

Canada's Foreign Investment Review Agency and United States direct investment in Canada

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Canada's Foreign Investment Review Agency became world renowned in the 1970s as a symbol of the country's unease with an unsurpassed level of penetration by incoming foreign direct investment. Although serious observers have suggested quite divergent hypotheses about the Agency's effect on incoming investment, no previous study has attempted to determine its impact using actual data. This research looks at investment from the dominant home country, the United States, and finds only weak evidence of a deterrent effect.

The screening of incoming foreign direct investment (FDI) during the 1970s and early 1980s became the best-known element of Canada's foreign economic policy. The requirement of significant benefit to Canada, spelled out in the Foreign Investment Review Act of 1973 and embodied in the Foreign Investment Review Agency (FIRA) founded in 1974, followed a long period during which Canada hosted the largest volume of FDI relative to its total domestic capital formation compared with that of any major industrialized country (Globerman, 1983, p. 188). In 1984, the name of the agency was changed to Investment Canada; the enabling legislation allowed much more investment to proceed without screening, and Investment Canada began to focus more on the promotion of inward FDI than on conditions for entry.

Some may regard the subject of FDI screening as *démodé*. Canada's change of policy typified a global shift towards FDI openness that still continues. Nonetheless, a long-time advocate of FDI openness, the United States, experienced a substantial upsurge in inward investment during the

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1980s that generated demands for federal investment screening (Kudrle, 1991). This onrush of inward FDI slowed markedly in the early 1990s, but then accelerated again.

Two lines of argument suggest reasons for continuing concern about United States policy towards inward FDI, which, if it were to become more restrictive, could trigger a movement towards parallel policies elsewhere. First, although federal screening mandated by the Exon-Florio amendment of 1988 (administered by the inter-agency Committee on Foreign Investment in the United States and ultimately decided by the President) was confined to “national security” considerations, the original legislation included the term “economic security”. A substantial part of the United States Congress continues to believe either that free access for inward FDI drains United States competitive advantage, or that such access should be conditioned on even greater openness abroad (Graham and Krugman, 1995). Restrictive initiatives abound, despite previous United States international bargaining positions and commitments (Warner and Rugman, 1994).

A second reason for concern stems from the lack of definition of “national security” in the present legislation. Economic nationalism plays an important role in the newest ranks of the Republican party—it has always resonated with labour-oriented Democrats—and it provides an ideological pillar for the followers of Ross Perot. A President attempting to woo economic nationalists could interpret the present legislation far more restrictively than has been done hitherto (Rugman, 1995). The current United States process appears to involve *de facto* performance requirements arrived at through confidential negotiations, somewhat similar to the operation of FIRA. Thus, here as in other fields, the United States may learn from the Canadian experience.

Although Steven Gliberman produced an account of the operation of FIRA in 1984, no published research has explored how its operations have affected the volume of FDI into the Canadian economy, an issue of great importance in its own right that also has implications for other host countries.¹ This article attempts to answer one major question: did FIRA lower the volume of FDI into Canada from the dominant source country, the United States?

¹ Gliberman performed an unpublished statistical analysis in 1978 with only a few years of post-FIRA inward FDI data (private communication with Gliberman).

Foreign direct investment in Canada

Canadian public opinion polling showed a secular swing towards greater skepticism about inward FDI during the 1960s (Rugman, 1980, p. 127), following the Gordon Commission's 1957 warnings of possible foreign domination and Finance Minister Walter Gordon's proposed restrictions on FDI in his 1963 budget; but no action was taken for several years. Then, three major studies criticizing inward FDI came in rapid succession. The Watkins (1968), Wahn (1970), and Gray (1972) reports all questioned *inter alia* the volume of FDI in Canada, and the Gray Report recommended explicitly a screening agency. Enabling legislation was passed in 1973; FIRA began reviewing acquisitions of Canadian firms in 1974 and new business cases late in 1975.

All acquisitions and the establishment of new businesses in Canada by foreign-controlled entities had to be reviewed by FIRA except when the acquiring firm had very modest assets and revenues² and the new business was related to a previously owned business in Canada. The Foreign Investment Review Agency advised the Cabinet Minister on the most appropriate portfolio for a given investment, and then the case was decided at the Cabinet level, taking into account the views of influential lobbies in the affected provinces. While the meaning of "benefit to Canada" was spelled out in a list of five broadly phrased criteria,³ the relative weights to be attached to each of the criteria were never clarified by the Cabinet, and the entire process took place in considerable secrecy with no procedure for appeal (Beckman, 1984, pp. 21-27; Safarian, 1993, pp. 126-137).

Hypothesizing FIRA's effect

The extensive commentary on FIRA suggests differing hypotheses about its impact:

- First, the reputation for a "bad investment climate" that the international publicity surrounding FIRA generated (see, for example, Erdilik,

² Initially, gross assets of Canadian \$250,000 and gross revenues of Canadian \$3 m.; after 1982, Canadian \$5m. in gross assets and 200 employees—with much higher floors for a *change* in foreign parent firms.

³ The criteria were: (i) level and nature of economic activity and the probable effect on measures such as employment and trade, (ii) Canadian participation in the investing firm or the industry in which the investment was made, (iii) effect on productivity, efficiency, technical innovation and product variety, (iv) effect on competition, and (v) the compatibility of the investment with the overall provincial and national economic goals (Safarian, 1993, p. 128).

1986) could have caused new investors to be wary of venturing into Canada and might have driven established investors elsewhere for expanding their overseas activity independently of the direct effects of the screening process on specific firms (Globerman, 1983, pp. 83-85).

- Second, the screening of acquisitions and new businesses could have directly reduced the inflow of FDI because each substantial initiative was scrutinized by Canadian officials who typically asked for specific, legally binding commitments from the would-be investors. As a leading analyst of Canadian FDI put it: “Undertakings or guarantees of the kind required by the FIRA were disincentives to investment from the firm’s viewpoint, since they were intended to reduce its overall rate of return” (Safarian, 1993, p. 147). While this would affect investment only at the margin, the cumulative effect on FDI inflow could have been significant (for a discussion implying that FIRA did have that effect, see Hufbauer and Samet, 1982, p. 123).
- Third, some voices from the earliest days of FIRA stressed the disjuncture between what the agency might do and the way its work was actually conducted. Alan Rugman (1980, pp. 137-140) pointed out that the approval rates were high and that FIRA was not likely to reduce the volume of incoming FDI significantly. Instead, it would encourage foreign investors to make their proposals more attractive to the Canadian officials with whom they dealt—frequently by assuring increased employment through import substitution or export expansion, presumably while maintaining satisfactory profits (for a similar argument, see McCulloch and Owen, 1983, pp. 339-341). One formulation of this hypothesis would be that FIRA may have changed the quality of incoming FDI into Canada without affecting significantly its quantity.

Because this study is confined to aggregate data, nothing can be done to explore directly the quality of inward FDI in Canada.⁴ Moreover, available data do not permit a distinction between the possible impact of discrete FIRA decisions on the inflow of FDI and a more general “chilling effect.” Finally, concerns for data quality dictate a focus on FDI from the United States only, which accounted for a declining share of the total FDI: from 80 per cent to 76 per cent over the period of FIRA’s operation. Thus, the only hypothesis tested here directly is simply that FIRA reduced the flow of United States FDI into Canada. A significant deterrent effect is not found easily or consistently.

⁴ Political pressures surrounding the process might have led to commitments by investors that damaged the Canadian economy rather than strengthening it.

FDI to Canada: a look at the data

The Foreign Investment Review Agency is portrayed frequently as a policy response to a uniquely intolerable situation. But when attention is confined to the book value of inward FDI stock, this impression seems at variance with the facts. The high watermark of the ratio of FDI inward stock relative to Canadian GDP was reached much earlier in the century (table 1).

Table 1. Book value of FDI in Canada, even years 1948-1988 and selected earlier years

(Millions of current Canadian dollars)

Year	1 GDP	2 Total FDI	3 2/1 x 100	United States		United States	
				4 FDI in Canada	5 4/1 x 100	6 FDI in Canada	7 6/1 x 100
1926	5,354	1,782	33.3	1,403	26.2	818	15.3
1930	6,009	2,427	40.4	1,993	33.2	932	15.5
1933	3,723	2,352	63.2	1,933	51.9	976	26.2
1939	5,880	2,414	41.1	1,999	34.0	1,082	18.4
1945	12,063	2,831	23.5	2,422	20.1	1,291	10.7
1948	15,969	3,399	21.3	2,936	18.4	1,840	11.5
1950	19,125	4,098	21.4	3,549	18.6	2,125	11.1
1952	25,170	5,358	21.3	4,661	18.5	2,720	10.8
1954	26,531	6,960	26.2	5,969	22.5	2,779	10.5
1956	32,902	9,314	28.3	7,798	23.7	3,515	10.7
1958	35,689	11,371	31.9	9,504	26.6	4,167	11.7
1960	39,448	13,583	34.4	11,210	28.4	4,853	12.3
1962	44,408	15,380	34.6	12,661	28.5	5,266	11.9
1964	52,191	16,473	31.6	13,308	25.5	5,743	11.0
1966	64,388	19,550	30.4	15,942	24.8	7,053	11.0
1968	75,418	23,234	30.8	18,975	25.2	8,323	11.0
1970	89,116	27,374	30.7	22,054	24.7	9,660	10.8
1972	108,629	30,563	28.1	24,304	22.4	10,550	9.7
1974	152,111	37,557	24.7	29,870	19.6	12,987	8.5
1976	197,924	41,623	21.0	32,726	16.5	15,218	7.7
1978	241,604	50,089	20.7	39,352	16.3	18,305	7.6
1980	309,891	64,708	20.9	50,368	16.3	22,320	7.2
1982	374,442	72,814	19.4	54,457	14.5	24,104	6.4
1984	444,735	83,385	18.7	63,355	14.2	27,930	6.3
1986	505,666	92,401	18.3	67,025	13.3	33,330	6.6
1988	605,906	110,545	18.2	73,710	12.2	35,419	5.8

Source: Statistics Canada (1995).

By this measure FDI stocks as a percentage of GNP actually peaked during the depths of the Great Depression when the numerator—the book value of inward FDI—held relatively firm while the denominator collapsed. According to these data, even the pre-Depression 1926 FDI-to-GNP ratio (in 1926) nearly reached the post-war high experienced in the early 1960s.

Looking only at United States investments, the 1926 ratio for United States manufacturing FDI stocks into Canada was never exceeded in the post-war period, and the 1926 total United States investment ratio was exceeded only very briefly in the late 1950s and early 1960s. The post-war ratios look even more modest by comparison with ratios of 1939, when the Canadian economy was still recovering from an economic depression.

The stock of inward FDI is, of course, not the only measure of foreign penetration of the Canadian economy. Other measures about which Canadians have expressed concern over the years are “ownership” and “control” indicators (table 2). The first indicator refers to the total foreign ownership of long-term capital (regardless of the percentage ownership of individual enterprises), while the second indicator measures the total assets of firms that are controlled effectively by foreigners.⁵ Most of the political concern appears to have focused on either inward FDI or control, and, as table 2 reveals, the inward FDI figures provide a good proxy for the other measures.

If inward FDI stocks gave a true picture of the foreign investment position of Canada, it might appear that Canada began acting long after the years of maximum foreign penetration and when the importance of FDI relative to national product was already dropping noticeably. But there is good reason to doubt that the figures are even approximately accurate. Book values are well known to underestimate the real value of capital in inflationary periods. Thus, an appropriate comparison of capital stock to national product must allow for changing price levels.

This article employs a variant of the method employed by Robert Eisner and Paul Pieper (1990) in their comprehensive study of the United States international investment position. An initial book value (in this case, 1950) is used as a baseline, and then net real investment in each succeeding year is added to it—reported book values from official data are not employed

⁵ The assignment rules are complex when a 50 per cent foreign ownership threshold is not met (Investment Canada, 1992, pp. 32-33).

**Table 2. Book value of FDI, foreign ownership and foreign control in Canada,
even years 1948-1988 and selected earlier years**

(Millions of current Canadian dollars)

Year	1	2	3	4	5	6	7	8	9
	FDI	United States FDI	2/1 x 100	Foreign ownership	United States ownership	Foreign control	United States control	4/1 x 100	6/1 x 100
1926	1,782	1,403	78.7	3,900	2,000	1,800	1,500	218.9	101.0
1930	2,427	1,993	82.1	5,000	3,000	2,500	2,200	206.0	103.0
1933	2,352	1,933	82.2	—	—	—	—	—	—
1939	2,414	1,999	82.8	4,500	2,600	2,500	2,200	186.4	103.6
1945	2,831	2,422	85.6	—	—	—	—	—	—
1948	3,399	2,936	86.4	5,100	3,700	3,900	3,500	150.0	114.7
1950	4,098	3,549	86.6	—	—	—	—	—	—
1952	5,358	4,661	87.0	7,400	5,600	6,200	5,400	138.1	115.7
1954	6,960	5,969	85.8	9,022	7,008	7,992	6,916	129.6	114.8
1956	9,314	7,798	83.7	11,457	8,694	10,468	8,804	123.0	112.4
1958	11,371	9,504	83.6	13,779	10,666	13,054	10,692	121.2	114.8
1960	13,583	11,210	82.5	15,661	12,104	15,204	12,028	115.3	111.9
1962	15,380	12,661	82.3	17,358	13,645	16,719	13,249	112.9	108.7
1964	16,473	13,308	80.8	19,553	15,767	18,914	14,962	118.7	114.8
1966	19,550	15,942	81.5	23,382	19,257	22,640	17,962	119.6	115.8
1968	23,234	18,975	81.7	27,383	22,743	27,237	21,756	117.9	117.2
1970	27,374	22,654	80.6	31,758	26,140	32,999	25,530	116.0	120.5
1972	30,563	24,304	79.5	35,718	28,968	36,531	27,623	116.9	119.5
1974	37,557	29,870	79.5	43,741	35,188	43,113	33,252	116.5	114.8
1976	41,623	32,726	78.6	57,753	45,648	51,487	40,255	138.8	123.7
1978	50,089	39,352	78.6	73,493	56,584	59,052	45,645	146.7	117.9
1980	64,708	50,368	77.8	91,145	70,701	72,760	55,904	140.9	112.4
1982	72,814	54,457	74.8	111,645	79,928	81,133	61,216	153.3	111.4
1984	83,385	63,355	76.0	127,219	88,745	93,152	69,419	152.6	111.7
1986	92,401	67,025	72.5	136,977	90,269	99,362	70,875	148.2	107.5
1988	110,545	73,710	66.7	158,756	98,508	141,999	94,093	143.6	128.5

Source: Statistics Canada (1995).

at all except for the initial year.⁶ Estimates of the stock of real FDI are obviously sensitive to the deflation method used. The deflator employed is the same as that for total business investment in fixed capital.⁷

The estimated series for total United States FDI and total United States manufacturing investment in Canada since 1950 is shown in table 3. This method of estimation uses the relatively accurate disaggregated data for net investment available from the United States Department of Commerce; so a picture of the total Canadian inward FDI position with countries other than the United States and a direct comparison of the pre- and post-war periods is not possible. Nonetheless, the revised estimates present quite a different picture of post-war United States FDI in Canada. Instead of declining steadily relative to domestic product after the early 1960s, as the book-value figures suggest, the real total investment-to-product ratios hold remarkably steady from about 1960 onwards. The United States manufacturing investment ratio which, when calculated with current GDP and book values, begins to decline around 1970, stands somewhat higher in real terms in the late 1970s and 1980s than in the 1960s.⁸

The years following the introduction of FIRA in 1974 were accompanied by much less real growth of the United States-owned capital stock than was the case in the previous period. The real stock of United States manufacturing FDI grew by 112 per cent from 1950 until 1960, while total United

⁶ An example can illustrate the approach used. From United States data, the estimated manufacturing capital stock in Canada owned by United States investors in 1950 was \$1,897. This was converted into Canadian dollars using the prevailing exchange rate of Canadian \$1.06 to US\$1. This figure was, in turn, translated into 1981 Canadian dollars using .257, the value of the Canadian deflator for total business investment in fixed capital. To this amount is added the estimated additional manufacturing investment from the United States for each succeeding year, employing United States Department of Commerce data, and converted into 1981 Canadian dollars. Eisner and Pieper used flows provided by the United States Department of Commerce (official data) until 1979. For the subsequent years, they employed a special unpublished series in which all capital gains and losses were removed from the data. The procedure accounts for both depreciation and reinvested earnings. The present study employs data subject to yet another stage of refinement: capital gains have been assigned by experts at the Department of Commerce to two categories: those likely to have arisen from exchange rate gains and losses and those more likely to have resulted from capital gains and losses experienced within Canada. Only the former gains and losses have been removed from the data. Starting with 1990, flows subject to this correction have been part of the reported statistics in the *Survey of Current Business*. The author is grateful to Smith Allnut of the Bureau of Economic Analysis, United States Department of Commerce, for providing the unpublished data.

⁷ Several alternative deflators were also examined; the importance of the selection of one deflator over another on the econometric results is discussed later in the article.

⁸ The reader is reminded that table 1 is based on Canadian data in current dollars, and table 3 employs United States data presented in constant dollars. In 1981, for example, the constructed figure for United States FDI in Canada is approximately twice the recorded book value in Canada's FDI statistics.

Table 3. Estimated stock of United States FDI in Canada^a*(Millions of 1981 Canadian dollars)*

Year	1 GDP	2 United States stock of FDI in Canada	3 2/1 x 100	4 United States stock of manufacturing in Canada	5 4/1 x 100
1950	91,826	14,591	15.9	7,734	8.4
1951	96,829	16,092	16.6	8,239	8.5
1952	104,786	18,260	17.5	9,195	8.8
1953	106,493	20,532	19.3	9,969	9.4
1954	101,056	22,715	22.5	10,730	10.6
1955	111,651	24,926	22.3	11,484	10.3
1956	121,328	28,090	23.2	12,775	10.5
1957	123,470	31,080	25.2	13,826	11.2
1958	126,235	33,121	26.2	14,585	11.6
1959	132,247	35,433	26.8	15,686	11.9
1960	134,183	37,823	28.2	16,434	12.2
1961	138,600	39,505	28.5	17,193	12.4
1962	147,810	41,615	28.2	17,938	12.1
1963	155,877	44,322	28.4	19,310	12.4
1964	166,196	46,655	28.1	20,564	12.4
1965	180,567	50,839	28.2	22,453	12.4
1966	193,345	55,105	28.5	24,368	12.6
1967	199,768	57,740	28.9	25,258	12.6
1968	210,985	60,844	28.8	26,374	12.5
1969	222,150	64,713	29.1	29,499	12.8
1970	227,957	68,024	29.8	29,797	13.1
1971	243,200	70,287	28.9	30,911	12.7
1972	253,390	73,664	29.1	32,829	13.0
1973	277,601	77,997	28.1	34,875	12.6
1974	287,319	82,282	28.6	37,437	13.0
1975	290,723	85,944	29.6	39,183	13.5
1976	308,465	89,104	28.9	40,806	13.2
1977	315,127	91,178	28.9	41,218	13.1
1978	327,568	92,789	28.3	42,446	13.0
1979	338,989	98,525	29.1	44,692	13.2
1980	342,428	103,378	30.2	46,566	13.6
1981	355,990	102,470	28.8	47,046	13.2
1982	340,262	100,376	29.5	47,122	13.8
1983	350,250	101,423	29.0	47,448	13.5
1984	363,221	105,405	29.0	49,955	13.8
1985	378,427	105,620	27.9	51,899	13.7
1986	391,097	105,585	27.7	53,731	13.7
1987	406,102	115,740	28.5	56,449	13.9
1988	424,563	118,493	27.9	57,146	13.5

Source: Column 1: IMF (1993); United States, Department of Commerce (1986).

^a Estimates based on net real investment adjustments for each year and book values for 1950.

States real FDI grew by 160 per cent. From 1960 to 1973, the figures were 112 per cent and 106 per cent, respectively. From 1974 through 1987, however, the stocks grew by only 51 per cent and 41 per cent.⁹ This article will explore whether this diminution can be assigned to the introduction and operation of FIRA's investment screening.

Previous research

The literature on various aspects of the determinants of FDI is now voluminous. A recent United Nations survey on the subject (1992) has a (clearly incomplete) bibliography of 126 entries (UNCTC, 1992). Much of this research deals with firm-level data that allow for the consideration of firm and industry-level concerns, such as relative factor and skill intensity, firm size and industry concentration. Because the present study considers aggregate FDI into Canada from the United States over time, only a small part of previous research is directly relevant. The earliest pertinent studies go back to the 1960s when Anthony Scaperlanda (1967) and Scaperlanda and Mauer (1969; 1972) examined the impact of the consolidation of the Common Market in Europe on aggregate United States FDI there.¹⁰ Sung Y. Kwack (1972) and Guy G. V. Stevens (1972; 1974) elaborated more formal models of the investment process. Subsequent research has frequently followed Stevens' development of a model in which the foreign-owned capital stock is adjusted over time in response to changes in final demand in the host country (see Lunn, 1980; Scaperlanda and Balough, 1983; Caves, 1989).

The most recent empirical research on the determinants of inward FDI by the United Nations Centre on Transnational Corporations (UNCTC, 1992 and UNCTAD-DTCI, 1993) employs a model that builds on earlier research and offers some innovations. While many previous studies employed measures of the foreign-owned capital stock and assumed that new investment responded to a shortfall of that stock from an optimal level, the UNCTC study

⁹ Over the same period, total estimated outward United States FDI grew by 208 per cent (calculated from Eisner and Pieper, 1990).

¹⁰ Many studies have treated United States FDI flows to one or several countries and a wide variety of policy variables. In addition to the Common Market research, these include the impact of United States capital controls (Stevens, 1972; Herring and Willett, 1972) and the exchange-rate changes following the end of the Bretton Woods system (Logue and Willett, 1977). Scaperlanda's 1974 study of United States FDI in Canada over the period 1950-1971 tests the impact of the 1965 agreement freeing trade in new automobiles and parts. In light of the recent developments, interest has increased in the determinants of FDI into the United States. Richard Caves (1988) has examined the impact of exchange-rate changes on the foreign acquisition of United States firms (see also Cushman, 1985).

omits the capital stock variable altogether (perhaps because it is so difficult to estimate), but adds a new variable not employed in earlier work: the ratio of domestic investment to domestic product in the host country as a proxy for the general dynamism of the investment sector of the domestic economy.

Both the UNCTC study and most of the earlier literature also employ measures of the level of gross domestic product and changes in that level as proxies for host-country demand. They also test hypotheses about changing trade barriers and exchange rates on inward FDI. The UNCTC model (and several others) have been successful in explaining three-fourths or more of the variation in incoming FDI across many countries and time periods.

United States FDI in Canada: methodology considerations

In most of the research cited above, FDI inflows serve as the dependent variable. In United States data, this measure includes equity and related flows as reported in the balance of payments to which foreign affiliates' retained earnings are added. Except for stock valuation changes, this measure conforms to the first difference of annual FDI stock figures. The Foreign Investment Review Agency, of course, dealt with all FDI from all sources, but published Canadian data do not distinguish between changes in FDI stock valuations and FDI flows annually by sector. In addition, as discussed later, FDI earnings (net income) by country and sector are an important variable that Canadian data sources do not provide. United States data cover all of these issues;¹¹ moreover, as table 1 suggests, the United States domination of FDI in Canada remained strong throughout the period of FIRA's existence.

The variables discussed below are widely employed in time-series models of FDI. They are well-grounded theoretically, but much cannot be captured. The inability to deal explicitly with changing technology, variation in administered trade barriers and the pace of integration of the global economy outside of North America all diminish the model's explanatory power. Moreover, although Canada's modest draw on United States investable funds largely eliminates problems on the supply side, our investigation is complicated by FIRA's establishment almost simultaneously with occurrences of great upheavals in the global economy resulting from the end of the Bretton Woods system and an enormous increase in oil prices.

¹¹ United States Department of Commerce data distinguish between estimated flows from estimated stock changes by sector in a comparable series beginning in 1950.

Capital stock adjustment and demand

Previous models of FDI can be criticized for a lack of very convincing theoretical grounding, and the effort that follows does not escape that vulnerability. For example, many have followed Guy Stevens in relating the FDI stock position to domestic demand. Such a link is only indirect, however. Leaving foreign trade aside, changes in domestic demand can be expected to generate changes in the physical capital stock to which the FDI may not be closely bound.¹² This simplification can be defended (although many studies lack an explicit defence) on the grounds that variables with the same hypothesized signs have been shown in earlier research to affect both net financial and gross fixed investment flows (Stevens, 1972, pp. 334-336).¹³ Moreover, stock adjustment assumes market participation in the first place. The approach is therefore far more suited to modelling a bilateral relation with a well established foreign investor, such as United States FDI in Canada, than one in which entry plays a larger role in total inward FDI. Additionally, models of stock adjustment should focus on changes in the sales of foreign affiliates. Partly because such figures are difficult to estimate, however, measures of national product are typically employed as proxies for final demand.¹⁴ In the case of United States FDI activity in Canada, changes in affiliates' sales for the period 1957-1985 for which data are available show a .95 correlation coefficient with changes in Canadian GDP.

Additional general variables

Previous research also suggests several other variables for a well specified model of United States FDI into Canada.

- **Protection.** Nearly all models of inward FDI take into account levels of protection, although the resulting hypotheses vary. Sometimes protection is assumed to induce FDI into an otherwise unreachable market;

¹² Plant and equipment expenditures by foreign affiliates, also made available by the United States Department of Commerce, provide a measure of gross fixed investment. But because this article addresses the issue of whether or not FIRA reduced United States FDI resources in Canada, investment flows are more appropriate.

¹³ This issue was also noted by Anthony Scaperlanda (1974). A detailed comparison of the present research with that of Scaperlanda's is available from the author.

¹⁴ Most estimators of present and future demand are seriously affected by multicollinearity, so additional refinements of the expected sales variable, such as those suggested in Scaperlanda and Balough (1983, p. 383), were not considered here.

in other formulations, lower trade barriers are thought to favour FDI by broadening the size of the market for the output of foreign affiliates. The role of protection in the initial wave of United States FDI into Canada following the First World War cannot be doubted: sharply increased tariffs and Imperial Preferences led to a massive influx of capital as United States companies sought market access into Canada. Still higher protection during the Great Depression further increased inward FDI into Canada. A 1932 survey found that 76 per cent of the United States respondents claimed that tariffs had been important in their decision to produce in Canada (Marshall, *et al.*, 1936, p. 200). In the post-war period, however, both general tariff levels and the preferences that gave Canadian production advantageous access to the United Kingdom and the Commonwealth diminished greatly.

The tariff proxy calculated for this study is $TR/(DM + FM)$, where TR is tariff revenue, DM is the value of dutiable imports, and FM is the value of duty-free imports. This ratio dropped from a post-war high of 10.5 per cent in 1955 to 2.8 per cent in 1985. In view of the proximity of the two markets, the magnitude of the formal barrier reduction, and the insecurity of Canadian production for export to the United States in the face of United States-administered protection, a more protected Canadian market should have been more attractive to FDI, other things being equal.

The ratio of tariff revenue to the value of total imports may well provide the best single measure of protection available, but it should nevertheless, be regarded as a crude and incomplete measure.¹⁵ In addition, a particular problem arises in the present study: the measure employed declines secularly, and therefore has a very high negative correlation coefficient with the national product (-.96). Both variables are included in the equations to avoid misspecification, but finding significance for either is thereby rendered far more difficult.

¹⁵ In addition to the complications of the Commonwealth Preference, tariffs have been replaced by quotas in some instances (as in the United States) and, as tariffs were declining, non-border protection for parts of the Canadian economy was granted. Moreover, prohibitively high tariffs yield no revenue, although this would likely have been of minor importance over the period of this study. Finally, a measure of effective rather than nominal tariff protection would be preferred. In fact, the correlation between nominal and effective tariffs is quite high when either levels or changes resulting from liberalization are considered. (For a discussion of the evidence, see Lavergne, 1983, p. 51.) Despite its limitations, the tariff revenue ratio variable continues to be widely used in empirical work. See, for example, Srinivasan and Cancero, 1993.

- ***The share of investment in national product.*** Those suggesting this variable claim that countries with a high investment proportion may “be attractive markets for foreign investors seeking to increase their participation” (UNCTC, 1993, p. 10).¹⁶ In a time-series study confined to a single country with well-established foreign affiliates, however, this lagged variable may mainly supplement lagged domestic product and changes in that product by providing additional information on immediate demand conditions and the need for greater production capacity.
- ***Exchange rates.*** Other studies have stressed the importance of real exchange-rate levels in the determination of FDI volume (Logue and Willett, 1977; McClain, 1983; Caves, 1988). Most notably, Richard Caves (1988) presented a wide range of possibilities based on trade patterns and expectations, but the information requirements do not allow his approach to be used here. Another approach suggests a very simple hypothesis. Kenneth Froot and Jeremy Stein (1991) argued that, if domestic firms are more cash-constrained than foreign firms, the depreciation of the domestic currency may lead to an increase in inward FDI as foreigners outbid domestic firms. If this were the case for Canada-United States, more investment should be expected when the value of the Canadian dollar is relatively low.¹⁷
- ***Stock prices.*** Richard Caves (1988) suggested that the relative performance of share prices between two countries might determine inflows of FDI; if home and host assets are sufficiently close alternatives, differential movement between their indices might induce home investors to seek bargains abroad. This motive makes particular sense in research that deals only with new greenfield investments rather than mergers and acquisitions. In the present case, however, if United States foreign investors perceive variations in the short and medium-term prospects of the Canadian economy in the same way as the stock market, the share index in Canada could serve principally as a barometer

¹⁶ This rationale seems rather shaky on logical grounds. Algeria, for example, was investing a large fraction of its national income in the 1970s and 1980s, but this paralleled a highly inefficient deployment of capital in that economy rather than economic dynamism.

¹⁷ The UNCTC model (1993) employs another exchange rate variable as well. It is hypothesized that exchange-rate volatility impedes inward FDI by increasing uncertainty; hence, some measure of variability should relate negatively to such investment. The UNCTC study considers the period since the breakdown of the fixed exchange-rate system. The operationalization of this variable in the present case would be difficult, however, because Canada's rate with the United States was fixed over part of that period. Attempts to employ the variable without other emendations to the model were therefore unsuccessful.

of strong earnings prospects rather than overpriced assets. And to complicate things further, the United States economy is about 10 times larger than the Canadian economy, and economic activity in these two countries tends to move together; the share indices in this sample show a .97 correlation coefficient.

- **Profitability.** Net income divided by the lagged book value of FDI stocks can serve as a simple index of profitability that might induce additional FDI (Caves, 1988).
- **Temporary retained earnings.** This possibly important variable does not appear to have been explored in previous work. Unrepatriated profits at the end of an accounting period are part of FDI; a positive relation between measured profitability and FDI may thus reflect partly accounting artifacts rather than profit opportunities.¹⁸ The same phenomenon also implies a subsequent negative impact on measured investment flows as those same profits are repatriated.¹⁹ The importance of this phenomenon is likely to be significant in the case of United States FDI into Canada because FDI inflows are modest relative to the existing FDI stock.

Variables specific to the present model

- **Autopact.** Scaperlanda (1974) tested for the influence of the United States-Canadian Automotive Products Trade Agreement of 1965 ("Autopact"), that permits free trade in new automobiles and components on inward FDI. Trade in this industry alone comprised 37 per cent of total bilateral trade by the mid-1980s (Lonmo, 1988, p. 113). Scaperlanda argued that, theoretically the impact of the agreement on private investment decisions is ambiguous; investors could rationalize production in ways involving either an increase or a diminution of FDI in Canada. Unofficial but written assurances given by the automobile manufacturers to the Government of Canada at that time pledged a continuation of FDI into Canada as the market expanded. However, the Government saw the agreement as a way of assuring that at least as much foreign-owned automobile manufacturing took place as would

¹⁸ Guy Stevens attributed to Robert Stobaugh the observation that "earnings [may be] accumulated and held in liquid balances abroad until the beginning of the new year before being transferred to the United States . . ." (Stevens 1972, p. 336).

¹⁹ I have benefitted from discussion with Stevens on this point.

have been the case otherwise. This suggests that Autopact should, if anything, affect positively IFDI from the United States into Canada.

- **National Energy Program.** Introduced in late 1980, the National Energy Program “drastically altered the investment climate in the Canadian petroleum industry” (Hufbauer and Samet, 1982, p. 107) by favouring heavily Canadian ownership of the domestic oil and gas industries. These ambitions were largely abandoned in 1985 when Investment Canada began actively to solicit FDI in these industries (Investment Canada, 1986, p. 20; Safarian, 1992, p. 140). The National Energy Program could have discouraged FDI into Canada’s energy resources; investments into other sectors could also have decreased if foreign investors perceived a less hospitable general investment climate in Canada.
- **Foreign Investment Review Agency.** The most obvious approach to modelling FIRA’s impact would be to insert a dummy variable for 1973 or 1974 in the time series estimation equation and test its significance.²⁰ Whether or not the dummy should be excluded after 1984 is open to debate. (The Foreign Investment Review Agency was replaced by Investment Canada on 30 June 1985). New businesses outside the realm of “cultural heritage or national identity” were no longer subject to review (Investment Canada, 1986, p. 22), and the declared criterion of approval was changed from “significant benefit” to “net benefit” to Canada. The change still left the acquisition of Canadian businesses with a value of \$5 million or more subject to review,²¹ although it exempted from screening approximately 68 per cent of the acquisitions vetted by FIRA in its last year.²²
- **Approval rates.** A supplementary measure of restrictiveness can also be used. Every year FIRA published a report (Foreign Investment Review Agency, various years) that provided data on the reviewable new cases

²⁰ An “intercept” dummy of this kind simply shifts an entire relation that is otherwise the same. Legislation introduced by the Liberal Party before the 1972 election would have dealt only with takeovers and not with start-ups. The plans for restriction were strengthened after the election in part to assure the support of the New Democratic Party (see Safarian, 1993, p. 127).

²¹ In addition, a change of foreign parents was reviewable if the Canadian affiliate accounted for less than half of the total assets, if those assets were \$50 million or more.

²² By count; calculated from data in FIRA, 1985, table II. Foreign Investment Review Agency and Investment Canada report data that are not completely comparable, but Investment Canada apparently presents its determinations to encourage the view that virtually no acquisitions are permanently denied (Investment Canada, 1987, Appendix A).

before the Agency, carryovers from previous years and their disposition (FIRA's reporting year was typically from April 1 to March 31).

Two obvious measures of FIRA's approval could be employed: the percentage allowed of total resolved acquisition cases and the percentage allowed of total resolved start-ups. During the FIRA period, the allowed acquisition figure in manufacturing was only 60 per cent during the first year of operation; it was over 90 per cent by the early 1980s. Both numbers become virtually 100 per cent in 1985. The situation for all industries and for all United States acquisitions was broadly similar. The allowed rates for new ventures followed the same general upward course, except for a generally higher approval rate in the early years and a sharp drop in approvals in 1981.

The percentage variations cited above do not take into account the size of projects accepted or rejected. Moreover, while both industry dispositions and dispositions by nationality were reported in the data, no cross-tabulations are available. Thus, when the following analysis considers manufacturing or total investment minus petroleum approval rates, only rates for all investors can be employed in the consideration of FDI from the United States. Steven Globerman's careful study (1984) discerned no discrimination by FIRA on the basis of nationality, however.

The following analysis focuses exclusively on the acquisition figures because of the dominant role of acquisitions in new FDI activity. During 1985-1986, for example, the estimated value of acquisitions was about twenty times the value of capital committed to greenfield investments.

Much econometric work assumes that affected agents fully understand contemporary policy as it unfolds and can even accurately forecast its future course. In the present case, however, the plausibility of such assumptions can be strongly attacked. The Foreign Investment Review Agency's decisions were made secretly at the cabinet level, and no one has modelled successfully the year-to-year variation in approval rates. The measure employed in the following statistical analysis is an unweighted average of the three previous years' acquisition approval rates. This seemed reasonable, and subsequent experimentation with the data showed a generally stronger impact for FIRA with the measure than with obvious alternatives.

The analysis ends in 1987. A priori reasoning, confirmed by inspection of the data, suggested that in subsequent years the impending Free Trade Agreement with the United States was generating an environmental shift.

The estimated model

The single-equation model to be estimated is:

$$I_t = f(GP_{t-1}^+, \Delta GP_t^+, NK_{t-1}^-, DF, FA_t^+, NE_t^+, RE_t^+, TA_t^+, SP_t^-).$$

More specifically:

$$I_t = \beta_0 + \beta_1 GP_{t-1} + \beta_2 \Delta GP_t + \beta_3 NK_{t-1} + \beta_4 DF + \beta_5 FA_t + \beta_6 NE_t + \beta_7 RE_t + \beta_8 TA_t + \beta_9 SP_t + v_t$$

I = Flow of United States manufacturing FDI into Canada in 1981 (Canadian dollars).

I_a = All investment.

I_b = All investment minus petroleum.

I_m = Manufacturing investment.

GP = Gross domestic product of Canada in 1981 (Canadian dollars).

$\Delta GP = GP_t - GP_{t-1}$.

NK = Estimated replacement cost of United States FDI in Canada in 1981 (Canadian dollars).

NK_a = Stock of all investment.

NK_b = Stock of all investment minus petroleum.

NK_m = Stock of all manufacturing investment.

DF = Dummy for FIRA screening; 1 for 1973 and all subsequent years; 0 otherwise.

FA = The average FIRA acquisition acceptance rate for three previous years during the period of $DF = 1$.

FA_a = Rate of acceptance for all investment.

FA_b = Rate of acceptance for all investment minus petroleum.

FA_m = Rate of acceptance for manufacturing investment.

NE = Net earnings (after Canadian taxes) of United States affiliates in 1981 (Canadian dollars).

NE_a = Earnings of all investment.

NE_b = Earnings of all investment minus petroleum.

NE_m = Earnings of all manufacturing investment.

RX = The exchange rate (Canadian dollar to United States dollar).

TA = Tariff revenue collected by Canada on merchandise imports from the United States as a percentage of the value of total merchandise imports from the United States.

CP = Index of security prices in Canada, 1980 = 100.

UP = Index of security prices in the United States, 1980 = 100.

$SP = CP_t - UP_t$.

v = Error term hypothesized to be random.

Other variables also employed in the regression equations are:

IR = Business and Government investment in Canada as a fraction of GP.

PR = NE/NK_{t-1}

PR_a = NF_{at}/NK_{at-1}

PR_b = NE_{bt}/NK_{bt-1}

PR_m = NE_{mt}/NK_{mt-1}

DA = Dummy for "Autopact"; 1 for 1965 and all subsequent years; 0 otherwise.

DP = Dummy for the "National Energy Policy"; 1 for the years 1981 through 1985; 0 otherwise.

Omitted influences

All of the variables outlined above appear promising in capturing most effects of FIRA on United States FDI into Canada. Other less important factors have been omitted. Richard Caves (1988) defended the omission of variables capturing differential prices of capital goods and interest rates; the same omission in the present study is also particularly defensible for these two largely integrated markets. No other measure beyond the bilateral exchange rate to capture Canada's trade competitiveness relative to the United States was used.²³

Results

As noted already, some of the independent variables are highly collinear, leading to diminished significance for the associated coefficients. Box 1 presents a correlation matrix for the variables used in the overall regression results; the picture for the other two aggregations is broadly similar. Canada's gross domestic product and United States-owned FDI stock move together very closely, and both are almost perfectly correlated with diminishing tariff protection. Total profits, rising over time, are highly correlated with GP and NK. The two FIRA variables have a positive correlation of .99, and both necessarily show high positive correlations with variables that are positively trended because they have values other than zero only in the last years under study.

²³ Caves (1988) employed trade-balance variables to provide an additional test, but easily available merchandise trade data for Canada appear contaminated by changing world raw material prices which affected greatly the volume and price of Canadian exports.

**Box 1. Correlation matrix of the major independent variables
for total investment**

	GP _{t-1}	dGP _t	NK _{at-1}	IR _{t-1}	DF _t	FA _{at}	NE _{at}	RX _t	TA _t	PRA	SD
GP _{t-1}	1.00										
dGP _t	.29	1.00									
NK _{at-1}	.99	.31	1.00								
IR _{t-1}	-.32	-.37	-.34	1.00							
DF _t	.89	.11	.87	-.22	1.00						
FA _{at}	.90	.15	.87	-.22	.99	1.00					
NE _{at}	.82	.51	.84	-.29	.71	.73	1.00				
RX _t	.59	.26	.60	-.59	.38	.40	.40	1.00			
TA _t	-.96	-.35	-.96	.35	-.78	-.78	-.83	-.56	1.00		
PRA	-.75	.29	-.78	.18	-.62	-.60	-.39	-.57	.69	1.00	
SD	-.52	-.42	-.52	.19	-.28	-.33	-.32	-.52	.53	.54	1.00

The initial regression results are presented in table 4.

Alternative formulations are presented for total United States FDI (panel A), for all United States except petroleum (panel B), and for United States manufacturing investment (panel C). These are perhaps the most obvious categories for a test of FIRA's possible effect. The total investment figures without any adjustment include investments into the highly volatile petroleum industry. It is therefore worthwhile examining these figures after FDI into petroleum has been removed. The manufacturing sector of an economy is not only interesting in its own right, but has frequently been the focus of nationalist anxieties about technological dependence.

Equations 4A1, 4B1, and 4C1 present results in which FIRA is modelled by both a dummy variable and an acceptance rate variable and in which profits are presented explicitly rather than as a percentage of the capital invested. The second equation in each series adds the variable recently employed by the UNCTAD-DTCI study (1993): the share of national product invested by both business and government. This additional variable is retained in all of the subsequent equations in each of the panels. The third equation in each set models FIRA with a dummy variable alone, but it is otherwise identical to the second equation. The fourth equation substitutes the profit rate on the previous year's inward FDI stock with the amount of profit.

Table 4. Regression equations for

Panel A		Coefficient ^a					
Equation	Dependent variable ^b	GP _{t-1}	dGP _t	NK _{mt-1}	IR _{t-1}	DF _t	FA _{mt}
4A1	I _a	0.072 (0.022)	-0.022 (0.031)	-0.242 (0.518)	—	-6116 (3142)	47.83 (32.19)
4A2	I _a	0.073 (0.022)	-0.006 (0.032)	-0.245 (0.051)	11526.57 (8521.29)	-5854 (3101)	45.08 (31.77)
4A3	I _a	0.078 (0.022)	0.000 (0.032)	-0.272 (0.048)	12299.79 (8661.99)	-1726 (1094)	—
4A4	I _a	0.016 (0.034)	0.006 (0.051)	0.117 (0.095)	20335.86 (12461.76)	-14538 (4330)	127.65 (44.40)
4A5	I _a	0.020 (0.027)	-0.030 (0.034)	-0.142 (0.056)	9524.42 (8767.47)	18 (3736)	-9.10 (36.24)

Panel B		Coefficient ^a					
Equation	Dependent variable ^b	GP _{t-1}	dGP _t	NK _{mt-1}	IR _{t-1}	DF _t	FA _{mt}
4B1	I _b	0.067 (0.018)	0.048 (0.023)	-0.226 (0.064)	—	-6766 (2495)	55.82 (25.68)
4B2	I _b	0.066 (0.016)	0.065 (0.022)	-0.225 (0.057)	15861.56 (5730.01)	-6682 (2234)	55.73 (23.00)
4B3	I _b	0.077 (0.017)	0.062 (0.024)	-0.290 (0.055)	15882.77 (6225.60)	-1542 (763)	—
4B4	I _b	0.027 (0.020)	0.083 (.025)	0.038 (.087)	21187.40 (6902.70)	-11803 (22339)	104.77 (23.84)
4B5	I _b	0.042 (0.020)	0.059 (0.023)	-0.155 (0.060)	17807.07 (5734.55)	-5213 (2582)	41.80 (25.66)

Panel C		Coefficient ^a					
Equation	Dependent variable ^b	GP _{t-1}	dGP _t	NK _{mt-1}	IR _{t-1}	DF _t	FA _{mt}
4C1	I _m	0.060 (0.017)	0.017 (0.016)	-0.352 (0.100)	—	-3437 (1600)	27.05 (16.28)
4C2	I _m	0.050 (0.015)	0.013 (0.015)	-0.308 (0.090)	10682.94 (3714.98)	-3056 (1427)	24.37 (14.48)
4C3	I _m	0.054 (0.016)	0.009 (0.015)	-0.350 (0.089)	11085.42 (3831.15)	-754 (421)	—
4C4	I _m	0.050 (0.025)	0.056 (0.018)	-0.222 (0.176)	7644.54 (6372.76)	-6444 (1757)	57.29 (18.10)
4C5	I _m	0.051 (0.015)	0.010 (0.015)	-0.330 (0.093)	10081.80 (4292.32)	-1913 (1788)	12.50 (18.22)

^a Standard errors in parentheses.

^b Bolded coefficients significant at .05 (one-tailed test).

^c DW = Durbin Watson statistic.

United States FDI in Canada, 1951-1987

Coefficient ^a									
NE _{at}	RX _t	TA _t	SD _t	UP _t	PR _{at}	DP _t	R ²	DW ^c	F
1.62 (0.20)	-2694 (2597)	41233 (21779)	-63.43 (14.95)	—	—	—	.79	2.11	16.231
1.58 (0.20)	-1027 (2839)	39061 (21512)	-59.04 (15.08)	—	—	—	.80	2.11	15.208
1.67 (0.19)	-358 (2852)	37638 (21888)	-65.47 (14.65)	—	—	—	.79	1.94	16.108
—	-5322 (4112)	72240 (33339)	-50.50 (23.12)	—	96362 (25314)	—	.56	2.01	5.550
1.50 (0.22)	-4241 (2872)	13267 (22729)	—	41.19 (10.79)	—	-1191.31 (582.59)	.81	2.41	14.945

Coefficient ^a									
NE _{bt}	RX _t	TA _t	SD _t	UP _t	PR _{bt}	DP _t	R ²	DW ^c	F
1.03 (0.25)	-4234 (2017)	37783 (16117)	-30.40 (10.05)	—	—	—	.77	2.23	14.647
0.99 (0.23)	-1829 (2004)	33992 (14499)	-25.59 (9.16)	—	—	—	.82	2.33	17.097
1.25 (0.22)	-695 (2118)	32659 (15741)	-32.03 (9.53)	—	—	—	.78	2.15	15.293
—	-3576 (2306)	48744 (19484)	-17.09 (10.5)	—	35076 (14038)	—	.75	2.08	11.53
0.97 (0.23)	-3049 (2073)	28024 (15372)	—	16.19 (6.25)	—	—	.81	2.22	16.518

Coefficient ^a									
NE _{mt}	RX _t	TA _t	SD _t	UP _t	PR _{mt}	DA _t	R ²	DW ^c	F
0.87 (0.22)	413 (1358)	20656 (10402)	-9.74 (6.23)	—	—	—	.74	2.12	12.228
1.06 (0.21)	2354 (1382)	16431 (9350)	-7.19 (5.60)	—	—	—	.79	2.25	14.733
1.23 (0.19)	3501 (1242)	14995 (9622)	-9.95 (5.54)	—	—	—	.78	2.19	15.072
—	-1090 (1677)	21428 (13001)	-1.30 (7.78)	—	6956 (9234)	—	.59	1.85	6.274
1.10 (0.23)	2064 (1376)	19927 (12907)	—	6.27 (3.95)	—	244.43 (408.07)	.79	2.33	13.401

The last equation in each set substitutes the United States stock price index with the difference in indices between Canada and the United States in the basic equation. The United States index is presented because the variable yields a higher level of significance and contributes more to the equation than the Canadian index, although each of those alternatives yields very similar results for the FIRA restrictiveness variables.

The restrictiveness variables

Because this article's principal focus is FIRA, a close look at the performance of other factors awaits the careful consideration of the restrictiveness variables. Nonetheless, even the briefest look at the statistical results finds the prominence of current net earnings in terms of both significance and contribution to the overall fit.

The results shown employ a dummy variable for FIRA for 1973; this showed a stronger influence overall than did the dummy variable for 1974.²⁴ Still, the FIRA dummy variable alone is not significant in the total FDI equation.

Pairing it with the acceptance rate typically increases the significance of the FIRA dummy variable. This pairing ignores implicitly the introduction of Investment Canada as a regime shift. Instead, it simply approximates the policy change by putting the annual approval rate at 100 per cent after 1984.²⁵

Care must be taken in interpreting the coefficients of the restrictiveness variables used together. The coefficient of the FIRA dummy variable is calculated as the impact of FIRA *if the approval rate were zero*. This clarifies the great change in the coefficient of the FIRA dummy variable when it appears with the acceptance rate (between the second and third equation in each panel).²⁶

²⁴ A dummy variable for 1972 performs at about the same level as the one for 1974, and some equations find significance even for a 1971 dummy variable, suggesting that the discussion and introduction of restrictive legislation might have had some effect on FDI inflows.

²⁵ By comparison with other regressions (not shown here), this combination of variables finds consistently a larger and more significant impact for FIRA than either the dummy and rate combination that restores the pre-1974 situation in 1985, or a simple dummy that begins in 1973 and kicks out again twelve years later.

²⁶ In equation 4A4, for example, the point estimate of the total restrictive effect of the regime is calculated as -14538 plus 127.65 times the approval rate, which averaged 86.5 per cent over the period. Thus, the total average effect of the FIRA regime is estimated to be -3496 . In this equation the "pure" FIRA effect would be estimated as the apparent restrictiveness when the approval rate was 100 per cent or -1773 ($-14538 + 12765$).

Inspection of all of the equations together shows that the restrictiveness variable emerges with the highest level of significance when paired with the acceptance rate in those equations in which the profit rate is substituted for the actual level of profits (4A4, 4B4, and 4C4). Actual profits, however, are usually far more significant than profit rates and are associated with better fitting equations in the total FDI and manufacturing FDI equations.

In the equations for total FDI, only the profit-rate equation (4A4) shows expected signs and significant coefficients at the .05 level for a one-tailed test for both the FIRA variables, although the FIRA dummy variable is significant in both 4A1 and 4A2. In the equations excluding only the petroleum sector, the FIRA dummy variable is significant at the .05 level with the expected sign in all equations, and the acceptance rate fails significance only in 4A5. The manufacturing FDI equations show a significant FIRA dummy variable with the expected sign in all of the equations, but the approval rate is significant only in the profit rate equation (4C4). When the effect of FIRA in some of these equations is considered relative to the FDI annual inflows in particular sectors, the impact is frequently impressive. For example, in the manufacturing sector, equation 4C4 suggests that FIRA reduced FDI inflows by about one-half over the period 1974-1984. These estimates, however, do not show a high level of consistency across alternative specifications and time periods. Among the total FDI and manufacturing-sector FDI equations, there is only one equation in which both the FIRA dummy variable and the acceptance rate are significant: the equation noticeably poorly fitting employing the profit rate. In the manufacturing-sector FDI equation without the acceptance rate (4C3) the FIRA dummy variable is (barely) significant at the 5 per cent level.²⁷

Picking 1973 over 1974 as "the dummy variable year of choice" was done by looking only at the significance of the dummy variable without the acceptance rate variable in the otherwise best specified equation in each sector; this gave some equations for the year 1974 (not shown) a better fit than their counterparts for the year 1973. For example, *all* of the manufacturing equations have a slightly superior fit with the dummy variable for the year 1974, but they also suggest a much smaller impact for FIRA. Instead of a decrease in average FDI inflows by 51 per cent, for example, equation 4C4 (with a dummy variable for the year 1974) suggests a decrease of only 13 per cent.

²⁷ The stronger result for FIRA with the profit rate is not apparently the result of reduced multicollinearity. The standard errors in those equations are, if anything, larger than in those employing profits.

There are still more problems as far as making confident inferences is concerned. The equations reported in table 4 do not appear to suffer from serially correlated errors, heteroskedasticity, or lack of intertemporal structural homogeneity.²⁸ When the stability of the results is tested with a slightly shortened period, however, the difference is striking. The estimates presented in table 5 result from taking only two years from the beginning of the period and another two from the very end of the period (when FIRA approval rates were essentially 100 per cent).

Although some deterioration of significance might be expected, on average, for all of the variables due to the loss of four degrees of freedom, the FIRA results essentially collapse for the equations treating all United States FDI. There are several unexpected signs and no expected signs at the usual levels of significance. The FIRA dummy variable alone has the expected sign, but it is insignificant in all three equations, and with only one *t*-score (barely) above unity. For the equations for all FDI excluding petroleum, the FIRA dummy variable is significant in 5B3, and both FIRA variables are significant in 5B4, the equation within that group with the worst fit. For manufacturing-FDI, only the profit rate equation, 5C4, shows the FIRA variables with expected signs and a high level of significance. However, the fit of this profit rate equation is worse compared with that of 54B.

The econometric estimation reported above was repeated for alternative capital-flow and stock deflators with little impact on the qualitative results.²⁹

Other variables

As noted earlier, the most significant variable by far in virtually all of the estimated equations was net earnings. Its importance is also seen in the drop in the fit measured by the adjusted R^2 when the profit rate was substituted for net earnings. That variable's impact shows clearly in part because net earnings are large relative to net investment; but its superior explanatory power and significance in the regression estimates by comparison with the profit rate is striking.

²⁸ Autocorrelation (non-independence of errors from each other) and heteroskedasticity (non-constant variance of the error) lead to coefficient estimates with misleadingly low estimated standard errors, tempting faulty inferences about the significance of coefficients. The Durbin-Watson statistics reported in table 4 suggest the absence of the former problem; the possibility of the latter was investigated using Engle's ARCH test. The stability of the basic structure of the model over time was tested using a Chow test. Tests for interactions between the FIRA dummy variable and other major regressors were also performed. For a discussion of these issues, see Studenmund, 1992, pp. 337-348, 365-385 and 174-175.

²⁹ Considerable discussion has taken place on alternative deflation methods. For a review of that discussion, see Landefeld and Lawson, 1991.

The hypothesis that profits represent largely inadvertent, passive investments to be corrected through subsequent remissions to the parent firms implies that lagged profits should have a negative relation with current levels of FDI. In fact, profits lagged by one year were correlated positively with current levels of these investments. Only when profits were lagged by two years did a negative relation emerge, with low significance in the equations for manufacturing FDI but with very high significance when more sectors were included.³⁰

The total-product variable almost always had the expected sign, usually with a high level of significance. The change in total-product variable performed far more erratically and was typically insignificant. The lagged capital-stock variable performed as expected; in most cases, it had a negative influence on FDI, typically at a high level of significance. The ratio of domestic investment to national product had invariably the expected sign and was frequently quite significant. Its unique explanatory power is seen by comparing the first and second equations in each panel.

The exchange-rate variable performed erratically. It had the unexpected sign more often than the expected one in both sets of equations, although the significance of the expected sign occurred slightly more often. Although the tariff variable performed weakly and erratically over the shorter period (as might be expected given its high correlation with national product), it had the expected sign over the longer period, usually with a high level of significance.

The stock-market-difference variable performed quite consistently, as expected, over the longer time period, although it sometimes appears to be outperformed by the United States index. Neither variable stood out in the shorter period.

The dummy variable for the National Energy Program in the equation modelling total United States FDI is significant with the expected sign over the longer time period (4A5), but it collapses when two years are removed from each end of that time period (5A5). The latter result is undoubtedly the outcome of the omission of the dummy variable for the two years (1986 and 1987) following the end of the NEP dummy variable during which there was large FDI inflow to petroleum. More generally, expectations and other considerations not included in the model influenced petroleum investment quite substantially.

³⁰ This is consistent with the idea that foreign affiliates have first claim on their own earnings, with increased profits providing at least a *prima facie* case for expansion. The idea is a distant relative of the empirically discredited notion of "gambler's earnings" (Barlow and Wender, 1955, as discussed in Caves, 1982, p. 167), which began as a hunch that risky subsidiaries faced both the opportunity and the constraint of investing their own profits.

Table 5. Regression equations for United States

Panel A		Coefficient ^a					
Equation	Dependent variable ^b	GP _{t-1}	dGP _t	NK _{nt-1}	IR _{t-1}	DF _t	FA _{nt}
5A1	I _a	.001 (.028)	-.042 (.030)	-.101 (.070)	—	236 (3315)	-5.37 (32.13)
5A2	I _a	.005 (.029)	-.034 (.030)	-.112 (.069)	5115.50 (7768.42)	141 (3360)	-4.64 (32.55)
5A3	I _a	.006 (.028)	-.034 (.030)	-.113 (.067)	5153.11 (7596.79)	-315 (1006)	—
5A4	I _a	-.021 (.053)	-.006 (.054)	.154 (.143)	19317.92 (13019.11)	-9169 (5410)	85.57 (52.33)
5A5	I _a	-.005 (.030)	-.034 (.032)	-.092 (.069)	5768.85 (8432.57)	861 (3564)	-12.27 (34.31)

Panel B		Coefficient ^a					
Equation	Dependent variable ^b	GP _{t-1}	dGP _t	NK _{bt-1}	IR _{t-1}	DF _t	FA _{bt}
5B1	I _b	.036 (.024)	.035 (.022)	-.150 (.085)	—	-3952 (2683)	33.14 (26.25)
5B2	I _b	.045 (.022)	.052 (.021)	-.182 (.078)	12908.45 (5383.00)	-4376 (2449)	37.73 (23.97)
5B3	I _b	.039 (.023)	.047 (.022)	-.184 (.081)	12232.28 (5535.32)	-685 (726)	—
5B4	I _b	.018 (.030)	.077 (.026)	.032 (.117)	20070.88 (7064.56)	-9738 (2855)	89.93 (27.60)
5B5	I _b	.038 (.018)	.051 (.022)	-.158 (.062)	12686.30 (5561.63)	-4063 (2429)	34.52 (23.57)

Panel C		Coefficient ^a					
Equation	Dependent variable ^b	GP _{t-1}	dGP _t	NK _{mt-1}	IR _{t-1}	DF _t	FA _{mt}
5C1	I _m	0.49 (.019)	.006 (.018)	-.333 (.111)	—	-1380 (2158)	8.67 (21.58)
5C2	I _m	.038 (.017)	.001 (.016)	-.277 (.099)	10856.61 (3730.34)	-855 (1883)	4.20 (18.81)
5C3	I _m	.037 (.016)	.000 (.014)	-.278 (.097)	10924.56 (3640.31)	-446 (444)	—
5C4	I _m	.045 (.026)	.040 (.019)	-.182 (.175)	13939.23 (7079.51)	-6331 (2120)	58.06 (20.89)
5C5	I _m	.038 (.019)	.001 (.016)	-.274 (.124)	10056.70 (4433.42)	-1201 (1940)	8.13 (19.20)

^a Standard errors in parentheses.

^b Bolded coefficients significant at .05 (one-tailed test).

^c DW = Durbin Watson statistic.

FDI in Canada, annual data, 1953-1985

Coefficient ^a									
NE _{it}	RX _t	TA _t	SD _t	UP _t	PR _{it}	DP _t	R ²	DW ^c	F
1.72	-880	-15535	-12.38	—	—	—	.83	2.15	18.565
(0.18)	(2437)	(25834)	(19.39)	—	—	—			
1.69	-122	-15142	-12.66	—	—	—	.83	2.15	16.287
(0.18)	(2723)	(26165)	(19.63)	—	—	—			
1.68	-176	-13758	-13.26	—	—	—	.83	2.16	18.920
(.17)	(2638)	(23778)	(18.77)	—	—	—			
—	-2263	17055	-19.84	—	100908	—	.49	1.87	4.122
—	(4632)	(45198)	(34.43)	—	(29832)	—			
1.71	-672	-20642	—	3.20	—	103.61	.82	2.17	14.000
(.29)	(3106)	(25791)	—	(18.75)	—	(1035.69)			

Coefficient ^a									
NE _{it}	RX _t	TA _t	SD _t	UP _t	PR _{it}	DP _t	R ²	DW ^c	F
1.11	-1762	13485	-4.35	—	—	—	.76	2.12	11.965
(.23)	(2054)	(20068)	(17.72)	—	—	—			
1.06	-9	13182	-7.94	—	—	—	.80	2.32	13.627
(.21)	(2008)	(18270)	(16.21)	—	—	—			
1.20	918	3454	-1.12	—	—	—	.78	2.16	13.932
(.19)	(1980)	(17736)	(16.11)	—	—	—			
—	-1592	25300	-7.53	—	36353	—	.66	2.10	7.365
—	(2530)	(24737)	(20.86)	—	(14234)	—			
1.05	42	10108	—	.14	—	—	.80	2.29	13.403
(.21)	(2206)	(17312)	—	(9.36)	—	—			

Coefficient ^a									
NE _{it}	RX _t	TA _t	SD _t	UP _t	PR _{it}	DA _t	R ²	DW ^c	F
1.04	1915	5319	-.43	—	—	—	.71	1.99	9.614
(.27)	(1634)	(14709)	(10.66)	—	—	—			
1.26	3857	927	2.84	—	—	—	.78	2.35	12.274
(.24)	(1569)	(12868)	(9.33)	—	—	—			
1.30	4042	-387	3.62	—	—	—	.79	2.36	14.257
(.19)	(1305)	(11207)	(8.48)	—	—	—			
—	978	18522	-14.41	—	19856	—	.57	1.94	5.309
—	(1996)	-(17134)	(12.68)	—	(10995)	—			
1.24	3849	4885	—	-1.26	—	110.57	.77	2.30	10.651
(.25)	(1716)	(17474)	—	(8.62)	—	(448.56)			

A dummy variable for Autopact, which should have had its principal effect on FDI into the manufacturing sector, was included in equations 4C5 and 5C5; the impact of that agreement on United States flows into that sector was undetectable.

Interpretation of the findings

The results of the regression analysis presented above suggest that the right time period and a defensible formulation of a time-series equation modelling the effects of FIRA can produce consistent results showing a negative impact on these investments. If, as both common sense and scholarly admonition dictate (e.g., Leamer and Leonard, 1983), the fragility of the results is explored both in the context of model specification and time-period examined, much of the apparent negative impact of FIRA on FDI flows into Canada dissipates. Those with prior convictions about the negative impact of FIRA on FDI into Canada will find some support for their position in the results presented above; others will continue to be skeptical since these results conform most closely with part of the third hypothesis presented at the beginning of the article: little or no effect on the volume of inward FDI.

It should be stressed again that FIRA affected directly only new business cases and acquisitions, and not all FDI inflows. Moreover, FIRA's impact on the character of the investments made should also be considered. There was no evidence suggesting that FIRA operated successfully as a discriminating monopsonist in its dealings with United States firms. The Agency paid a lot of attention to issues such as import substitution and export promotion; if it had succeeded in changing firm behaviour, a reduction in profits would be expected. Yet, the rate of return (net earnings as a percentage of lagged (estimated) capital stock), regressed on time showed a highly significant downward trend over the post-war period that accounted for between three-fifths and three-quarters of all of the variation in such returns for each of the three FDI stock variables employed in this study. A dummy variable for FIRA added to those equations is positive in all three equations with a *t*-score above 1.00 for manufacturing FDI and total FDI. While these equations were not carefully specified, the burden of proof seems to rest with those claiming that FIRA used its discretion successfully to reduce the profitability of United States investment.

However, FIRA might have affected FDI from other countries more unambiguously than United States FDI. Moreover, it must be admitted that the statistical analysis presented here may not be sufficient; more accurate

measures of the existing variables or the discovery of important omitted variables may provide a more significant and consistent negative impact for FIRA than it has been suggested here.

One must still ask how a regime with such apparently muffled quantitative effects can be reconciled with the extreme suspicion that FIRA aroused among foreign investors and with documented rates of rejection that were the highest among all industrial countries that screened incoming FDI during the 1970s (Safarian, 1978). An important clue lies in FIRA's procedures and in the way data were recorded. After an initial application, FIRA officials provided reactions to investors about the attractiveness of the proposal from a Canadian perspective. If this counsel was ignored or heeded inadequately, and the application was subsequently rejected, the proposed investment did not necessarily die. The application would be recorded as a rejection, but a chastened investor still had the option to return with a more attractive offering in another application. As many as one third to one half of all takeovers and about 25 per cent of all proposed start-ups that were rejected by FIRA when first proposed were resubmitted in a modified form and approved.³¹

Overall, FIRA may well have had a much greater impact on Canada's popular image as a host to FDI than on either the volume or profitability of investment. Perhaps FIRA served mainly the domestic political purpose of demonstrating that the Government is vigilant in a policy area about which Canadians remain uneasy even today. As one reviewer of this study noted, FIRA may ultimately have found merit in most proposed investments, yet the aggregate impact of foreign control on the Canadian economy would still remain a source of concern.

Those concerned about inward FDI screening in the United States and elsewhere can draw a number of lessons from the FIRA experience. Those fearful that screening would deter substantial amounts of FDI would find some grounds for optimism. Performance requirements for foreign investors might be met without a substantial impact on the overall volume of FDI (or profits sacrificed by foreigners). On the other hand, those most concerned about United States leadership towards a more open world economy might draw a very different conclusion: screening could produce a dramatically different image of the United States economy abroad, even if the impact on the volume of inward FDI is not easily detectable. ■

³¹ I am greatly indebted to Charles Byron, Director, Manufacturing and Resource Industries, Investment Review, Investment Canada, for providing these estimates.

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