80	40.49
Chemicals and allied products	64.76	76.14	55.28	87.76	104.37
Primary and fabricated metals	54.23	59.64	38.60	29.55	n/a
Primary metals	65.62	67.40	49.90	50.90	n/a
Machinery	22.77	26.13	25.50	18.45	32.30
Electric equipment	21.88	n/a	22.16	17.08	20.09
Other manufacturing	38.33	47.32	28.48	32.75	n/a
Textile products and apparel	20.33	21.07	24.73	22.00	17.55
Lumber and furniture	25.54	61.88	20.04	n/a	n/a
Paper and allied products	85.88	n/a	n/a	n/a	n/a
Printing and publishing	26.07	24.81	37.32	12.63	n/a
Rubber and plastics products	32.10	17.01	33.94	38.15	36.34
Stone, clay & glass products	67.38	99.98	78.62	34.13	n/a
Transportation equipment	25.63	24.53	n/a	12.35	n/a
Instruments & related products	14.29	n/a	18.34	n/a	23.30
Other	21.28	n/a	n/a	n/a	n/a
Wholesale trade	33.23	34.60	34.03	22.85	25.94
Motor vehicles and equipment	48.28	n/a	n/a	26.89	36.04
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	17.09	16.14	n/a	n/a	21.05
Finance, except banking	23.60	n/a	11.19	6.88	n/a
Insurance	18.86	60.47	26.79	9.60	n/a
Real estate	850.82	463.11	5466.32	1642.31	1119.05
Other industries	39.74	n/a	n/a	22.16	0.00
Agriculture	133.19	n/a	243.16	62.34	81.20
Forestry and fishing	1131.58	n/a	n/a	n/a	n/a
Construction	23.43	96.92	8.84	n/a	n/a
Transportation	47.12	70.63	3.80	n/a	9.58
Communication & public utilities	67.27	117.28	n/a	n/a	n/a
Services	32.95	26.85	11.61	22.89	44.27

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-5
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Labour Productivity/Average Wage (Ratio) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	10.30	5.91	6.48	12.38	39.35
Mining	4.81	5.03	n/a	5.13	n/a
Petroleum	20.21	10.87	n/a	n/a	742.60
Manufacturing	4.30	4.70	4.14	4.31	5.72
Food and kindred products	6.13	5.74	5.61	5.74	6.69
Chemicals and allied products	4.68	11.29	4.53	4.45	6.35
Primary and fabricated metals	4.95	5.86	5.26	3.55	n/a
Primary metals	5.41	6.27	6.21	8.81	n/a
Machinery	3.53	3.95	3.67	3.25	5.00
Electric equipment	3.66	n/a	0.76	4.02	n/a
Other manufacturing	3.82	4.01	3.26	4.20	n/a
Textile products and apparel	3.91	6.47	4.43	3.28	4.56
Lumber and furniture	5.40	5.82	5.60	n/a	n/a
Paper and allied products	4.48	n/a	n/a	n/a	n/a
Printing and publishing	3.55	3.14	4.66	3.78	n/a
Rubber and plastics products	3.92	3.57	4.15	4.14	6.38
Stone, clay & glass products	3.94	4.32	n/a	3.35	n/a
Transportation equipment	3.48	5.10	n/a	5.00	n/a
Instruments & related products	3.75	n/a	3.46	n/a	4.11
Other	3.61	n/a	n/a	4.05	n/a
Wholesale trade	42.88	19.48	18.98	73.23	66.45
Motor vehicles and equipment	33.82	n/a	18.69	8.45	98.42
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	6.27	5.82	n/a	n/a	6.13
Finance, except banking	5.63	n/a	5.80	5.07	n/a
Insurance	12.29	23.89	16.55	9.09	n/a
Real estate	10.60	7.91	59.33	14.05	21.40
Other industries	3.57	n/a	n/a	n/a	n/a
Agriculture	4.93	n/a	4.20	4.18	5.50
Forestry and fishing	26.00	n/a	n/a	n/a	n/a
Construction	4.88	5.79	4.49	n/a	10.00
Transportation	2.73	n/a	2.49	n/a	n/a
Communication & public utilities	3.64	6.08	n/a	n/a	n/a
Services	2.87	2.44	n/a	3.34	3.48

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-6
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Net Income/Sales (Percent) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	2.12	3.01	0.43	3.35	0.87
Mining	11.57	23.35	n/a	4.07	n/a
Petroleum	7.80	4.79	n/a	0.00	0.16
Manufacturing	1.04	1.31	1.21	1.67	3.38
Food and kindred products	1.81	6.28	-6.93	1.61	n/a
Chemicals and allied products	1.07	3.64	2.55	-0.06	n/a
Primary and fabricated metals	2.70	1.87	2.10	5.85	n/a
Primary metals	2.48	1.41	0.66	2.20	n/a
Machinery	0.71	-4.74	-1.31	1.56	2.58
Electric equipment	1.80	n/a	2.42	0.61	0.29
Other manufacturing	0.02	3.11	-1.30	2.86	0.00
Textile products and apparel	0.40	3.62	n/a	1.64	-3.66
Lumber and furniture	1.29	0.78	5.36	n/a	n/a
Paper and allied products	4.19	n/a	-2.08	n/a	n/a
Printing and publishing	2.73	0.00	-4.29	-0.47	n/a
Rubber and plastics products	-1.60	-0.52	-0.20	-1.01	-3.92
Stone, clay & glass products	1.15	0.22	3.27	1.14	n/a
Transportation equipment	-3.91	1.96	-2.11	-10.00	n/a
Instruments & related products	-2.59	n/a	-4.29	n/a	-2.65
Other	1.74	n/a	2.33	n/a	n/a
Wholesale trade	0.61	1.80	-0.47	0.13	0.71
Motor vehicles and equipment	0.72	n/a	-0.06	-4.33	1.67
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	1.18	1.32	n/a	n/a	-0.53
Finance, except banking	7.97	5.60	-12.07	4.07	n/a
Insurance	7.01	1.84	10.33	7.07	n/a
Real estate	1.42	2.84	7.87	3.56	13.08
Other industries	0.56	2.02	-1.37	n/a	n/a
Agriculture	-3.43	n/a	-30.95	9.40	9.09
Forestry and fishing	19.23	16.67	n/a	n/a	n/a
Construction	-0.35	2.88	-0.91	-2.02	4.00
Transportation	2.93	n/a	5.15	2.08	5.19
Communication & public utilities	-11.97	-13.70	n/a	n/a	n/a
Services	1.59	0.61	-0.85	3.08	-0.61

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-7
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Investment/Sales (Percent) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	6.24	18.13	6.53	3.76	1.72
Mining	16.74	15.98	n/a	8.13	n/a
Petroleum	9.64	36.52	n/a	n/a	0.08
Manufacturing	8.12	8.97	10.55	7.29	12.93
Food and kindred products	5.70	10.59	9.90	3.01	9.23
Chemicals and allied products	10.56	5.41	12.85	13.43	13.12
Primary and fabricated metals	6.27	6.07	4.19	4.28	n/a
Primary metals	6.57	6.12	3.78	1.83	n/a
Machinery	6.89	7.35	7.83	5.61	n/a
Electric equipment	8.38	n/a	44.93	8.40	n/a
Other manufacturing	8.54	12.04	8.02	7.02	n/a
Textile products and apparel	5.91	n/a	8.39	4.20	6.71
Lumber and furniture	10.63	n/a	7.74	n/a	n/a
Paper and allied products	17.57	n/a	n/a	n/a	n/a
Printing and publishing	5.67	4.62	8.28	5.15	n/a
Rubber and plastics products	8.80	2.59	9.31	6.04	39.22
Stone, clay & glass products	12.66	n/a	n/a	21.59	n/a
Transportation equipment	3.90	n/a	6.15	10.00	n/a
Instruments & related products	4.93	n/a	6.55	n/a	3.17
Other	4.79	n/a	7.75	n/a	n/a
Wholesale trade	0.89	1.54	1.91	0.39	0.55
Motor vehicles and equipment	1.60	n/a	2.10	8.02	0.53
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	3.51	4.38	n/a	n/a	14.21
Finance, except banking	5.34	n/a	1.72	2.85	n/a
Insurance	1.66	n/a	2.53	1.09	n/a
Real estate	180.55	138.45	184.27	155.16	254.21
Other industries	14.96	26.27	7.49	n/a	n/a
Agriculture	47.91	n/a	140.48	19.66	n/a
Forestry and fishing	207.69	n/a	n/a	800.00	n/a
Construction	6.56	24.28	2.45	n/a	2.00
Transportation	14.13	n/a	3.09	n/a	n/a
Communication & public utilities	43.66	n/a	n/a	n/a	n/a
Services	17.71	24.62	14.53	10.53	5.91

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-8
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Exports/Sales (Percent) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	12.66	5.05	7.30	3.39	22.72
Mining	23.91	n/a	n/a	n/a	n/a
Petroleum	1.78	n/a	n/a	n/a	n/a
Manufacturing	9.22	6.37	7.92	9.12	19.07
Food and kindred products	5.16	5.82	13.86	2.53	42.64
Chemicals and allied products	7.56	3.25	5.57	11.85	22.83
Primary and fabricated metals	8.20	4.41	3.21	8.40	n/a
Primary metals	29.62	22.98	68.14	190.84	4.22
Machinery	4.05	2.61	0.71	0.16	n/a
Electric equipment	18.74	n/a	198.07	29.25	n/a
Other manufacturing	6.00	n/a	5.08	2.17	1.47
Textile products and apparel	4.03	1.64	1.94	6.02	2.44
Lumber and furniture	18.97	n/a	31.55	n/a	n/a
Paper and allied products	10.22	n/a	8.33	n/a	n/a
Printing and publishing	2.73	n/a	n/a	1.41	n/a
Rubber and plastics products	3.51	1.04	4.25	3.62	3.92
Stone, clay & glass products	1.46	0.29	n/a	1.14	n/a
Transportation equipment	18.18	n/a	15.16	n/a	n/a
Instruments & related products	9.30	n/a	9.93	n/a	n/a
Other	11.54	n/a	n/a	n/a	n/a
Wholesale trade	20.60	7.91	12.27	2.38	24.35
Motor vehicles and equipment	7.59	n/a	n/a	0.25	n/a
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	1.92	n/a	n/a	n/a	1.58
Finance, except banking	n/a	n/a	n/a	n/a	n/a
Insurance	n/a	n/a	n/a	n/a	n/a
Real estate	n/a	n/a	n/a	n/a	n/a
Other industries	n/a	n/a	1.78	n/a	n/a
Agriculture	7.31	n/a	n/a	13.68	n/a
Forestry and fishing	n/a	n/a	n/a	n/a	n/a
Construction	0.93	n/a	n/a	0.50	n/a
Transportation	0.10	n/a	n/a	4.17	n/a
Communication & public utilities	0.70	n/a	n/a	n/a	n/a
Services	1.05	n/a	2.56	1.13	n/a

Source: Estimates based on data from the U.S. Department of Commerce.

Table A5-9
Relative Performance of U.S. Affiliates of Canadian-Based MNEs
Imports/Sales (Percent) 1980

	All Countries	Canada	Germany	U.K.	Japan
All industries	18.38	15.66	16.48	9.00	32.84
Mining	0.83	n/a	n/a	n/a	n/a
Petroleum	18.89	n/a	n/a	n/a	0.78
Manufacturing	10.61	17.91	8.71	8.18	16.09
Food and kindred products	7.96	n/a	1.98	6.36	1.32
Chemicals and allied products	6.18	n/a	6.28	4.62	n/a
Primary and fabricated metals	14.51	25.20	9.83	n/a	7.96
Primary metals	16.54	n/a	16.91	n/a	n/a
Machinery	16.49	26.54	21.00	7.74	36.39
Electric equipment	16.81	n/a	n/a	4.86	n/a
Other manufacturing	9.86	7.06	7.45	n/a	n/a
Textile products and apparel	5.44	0.99	22.58	3.10	n/a
Lumber and furniture	14.08	11.72	1.19	n/a	n/a
Paper and allied products	12.25	n/a	n/a	n/a	n/a
Printing and publishing	3.01	n/a	4.91	7.03	n/a
Rubber and plastics products	7.75	6.74	n/a	n/a	11.76
Stone, clay & glass products	2.75	3.09	6.54	1.99	n/a
Transportation equipment	14.54	n/a	4.41	20.00	n/a
Instruments & related products	17.92	n/a	12.42	n/a	11.64
Other	13.35	n/a	10.85	14.73	n/a
Wholesale trade	27.33	38.24	40.44	7.50	35.85
Motor vehicles and equipment	54.19	n/a	57.27	46.69	51.75
Electrical goods	n/a	n/a	n/a	n/a	n/a
Retail trade	2.59	n/a	n/a	n/a	25.79
Finance, except banking	0.21	n/a	n/a	n/a	n/a
Insurance	n/a	n/a	n/a	n/a	n/a
Real estate	n/a	n/a	n/a	n/a	n/a
Other industries	1.26	2.57	0.48	n/a	n/a
Agriculture	1.64	n/a	4.76	0.85	n/a
Forestry and fishing	n/a	n/a	n/a	n/a	n/a
Construction	0.91	n/a	0.14	0.13	n/a
Transportation	n/a	n/a	1.03	2.08	1.73
Communication & public utilities	n/a	n/a	n/a	n/a	n/a
Services	1.14	n/a	1.71	n/a	2.44

Source: Estimates based on data from the U.S. Department of Commerce.

APPENDIX 6

Performance of Outwardly-Oriented and Domestically-Oriented Canadian Firms

	Aircraft & Parts	0	3		22.00		34.36		
	Light Machinery	1	2	(2.70)	16.55	(2.87)	20.95	(3.94)	
Technology Intensive Manufacturing		10	24	4.24	12.22	2.96	14.88	(1.16)	3.58
Transportation		10	5	12.76	(1.04)	6.47	5.03	4.25	(0.17)
Communications		17	4	7.93	8.26	10.01	15.82	(1.04)	2.84
Utilities		19	1	4.46		6.18		1.41	
	Wholesale Trade	22	6	3.19	7.13	7.39	7.73	0.45	(9.93)
	Retail Trade	14	7	3.71	4.79	2.62	6.02	(0.52)	(1.89)
Trade		36	13	3.33	5.69	6.14	6.86	0.38	(4.42)
	Depository Institutions	9	4		14.24		13.17		
	Non-Depository Institutions	3	0	23.95		21.19		5.79	
	Securities & Brokers	2	0	23.37		21.51			
	Insurance	11	1	11.01		14.25		2.49	
	Other Financial Services	19	7	2.09	61.35	5.47	53.23	4.94	
Finance		44	12	11.97	33.13	14.93	28.73	3.76	
	Commercial Services	3	8	23.55	18.00	13.70	13.34		4.66
	Health Services	2	1	21.38	(0.37)	33.51	(11.74)	9.15	1.24
	Other Services	1	3		12.40	29.62	15.78		2.13
Services		6	12	22.35	12.70	28.68	8.14	9.15	2.14
Average		238	147	7.03	8.96	10.63	14.93	2.73	0.73

Source: Estimates based on data from Disclosure Inc.

Industry Grouping	Industry	No. of Firms 1991		R&D as a % of Sales 1991		Return on Assets 1986-1991	
	Non-Depository Institutions	3	0			0.95	
	Securities & Brokers	2	0			7.95	
	Insurance	11	1			1.19	
	Other Financial Services	19	7			6.71	7.22
Finance		44	12			1.26	2.35
	Commercial Services	3	8	8.42	2.50	5.70	1.98
	Health Services	2	1	0.59		9.89	0.32
	Other Services	1	3			15.41	5.09
Services		6	12	1.48	2.50	10.87	2.39
Average		238	147	0.63	4.12	2.93	4.88

Source: Estimates based on data from Disclosure Inc.

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