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MATURE DEPENDENCY: THE EFFECTS OF AMERICAN DIRECT INVESTMENT ON

CANADIAN ECONOMIC GROWTH

by

HEATHER-JO HAMMER

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for acceptance, a thesis entitled  Mature Dependency:  The
Effects of American Direct Investment on Canadian Economic
Growth, submitted by Heather-Jo Hammer in partial fulfilment
of the requirements for the degree of Doctor of Philosophy.


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## DEDICATION

To Bobby for showing me the door and to John for taking me through.

# ABSTRACT

The concept of mature dependency is used to explain the structural problems associated with Canadian economic growth. Canada's mature dependency is similar to Third World dependency in its experience of extensive foreign capital penetration and a resulting reduction in economic growth. Yet, unlike its Third World counterparts, Canada's real economy gives it better potential to mitigate the negative effects of foreign direct investment.

A time series analysis of the effects of year-to-year changes in American direct investment and Canadian economic growth indicates that there has been a change in the relationship between American direct investment and economic growth in Canada. Prior to 1960, high levels of American direct investment flowed into Canada. Its effect on Canada's economic growth was positive. After 1960, the reinvestment of retained earnings largely replaced new American capital investment. The synchronous effect on change in gross fixed capital formation and economic growth remained positive. For every dollar change in growth of American direct investment, change in Canadian GNP increased by $.97. However, after a lag of nine years, change in American direct investment reduced the change in growth of Canada's GNP by $1.92.

Despite the establishment in 1973 of the Foreign Investment Review Agency, Canada has been unable to effectively counteract this negative long-term effect of American capital penetration. The public and political misconception of the necessity of foreign direct investment to sustain Canadian economic growth has pre-empted any serious attempt to alter the existing structures of American economic control.

# ACKNOWLEDGEMENTS

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## A. INTRODUCTION

In the past decade, sociologists have become increasingly concerned about the effects of extensive foreign direct investment on the recipient country's economic and political well-being. Bornschier (1981:385) reports that the penetration of multinational enterprises is the most significant predictor of economic growth. In addition, there is clear evidence of a negative effect of foreign direct investment on the host's economic growth in the long run (Bornschier et al. 1978; Bornschier 1980b). The long-run negative-growth effect of foreign capital penetration is explained in terms of economic dependency. As it is currently used, dependency refers to an asymmetric property of the structure of relationships among countries. It involves a complex intersection between domestic and international capitalist interests. It is associated with certain economic, political and social distortions,[1] and it is a condition implemented initially by a willing domestic state. Dependency requires the incorporation of history into the analysis in that the effects of dependency are evident only in the long run (Bornschier and Ballmer-Cao 1979).

According to the perspective of empirical dependency theory, economic dependency is a two-phased process. In the first phase, foreign investment will have a positive effect on economic growth that will be stronger the higher the net investment level. In the second-phase, net investments will slow down or decrease in level, thereby adversely affecting growth. Although the growth-reducing consequences of MNE penetration are mitigated as long as fresh investment levels remain high, the long-term consequences will also be more pronounced where high levels of penetration exist (Bornschier 1975; 1980a; 1980b; Bornschier et al. 1978;

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[1] I have paraphrased Cardoso based in the quotation in Duvall (1978:55-56). This quotation was translated from the original Portuguese by Duvall and Russett. The Cardoso reference is "Teoria de la Dependencia' o Analisis de Sitaciones Concretas de Dependencia?" Revista Latinamericana de Ciencia Politica 1:414 (Dec. 1970).

Bornschier and Ballmer-Cao 1978; Dolan and Tomlin 1980). Economic dependency is the extent to which a country's economy is penetrated and controlled by foreign direct investment. The negative effects of economic dependency are explained in the context of the "decapitalization thesis" (Bornschier 1980a; 1980b), where decapitalization results from the loss of capital for accumulation.

There are two aspects to the decapitalization argument: the balance of payments effect and the effect of reinvested earnings. The early arguments emphasized that firms would inhibit economic growth by offsetting their contribution to the host's capital formation through excessive rates of capital repatriation to the investor. Where repatriation includes profits, interest and dividend payments, these are variable costs with a tendency to grow without further capital inflow. This constitutes the "balance of payments" effect of dependency. It is a linkage aspect of dependency that has been de-emphasized in the recent empirical literature. It is, however, the aspect that Canadian scholars have applied in various Science Council of Canada studies in an attempt to isolate the deficit in Canada's non-merchandise account as the most persistent and increasing drain on the Canadian economy.

Critics of foreign direct investment have long argued that the benefits associated with the activities of multinational enterprises have been accompanied by high economic costs. For the most part, these costs have been measured as balance of payments effects in terms of the magnitudes of capital flows (Stoneman 1975:12). As measures of the effects of foreign direct investment on development, balance of payments measures have concentrated on the recipient's rising debt burden and on capital repatriation to the investor in terms of outflows of profits, interest and dividend payments, royalties and so on (Britton and Gilmour 1978:30; Stoneman 1975:12).

Recently, the economic benefits traditionally associated with foreign direct investment have also been brought into question. The negative growth effect of foreign direct investment is not seen as the result of an imbalance between the costs and benefits of investment. Rather, the effect is a product of the structure of the relationship between the host economy and the stock

of foreign capital. This structure is defined as economic dependency (Weisskopf 1976:3; Bornschier et al. 1978:653). Whereas payment effects should be measured net of both amortization and factor payments (Stoneman 1975:16), the structural effect of foreign direct investment requires a gross flow measure because factor payments do not imply a surrender of control (Stoneman 1975:12). In addition economic dependency is a structural effect that is evident in the long run. Consequently, the flow measure must be accumulated (Stoneman 1975:15; Bornschier et al. 1978:667) in order to approximate the stock of foreign direct investment.

## B. THE REINVESTMENT OF RETAINED EARNINGS

The key to understanding the structural effect of dependency is the role played by the reinvestment of retained earnings. Reinvestment is considered as a net increase in the host's foreign liability (Stoneman 1975:16; Dolan et al. 1982). In the long run, stocks of foreign direct investment will grow faster than net inflows. Indeed, often net inflows become net outflows. As fresh capital inflows are reduced, foreign direct investment comes to rely increasingly on the reinvestment of retained earnings. Consequently, the stock of foreign direct investment in a host will expand without the balance of payments benefits associated with the importation of new foreign savings.

As long as levels of fresh investment remain high enough to trigger synchronous growth effects, the structural effects of increasing foreign investment stock will be mitigated (Bornschier 1981:374). However, stocks of foreign capital grow faster than net investment flows, and in the long run, the negative stock effects will cancel current payments benefits and those of earlier flows as well (Stoneman 1975:18). Moreover, the stock of foreign direct investment is likely to expand faster than the general economy because it is directed into specifically high-technology and high-growth industries (Stoneman 1975:19; Gonick 1970:50). Stoneman (1975:19) suggests that extensive foreign capital penetration may, in addition, cancel the positive effects of the investment of domestic savings where there is a sizeable difference

between the growth rates of the two.

## C. CHANGES IN THE CONCEPTUALIZATION OF DEPENDENCY

Sociological interest in economic dependency reflects a gradual reorientation of North American macrosociology away from individual development and towards issues of structural change within the world system (Hannan and Tuma 1979:303). From the perspective of world system theory, structural change may be viewed as a history of the expansion of capitalism as a mode of production (Wallerstein 1972, 1974a; Chase-Dunn 1981). In its initial conceptualization, world capitalist expansion has constituted a hierarchical division of labor between the core and the periphery (Wallerstein 1972, 1974a). This division is both functional and geographic in the sense that the historical process of extensive core penetration of the periphery has created and transformed the peripheral structure of production largely in accordance with the interests of international capital and with the conditions of international markets.

Typically, the peripheral structure has been marked by a few leading industries created and controlled by foreign capitalists. These key sectors have been overwhelmingly responsible for economic growth and have been for the most part, geared towards export back to the core, Core demand for primary commodities and a supply of cheap labor (to assemble parts for technologically sophisticated consumer goods and industrial components) has come to determine a dependent structure of capital accumulation. Dependent accumulation is a peripheral expression of a more basic and autonomous process of accumulation in the core (Amin 1976; Duvall and Freeman 1981; Evans 1979).

Since World War II, the multinational enterprise has emerged as the basic organizational unit of world production (Bergeson 1982:33; Bornschier and Ballmer-Cao 1979:488; Blake and Walters 1983:87; Hood and Young 1979:18), and the world economy has come to reflect the internal division of labor within the multinationals (Cardoso 1973). This new division of labor has been superimposed upon the traditional division between the

periphery and the core, or it has come to replace the core-periphery division. Circa 1960, multinational activity further modified the world economy by shifting investment out of the extractive industries of the periphery and into the manufacturing industries of developed countries. (Blake and Walters 1983:86). The shift in patterns of foreign direct investment has necessitated the expansion of the concept of dependency to account for cross-penetration within the core.

At the level of theory, the classical interest rate theories of foreign direct investment have been modified to account for the oligopolistic rivalry between multinational enterprises (Bornschier 1981:377). The new theories of multinational expansion (Hymer 1976; Rugman 1980) stress the organizational and industrial economics of the institutions. These theories explain both the expansion of the multinationals into the periphery and the cross-penetration among core countries, independent of the level of industrial concentration attained in the home country. The new theories of multinational expansion do not propose a general global expansion along the world system line of argument. Instead, they argue that foreign direct investment will expand into certain activities within the highly concentrated and technologically sophisticated branches of industry (Bornschier 1981:377).

The expansion of the concept of dependency has important implications for the design of empirical research. As stated by Caporaso and Zare (1981:47), if researchers are not in a position to distinguish between penetrated countries such as Canada, South Korea and Brazil, they are not in a strong position to discover the structure of dependency. "The questions of identification and measurement must be answered before theoretical ones can be raised." (Caporaso and Zare 1981:47)

## D. EMPIRICAL DEPENDENCY RESEARCH

Ironically, the problem with current dependency research is that advances in empirical methodology have not kept up with advances in sociological theory. The statement of dependency theory requires that dependency be viewed as an historical process that is

constrained, but not determined by the encompassing structure of the world economy. The theory's operationalization demands the differentiation of forms of dependence as they may vary between "concrete" cases, and it demands attention to history. Although sociologists have begun to devote more attention to modelling processes of change (Hannan and Tuma 1979:324).

> ...the relative neglect of the time dimension in sociology ... noted by Galtung (1975),
> Light (1975), and others ... has resulted in insufficient or insufficiently rigorous
> attention given ... to the process of history (Czarnocki 1978:24, 35).

Similarly, the commitment to cross-national research has largely obscured important structural differences between cases of dependency.

To what extent does the structure of economic dependency evident in the periphery provide an adequate model of economic relations within the core? As a reasonable description of structural change within the world system, dependency should provide an explanation for both peripheral and core country development. To date, the research findings have not been encouraging. Although core countries have been routinely included in world samples (Bornschier et al. 1978; Bornschier 1980a), empirical analyses have failed to replicate the long-term negative effect of foreign direct-investment that is evident cross-nationally for the fifteen richest countries analyzed separately (Bornschier 1981:387; Krahn and Gartrell 1984).

The lack of findings is particularly disturbing in light of the fact that the strongest findings have been evident in those countries with the highest growth potential in terms of exceptional resource endowment, market size, character of the labor supply and so on (Bornschier 1981). Because of the high growth potential of the areas that attract extensive foreign direct-investment, there is probably a built-in bias towards a positive association between penetration and economic growth (Stoneman 1975:19). The finding of the strongest negative effects for these areas speaks to the strength of the negative effects, thereby strengthening the case for the existence of a harmful causal factor (Stoneman 1975:19).

## E. CANADA AS A CASE STUDY IN ECONOMIC DEPENDENCY

Portes (1976), Levitt (1970) and others have suggested that Canada may be an important test case for the application of the dependency paradigm to the explanation of the effects of foreign direct investment on the economic growth of a non-peripheral country. Not only does Canada, as the most extensively penetrated industrialized country, play host to more than half of the total of American direct investment in developed areas (Table 1.1); Canada is unique in that foreign direct investment is directed into both resource extraction and manufacturing industries (Gherson 1980). In addition, there are important similarities between Canada's political economy and the economies of underdeveloped countries. These similarities include a relatively weak and fragmented industrial sector, a disproportionate reliance on primary resource exports and high-technology imports, and a state and economic elite which has nurtured and protected foreign interests (Williams 1983).

Approximately 80 percent of total direct investment in Canada has been American (Statistics Canada 1981b:10). Although the proportion of American direct investment in Canada has declined, Canada's gross liabilities to the U.S. have risen, due in large part, to the growth in the reinvestment of retained earnings (Statistics Canada 1981b:10). The annual data are sketchy, however, the Statistics Canada estimates (1981b:9) indicate that since 1971, retained earnings have been the major contributor to the expansion of foreign direct investment in Canada. Almost 90 percent of the net increase in the book value of stock of foreign direct investment has been accounted for by the reinvestment of retained earnings since 1975. This means that only 10 percent of foreign direct investment in Canadian industries has been financed by foreign savings or new funds in the past nine years.

Levitt (1970:63-64) suggests that the reinvestment of retained earnings became a problem for Canada before 1971. She estimates that between 1957 and 1964, American direct investment in manufacturing, petroleum and natural gas, and mining and smelting secured 73 percent of investment funds from retained earnings and depreciation reserves. Only 15 percent of American direct investment in these industries was financed by new funds. Laxer (1984)

TABLE 1.1

GEOGRAPHIC BREAKDOWN OF U.S. DIRECT INVESTMENT ABROAD, SELECTED YEARS 1950-1980

(IN BILLIONS OF CURRENT DOLLARS AND PERCENTAGES)

| | 1950 | | 1960 | | 1970 | | 1980 | |
|---|---|---|---|---|---|---|---|---|
| | Amount | % of Total | Amount | % of Total | Amount | % of Total | Amount | % of Total |
| Total developed areas | $ 5.7 | 48% | $19.6 | 61% | $53.2 | 68% | $157.1 | 74% |
| Canada | 3.6 | 31 | 11.2 | 35 | 22.8 | 29 | 44.6 | 21 |
| Europe | 1.7 | 14 | 6.7 | 21 | 24.5 | 31 | 95.7 | 45 |
| Others | 0.4 | 3 | 1.7 | 5 | 5.9 | 8 | 16.8 | 8 |
| Total less developed areas | 4.4 | 37 | 10.9 | 34 | 21.3 | 27 | 52.7 | 25 |
| Unallocated | 1.7 | 14 | 1.5 | 5 | 3.6 | 5 | 3.7 | 2 |
| Total | $11.8 | 99% | $32.0 | 100% | $78.1 | 100% | $213.5 | 100% |

Sources: U.S. Congress, Senate Committee on Finance, Implications of Multinational Firms for World Trade and Investment and for U.S. Trade and Labor, 93rd Cong., 1st sess., 1973, p. 72. The 1980 figures are from the U.S. Department of Commerce, Survey of Current Business, August 1981, pp. 21-22.

Reference: David H. Blake and Robert S. Walters, The Politics of Global Economic Relations, New Jersey: Prentice-Hall, p. 86

8

dates the problem back earlier yet. According to Laxer, the initial expansion of the American multinationals within the Canadian economy between 1913 and 1926 was largely financed by retained earnings. He does not have estimates for the period, however.

As predicted by the dependency model, Canada has experienced a reduction in the net inflow of foreign capital. The statistics for 1977 indicate the second net outflow of foreign direct investment in three years (Statistics Canada 1981a:33). In addition, there has been a reduction in the net foreign capital inflows from transactions in interest-sensitive capital such as bonds and money market instruments. This reduction has occurred in spite of the prevalence of interest rate differentials that have been favorable to investment in Canadian securities (Statistics Canada 1981a:32). Indeed, had it not been for massive foreign borrowing by the Canadian government in order to finance the increasing current account deficit, the net inflows for 1977 would have been even lower (Statistics Canada 1981a:32).

In spite of what appears to be a strong substantive case for the application of a dependency explanation to Canada's economic development, there has been no direct empirical evidence to suggest that foreign direct investment has a negative structural effect on the economic growth of extensively penetrated rich countries (Bornschier 1980b). In fact, the argument has been made that the structural aspect of economic dependency is not a characteristic of developed core capitalism (Duvall and Freeman 1981:101).

Williams (1983:4) suggests that in the Canadian example, foreign direct investment is dominant; however, it plays a different role in Canada than it does in the periphery. Because of the large and relatively integrated Canadian economy, foreign direct investment has produced more positive than negative economic effects (Williams 1983:4). Williams argues that if dependency is to be used as an explanation of Canadian economic growth, then it should be correctly identified as a question of Canada's excessive dependence on imported manufactured goods and the related restrictions on the Canadian capacity to export (Williams 1983:3).

## F. TRADE VERSUS ECONOMIC-DEPENDENCY

Although various aspects of trade dependence, or partner and/or commodity concentration dependence (Weisskopf 1976:3-4) have received considerable attention in the dependency literature (Vengroff 1977; Kaufman et al. 1975), measures of trade dependence have been largely unrelated to growth measures. This is in spite of a clear association of economic dependency with a certain trade structure that is unfavorable for self-sustained economic growth (Bornschier 1980a:164; Kaufman et al. 1975). In part, the lack of empirical association may be explained by the use of trade linkage variables that "reflect" a structural relationship (Clement 1978:22) as a direct measure of the relationship (Dolan et al. 1982). In part, measures of trade dependence have become confounded by multinationals determining the production and distribution of goods and services independent of world-market cycles (Government of Canada 1972:184).

Where foreign capital penetration is extensive, international trade may bypass the world market completely through intercorporate transfers (Bornschier and Ballmer-Cao 1979:488). The Gray Report (1972:171) estimate for 1969 was that 75 percent of all trade conducted by multinationals in Canada was in the form of intercorporate transfers. The 1981 Statistics Canada estimate (1981a:12) indicates that the United States accounted for about 70 percent of Canada's exports. Extrapolating, we could estimate that about half of Canadian-American trade is accounted for by intercorporate transfers.

Whether trade dependence is measured in terms of partner, sectoral and commodity concentration, or with as index combining various configurations of the three indicators, trade remains, fundamentally, a variable associated with external economic linkage. Trade does not involve the structural penetration of an economy any more than imported goods are seen by the consumer as domestically-produced items. Foreign direct investment, in contrast, may well become a strong internal force within the host economy (Hutcheson 1983:174). Grant (1970) has argued that foreign capital comes to be seen as domestic capital. Hutcheson has gone as far as to suggest that the Canadian state is controlled by the dominant section of the ruling class,

which he identifies as the American corporation (Hutcheson 1983:174).

In particular, foreign-owned manufacturing subsidiaries, become very much a part of the local scene. For example, they are likely to have local business supporters as well as domestic enemies. Often, the products are consumed locally, a situation that is aided by massive advertising campaigns designed to increase consumer awareness and a predisposition toward the product (Blake and Walters 1983;99).

In his critique of Wallerstein and Frank, Brenner (1977) makes the point that constrained and distorted economic development cannot be fundamentally altered by changing trade-related features of dependence alone. Duvall (1978:71) adds that "the extent and forms of capitalist...(structural) relations are determinative." Somehow, the bulk of social scientists who argue that Canada is dependent have missed this point. The Canadian concern with trade-related features of dependence may be associated with the fact that these features are the most obvious "symptoms" of dependence. However, foreign direct investment or economic penetration is determinative in the causal structure.

By far, the strongest empirical evidence of dependency has been related to the economic aspect of structural dependency. I suggest that the question of the appropriateness of the economic dependency explanation to core development in general and to Canadian development in particular, may be resolved on methodological grounds. Whereas most of the periphery is dependent, most of the core is not. The analysis of rich industrialized countries as a block has obscured the differences between rich countries, masking any dependency effects that are evident in particular countries.

## G. DEFINING MATURE DEPENDENCY.

From the standpoint of dependency theory, the issue of comparability is crucial. The international economy sets broad structural constraints on national economic change. However, it is the complex interplay between the nation and the world economy that determines the specific historical outcome (Evans 1979; Cardoso and Faletto 1978). In consequence, dependent development cannot be adequately explained as a "simple derivation or reflection of the 'laws' of global change." (Caporaso 1980:607) The issue is contextual specificity. The contextual

specificity of causal relations requires a testing of the notion that context affects the specification of causal relations (Duvall 1978). Even where researchers have been careful in the division of their samples in terms of geographic location, world system position, resource endowment, initial level of development and so on, 'aberrant' cases such as Canada have not been explained by the research findings.

As a rich, industrialized host to extensive foreign direct investment, Canada has been consistently treated as a deviant case in the dependency literature (Portes 1976). Canada is not a deviant case. Rather, the Canadian economy exhibits what I will define as "mature dependency". That is, Canada is underdeveloped relative to other industrialized core countries. Similar to the underdeveloped dependent, the mature dependent experiences extensive foreign capital penetration in terms of both the amount of foreign ownership and the extent of foreign control. In contrast to the "functional incompleteness" characteristic of underdeveloped economies (Caporaso and Zaire 1981), the mature dependent does not require crucial external inputs to complete its domestic economic cycle. The mature dependent is a fully-integrated capitalist economy that has at some point made the decision to invite external capital inputs in order to accelerate domestic economic growth.

Although empirical evidence can only be considered as a partial and incomplete test of theoretical claims (Bornschier 1981:372), the demonstration of a long-term negative effect of American direct investment on Canadian economic growth provides strong support for the argument that Canada is subject to the structural relationship associated with economic dependency. The specification of the time lag associated with the structure of economic dependency will provide the basis for future empirical specification of the mechanisms by which American direct investment has come to have a long-term negative impact on Canadian economic growth.

The strength of the empirical demonstration rests with the use of a research design that will enable the combination of historical context and sophisticated analytical technique. This requires that the model be informed by an examination of the historical conditioning of

Canadian economic growth by the penetration of American direct investment. In addition, the model requires a longitudinal design to differentiate the short and long-term effects of American capital penetration.

## H. DEMONSTRATING DEPENDENCY EFFECTS FOR CANADA

It is only recently that sociologists have begun to emphasize that temporal data differ from cross-national data in that time series contain information about the manner in which change comes about (Hannan and Tuma 1979:324). A time series design has three features that make it methodologically superior to the cross-sectional design in the study of dependency. First, by focusing on a single country or, more generally, by doing a country-by-country analysis, the use of time series design avoids the problem of comparability. Second, since dependency theory argues that a change in a country's dependency is evident only through historical analysis, the statement of dependency theory demands a longitudinal design or what Czarnocki (1978:25) refers to as the application of "dynamic macrosociology". In fact, even the variation in research methods among the cross-sectional studies reflects a methodological choice on how to handle the temporal dimension in the measurement of economic growth (consider the incorporation of lagged variables in panel regression, for example) (Bornschier et al. 1978:654).

The restriction of current empirical dependency analyses to comparative non-time series research designs has meant that events which are major sources of variation in the independent variables have been ignored (Esteb 1977:13). Czarnocki explains that,

...if a sub-set of key indicators can ... be isolated and a consistent series of concurrent redirections identified among them, it can be claimed that historically important periods have been inductively delineated ... It is not the analyst that indicates but the data that indicates when, if at all, concurrent redirections of key indicators take place.... the key indicators must also prove to be leading indicators in the sense that whenever they move jointly or substantially, the subsequent changes in other variables are profound enough to claim that the system has moved from one historical period to another (Czarnocki 1979:33).

The use of a time series design to analyze the growth effects for a rich country which I know substantively to be dependent, amounts to doing an empirical follow-up on what I see as an

important conceptual shift in dependency research from cross-national "tests" of dependency theory toward the demonstration of dependency effects for a single country.

The focus of examination will be informed by the theoretical predictions and empirical findings of current dependency research. Bornschier (1981) reports sectoral effects that suggest that manufacturing, mining and smelting, and petroleum and natural gas are the key sectors that contribute to the negative aggregate effect of foreign direct investment on economic growth. Therefore, attention will be paid to the historical distribution of American direct investment in these three Canadian industries.

In addition, dependency theory argues for the importance of considering structural breaks (such as world wars) in world economic development as parameters that delineate the time frame of analysis. The relevance of this argument for Canada is that there should be historical evidence to support the argument that a qualitative difference exists between the character of American direct investment in the pre- and post-WW II periods. Finally, because there exists a substantial body of literature on the effects of debt dependence in the Third World (Leff and Sato 1980; Fry 1978; Papanek 1973; Grinols and Bhagwati 1976), the long and short-term effects of portfolio investment in Canada will also be examined.

The other important clue to the isolation of the structural effect of dependency for Canada is related to where one begins the search for negative long-run effects. Stoneman (1975) reports a negative association between the stock of foreign direct investment and economic growth that is evident in the late 1960's. In her description of the historical phases of Canada's dependence, Levitt (1970:65) suggests that 1960 begins a new phase which she describes as "American corporate imperialism". Following the lead of Bornschier and his colleagues, we would expect to find the negative effects of American corporate imperialism about eight to ten years after net capital inflows begin to slow down. Again, this puts the search for dependency effects somewhere in the late 1960's.

# I. DETERMINING WHEN CANADA BECAME DEPENDENT

For the Third World, economic dependency is clearly a post World War II phenomenon. It is tied to the ascent of the multinationals to hegemony in the world economy. For Canada, the argument for limiting the analysis to the post-1945 period is less cogent. The decision reflects methodological considerations, the availability of an uninterrupted series of annual data, and a consideration for the change in the proportional contribution of American direct investment to the total stock of foreign capital in Canada.

From a strictly methodological standpoint, World War II marks a structural break in the history of the world economy (Bergeson 1982:30). The end of the Second World War begins a period of world economic boom, peace between major core powers, the second era of economic liberalism and a corresponding upswing of mergers among the international industrial enterprises. The structural break circa 1945 renders the pre-1945 and the post-1945 series not strictly comparable in terms of analysis. In addition, there are other structural 'bends' in the early series that include the depression and war years. These bends require special treatment in analysis that results in the truncation of the analyzable series.

The composition of foreign long-term investment in Canada (data are reported in Chapter II) also lends support to the argument that a change in the proportion of American direct investment occurred after World War II. Unlike its Third World counterparts, Canada has a long history of foreign direct investment. Most of the contemporary American multinationals had already been established in Canada by the end of 1920 (Gonick 1970:62). It was not until 1946, however, that American direct investment exceeded British portfolio investment as a proportion of total foreign investment. It was not until 1952 that American direct investment accounted for a larger proportion of total foreign capital than did the total of British and American portfolio investment.

Until 1926, British portfolio investment was by far the most significant contributor to foreign long-term investment in Canada. It accounted for about 80 percent of foreign capital in Canada between 1867 and 1913. By 1926, foreign long-term investment was fairly evenly split

between American and British portfolio and American direct investments. However, American capital dominated foreign investment, accounting for between 53 and 61 percent of total foreign capital between 1926 and 1939. The important point is that between 1930 and 1946, portfolio investment (American and British) accounted for twice as much foreign long-term investment as did American Direct investment.

There is a structural difference in the capital flows that accompany portfolio and foreign direct investment. Direct investments are those in which control lies with the foreign investor (Aitken 1961:24). Portfolio investments involve the acquisition of foreign securities by individuals or institutions with limited control over the companies concerned. In fact, many experts argue that portfolio investment does not involve foreign control at all (Aitken 1961:24; Hood and Young 1979:9; Levitt 1970:58; Gonick 1970:50). Gonick (1970:50) argues that as an economy expands, the foreign sector recedes. In contrast, foreign direct investment may well expand faster than the general economy because it is concentrated in the most dynamic and profitable sectors of the economy.

Flows of portfolio capital generally contribute to economic growth whereas the structural effects of a stock of foreign direct investment reduce growth (Stoneman 1975:19). Although a country developing largely on portfolio investment might have a structure of investment that differs from the structure that would have been associated with domestic resource or direct investment development, Stoneman (1975:15) dismisses as rare, the chances of any continuing direct control over an economy. Since 1960, the total of British and American portfolio investment has not exceeded 32 percent of the total of foreign long-term-investment in Canada. This proportion may be compared to the previous low score of 42 percent in 1952. Prior to World War II, foreign portfolio investment accounted for an average of 71 percent of the total foreign capital investment. After World War II, the average proportion dropped to 34.8 percent. In contrast, American direct investment accounted for only 19.3 percent of the pre-World War II average of foreign long-term investment. After 1946, American direct investment accounted for 42.9 percent of the total. The growth inducing effect of portfolio

investment has likely operated in much the same way as flows of direct investment. Certainly, American direct investment had an early negative effect on Canada's trade composition; however, the high levels of portfolio and direct investment inflows postponed the long-term effect of economic stagnation until the 1960's.

## J. THE IMPLICATIONS OF MATURE DEPENDENCY FOR EFFECTIVE ECONOMIC POLICY

Stoneman (1975:20) suggests that if foreign direct investment was truly an independent variable that negatively effected economic growth, the policy implications would be obvious. Economic growth would be accelerated by the reduction of the stock of foreign direct investment. Of course, the political and social consequences of the nationalization of industry speak against the independence argument. Economic dependency is not a result of the movement of disembodied capital and technology. Capital investment has a specific role in the organizational economics of the multinational enterprises, and the multinationals are continually adapting to or modifying the structure of the world economy.

Aside from the issue of the efficacy of foreign direct investment, the inability of host states to mount effective economic policy has raised concern over the threat to political sovereignty that is posed by foreign penetration. Policy recommendations to increase new inflows of foreign direct investment and to improve the impact of multinational penetration have underestimated the extent to which the logic of existing economic relationships has determined the structure of outcomes. In addition, policy-makers have not anticipated the ease with which foreign direct investment has been able to reduce the impact of anti-multinational policies. The result has been largely ineffective policy.

The Foreign Investment Review Act (1973) is a policy that has been implemented because of a concern with Canadian sovereignty and independence (Rugman 1980b; Feltham and Rauenbusch 1973). The Act reflects an acceptance of both the presence of and need for extensive American direct investment, however, it attempts to control the negative

consequences of the investment by screening for economic benefits. The Act does not attempt to reduce the existing stock of American direct investment; nor does it attempt to limit the amount of incoming investment.

FIRA is based on the misconception that if properly controlled, multinational activity will transfer technological and managerial benefits to Canada. According to the organizational theory of oligopolistic advantage within the multinationals, however, the transfer of benefits is largely contradictory to the profitability of firm-specific advantage. Screening American direct investment for benefits will have virtually no effect on the structural relationship between growth and penetration because the negative effect of dependency cannot be altered by screening for other types of benefits.

The issues related to the demonstration of Canada's economic dependency and Canada's inability to alter the structural relationship have provided the outline for this study. The contextual specificity of Canada's mature dependence will be identified in Chapter II through an historical analysis of the composition and extent of foreign investment in Canada. Chapter III will address the methodological issues related to the use of a time series model of the process of American economic penetration. In Chapter IV, the long-term structural effect of mature dependency will be demonstrated for the post-World War II period.

The final two chapters will examine the effectiveness of the Foreign Investment Review Act in the mitigation of dependency. Chapter V will provide the context for the evaluation with an examination of how Canadian policy-makers have come to define American direct investment as a problem. In Chapter VI, organizational theory will be used to specify criteria for the evaluation of the appropriateness of policy.

## K. HYPOTHESES

My hypotheses are that:

1. Flows of American direct investment into Canada will have a short-term positive effect on growth, due in large part, to the contribution of initial capital outlays in key industries, domestic capital formation and employment.
2. The penetration of the Canadian economy by American direct investment will have a

long-term negative effect on Canadian economic growth that will be partially neutralized to the extent that inflows of new or fresh foreign direct investment remain high.

3. The Foreign Investment Review Act has been largely ineffective as a policy intended to mitigate the negative effects of foreign penetration. This is because the screening of new investments for economic benefits does not in any way alter the structural effects related to foreign control.

I will argue that after 1960, American direct investment has had a negative effect on Canadian economic growth. The 1947-60 period corresponds to Canada's post-war boom. The 1961-78 period corresponds to the stabilization and disinvestment phase of mature dependency.

## II. THE CANADIAN HISTORICAL CONTEXT.

## A. THE ORIGIN OF FOREIGN CAPITAL INTERESTS IN CANADA

Canadian political economists have argued that a continuity exists between the inherent weakness associated with Canada's initial industrialization (1896-1926), and Canada's current dependence on American direct investment. Both the explanation of Canada's long-standing dependence on manufactured imports and the explanation for the extensive amount of American direct investment in Canada's resource sector have been given in the context of an "advanced resource capitalism" rendition of the early staple theory (Innis 1957) arguments (Richards and Pratt 1979; Drache 1978). Laxer (1938:28) describes the intial period on Canadian industrialization as one of regression in Canadian economic development. According to dependency theory, however, contemporary economic dependence based on foreign economic penetration must be distinguished from the earlier forms of dependence based in resource exports (Dos Santos 1970:232; Cardoso and Faletto 1978).

This chapter will attempt to reconcile the differences in approach between Canadian political economy and dependency theory by examining the history of foreign investment in Canada over a period of 113 years, from 1867-1980. The amount, sources and composition of foreign capital will be compared between the pre and post-World War II periods in order to determine if the historical evidence supports the argument that the dependency approach is a valid interpretation of Canadian economic development.

By 1900, Canada was the eighth largest manufacturing country in the world (Maizels, 1963). However, the proportion of finished manufactures to total exports indicates that Canada was already doing considerably worse than the top seven industrialized countries. In 1913, Canada was exporting an average of 31 percentage points less in finished manufactures that the top seven countries. (Table 2.1). Nevertheless, in 1870, manufacturing accounted for 19% of Canada's gross national product, with the production of iron and steel leading the composition.

TABLE 2.1
FINISHED MANUFACTURES AS A PROPORTION OF TRADE FOR SELECTED
INDUSTRIALIZED COUNTRIES: 1913, 1929, 1955, AND 1980

| | EXPORTS (per cent of total trade) | | | | IMPORTS |
|---|---|---|---|---|---|
| | 1913 | 1929 | 1955 | 1980 | 1980 |
| JAPAN | 31 | 43 | 64 | 71 | 11 |
| ITALY | 31 | 41 | 47 | 61 | 28 |
| GERMANY (FEDERAL) | 46 | 54 | 65 | 60 | 34 |
| SWEDEN | 23 | 26 | 33 | 53 | 15 |
| UNITED STATES | 21 | 37 | 48 | 52 | 38 |
| GREAT BRITAIN | 58 | 49 | 62 | 50 | 39 |
| FRANCE | 44 | 47 | 38 | 50 | 35 |
| Av. % of trade accounted for excluding CANADA | 37 | 42.5 | 51 | 56.7 | 32.9 |
| CANADA | 5 | 14 | 11 | 32 | 59 |
| Difference between top 7 and Canadian %'s | 31 | 28.4 | 40 | 24.7 | 26.1 |

Derived from: A. Maizels. INDUSTRIAL GROWTH AND WORLD TRADE (Cambridge: Cambridge University Press, 1963).
pp. 59, 64.

United Nations. YEARBOOK OF INTERNATIONAL TRADE STATISTICS. vol. 1, 1980.

If, as suggested by Ingram (1975) exports had increased by 20% from 1900 to 1913, we can assume that in 1900, manufactured exports accounted for only about 1% of total exports.

The key to understanding Canada's poor performance in manufactured export trade is Canada's early capital imports. It was not the case that Canada lacked domestic savings for investment in the technology necessary to further develop the manufacturing sector. Rather, Canadian funds were being directed into an elaborate banking and financial system to support the domestic transportation and utilities infrastructure. Technology was being imported at a much faster rate than the rate of increase in manufactured exports, and consequently, capital inflows were required to maintain the overall rate of economic growth (Ingram 1975).

Gonick (1970:70) argues that the import-substitution mentality implicit in the Canadian National Policy was not motivated by the need to protect Canadian manufacturing. It was motivated by the commercial capitalists' concern with protecting their trade monopoly in staples. The policy was intended to force the U.S. to finance an industrial sector which Canadian capitalists had opted out of in pursuit of their own short-term interests in profits and in what Gonick (1970:70) has described as a "national obsession with crude growth."

The state used British portfolio investment to serve the Canadian financial capitalists by subsidizing their investments in an elaborate railway system, by protecting Canadian merchandise through tariffs and by building the utilities infrastructure needed to move wheat out for export (Laxer 1983). Large amounts of British portfolio capital were imported by the sale of government-guaranteed railway bonds which transferred the costs of foreign borrowing to the consumers via high import duties, higher priced Canadian manufactured goods and high freight rates and financial charges to Canadian producers (Laxer 1983).

The primary purpose of the tariff was to guarantee the Canadian merchants the trade monopoly in exports. The Canadian railway and the financial capitalists were the same central Canadian capitalists who gained from the National Policy protection of Canadian manufacturing as well as from government assistance to the C.P.R. Levitt (1970:50-51) explains that Canadian private venture capital flowed freely from railway enterprises into the

financial sector and into manufacturing industries. Thus, the close association between the entrepeneurs and the local politicians had an effect on the institutional mechanism of capital accumulation.

Pope suggests that an unanticipated consequence of the National Policy was the protection of a manufacturing sector that was characterized by high costs and overall inefficiency (Pope 1971:16, 39). Pope's argument is substantiated by the economics of foreign direct investment. Economic theory predicts that if investment goes into highly protected industries, resources are diverted into the less efficient sectors of the host economy and this results in a potential negative impact on trade (Behrman 1970:23). Where the protected industries are themselves inefficient, the negative impact is accentuated.

In addition, the monopoly established by the tariff-protected American subsidiaries with the backing of rich parent companies, has effectively pre-empted any attempt at competition by late-coming Canadians (Pope 1971:39). The plan was not to subordinate industry to resources, but to invite foreign direct investment to develop Canadian industry to its continental specifications. Moreover, by Canadian invitation, American direct investment assumed the responsibility for extracting raw material staples. As with British mercantilism, the American multinationals directly exercised the entrepreneurial function and collected the "venture profit" from investment. Unlike the old mercantilism, foreign direct investment formed capital channels and commodity transfer networks which cut across the political border and effectively bypassed the international market.

From the point of view of American capital, foreign direct investment in Canadian manufacturing was highly profitable because it allowed the multinationals to sidestep the protective tariff, to comply with Canadian patent laws, to compete under the terms of British preference in export trade and to take advantage of regional competition within Canada to attract investment. The competition offered associated benefits that included tax reliefs and free land (Scheinberg 1973:85). Although some protection of Canadian manufacturing industry may have been warranted, in fact most other industrialized countries had tariffs, Canada stood

out in its inability to effectively combine tariffs, efficient industry and low levels of foreign ownership (Laxer 1983:29).[2]

## B. FROM CONFEDERATION TO WORLD WAR I: 1867-1926

Although direct calculations of the inflow of foreign capital into Canada for the early periods are particularly hazardous (Aitken 1961:28), Hartland (1960) estimates that in 1867, the total amount of foreign capital invested in Canada was about $200 million (current). Only $15 million or 7.5% of the total was American direct investment. In the initial 33 year period between 1867 and 1900, Canada absorbed more than one billion dollars of foreign capital. Sixteen per cent of the inflow or $160 million was in American direct investment. Between 1900 and 1913, American direct investment remained constant at 13.5% of total long-term foreign investment in Canada.

During the war years, 1914-1920, Canadian manufacturing developed on a large scale, offering particularly lucrative opportunities for American direct investment through the accelerated demand for consumer durables that accompanied the demand of Canadian manufacturers for electrical machinery and capital equipment (Scheinberg 1973:93). Although the increase in the total stock of foreign capital between 1913-1926 was due entirely to the growth of American investments, 41% of this investment was in the form of American direct investment, whereas 68.6% of the total was in American portfolio investment. In fact, the proportion of American direct to total American long-term investment declined from 62.8% of the total in 1913 to 43.9% of the total in 1926 (Table 2.2). In contrast, American portfolio investment increased from 38% of total American capital in Canada (1913) to 53% of the total in 1926 (Table 2.2).

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[1]Although the Canadian tariff has never been excessive in comparison to the tariffs of other industrialized countries, it is arguable that within the block of rich manufacturing countries, location specific advantages and disadvantages are so small, that impediments to international trade can create impressive amounts of foreign direct investment (Giddy and Young 1982).

TABLE 2.2

RELATIVE IMPORTANCE OF DIRECT AND PORTFOLIO INVESTMENT TO TOTAL LONG-TERM INVESTMENT OF THE U.S. AND U.K., SELECTED YEARS 1867-1978 (Millions of Canadian $ and Percentages)

| PERIOD | YEAR | U.K. LONG TERM | U.K. PORT. AS % UK LONG TERM | U.K. DIRECT AS % UK LONG TERM | U.S. LONG TERM | U.S. PORT. AS % US LONG TERM | U.S. DIRECT AS % US LONG TERM |
|---|---|---|---|---|---|---|---|
| Formative Years | 1867 | 185* | 100.0 | - | 15* | - | 100 |
|  | 1900 | 1065* | 93.9 | 6.1 | 202* | 14.8 | 86.2 |
| Wheat Economy | 1913 | 2818* | 92.9 | 7.1 | 828* | 38.0 | 62.8 |
| WW I | 1926 | 2637 | 81.8 | 12.7 | 3196 | 53.4 | 43.9 |
| Depression | 1930 | 7766 | 79.6 | 14.2 | 4660 | 55.2 | 42.8 |
|  | 1933 | 2683 | 80.4 | 14.0 | 4492 | 55.0 | 43.0 |
|  | 1939 | 2476 | 80.4 | 14.8 | 4151 | 52.1 | 45.3 |
| WW II | 1946 | 1670 | 75.5 | 20.0 | 5158 | 50.2 | 47.1 |
| Early Post-War Boom | 1952 | 1886 | 65.1 | 28.8 | 7997 | 40.2 | 56.6 |
| Late Post-War Boom | 1960 | 3359 | 48.0 | 45.7 | 16718 | 33.0 | 63.1 |
|  | 1965 | 3512 | 36.6 | 57.9 | 23389 | 34.0 | 60.1 |
| Mature Dependency | 1969 | 3873 | 32.0 | 62.6 | 33047 | 34.3 | 60.4 |
|  | 1972 | 4621 | 33.4 | 61.2 | 38687 | 33.2 | 60.2 |
|  | 1975 | 5704 | 32.7 | 63.6 | 52971 | 39.3 | 56.0 |
|  | 1978 | 7253 | 25.7 | 61.7 | 73043 | 43.1 | 52.5 |

Derived from: *Kari Levitt, SILENT SURRENDER: THE MULTINATIONAL CORPORATION IN CANADA.
(Toronto: Macmillan, 1970).
Canada's International Investment Position, 1978.

As a percentage of total foreign long-term investment, American direct investment increased by 9.9 percentage points over the 1913-1926 period, to 23.4% in 1926. Again, the marked increase in terms of total foreign capital investments was in American portfolio investment. As a proportion of total foreign long-term investment, American portfolio investment rose by 20.2% from 8.2% in 1913 to 28.4% in 1926 (Table 2.3).[3] By 1924, the total of American investment in Canada was just slightly under the total of American investment in all of Europe. This was mainly due to the large increase in American loans to Europe during the war and post-war years (Aitken 1961:41). American direct investment in Canada was, nevertheless, the largest for any other single country, although smaller than the amount of investment in Latin America as a whole (Table 2.4). In 1924, Canada accounted for 20% of the total of American direct investment abroad.

The concentration of American direct investment in Canada was in industrial raw materials and secondary manufacturing (including pulp and paper). Between 1914 and 1926, American direct investment in the Canadian manufacturing sector grew from 35.8% of total foreign direct investment in the sector to 58.3% of the total foreign direct investment (Table 2.5). Comparing across sectors, American direct investment in mining and smelting accounted for 20.7% of the total of foreign direct investment in mining and smelting in 1924, and only 3.7% of the total foreign direct investment in petroleum and natural gas for the same year (Table 2.6).

## C. THE BREAKDOWN OF THE WORLD ECONOMY: 1926-1939

The statistics for the interwar period reflect very strongly the impact of the depression on both the investing countries and the Canadian host. The inflow of foreign investment fell sharply. Total British long-term investment fell from 43.9% of total foreign investment in 1926 to 35.8% of the total in 1939 (Table 2.6). Between 1926 and 1939, British portfolio investment

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[3]Knox's 1939 estimates of American long-term investment differ slightly from Hartland's. Knox's 1925 estimate is 23.2 million dollars smaller than Hartland's 1926 estimate. See Aitken (1961:38-41) for a reconciliation of the differences.

COMPARISON OF U.S. AND U.K. PORTFOLIO INVESTMENT IN CANADA, SELECTED YEARS 1867-1978
(Millions of Canadian $ and Percentages)

TABLE 2.3

| PERIOD | YEAR | U.K. PORTFOLIO | U.K. PORT. AS % OF TOTAL PORT | U.K. PORT. AS % OF TOTAL FOREIGN LONG-TERM | U.S. PORTFOLIO | U.S. PORT. AS % OF TOTAL PORT | U.S. PORT. AS % OF TOTAL FOREIGN LONG-TERM |
|---|---|---|---|---|---|---|---|
| Formative Years | 1867 | 185* | 100.0 | 92.5 | 30* | 2.8 | 2.3 |
| | 1900 | 1000* | 93.9 | 76.6 | 315* | 15.1 | 8.2 |
| Wheat Economy | 1913 | 2618* | 85.0 | 68.0 | 1708 | 53.4 | 28.4 |
| WW I | 1926 | 2156 | 54.4 | 35.9 | 2573 | 55.2 | 33.8 |
| | 1930 | 2203 | 45.0 | 28.9 | 2469 | 55.0 | 33.5 |
| Depression | 1933 | 2157 | 45.5 | 29.3 | 2165 | 52.2 | 31.3 |
| | 1939 | 1990 | 45.9 | 28.8 | 2590 | 50.2 | 36.1 |
| WW II | 1946 | 1260 | 30.9 | 17.5 | 3218 | 40.3 | 31.0 |
| Early Post-War Boom | 1952 | 1228 | 26.0 | 11.8 | 5516 | 33.0 | 24.8 |
| Late Post-War Boom | 1960 | 1613 | 20.4 | 7.0 | 7975 | 34.1 | 26.9 |
| | 1965 | 1285 | 12.7 | 4.3 | 11324 | 34.3 | 27.2 |
| | 1969 | 1239 | 8.5 | 3.0 | 12852 | 33.2 | 25.5 |
| Mature Dependency | 1972 | 1545 | 8.9 | 3.1 | 20838 | 39.3 | 30.1 |
| | 1975 | 1867 | 6.6 | 2.7 | 31513 | 43.1 | 30.9 |
| | 1978 | 2385 | 5.0 | 2.3 | | | |

Derived from: *Karl Levitt, SILENT SURRENDER: THE MULTINATIONAL CORPORTATION IN CANADA. 1970. Toronto: Macmillan.

TABLE 2.4
GEOGRAPHIC BREAKDOWN OF U.S. DIRECT INVESTMENT ABROAD, SELECTED YEARS 1897-1935
(in billions of American dollars and percentages)

| | 1897 | | 1914 | | 1924 | | 1935 | |
|---|---|---|---|---|---|---|---|---|
| | Amount | % of Total | Amount | % of Total | Amount | % of Total | Amount | % of Total |
| Total developed areas | .290 | 45.9 | 1.191 | 45.1 | 2.001 | 37.1 | 3.061 | 42.5 |
| Canada (+Nfld.) | .159 | 25.3 | .618 | 23.4 | 1.080 | 20.0 | 1.692 | 23.5 |
| Europe | .131 | 20.6 | .573 | 21.7 | .921 | 17.1 | 1.369 | 19.0 |
| Others | --- | --- | --- | --- | --- | --- | --- | --- |
| Total less developed areas | .333 | 52.5 | 1.430 | 54.0 | 3.262 | 60.6 | 4.032 | 55.8 |
| Unallocated* | .001 | 1.6 | .003 | 0.8 | .125 | 2.3 | .125 | 1.7 |
| Total | .634 | 100.0 | 2.652 | 100.0 | 5.389 | 100.0 | 7.840 | 100.0 |

*International, including banking.

Derived from: Cleona Lewis, AMERICA'S STAKE IN INTERNATIONAL INVESTMENTS. 1938. Washington, D.C.: Brookings Institute.

TABLE 2.5

COMPARISON OF U.S. AND U.K. DIRECT INVESTMENTS IN CANADA, SELECTED YEARS 1867-1978
(Millions of Canadian $ and Percentages)

| PERIOD | YEAR | U.K. DIRECT | | | U.S. DIRECT | | |
|---|---|---|---|---|---|---|---|
| | | U.K. DIRECT | U.K. DIRECT AS % OF TOTAL FOREIGN DIRECT | AS % OF TOTAL FOREIGN LONG-TERM | U.S. DIRECT | U.S. DIRECT AS % OF TOTAL FOREIGN DIRECT | AS % OF TOTAL FOREIGN LONG-TERM |
| Formative Years | 1867 | | | - | 15* | 100.0 | 7.5 |
| | 1900 | 65* | 27.0 | 4.9 | 175* | 72.9 | 13.4 |
| Wheat Economy | 1913 | 200* | 26.0 | 5.2 | 520* | 67.5 | 13.5 |
| WW I | 1926 | 336 | 18.9 | 5.6 | 1403 | 78.7 | 23.4 |
| Depression | 1930 | 392 | 18.2 | 5.1 | 1993 | 82.1 | 26.2 |
| | 1933 | 376 | 16.0 | 5.1 | 1933 | 82.2 | 26.2 |
| WW II | 1939 | 366 | 16.0 | 5.3 | 1881 | 81.9 | 27.2 |
| | 1946 | 335 | 11.9 | 4.7 | 2428 | 85.9 | 33.8 |
| Early Post-War Boom | 1952 | 544 | 10.4 | 5.2 | 4530 | 86.8 | 43.6 |
| Late Post-War Boom | 1960 | 1535 | 11.9 | 6.9 | 10549 | 82.0 | 47.5 |
| | 1965 | 2033 | 11.7 | 6.9 | 14059 | 81.0 | 47.5 |
| Mature Dependency | 1969 | 2426 | 9.9 | 5.8 | 19959 | 81.6 | 47.9 |
| | 1972 | 2826 | 9.5 | 5.6 | 23680 | 79.9 | 47.1 |
| | 1975 | 3629 | 9.7 | 5.2 | 29666 | 79.3 | 42.8 |
| | 1978 | 4476 | 9.3 | 4.4 | 38348 | 79.5 | 37.6 |

Derived from: *Karl Levitt, SILENT SURRENDER: THE MULTINATIONAL CORPORATION IN CANADA. 1970. Toronto: Macmillan.

fell from 54.4% to 45.9% of total foreign investment. The reduction in British investment took place principally through the sale and redemption of government and railroad securities (Aitken 1961:46).

American portfolio investment rose slightly from 28.4% of total foreign capital in 1926 to 31.3% of total foreign capital in 1939. The portfolio statistics reflect an American inflow that was only 32% as large as the inflow for the previous 1913-1926 period (Table 2.3). Nevertheless, American portfolio investment in Canada increased by 152% or $82 million dollars over the previous period total. As a proportion of total portfolio investment American portfolio investment increased from 28.4% of the total in 1926 to 52.2% of the total in 1939. This put American portfolio investment 10 percentage points higher than British portfolio investment as a proportion of total foreign portfolio investment in 1939 (Table 2.4).

The inflow of American direct investment between 1926-1939 was, at 478 million dollars, 54% less than the inflow for the previous period. Similarly, American long-term investment increased by only 42% of the increase in the previous period. Nevertheless, American long-term investment increased from 53.2% of total long-term investment in 1926 to 60% of total foreign capital in 1939 (Table 2.6). American direct investment also increased slightly, as a proportion of total direct investment, from 78.7% in 1926 to 81.9% in 1939 (Table 2.5).

Canada's importance as a recipient of American direct investment remained relatively stable throughout the depression as did Europe's (Table 2.4). The proportion of American direct investment in less developed countries dropped from 60.6% in 1924 to 55.8% in 1935 (Table 2.4). In comparison to the distribution of American foreign direct investment in Latin America and Canada in 1936 (U.S. Department of Commerce 1953:49), the difference between the concentration of investment is emphasized. In Canada, 41% of American direct investment was in manufacturing. In Latin America, only 6.8% was invested in manufacturing. On the other hand, twice as much American direct investment went into Latin American mining and smelting, and three times as much went into petroleum and natural gas. These estimates are

TABLE 2.6

COMPARISON OF U.S. AND U.K. LONG-TERM INVESTMENT IN CANADA. SELECTED YEARS 1867-1978
(Millions of Canadian $ and Percentages)

| PERIOD | YEAR | TOTAL FOREIGN LONG-TERM | U.K. LONG-TERM | U.K. LONG-TERM AS % OF TOTAL FOREIGN LONG-TERM | U.S. LONG-TERM | U.S. LONG-TERM AS % OF TOTAL FOREIGN LONG-TERM |
|---|---|---|---|---|---|---|
| Formative Years | 1867 | 200* | 185* | 92.5 | 15* | 7.5 |
| | 1900 | 1305* | 1065* | 81.6 | 202* | 15.5 |
| Wheat Economy | 1913 | 3850* | 2818** | 73.2 | 828* | 21.5 |
| WW I | 1926 | 6003 | 2637 | 43.9 | 3196 | 53.2 |
| Depression | 1930 | 7614 | 2766 | 36.3 | 4660 | 61.2 |
| | 1933 | 7365 | 2683 | 36.4 | 4492 | 61.0 |
| | 1939 | 6913 | 2476 | 35.8 | 4151 | 60.0 |
| WW II | 1946 | 7181 | 1670 | 23.2 | 5158 | 71.8 |
| Early Post-War Boom | 1952 | 10385 | 1886 | 18.2 | 7997 | 77.0 |
| Late Post-War Boom | 1960 | 22214 | 3359 | 15.1 | 16718 | 75.3 |
| | 1965 | 29603 | 3512 | 11.9 | 23389 | 79.0 |
| Mature Dependency | 1969 | 41688 | 3873 | 9.3 | 33047 | 79.3 |
| | 1972 | 50316 | 4621 | 9.2 | 38687 | 76.9 |
| | 1975 | 69225 | 5704 | 8.2 | 52971 | 76.5 |
| | 1978 | 102034 | 7253 | 7.1 | 73043 | 71.6 |

Derived from: *Kari Levitt. SILENT SURRENDER: THE MULTINATIONAL CORPORATION IN CANADA. 1970. Toronto: Macmillan.
CANADA'S INTERNATIONAL INVESTMENT POSITION. 1978.

reported in Appendix I.

Although there are no available data for American direct investment in petroleum and natural gas industries in Canada for 1939, as a proportion of total direct investment in manufacturing, the U.S. accounted for 52.3% of investment. The same pattern of investment is evident in mining and smelting, although the change in proportions is larger. In 1939, American direct investment in mining and smelting had dropped to 10.5% of total foreign direct investment (Table 2.7).

As with the earlier periods in Canadian economic history, there are some inconsistencies with the estimates of American direct investment in Canada's leading sectors. The source for the sector breakdowns used for the 1926-1939 estimates (Lewis 1953) may be compared with an alternative estimate derived from a survey conducted by the U.S. Department of Commerce (1953). The Department of Commerce estimates that total American direct investment in Canada was 29.2% of total foreign direct investment. Lewis' estimate is lower, at 23.5%. Nevertheless, the emphasis in both estimates in terms of the sectoral distribution of American direct investment is clear. Canadian manufacturing, mining and smelting, and transportation indicated are the areas of American investment concentration.

## D. WORLD WAR II (1939-1946) AND THE BOOM YEARS (1946-1960)

### THE OVERALL PICTURE

Of the increase in total stock of foreign capital invested in Canada between 1939 and 1960, American direct investment contributed over 56% (Levitt 1970:66-67). Of the total of American long-term investment in Canada in 1960, 63.1% was direct investment and 33% was portfolio (Table 2.2). Dominating the sectoral distribution is the increase in American direct investment in Canadian mineral industries.

TABLE 2.7

AMERICAN DIRECT INVESTMENT IN SELECTED CANADIAN INDUSTRIES AS A PERCENTAGE OF TOTAL AMERICAN DIRECT INVESTMENT IN CANADA, SELECTED YEARS 1897-1978

| PERIOD | | MINING AND SMELTING | PETROLEUM AND NATURAL GAS | MANUFACTURING |
|---|---|---|---|---|
| Formative Years | 1897 | 34.5 | 3.7* | 34.4* |
| Wheat | 1914 | 25.6* | 4.0* | 35.8* |
| Economy | 1924 | 20.7* | 3.7* | 55.6* |
| WW I | 1926 | 10.0 | - | 58.3 |
| Depression | 1936 | 12.3* | 5.5* | 41.0* |
| | 1939 | 10.5 | - | 52.3 |
| WW II | 1950 | 13.2 | | 59.1 |
| Early Post-War Boom | 1960 | 12.8 | 27.3 | 41.2 |
| Late Post-War Boom | 1963 | 12.9 | 27.3 | 40.3 |
| Mature | 1969 | 13.8 | 24.9 | 43.6 |
| Dependency | 1972 | 12.3 | 25.5 | 42.8 |
| | 1975 | 9.5 | 23.3 | 45.6 |
| | 1978 | 8.9 | 23.2 | 45.9 |

Increase in transportation and utilities (+communications) investment between 1924 and 1936, from 10.1% of the total to 32.9%. Up to 1936, stats include only a breakdown for railroads and public utilities.

1897-1914 drop due to drop off in interest in precious metals and stones.. one of the components of mining and smelting from 18.8% in 1897 to 9.1% in 1914.

*1936 statistics source: U.S. Department of Commerce. FOREIGN INVESTMENTS OF THE UNITED STATES.. 1953. Washington, D.C.. p. 49. Appendix Table 13.

Statistics for 1897, 1914 and 1924: Cleona Lewis. AMERICA'S STAKE IN INTERNATIONAL INVESTMENTS. 1938. Washington, D.C.. Brookings Institute.

Whereas American direct investment in manufacturing fell from 52.3% of total direct investment in 1939 to 42.1% of total foreign investment in 1960 (yet it remained the largest single category), American direct investment in petroleum and natural gas rose from 5.5% of the total of American direct investment in 1936 to 27.3% of the total in 1960. This increase in investment reflected American participation in petroleum and natural gas development in Canada after the 1947 Leduc discovery in Alberta. American interests in Canadian mining and smelting also increased slightly, from 10.5% of total direct investment in 1939 to 12.8% of total foreign direct investment in 1960.

By 1960, the U.S. was by far the largest of Canada's foreign investors. More American private capital was invested in Canada than in any other country. Thirty-seven percent of American foreign investment capital was invested in Canada, compared to 26% in Latin America, the second most important area of American foreign investment (Table 1.1). The difference in the distribution of interests in Canada and Latin America rests in the importance of portfolio investment. In Canada, 33% of total American investment in 1958 was portfolio investment. In Latin America, only 1.8% was portfolio (derived from Aitken 1961:55, Table 2.3).

During the boom years, 1946-1960, American direct investment increased from 33.8% of total foreign long-term investment in Canada to 47.5% of total foreign capital (Table 2.2). This increase represents an increase in the proportion of American direct to total American capital investments; from 47.1% in 1946 to 63.1% in 1960 (Table 2.2). By 1960, the United States accounted for 75.3% of the total of foreign long-term investment in Canada, 82% of total foreign direct investment and 33% of total foreign portfolio investment. In comparison, the next largest foreign investor, the U.K., accounted for only 15.1% of total foreign investment; 11.9% of total foreign direct investment; and 20.4% of total portfolio investment (Table 2.3 and Table 2.4).

## E. LONG-TERM INVESTMENT

In 1913, British long-term investment in Canada accounted for 73.2% of total foreign capital. American long-term investment accounted for 21.5%. By 1946, the distribution had actually reversed, with American long-term investment accounting for 71.8% of total foreign capital and British long-term investment accounting for 23.2% (Table 2.6). The gap continued to enlarge until 1969, when American long-term investment accounted for 79.3% of total foreign investment and British long-term investment accounted for only 9.3% of total foreign investment.

As a proportion of total long-term investment, American investment became significant after WW II. Between 1939 and 1946, American long-term investment increased from 61% to 71.8% of total foreign capital. This may be compared to the proportion of American to total foreign long-term investment for the pre-WW II period. Between 1867 and 1913, American long-term investment accounted for 14.8% of total foreign capital invested in Canada. Between 1913 and 1926, the proportion had risen to 37.5%. This proportion had more than doubled at the beginning of the second boom period (Table 2.5). By 1952, American long-term investment was up to 77% of the total of foreign capital invested in Canada, although American long-term investment did drop slightly to 75.3% of total foreign capital in 1960.

## F. PORTFOLIO INVESTMENT

World War II marks the second precipitous drop in the proportion of British portfolio capital invested in Canada. By 1946, British investment had dropped to 30.9% of total portfolio investment and 17.5% of total foreign long-term investment. During the boom years, British portfolio investment fell again, to 20.4% of total portfolio investment and to only 7.3% of total long-term investment (Table 2.3) in 1960. American portfolio investment also dropped during WW II, to 50.2% of total portfolio investment in 1946, and 31% of total foreign long-term investment (Table 2.3). Between 1946 and 1960, American portfolio investment continued to decline in proportion to total foreign investment, reaching lows of 33% of total portfolio

investment and 24.8% of total foreign long-term investment in 1960.

## G. DIRECT INVESTMENT

British direct investment has never been a significant factor in Canadian economic history, although it also dropped during both wars to 11.9% of total foreign direct investment in 1946 (Table 2.5). In contrast, American direct investment has always been the overwhelming source of total foreign direct investment in Canada. During the boom years, American direct investment reached a proportion of 86.8% of total direct foreign investment. Between 1946 and 1960, American direct investment accounted for over 70% of the increase in American long-term investment and 54% of the increase in total long-term foreign investment (Levitt 1970:66-67). Between 1952 and 1960, American direct investment dropped to 82% of the total of foreign direct investment. After 1960, there has been a steady decline of American direct investment as a percentage of total direct investment. Nevertheless, American direct investment has remained relatively constant at about 80% of total foreign direct investment in Canada since 1960.

The sector breakdowns (Table 2.7) indicate that the post-WW II expansion of American direct investment was in key Canadian industries. By 1950, American direct investment in manufacturing was up to 59.1% of total foreign direct investment in the country. This investment accounted for 73.4% of total foreign long-term investment in the sector and 89.5% of American investment in manufacturing (Appendix II). Just prior to World War II, American direct investment made up 68.1% of total foreign long-term investment in the sector and 84.8% of American investment in manufacturing (1939 estimates Table 2.8). In the mining and smelting sector, American direct investment accounted for 82.5% of American investment and 71.8% of total foreign investment.

While World War II led to an important increase in Canadian-owned manufacturing, it also led to an economy more closely interlocked with that of the U.S. Prior to 1950, U.S. direct investment was tied closely to changes in the Canadian economy, accelerating during periods of

TABLE 2.8

PERCENTAGE OWNERSHIP AND CONTROL OF CAPITAL IN SELECTED NON-FINANCIAL INDUSTRIES*: A COMPARISON OF AMERICAN AND CANADIAN SHARES OF THE CANADIAN ECONOMY 1974

| | American | | Canadian | |
|---|---|---|---|---|
| | Owned | Controlled | Owned | Controlled |
| Manufacturing | 43.4 | 43.3 | 47.8 | 42.5 |
| Petroleum and Natural Gas | 45.0 | 59.0 | 43.1 | 25.1 |
| Mining | 45.3 | 44.8 | 43.3 | 42.3 |
| TOTAL | 44.1 | 48.0 | 45.8 | 37.5 |

* This is the traditional measure of foreign control, measures may be more accurate and put the estimate between 10-20% higher than the conservative measure. The reader is referred to the comparison of various measures of foreign control pp. 8-9 in "Indicators of foreign control of non-financial industries by province". (FIRA Paper No. 3, May, 1978).

Source: Table 12, Estimated Percentage Ownership and Control of Capital Employed in Non-Financial Industries. Pp. 21-22 in "Compendium of Statistics on Foreign Investment" (FIRA Paper No. 4 May, 1978).

high tariffs and decelerating during periods of recession (Marshall, Southard and Taylor 1964:21). Pope (1971:24) and Aitken (1961:104) suggest that by 1950 American direct investment had become so large that is not only exploited opportunites, but created them by molding the structure of the Canadian economy to reflect continental needs.

These continental needs were twofold. First there was the extension of the initial British interests in the securing of staple resources. Second, and in contrast to the early British investment that did not consider Canada as an important market for manufactured exports, American direct investment in Canadian manufacturing came to supply the U.S. with an essential source of foreign income (Gonick 1970:70). The predominance of both the capital-interest and market motives of American direct investment has been so strong, that by 1975, resource development and manufacturing together accounted for 78.5% of the book value of all U.S. direct investment in Canada. As much as 43% of that investment was in manufacturing, 24% in petroleum and natural gas and 11% in mining (Gherson 1980:12).

The loss of Canadian access to British portfolio investment and markets after World War II can only be offered as a partial explanation of the acceleration of American direct investment. This argument is underlined by the fact that the Canadian government had demonstrated clearly its capability to generate large capital exports in the 1940's. The more important explanation was the support of the Canadian government. The government was committed to private accumulation, and American direct investment was the readiest source of capital (Panitch 1977:17).

In LAMENT FOR A NATION, Grant (1970:8) argues that since 1960, Canada has developed as a "northern extension" of the continental economy.

....the policies of Howe from 1945 to 1957.... proceeded from the recognition of certain realities: that the Canadian economy was part of the total resources of North America; that Canada was an undeveloped frontier within that total, and the capital necessary for that development would come largely from the United States; that North America was committed to a capitalist structure in which the control of production would be in the hands of "private" corporations, while the government would play only a supervisory role (Grant 1970:38).

The crucial years, according to Grant, were the early 1940's. During this period, it was decided

that Canada would become a branch plant society, integrated into the American capitalist structure that has dominated the west since 1945 (Grant 1970:40-41). Both the organization of the war and the postwar construction was carried on within the assumption that government action never questioned the ultimate authority of business interests to run the economy (Grant 1970:46).

The dominant philosophy of North-American liberalism was at the root of government policy. Liberalism was the belief in open-ended progress (Grant 1970:56). Canada's federal system of government also had roots in the philosophy of liberalism. Grant (1970:77) suggests that the division of powers in a federal system weakens the ability of the public authority to control the private sector. In the Canadian case, the size of the provinces has allowed them to be controlled by private economic power (Grant 1970:77). The nonuniform nature of the Canadian economy and conflicting federal-provincial efforts to reduce regional disparities have further led to provincial governments trying to outbid each other in order to attract foreign investment (Rugman 1980b:60). In consequence, "the nature of the Canadian federation is also partly responsible for the large amount of American foreign ownership of its industries and resources." (Rugman:1980b:60).

Levitt (1970) describes how American capital continued to flow into the Canadian economy after the recession of 1957-1958, despite rising rates of unemployment and a slowing down of the Canadian output. The most important feature of the acquisition of Canadian commodity-producing sectors was that only a very small proportion of the foreign investment actually involved the importation of foreign savings (Gonick 1970:64). American direct investment was being financed largely from corporate capital raised in Canada through the sale of Canadian resources, extracted and processed by Canadian labor or from the sale of branch plant manufactures back to Canadian consumers at tariff-protected prices (Levitt 1970:63).

## H. MATURE DEPENDENCY 1960-1980

At the end of the post-war boom, Canada's economic honeymoon was over.

Fifty-eight percent of Canada's long-term indebtness was in foreign direct investment and 48% of all foreign capital in Canada was controlled by American corporations. Although half of the $7 billion increase in foreign indebtedness between 1960 and 1965 was attributable to American foreign direct investment, the American share of the debt levelled off at 58% around 1964. This is explained, in part, by the shift of new American investment into Western Europe around 1966. In part, it is explained by unusually heavy portfolio borrowing on the American capital market by provincial governments and large corporations (Levitt 1970:69). From the perspective of dependency theory, American disinvestment in Canada signals the emergence of the long-term negative effects of the penetration of the Canadian economy by American direct investment.

By 1960, 80% of foreign long-term investment (this includes foreign direct, portfolio and miscellaneous investment) in Canada was American. By 1974, the U.S. controlled 43% of manufacturing, 59% of petroleum and natural gas and 44.8% of mining in Canada. These statistics are reported in Table 2.8.

## I. THE COMPOSITION OF INVESTMENT

After 1960, British portfolio investment was virtually nonexistent as a source of foreign investment capital in Canada. For the 1960-78 period, British portfolio investment accounted for approximately 10% of total portfolio investment and only 3.8% of total foreign long-term investment. American portfolio investment, in contrast, maintained a relatively stable level of investment until 1975, when it increased to 39.3% of total portfolio investment and continued to increase to 43.1% of total foreign portfolio investment in 1978 (Table 2.3). As a proportion of total foreign long-term investment, American portfolio investment accounted for about 26% of foreign investment between 1960-1972, and then it rose to just over 30% of the total in 1975 and 1978.

As indicated above, the proportion of American to total long-term foreign investment in Canada has declined since 1952. In 1960, it dropped from 77% to 75.3% of total foreign investment. American long-term investment rose to 79% of the total in 1965 and then it dropped again to 73% of the total in 1969. After 1969, the decline has been steady and gradual. The 1978 statistics indicate that American long-term investment was 71.6% of total foreign investment in Canada (Table 2.6).

The British direct investment data indicate that there has been a slow and consistent decline in the levels of investment during the 1960's and the 1970's. By 1978, British direct investment accounted for only 9.3% of total foreign direct investment (Table 2.5). As a proportion of total foreign long-term investment, British direct investment has remained relatively stable except for increases in 1960 and 1965. However, these increases have been minimal in that they have only brought the proportion of British direct to total foreign capital to 6.9%, or 1.5% above the approximate series average (Table 2.5).

The proportion of American direct investment in Canada has also declined since 1960. The drop has been steady from a high of 86.8% of total foreign direct investment during the boom years to 86.9% of total foreign direct investment in 1978 (Table 2.5). As a percentage of American long-term investment, American direct investment hovered just below 90% between 1946 and 1972. In 1975, the percentage dropped to 83.5% and then increased slightly to 86.9% in 1978.

If, as predicted by dependency theory, new investment flows have a mitigating effect on the long-term negative impact of foreign direct investment, then the balance of British and American portfolio to American direct investment during the early periods should operate as a double mitigation. The disinvestment of British portfolio and American capital as a percentage of foreign long-term investment in the post-1960 period offers contextual support for the temporal specification of dependency effects on the structure of the Canadian economy.

The following two chapters will attempt to demonstrate empirically the existence of a structural effect of foreign direct investment on Canada's economic growth. Following the lead

of Bornschier and his colleagues, the demonstration will require the differentiation of short-term positive and long-run negative effects of American capital penetration on Canadian economic growth. In light of the historical data presented in this chapter and Levitt's suggestion that 1960 marks a new phase of dependence, the Bornschier et al. predictions have been modified to allow for the demonstration of mature dependency. This means that the negative long-term effects of American direct investment in Canada will be isolated to the post-1960 period.

# III. MODELING MATURE DEPENDENCY: METHODS AND STATISTICS.

## A. OPERATIONALIZING HISTORICAL ANALYSIS

In order to operationalize a model of mature dependency as a dynamic process, what is needed is a formulation that reflects the long-term conditioning of Canadian economic growth by the penetration of American direct investment. Taking into consideration the temporal constraint of the Second World War, the model needs to encompass at least the period between 1947 and 1974.[4] Although there is evidence that the 1975-1978 period may reflect a structural change marked by the world recession and the demise of American world hegemony, I will assume that the three year tail-end of the series includes enough of the diminishing impact of the adjacent period to warrant inclusion in the analysis.[5] Furthermore, historical models should ideally extend for periods of at least twenty-five, fifty or even one-hundred years (Duvall 1978:73). Thus, on methodological grounds, the explanatory benefits of the extension can be assumed to outweigh any negative consequences for analysis.

## B. TOWARD A STRUCTURAL EQUATION

In his specification of a statistical model of dependencia, Duvall (1978:72) argues that the case for the structural equation form:

$$[1] \quad Y_t = B_0 X_t + B_1 X_{t-1} + B_2 X_{t-2} + \ldots + B_K X_{t-K} + \mu_t$$

where:

Y   is the current value of some conditioned feature of the penetrated country, say economic growth,

$X_t, \ldots, X_{t-K}$ are the current values of the conditioning phenomenon, say foreign direct investment,

$B_0, \ldots, B_K$ are the parameter values which represent the determining effect on Y of

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[4]Because of first differencing, the 1978 observation is lost, as is the 1946 observation at the beginning of the series.

[5]This argument is based on Koyck's (1954) assumptions which are discussed later in this chapter.

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each of the X's, and

$\mu_t$ is an error term representing the imperfect character of the conditioning relationship.

The obvious feature of Duvall's model is that the longer the continuous period of time during which the penetrated country has been exposed to foreign direct investment and the greater the degree to which the host is exposed to foreign direct investment at each point in time during the period, the greater (or less) will be the contemporary value of the host's economic growth that is conditioned by current foreign direct investment.

This same feature is alternatively represented by Duvall as a regularly declining time-function that assumes a progressive decline of the B's over time. This time-function is governed by some simple functional form of a geometric decline. Using the simplest assumption, attributable to Koyck (1954), the decline is described by:

$$[2] \quad W_i = (1 - \lambda)\lambda^i \quad , \text{ and } W_i = B_i / \Sigma B_i \quad ^6$$

where the parameter $\lambda$ describes the shape of the time-function, or historical process by which foreign direct investment effects growth. "It indicates how quickly [the host] 'forgets' or overcomes its past." (Duvall 1978:74) Given an assumption of type [2], model [1] becomes, after lagging, multiplication and rearrangement of terms,

$$[3] \quad Y_t = \lambda Y_{t-1} + B^* (1 - \lambda)X_t + \mu_t - \lambda \mu_{t-1}$$

The estimation of model [3], "in which the error term is now generated by a first-order moving average process, provides precise information about the nature of the historical process through which X conditions Y" (Duvall 1978:74).

- - - - - - - - - - - - - - -

$^6$Model [1] can be written as:

$$Y = B^* [W_0 X_t + W_1 X_{t-1} + W_2 X_{t-2} + ... + W_k X_{t-k}] + \mu_\epsilon$$

where, $\sum_i^k W_i = 1$.

The B* term used in the subsequent formulation is consistent with this rewriting of model [1]. It is assumed that $W_0 = 0$. That is, there are no instantaneous impacts of X on Y (Duvall 1978:74).

The problem with using Duvall's model is illustrated in the argument underlying the decapitalization effect. According to the decapitalization thesis, the short and long-term effects of foreign direct investment on growth have different magnitudes. Koyck's schema of a progressively diminishing effect is a reasonable model of the short-term effect of foreign direct investment but an incomplete specification of the long-term effect. The declining function is consistent with the Bornschier (1980a) finding that the maintenance of a high level of short-term of fresh foreign investment flows acts as a mitigation of the structural impact of penetration. Where the Koyck model is inappropriate is in its application to the long-term negative effect.

The decapitalization thesis suggests that long-term penetration has an increasing, negative effect on economic growth. The long-term negative effect is not a diminished effect of foreign investment flows, rather, it is a different kind of effect that is related to a control structure that underlies foreign penetration. Although penetration is related to fresh investment (Bornschier 1980a reports a synchronic, cross-sectional correlation of 0.62 for rich countries), fresh investment has a positive effect and cumulative penetration has a negative effect. The relationship between investment and penetration indicates only that as long as investment levels are high in a rich country, continued fresh direct investment will have a strong mitigation effect on the negative consequences of foreign penetration.

A more flexible approach to the problem has been suggested by Almond (1965). Almon's method is based on Weierstrauss's theorum (Johnson 1972:294) which states that a function continuous within a closed interval can be approximated over the whole interval by a polynominal of suitable degree. This polynominal will differ from the function by less than any given positive quantity at every point in the interval. If we had a set of B's as shown in Figure 3.1, rather than attempting to estimate all of the (s + 1) B's for the total lag of s periods, we can assume that the B's can be approximated by some function $f(z)$ as in Figure 3.2.

Figure 4.1    Description of B
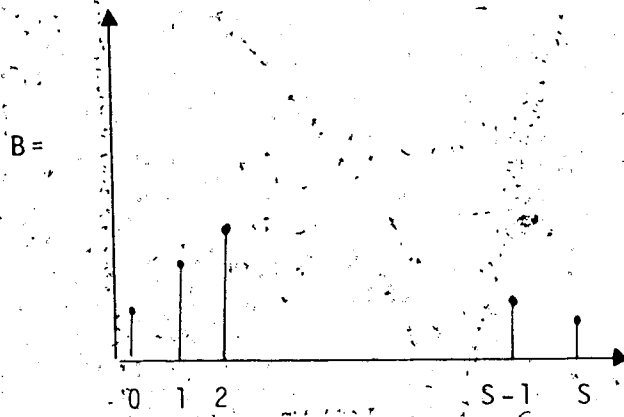


Figure 4.2    Approximation of B
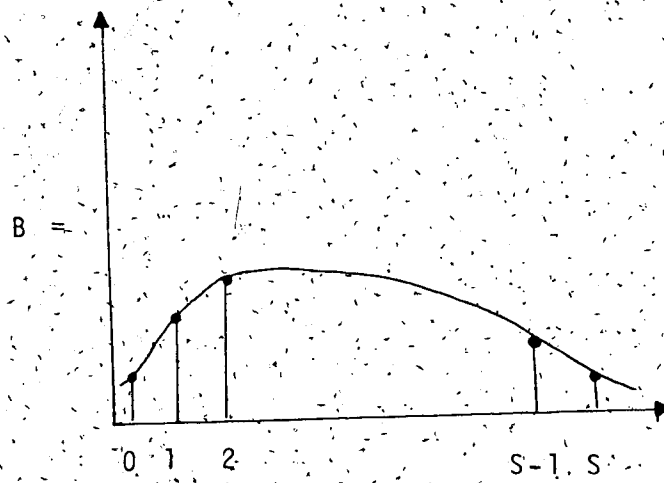
The function f(z) is unknown, and in the absence of any a priori assumptions about its form, the degree of the approximating polynominal has to be specified a priori. The specification of Almon's polynominal distributed lag requires the fitting of several (or numerous) different approximations in an attempt to judge which lag is best fit to the data. As with the Koyck estimation, however, we would have to be able to differentiate between two types of effects with differing magnitudes. This could be a suggestion for future econometric research.

Johnson (1972:293) suggests that the least squares model (Duvall's model [1] before transformation) will give the best linear unbiased estimates if the model has been specified correctly. To begin with, it is highly unlikely that any sociological theory of development will give any precise and firm indication of all the relevant variables needed to model change in an economy (even the economists have not been succesful in their attempts) let alone the length of the lags on either a diminishing or a polynominal function. What we do have to work with is a relatively robust set of findings that indicate that the penetration of foreign direct investment is the most significant single predictor of economic growth (Bornschier 1981:385) and that the effect of penetration is a long-term negative effect that must be differentiated empirically from the short-term positive effect of fresh foreign direct investment (Bornschier 1975, 1980a, 1980b, 1981; Bornschier et al. 1978, 1980).

What this all means in terms of analysis is that the specification of the long-term lag is an exploratory rather than a confirmatory exercise in data analysis. Consequently, the introduction of measures of foreign direct investment at various lags into each regression equation is, at this stage in the research, a more flexible method of estimation than with the Koyck or Almond schemas. The argument for flexibility is particularly relevant in light of the specificative ambiguity of even the most precise sociological models. Moreover, given the manageable length of the series, it should be possible to identify the lags at which the negative effects of foreign direct investment become evident.

In terms of the design of research, the specification of the model becomes the key

directive. To a large extent, this is an issue of how well the model fits the data. This is the main

reason why particular attention must be paid to the discontinuities in the series, or the

deviations of the actual observations from the extracted trend. In the modern world,

> ...many indicators have a strong secular component (a trend upwards or downwards).
> Only when this trend is removed and movements of the remaining fluctuations are
> matched across indicators can we assess the extent to which they fluctuate
> together...these residual components ...are ... likely to contain the most dynamic
> components of the process under investigation. Hence their intercorrelations are most
> likely to capture causal (functional) links among these processes. (Czarnocki 1978:29)

This is the same procedure that is implicit in multiple regression analysis, and it is directly

analagous to the computation of partial regression coefficients where the residuals of separate

regressions are correlated (Blalock 1964).

The flexibility of the regression approach is also evident in that the procedure allows

for both quantitative and qualitative independent variables to be included in analysis (Hannan

and Tuma 1979:315). This flexibility is crucial for the modelling of Canada's mature

dependency because of the importance of differentiating the Canadian case on the basis of

contextual specificity.


## C. BUILDING IN CONTEXTUAL SPECIFICITY

The argument presented in this study is that Canada's dependency has had a negative

effect on Canada's economic development and state autonomy. Following Axline (1974), the

history of foreign investment in Canada can be summarized as follows. In Canada's initial

period of economic development (1867-1913), the bulk of foreign investment in Canada was

British. American investment played only a secondary role. British investment typically

involved debt capital and portfolio equities; investments that improved material conditions with

few control implications.

In contrast to British-Canadian relations, American-Canadian relations have been

characterized by a combination of restricted goods flows coupled with almost free factor (labor

and ownership) flows. Of the two types of flows, American factor flows are the most likely to

encroach on the operation of the Canadian economy. This shift in the pattern of foreign investment should have negative and empirically demonstrable effects, as Canadian economic activity has been molded to suit American economic interests.

Reformulating the post-World War II acceleration of American MNE activity in Canada into empirically demonstrable effects requires a differentiation of the initial post-war boom period of the expansion of American direct investment from the period of stabilization and disinvestment that is evident in the 1960's. According to Levitt (1970), the series break can be dated precisely to 1960 and the beginning of the phase that she describes as American Corporate Imperialism. Figure 3.3, and Appendix 4 provide Levitt's data base for the series break. Nevertheless, the Canadian literature is generally less specific about the break point. Consequently, exploratory analyses were run for break points varying from 1959 to 1966. The preliminary contenders were 1960-1963. The method used to include these quantitative data in the model was the incorporation of a dummy variable coded as zero before the break and as one afterwards.
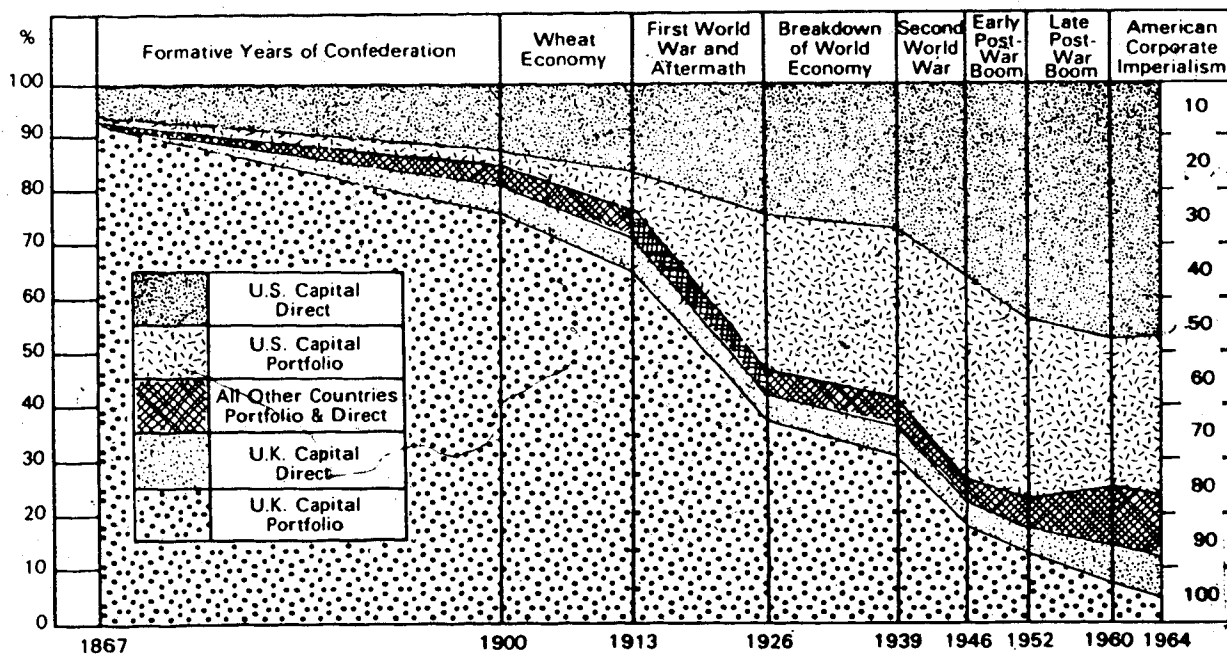


Figure 3.3   Composition of Foreign Investment in Canada (1867-1964).

Source: Kari Levitt. Silent Surrender, Toronto: Macmillan of Canada (1970:65).

## D. THE USE OF DUMMY VARIABLES AND INTERACTION TERMS

Dummy variables can be used in the regression context to account for the fact that observations within a given category are associated with one set of regression parameters while observations in a second category are associated with a different set of regression parameters. In the context of my study, I want to argue that there exists an interaction between some break in the 1960's and the effect of foreign direct investment so that after the break, the long-term negative growth effects specified by decapitalization thesis will become evident in analysis.

For the simple model:

$$[4] \quad Y_t = B_1 + B_2 X + \varepsilon_t$$

where $Y = $ GNP and $X = $ foregin direct investment (FDI),

$$[5] \quad GNP = B_1 + B_2 FDI_t + \varepsilon_t$$

If a dummy variables for 1964 is included in [5], we will obtain:

$$[6] \quad GNP_t = B_1 + B_2 FDI_t + B_3 (FDI_t - FDI_{t_0}) D_t + \varepsilon_t$$

where:

$GNP_t$ = growth at time $t$.
$FDI_t$ = investment at time $t$
$FDI_{t_0}$ = investment in the year in which the structural break occurs; and
$D_t$ (the dummy variables measured at time $t$) = 1 if $t$ is greater than $t_0$ and 0 otherwise.

Before the break, $D_t = 0$. Therefore, the expected value of GNP at time $t$, $E(GNP_t) = B_1 + B_2 FDI_t$. However, after the break, $D_t = 1$. Therefore:

$$[7] \quad E(GNP_{t_0}) = B_1 + B_2 FDI_t + B_3 FDI_t - B_3 FDI_{t_0}$$

or $E(GNP_t) = (B_1 - B_3 FDI_{t_0}) + (B_2 + B_3)FDI_t$

Before the break, the line has the slope $B_2$. The slope changes to $B_2 + B_3$ afterwards (the intercept changes as well).

The important thing to note is that there is no discontinuity in the relationship between GNP and FDI because:

[8] $E(GNP_{to})$

$$= B_1 + B_2 FDI_{to}$$

$$= (B_1 \cdot B_3 FDI_{to}) + (B_2 + B_3) FDI_{to}$$

$$= B_1 + B_2 FDI_{to}$$

It should also be noted that when $B_3 = 0$, equation [7] reduces to a single straight line, so that a t test[7] using $B_3$ provides a simple text for structural change. In my study, where both a dummy variable and a dummy interaction term are used to allow for a shift in both the slope and the intercept between periods, the t test is the appropriate test of the shift. A simplified version of my model will look something like this:

[9] $GNP_t = B_1 + B_2 FDI_t + \alpha D_t + \gamma (D_t \, FDI_t) + \varepsilon_t$

The statistical difficulty with the least squares estimation procedure is that "the various lagged values of X will be highly intercorrelated, leading to very imprecise estimates of the lagged coefficients and great difficulty in making useful inferences about them." (Johnson 1972:293). This is the problem of autocorrelation. This study will use the Time Series Processor (TSP) program that routinely reports the values of the Durbin-Watson statistic for autocorrelation. Should the value of this statistic indicate that autocorrelation is a problem, the problem will be corrected by using the Cochrane-Orcutt iterative procedure.

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[7]The t test is calculated on the basis of the ratio of the estimated coefficient to the estimated standard error.

## E. TESTING FOR SERIAL CORRELATION

Autocorrelated disturbances are such a serious problem for least squares regression that it is extremely important to test for their presence (Johnson 1972:249). For model [10] below, where all the values of X are lagged,

$$[10] \quad Y_t = B_1 + B_2 X_{t-1} + B_3 X_{t-2} + \ldots B X_{t-k} + \varepsilon_t$$

the autocorrelated disturbance is represented by,

$$[11] \quad \varepsilon_t = \rho \varepsilon_{t-1} + V_t \quad (0 \leq \rho < 1)$$

where each of the error terms $\varepsilon_t$ and $V_t$ are drawn from normal populations with 0 expected value and a constant variance. That is, $\varepsilon_t$ and $V_t$ are distributed as $N(0, \sigma_\varepsilon^2)$ and $N(0, \sigma_v^2)$ respectively. Whereas $V_t$ is independent of other error terms over time and independent of $E_t$, $E_t$ is not independent of other error terms over time.

$E_t$ is determined by diminishing the value of the error in the previous period (multiplying by $\rho$) and then adding the effect of a random variable $V_t$ with 0 expected value.

$\rho$ measures the correlation coefficient between errors in adjacent time periods t and t - 1 for example. When $\rho = 0$, there is no first-order serial correlation (Pindyck and Rubinfeld 1981:155).

The most popular test for serial correlation is the Durbin-Watson test of the null hypothesis that no autocorrelation is present ($\rho = 0$) (Pindyck and Rubinfeld 1981:158). The Durbin-Watson test involves the calculation of a test statistic based on the residuals estimated by the ordinary least squares (OLSQ) regression procedure. The statistic is defined as:

$$[12] \quad d = \sum_{t=2}^{n} \frac{(\varepsilon_t - \varepsilon_{t-1})^2}{\sum_{t=1}^{n} \varepsilon_t^2}$$

where d has a mean of zero, and the values of d may vary between positive and negative

magnitudes. The range of d values will fall between 0 and 4, with a value of 2.16 indicating the absence of first-order serial correlation.[1]

Upon examination of the numerator, it is evident that for a positively autocorrelated series, the first differenced values will be smaller than the absolute values of $E$ (Johnson 1972:251). In addition, where positive serial correlation or autocorrelation exists, successive values of $E_t$ will be close to each other and they will produce a statistic that is less than two. That is, the higher the value of $\rho$, the serial correlation coefficient, the lower the value of d. In the case of sample values of d in excess of two, we would test the alternative hypothesis of negative first-order serial correlation by computing (4 - d). It should also be noted that the numerator of the d statistic cannot include a difference for the first observation in the sample since $t - 1$ is undefined.

## F. CORRECTING FOR AUTOCORRELATION: THE COCHRANE-ORCUTT ITERATIVE PROCEDURE

The Cochrane-Orcutt procedure involves a series of iterations, each of which produces a better estimate of $\rho$ than the previous one. This procedure uses the notion that   is a correlation coefficient associated with errors in adjacent time periods. The four estimation steps involved in the procedure are listed below:

1. OLSQ is used to estimate the original model (equation [11] for example). The residuals from this equation are then used to perform the regression

   [a] $\hat{E}_t = \rho \hat{E}_{t-1} + V_t$

2. The estimated transformation equation will yield parameter values for the original intercept $B_1$ and all the slope parameters $B_2,...,B$

3. These revised parameter estimates are substituted into the original equation, and new regression residuals are obtained. These are:

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[1] Exact interpretation of the d statistic is difficult because the sequence of error terms is dependent upon both the sequence of E's and the sequence of X values. This results in variations in the statistic depending upon both the number of independent variables and the number of observations. Because of the dependence of the sampling distribution of d on the X values, the statistic establishes only upper and lower limits for the significance levels of d. These levels are used to test the null hypothesis (Johnson 1972).

[b] $\hat{\hat{\varepsilon}}_t = Y_t - \hat{\beta}_1 - \hat{\beta}_2 X_{2t} - \cdots \hat{\beta}_k X_{kt}$

When the regression is run, we obtain:

[c] $\hat{\hat{\varepsilon}}_t = \rho \hat{\hat{\varepsilon}}_{t-1} + v_t$

4. The second round residuals in [c] can then be used to obtain a new estimate of .
The standard procedure is to stop the iterations when the new estimates of differ
from the old ones by less than 0.01 or 0.005 (Pindyck and Rubinfeld 1981:157).

The primary difficulty with the Cochrane-Orcutt procedure is that there is no guarantee
that the final estimate of $\rho$ will be the optimal estimate in the sense of minimizing the
sum of squared residuals. That is, the difficulty arises because the iterative technique may
lead to a local rather than a global minimum (Pindyck and Rubinfeld 1981).

## G. MEASURING ECONOMIC DEPENDENCY

Because I am looking at effects over time, the variables of interest will differ slightly

from the variables used in cross-national studies of dependency. In large cross-national studies,

variables such as state strength, income inequality and world system position are important

indicators and controls used to rank countries and to assist in differentiating between causally

similar constellations of cases. Where the wealth and power variables come into play in

longitudinal analysis is in the contextual specification of the relationship between foreign

penetration and the host's control over its national economy and rate of economic growth.

Changes in Canadian state strength or autonomy remain, to a large extent, an issue of current

analysis and policy evaluation. The erosion of state autonomy requires in-depth analyses of

various policies, or micro-analysis, because at the macro-level, Canada has maintained its

world position as a middle power in spite of its display of unquestionable characteristics of

dependency. The micro-analysis will be handled in the evaluation of the Foreign Investment

Review Act, Chapter VII.

## H. DESCRIPTION OF THE VARIABLES

The dependency relationship indicates an asymmetrical integration of the productive capacities of a national economy into the world economy (Jackson 1979). Because capital stock is the root of an economy's productive structure, the extent of economic dependency is a question of the extent of foreign control over capital. This question is generally addressed either as an issue of foreign direct investment or as an issue of penetration by foreign MNEs. For the purpose of this study, the MNE will be defined in inclusive rather than exclusive terms.

> A multinational enterprise is a corporation which owns (in whole or in part), controls and manages income-generating assets in more than one country. In so doing it engages in international production, namely production across national boundaries financed by foreign direct investment. The abbreviated form MNE is used throughout, in preference to what are effectively surrogate terms such as MNC (multinational corporation) and TNC (transnational corporation), the latter being the nomenclature employed by the United Nations. (Hood and Young 1979:3)

The same general determinants of foreign investment apply to the growth of the MNE (Government of Canada 1972:51), consequently, the two terms can be used interchangeably in relation to foreign control.

Rugman (1980:32) suggests that the definition of the MNE as an international producer also permits the treatment of foreign direct investment. In fact, foreign direct investment involves control by investors over the use of capital therefore, it is convenient to regard the MNE as a vehicle for foreign direct investment. Although the activities of the MNEs are decided at the firm level, these decisions sum to the aggregate effect of foreign direct investment. Consequently, either firm level data on the profits and financial valuation of shares or aggregate data on foreign direct investment may be used in analysis.[9] Regardless of whether multinational investment is differentiated from all types of cumulated foreign direct investment, the results are always in the some direction (Jackson 1979:48).

The short and long-term effects of American direct investment on Canada's economic growth will be demonstrated using a time series design that incorporates the following

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[9] The unavailability of an uninterrupted post-WW II series of firm level data in addition to the problems associated with the reliability of corporate financial reports has determined a general preference for aggregate-level analysis in the dependency research.

variables: change in growth of Canada's gross national product (GNP) and Canadian gross domestic fixed capital formation (GFCF), change in aggregate American-owned foreign direct investment and sector breakdowns of change in American ownership for manufacturing, mining and smelting and petroleum and natural gas. The hypotheses to be tested are:

1. that change in flows of American direct investment into Canada will have a short-term positive effect on change in Canadian economic growth, and
2. that after a break point in the 1960's change in stock of foreign direct investment will have a long-term negative effect of change in growth of GNP. The research design suggests that an interaction effect exists between the measure of foreign penetration and the threshold.

## i. GROSS DOMESTIC FIXED CAPITAL FORMATION

GFCF represents the general capital available for investment and it is a measure of domestic savings. The GNP and GFCF data have been obtained from the Statistics Canada volume CANADA's NATIONAL INCOME AND EXPENDITURES 1965-1982. The measure of GFCF used in this study omits housing and inventories (goods in process) and uses total investment in non-residential structures and equipment, the areas of heavy foreign investment.

Because change in GFCF is expected to have a positive effect on change in GNP and it is also likely to correlate positively with both current and lagged values of foreign direct investment, GFCF will be used as a control variable. Although previous studies have used domestic savings as a base for computing the percentage of investment that is foreign-owned, I prefer to measure foreign penetration directly by introducing the foreign direct investment variable into the regression equation.

Aitken (1961:60-62) suggests that if our interest is in the contribution of external capital to development, we should ideally be able to say what proportion of total investment expenditures foreign capital has been responsible for. Aitken also notes the difficulty of this task. He suggests that there in no simple way in which financial transactions (such as the international transfer of funds) can be identified with investment in physical capital. Nevertheless, there exists one useful set of statistics that have been designed to estimate the extent to which foreign capital has been used to finance investment in Canada. The data are

presented in Table 3.1.

Of particular interest are the net foreign savings data. They estimate direct foreign financing of Canada's GFCF. For the second boom period (1952-1960), foreign capital financed directly 29.7% of gross capital formation in Canada. Between 1955 and 1960, foreign capital directly financed 36.5% of capital formation (Aitken 1961:61). Aitken's estimates are just slightly higher than the International Investment Position statistics reported in Table 3.1. According to the estimates in the table, foreign capital financed 19% of GFCF between 1946-1978 and 24% of net capital formation. Aitken suggests that the percentages indicate a high reliance on foreign capital financing for the post-WW II period, however, these estimates can only be interpreted in comparison with earlier periods (hazardous as this comparison might be). In comparison to earlier periods there is less financing but the composition differs. In the period between 1926-1930, it has been estimated that the net use of foreign capital financing of Canada's GFCF was about 50% of total investment. This proportion is mainly composed of portfolio investment. In the period between 1900-1913, these ratios were probably even higher (Aitken 1961:62).

## ii. AMERICAN DIRECT INVESTMENT

The data on American direct investment, American portfolio investment, American long-term investment, the net direct flow of American direct investment and net change in book value of American direct investment were obtained from the Statistics Canada volume CANADA'S INTERNATIONAL INVESTMENT POSITION 1926-1967 (Government of Canada 1978). Additional data points were supplemented from the 1981 edition. I have chosen the INTERNATIONAL INVESTMENT POSITION statistics over the Corporations and Labor Returns Act (CALURA) data for three reasons. First, the CALURA data are aggregated from firm level data and they use slightly different measurements of ownership and control. These data are slightly higher than the Statistics Canada data. Second, the CALURA data are not available on an annual basis from 1945 onward nor are the data as current as the Investment

TABLE 3.1

USE OF FOREIGN RESOURCES TO FINANCE CANADIAN GROSS AND NET CAPITAL FORMATION, 1946-1978

| Year | A1: Gross capital formation | | | A2: Net capital formation | | |
|---|---|---|---|---|---|---|
| | Gross Foreign Savings | Gross National Savings | As % of Total Canadian Gross Capital Formation | Net Foreign Savings | Net National Savings | As % of Total Canadian Net Capital Formation |
| | billions of dollars | | | billions of dollars | | |
| 1946-1948 | 0.1 | 7.8 | | -0.5 | 4.0 | |
| 1949-1951 | 1.6 | 13.5 | 12 | 1.0 | 7.9 | |
| 1952-1954 | 2.6 | 17.0 | 15 | 1.5 | 9.5 | 16 |
| 1955-1957 | 6.4 | 24.4 | 26 | 4.7 | 13.1 | 36 |
| 1958-1960 | 6.7 | 25.6 | 26 | 4.6 | 12.3 | 37 |
| 1961-1963 | 6.0 | 28.3 | 21 | 3.4 | 12.6 | 27 |
| 1964-1966 | 8.1 | 42.3 | 19 | 4.8 | 22.2 | 22 |
| 1967-1969 | 8.8 | 51.5 | 17 | 4.6 | 26.4 | 17 |
| 1970-1972 | 8.1 | 61.5 | 13 | 3.3 | 29.7 | 11 |
| 1973-1975 | 20.3 | 107.9 | 19 | 14.4 | 60.3 | 24 |
| 1976-1978 | 30.7 | 146.3 | 21 | 23.4 | 76.8 | 30 |
| 1946-1978 | 99.2 | 526.5 | 19 | 65.1 | 274.8 | 24 |

Source: CANADA'S INTERNATIONAL INVESTMENT POSITION, 1978. (p.102) Table 33

Position statistics. Third, the concepts of direct investment differ between the two sources in, that the CALURA data derive from flow statistics whereas the Statistics Canada data differentiate between flows of foreign direct investment and position statistics that include retained earnings to direct investors (Government of Canada 1981b:31).

In measuring foreign direct investment in cross-national studies, most researchers have used some variation of an index that approximates the ratio[10] of the values of the stock of foreign direct investment in a country to the domestically-owned capital stock (Stoneman 1975). This is a cumulative or long-term indicator as opposed to the measures of foreign investment flows which are short-term indicators. The problem with most of these measures to date is that a proxy variable has had to be used because the necessary data are not available for many dependent peripheral countries. In addition, the reliability of any available data is questionable, particularly for the smaller hosts. The problem of data reliability, of course, is less of a problem for the study of Canada.

The analyses reported in Chapter IV will rely on ownership rather than control data because the ownership data are closer as an approximation of the conceptualization of foreign penetration that has been used in the dependency literature. For example, data on American ownership include the holdings of both American portfolio and direct investors in Canadian enterprises, whereas the data on American controlled investment encompass investment by Canadians and all foreign investors in Canadian enterprises controlled by American residents (Government of Canada 1981:33). Moreover, there are missing data points in the control series that could bias the estimation results.

## iii. ECONOMIC GROWTH

The remaining variable in the equation is the dependent variable. Canadian economic growth will be measured as the change in GNP, the market value of goods, earnings and

[10]Ratio variables should be used with extreme caution and avoided, if at all possible. I will refer the reader to the contraversy over the use of ratio variables in correlation and regression analyses (Bollen and Ward 1979; Logan 1972; Vanderbok 1977; Schuessler 1973; Long 1980; Jackman 1980).

investment that is retained in Canada. The analysis examines change in Canada's GNP as a function of change in American direct investment. According to Tom Powrie (1977), a problem with using GNP as the dependent variable in a study of the impact of foreign penetration is that GNP includes retained earnings of foreign-owned corporations. Powrie suggests that a more appropriate measure of growth is a measure of "adjusted GNP", in which the retained earnings of foreign-owned enterprises have been subtracted out of the total GNP (Powrie 1977). However, since most of the recent contributions of foreign direct investment have been in the form of reinvestment rather than new capital flow, I have chosen to use the conventional GNP measure of growth in accordance with the empirical literature.

# IV. EMPIRICAL FINDINGS FOR THE EFFECTS OF AMERICAN PENETRATION OF CANADIAN GROWTH

## A. INITIAL EXPLORATORY RUNS FOR USDI

### i. USDI (1946-78) WITH THE SERIES BREAK AT 1964

In the initial analysis reported in Hammer (1982), the full post-WW II series for the effects of American direct investment (USDI) on Canadian GNP controlling for gross fixed capital formation (GFCF), was divided into two periods 1946-63 and 1964-78. The basis for the division was the historical description of Canada's economic development. The 1946-63 period corresponds to the time of unprecedented growth of American direct investment in Canada and to the post-war boom of both the American and Canadian economies. It is suggested in the Canadian literature that somewhere in the mid-1960's, the initial post-war boom of USDI expansion stabilized and changed to a period of disinvestment (Levitt 1970). In terms of dependency theory, it is this latter period in which the long-term negative effects of foreign direct investment in Canada would be expected to emerge.

Upon examination of the year to year fluctuations in USDI (using the transformed variable that controls for inflation and detrends the series with first differences, that is, DUSDICO) 1964 appears to be the break point for the 1960's. This is indicated by the abrupt drop in USDI for that year. The series for the transformations of USDI is plotted in Appendix 5. Breaking the series at 1964 with a dummy variable operationalizes the threshold or discontinuity in the series, where the pattern of growth for the two periods is expected to change in relation to the effects of USDI. That is, after 1963, the long-term negative effects of change in USDI on change in Canada's GNP should be evident.

The initial findings for the second period roughly correspond to the Bornschier et al. (1978) findings for 115 countries. There is a positive short-term effect of change in USDI on change in Canada's GNP, accompanied by a negative long-term effect for the nine-year lag estimate. Since there was no evidence of long-term effects for the first period, the analysis reported here is based on the full series 1945-78. The 1964 break is operationalized with a dummy variable that is set to equal zero for the 1946-63 data points and one for the 1964-78 period.

The oridinary least squares (OLSQ) estimates of the 1945-78 series for the effects of change in USDI on change in GNP are reported in Table 4.1.A. Although the equation is subject to the problem of almost perfect autocorrelation among the error terms, as indicated by the Durbin-Watson value of 1.04, the coefficients are revealing in terms of specifying the final equation. For 33 observations, there is a large difference between the means of the two periods, equal to 4687.67 million constant 1971 dollars. This difference is significant at the .005 level. Also significant at this level are the positive effect of change in GFCF on change in GNP (1.04) and the short-term positive effect of change in USDI on change in GNP (3.60). There is a significant, negative interaction effect between change in USDI in the post-1963 period and change in GNP. However, the negative effect of change in USDI for the nine year lag during this period is not significant.

Examination of the residual plot in Table 4.1.B, indicates that 1946 and 1976 are overestimated by about two standard deviations, whereas the 1953-1957 observations are underestimated. The model does, however, appear to be a good fit for the post-1957 period.

The Cochrane-Orcutt procedure (Table 4.2.A) yields an acceptable Durbin-Watson of 1.85. The $R^2$ and the $R^2$ adjusted[11] are .88 and .86 respectively. In comparison to the OLSQ estimate, the D coefficient is slightly higher at 4869.74 (vs. 4687.67), and the GFCF estimate is somewhat lower at .88 (vs. 1.04). The short-term effect of change in USDI is reduced to about half of the OLSQ estimate, at 1.89.

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[11]The $R^2$ is adjusted for the loss in degrees of freedom that is associated with the iterative estimations.

TABLE 4.1.A  OLSQ Estimation of U.S. Direct Investment Effects on GNP : D > 1963 : (1946-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE:   DGNPCO

SUM OF SQUARED RESIDUALS =    0.913211E+08
STANDARD ERROR OF THE REGRESSION =    1805.95
MEAN OF DEPENDENT VARIABLE =    3831.35
STANDARD DEVIATION =    4771.01
LOG OF LIKELIHOOD-FUNCTION =   -291.575
NUMBER OF OBSERVATIONS =    33.
SUM OF RESIDUALS =  -13452.1
DURBIN-WATSON STATISTIC (ADJ. FOR  O.GAPS) =   1.0407

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4687.67 | 1473.40 | 3.18152 |
| DGFCFCO | 1.04326 | 0.413836 | 2.52096 |
| DUSDICO | 3.60350 | 0.386092 | 9.33326 |
| IUSDI | -2.80866 | 0.808084 | -3.47571 |
| IL9USDI | -1.98763 | 1.45254 | -1.36839 |

TABLE 4.1.B   Plot of Actual, Fitted and Residual Values for OLSQ Estimation of U.S. Direct Investment Effects on GNP: D > 1963 (1946-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES          PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1946 | 0.2830E+05 | 0.2501E+05 | 0.329E+04 |
| 1947 | 1184. | 446.3 | 737 |
| 1948 | 750.6 | 478.3 | 272 |
| 1949 | 1170. | 1618. | -448 |
| 1950 | 2341. | 2328. | 12.6 |
| 1951 | 1733. | 700.6 | 0.103E+04 |
| 1952 | 3124. | 3391. | -267 |
| 1953 | 2018. | 4928. | -0.291E+04 |
| 1954 | -497.2 | 2608. | -0.311E+04 |
| 1955 | 1621. | 4906. | -0.328E+04 |
| 1956 | 3637. | 5489. | -0.185E+04 |
| 1957 | 1001. | 5645. | -0.464E+04 |
| 1958 | 746.7 | 1904. | -0.116E+04 |
| 1959 | 1912. | 3383. | -0.147E+04 |
| 1960 | 1291. | 2148. | -857 |
| 1961 | 4431. | 3272. | 0.116E+04 |
| 1962 | 3724. | 3315. | 409 |
| 1963 | 2984. | 3349. | -365 |
| 1964 | 4172. | 4373. | -201 |
| 1965 | 4353. | 5605. | -0.125E+04 |
| 1966 | 4860. | 4886. | -26.1 |
| 1967 | 2457. | 3733. | -0.128E+04 |
| 1968 | 4524. | 3179. | 0.134E+04 |
| 1969 | 4360. | 4707. | -347 |
| 1970 | 2233. | 3196. | -963 |
| 1971 | 6024. | 5741. | 283 |
| 1972 | 5773. | 4516. | 0.126E+04 |
| 1973 | 7596. | 7690. | -93.9 |
| 1974 | 3861. | 4036. | -175 |
| 1975 | 1337. | 2688. | -0.135E+04 |
| 1976 | 6229. | 3218. | 0.301E+04 |
| 1977 | 2615. | 2908. | -293 |
| 1978 | 4575. | 4491. | 83.8 |

TABLE 4.2.A  Cochrane-Orcutt Estimation of U.S. Direct Investment Effects on GNP : D > 1963 (1947-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE:  DGNPCO
MEAN OF DEPENDENT VARIABLE =  3127.52
STANDARD DEVIATION =  1892.44

CONVERGENCE ACHIEVED AFTER  3 ITERATIONS

FINAL VALUE OF RHO =  0.185551
STANDARD ERROR OF RHO =  0.176486
T-STATISTIC FOR RHO =  1.05136

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*************************************************

SUM OF SQUARED RESIDUALS =  0.439384E+08
STANDARD ERROR OF THE REGRESSION =  1299.98
MEAN OF DEPENDENT VARIABLE =  2567.50
STANDARD DEVIATION =  1789.32
R-SQUARED =  0.853735
ADJUSTED R-SQUARED =  0.831233
F-STATISTIC( 4, 29 ) =  35.0215
NUMBER OF OBSERVATIONS =  31.
SUM OF RESIDUALS =  3384.71
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) =  2.0173

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4537.23 | 1114.70 | 4.07035 |
| DGFCFCO | 0.967286 | 0.327810 | 2.95075 |
| DUSDICO | 1.79375 | 0.517593 | 3.46556 |
| IUSDI | -0.861075 | 0.766493 | -1.12340 |
| IL9USDI | -1.78040 | 1.04310 | -1.70684 |

TABLE 4.2.B Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of U.S. Direct Investment Effects on GNP : D > 1963 (1947-1978)

PLOT OF RESIDUALS(O)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES



| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1948 | 750.6 | 687.9 | 62.7 |
| 1949 | 1170 | 1043 | 127 |
| 1950 | 2341 | 1465 | 876 |
| 1951 | 1733 | 608.4 | 0.112E+04 |
| 1952 | 3124 | 2263 | -862 |
| 1953 | 2018 | 3112 | -0.109E+04 |
| 1954 | -497.2 | 1058 | -0.155E+04 |
| 1955 | 1621 | 2586 | -966 |
| 1956 | 3637 | 3385 | 252 |
| 1957 | 1001 | 3153 | -0.215E+04 |
| 1958 | 746.7 | 368.8 | 378 |
| 1959 | 1912 | 1643 | 269 |
| 1960 | 1291 | 942.2 | 349 |
| 1961 | 4431 | 1631 | 0.280E+04 |
| 1962 | 3724 | 2414 | 0.131E+04 |
| 1963 | 2984 | 2310 | 675 |
| 1964 | 4172 | 4466 | -294 |
| 1965 | 4353 | 5595 | -0.124E+04 |
| 1966 | 4860 | 4782 | 78.2 |
| 1967 | 2457 | 3848 | -0.139E+04 |
| 1968 | 4524 | 3147 | 0.138E+04 |
| 1969 | 4360 | 4940 | -580 |
| 1970 | 2233 | 3249 | -0.102E+04 |
| 1971 | 6024 | 5430 | 593 |
| 1972 | 5773 | 4518 | 0.125E+04 |
| 1973 | 7596 | 7607 | -11.1 |
| 1974 | 3861 | 3869 | -7.95 |
| 1975 | 1337 | 2423 | -0.109E+04 |
| 1976 | 6229 | 2964 | 0.326E+04 |
| 1977 | 2615 | 3588 | -974 |
| 1978 | 4575 | 4475 | 99.7 |

The short-term effect of change in USDI is twice the size of the short-term effect of change in GFCF! This finding is suggestive of Gonick's (1970:50) point that foreign direct investment or foreign equity capital may expand faster than general economic growth because it is concentrated in the most dynamic and profitable branches of economic activity. The negative interaction effect is less than half the OLSQ effect, and it is significant only at the .10 level. The lagged effect of change in USDI, however, is significant at the .05 level although the standard error is 1.04 for a coefficient of -1.99.

The residual plot for the Cochrane-Orcutt estimation (Table 4.2.B) indicates that 1954, 1957 and 1967 are underestimated, and as with the OLSQ equation, 1976 is overestimated. The 1976 overestimation can be explained in reference to the series plot in Appendix 5. The 1975 observation is the lowest point in the series. It represents the bottom in the drop in USDI that began in 1974 (post-OPEC). It was not until 1977 that USDI reached its 1973 level. The 1974-76 period corresponds to the onset of the economic recession. It should be noted, however, that the decline in levels of USDI began in 1968, with the abrupt drop occurring in 1974. Because the equation estimates are based on first-differenced values of the variables, the 1976 observation will reflect the 1975 change.

Less amenable to substantive explanation is the emergence of 1961 and 1962 as outliers in the Cochrane-Orcutt estimations. These outliers likely indicate a misspecification of the breakpoint. However, the original OLSQ estimates were biased by the inclusion of the 1964 data point. In consequence, the model was further refined in two steps. First, the OLSQ equation was re-estimated with the 1946 observation omitted and the breakpoint unchanged. Second, the residuals of this model were used to respecify the dummy variable.

## ii. USDI (1947-78) WITH THE SERIES BREAK AT 1964

The OLSQ results for the 1947-78 series are reported in Appendix 6. For 32 observations, the Durbin-Watson statistic is inconclusive. The results are basically unchanged from the results for the OLSQ estimate of the 1946-78 series, with all of the estimated

coefficients being just slightly higher than the 1946-78 series findings. The residual plot (Table 4.1.B) gives the important clues, however, in that it accentuates the spread of the outliers. The Cochrane-Orcutt procedure confirms the problem with the estimation of the 1961 and 1962 observations (Table 4.2.A). The size of the coefficients is reduced, and the lagged effect of change in USDI is significant only at the .10 level. Nevertheless, the Durbin-Watson value of 2.01 indicates that the errors are in nearly perfect random distribution after the transformation. Moreover, the $R^2$ and adjusted $R^2$ are quite high at .85 and .83 respectively.

## B. THE FINAL MODEL OF THE EFFECTS OF USDI ON CANADIAN GNP

Following the lead of the preliminary runs for the 1947-78 series, there is strong indication that the tail-end of the 1947-63 series was not adequately modelled. In consequence, the analysis was rerun with the new break point set at 1961 as suggested by Levitt (1970). The OLSQ results are reported in Table 4.3.A. The Durbin-Watson statistic (2.10) indicates that the OLSQ estimation is free of autocorrelation problems. The regression coefficient for D indicates a difference of 4721.63 million dollars between the mean of the 1947-60 period and the 1961-78 period. This finding is significant at the .005 level. Also significant at this level are the coefficients for the short term effects of change in GFCF and change in USDI. Change in gross fixed capital formation increases change in GNP by .98 of a dollar for every dollar invested. Change in American direct investment has a larger positive effect, increasing change in GNP by $1.22 for every dollar invested. For the post-1960 period, the long-run effect of change in USDI measured at a lag of nine years, is negative and significant at the .025 level. The coefficient indicates that for every dollar change in USDI, the effect is a $2.00 decrease in change in GNP for the post-1960 period.

The coefficient for the interaction effect of change in USDI and the post-1960 period is negative. However, it is small and does not meet conventional levels of significance. In consequence, the reduced form of equation which leaves out the main effect of interaction will be reported as the final model. This choice is supported by the comparison of the residual plots

TABLE 4.3.A OLSQ Estimation of U.S. Direct Investment Effects on GNP: D > 1960 (1947-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE    DGNPCO

SUM OF SQUARED RESIDUALS = 0.325264E+08
STANDARD ERROR OF THE REGRESSION = 1097.58
MEAN OF DEPENDENT VARIABLE = 3066.78
STANDARD DEVIATION = 1893.11
LOG OF LIKELIHOOD FUNCTION = -266.715
NUMBER OF OBSERVATIONS = 32
SUM OF RESIDUALS = 3572.98
DURBIN-WATSON STATISTIC (ADJ. FOR 0 GAPS) = 2.1079

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4721.63 | .870 | 5.42134 |
| DGFCFCO | 0.984784 | 0.25 | 3.93894 |
| DUSDICO | 1.22360 | 0.40 | 2.99370 |
| IUSDI | 0.475905 | 0.590 | -0.806595 |
| IL9USDI | -1.99810 | 0.861928 | -2.31818 |

TABLE 4.3.B  Plot of Actual, Fitted and Residual Values of OLS() Estimation of U.S. Direct Investment Effects on GNP: D > 1960 (1947-1978)

PLOT OF ACTUAL(.) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1947 | 1184. | 868.8 | 315 |
| 1948 | 750.6 | 677.4 | 73.1 |
| 1949 | 1170. | 845.2 | 325 |
| 1950 | 2341. | 1181 | 0.116E+04 |
| 1951 | 1733. | 367.2 | 0.137E+04 |
| 1952 | 3124. | 1623 | 0.150E+04 |
| 1953 | 2018. | 2313 | -295 |
| 1954 | -497.2 | 779.1 | -0.128E+04 |
| 1955 | 1621. | 2318 | -697 |
| 1956 | 3637. | 3118 | 518 |
| 1957 | 1001. | 2396 | -0.140E+04 |
| 1958 | 746.7 | 393.2 | 354 |
| 1959 | 1912. | 1096. | 816 |
| 1960 | 1291. | 481.5 | 809 |
| 1961 | 4431. | 3829. | 602 |
| 1962 | 3724. | 3658. | 65.8 |
| 1963 | 2984. | 4388. | -0.140E+04 |
| 1964 | 4172. | 4295. | -123 |
| 1965 | 4353. | 5470. | -0.112E+04 |
| 1966 | 4860. | 4742. | 118 |
| 1967 | 2457. | 3740. | -0.128E+04 |
| 1968 | 4524. | 3178. | 0.135E+04 |
| 1969 | 4360. | 4652. | -291 |
| 1970 | 2233. | 3196. | -963 |
| 1971 | 6024. | 5621. | 403 |
| 1972 | 5773. | 4470. | 0.130E+04 |
| 1973 | 7596. | 7576. | 19.8 |
| 1974 | 3861. | 4004. | -143 |
| 1975 | 1337. | 2707. | -0.137E+04 |
| 1976 | 6229. | 3221. | 0.301E+04 |
| 1977 | 2615. | 2909. | -295 |
| 1978 | 4575. | 4450. | 124 |

of the two equations. Although both indicate a good fit, the reduced form residuals are better fit than the structural equation model residuals. The reduced form results are reported in Table 4.4.A.

The OLSQ results for both the structural equation and the reduced form equations are free of autocorrelation. However, the variables are taken as first-differences, therefore, the time series procedure does not calculate an $R^2$. For this reason, the Cochrane-Orcutt procedure has been performed on both equations as a check on the amount of variance explained. For the Cochrane-Orcutt estimations the $R^2$ and $R^2$ adjusted for the structural and reduced form equations are .93, .92 and .92, .91 respectively. The Cochrane-Orcutt estimations and residual plots are reported in Appendices 8 and 9.

Table 4.4.A reports the values for the OLSQ estimation of the reduced form equation. The omission of the main effect of the interaction (IUSDI) of improves the fit of the residual plot (Table 4.4.B), bringing all but the Korean War and the 1976 residuals close to within one standard deviation of the mean. The Durbin-Watson statistic is an extremely good fit at 1.96 (.04 from a perfect random distribution of the error terms). In comparison to the structural equation estimates in Table 4.3.A, the reduced form coefficients are slightly smaller with the exception of the effect of change in GFCF. The standard errors are also slightly increased, but within acceptable range.

The effect of the nine-year lag of change in USDI for the post-1960 period is -1.92 and significant at the .025 level. The other coefficients are significant at the .005 level. The Cochrane-Orcutt run reported in Appendix 10 actually brings the Durbin-Watson up to a perfect 2.00. The $R^2$ and $R^2$ adjusted for the transformed equation are .92 and .91 respectively.

Although either the structural equation estimation or the reduced form equation are excellent models of the effects of change in American direct investment on change in Canada's GNP over the long-run, the two estimations differ in the comparison of the short run effects of change in GFCF and change in USDI. In the structural equation model, with the main effect of the interaction included, change in USDI has a slightly larger effect on change in

TABLE 4.4.A OLSQ Reduced-Form Estimation of U.S. Direct Investment Effects on GNP : D > 1960 (1947-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE    DGNPCO

SUM OF SQUARED RESIDUALS =    0.333102E+08
STANDARD ERROR OF THE REGRESSION =   1090.71
MEAN OF DEPENDENT VARIABLE =    3066.78
STANDARD DEVIATION =   1893.11
LOG OF LIKELIHOOD FUNCTION =   -267.096
NUMBER OF OBSERVATIONS =    32
SUM OF RESIDUALS =    .5099.00
DURBIN-WATSON STATISTIC (ADJ. FOR 0 GARS) =   1.9567

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | F-STATISTIC |
|---|---|---|---|
| D | 4493.03 | 818.393 | 5.49010 |
| DGFCFCO | 1.07612 | 0.221502 | 4.85830 |
| DUSDICO | 0.971270 | 0.261319 | 3.71660 |
| IL9USPT | 1.92295 | 0.851513 | 2.25827 |

TABLE 4.4.B   Plot of Actual, Fitted and Residual Values for OLSQ Reduced Form Estimation of U.S. Direct
Investment Effects on GNP : D > 1960  (1947-1978)

PLOT OF ACTUAL(·) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1947 | 1184. | 1025 | 159 |
| 1948 | 750.6 | 778.2 | 27.7 |
| 1949 | 1170. | 809.0 | 361 |
| 1950 | 2341 | 1120 | 0.122E+04 |
| 1951 | 1733 | 351.8 | 0.138E+04 |
| 1952 | 3124 | 1508 | 0.162E+04 |
| 1953 | 2018 | 2135 | +16 |
| 1954 | -497.2 | 568.6 | 0.107E+04 |
| 1955 | 1621 | 2145 | -524 |
| 1956 | 3637 | 3061 | 576 |
| 1957 | 1001. | 2126 | -0.112E+04 |
| 1958 | 746.7 | 193.8 | 553 |
| 1959 | 1912 | 845.7 | 0.107E+04 |
| 1960 | 1294 | 266.5 | 0.102E+04 |
| 1961 | 4431 | 3854 | 577 |
| 1962 | 3724 | 3730 | -5.66 |
| 1963 | 2984 | 4443 | -0.146E+04 |
| 1964 | 4172 | 4277 | -105 |
| 1965 | 4353 | 5689 | -172 |
| 1966 | 4860 | 5032 | -0.134E+04 |
| 1967 | 2457 | 3733 | -0.128E+04 |
| 1968 | 4524 | 3223 | 0.130E+04 |
| 1969 | 4360 | 4707 | -347 |
| 1970 | 2233 | 3157 | -924 |
| 1971 | 6024 | 5732 | 292 |
| 1972 | 5773 | 4428 | 0.135E+04 |
| 1973 | 7596 | 7607 | -11.0 |
| 1974 | 3861 | 3805 | 55.8 |
| 1975 | 1337 | 2309 | -971 |
| 1976 | 6229 | 3043 | 0.319E+04 |
| 1977 | 2615 | 2845 | -730 |
| 1978 | 4575 | 4495 | 79.4 |

GNP than does change in GFCF. In the reduced form estimation, the size of the effects are reversed. The significance of the difference is, however, difficult to determine because of the small difference between the coefficients. In the structural equation model, the effect of change in USDI (1.22) is .24 larger than the effect of change in GFCF. In the reduced form equation, the effect of change in USDI (.97) is .11 smaller.

It is probably safe to say that changes in both USDI and GFCF have similar short term effects on domestic change in GNP. In both cases, one dollar change in investment increases change in GNP by the same amount. In the long run, the structural equation estimation indicates a negative effect of 2.00. The comparable reduced form estimation is 1.92. Both estimations provide strong support for the dependency predictions of positive short-term and negative long-term effects of foreign penetration on growth.

## G. SECTORAL EFFECTS

The cross-national findings of Dolan and Tomlin (1980), Bornschier and Ballmer-Cao (1978) and Bornschier et al. (1980) indicate a significant effect of foreign capital penetration in manufacturing. Bornschier and Ballmer-Cao find a significant negative effect of penetration in extraction and mining and smelting as well. It should be noted that in an earlier 1980 study, Dolan et al. did not reproduce these findings. Nevertheless, the empirical dependency literature argues that there exist different effects for long-term growth depending on the sectoral location of foreign capital (Bornschier 1981:372). Foreign capital in manufacturing and mineral extraction have strong negative effects on growth, whereas the other sectoral locations show no substantial effects (Bornschier and Ballmer-Cao 1978; Borhschier et al. 1980).

Although the time series results for the penetration of American capital suggest strong negative aggregate effects exist, the sectoral breakdowns indicate that the aggregate model may not be appropriate for sectoral analysis. In the data analyses reported below, the effects of change in USDI are differentiated into partial effects for manufacturing, mining and smelting and petroleum and natural gas.

### i. MANUFACTURING

The OLSQ estimate for the manufacturing series is inconclusive, as indicated by the Durbin-Watson value of 1.76. The D coefficient, or period difference for manufacturing (2900.58) is about 1500 less than the aggregate period difference. Neither of the USDI interaction coefficients is significant, although the immediate effect of change in USDI in manufacturing, 1.74, is significant at the .10 level. The OLSQ results for manufacturing investment are reported in Table 4.5.A. The positive effect of change in GFCF remains virtually identical to the aggregate estimate, leading to the questioning of the application of the aggregate USDI estimation for the manufacturing equation. On the other hand, the residual plot is fairly good, with 1951, 1973, 1975 and 1976 evident as the largest outliers (Table 4.5.B).

The Cochrane-Orcutt estimates are reported in Table 4.6.A. The transformed equation improves the Durbin-Watson to a near perfect 1.96. The $R^2$ is .84, and the $R^2$ adjusted for the loss in degrees of freedom is .82. The D coefficient is reduced slightly to 2788.43. The effect of change in GFCF is increased to 1.16, and both of these findings are significant at the .005 level. The short term effect of change in American direct investment in manufacturing is reduced to 1.25 and the coefficient does not attain conventional significance ($p > .10$). The interaction effect is reduced to -.50 and it is also not significant. The long term effect remains stable and positive contrary to theory. The effect is small, however, and does not attain conventional levels of significance. The residual plot is much the same as the OLSQ plot, with 1968 showing up clearly as an additional outlier (Table 4.6.B).

In an attempt to explain the difference between the aggregate and manufacturing findings, the detrended series have been plotted against another one. The plot is illustrated in Figure 4.1. From 1966 to 1972, the two series vary in opposite directions. Prior to 1966, the year to year fluctuations in manufacturing investment are larger than the aggregate fluctuations. After 1972, the manufacturing series is less volatile. These differences may, in part, account for the differences in the findings.

TABLE 4.5.A Plot of Actual, Fitted and Residual Values for OLSQ Reduced Form Estimation of U.S. Direct
Investment Effects in Manufacturing on GNP : D > 1960 (1947-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE:    DGNPCO

SUM OF SQUARED RESIDUALS =    0.49969E+08
STANDARD ERROR OF THE REGRESSION =    1359.70
MEAN OF DEPENDENT VARIABLE =    3066.78
STANDARD DEVIATION =    1893.11
LOG OF LIKELIHOOD FUNCTION =   -273.568
NUMBER OF OBSERVATIONS =    32
SUM OF RESIDUALS =    8886.13
DURBIN-WATSON STATISTIC (ADJ. FOR    O.GAPS) =    1.7642

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 2900.58 | 720.776 | .02425 |
| DGFCFCO | 1.07190 | 0.288553 | 3.71475 |
| DADIMFCO | 1.74253 | 0.972266 | 1.79223 |
| IADIMF | -1.12385 | 1.66461 | -0.675145 |
| IL9ADIMF | 0.567997 | 1.38300 | 0.410700 |

TABLE 4.5.B   Plot of Actual, Fitted and Residual Values of OLSQ Estimation of U.S. Direct Investment
Effects in Manufacturing on GNP : D > 1960 (1947-1978)

PLOT OF RESIDUALS(O)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1947 | 1184. | 1245. | -60.9 |
| 1948 | 750.6 | 1056. | -305. |
| 1949 | 1170. | 753.0 | 417. |
| 1950 | 2341. | 976.6 | 0.136E+04 |
| 1951 | 1733. | -728.6 | 0.246E+04 |
| 1952 | 3124. | 2481. | 643. |
| 1953 | 2018 | 624.4 | 0.139E+04 |
| 1954 | -497.2 | 216.8 | -714. |
| 1955 | 1621. | 1607. | 13.8 |
| 1956 | 3637. | 2793. | 844. |
| 1957 | 1001. | 1647. | -646. |
| 1958 | 746.7 | -21.48 | 768. |
| 1959 | 1912. | 436.2 | 0.148E+04 |
| 1960 | 1291. | 60.28 | 0.123E+04 |
| 1961 | 4431. | 3478. | 953. |
| 1962 | 3724. | 3392. | 332. |
| 1963 | 2984. | 3988. | -0.100E+04 |
| 1964 | 4172. | 5211. | -0.104E+04 |
| 1965 | 4353. | 5693. | -0.134E+04 |
| 1966 | 4860. | 5493. | -633. |
| 1967 | 2457. | 2888. | -430. |
| 1968 | 4524. | 2815. | 0.171E+04 |
| 1969 | 4360. | 4217. | 143. |
| 1970 | 2233. | 3149. | -916. |
| 1971 | 6024. | 5267. | 757. |
| 1972 | 5773. | 4519. | 0.125E+04 |
| 1973 | 7596. | 5575. | 0.202E+04 |
| 1974 | 386.1 | 4862. | -0.100E+04 |
| 1975 | 1337. | 4560. | -0.322E+04 |
| 1976 | 6229. | 3803. | 0.243E+04 |
| 1977 | 2615. | 3202. | -588. |
| 1978 | 4575. | 3994. | 580. |

TABLE 4.6.A Cochrane-Orcutt Estimation of U.S. Direct Investment Effects in Manufacturing on GNP : D > 1960 (1948-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3127.52
STANDARD DEVIATION = 1882.44

CONVERGENCE ACHIEVED AFTER 3 ITERATIONS

FINAL VALUE OF RHO = 0.173699
STANDARD ERROR OF RHO = 0.176875
T-STATISTIC FOR RHO = 0.982044

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*********************************************

SUM OF SQUARED RESIDUALS = 0.48843E+08
STANDARD ERROR OF THE REGRESSION = 1370.62
MEAN OF DEPENDENT VARIABLE = 2603.27
STANDARD DEVIATION = 1794.00
R-SQUARED = 0.840713
ADJUSTED R-SQUARED = 0.816208
F-STATISTIC( 4. , 26.) = 31.6679
NUMBER OF OBSERVATIONS = 31.
SUM OF RESIDUALS = 8146.16
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) = 1.9635

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T STATISTIC |
|---|---|---|---|
| D | 2788.43 | 760.477 | 3.66669 |
| DGFCFCO | 1.15858 | 0.316308 | 3.66282 |
| DADIMFCO | 1.25188 | 0.932930 | 1.34188 |
| IADIMF | -0.498035 | 1.73420 | -0.287185 |
| IL9ADIMF | 0.582253 | 1.31041 | 0.444330 |

TABLE 4.6.B  Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of U.S. Direct Investment Effects in Manufacturing on GNP : D > 1960 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES          PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1948 | 750.6 | 1049. | -299 |
| 1949 | 1170. | 666.7 | 503. |
| 1950 | 2341. | 1020. | 0.132E+04 |
| 1951 | 1733. | -200.9 | 0.193E+04 |
| 1952 | 3124. | 2451. | 674. |
| 1953 | 2018. | 1025. | 993. |
| 1954 | -497.2 | 294.4 | -792. |
| 1955 | 1621. | 1455. | 166. |
| 1956 | 3637. | 2790. | 846. |
| 1957 | 1001. | 1627. | -626. |
| 1958 | 746.7 | -254.4 | 0.100E+04 |
| 1959 | 1912. | 440.6 | 0.147E+04 |
| 1960 | 1291. | 173.9 | 0.112E+04 |
| 1961 | 4431. | 3653. | 777. |
| 1962 | 3724. | 3518. | 206. |
| 1963 | 2984. | 4056. | -0.107E+04 |
| 1964 | 4172. | 5124. | -952. |
| 1965 | 4353. | 5654. | -0.130E+04 |
| 1966 | 4860. | 5350. | -490. |
| 1967 | 2457. | 2676. | -219. |
| 1968 | 4524. | 2654. | 0.187E+04 |
| 1969 | 4360. | 4551. | -191. |
| 1970 | 2233. | 3079. | -846. |
| 1971 | 6024. | 5187. | 837. |
| 1972 | 5773. | 4688. | 0.110E+04 |
| 1973 | 7596. | 5886. | 0.171E+04 |
| 1974 | 3861. | 5201. | -0.134E+04 |
| 1975 | 1337. | 4380. | -0.304E+04 |
| 1976 | 6229. | 3182. | 0.305E+04 |
| 1977 | 2615. | 3538. | -923. |
| 1978 | 4575. | 3914. | 660. |

TIME SERIES PLOT

DUSDICO PLOTTED WITH + DABIMFCO PLOTTED WITH +



-0.17E+04 -0.14E+04 -0.11E+04 -0.79E+03 -0.49E+03 -0.18E+03 0.12E+03 0.43E+03 0.74E+03 0.10E+04 0.13E+04

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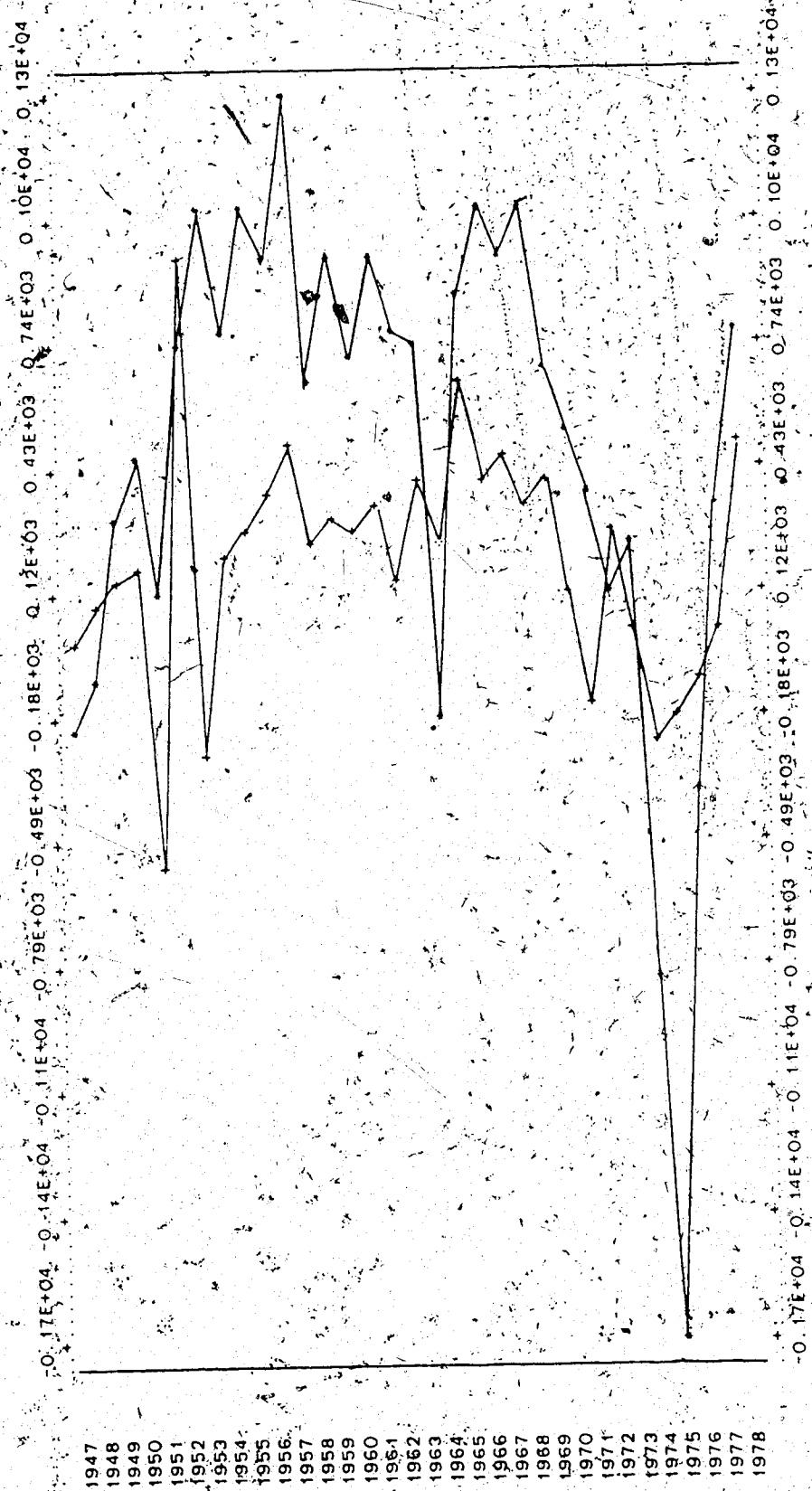
Fig. 4.1  Time Series Plot of Year-to-Year Changes in Direct Investment in Manufacturing with Changes in Aggregate U.S. Direct Investment

## ii. MINING AND SMELTING

Both the mining and smelting and the petroleum and natural gas series are truncated to 25 observation points because of missing data for the early years of the post-war period. The OLSQ results for the mining and smelting series are reported in Table 4.7.A. The Durbin-Watson statistic indicates the absence of first order serial correlation among the error terms. The difference between the two periods, 3584.44 and the effect of change in GFCF, .99, are both significant at the .005 level. The short term positive effect of change in USDI in mining and smelting is, at 5.99, almost six times as big as the short term positive effect of the aggregate USDI measure on change in GNP. This finding is significant at the .05 level. Neither the interaction effect nor the lagged effect of change in USDI in mining and smelting are significant, although both are negative. These findings must also be viewed with caution because of the substantial size of the standard errors.

The residual plot (Table 4.7.B) indicates that the model is a good fit for the 1954-71 period. After 1971, four of the seven observations are outliers. The Cochrane-Orcutt estimations are reported in Appendix 14 as a check on the $R^2$ values. The $R^2$ and $R^2$ adjusted are high at .91 and .90. The coefficient estimates remain largely unchanged. As with the manufacturing series, the mining and smelting series is plotted with the aggregate USDI (detrended and in constant dollars) series. The plot is illustrated in Figure 4.2.

With the exception of the 1954 and the 1978 drops in investment levels in the mining and smelting series, the sectoral pattern reflects a much attenuated version of the aggregate changes. This indicates more stability in the mining and smelting series. It should also be noted that the large drop in the aggregate USDI series that occurs in 1964 is not reflected in the mining and smelting series. Instead, mining and smelting investment increases slightly in 1963 and remains stable until 1966 when another increase occurs. The most obvious differences between the two series are the huge drop in mining and smelting investment in 1954, and the huge drop in aggregate investment in 1964.

TABLE 4.7.A  OLSQ Estimation of U.S. Direct Investment Effects in Mining and Smelting on GNP: D > 1960
          (1954-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE:  DGNPCO

SUM OF SQUARED RESIDUALS =    0.32011OE+08
STANDARD ERROR OF THE REGRESSION =    1265.13
MEAN OF DEPENDENT VARIABLE =    3432.66
STANDARD DEVIATION =    1956.13
LOG OF LIKELIHOOD FUNCTION =  -211.257
NUMBER OF OBSERVATIONS =    25
SUM OF RESIDUALS =    1084.95
DURBIN-WATSON STATISTIC (ADJ. FOR 0 GAPS) =    1.8627

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3584.44 | 484.434 | 7.39924 |
| DGFCFCO | 0.991115 | 0.289852 | 3.41939 |
| DADIMSCO | 5.98713 | 3.12889 | 1.91350 |
| IADIMS | -3.14139 | 3.50060 | -0.897388 |
| IL9ADIMS | -1.60638 | 1.57299 | -1.02123 |

TABLE 4.7.B   Plot of Actual, Fitted and Residual Values for OLSQ Estimation of U.S. Direct Investment
Effects in Mining and Smelting on GNP : D > 1960 (1954-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(0)

| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1954 | 497.2 | 575.7 | -0.107E+04 |
| 1955 | 1621. | 2195. | -574 |
| 1956 | 3637. | 2391. | 0.125E+04 |
| 1957 | 1001. | 1590. | -589. |
| 1958 | 746.7 | -12.98 | 760. |
| 1959 | 1912. | 719.3 | 0.119E+04 |
| 1960 | 1291. | 1168. | 123. |
| 1961 | 4431. | 3808. | 623 |
| 1962 | 3724. | 3157. | 567 |
| 1963 | 2984. | 4124. | -0.114E+04 |
| 1964 | 4172. | 5340. | -0.117E+04 |
| 1965 | 4353. | 5741. | -0.139E+04 |
| 1966 | 4860. | 5792. | -932. |
| 1967 | 2457. | 3518. | -0.106E+04 |
| 1968 | 4524. | 3808. | 715. |
| 1969 | 4360. | 3908. | 452 |
| 1970 | 2233. | 3260. | -0.103E+04 |
| 1971 | 6024. | 5829. | 195 |
| 1972 | 5773. | 3870. | 0.190E+04 |
| 1973 | 7596. | 5715. | 0.188E+04 |
| 1974 | 3861. | 4559. | -698. |
| 1975 | 1337. | 2858. | -0.152E+04 |
| 1976 | 6229. | 3620. | 0.261E+04 |
| 1977 | 2615. | 3234. | -617. |
| 1978 | 4575. | 3967. | 607. |

TIME SERIES PLOT

DUSDICO PLOTTED WITH +   DADIMSCO PLOTTED WITH *

-0.17E+04  -0.14E+04  -0.11E+04  -0.79E+03  -0.49E+03  -0.18E+03  0.12E+03  0.43E+03  0.74E+03  0.10E+04  0.13E+04

-0.17E+04  -0.14E+04  -0.11E+04  -0.79E+03  -0.49E+03  -0.18E+03  0.12E+03  0.43E+03  0.74E+03  0.10E+04  0.13E+04

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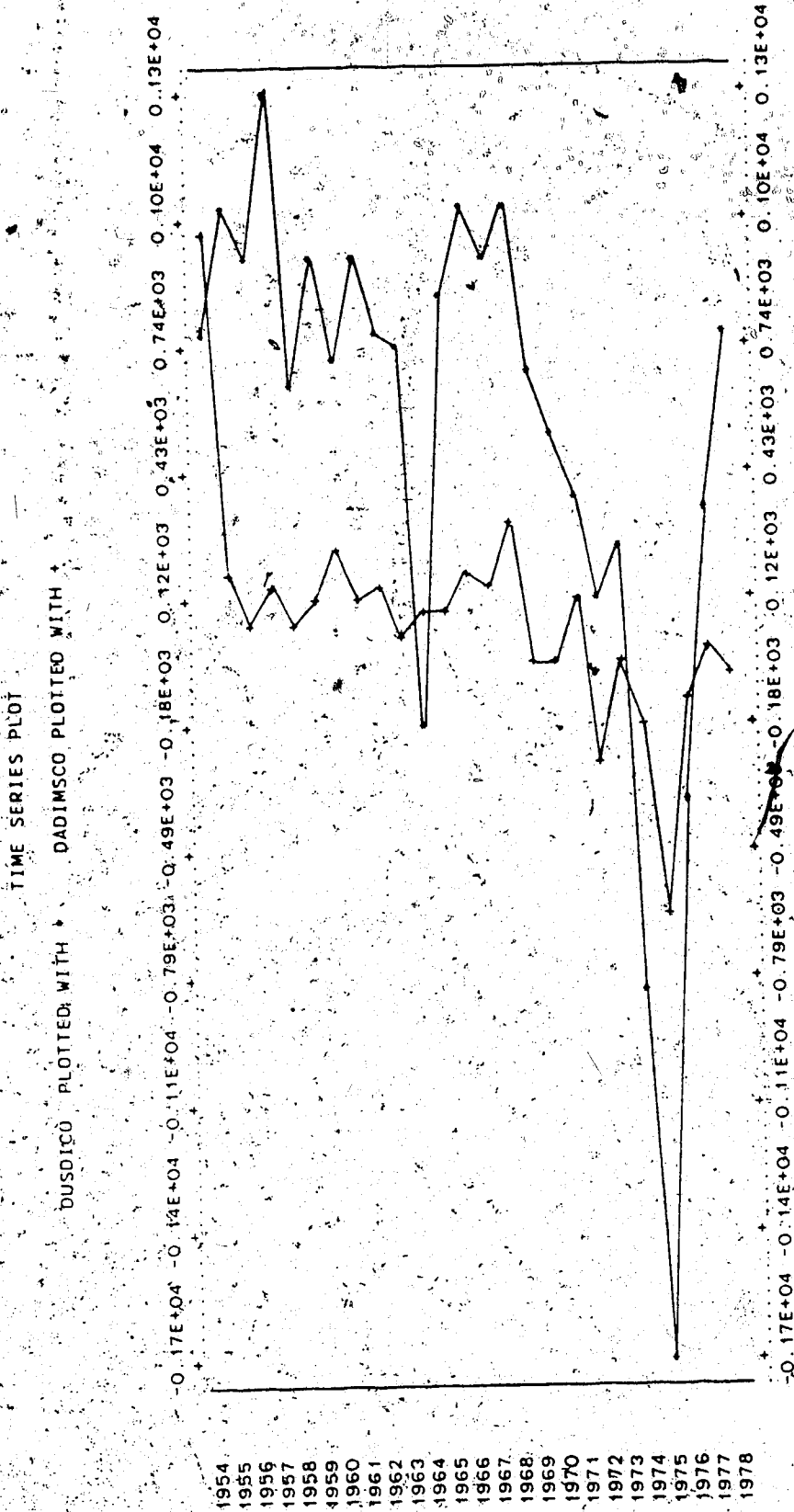
Fig. 4.2   Time Series Plot of Year-to-Year Changes in U.S. Direct Investment in Mining and Smelting with Changes in Aggregate U.S. Direct Investment

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## iii. PETROLEUM AND NATURAL GAS

The OLSQ estimates for the petroleum and natural gas series are reported in Table 4.8.A. The Durbin-Watson statistic is 2.19, indicating an absence of autocorrelation. Both the period difference and the effect of change in GFCF are at 3543.19 and .93 respectively, significant at the .005 level. The short term effect of change in USDI in petroleum and natural gas is positive and substantial at 2.21. However, the coefficient does not attain conventional levels of significance. The interaction effect is small, positive and not significant, and the associated standard error is almost four times the size of the coefficient.

The lagged effect of change in USDI in petroleum and natural gas is negative, but not significant. The standard error is smaller for the petroleum and gas estimates (.76 for a coefficient of -1.09). The residual plot is similar to the mining and smelting plot, with the post-1969 series being a very poor fit (Table 5.9.B). The other outliers are 1959, 1960 and 1962. The Cochrane-Orcutt results reported in Appendix 16 reveal very high $R^2$ values at .94 and .93 adjusted.

The first-differenced plot of USDI in petroleum and natural gas and aggregate USDI is illustrated in Figure 4.3. Comparable to the mining and smelting series, there is a large drop in the level of investment in 1955. The rest of the series is an attenuated version of the aggregate series, with the exception of the 1977 drop in investment in petroleum and natural gas.

The similarity between the mining and smelting and the petroleum and natural gas series enables the interpretation of both sets of results within the same context. The nine-year lagged mining and smelting coefficient, -1.61, is not significant ($p => -1.02$), although the petroleum and natural gas lagged estimate (-1.09) is significant at the .10 level. In the preliminary runs on the aggregate USDI data, the coefficients for the eight-year-lagged interaction effect yielded similar results. My suspicion is that a longer lag might reveal stronger negative effects when further data points are available to extend the series past 1978. On the other hand, the truncation of the series at 1954 means a loss of eight data points in comparison to the aggregate series. The shorter series does not permit the extension of the lag and it might

TABLE 4.8.A OLSQ Estimation of U.S. Direct Investment Effects in Petroleum and Natural Gas on GNP: D > 1960 (1954-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE: DGNPCO

SUM OF SQUARED RESIDUALS = 0.305343E+08
STANDARD ERROR OF THE REGRESSION = 1235.60
MEAN OF DEPENDENT VARIABLE = 3432.66
STANDARD DEVIATION = 1956.13
LOG OF LIKELIHOOD FUNCTION = -210.667
NUMBER OF OBSERVATIONS = 25
SUM OF RESIDUALS = 2241.12
DURBIN-WATSON STATISTIC (ADJ FOR 0.GAPS) = 2.1902

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
| --- | --- | --- | --- |
| D | 3543.19 | 467.713 | 7.57555 |
| DGFCFCO | 0.933092 | 0.298833 | 3.12245 |
| DADIPGCO | 2.20945 | 1.42058 | 1.55531 |
| IADIPG | 0.552769 | 1.90835 | 0.289657 |
| IL9ADIPG | -1.09135 | 0.760216 | -1.43558 |

TABLE 4.8.B   Plot of Actual, Fitted and Residual Values for OLSQ Estimation of U.S. Direct Investment
Effects in Petroleum and Natural Gas on GNP : D > 1960 (1954-1978)

PLOT OF ACTUAL(•) AND FITTED(+)-VALUES                    PLOT OF RESIDUALS(0)

| ID | ACTUAL | FITTED | RESIDUAL |
|------|---------|---------|------------|
| 1954 | -497.2 | 513.5 | -0.101E+04 |
| 1955 | 1621 | 1933 | -312 |
| 1956 | 3637 | 2776 | 861 |
| 1957 | 1001 | 1868 | -867 |
| 1958 | 746.7 | -205.9 | 541 |
| 1959 | 1912 | 499.3 | 0.141E+04 |
| 1960 | 1291 | -326.3 | 0.162E+04 |
| 1961 | 4431 | 4015 | 416 |
| 1962 | 3724 | 2741 | 983 |
| 1963 | 2984 | 4389 | -0.141E+04 |
| 1964 | 4172 | 4608 | -436 |
| 1965 | 4353 | 5045 | -692 |
| 1966 | 4860 | 5604 | -744 |
| 1967 | 2457 | 3091 | -634 |
| 1968 | 4524 | 3432 | 0.109E+04 |
| 1969 | 4360 | 4762 | -402 |
| 1970 | 2233 | 3541 | -0.131E+04 |
| 1971 | 6024 | 6178 | -154 |
| 1972 | 5773 | 4370 | 0.140E+04 |
| 1973 | 7596 | 6198 | 0.140E+04 |
| 1974 | 3861 | 3724 | 137 |
| 1975 | 1337 | 2664 | -0.133E+04 |
| 1976 | 6229 | 3660 | 0.257E+04 |
| 1977 | 2615 | 4179 | -0.156E+04 |
| 1978 | 4575 | 3906 | 668 |

TIME SERIES PLOT

DUSDICO PLOTTED WITH *     DADIPGCQ PLOTTED WITH +
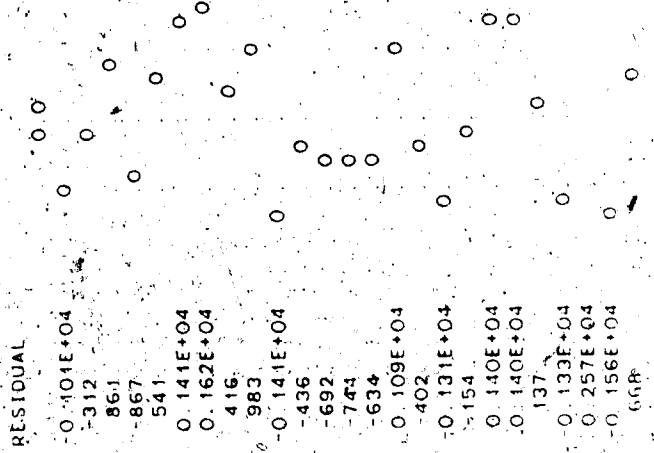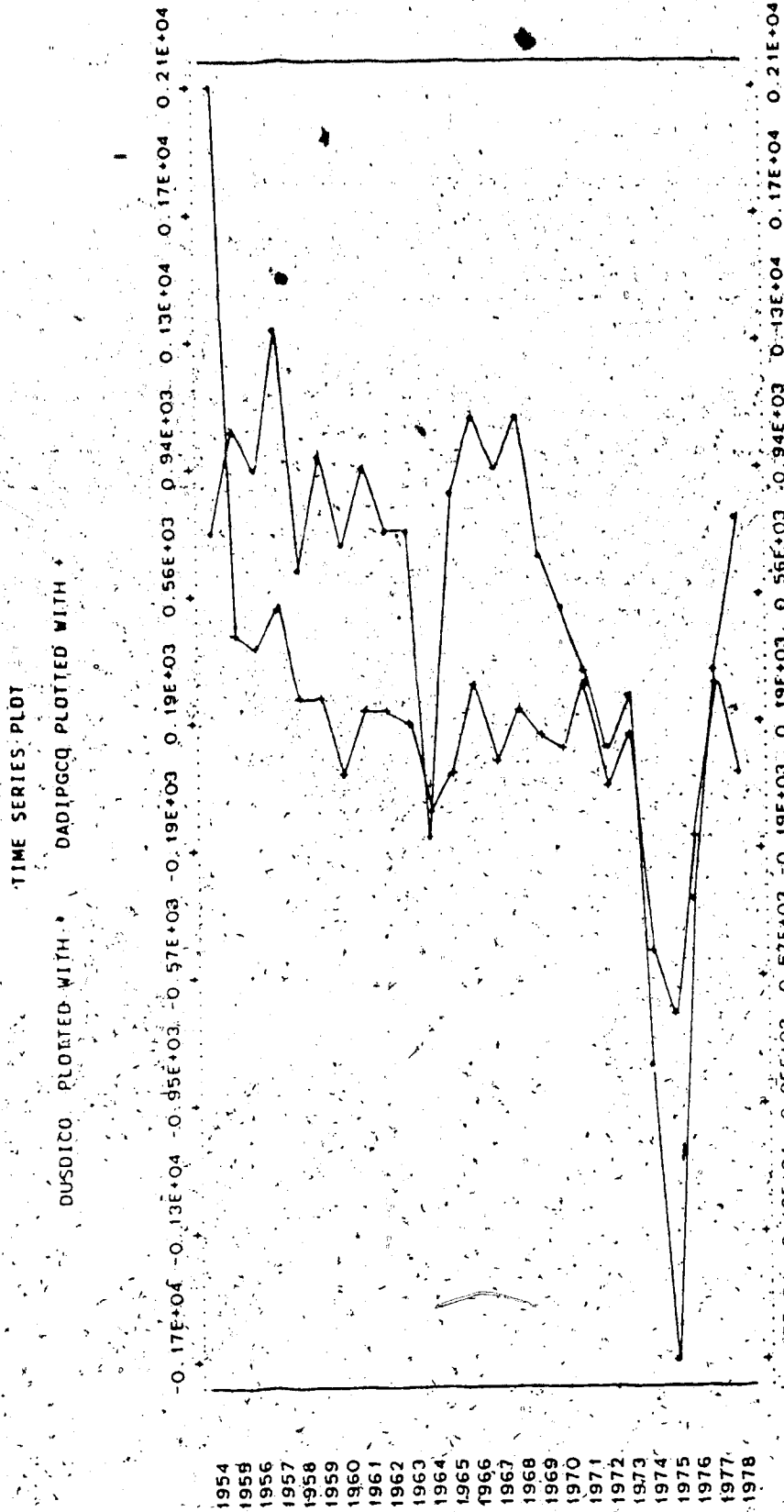
Fig. 4.3   Time Series Plot of Year-to-Year Changes in U.S. Direct Investment in Petroleum and Natural
Gas with Changes in Aggregate U.S. Direct Investment

be the reason why the lagged effect is not as strong as would be expected from the aggregate results.

To summarize the sectoral findings, there is some indication that there is a negative effect of change in USDI in both mining and smelting and petroleum and natural gas in the long-run, for the post-1960 period. The short length of the two series may be affecting the strength of the coefficients. Change in USDI in these two sectors has a large positive short term effect of 2.21 (significant at the .10 level) in petroleum and natural gas and 5.99 (significant at the .05 level) in mining and smelting. It is also possible that the relatively stable levels of investment in these sectors, coupled with the large positive short-term effects of investment may, to some extent, be functioning to neutralize the long-term negative effects. If this is the case, then even the weak negative findings for the lagged coefficients are explanable in the context of dependency theory.

The findings for manufacturing investment are not as amenable to interpretation. Certainly there is a severe problem with the fit of the model to the post-1976 period. This may explain the small and insignificant coefficient estimates for the interaction and the lagged values (only the value for 1969 would be adequately estimated). On the other hand, there may be a different lag structure for manufacturing; as possibly suggested by the negative covariation of change in USDI in manufacturing and aggregate change in USDI during the 1960's. Exploratory work on a longitudinal model for Canadian manufacturing investment is a task for further research.

D. AMERICAN DIRECT INVESTMENT AND AMERICAN LONG-TERM INVESTMENT

Since the argument has been made that debt-dependence related to foreign portfolio investment is similar in its effect structure to foreign direct investment, analysis has been done on both the series for American long-term investment (of which foreign direct, portfolio and miscellaneous investment are the three components) and the series for American portfolio

investment in isolation.[12] The results for American long-term investment (USLTI) are reported in Table 4.10.A, and the results for the portfolio investment series are reported in Table 4.11.A.

The OLSQ results for the estimation of the American long-term investment series yields an acceptable Durbin-Watson statistic of 1.75. The OLSQ results are reported in Table 4.9.A. The difference between the two periods (4651.02), the effect of change in GFCF (1.05), and the short-term effect of change in USLTI (.80) are all significant at the .005 level. The first thing that should be noted is that the short-term effect of change in USLTI is smaller than the comparable effect of change in USDI (in the structural equation estimation). The estimated effect of change in USDI is 1.22, whereas the coefficients for change in USLTI is .80.

The change in GFCF effect is slightly higher for change in USLTI, 1.05 compared to .98 for the change in USDI equation (at the same level of significance). The interaction effect of change in USLTI is small, negative, not significant and measured with a standard error almost twice the size of the coefficient. The post-1960 lagged effect of change in USLTI is negative, and sizeable at -1.40. This estimate is significant at the .10 level.

The residual plot for change in USLTI (Table 4.9.B) indicates that the model is an adequate fit, with 1951, 1952, 1963, 1964, 1967, 1971, and 1972 outlying, but within two standard deviations of the mean. The 1976 outlier remains the largest. The underestimation of

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[12]For the early period, miscellaneous investment refers to the following direct investments: the purchase of Canadian mining, agricultural, timber and urban properties; the investments of foreign shipping companies in Canadian coastwise and internal shipping; the purchase or establishment of branch plants and subsidiaries, foreign funds on mortgage in Canada; and foreign capital used in financing Canadian import and export trade. There are no comprehensive data breakdowns for the data beyond certain estimates presented by Field (1911 and 1914), and these are probably incomplete (Aitken 1961:35).

For the 1926-1978 period, the components of miscellaneous invvestment include: sundry assets, non-corporate ownership of foreign real estate, the equity of Canadian banks in bank premises abroad and a negative component representing reserves in respect to inactive Canadian government loans and investments (including export credits). (Canada's International Investment Position 1978:22).

The data presented in Appendix 26 indicate that miscellaneous investment has been only a neglible component of total foreign long-term investment in Canada.

TABLE 4.9.A  OLSQ Estimation of U.S. Long-Term Investment Effects on GNP : D > 1960 (1947-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE:  DGNPCO

SUM OF SQUARED RESIDUALS = 0.393019E+08
STANDARD ERROR OF THE REGRESSION = 1206.49
MEAN OF DEPENDENT VARIABLE = 3066.78
STANDARD DEVIATION = 1893.11
LOG OF LIKELIHOOD FUNCTION = -269.743
NUMBER OF OBSERVATIONS = 32
SUM OF RESIDUALS = 5103.22
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) = 1.7524

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T STATISTIC |
|---|---|---|---|
| D | 4651.02 | 1285.78 | 3.61727 |
| DGFCFCO | 1.05286 | 0.269984 | 3.89970 |
| DUSLTICO | 0.804252 | 0.301772 | 2.66510 |
| IUSLTI | -0.334376 | 0.508127 | -0.658057 |
| IL9USLTI | -1.40101 | 0.838774 | -1.67031 |

TABLE 4.9.B Plot of Actual, Fitted and Residual Values for OLS Estimation of U.S. Long-Term Investment Effects on GNP :.D > 1960 (1947-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1947 | 1184 | 473.6 | 710 |
| 1948 | 750.6 | 434.6 | 316 |
| 1949 | 1170 | 644.5 | 525 |
| 1950 | 2341 | 1385 | 956 |
| 1951 | 1733 | 175.1 | 0.156E+04 |
| 1952 | 3124 | 1313 | 0.181E+04 |
| 1953 | 2018 | 2188 | -169 |
| 1954 | -497.2 | 661.9 | 0.116E+04 |
| 1955 | 1621 | 1771 | -151 |
| 1956 | 3637 | 3449 | 186 |
| 1957 | 1001 | 2213 | 0.121E+04 |
| 1958 | 746.7 | 711.2 | 25.5 |
| 1959 | 1912 | 1150 | 762 |
| 1960 | 1291 | 358.2 | 933 |
| 1961 | 4431 | 4353 | 78.0 |
| 1962 | 3724 | 3821 | -96.8 |
| 1963 | 2984 | 4533 | 0.155E+04 |
| 1964 | 4172 | 5738 | 0.157E+04 |
| 1965 | 4353 | 5101 | -748 |
| 1966 | 4860 | 4967 | -107 |
| 1967 | 2457 | 2950 | 193 |
| 1968 | 4524 | 2871 | 0.165E+04 |
| 1969 | 4360 | 4805 | 445 |
| 1970 | 2233 | 2476 | 234 |
| 1971 | 6024 | 5402 | 622 |
| 1972 | 5773 | 4159 | 0.161E+04 |
| 1973 | 7596 | 6231 | 0.136E+04 |
| 1974 | 3861 | 3666 | 195 |
| 1975 | 1337 | 4297 | 0.296E+04 |
| 1976 | 6229 | 3996 | 0.273E+04 |
| 1977 | 2615 | 2538 | 76.9 |
| 1978 | 4575 | 4202 | 373 |

TABLE 4.10.A Cochrane-Orcutt Estimation of U.S. Long-Term Investment Effects on GNP : D > 1960 (1947-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3127.52
STANDARD DEVIATION = 1892.44

CONVERGENCE ACHIEVED AFTER 1 ITERATIONS

FINAL VALUE OF RHO = 0.116007
STANDARD ERROR OF RHO = 0.175583
T-STATISTIC FOR RHO = 0.660696

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*****************************************

SUM OF SQUARED RESIDUALS = 0.382048E+08
STANDARD ERROR OF THE REGRESSION = 1212.19
MEAN OF DEPENDENT VARIABLE = 2777.39
STANDARD DEVIATION = 1820.63
R-SQUARED = 0.887159
ADJUSTED R-SQUARED = 0.869799
F-STATISTIC( 4 , 2G. ) = 47.1722
NUMBER OF OBSERVATIONS = 31
SUM OF RESIDUALS = 3600.21
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) = 1.9946

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| 0 | 4620.23 | 1335.38 | 3.45987 |
| DGFCFCQ | 1.0132G | 0.296397 | 3.41857 |
| DUSLTICO | 0.855069 | 0.351757 | 2.43085 |
| IUSLTI | -0.359731 | 0.554868 | -0.648317 |
| IL9USLTI | -1.37095 | 0.839754 | -1.63256 |

TABLE 4.10.B  Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of U.S. Long-Term
Investment Effects on GNP : D > 1960  (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1948 | 750.6 | 468.3 | 282 |
| 1949 | 1170. | 678.9 | 191 |
| 1950 | 2341. | 1469. | 872 |
| 1951 | 1733. | 272.7 | 0.146E+04 |
| 1952 | 3124. | 1499. | 0.163E+04 |
| 1953 | 2018. | 2428. | -410 |
| 1954 | -497.2 | 698.5 | -0.120E+04 |
| 1955 | 1621. | 1632. | -11.2 |
| 1956 | 3637. | 3438. | 199 |
| 1957 | 1001. | 2293. | -0.129E+04 |
| 1958 | 746.7 | 651.3 | 95.4 |
| 1959 | 1912. | 1225. | 687 |
| 1960 | 1291. | 501.4 | 789 |
| 1961 | 4431. | 4492. | -60.7 |
| 1962 | 3724. | 3848. | -124 |
| 1963 | 2984. | 4528. | -0.154E+04 |
| 1964 | 4472. | 5496. | -0.132E+04 |
| 1965 | 4353. | 4902. | -549 |
| 1966 | 4860. | 4868. | -8.22 |
| 1967 | 2457. | 3005. | 5.18 |
| 1968 | 4524. | 2884. | 625 |
| 1969 | 4360. | 4986. | -625 |
| 1970 | 2233. | 2456. | -223 |
| 1971 | 6024. | 5297. | 727 |
| 1972 | 5773. | 4215. | 0.156E+04 |
| 1973 | 7596. | 6322. | 0.127E+04 |
| 1974 | 3861. | 3744. | -116 |
| 1975 | 1337. | 4308. | -0.297E+04 |
| 1976 | 6229. | 3683. | 0.255E+04 |
| 1977 | 2615. | 2826. | 212 |
| 1978 | 4575. | 4238. | 337 |

Fig. 4.4 Time Series Plot of Year-to-Year Changes in U.S. Direct Investment
with Changes in U.S. Long-Term Investment

1962 and 1963 may indicate a slight shift in the break point for the USLTI series. Again, the need for further research is indicated. The Cochrane-Orcutt estimations are reported in Appendix 18. The $R^2$ is .89 and the $R^2$ adjusted is .87.

The similarity between the USDI and the USLTI findings adds further support to the negative long-term relationship between change in USDI and change in GNP. Because USDI is one of the three components of USLTI, USLTI should reveal a similar pattern of effects. Figure 4.4 confirms the close year to-year movement of American direct and long-term investment. Nevertheless, it is possible that American portfolio investment may account for part of the negative long-term effect of change in USLTI because of its suspected relationship with debt dependence. This is another reason why the comparison of the USDI results and the American portfolio results is essential to the understanding of the lagged negative effect.

## E. AMERICAN PORTFOLIO INVESTMENT

The OLSQ estimates of the change in American Portfolio investment (USPI) series are subject to the problem of first-order serial correlation among the error-terms, as indicated by the Durbin-Watson value of 1.65. These estimates are reported in Appendix 20. The Cochrane-Orcutt estimates are reported in Table 4.11.A. The size of the T-statistic and standard error associated with the estimated coefficient of the lagged value of change in USPI strongly suggest that USPI is not the significant component of the lagged effect of change in USLTI. Although there is a negative effect of -1.68 for the interaction coefficient that is significant at the .10 level, the standard error is larger than the coefficient estimate. There is a positive effect of change in USPI on change in GNP that is, at 1.46, significant at the .10 level. The difference between the periods, 3332.69, and the effect of change in GFCF, 1.13, are both significant at the .005 level.

The plot of the residuals (Table 4.11.B) indicates that the model is quite a good fit for the period prior to 1973. The outliers for the early period are 1951, 1952, and 1968. The $R^2$ and the $R^2$ adjusted are .84 and .82 respectively. Examination of the plot of year-to-year changes in

TABLE 4.11.A Cochrane-Orcutt Estimation of U.S. Portfolio Investment Effects of GNP : D >1960 (1948-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3127.52
STANDARD DEVIATION = 1892.44

CONVERGENCE ACHIEVED AFTER 1 ITERATIONS

FINAL VALUE OF RHO = 0.166071
STANDARD ERROR OF RHO = 0.174322
T-STATISTIC FOR RHO = 0.952669

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*******************************************

SUM OF SQUARED RESIDUALS = 0.493895E+08
STANDARD ERROR OF THE REGRESSION = 1378.26
MEAN OF DEPENDENT VARIABLE = 2626.29
STANDARD DEVIATION = 1797.16
R-SQUARED = 0.841045
ADJUSTED R-SQUARED = 0.816590
F-STATISTIC( 4, 26 ) = 31.7465
NUMBER OF OBSERVATIONS = 31
SUM OF RESIDUALS = 8348.45
DURBIN-WATSON STATISTIC (ADJ FOR 0 GAPS) = 1.9451

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3332.69 | 762.134 | 4.37284 |
| DGFCFCO | 1.13285 | 0.308894 | 3.66745 |
| DUSPICP | 1.46232 | 1.07019 | 1.36641 |
| IUSPI | -1.68419 | 1.17052 | -1.43884 |
| IL9USPI | 0.103998 | 1.27887 | -0.813200E-01 |

TABLE 4.11.B Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of U.S. Portfolio
Investment Effects on GNP : D > 1960 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1948 | 750.6 | 487.7 | 263 |
| 1949 | 1170 | 415.1 | 754 |
| 1950 | 2341 | 1446 | 895 |
| 1951 | 1733 | 171.4 | 0.156E+04 |
| 1952 | 3124 | 927.5 | 0.220E+04 |
| 1953 | 2018 | 2008 | 10.6 |
| 1954 | -497.2 | 183.2 | -680 |
| 1955 | 1621 | 615.9 | 0.100E+04 |
| 1956 | 3637 | 3278 | 359 |
| 1957 | 1001 | 1534 | -533 |
| 1958 | 746.7 | 506.4 | 240 |
| 1959 | 1912 | 692.3 | 0.122E+04 |
| 1960 | 1291 | 8.741 | 0.128E+04 |
| 1961 | 4431 | 3309 | 0.112E+04 |
| 1962 | 3724 | 4014 | -290 |
| 1963 | 2984 | 3933 | -948 |
| 1964 | 4172 | 5202 | -0.103E+04 |
| 1965 | 4353 | 5267 | -914 |
| 1966 | 4860 | 5195 | -335 |
| 1967 | 2457 | 2618 | -161 |
| 1968 | 4524 | 2613 | 0.191E+04 |
| 1969 | 4360 | 4447 | -86.7 |
| 1970 | 2233 | 3366 | -0.113E+04 |
| 1971 | 6024 | 5621 | 402 |
| 1972 | 5773 | 4535 | 0.124E+04 |
| 1973 | 7596 | 6163 | 0.143E+04 |
| 1974 | 3861 | 5522 | -0.166E+04 |
| 1975 | 1337 | 4112 | -0.277E+04 |
| 1976 | 6229 | 3084 | 0.315E+04 |
| 1977 | 2615 | 3753 | -0.114E+04 |
| 1978 | 4575 | 3576 | 998 |

USDI against USPI is inconclusive as evidence of a difference between the two series. The plot is illustrated in Figure 4.5. The two series covary in the same direction until 1963, when USDI makes a sharp drop in the level of investment, and USPI remains stable.

The outstanding difference between the USDI and the USPI series occurs in 1975, when USDI makes a huge investment level plunge, and USPI makes an even larger increase, followed by a decline that coincides with a recovery of USDI. The two series covary perfectly between 1976 and 1978. The tentative conclusion to be drawn is that the difference in effects is more likely explained as a difference in underlying causal structures than it is to be explained as a difference in the year to year variations in the USDI and the USPI series.

## F. OTHER MEASURES OF AMERICAN DIRECT INVESTMENT

The USDI measures used in the runs reported earlier in this chapter are position measures derived from Canada's International Investment Position (Government of Canada 1981b). According to the main thrust of the dependency and the Canadian political economy arguments, the position statistics that include retained earnings invested are the focal measure of the effects of foreign penetration. The flow statistics measure "fresh investment", and are related to a short-term growth accelerating effect (Bornschier 1981:385). When the Canadian Balance of International Payments Capital Account statement is compared with the position statistics, it becomes obvious that the inflows of fresh investment are extremely small, compared to the investment statistics that include retained earnings.

It should be noted that there is a discontinuity in the USDI series between 1974-75, with a new series from 1975 not being strictly comparable to the earlier years. Prior to 1975, the USDI measures included capital movements other than direct investment flows which affect the level of direct investment. These flows, representing mainly bond borrowings and bank financings from foreign portfolio investors resident in the parent-company's home country, were previously considered as direct investment in the position statistics. These bank financings and foreign bond borrowings have been shifted to the portfolio investment category.

TIME SERIES PLOT

DUSDICO PLOTTED WITH +   DUSPICO PLOTTED WITH +

-0.17E+04 -0.13E+04 -0.86E+03 -0.43E+03 -1.9   0.43E+03  0.85E+03  0.13E+04  0.17E+04  0.21E+04  0.26E+04

-0.17E+04 -0.13E+04 -0.86E+03 -0.43E+03 -1.9   0.43E+03  0.85E+03  0.13E+04  0.17E+04  0.21E+04  0.26E+04

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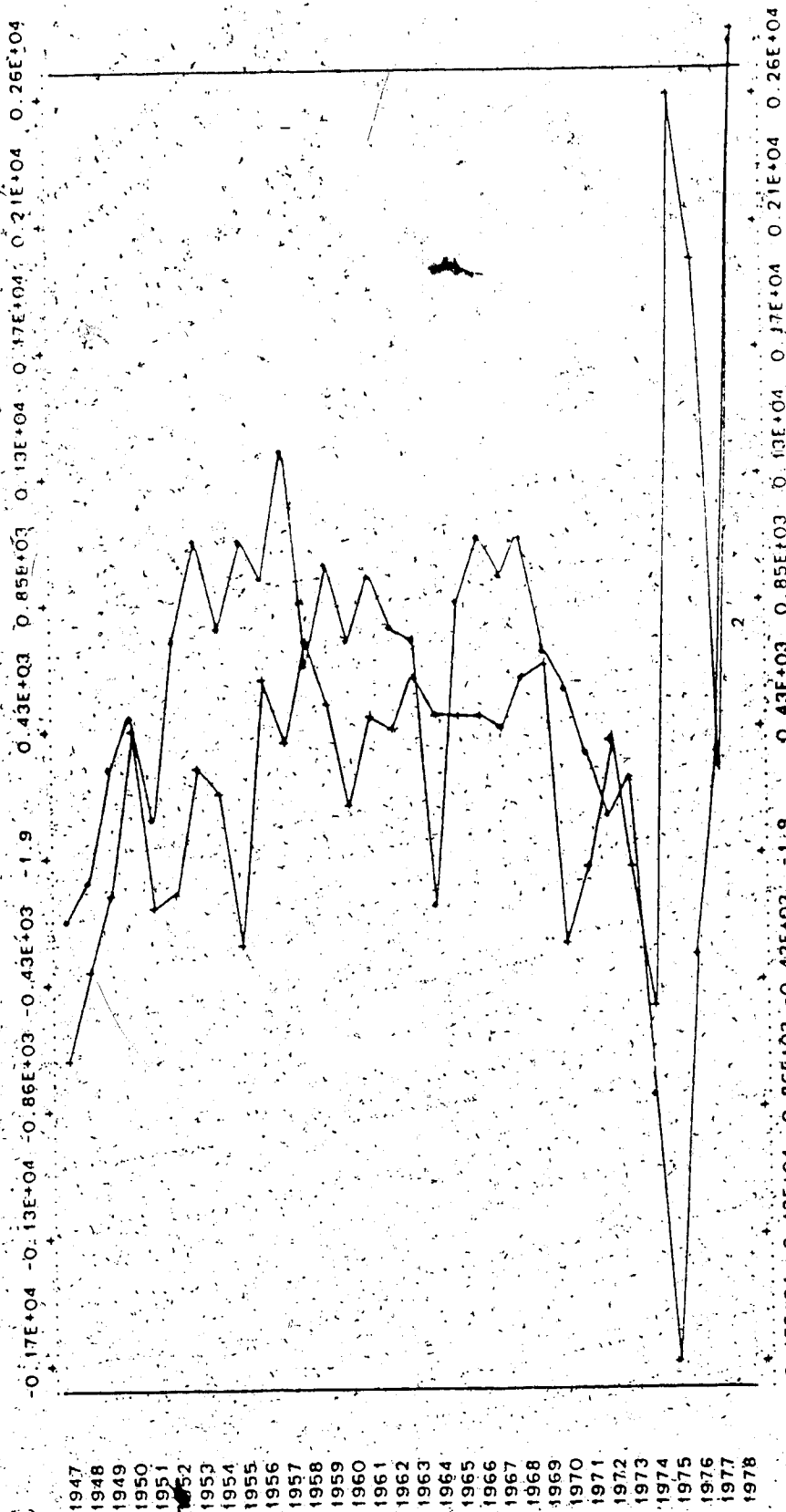
Fig. 4.5  Time Series Plot of Year-to-Year Changes in U.S. Direct Investment in U.S. Portfolio
Investment with Changes in Aggregate U.S. Direct Investment

The reason for the change in the foreign direct investment measures was to make the position statistics fit more closely with the flow treatments of foreign direct investment recorded in the balance of payments (Government of Canada 1981b:30). The actual change in 'total' (from all areas including the U.S.) direct investment on the revised basis for 1975-1978 represents about 93% of the corresponding estimates on the previous conceptual basis (Government of Canada 1981b:31). At first glance, the change in measurement could be cited as a reason for 1976 showing up as the consistent outlier in the USDI series. However, the conceptual shift does not affect the level of American long-term investment (Government of Canada 1981b:29). Consequently, the inclusion of the 1976 outlier in the long-term investment series indicates that the change in measurement is not the cause.

The important point in terms of this study is that the concept of direct investment used in the position statistics continues to differ from the flow statistics in the following respect. "Retained earnings accruing to direct investors is included in the position statistics whereas it is excluded from the flow statistics." (Government of Canada 1981b:31). That is, the flow statistics report only new foreign direct investment. Short-term transactions with foreign direct investors are still excluded from the measure of foreign direct investment for both flow and position statistics.

The comparison of the raw data (untransformed, current dollars) for the summary of direct investment inflows is, however, revealing on another account. The 1976 Balance of Payments statistics indicate the first outflow of foreign direct investment in Canada's post-war history. The amount is -300 million current dollars. This statistic provides a clue as to why 1976 is such an extreme outlier in the position statistics. If, according to theory, fresh inflows offset the negative effects of penetration, there would be no offsetting effect for 1976.

The year 1978 represented the second net outflow of foreign direct investment in three years. This outflow amounted to -125 million current dollars. Unusually large Canadian takeovers of foreign enterprises, including the takeover of the Phillips Petroleum Company's holdings in Pacific Petroleums Ltd. by Petro Canada have been cited as the explanation for

change in trend. As a further check on the robustness of the USDI aggregate results, exploratory analyses were run for three alternative position measures of American direct investment: gross inflow, net change in book value, and net capital flow. The gross inflow findings were not significant, however, the net capital flow and the net change in book value did yield similar results for the 4-5 year lag. These results are reported below.

## G. NET INCREASE IN BOOK VALUE AND NET CAPITAL FLOW OF USDI

Both the change in book value and the change in capital flow series were estimated for a series break at 1960 and a lag range of 1 through 9. The book value results are reported in Table 4.12.A. Because all of the book value and capital flow estimates were subject to the problem of first-order serial correlation, the Cochrane-Orcutt estimations will be discussed. The capital flow estimates are reported in Table 4.13.A.

According to the Cochrane-Orcutt estimations, the period differences for the lag 4 estimate of change in net increase in book value and the lag 5 estimate of change in net capital flow are relatively small. These estimates are 2361.81 for the book value series and 2100.21 for the capital flow series. Both coefficients are, however, significant at the .025 level. Also significant at this level are the positive effects of change in GFCF, which are 1.21 for the book value series and 1.49 for the capital flow series. The short term effects of the two variables are small and not significant.

The change in net increase in the book value of USDI has a negative effect of .92 after a lag of four years in the post-1960 period. This finding is significant at the .10 level. The negative effect of change in net capital flow of USDI measured for a lag of 5 years is large, at -4.10 and significant at the .025 level. According to the plot of the residuals, the net capital flow model is the better fit of the two. In both plots, (Table 4.12.B and Table 4.13.B) 1961 is an extreme outlier, indicating a potential problem with the specification of the break point. The $R^2$ and $R^2$ adjusted values are also not as high as the values for the aggregate model. The

TABLE 4.12.A  Cochrane-Orcutt Estimation of Net Increase in Book Value of U.S. Direct Investment Effects
on GNP : D > 1960 (1948-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE =    3127.52
STANDARD DEVIATION =    1892.44

CONVERGENCE ACHIEVED AFTER   2 ITERATIONS

FINAL VALUE OF RHO =   0.525562
STANDARD ERROR OF RHO =  0.152800
T-STATISTIC FOR RHO =    3.43954

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*******************************************

SUM OF SQUARED RESIDUALS =   0.314641E+08
STANDARD ERROR OF THE REGRESSION =  1100.07
MEAN OF DEPENDENT VARIABLE =   1541.30
STANDARD DEVIATION =   1775.88
R-SQUARED =    0.812999
ADJUSTED R-SQUARED =   0.784229
F-STATISTIC(   4     26.) =    26.0854
NUMBER OF OBSERVATIONS =    31
SUM OF RESIDUALS =    6387.76
DURBIN-WATSON STATISTIC (ADJ FOR 0 GAPS) =   1.8495

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3034.02 | 546.937 | 5.54729 |
| DGFCFCO | 1.21299 | 0.260681 | 4.65317 |
| DNINBVCO | 0.143292 | 0.799449 | 0.179239 |
| ININBV | 1.32493 | 0.863900 | 1.53367 |
| IL4NINBV | -0.745937 | 0.438223 | -1.70218 |

TABLE 4.12.B  Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of Net Increase in Book Value of U.S. Direct Investment Effects on GNP: D > 1960 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1948 | 750.6 | 925.0 | -174 |
| 1949 | 1170. | 429.1 | 741 |
| 1950 | 2341. | 1074. | 0.127E+04 |
| 1951 | 1733. | 1103. | 630 |
| 1952 | 3124. | 1706. | 0.142E+04 |
| 1953 | 2018. | 2388. | -370 |
| 1954 | -497.2 | 180.7 | -678 |
| 1955 | 1621. | 1145. | 476 |
| 1956 | 3637. | 2616. | 0.102E+04 |
| 1957 | 1001. | 1589. | -588 |
| 1958 | -746.7 | -572.8 | 0.132E+04 |
| 1959 | 1912. | 660.9 | 0.125E+04 |
| 1960 | 1291. | 503.4 | 787 |
| 1961 | 4431. | 3789. | 642 |
| 1962 | 3724. | 5009. | -0.128E+04 |
| 1963 | 2984. | 3402. | -418 |
| 1964 | 4172. | 3994. | 178 |
| 1965 | 4353. | 7022. | -0.267E+04 |
| 1966 | 4860. | 4601. | 259 |
| 1967 | 2457. | 1634. | 823 |
| 1968 | 4524. | 3276. | 0.125E+04 |
| 1969 | 4360. | 3703. | 657 |
| 1970 | 2233. | 3294. | -0.106E+04 |
| 1971 | 6024. | 4995. | 0.103E+04 |
| 1972 | 5773. | 5054. | 719 |
| 1973 | 7596. | 8022. | -426 |
| 1974 | 3861. | 5240. | -0.138E+04 |
| 1975 | 1337. | 1836. | -499 |
| 1976 | 6229. | 4547. | 0.168E+04 |
| 1977 | 2615. | 3320. | -706 |
| 1978 | 4575. | 4079. | 495 |

TABLE 4.13.A  Cochrane-Orcutt Estimation of Net Capital Flow of U.S. Direct Investment Effects on GNP (Long-lag = 5); D > 1960 (1948-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3127.52
STANDARD DEVIATION = 1892.44

CONVERGENCE ACHIEVED AFTER 3 ITERATIONS

FINAL VALUE OF RHO = 0.383014
STANDARD ERROR OF RHO = 0.165909
T-STATISTIC FOR RHO = 2.30858

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
**********************************************

SUM OF SQUARED RESIDUALS = 0.331245E+08
STANDARD ERROR OF THE REGRESSION = 1128.73
MEAN OF DEPENDENT VARIABLE = 1971.53
STANDARD DEVIATION = 1752.66
R-SQUARED = 0.844229
ADJUSTED R-SQUARED = 0.820264
F-STATISTIC( 4    26.) = 32.5181
NUMBER OF OBSERVATIONS = 31
SUM OF RESIDUALS = 6416.61
DURBIN-WATSON STATISTIC (ADJ. FOR 0 GAPS) = 1.8983

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 2952.16 | 491.088 | 6.01147 |
| DGFCFCO | 1.23493 | 0.282478 | 4.37177 |
| DNCAFLCO | 4.51607 | 2.76145 | 1.63539 |
| INCAFL | -7.07381 | 2.82080 | -2.50773 |
| IL5NCAFL | -2.36009 | 1.47250 | -1.60278 |

TABLE 4.13.B   Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of Net Capital Flow of U.S. Direct Investment Effects on GNP (Long-lag = 5): D > 1960 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)



| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1948 | 750.6 | 824.9 | -74.4 |
| 1949 | 1170. | 666.2 | 504 |
| 1950 | 2341. | 1881. | 460 |
| 1951 | 1733. | 869.4 | 863 |
| 1952 | 3124. | 1591. | 0.153E+04 |
| 1953 | 2018. | 2246. | -228 |
| 1954 | -497.2 | -411.9 | -85.3 |
| 1955 | 1621. | 1392. | 229 |
| 1956 | 3637. | 3474. | 162 |
| 1957 | 1001. | 570.3 | 431 |
| 1958 | 746.7 | 970.2 | 53? |
| 1959 | 1912. | 1381. | 0.172E+04 |
| 1960 | 1291. | 172.7 | 0.112E+04 |
| 1961 | 4431. | 3233. | 0.120E+04 |
| 1962 | 3724. | 4676. | -952 |
| 1963 | 2984. | 4426. | -0.144E+04 |
| 1964 | 4172. | 4385. | -213 |
| 1965 | 4353. | 4330. | 22.8 |
| 1966 | 4860. | 4687. | 172 |
| 1967 | 2457. | 3128. | -670 |
| 1968 | 4524. | 3223. | 0.130E+04 |
| 1969 | 4360. | 3981. | 379 |
| 1970 | 2233. | 2453. | -220 |
| 1971 | 6024. | 5040. | 984 |
| 1972 | 5773. | 5655. | 118 |
| 1973 | 7596. | 6746. | 849 |
| 1974 | 3861. | 4600. | -739 |
| 1975 | 1337. | 4800. | -0.346E+04 |
| 1976 | 6229. | 4419. | 0.181E+04 |
| 1977 | 2615. | 2105. | 510 |
| 1978 | 4575. | 4961. | -387 |

comparative plots of the two series with the aggregate series are given in Appendices 24 and 25. Both series vary with changes in USDI, however, the change in net capital flow series does not exhibit the extreme year to year fluctuations that are evident in the change in net increase in book value series.

The net capital flow of USDI model also replicates the aggregate results of a long-term negative effect of change in USDI on change in GNP. These results are reported in Table 4.14.A. Although the $R^2$ values are not as high as for the aggregate values, nor is the residual plot (Table 4.14.B) as good a fit, the same type of process is likely in operation. As with the smaller lag estimates, the problem with the 1961 estimation suggests that the breakpoint may have to be respecified. The estimates for 1964, 1968 and 1975 are the other extreme outliers. In contrast to the aggregate plot, the 1976 estimation is just over one standard deviation from the mean. The lag 9 coefficients closely approximate the lag 5 estimates. The effect of the lag 9 variable is very large at -3.49, and this finding is significant at the .05 level.

## II. SUMMARY

In summary, there is support for the argument that the long-term negative effects of change in USDI are robust across measures of foreign penetration, at least at the aggregate level. The variables measuring change in net effect appear to exhibit a somewhat different lag structure in that significant negative effects are evident for the shorter 4-5 year lags. The change in net capital flow series, in addition, displays the significant negative effect after nine-years for the post-1960 period. The residual plots suggest that further research is required into the specification of the break point for the net penetration series. The 1961 threshold appears to be close, however, there may be a one-to-two year variation in the cut-off point, up to and including 1964 as possible alternatives.

The most important finding is the long-term negative effect of change in aggregate USDI on change in Canadian GNP. According to the reduced form equation (Table 4.4.A), change in USDI has a negative effect of 1.92 for a lag of nine years measured for the post-1960

TABLE 4.14.A Cochrane-Orcutt Estimation of Net Capital Flow of U.S. Direct Investment Effects on
GNP (Long-lag = 9): D > 1960 (1948-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3206.75
STANDARD DEVIATION = 1871.76

CONVERGENCE ACHIEVED AFTER 4 ITERATIONS

FINAL VALUE OF RHO = 0.274281
STANDARD ERROR OF RHO = 0.175572
T-STATISTIC FOR RHO = 1.56221

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
***********************************************

SUM OF SQUARED RESIDUALS = 0.378784E+08
STANDARD ERROR OF THE REGRESSION = 1230.91
MEAN OF DEPENDENT VARIABLE = 2362.16
STANDARD DEVIATION = 1757.96
R-SQUARED = 0.852622
ADJUSTED R-SQUARED = 0.829042
F-STATISTIC( 4, 25 ) = 34.7113
NUMBER OF OBSERVATIONS = 30
SUM OF RESIDUALS = 7213.91
DURBIN-WATSON STATISTIC (ADJ. FOR 0.GAPS) = 1.8670

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3011.29 | 492.091 | 6.11937 |
| DGFGFCO | 1.23000 | 0.310393 | 3.96273 |
| DNDIFLCO | 3.90566 | 2.42239 | 1.61232 |
| INDIFL | 6.06807 | 2.57549 | 2.35609 |
| IL9NDIFL | -1.95158 | 1.63543 | -1.19331 |

TABLE 4.14.B. Plot of Actual, Fitted and Residual Values for Cochrane-Orcutt Estimation of Net Capital Flow of U.S. Direct Investment Effects on GNP (Long-lag=9): D > 1960 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1949 | 1170. | 647.5 | 522. |
| 1950 | 2341. | 1802. | 539. |
| 1951 | 1733. | 878.9 | 854. |
| 1952 | 3124. | 1362. | 0.176E+04 |
| 1953 | 2018. | 2365. | -347. |
| 1954 | -497.2 | -342.9 | -154. |
| 1955 | 1621. | 1351. | 270. |
| 1956 | 3637. | 3607. | 30.3 |
| 1957 | 1001. | 288.6 | 712. |
| 1958 | 746.7 | -979.0 | 0.173E+04 |
| 1959 | 1912. | 1147. | 765. |
| 1960 | 1291. | 374.1 | 917. |
| 1961 | 4431. | 3420. | 0.101E+04 |
| 1962 | 3724. | 3923. | -199. |
| 1963 | 2984. | 4659. | -0.167E+04 |
| 1964 | 4172. | 4840. | -669. |
| 1965 | 4353. | 3958. | 394. |
| 1966 | 4860. | 5147. | -287. |
| 1967 | 2457. | 3115. | -658. |
| 1968 | 4524. | 2220. | 0.230E+04 |
| 1969 | 4360. | 4137. | 223. |
| 1970 | 2233. | 3175. | -942. |
| 1971 | 6024. | 5716. | 308. |
| 1972 | 5773. | 5796. | -22.7 |
| 1973 | 7596. | 5653. | 0.194E+04 |
| 1974 | 3861. | 5106. | -0.125E+04 |
| 1975 | 1337. | 4348. | -0.301E+04 |
| 1976 | 6229. | 4709. | 0.152E+04 |
| 1977 | 2615. | 2569. | 45.7 |
| 1978 | 4575. | 3996. | 578. |

period. This effect is evident in the OLSQ estimate, without the need to correct for autocorrelation. This finding provides support for the dependency arguement that foreign penetration is, in the long-run, significantly related to lower subsequent economic growth. The importance of this finding is enhanced by its application to a non-peripheral but yet dependent country. Finally, the change in the break point of the series from the mid-1960's to 1960 is also explanable in terms of dependency. In Figure 4.3, Keri Levitt specifies 1960 as the start of a new phase which she describes as "American corporate imperialism". This phase of disinvestment by the American multinational enterprises in Canada displays the structural growth effects associated with mature dependency.

The potential for regulating dependence through policy dictates that the relationship between the state and the economy is crucial in the determination of the extent to which dependent countries can alter the circumstances of their dependence (Duvall 1978:69). Duvall and Freeman (1981:109) suggest that at the most basic level, the distinguishing feature of the dependent relationship is that the structure of reciprocal interaction between state and economy is heavily mediated by the constraints of the world system. In particular, the effect of state intervention on the economy is strongly conditioned by the dependent character of both.

One of the advantages that the mature dependent should have over the Third World dependent is the availability of an abundance of social, economic and political resources that can be mobilized to implement effective policy (Bornschier 1980a:166-167). Canada's failure to realize its mature advantage will be explained as a result of an inappropriate definition of the structure of the dependency relationship.

# V. CANADIAN NATIONALISM AND ECONOMIC GROWTH: IDENTIFICATION AND FORMULATION OF THE PROBLEM

The following decision will be devoted to an examination of how the Canadian public, elites and government leaders perceive the problem of foreign direct investment. According to Rugman (1980b:130), "FIRA reflects the schizophrenic attitudes of Canadians toward their national identity in general and the foreign ownership issue in particular." Rugman explains that while Canadians contrast the perceived economic benefits of foreign direct investment with a concern for their independence and political integrity, they expect to postpone the trade-off involved. His point is that sovereignty is a non-economic objective that may have to be traded off in the interest of economic efficiency if efficiency is, in fact, associated with the penetration of MNEs.

The schizophrenia of Canadian attitudes towards the issue of foreign ownership and what appears to be a problem of differentiating between socio-political and economic objectives will be addresses as an issue of policy identification and formulation. In order to understand how the objective of screening foreign direct investment for economic benefits became an issue of public policy, this chapter will examine Canadian research on elite attitudes and public opinion in addition to policy statements by the Canadian government.

## A. THE ENCOURAGEMENT OF FOREIGN DIRECT INVESTMENT

From the standpoint of classical economics, the relationship between foreign direct investment and national identity is a non-issue. Indigenous technological development requires the mobilization and productive use of investment capital, and this is the main contribution of the MNE. In addition to the transfer of capital, there is an associated benefit of the transfer of technology. The classical assumption is that products and processes developed elsewhere in the world network of the multinational enterprise will be rapidly dispersed throughout the firm. Thereby those countries that are the recipients of these innovations benefit through the additional process of "spill-over" into related sectors (Blake and Walters 1983:107).

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An additional benefit to hosts of foreign direct investment is suggested by Behrman (1970:20). Economies hosting direct foreign investment typically have oligopolistic industrial structures and relatively small markets. Because the multinationals, the vehicles of foreign direct investment, are efficient producers (as evidenced in improved manufacturing techniques, better marketing and more attention to servicing that their domestic counterparts), the introduction of new products that accompanies the entrance of foreign direct investment should have a positive effect on domestic competition by widening consumer choice. Moreover, there should be an associated increase in productive capacity that acts to constrain price increases or possibly reduce domestic prices in the long-run.

## B. THE MAINTENANCE OF FOREIGN DIRECT INVESTMENT AND THE PRESERVATION OF SOVEREIGNTY

The main contributions of the MNE to Canada are perceived as the ability of foreign direct investment to add net investment and technology to the Canadian economy. In fact, the only advantages of the MNE to the host are economic (Rugman 1980b:133). The consequences for host policy are that at least four nationalistic arguments have been advanced to increase the regulation of MNEs while accepting the basic premise that MNE investment is economically beneficial. These arguments address the need to:

1. preserve independence by developing an indigenous manufacturing sector
2. improve sovereignty by reducing foreign ownership of major industrial or resource sectors
3. ensure appropriate transfer of technology to the host, and
4. reduce the perceived outflow of excessive corporate profits (Rugman 1980b:134).

Rugman (1981b:136) suggests that all four arguments for regulation of MNEs are either false or misconceived because they stem from a concern for social, cultural or political objectives to the neglect of economic realities. To begin with, the nature of the MNE itself, as conceptualized by internalization theory and dependency theory, is to respond to market imperfections such as barriers to trade. In this context, the MNE would not be expected to act as an agent for technology transfer because one of the key firm-specific advantages to foreign

direct investment is the protection of technological know-how (Rugman 1981b:115). FIRA's strategic preference for a screening approach, however, indicates that government policy assumes that technological benefits will accrue to Canada if the quality of incoming direct investment is controlled (FIRA Annual Report 1976-77:25).

Although the bulk of research and development (R & D) expenditure generated in Canada takes place in the seven industries where American investment is concentrated,[13] Canada has one of the lowest percentages of R&D expenditures to GNP for all advanced nations (Rugman 1981a:607). In order to maintain the assumption that the orientation of the multinational toward efficiency and cost reduction make it an effective agent of technology transfer, the failure of foreign direct investment to promote Canadian economic growth must be attributed to the inefficient operation of subsidiaries.

The paradox is that existing barriers to trade such as the Canadian tariff have the dual effect of increasing the extent of foreign direct investment and creating and protecting inefficient industry. Yet Canada has attempted to regulate the efficiency of foreign firms by introducing another barrier in the form of the FIR Act. The expected outcome of tariffs in combination with FIRA would be to increase the inefficiency of Canada's industrial sector (Rugman 1980:138). In addition, the major findings of various empirical studies are that the profits of MNEs and their Canadian subsidiaries are not excessive, but that parent MNEs enjoy more stable profits than their Canadian subsidiaries (Rugman 1980b:65).

Finally, sovereignty and independence are political issues. It is not clear to what extent that changes in the economy in relation to the amount of foreign ownership will effect the political and cultural domination of Canada by the U.S. Even on strictly economic grounds, the massive amount of trade between the two countries means that the threat of trade sanctions will continue to be a strong deterrent to economically-based attempts to increase national sovereignty and independence, regardless of the utility of these moves.

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[13] These industries are: aircraft and parts, electrical products, petroleum and coal, machinery, chemicals, primary metals, and paper and allied industries (Bones 1980).

A point that should be emphasized in this discussion is that the existing policy decision to screen foreign direct investment for significant economic benefits is a political decision that stems from concerns with Canadian sovereignty and independence (Rugman 1980b; Feltham and Rauenbusch 1973). The fact that the Canadian government has chosen to implement the FIR Act on the basis of an economic rationale should not disguise the political nature of the Act (Rugman 1980b:140). Moreover, there should be no mistake made in identifying the administering agency as anything but a political agency (Rugman 1980b:141).

## C. ELITE ATTITUDES TOWARDS FOREIGN DIRECT INVESTMENT

According to Fayerweather (1972:472), "the future evolution of the multinational firms will depend to a large degree on the policy decisions of host nations, made essentially by leadership groups." In a comparative survey of significant elite group attitudes on the net economic results of MNE penetration in late 1971, Fayerweather (1972:479) found that legislators, government officials and labor leaders all took a negative view, with business leaders being the exception.

This judgement may be seen as a contradiction to the commonly heard Canadian view that foreign investment is beneficial, or it may mean, as suggested by Fayerweather (1972:480), that Canadian leaders feel that the corporate gains accruing to MNEs outweigh the contributions of foreign direct investment to the Canadian economy. However, Fayerweather's data indicate that the scores of Canadian responses to the question "How do you feel about the proportion of foreign profits to foreign contributions?" are average and not significantly different from either Britain or France (Fayerweather 1972:482). This finding is particularly important in light of Fayerweather's assumption that "the massive impact of U.S. investment makes the Canadians more concerned about its effects on the whole character of their nation." (Fayerweather 1972:478) This assumption is not supported by his data.

In spite of Canada's unique position in terms of the amount of foreign ownership and control, Canadian elites do not look upon the actual loss of control as any more of a problem

than the British, for example, who have less than one tenth the actual degree of foreign

penetration[14] (Fayerweather 1972:482). Fayerweather (1972:484) attributes this finding to the

"pragmatic acceptance" by Canadian elites "of the realities of political interdependence and

powerful influence from the U.S." It should be noted, however, that according to

Fayerweather's Table 4 (1972:482) British, French and Canadian elites view the United States

as posing the greatest threat of foreign control out of a sample of eight foreign investors.

## D. PUBLIC OPINION ON THE AMERICANIZATION OF CANADA

Although public opinion is traditionally considered to be an inconsistent response to

national events or issues, it does provide a legitimate insight into the attitudes of the voting

masses on a particular issue (Murray and Gerace 1972:388). A number of national surveys

conducted in the later 1960's and early 1970's indicate that there was a significant increase in

the percentage of Canadians who considered the American ownership of Canadian industry as a

negative force. The aggregate statistics for this period, however, differ from the regional

results.

Both the richest province, Ontario and the poorest region, the Maritimes, recorded a

percentage increase in the opinion that American investment in Canada was a good thing.

Murray and Gerace (1972:389) suggest that the desire to strengthen one's own economy, in the

case of the Maritimes, and the fear of weakening it, in the case of Ontario, seem to have

produced similar results. Of all the regions, the Prairies displayed the most consistent shift

from a positive to a negative point of view (Murray and Gerace 1972:390).

The second part of the Murray and Gerace survey attempts to discern the reasons

behind the attitude responses to the presence of American investment. The results indicate that

differences among regions on what is "good" about foreign direct investment are based, to a

large extent, on regional specific economic conditions. For example, the Maritimes rate

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[14]Canadians do demonstrate a different degree of concern about future loss of
control. They are more concerned than their British and French counterparts
(Fayerweather 1972).

employment highest on the list of benefits, more than likely due to their high rate of

unemployment. The reasons used to oppose American ownership indicate a concern with two

predominant issues:

1. loss of control in making decisions beneficial to Canada (as it relates to a negative opinion about the U.S. government's understanding of Canadian interests), and
2. the economic loss of earning (as it relates to the payment of dividends, profits and so on) and the related loss of employment through absentee ownership (Murray and Gerace 1972:391).

Approximately 7% of the 1971 sample gave "qualified" opinions about the effects

of American direct investment.

They attempt to balance the value of foreign direct investment against the
political and economic costs which Canada might have to endure, and appear to
accept the presence of U.S. investment [my emphasis] provided it is controlled in
some way. Some 23% of these respondents would accept U.S. investment as long
as Canadians have controlling interest. This is the predominant opinion and seems
to suggest the importance of political independence (Murray and Gerace
1972:394).

When Canadians were questioned about which type of independence they valued most

highly, the majority indicated economic independence, followed by political independence.

The exception was Quebec, where cultural independence has a slight edge.[15] This means

that for Canadians, the question seems to be how to maintain independence while

maintaining the present level of American ownership (Murray and Gerace 1972:395).

According to the Rugman argument, the question poses an impossible task. At some point,

foreign ownership and independence must be traded off.

In a more recent study conducted by Murray and LeDuc (1982), public opinion

poll data was collected for selected years between 1948 and 1977. Until the mid-1960's,

public opinion showed little concern over American influence. In 1956, for example, 63%

of Canadians surveyed were not worried about American influence. In 1963, 48% of a

national sample felt that Canadian dependence on the U.S. was basically a good thing. The

change in the percentage of Canadians who think that there is too much American

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[15]Quebec and the Maritimes are the least opposed to American direct investment,
although they have also been increasingly negative in their response (Murray and
Gerace 1972:389).

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influence (1956-1974) is graphed below in Figure 5.1.

## FIGURE 5.1
### PERCENT INDICATING THAT THERE IS "TOO MUCH U.S. INFLUENCE IN THE CANADIAN WAY OF LIFE," 1956-1974
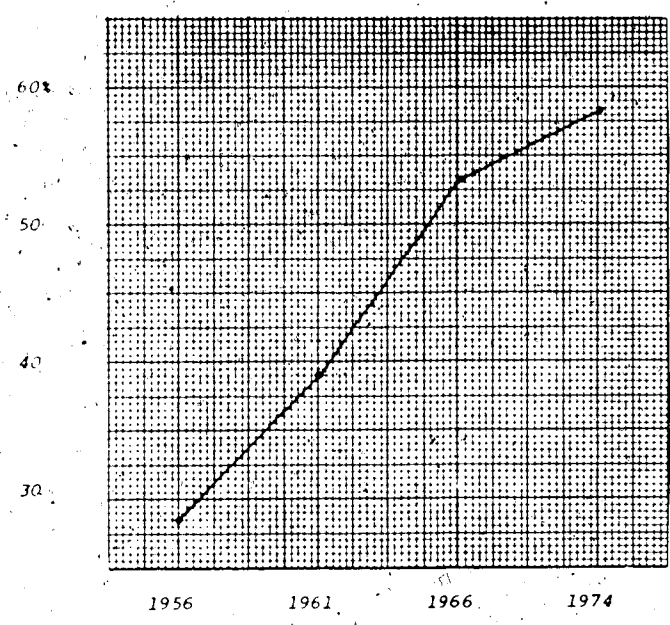


Sources CIPO, *The Gallup Report*, May 25, 1974; and John H. Sigler and Dennis Goresky, "Public Opinion on United States-Canadian Relations," *International Organization*, XXVIII (1974), p. 658.

By 1974, 57% of the Canadian public felt that there was too much American influence. In 1972, 67% felt that there was enough U.S. capital in Canada, up from 46% in 1964. Moreover, 34% felt that Canadian dependence was a good thing in 1971, down from 48% in 1963. Also in 1972, 69% of Canadians surveyed thought that a screening agency was a good thing[16] (Murray and LeDuc 1982:219). Murray and LeDuc's data show that negative public opinion peaked in 1973-1974. The change in negative public opinion is graphed below in Figure 5.2.

FIGURE 5.2
PERCENT OF NATIONAL SAMPLE WHO BELIEVE THAT U.S. INVESTMENT IN CANADA IS A "BAD THING": 1969-77 (exlcudes "no opinion" and "qualified" answers)
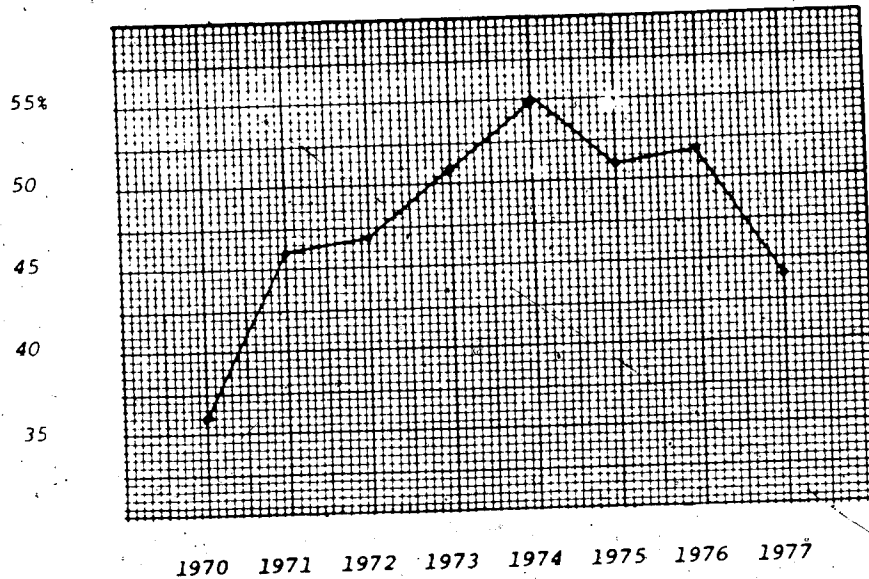


Year 1977 marks the first time since 1969 that Canadians were responding more positively than negatively toward American direct investment. The largest overall shifts in opinion have occurred in Quebec, the prairies and Ontario. In terms of party breakdowns, NDP respondents are the most negative at 49%. Conservatives and Liberals are closely

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[16]With respect to Canadian-American trade relations, it is interesting to note that there has not been the same shift in response. The percentages have remained constant, with half of the respondents in favor of free trade, and half in favor of trade restrictions.

matched with Liberals split 37% negative and 52% positive and Conservatives split 36%

negative and 51% positive. Income group breakdowns show a 51% positive response for the

lowest income groups. The high income groups are evenly divided. Young respondents are

more negative in their attitudes toward American direct investment than older respondents

(Murray and LeDuc 1982:222).

Comparable to the earlier Murray and Gerace study, negative respondents cited

nationalistic reasons such as the need for Canada to control its own affairs and the need

for Canada to be more independent. Positive respondents cited economic growth and

development as the primary reasons for encouraging American direct investments. Nearly

half of the positive response reasons were related to perceived employment benefits. Other

reasons were divided between resource development benefits and anticipated improvements

in the standard of living (Murray and LeDuc 1982:223).

One interesting observation about Canadian mass perception is that in 1974, for

example, only 17% of the national election sample related the question of foreign direct

investment specifically to the U.S. This may account for the lack of relationship between

attitudes toward foreign direct investment and attitudes toward decreasing dependence on

the U.S. The authors were "surprised" by this finding and do not explain it in their

analysis.

Even among those respondents who identified foreign direct investment as a

problem, only a minority favored direct government regulation, although some favored

selective controls in some industries (Murray and LeDuc 1982:227). More people

supported incentives for Canadian business or alternative investment schemes such as the

Canadian Development Corporation.[17] Murray and LeDuc (1982:232) speculate that the

apparent decline in public support for government regulation of foreign direct investment

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[17]The Canadian Development Corporation was set up in 1971 "to help prevent
foreign takeovers of Canadian firms by offering an instrument by which Canadian
savings and managerial resources can be pooled and by providing equity capital for
industrial and resource projects as well as a means of ensuring Canadian control of
major elements of Canadian industry that might be taken over by foreign owners"
(Lee and Webley 1973:46).

might be related to the slackening of the Canadian economy and more specifically to growing unemployment.

According to Murray and LeDuc (1982:233), in agreement with Fayerweather's attribution of "pragmatic acceptance" as a Canadian elite attitude, and in support of the argument that foreign direct investment is economically beneficial to the host, it is "understandable that ... a more favorable attitude toward foreign investment or toward closer ties with the United States may be seen by some as necessary in a period of economic slowdown."

> Chrétien, the minister previously responsible for the enforcement of FIRA,
> recently was quoted as putting these tradeoffs succinctly in stating that "a
> continuing inflow of direct investment from abroad is an essential condition of
> continuing economic progress in Canada" (Murray and LeDuc 1982:233).

The point of this whole study, of course, is to demonstrate that this genre of argument is both theoretically and empirically unsound. The generalized concern with economic progress, however, goes a long way toward explaining the economic rationale (irrespective of its validity) behind FIRA. The initiation of a policy aimed at improving economic conditions, even if it is directed at foreign direct investment, is more likely to enlist public support than an overtly political policy aimed at diminishing dependence.

## E. OFFICIAL INQUIRY INTO THE QUESTION OF FOREIGN OWNERSHIP: BACKGROUND TO POLICY 1957-1970

It was not until 1970 that foreign ownership became a political question of national policy (Lea and Webley 1973:41). Prior to the Wahn Report (Government of Canada 1970) and Herb Gray's 1971 initiation of the effort to develop a broad foreign investment policy, the various Canadian governments had taken a number of steps toward the regulation of foreign direct investment on an ad hoc basis. These steps followed three themes:

1. influencing subsidiary behavior, an example of which is Winters' 1966 "Guidelines to Good Corporate Citizenship".[1]
2. Canadianization of business in particular sectors, for example, the Canadian

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[1] The guidelines are reprinted in Government of Canada, Foreign Investment Review, Autumn 1977. pg. 18.

Participation Provisions first introduced in 1960, and

3. requirements for disclosure of corporate financial data, such as the enactment of the Corporations and Labor Unions Returns Act in 1966.

The principal stated objectives of Canadian policy on foreign ownership, as given by the Watkins, Wahn and Gray Reports, also fall under three themes:

1. to improve the overall efficiency of the Canadian economy to the benefit of all firms operating here, regardless of ownership,
2. to retain and increase Canadian ownership and control of Canadian industry to varying sector-specific degrees, and
3. in acknowledgement of the continuation of substantial foreign ownership in manufacturing especially, to cause foreign-owned firms to be better behaved as "corporate citizens". Specifically, policy has been concerned with:
   a. maximizing the benefits of foreign direct investment and minimizing the costs,
   b. minimizing Canada's vulnerability to the noneconomic impact of foreign ownership, and
   c. terminating the ability (or obligation) of American firms to transmit American law and policy objectives. This is the issue of extraterritoriality. (Lea and Webley 1973:45)

The first official inquiry[19] into the question of foreign ownership as an issue requiring government policy decisions and intervention dates back to the 1957 Report of the Royal Commission on Canada's Economic Prospects, the Gordon Report. The report recommended action to increase Canada's control of foreign subsidiaries through Canadian participation, increased shareholding and the disclosure of financial statements. In 1958, the Broadcasting Act made some limited moves toward restricting foreign ownership in TV broadcasting. In 1960, the Canadian Participation Provisions of the Canada Oil and Gas, Land and Mining Regulations placed restrictions upon the granting of oil and gas leases to non-residents.

It was not until the return of the Liberal Party to power in 1963, however, that the first initiative against foreign ownership was taken. Although the Liberal budget proposals for a 30% takeover tax for non-residents and a 20% withholding tax on dividends paid to foreign firms with less than 25% Canadian ownership were withdrawn after strong pressure from the financial community, Walter Gordon's amended 1963 budget included the strongest measures ever directed toward foreign ownership in Canada (Fayerweather 1973:170). Moreover, the

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[19]Official inquiries are distinguished in Canada by team effort in task forces or special committees, by broad scope inquiry, and more importantly, by policy orientation (Lea and Webley 1973:39).

budget clearly delineated between regulations to be applied to Canadian corporate citizens and regulations to be applied to foreigners.

Prior to 1963, concern with foreign direct investment was focused on the policies and practices of American subsidiaries in Canada.[20] In the mid-1960's, inquiry shifted from subsidiary behavior per se to the impact of foreign penetration on the economy in general. In 1966, A.E. Safarian initiated major research into the "performance" of foreign-owned firms in terms of the characteristics of managers and boards, the distribution of powers, external trade, R & D, returns to owners, efficiency and extraterritoriality. This work led to Safarian's subsequent participation in the Watkins Task Force (1967) and the Canadian-American Committee study, THE PERFORMANCE OF FOREIGN-OWNED FIRMS IN CANADA (1969). The impact of Safarian's work is still evident in the ongoing debate about whether or not subsidiary performance can be considered in terms of the phenomenon of "truncation".

The evolution of Liberal Party views on the issue of foreign direct investment can be traced to the March 1966 publication of "Some Guiding Principles of Good Corporate Behavior" by Robert Winters, then Minister of Trade and Commerce. The principles are reproduced, with commentary, in Appendix 27. The corporate behavior principles were formulated by Winters in response to the American government's voluntary application of balance-of-payments guidelines to American foreign subsidiaries in 1965. The "guidance" was directed at how to deal with conflicting policy pressures from the two governments (Lea and Webley 1973:36).

Fayerweather (1973:178) suggests that:

...this action was indicative of the prevailing Liberal viewpoint that, except in key sectors, the activities of foreign-owned firms should be subject only to persuasive influence [21][my emphasis]. This philosophy was explicit in resolutions adopted at the

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[20]The most widely criticized aspect of subsidiary behavior was the aspect of extraterritoriality. An early review of the legality of extraterritoriality was published in 1960 by Kingman Brewster as a supplement to the Armstrong and Lindeman study, THE POLICIES AND PRACTICES OF U.S. SUBSIDIARIES IN CANADA (1960).
[21]Lilley (1981) has defined Canada's key sectors as: public utilities, natural resources, banking, insurance, media, communications and transportation. According to Safarian (1978:644-645), "short of the defence sector [not listed by Lilley] and some

October 1966 party convention. The overall policy decision was: "The government should take steps to encourage greater ownership of the economy without discouraging foreign investment [my emphasis].

On the issue of regulation, the Liberal viewpoint is consistent with the Conservative viewpoint.

In his 1972 speeches, Stanfield acknowledged the value of some degree of regulation of foreign investment, especially in key sectors, however, he was strongly opposed to a general screening system which would restrict the inflow of foreign capital (Fayerweather 1973:184). Stanfield placed the emphasis on the need to build up Canadian firms. This need was articulated by Winters in a 1967 speech in which he argued for positive steps to foster Canadian firms, not "negative or punitive legislation affecting foreign interests" (Fayerweather 1973:179).

## i. REPORT ON FOREIGN OWNERSHIP AND THE STRUCTURE OF CANADIAN INDUSTRY (THE WATKINS REPORT)

The Watkins Task Force (1967-1968) involved eight academic economists appointed by the Pearson government and headed by Mel Watkins. As stated by Watkins, the intent of the task force was:

> ... to analyze the causes and consequences of foreign investment, to assess actual benefits and costs, and to put forth proposals for legislative considerations. (Watkins 1970:64)

The report was issued in January 1968, under the title FOREIGN OWNERSHIP AND THE STRUCTURE OF CANADIAN INDUSTRY. Recommendations included:

1. the establishment of both a special agency to coordinate foreign investment policy and.
2. a government export trade agency to ensure that subsidiary exports conformed with Canadian law and foreign policy, and
3. the creation of a Canada Development Corporation to act as a large holding company with entrepreneurial and management functions to assume a leadership role in Canada's business community (Fayerweather 1973:172).

Because of the contraversial nature of the report, that is, its recommendations for negative legislation to discourage foreign direct investment, the report was not acted upon by the

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[21](cont'd) closely related high-technology industries, there are no consistent criteria in this regard. One has to look for explanations to [the definition of key sectors] ... in such factors as the particular historic setting, such as concern with the American cultural impact in Canada: pressure tactics for protection by one group or another; and, perhaps most important, the costs of reserving a sector and of developing a substitute for the multinational enterprise in some areas."

Canadian government. Moreover, the report was partially repudiated by Watkins, who moved into a position advocating nationalization in the early 1970's (Lea and Webley 1973:39).

## ii. REPORT OF THE COMMONS STANDING COMMITTEE ON EXTERNAL AFFAIRS AND NATIONAL DEFENCE (THE WAHN REPORT)

The year 1970 witnessed the expression of strong internal pressures within the Liberal Party. In June, Alistair Gillespie MP distributed a paper on industrial policy objectives in which he proposed 50% Canadian ownership in resource development and the need for cabinet approval of all foreign takeovers. The second official study of foreign ownership, the Wahn Report, also appeared. The Wahn Report was supported by the Liberal majority on a Parliamentary Standing Committee, who endorsed the requirements of majority Canadian ownership of major foreign firms (Fayerweather 1973:180). Although the Wahn Report was largely a reworking of the Watkins Task Force discussion of the problems of American ownership, it signalled a redefinition of foreign ownership as a question of national policy to be placed on the political agenda (Lea and Webley 1973:41).

## iii. FOREIGN DIRECT INVESTMENT IN CANADA: THE GRAY REPORT AND FIRA (DEFINING FOREIGN OWNERSHIP AS A PROBLEM OF TRUNCATION)

The political character of foreign direct investment was re████med by Herb Gray's beginning of work on his report. Fayerweather (1973:180) describes this juncture as "indicating an official Liberal intent to come to grips with policy issues." The report of the Gray Task Force was the third and largest official examination of foreign ownership, and it became the basis for national policy.

Two versions of the Gray Report emerged: the leaked 1971 version, CITIZEN'S GUIDE TO THE GRAY REPORT, prepared by the editors of CANADIAN FORUM, and the official May 1972 version which serves as the basic document for the FIR Act and contemporary policy investigation. The two stated objectives of the Gray Report were:

1. to analyze the impact and implications of the high degree of foreign control of Canadian business, and

2. to canvas the range of policy options for control and maximization of benefits and increased ownership.

The report offered three alternative policy approaches for dealing with foreign direct investment:

1. the key sector approach as an element of general policy because the technique of reserving sectors for exclusive ownership was seen as too rigid and arbitrary to serve as the main element of policy,
2. minimum levels for mandatory Canadian participation in foreign firms, and
3. an administrative review that would screen foreign direct investment according to legislated criteria that assured "significant benefit to Canada".

Fayerweather (1973:48) interprets the Gray Report's preference for screening as a clear policy shift away from gaining more ownership of Canadian industry toward gaining more control of the impact of foreign ownership. This shift in Liberal party policy reflects an earlier shift in NDP thinking that had occurred in the 1950's. At the 1961 party convention, the NDP adopted a resolution to break the "monopoly control" over Canadian industry and resources. This would require a minimum percentage of Canadian ownership and representation in foreign firms. By the 1967 convention, there was no mention of ownership or participation requirements, rather, the main emphasis was on increased government participation in industry.

> This change of direction was affirmed in the 1968 campaign document which declared: "It is already too late to think in terms of 'buying back' those Canadian industries already owned by foreigners. What can be done, however, is to adopt laws and policies compelling such industries to operate in a manner conducive to the best interests of Canada, rather than of foreign firms or governments, while at the same time stimulating more investment in and ownership of future economic development." (Fayerweather 1973:180)

The shift in NDP thinking was later mirrored in Stanfield's 1971 speech, where he noted "that ownership and control are not necessarily the same thing." The basic goal he prescribed was "to make sure that the essential leavers of control are in the hands of Canadians." (Fayerweather 1973:183)[22]

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[22]The Gray Report devotes and entire chapter to the discussion of the tendency of MNEs to foster "global integration of national economies" and to "reduce the abilities of national governments to control their own destiny" (1972:59, 53-54).

The historical defence of Canada's encouragement of high foreign investment levels, particularly in the high and medium technology industries continued in its combination of a belief in American technological know-how, widely accepted assumptions about the benefits of foreign direct investment and a perceived shortage of domestic investment capital. However, in the early 1970's government opinion shifted toward a recognition of the extent to which foreign ownership may have undermined rather than have contributed to the effectiveness of Canadian economic policy (FIRA, Purpose of the Act, S.C. 1973-74, C46:1). This shift indicates the beginning of a decade-long trend toward a new economic nationalism within the Liberal party. This newfound nationalism led to a restatement of government objectives.

The three restated objectives of the Trudeau government in 1980 are summarized by Gonick (1981:20). They were:

1. to give the government a more secure financial basis to reshape [my emphasis] the national economy,
2. to promote the development of an indigenous class of capitalists with an understanding of multinational operations, and
3. to move the ownership of industry if it is required to restructure Canada's weak manufacturing sector.

The Canadian Foreign Investment Review Act (1973) was hailed as a major policy move directed toward these goals. The Act was established to limit the market entry of foreign direct investment to investment that could demonstrate significant benefits to Canada with regard to certain factors of assessment (Purpose of the Act, S.C. 1973-74, C46:1). The major objective of the entire FIRA program is the mitigation of the deleterious effects of truncation (Supplement to the 1978-79 Annual Report:2, 13).

The 1971 version of the Gray Report is responsible for the popularization of the term "truncation". Both the unofficial and the official versions define truncation in relation to the performance of foreign subsidiaries. Truncation in the 1971 version means that:

...many important activities are performed abroad by the parent company, with the result that the development of Canadian capacities or activities in these areas are stultified. (1971:11)

The 1972 version leaves out the reference to the stultification of Canadian capacity, and adds the observation that the dislocation of many activities associated with innovation from the

MNE subsidiaries to the parent companies is unecessary and subject to change under appropriate host regulation (The Gray Report 1972:406).

The result of truncation at the level of the firm is that the subsidiary does not perform all the functions necessary for developing, producing and marketing its goods (Gray 1972:405). At the national level, there will be parallel gaps in related domestic capacities, in particular, innovative capacity and entrepreneurship (Britton and Gilmour 1979; Safarian 1979; Rugman 1981a). If, in fact, one of the main contributions of MNE investment is the transfer of technology to the host, then screening incoming investment for technological benefits should alleviate the problem of truncated capacity.

The survey data of public and government opinion in the early 1970's indicate that the Foreign Investment Review Act came to fruition at precisely the same time as negative public opinion toward American direct investment peaked. Even the pro-business Conservatives were talking in terms of regulation (Stanfield's 1972 speech, for example). On the one hand, the timing of the Foreign Investment Review Act was an impeccable political move on the part of the minority Liberal government. Not only did it carry the symbolic benefit of assuring Canadians that the Liberals were taking charge of the domestic economy, it was also a policy that, if properly conceived, had the potential to actually reverse some of the structural effects associated with the penetration of American direct investment. The problem is that in terms of economic impact the Act was misconceived.

The basic misconception in the formulation of the Foreign Investment Review Act was the underlying acceptance of the presence of extensive foreign direct investment. Underlying FIRA was the assumption that if properly controlled, foreign multinational activity would transfer technology-related benefits to Canada. According to the organizational theory of oligopolistic advantage within multinationals, the transfer of benefits is largely contradictory to the profitably of firm-specific advantage. The screening of incoming foreign direct investment by FIRA has had virtually no effect on the structural relationship between growth and penetration because the decapitalization effect of reinvested earnings cannot be altered by

screening for other types of benefits. As Megarry, publisher of The Globe and Mail has stated, foreign direct investment is no longer viewed as a "villian" (Megarry 1983:7).

No attempt was made to alter existing control structures, nor was there any attempt to limit the amount of incoming investment. The Canadian government had not acknowledged (and still does not acknowledge) the inevitability of the trade-off between long-term economic growth and reliance on the multinationals. Instead, Canada was trying to make the best out of a bad situation. Unfortunately, the tables of public opinion turned in 1977. This meant that even the symbolic appeasement of nationalistic sentiment could no longer be relied on as a source of support for the Act or the government that implemented it.

## VI. THE FOREIGN INVESTMENT REVIEW ACT: AN EVALUATION OF CONTENT, INTENT AND EFFECT

This chapter will present a sociological evaluation of the effectiveness of the Foreign Investment Review Act in regulating the negative effects of foreign direct investment in Canada. I will argue that government claims of a great impact on the reduction of truncation are at best overstated. In spite of recent increases in levels of Canadian participation, the proportion of productivity and efficiency benefits offered by incoming investors has declined. In addition, technological benefits attained from foreign firms have been consistently low.

It has become increasingly evident that FIRA promises more material benefits than its implementation actually yields. Rugman (1980b:130) describes the Act as neutral. Urquhart (1977:18) views FIRA as more of a "lapdog" than a "watchdog" and goes as far as describing the Act as a "welcome wagon to foreign investors." Concomitantly, the business community's recent complaints have become less strident. However, simply by the fact of its existence, FIRA assures the mass of Canadians that the government is concerned about foreign ownership issues.

Because the administration of the FIR Act is the sole responsibility of FIRA, evaluation of the impact of the Act is complicated by the fact that administrative agencies often operate under broad and ambiguous statutory mandates that leave them with enormous discretion on decisions about policy implementation (Anderson, J. 1984). In this context, differences between policy effect may indicate any combination of:

1. differences between the Act's stated intent and the Agency's implementation of the Act
2. problems with the underlying assumptions and the associated validity of policy content, and
3. differences between the Act's stated and the Act's intended effect.

These alternatives will be explored in the course of the evaluation.

# A. SOLVING THE PROBLEM OF TRUNCATION: AN EXAMINATION OF THE ASSUMPTIONS UNDERLYING THE ADOPTION OF THE FOREIGN INVESTMENT REVIEW ACT

Canadian political economists have created a formidable body of substantive and empirical literature addressed to the issue of American foreign investment. Canadian studies of the effects of American penetration fall into two camps. First, there are those studies which argue that foreign direct investment has led to the dislocation of many activities associated with innovation from the subsidiaries of MNEs to parent companies. The effects are summarized by the concept of truncation (Gray 1972:405).

At the national level, parallel gaps are apparent in related domestic capacities. These "symptoms" of truncation include:

1. the dominance of Canada's merchandise trading by resources rather than manufactured products,
2. The establishment and protection of foreign technology, brand names, product concept and market power by oligopolistic foreign corporations; resulting in a miniature replica effect,[23]
3. fragmentation of the Canadian goods market because of excessive numbers of producers and sellers in a relatively small market,
4. oligopolistic effects to the detriment of Canadian firms due in part to the foreign share of the domestic market, and in part to the effects of Canadian tariff policy,
5. foreign sourcing of high technology requirements in engineering and machinery,
6. negative spatial economic effects in terms of the regional disparity of foreign firm concentration, and
7. the low level of Canadian manufacturing's innovative capability. (Britton and Gilmour 1978:93-96)

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[23]Frankl (1979) finds that Canadian subsidiaries experience truncation of research and development capacity even where economies of scale are realized by the parent. This is because of the basic relationship between parent centralization of R&D and subsidiary truncation. Where centralization occurs in response to protecting knowledge rather than economies of scale, for innovative activity in Canada (Saunders 1982:474). Even in a free trade environment that would minimize the follow-the-leader and miniature replica effects, the inefficiency of Canadian manufacturing would likely persist where truncation was an effect of preventing the dissipation of knowledge rather than an effect attributable to scale (Saunders 1982:476).

Rugman (1980b:139) gives the example of the Canadian-American auto industry. Canadian production enjoys economies of scale by selling into the integrated North American market. The price of cars to American consumers, however, is about 10% less than the price to Canadian consumers. If this price difference is not due to scale, then presumably, it is due to policies endogenous to the MNEs.

On the other side of the argument are the advocates of free trade. They contend that continued dependency is not due to the presence of foreign direct investment, but to policies such as protectionism that have fostered inefficient industrial development.

It is suggested that high Canadian barriers to trade, the lack of effective competition policy and badly devised industrial policies have, in combination, resulted in short production runs that do not allow firms to realize economies of scale (Saunders 1982:471). On the whole, however, it is the ability of MNEs to internalize market imperfections that has provided them with the ability to produce and compete successfully across international borders (Hood and Young 1979:56). The second aspect of the free trade critique of the truncation argument is closely tied to the issue of internalization. The incentive to internalize depends on the relationship between four groups of factors:

1. industry specific, including the nature of the product, external market structure and economies of scale,
2. regional considerations such as geographic proximity,
3. national political and fiscal policies, and
4. firm specific factors such as management expertise and technological know-how. (Hood and Young 1979:56)

Truncation may result from economies of scale in the centralization of certain activities such as research and development in the foreign parent firm (Saunders 1982:465). It may be strategic for parent flexibility in drawing off profits from the subsidiary in the form of royalties, managerial fees and input prices (as suggested by the Gray Report 1972), or it may be designed to prevent the dissipation of knowledge to potential Canadian competitors (Rugman 1981a:607). The latter alternative is related to the fourth internalization factor. It brings into question both the validity of assuming that foreign multinationals will transfer technology and the appropiateness of policy that is based on the transfer assumptions.

Foreign direct investment is expected to transfer benefits to the host economy by supplying capital and making available a range of technology, market access and entrepreneurship that would otherwise be unavailable or available only at higher costs. The potential gains from increased capital stock and improved technology may, in turn, increase real wage rates and employment and/or lower prices and improve the quality of output

(Safarian 1973:419-420). Whereas the truncation argument focuses on the costs of foreign direct investment in terms of interest, dividend and service payments, and warn about the potential for foreign direct investment to expand without further capital inflow through the reinvestment of retained earnings; the free trade argument views the MNEs as victims rather than contributors to or creators of market imperfections.

If there is a problem with the transfer of resource assumption, then there is also a problem with the policies that are derived from both the truncationist and free trade positions. The free tradists are critical of the policy of investment screening for two reasons. First, economists such as Safarian (1973:426) interpret the plea for more protection of Canadian R&D as an extension of the infant industry argument into the realm of the nationality of ownership. Safarian (1973) questions the relevance of the strategy for a high-income host. Second, organizational economists such as Hymer (1976) and Rugman (1980, 1981a, 1981b) dispute, the validity of the transfer of technology assumption. In three recent publications (1980; 1981a; 1981b), Rugman explains that the profitability of foreign investment in Canada reguires the cautious use of technology so as to "prevent the dissipation of knowledge from the parent."

On the other hand, the decisions about R&D, pricing and capital investment are made at the level of the firm, following a global strategy (Rugman 1981a:609). Economic policy, in contrast, is a national question. Rugman (1981a:611) predicts that any type of protectionist policy will only be considered peripherally by foreign MNEs in their decision-making, and only to the extent that the policies may effect the profitability of investment (the key determinant for the firm). As an alternative to the existing policies of domestic industrial protection and screening incoming foreign direct investment, the free tradists propose the removal of trade barriers. This is expected to encourage both a shift of resources from inefficient sectors to efficient ones and a shift to intra-industry rationalization (Saunders 1982:468).

Saunders (1982) is critical of the free trade argument because it fails to recognize that the MNEs have contributed to the small market problem. He explains that foreign direct

investment is typically attracted to the oligopolistic-differentiated products industries where it has an advantage in intangible assets such as technological know-how and marketing skills, and a brand image that can be produced at a low marginal costs. Moreover, where R&D is centralized in order to prevent the dissipation of knowledge, foreign ownership is likely to have a negative impact on the level of innovative activity in Canada. This would be the case even in a free trade environment (Saunders 1982:474). Because American operations are already rationalized for a large market, there exists the additional possibility that the dropping of trade barriers could result in a substantial shift of manufacturing investment back to the U.S., with a concomittant flooding of the Canadian market with American imports.

My view of the issue falls somewhere in the middle of the two positions. I agree with Safarian (1973) that until recently, what has passed for industrial strategy in Canada has been an inducement to foreign firms to invest rather than import. This situation has been brought about by a combination of a high effective rate of protection, substantial tax concessions for R&D activity and incentives to locate in depressed areas. I also agree with Rugman (1980b:61) that Canada has made a big mistake in its generous distribution of R&D funding to MNE subsidiaries. The failure of Canadian science policy to generate any kind of a substantive indigenous technological advantage has been documented by McFetridge (1977). The crux of the problem is that according to internalization theory, subsidiaries, by definition of their role, are not geared for original or even innovative research.

On the other hand, I agree with the truncation argument that the extent of MNE activity has both created and exacerbated a significant proportion of Canada's economic problems. On the other hand, I question the underlying assumption about the transfer of benefits to the host, that have been traditionally associated with foreign direct investment. I do not think that either control or the lack thereof will be an effective strategy to reduce the costs of foreign investment where these costs are associated with the extent of foreign ownership rather than the adequacy of its regulation. Screening incoming investment will have virtually no effect on the structural relationship between growth and foreign penetration simply because the

structural effect of reinvested earnings cannot be altered by securing other types of benefits. Moreover, according to economic theory, the possibility of actually securing the anticipated benefits is dubious.

In addition, I do not agree that either tariffs or MNE penetration can be cited as a single causal factor in Canada's mature dependency as both have been inextricably interactive at each stage of Canada's development. Nevertheless, because the major objective of the entire FIRA program is to reduce truncation through an attempt at controlling incoming foreign direct investment, I have chosen to evaluate the extent to which this objective has been achieved.

## B. THE IMPACT OF FIRA ON THE REDUCTION OF TRUNCATION: AN EVALUATION OF THE EFFECTIVENESS OF SCREENING FOR SIGNIFICANT BENEFITS

The Foreign Investment Review Act offers two kinds of benefit strategy in response to the problem of the alleged inefficiency of foreign firms. The direct response screens incoming direct investment for benefits related to efficiency criteria. These are defined by the Act to include effects on productivity, industrial efficiency, technological development, product innovations and product variety (Foreign Investment Review Act S.C., 1973-74, C. 46:2). The indirect response is to secure the autonomy of Canadian subsidiaries by screening for the autonomy and authority of Canadians in key management positions or directorships and to a lesser extent, Canadian participation through shareholding (FIRA Annual Report 1974-75:9; Supplement to the 1978-79 Annual Report:2).

I have assumed that the second alternative, increased Canadian participation, is intended to increase the input of Canadians into the production decisions of the investing corporations. The analysis and discussion that follow, will concentrate on the effectiveness of FIRA in regulating the truncation of foreign firms. The three central aspects of truncation that will be considered are: the efficiency of subsidiaries, technological contribution, and increases in Canadian participation.

## i. THE EFFICIENCY OF FOREIGN FIRMS

Canada's manufacturing industry is characterized by an oligopolistic market structure that is dominated by large, American multinational enterprises. Although there is evidence to suggest that American multinationals may be more efficient than their Canadian counterparts in terms of productivity (Rugman 1980b:161; Eastman and Stykolt 1967; Caves 1975), American subsidiaries may be relatively inefficient in comparison to their parent operations (Safarian 1969:5). In Canada, foreign firms are encouraged to enter industry on less than an efficient scale in order to produce a full range of products for the small Canadian market, at higher unit costs. The economies of scale that should permit the high fixed costs of production and R&D overheads to be distributed over the long run are not achieved because production runs are characteristically short and inefficient. This inefficiency reflects limitations on the Canadian market, firm size and specialization, and an excess diversification of product lines.

The first set of efficiency criteria are included in the composite benefit (C), in Table 6.1. For the sake of analytical clarity, the components of this composite benefit will be examined separately. The emphasis of discussion will be on the technological component. Table 6.2 decomposes the benefits for the primary and manufacturing sectors. The industry breakdowns have been published only on the first FIRA Annual Report (1974). With the Agency's permission, I have been able to access the Quarterly Reports issued from the fourth fiscal quarter of 1979 through to the third fiscal quarter of 1982. It should be noted that the data base is incomplete as a series because of the gap between 1974 and 1979.

The aggregate data in Table 6.1 indicate that the proportion of productivity and industrial efficiency benefits, that is, benefit (Ci) isolated from the composite benefit (C), have dropped for allowed acquisition cases. Nevertheless, acquisitions offer proportionately more productivity and efficiency benefits than allowed new businesses. The respective period averages are 63% and 26.2%. The technological benefit (Cii) is offered by very few allowed cases, scoring low at 26.6% for acquisitions and 19.8% for new businesses. Both acquisitions and new businesses offer moderate improvements in product variety and innovation (Ciii). The

TABLE 6.1

ALLOWED* CASES: SIGNIFICANT BENEFITS TO CANADA SUMMARIZED BY PRINCIPAL FACTORS OF ASSESSMENT 1975-1981**

1. Acquisitions

Number of cases in which that type of benefit is obtained

| Type of Benefit | 1974-75 | | 1975-76 | | 1976-77 | | 1977-78 | | 1978-79 | | 1979-80 | | 1980-81 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| (A) Positive effect on level and nature of economic activity | 54 | 86 | 107 | 97 | 142 | 93 | 200 | 83 | 268 | 91 | 286 | 93 | 184 | 96 |
| (i) Increased employment | 43 | 68 | 96 | 87 | 113 | 74 | 141 | 59 | 200 | 68 | 212 | 69 | 137 | 72 |
| (ii) New investment | 37 | 59 | 88 | 80 | 107 | 70 | 135 | 67 | 204 | 69 | 219 | 74 | 156 | 82 |
| (iii) Increased resources processing or use of Canadian goods and services | 26 | 41 | 67 | 61 | 105 | 69 | 111 | 46 | 272 | 92 | 186 | 60 | 119 | 62 |
| (iv) Additional exports | 22 | 35 | 48 | 44 | 74 | 48 | 67 | 28 | 99 | 33 | 117 | 38 | 100 | 52 |
| (B) Increased Canadian participation (as sharerholders/directors/managers) in foreign-controlled companies | 17 | 63 | 51 | 46 | 95 | 62 | 104 | 43 | 163 | 55 | 176 | 57 | 114 | 60 |
| (C) Improved efficiency, technology, etc. | 59 | 94 | 102 | 93 | 124 | 75 | 186 | 77 | 241 | 82 | 238 | 77 | 133 | 75 |
| (i) Improved productivity & industrial efficiency | 46 | 73 | 88 | 80 | 96 | 63 | 132 | 55 | 185 | 63 | 171 | 56 | 97 | 51 |
| (ii) Enhanced technological development | 29 | 30 | 33 | 30 | 50 | 33 | 40 | 17 | 61 | 21 | 88 | 29 | 50 | 26 |
| (iii) Improved product variety or innovation | 30 | 48 | 57 | 52 | 82 | 54 | 95 | 39 | 134 | 45 | 124 | 40 | 86 | 45 |
| (D) Beneficial impact on competition | 19 | 30 | 39 | 35 | 40 | 26 | 48 | 19 | 98 | 33 | 57 | 19 | 46 | 24 |
| (E) Compatability with national and provincial industrial and economic policies | 63 | 100 | 110 | 100 | 153 | 100 | 241 | 100 | 296 | 100 | 308 | 100 | 191 | 100 |

TABLE 6.1 (CONT'D)

2. New Business

Number of cases in which that type of benefit is obtained

| Type of Benefit | 1975-76 No. | % | 1976-77 No. | % | 1977-78 No. | % | 1978-79 No. | % | 1979-80 No. | % | 1981-82 No. | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (A) Positive effect on level and nature of economic activity | 04 | 100 | 166 | 100 | 278 | 100 | 335 | 100 | 335 | 100 | 214 | 98 |
| (i) Increased employment | -- | -- | 164 | 99 | 291 | 97 | 274 | 99 | 328 | 98 | 114 | 52 |
| (ii) New investment | -- | -- | 161 | 97 | 186 | 62 | 265 | 95 | 330 | 98 | 214 | 98 |
| (iii) Increased resources processing or use of Canadian goods and services | -- | -- | 139 | 84 | 164 | 55 | 178 | 64 | 122 | 36 | 167 | 76 |
| (iv) Additional exports | -- | -- | 71 | 43 | 72 | 24 | 101 | 36 | 112 | 33 | 110 | 50 |
| (B) Increased Canadian participation (as shareholders/directors/managers) in foreign-controlled companies | 02 | 50 | 149 | 90 | 155 | 52 | 162 | 58 | 140 | 42 | 182 | 83 |
| (C) Improved efficiency, technology, etc. | 03 | 75 | 109 | 66 | 152 | 51 | 186 | 67 | 209 | 62 | 158 | 72 |
| (i) Improved productivity & industrial efficiency | -- | -- | 52 | 31 | 48 | 16 | 66 | 24 | 159 | 48 | 27 | 12 |
| (ii) Enhanced technological development | 01 | 25 | 53 | 32 | 47 | 16 | 48 | 17 | 51 | 15 | 30 | 14 |
| (iii) Improved product variety or innovation | -- | -- | 71 | 43 | 105 | 35 | 131 | 47 | 153 | 46 | 28 | 13 |
| (D) Beneficial impact on competition | 01 | 25 | 78 | 47 | 88 | 39 | 112 | 40 | 84 | 25 | 41 | 19 |
| (E) Compatability with national and provincial industrial and economic policies | 04 | 100 | 166 | 100 | 300 | 100 | 278 | 100 | 336 | 100 | 219 | 100 |

\* Cases "deemed allowed" are included where data is reported on the benefits offered.
\*\* Data source for this annual set is Table 13, pg. 36 of the 1974-75 Annual Report. The 1974-75 data refers only to acquisitions.
\*\*\* Reported in Table 13 as a percent of the 27 cases involving foreign-controlled vendor companies.

TABLE 6.2

ALLOWED CASES: SUMMARIZED BY CANADIAN PARTICIPATION AND EFFICIENCY
BENEFITS BY TYPE OF BUSINESS AND BY INDUSTRY SECTOR

| | 1974 | | 1979*** | | 1980 | | 1981 | | 1982**** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | ACQ | NEW** | ACQ | NEW | ACQ | NEW | ACQ | NEW | ACQ | NEW |
| **PRIMARY SECTOR** | | | | | | | | | | |
| | % | | % | % | % | % | % | % | % | % |
| (B) Canadian Participation | 83* | - | 25 | 67 | 20 | 63 | 67 | 84 | 90 | 91 |
| (C) Efficiency Composite 5 | 89 | - | 38 | - | 80 | | 67 | 32 | 80 | 45 |
| (i) productivity | 67 | - | 38 | - | 40 | | 44 | 21 | 50 | 27 |
| (ii) techn. innov. | 56 | - | 13 | - | 40 | | 11 | 21 | 70 | 36 |
| (iii) prod. variety | 22 | - | - | - | 60 | | 11 | - | - | 9 |
| **MANUFACTURING SECTOR** | | | | | | | | | | |
| (B) Canadian Participation | 62* | - | 75 | 90 | 74 | 95 | 78 | 90 | 73 | 88 |
| (C) Efficiency Composite | 96 | - | 83 | 60 | 91 | 72 | 80 | 73 | 81 | 71 |
| (i) productivity | 59 | - | 73 | 15 | 61 | 67 | 58 | 19 | 45 | 14 |
| (ii) techn. innov. | 59 | - | 35 | 30 | 44 | 29 | 22 | 35 | 41 | 26 |
| (iii) prod. variety | 59 | - | 50 | 15 | 68 | 70 | 54 | 56 | 35 | 62 |

* As a percent of the cases involving foreign controlled vendor companies in that industry.

** New businesses did not come under FIRA's jurisdiction until 1975-76 fiscal year.

*** Averages are based on available data for the last quarter of the 1978-79 fiscal year.

**** Averages are based on available data for the first three quarters of the 1981-82 fiscal year.

Numbers of component benefits add up to more than the overall total because any one case can involve several component benefits under the same heading. The overall total is larger than the number for any one component because no one component was always part of the overall type of benefit.

Sources: Government of Canada, Foreign Investment Review Act Quarterly Reports (Oct.-Dec. 1979- July-Sept. 1982).

Government of Canada, Foreign Investment Review Agency Annual Report, 1974-75.

period averages for acquisitions and new businesses respectively are 46% and 36.8%. Although

period averages are not reported in the tables, they may be calculated simply by totaling the

percentages and dividing by seven.

The extent to which two components of composite benefit (C), (Ci) improved

productivity and industrial efficiency and (Cii) improved product variety or innovation will

effect truncation is open to question. The two central aspects of the productivity of foreign

investment are technological change and the exploitation of economies of scale (Globerman

1979:39). Canadian subsidiaries are already more diversified than resident-owned companies

(Caves 1975). A further increase in product variety would probably increase the problem of

unrealized economies of scale by influencing the industrial structure through "follow the

leader" and "miniature replica" effects (Saunders 1982:473-474).

In addition, one might ask if the improvement in product innovation is original

research or further development of industry-specific packages of parent innovation, as

predicted by internalization theory. Powrie (1977:1) and Rugman (1981a:607) suggest than

importing the package of capital, production and distribution techniques and management skills

has, in fact, reduced the amount of R&D in Canada from what it would have been had there

been no post-war inflow of foreign direct investment.

It is also suggested that the fast adoption of imported technology has minimal spin-off

effects when compared to the development of new technology (Saunders 1982:475; Rugman

1981a:608). If this is the case, benefits derived in the form of the importation of new

machinery, technology or production processes (Supplement to the 1978-79 FIRA Annual

Report:14) may do little to alleviate subsidiary dependence on imports and little to effect

truncated research and development. Where benefits are realized in terms of quality control,

subsidiary expansion and reorganization, these benefits may be rationalized in the context of the

international firm and they may not contribute to the efficiency of any particular subsidiary.[24]

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[24]The problem of regaining economic control draws an important connection between Canadian participation and the efficiency of foreign subsidiaries. It has long been demonstrated, even by the US Senate Committee on Ways and Means (1961), that to the extent that decisions about Canadian-based facilities are rationalized in the

With these reservations in mind, I will take a closer, interpretive look at the sectoral and
aggregate data on efficiency contributions.

The aggregate efficiency scores lend support to the argument that there may be
problems associated with the benefits criteria used to screen for productivity and industrial
efficiency. Moreover, the acceptable percentages evident in acquisitions are to be expected when
one considers the reluctance of the Agency to allow takeovers of Canadian companies unless
foreign ownership is seen as the only solution to serious financial difficulties. Existing control
and ownership of aquiree businesses (Canadian versus foreign) has been an important factor in
Agency decisions. In a few cases, disallowances have been influenced by government knowledge
of an alternative buyer (usually Canadian) whose plans have been deemed more beneficial to
Canada than the foreign proposals (FIRA Annual Report 1975-76:5; 1977-78:21). Where
Canadian-controlled companies were allowed to be acquired, they were generally much smaller
than those disallowed and much smaller than allowed cases involving foreign-controlled
vendors. In many cases, the acquired businesses were in severe economic straits (FIRA Annual
Report 1975-76; 1977-78). In these cases, saving the business from bankruptcy would be
sufficient reason to merit benefits obtained in efficiency and productivity.

Comparing the decomposition of the efficiency benefit (C) across sectors (Table 6.2),
productivity benefits in manufacturing acquisitions show a downward trend that converges with
an increase in productivity benefits obtained in the primary sector. Although productivity and
efficiency are the largest contributing factors in the composite benefit measure for acquistions
in manufacturing, the decreasing realization of these benefits suggests that there may be a
discrepancy between either the capability of foreign direct investment to offer efficiency and
productivity benefits or a discrepancy between the administration and the intent of the
screening policy. The product variety/innovation component which is the most contentious
according to critics of foreign direct investment, is the largest efficiency component for new
businesses.

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[24](cont'd) context of the international firm, subsidiaries may be operating inefficiently
within Canada while maximizing the parent's profit.

New businesses offer the composite efficiency benefit (C) about half as often as acquisitions between 1979 and 1982. The averages for both categories show little change over the period, with a drop in 1981 and comparable scores in 1980 and 1982 of 80% in acquisitions and 38% and 45% in new businesses. Again, the relatively low efficiency composite may indicate that new businesses in the primary sector are coming in on less than efficient scale.

The productivity/efficiency component (Ci) also indicates that more productivity benefits are being offered by acquisitions than by new businesses. The proportion is about two to one. There is a slight and consistent increase between 1980 and 1982, however, evident in both acquisitions and new businesses. In reference to the product variety component (Ciii) the percentages suggest that with the exception of 1980 acquisitions, this benefit plays either no role or only a negligible role in the primary sector composite efficiency measure. This is a sector specific effect.

The composite efficiency measure for the manufacturing sector is consistent with the primary sector data in that the new businesses offer the composite efficiency benefit less, by a range of 7% to 23%. Both manufacturing categories are relatively high, however, compared to the breakdowns for acquisitions and new businesses in the primary sector. The lowest new business average is 60% and this figure represents the last quarter of 1979 rather than an annual average. Otherwise, 72% of new businesses approved offer some kind of efficiency benefit for the period, with a small range varying from 71% to 73%. This puts the composite efficiency measure for manufacturing acquisitions consistently higher than primary sector acquisitions and about 30% higher than new businesses in either sector. By including the 1974 data in the series, the decrease in composite efficiency benefits identified by the Agency also becomes apparent. In particular, there is a drop in the productivity benefits offered by acquisitions in the primary sector that is slowly being reversed.

In summary, the proportion of efficiency and productivity benefits offered by manufacturing acquisitions shows a downward trend that converges with an increase in the proportion benefits offered by primary sector acquisitions. The product variety/innovation

component which is the most contentious benefit, is the most important efficiency component for new businesses in manufacturing. Product variety does appear to be decreasingly important, however, reaching a low of 14% in new businesses and 45% in acquisitions in 1982.

## ii. CANADIAN PARTICIPATION

The screening of incoming investment to increase the Canadian content of corporate decisions may be viewed as an indirect strategy aimed at improving the efficiency and the productivity of foreign firms. The Agency suggests that this criterion relates to the industry of which the vendor business is a part, as well as the vendor business itself. Participation is important in "industries with existing high levels of foreign control" (FIRA Annual Report, 1974-75:9) or "with significance or sensitivity [key sectors] with respect to government objectives." (FIRA Annual Report, 1978-79:4) Particular emphasis has been placed on Canadian participation in the primary sector (FIRA Annual Report 1978-79:4), and this policy is consistent with the requirement of the New Energy Program. The Canadian participation factor is benefit (B).

Over the seven year period, approved foreign acquisitions have offered benefits associated with increases in Canadian participation in 62.5% of the new businesses cased and in 55% of acquisitions. The marked drop in Canadian participation benefits identified in new business from a high of 90% in 1976-77 to a low of 42% in 1979-80 is followed by a sharp increase to 83% in 1980-81. I assume that the large increase in participation benefits offered by acquisitions, from 20% in 1980 to 67% and 90% in 1981 and 1982, is a direct response to the implementation of the government's New Energy Program in 1980.

Within the primary sector, new businesses are higher by about 40% until 1981, when there appears to be a convergence accompanied by an increase in participation in both acquisitions and new businesses. Within the manufacturing sector, the new business are higher than acquisitions, by 10-15%, and consistent across the time period. The 1974 data indicate that a substantial drop had occurred in participation benefits identified in the primary sector, from

83% in 1974 to 20% in 1980. I cannot, however, comment on the nature of the drop because of

the break in the series. Manufacturing participation, on the other hand, increased between 1974

and 1979, by 13-14%.

## iii. THE TRANSFER OF TECHNOLOGY

In its assessment of technological benefits, the Agency gives "considerable weight" to

those investment proposals that include both the introduction of advanced technology

associated with new production processes, machinery or products, and support for research

institutes in Canada (Supplement to the 1978-79 Annual Report:13; 1978-79:10; 1979-80:5).

This weighting of technological benefits applies particularly to the manufacturing sector (FIRA

Annual Report 1978-79:19; 1979-80:5). Given the importance of the technology factor in the

mitigation of the negative effects of truncation (Supplement to the 1978-79 FIRA Annual

Report:13), and in light of the expected technological contribution of foreign direct investment

to manufacturing, one would expect the proportion of manufacturing proposals in which this

benefit is identified to be comparable with the proportion of primary sector proposals that

increase Canadian participation. This does not appear to be the case.

According to the aggregate data reported in Table 7.1, the technological component

(Cii) is the consistently low contributor to the composite factor in both acquisitions and new

businesses. The respective period averages are 26.6% and 19.8%. The sector breakdowns

reported in Table 7.2, indicate that there is no consistent trend for the technological benefits

identified in the primary sector. The new business percentages are consistently 36% or lower and

there is a drop in acquisitions from 40% to 11% in 1981 followed by a huge increase to 70% in

1982. The size of this increase is underlined in comparison to the previous two-year average and

in comparison to the 1974 high score of 56%. Technological benefits are the most frequently

identified contributions of allowed cases for new businesses in the primary sector, although the

percentages are moderately low, fluctuating around the 30% mark in manufacturing

acquisitions and new businesses.

The technological component (Cii) is much less evident in manufacturing investment than is the Canadian participation component in either sector. In manufacturing industries, where technological innovation is intended to receive the largest weighting by the Agency innovation is increased, as an identified benefit, by only 30%, whereas participation benefits identified increase by 90.7% over the time period.

Although the efficiency and technological benefits offered by reviewable investment are minimal if one examines only the numbers, these gains may be deemed even more neglible in the context of economic analysis.[25] Foreign-owned subsidiaries are already more diversified than resident-owned companies (Globerman 1979); moreover, it is doubtful that the benefits thought to be derived from the importation of new machinery, technology or production processes will do anything to alleviate subsidiary dependence on imports, and even less to reduce truncated R&D capacities.

From the perspective of dependency theory, it is the stock of foreign direct investment rather than the inflows that has resulted in the truncation of technological innovation and the long-run effect on growth. This raises two additional problems with FIRA. First, the Act does not intend to effect the quantity of foreign investment in Canada (FIRA Annual Report 1976-77:25). Second, the Canadian government acknowledges that the existing "non-reviewable" foreign direct investment will represent the major part of foreign direct investment in the future (OECD 1979:9).

The point is that ownership, not regulation appears to be the important issue. Moreover, where identified benefits have shown a substantial increase, is in the Canadian participation factor. Canadian participation is, in the narrow-sense, a non-economic criterion. It does not effect the internal logic of the firm. The results of this evaluation indicate that FIRA is not effectively eliminating truncation. In particular, there are problems associated

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[25] Rugman (1980b:136) assumed that the bottom line of FIRA criteria would be that "most types of foreign direct investment would satisfy criteria (A), economic compatibility and (C) efficiency and technology, with the other criteria presenting opportunity for bargaining between FIRA and the investor." The expectation for criterion (C) is empirically off-based.

with the Act's attempts to deal with the efficiency benefits of foreign investment and its

contribution to national technological development.

FIRA's inadequacy may be a question of the Agency's implementation of the Act.
More likely, it is a question of the content of policy. The important issue in terms of
dependency analysis is that the data suggest that the Canadian economy is subject to the
negative effects of structural dependency, and unable to implement effective economic strategy.
A policy analysis of the effectiveness of FIRA may be seen as a preliminary step in the
specification of the mechanisms that underly this component of mature dependency.

Recent policy moves to Canadianize energy through the National Energy Program, to
expand FIRA and to restructure the Canadian economy through revised industrial strategy have
all been advanced and rescinded in varying degrees. Moreover, the increased efficiency,
productivity and improved technological development criteria that are deemed crucial to the
conntrol of foreign direct investment by the Agency, do not yield data to verify the Agency's
claims to have had a great (or any) impact on the reduction of truncation.

I suggest that this argument holds in spite of recent increases in the amount of
Canadian participation. On the one hand, the initial findings suggest that the implementation of
the Act's screening strategy may not be particularly effective because inappropriate measures
have been taken to increase productivity benefits. On the other hand, the discrepancies may
indicate that the Agency's implementation is inconsistent with its own policy. Of course, the
inconsistency may indicate that the screening process is doing something other than just
regulating foreign direct investment. In the case of FIRA, the screening process appears to be
doing nothing at all.

The inability of the government to carry through with its stated objectives has been
due, in part, to the negative reaction of the Canadian business community. In part, the failure
is associated with a fear of American retaliation. What is ironic is that in spite of government
policy blunders, the extent of foreign ownership in Canada is, in fact, being reduced. It appears
that the general drop in investment brought about by the world economic recession has

accomplished what the Canadian government has not been able to accomplish. Unfortunately, the positive effects of reducing foreign penetration probably will not show up for a long time. Projecting from current results, significant effects would be lagged nine years. In the interim, the disinvestment of foreign capital is likely to continue to lower economic growth in the short-run.

Bornschier (1980:167) explains that incentives to increase current levels of foreign direct investment will mitigate the short-run growth effect of disinvestment, but there are consequences if the structural effects remain unaltered. The vascillation in Canadian attitudes towards foreign multinationals can only produce ineffective economic band-aids where radical surgery might better be the order of the day. Unfortunately, nationalistic policies are unlikely to be popular during difficult economic times. The status quo will protect the multinationals.

## VII. SUMMARY AND CONCLUSIONS

The Liberal government has pointed to the fall in foreign direect investment with anabated anticipation. The general drop in investment levels has meant that the proportion of Canadian industry controlled by non-residents has declined steadily since 1974. By 1977, non-residents controlled "only" 64% of Canada's oil and gas industry, 54% of manufacturing and 53% of mining and smelting (Anderson, R. 1984). However, there appears to be a general concensus among Canadian leaders (with the exception of the N.D.P.) that the economic impact of foreign disinvestment will be both "traumatic and very destructive" (Anderson, R. 1984). In consequence, both the Liberals and the Conservatives are talking about how the multinationals can be integrated into a policy framework that encourages foreign direct investment to operate in harmony with Canada's economic objectives.

The problem with the dominant "let us live together and be friends" philosophy is that it completely ignores the economic problem that is unique to Canada. This problem is the structural problem associated with the fact that Canada is host to more multinational enterprises than any other country in the world. The tendency of Canadian leaders to avoid dealing with the existing control structure of foreign capital has resulted in confused and ineffective economic policy. We have ended up with ineffective policies such as the Foreign Investment Review Act that have attempted to secure various types of benefits from multinationals.

Canadians have a peculiar idea of what dependency is all about. They tend to emphasize only one aspect, the problems evident in Canada's balance of trade. However, the reinvestment of retained earnings is the key to understanding the dependency structure. In the short term, foreign direct investment inflows will have a positive effect on economic growth. In the long-run the negative effects of foreign penetration will become more evident. As the inflow of fresh foreign capital decreases, ownership and control of the hosst economy will continue to grow despite the loss of the positive effect of new capital.

A common misconception among the critics of the dependency perspective is that rich countries cannot be dependent. Even where academics refer to the historical continuity between Canada's early reliance on British portfolio investment and Canada's later dependence on American foreign direct investment, they still want to distinguish between the effect of foreign penetration in the industrialized and the non-industrialized world. The anomoly of Canadian economic development has led many social scientists to demand a distinct methodological approach to the study of Canadian capitalism (Drache 1983). Canada looks great in terms of wealth and welfare expenditures, and pitiful in terms of research and development expenditures, manufactured exports, foreign control and foreign indebtedness. Canadians thus face the problem of identifying the mechanisms whereby a fully-integrated capitalist economy has come to its relative demise in the world economy.

What the Canadian and the dependency perspectives do have in common is the belief that economies cannot be treated as if they were closed systems. What the dependencia and Canadian political economists have in common is the belief that the contextual specificity of historical analysis cannot be modelled empirically. I have argued that empirical analysis is also necessary. What is needed is a modification in methodology that enables the researcher to account for both history and context.

The commitment of current empirical dependency research to the cross-sectional study of large samples of countries has, in part, obscured historical context. First, structural distinctions that differentiate different types of dependency are likely to be obscured. Second, static designs cannot pick up changes in dependency effects over time. These issues are particularly relevant for Canadian dependency because the long-term negative effects of foreign capital penetration are isolated to the post-1960 period of mature dependency. By using a time series design for analysis, I have been able to differentiate historical periods and thereby bridge the methodological rift between historicist, dependencia, and empirical approaches to dependency research.

Dependency involves an external reliance on foreign capital, an alliance between international and domestic capitalist interests and an invitation to foreign capital to invest. Trade dependence is not all there is to dependency. Rather it is external reliance. Trade dependence is a question of linkage that is related to structural dependency through organizational aspects of the multinational enterprise. Although trade patterns reflect structural dependency, they remain, to a large extent an external feature of an economy. Foreign direct investment, in contrast, becomes a strong internal force within the host economy, particularly where the investment is concentrated in the host's manufacturing sector. Where penetration is extensive, as it is in Canada, trade may bypass the world market completely through the mechanism of intercorporate transfers. The point is that no matter how bad Canada's trade profile appears, the determinative causal structures rests with the issue of foreign penetration.

The mature dependent is distinct from the Third World dependent because the rich state has the resources to implement effective policy. In contrast to the "functional incompleteness" evident in Third World economies, the rich economy is mature in the sense that it is both fully integrated into the world economy and capable of generating the domestic capital necessary to support national industry. In the long-run, however, the mature dependent comes to resemble the Third World dependent in one important aspect. The mature dependent experiences a stagnation in economic growth that results from the increasing stock of foreign direct investment, unaccompanied by the benefits associated with new foreign investment inflows.

Current cross-national research indicates that foreign capital penetration is the most significant predictor of economic growth among the developing nations. The inability of researchers to replicate this finding for rich countries hinges on the failure of researchers to pay any more than lip service to the distinctive characteristics of rich country dependents. This distinction requires more than the simple inclusion of rich countries in cross-national samples.

Empirical research must progress from cross-national "tests" of dependency toward the demonstration of dependency effects for one country over time. The strength of the empirical demonstration lies in the ability of time series design to combine historical context with

sophisticated analytical technique. Dependency research on Canada requires the examination of the long-term conditioning of the Canadian economy by American direct investment. It also requires a search for sectoral effects and the identification of thte relevant time period for mature dependency.

The history of foreign investment in Canada can be summarized as follows. During Canada's critical period of development, the bulk of foreign in Canada was British. British investment typically involved debt capital and portfolio equities: investments that improved material conditions with few implications for foreign control. With the world wars, American direct investment came to predominate in volume and in concentration in Canada's key sectors. The alliance between Canadian capitalist interests and the interests of American direct investment are evident as early as 1900.

Canadian economic policy was initially motivated by a desire to ensure Canada's trade monopoly in staple exports. The subordination of industry was not the intent. Tariff barriers were set up around Canadian manufacturing and other inducements to foreign investment were offered in order to ensure that the Americans would take charge of industry while the British financed the infrastructure for trade. Clearly the alliance between Canadian capitalists, the Canadian state and foreign capital affected the mechanism of accumulation. As the American multinationals came to assert their economic dominance, the dependency structure was set in place.

After the post-WW II American push to buy Canada had slackened, the negative effects of the extent of ownership became evident. The post-war boom period more than doubled the proportion of American long-term investment in Canada compared to the pre-1926 period. Between 1946 and 1960, American direct investment accounted for over 70% of the increase in American long-term investment and 54% of the increase in total long-term investment. Not only did American direct investment exploit existing investment opportunities, it created them by molding the structure of the Canadian economy to suit continental needs. These needs are reflected in the extent of American ownership in mining and smelting,

petroleum and natural gas and manufacturing. Canada came to supply the United States with both the industrial raw materials necessary to supplement the depleting American reserves and an essential source of foreign income from manufacturing investments. The loss of Canadian access to British portfolio investment and markets after WW II can only be offered as a partial explanation of the acceleration and extent of American direct investment. The more important explanation is the support of the Canadian state. The Canadian state has always been committed to private accumulation, and American direct investment has been the readiest source of capital.

The reliance of the mature dependency explanation of the structural problems of the Canadian economy is strongly supported by the data analysis. By far, the most important finding is the long-term negative effect of aggregate American direct investment on Canadian economic growth. According to the final model (reduced form OLSQ equation), every dollar change in American direct investment reduces change in Canada's GNP by $1.92 after the investment has been around for nine years during the post-1960 or mature dependency period. As predicted by dependency theory, the long-term negative effect is evident despite short-term positive effects of change in American direct investment on both change in gross domestic fixed capital formation and change in economic growth. The immediate effect of change in American direct investment on change in GNP indicates that for a change of one dollar of incoming investment change in growth increases by $.97. Similarly, the immediate effect of change in American direct investment on change in Canadian capital formation is 1.08.

The robustness of the findings for the effects of American direct investment is supported by the results for the effects of change in American long-term investment on change in Canadian economic growth. The estimations for American direct and American long-term investment are extremely close; the long-term investment effects on growth are slightly smaller than the direct investment effects, whereas the long-term investment effects of gross fixed capital formation are slightly higher. For the post-1960 period, every dollar change in American long-term investment in Canada reduces change in GNP by $1.40 after a nine-year lag. The

short-term effect of change in American long-term investment on change in growth is .80. The short-term effect on change in gross fixed capital formation is 1.05. Furthermore, the findings for the effects of American portfolio investment indicate that the long-term investment effects are determined by the direct investment component.

Both sets of aggregate findings provide strong support for the dependency argument that foreign capital penetration is, in the long-run, significantly related to lower subsequent economic growth. This finding holds despite the positive growth effects of short-term American investment. The importance of the findings are enhanced by their application to a non-peripheral but yet dependent country. The change in effects evident after 1960 supports the argument that the subsequent period of Canadian economic history may be described as a period of mature dependency. Substantively, my delineation of mature dependency coincides with Levitt's (1971) description of 1960 as the beginning of a new phase of American corporate imperialism. Her specification of the 1960 threshold was remarkably accurate given that she only had data to 1965.

The sectoral breakdowns of American direct investment also support the applicability of the mature dependency model to the Canadian case. There is some evidence of a negative effect of change in American direct investment in both mining and smelting and petroleum and natural gas for the post-1960 period. But the truncation of the two series due to missing data may explain why the long-term findings are not significant. Also, the stability of the American direct investment levels in three sectors for the period may be operating to sustain the large and positive short-term effect of change in American direct investment on change in growth. Comparable to the aggregate findings, change in American direct investment in mining and smelting has a short-term positive effect on change in gross fixed capital formation of .99. In contrast to the aggregate findings, the effect of change in American direct investment on change in short-term growth is 5.99 or over six times as large. The strength of the positive short-term effect in combination with the stability of levels of American direct investment probably has a strong mitigating effect on the long-term consequences of American

penetration.

For the petroleum and natural gas series, change in American direct investment has a short-term positive effect on change in Canadian gross fixed capital formation equal to .93. The short term effect on change in growth is over twice the size of the aggregate effect, at 2.21. Although the short-term effect on growth is smaller than the effect for the mining and smelting series, its relative strength in comparison to the aggregate series suggests that the long-term effects of American penetration will also be mediated, to a large extent, as long as the levels of investment remain relatively stable.

The short-term effects of change in American direct investment in manufacturing are larger than the aggregate series effects for both gross fixed capital formation and economic growth. Every dollar change in American direct investment in manufacturing will increase change in gross fixed capital formation by $1.16 and change in GNP by $1.25. There is, however, some indication that the dependency relationship in this sector requires a different long-term lag structure for accurate modelling. This is suggested by the negative covariation of aggregate change in American direct investment and the manufacturing series during the 1960's. The building of a longitudinal model for Canadian manufacturing investment is a task for further research.

The demonstration of a negative long-term effect of American direct investment on Canadian economic growth provides a critical test of dependency theory. The results indicate strong evidence for the existence of mature dependency. Nevertheless, the findings must be interpreted as a preliminary step in empirical dependency research.

Dependency theory is a general statement about the relationship between economic integration into the world system and national development. Empirical research on economic dependency is a narrow delineation of the structure of the relationship between aggregate foreign capital penetration and economic growth. The task of future empirical research is the specification of the mechanisms by which the negative structural effect of foreign capital penetration has come to determine economic growth.

Researchers suggest that the reliance on retained earnings for the expansion of the stock of foreign capital may be the determining factor of dependency. It may be that retained earnings do not display the spread effects associated with new foreign investment. There may also be an association between economic growth and the concentration of the stock of foreign capital.

What is probably more unfortunate than the fact that Canada is a mature dependent is the fact that Canada has not been able to do much about it. The basic misconception evident in Canadian economic policy is the underlying acceptance of both the presence of and need for extensive American direct investment. No attempts have been made to alter the existing control structures, nor has there been any attempt to limit the amount of incoming investment, except in the case of the Candian petroleum industry. As long as the Canadian government refuses to acknowledge that there exists an inevitable trade off between long-term economic growth and reliance of multinational investment, there will be no structural solution.

Instead, Canada keeps on trying to make the best of a bad situation. The implementation of the Foreign Investment Review Act in 1973 was a politically astute move on the part of the minority Liberal government. The Act came at the peak of negative public and official opinion of foreign direct investment. The Act quelled nationalist grumblings to some extent in that it promised to expand its mandate in the near future. Of course, the expansion of FIRA's powers was quickly forgotten when public opinion changed in 1977. Yet there remained the hope, at least among the nationalists, that some FIRA is better than no FIRA. Unfortunately, my evaluation of FIRA's performance indicates that there is all too little to choose between these "alternatives".

FIRA was probably doomed from the start. It was based on the misconception that if properly controlled, multinational activity will transfer technological and managerial benefits to the host. According to the organizational theory of oligopolistic advantage within the multinationals, however, the transfer of benefits is largely contradictory to the profitability of firm-specific advantage. Screening direct innvestment will have virtually no effect on the

structural relationship between growth and penetration because the negative growth effect of reinvested earnings cannot be altered by screening for other types of benefits.

The efficiency and technological benefits identified by FIRA in its own reports over the last eleven years have been minimal. These small gains may be deemed even more neglible in the context of economic analysis. The main component of the efficiency benefits has been the increased diversification of production. Foreign-owned firms are already more diversified than resident-owned companies. Moreover, it is doubtful that the benefits thought to be derived from the importation of new machinery, technology or production processes will do anything to alleviate subsidiary dependence on imports. It is even less likely to improve research and development capacities.

The latest brainchild of Canadian thinkers is the idea of world product mandating (Rugman 1982; Wolf 1982; Etemad 1982). It is suggested that the advantages of foreign direct investment can be maximized by mandating Canadian subsidiaries to develop, manufacture and market specific products for the world market instead of simply assembling or importaing a small volume of a wide range of products for the Canadian market.

> If foreign multinational companies are encouraged to pursue the world product mandating strategy, the benefits that they generate by way of significantly improved export earnings will more than offset ... transfer payments resulting from dividends paid to parent companies (Megarry 1983:7).

Currently, subsidies for research and development are available to all firms in Canada, on a nondiscriminatory basis. The new Conservative proposal being debated would restrict government grants for research and development to those subsidiaries of the MNEs that can secure a world product mandate.

Rugman (1982:74) describes the adoption of a world product mandate strategy as:

> one of the most important public policy initiatives in Canada today. Its repercussions go beyond the basic issue of technological development and affect the structure of Canadian industry in general.

The structural change to which Rugman refers is the associated move away from the protection that encourages MNEs to enter and establish branch plants of the American parent firms. He suggests that the reduction of tariff and nontariff trade barriers will increasingly expose

Canadian industry to international competition. This exposure requires increased access to technology if Canada is going to survive in the global marketplace. Unfortunately, such decentralized mandating conflicts with parent firm maintenance of its internal market to avoid the risk of dissipation of firm-specific technological advantage (Rugman 1982:75). The reluctance of the parent firm to decentralize control of the research and development function is likely to thwart conservative policy.

The key to changing Canada's economic structure may be the nationalization of industry. Dependency results from extensive foreign capital penetration and the cumulation of stocks of foreign direct investment: Ownership is the issue, not regulation. To some extent, the recent world economic recession may have accomplished what the Canadian government has failed to accomplish. The amount of American ownership has declined. Whether or not the decline will continue until an "acceptable" level of foreign penetration exists is open to question. Canada is losing the short-term benefits associated with high levels of American direct investment at a time when the long-term negative effects dominate the structure of Canadian economic growth. Therefore, if the present trend toward disinvestment continues, this decade will be a poor one for Canada. If the significant decrease in American direct investment continues, however, Canada's economic condition may improve in the future.

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## APPENDIX 1
### AMERICAN DIRECT INVESTMENT IN CANADA AS A PROPORTION OF AMERICAN AND TOTAL LONG-TERM INVESTMENT. SELECTED INDUSTRIES. SELECTED YEARS 1926-1978

| | Mining and Smelting | | | Petroleum and Natural Gas | | | Manufacturing | | |
|---|---|---|---|---|---|---|---|---|---|
| | USDI | USDI as % USLTI | USDI as % TFLTI | USDI | USDI as % USLTI | USDI as % TFLTI | USDI | USDI as % USLTI | USDI as % TFLTI |
| 1926 | 141 | 85.5 | 64.4 | | | | 818 | 85.8 | 68.3 |
| 1930 | 191 | 81.6 | 61.4 | 141 | 96.0 | | 932 | 79.4 | 63.9 |
| 1933 | 211 | 80.8 | - | | | | 976 | 83.3 | - |
| 1939 | 198 | 78.9 | 60.2 | | | | 984 | 84.8 | 68.1 |
| 1945 | 215 | 77.6 | 60.4 | 141 | 92.7 | | 1191 | 86.2 | 69.1 |
| 1950 | 453 | 82.5 | 71.8 | | | | 2024 | 89.5 | 73.7 |
| 1960 | 1348 | 79.2 | 68.2 | 2885 | 90.6 | 77.4 | 4348 | 90.2 | 71.1 |
| 1963 | 1645 | 81.1 | 70.8 | 3182 | 87.8 | 73.5 | 5155 | 90.0 | 72.6 |
| 1969 | 2754 | 90.2 | 74.5 | 4968 | 84.8 | 69.3 | 8700 | 88.0 | 71.7 |
| 1972 | 2909 | 81.9 | 67.3 | 6037 | 88.5 | 70.7 | 10134 | 87.9 | 74.2 |
| 1975 | 2806 | 64.0 | 51.4 | 6916 | 73.9 | 63.8 | 13525 | 87.3 | 73.6 |
| 1978 | 3167 | 66.2 | 48.2 | 8694 | 76.1 | 60.4 | 17603 | 86.9 | 72.9 |

Derived from: CANADA'S INTERNATIONAL INVESTMENT POSITION, 1926-1977 (Government of Canada 1978b).
CANADA'S INTERNATIONAL INVESTMENT POSITION, 1978 (Government of Canada 1981b).

APPENDIX 2

AMERICAN PORTFOLIO INVESTMENT IN CANADA, SELECTED INDUSTRIES, SELECTED YEARS 1926-1978

| | USPIMAS | | USPIPAG | | USPIMFC | |
|---|---|---|---|---|---|---|
| | Mining & Smelting | AS % USLTI | Petroleum & Natural Gas | AS / USLTI | Manufacturing | AS / USLTI |
| 1926 | 24 | 14.5 | - | - | 135 | 14.2 |
| 1930 | 43 | 18.4 | 6 | 20.0 | 242 | 20.6 |
| 1933 | 50 | 19.2 | - | - | 196 | 15.7 |
| 1939 | 53 | 21.1 | 11 | 7.2 | 176 | 12.2 |
| 1945 | 62 | 22.4 | - | - | 191 | 13.8 |
| 1950 | 96 | 17.5 | 299 | 9.4 | - | - |
| 1960 | 353 | 20.8 | 486 | 12.2 | 470 | 9.8 |
| 1963 | 164 | 8.1 | 891 | 15.2 | 574 | 10.0 |
| 1969 | 300 | 9.8 | 787 | 11.5 | 1182 | 12.0 |
| 1972 | 642 | 18.1 | 1679 | 17.9 | 1390 | 12.1 |
| 1975 | 1579 | 36.0 | | | 1962 | 12.7 |
| 1978 | 1617 | 33.8 | 2786 | 23.8 | 2661 | 13.1 |

Derived from: CANADA'S INTERNATIONAL INVESTMENT POSITION, 1926-1977. (Government of Canada 1978b)
CANADA'S INTERNATIONAL INVESTMENT POSITION, 1978. (Government of Canada 1981b).

APPENDIX 3

AMERICAN LONG-TERM INVESTMENT IN CANADA AS A PROPORTION OF TOTAL LONG-TERM INVESTMENT. SELECTED INDUSTRIES. SELECTED YEARS 1926-1978

| | | Mining and Smelting | | Petroleum and Natural Gas | | | | Manufacturing | |
| | USLTI | TOTAL FLTIN MAS | USDI as % TOTAL FLTIMAS | USLTI | TOTAL FLTIN PAG | USDI as % TOTAL FLTIPAG | USLTI | TOTAL FLTIN MFC | USDI as % TOTAL FLTIMFC |
|---|---|---|---|---|---|---|---|---|---|
| 1926 | 165 | 219 | 75.3 | - | - | - | 953 | 1198 | 79.5 |
| 1930 | 234 | 311 | 75.2 | 147 | 150 | 98.0 | 1174 | 1459 | 80.5 |
| 1933 | 261 | - | - | - | - | - | 1172 | - | - |
| 1939 | 251 | 329 | 76.3 | - | - | - | 1160 | 1445 | 80.3 |
| 1945 | 277 | 356 | 77.8 | 152 | - | - | 1382 | 1723 | 80.2 |
| 1950 | 549 | 631 | 87.0 | - | - | - | 2261 | 2757 | 82.0 |
| 1960 | 1701 | 1977 | 86.0 | 3184 | 3727 | 85.4 | 4818 | 6145 | 78.8 |
| 1963 | 2028 | 2322 | 87.3 | 3975 | 4749 | 83.7 | 5729 | 7097 | 80.7 |
| 1969 | 3054 | 3695 | 82.7 | 5859 | 7165 | 81.8 | 9882 | 11639 | 81.9 |
| 1972 | 3551 | 4320 | 82.2 | 6824 | 8537 | 79.9 | 11524 | 13648 | 81.4 |
| 1975 | 4385 | 5462 | 80.3 | 9363 | 10842 | 86.4 | 15487 | 18367 | 81.3 |
| 1978 | 4784 | 6568 | 72.8 | 11680 | 14714 | 79.4 | 20264 | 24131 | 81.0 |

Derived from: CANADA'S INTERNATIONAL INVESTMENT POSITION. 1926-1977. (Government of Canada 1978a)
CANADA'S INTERNATIONAL INVESTMENT POSITION. 1978 (Government of Canada 1981b)

Levitt's Data Base for the Period Splits

Table 3: Foreign Capital Invested in Canada, Selected Year Ends
(Book value of assets in millions of Canadian dollars)

| | 1867 | 1900 | 1913 | 1926 | 1939 | 1946 | 1952 | 1960 | 1964 | 1965 |
|---|---|---|---|---|---|---|---|---|---|---|
| U.K. direct | | 65 | 200 | 336 | 366 | 335 | 544 | 1,535 | 1,944 | 2,013 |
| portfolio | 185 | 1,000 | 2,618 | 2,301 | 2,110 | 1,333 | 1,340 | 1,824 | 1,519 | 1,485 |
| Total | 185 | 1,065 | 2,818 | 2,637 | 2,476 | 1,668 | 1,884 | 3,359 | 3,463 | 3,498 |
| U.S. direct | 15 | -175 | 520 | 1,403 | 1,881 | 2,428 | 4,532 | 10,549 | 12,901 | 13,940 |
| portfolio | — | 30 | 315 | 1,793 | 2,270 | 2,729 | 3,466 | 6,169 | 8,542 | 9,365 |
| Total | 15 | 205 | 835 | 3,196 | 4,151 | 5,157 | 7,998 | 16,718 | 21,443 | 23,305 |
| Other direct | — | — | 50 | 43 | 49 | 63 | 144 | 788 | 1,044 | 1,255 |
| portfolio | — | 35 | 147 | 127 | 237 | 290 | 358 | 1,349 | 1,404 | 1,449 |
| Total | — | 35 | 197 | 170 | 286 | 353 | 502 | 2,137 | 2,448 | 2,704 |
| All direct | 15 | 240 | 770 | 1,782 | 2,296 | 2,826 | 5,220 | 12,872 | 15,889 | 17,208 |
| All portfolio | 185 | 1,065 | 3,080 | 4,221 | 4,617 | 4,352 | 5,164 | 9,342 | 11,465 | 12,299 |
| GRANDTOTAL | 200 | 1,305 | 3,850 | 6,003 | 6,913 | 7,178 | 10,384 | 22,214 | 27,354 | 29,507 |
| Direct as percentage of total foreign investment | 7.5 | 18.5 | 20.0 | 30.0 | 33.5 | 39.0 | 50.0 | 58.0 | 58.0 | 58.3 |
| U.S. as percentage of total foreign investment | 7.5 | 15.5 | 21.5 | 53.0 | 60.0 | 72.0 | 77.0 | 75.0 | 78.5 | 79.0 |

SOURCE Dominion Bureau of Statistics. The Canadian Balance of International Payments, 1963, 1964 and 1965 and International Investment Position, p. 126, and Quarterly Estimates of the Canadian Balance of International Payments, Third Quarter 1968, p. 17.

Appendix 4, continued

### Table 4: Changes in Canadian Long-Term Indebtedness, Select Periods

(in millions of Canadian dollars)

| | U.K. | U.S. (Direct) | U.S. (Portfolio) | Other | Total |
|---|---|---|---|---|---|
| *Formative years* 1867-1900 (33 years) | +880 | +160 | +30 | +35 | +1,105 |
| *Wheat economy* 1900-1913 (13 years) | +1,753 | +345 | +285 | +162 | +2,545 |
| *First World War* 1913-1926 (13 years) | -181 | +883 | +1,478 | -27 | +2,153 |
| *Breakdown of world economy* 1926-1939 (13 years) | -161 | +478 | +477 | +116 | +910 |
| *Second World War* 1939-1946 (7 years) | -808 | +547 | +459 | +67 | +265 |
| *Early postwar boom* 1946-1952 (6 years) | +216 | +2,104 | +737 | +149 | +3,208 |
| *Late postwar boom* 1952-1960 (8 years) | +1,475 | +6,017 | +2,703 | +1,635 | +11,830 |
| *The Sixties* 1960-1965 (5 years) | +139 | +3,391 | +3,196 | +567 | +7,293 |
| TOTAL INFLOW (1867-1964) | +3,498 | +13,940 | +9,365 | +2,704 | +29,507 |
| INFLOW 1952-1965 (13 YEARS) | +1,614 | +9,408 | +5,899 | +2,202 | +19,123 |

SOURCE: Derived from Table 3.

## Appendix 5

Time Series Plot of U.S. Direct Investment with USDICO with DUSDICO

TIME SERIES PLOT

USDI    PLOTTED WITH 1    USDICO    PLOTTED WITH 2    DUSDICO    PLOTTED WITH 3

-0.17E+04   0.23E+04   0.63E+04   0.10E+05   0.14E+05   0.18E+05   0.22E+05   0.26E+05   0.30E+05   0.34E+05   0.38E+05

-0.17E+04   0.23E+04   0.63E+04   0.10E+05   0.14E+05   0.18E+05   0.22E+05   0.26E+05   0.30E+05   0.34E+05   0.38E+05

1947
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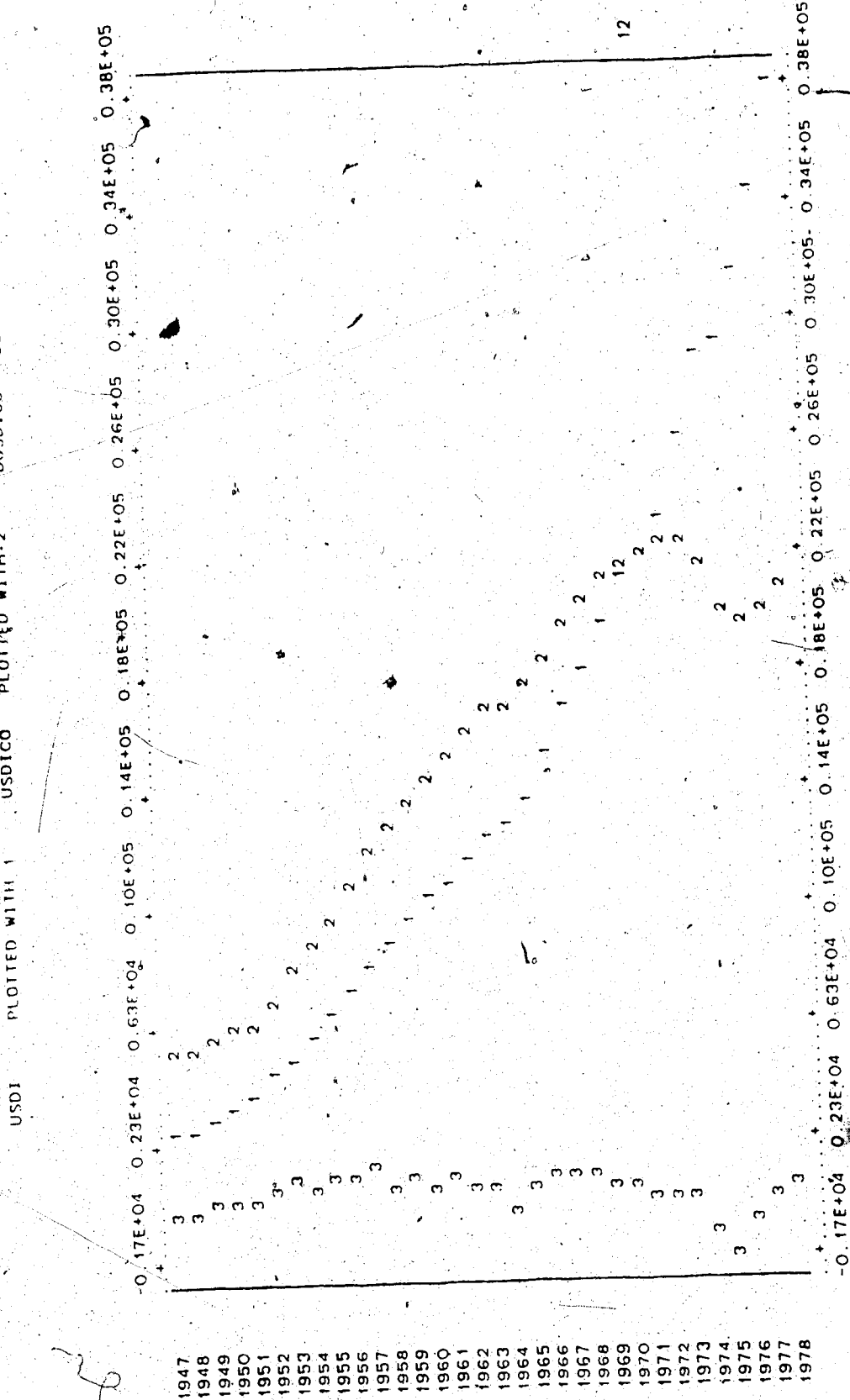
## Appendix 6

OLSQ Estimation of U.S. Direct Investment Effects on
GNP : D > 1963 (1947-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE: DGNPCO

SUM OF SQUARED RESIDUALS = 0.453905E+08
STANDARD ERROR OF THE REGRESSION = 1296.58
MEAN OF DEPENDENT VARIABLE = 3066.78
STANDARD DEVIATION = 1893.11
LOG OF LIKELIHOOD FUNCTION = -272.047
NUMBER OF OBSERVATIONS = 32
SUM OF RESIDUALS = 4289.22
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) = 1.7074

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4910.45 | 1058.69 | 4.63824 |
| DGFCFCO | 0.904873 | 0.298291 | 3.03352 |
| OUSDICO | 1.85167 | 0.434929 | 4.25740 |
| IUSDI | -1.10941 | 0.665038 | -1.66819 |
| IL9USDI | -2.06215 | 1.04295 | -1.97723 |

## Appendix 7

Plot of Actual, Fitted and Residual Values for OLSQ Estimation of U.S. Direct
Investment Effects on GNP : D > 1963 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1947 | 1184.9 | 648.8 | 535 |
| 1948 | 750.6 | 547.0 | 204 |
| 1949 | 1170. | 1005. | 165. |
| 1950 | 2341. | 1425. | 916. |
| 1951 | 1733. | 435.6 | 0.130E+04 |
| 1952 | 3124. | 2018. | 0.111E+04 |
| 1953 | 2018. | 2907. | -888 |
| 1954 | -497.2 | 1278. | -0.178E+04 |
| 1955 | 1621. | 2902. | -0.128E+04 |
| 1956 | 3637. | 3554. | 82.4 |
| 1957 | 1001. | 3181. | -0.218E+04 |
| 1958 | 746.7 | 830.0 | -83.3 |
| 1959 | 1912. | 1708. | 204 |
| 1960 | 1291. | 958.6 | 332 |
| 1961 | 4431. | 1622. | 0.281E+04 |
| 1962 | 3724. | 1893. | 0.183E+04 |
| 1963 | 2984. | 1968. | 0.102E+04 |
| 1964 | 4172. | 4269. | -97.1 |
| 1965 | 4353. | 5431. | -0.108E+04 |
| 1966 | 4860. | 4684. | 176 |
| 1967 | 2457. | 3914. | -0.146E+04 |
| 1968 | 4524. | 3334. | 0.119E+04 |
| 1969 | 4360. | 4723. | -363. |
| 1970 | 2233. | 3322. | -0.109E+04 |
| 1971 | 6024. | 5582. | 442 |
| 1972 | 5773. | 4519. | 0.125E+04 |
| 1973 | 7596. | 7587. | 8.78 |
| 1974 | 3861. | 4012. | -151. |
| 1975 | 1337. | 2722. | -0.138E+04 |
| 1976 | 6229. | 3299. | 0.293E+04 |
| 1977 | 2615. | 3020. | -405 |
| 1978 | 4575. | 4549. | 25.7 |

## Appendix 8. Cochrane-Orcutt Estimation of OLSQ Estimation of U.S.
"Direct Investment Effects on GNP: D > 1963 (1947-1978)

EQUATION 2
**********
FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE = DGNPCO
MEAN OF DEPENDENT VARIABLE = 3127.52
STANDARD DEVIATION = 1892.44

CONVERGENCE ACHIEVED AFTER 1 ITERATIONS

FINAL VALUE OF RHO = 0.211597E-01
STANDARD ERROR OF RHO = 0.176737
T-STATISTIC FOR RHO = 0.119951

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*******************************************

SUM OF SQUARED RESIDUALS = 0.332672E+08
STANDARD ERROR OF THE REGRESSION = 1110.01
MEAN OF DEPENDENT VARIABLE = 3063.53
STANDARD DEVIATION = 1877.58
R-SQUARED = 0.916140
ADJUSTED R-SQUARED = 0.906823
F-STATISTIC( 3, 27.) = 98.3222
NUMBER OF OBSERVATIONS = 31
SUM OF RESIDUALS = 4826.79
DURBIN-WATSON STATISTIC (ADJ FOR 0 GAPS) = 1.9968

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4465.03 | 837.325 | 5.33250 |
| DGFCFCO | 1.07251 | 0.233909 | 4.58516 |
| DUSDIGO | 0.975474 | 0.270769 | 3.60260 |
| IL9USDI | -1.88798 | 0.866400 | -2.17911 |

## Appendix 9

Plot of Actual, Fitted and Residual Values for OLSQ Estimation of U.S. Direct
Investment Effects on GNP: D>1963 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1947 | 1184 | 648.8 | 535 |
| 1948 | 750.6 | 547.0 | 204 |
| 1949 | 1170 | 1005 | 165 |
| 1950 | 2341 | 1425 | 916 |
| 1951 | 1733 | 435.6 | 0.130E+04 |
| 1952 | 3124 | 2018 | 0.111E+04 |
| 1953 | 2018 | 2907 | -888 |
| 1954 | -497.2 | 1278 | -0.178E+04 |
| 1955 | 1621 | 2902 | -0.128E+04 |
| 1956 | 3637 | 3554 | 82.4 |
| 1957 | 1001 | 3181 | -0.218E+04 |
| 1958 | 746.7 | 830.0 | -83.3 |
| 1959 | 1912 | 1708 | -204 |
| 1960 | 1291 | 958.6 | 332 |
| 1961 | 4431 | 1622 | -0.281E+04 |
| 1962 | 3724 | 1893 | 0.183E+04 |
| 1963 | 2984 | 1968 | 0.102E+04 |
| 1964 | 4172 | 4269 | -97.1 |
| 1965 | 4353 | 5431 | -0.108E+04 |
| 1966 | 4860 | 4684 | 176 |
| 1967 | 2457 | 3914 | -0.146E+04 |
| 1968 | 4524 | 3334 | 0.119E+04 |
| 1969 | 4360 | 4723 | -363 |
| 1970 | 2233 | 3322 | -0.109E+04 |
| 1971 | 6024 | 5582 | 442 |
| 1972 | 5773 | 4519 | 0.125E+04 |
| 1973 | 7596 | 7587 | 8.78 |
| 1974 | 3851 | 4012 | -151 |
| 1975 | 1337 | 2722 | -0.138E+04 |
| 1976 | 6229 | 3299 | 0.293E+04 |
| 1977 | 2615 | 3020 | -405 |
| 1978 | 4575 | 4549 | 25.7 |

## Appendix 10

### Cochrane-Orcutt Estimation of U.S. Direct Investment Effects on GNP : D > 1960 (1947-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3127.52
STANDARD DEVIATION = 1892.44

CONVERGENCE ACHIEVED AFTER 3 ITERATIONS

FINAL VALUE OF RHO = -0.881361E-01
STANDARD ERROR OF RHO = 0.178906
T-STATISTIC FOR RHO = -0.492638

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
* * * * * * * * * * * * * * * * * * * * * * * * *

SUM OF SQUARED RESIDUALS = 0.322289E+08
STANDARD ERROR OF THE REGRESSION = 1113.36
MEAN OF DEPENDENT VARIABLE = 3393.52
STANDARD DEVIATION = 1961.91
R-SQUARED = 0.931786
ADJUSTED R-SQUARED = 0.921292
F-STATISTIC( 4. , 26.) = 81.9588
NUMBER OF OBSERVATIONS = 31
SUM OF RESIDUALS = 3399.16
DURBIN-WATSON STATISTIC (ADJ. FOR 0 GAPS) = 2.0065

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4951.90 | 873.573 | |
| DGFCFCO | 0.918447 | 0.256164 | 3.58538 |
| DUSDICO | 1.28889 | 0.393134 | 3.27851 |
| IUSDI | -0.608455 | 0.575282 | -1.05766 |
| IL9USDI | -2.16871 | 0.871298 | -2.48905 |

## Appendix 11

Plot of Cochrane-Orcutt Estimation of U.S. Direct Investment on GNP: D > 1960 (1947-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES          PLOT OF RESIDUALS(0)



| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1948 | 750.6 | 580.9. | 170 |
| 1949 | 1170. | 822.7 | 31? |
| 1950 | 2341. | 1141 | 0.120E+04 |
| 1951 | 1733. | 259.2 | 0.147E+04 |
| 1952 | 3124 | 1500. | 0.162E+04 |
| 1953 | 2018. | 2183. | 165 |
| 1954 | -497.2 | 866.9 | -0.136E+04 |
| 1955 | 1621 | 2437. | 816 |
| 1956 | 3637. | 3110. | 527 |
| 1957 | 1001. | 2382. | -0.138E+04 |
| 1958 | 746.7 | 588.1 | 159 |
| 1959 | 1912. | 1140 | 772 |
| 1960 | 1291. | 488.0 | 803 |
| 1961 | 4431. | 3818. | 613 |
| 1962 | 3724. | 3571. | 153 |
| 1963 | 2984. | 4383. | -0.140E+04 |
| 1964 | 4172. | 4357. | 185 |
| 1965 | 4353. | 5357. | ?? |
| 1966 | 4860. | 4629. | 231 |
| 1967 | 2457. | 3795. | -0.134E+04 |
| 1968 | 4524. | 3320. | 0.120E+04 |
| 1969 | 4360. | 4542. | -182 |
| 1970 | 2233. | 3255. | -0.102E+04 |
| 1971 | 6024. | 5637. | 887 |
| 1972 | 5773. | 4449. | 0.132E+04 |
| 1973 | 7596. | 7550. | 46.9 |
| 1974 | 3861. | 4041 | -181 |
| 1975 | 1337. | 2789. | -0.145E+04 |
| 1976 | 6229. | 3398. | 0.283E+04 |
| 1977 | 2615. | 2666. | 51.7 |
| 1978 | 4575. | 4504. | 70.8 |

## Appendix 12

### Cochrane-Orcutt Estimation of Reduced Form Equation for U.S. Direct Investment
### Effects on GNP: D > (1947-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE:  DGNPCO
MEAN OF DEPENDENT VARIABLE =    3127.52
STANDARD DEVIATION =    1892.44

CONVERGENCE ACHIEVED AFTER    1 ITERATIONS

FINAL VALUE OF RHO =    0.211997E-01
STANDARD ERROR OF RHO = 0.176737
T-STATISTIC FOR RHO = 0.119951

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
**************************************************

SUM OF SQUARED RESIDUALS =   0.332672E+08
STANDARD ERROR OF THE REGRESSION =   1110.01
MEAN OF DEPENDENT VARIABLE =   3063.53
STANDARD DEVIATION =    1877.58
R-SQUARED =    0.916140
ADJUSTED R-SQUARED =   0.906823
F-STATISTIC(   3.,   27.) =     98.3222
NUMBER OF OBSERVATIONS =    31
SUM OF RESIDUALS =    4826.79
DURBIN-WATSON STATISTIC (ADJ. FOR  0.GAPS) =    1.9968

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4465.03 | 837.325 | 5.33250 |
| DGFCFCO | 1.07251 | 0.233909 | 4.58516 |
| DUSDICO | 0.975474 | 0.270769 | 3.60260 |
| IL9USDI | -1.88798 | 0.866400 | -2.17911 |

## Appendix 13

### Plot of Cochrane-Orcutt Estimation of Reduced Form Equation for U.S. Direct Investment Effects on GNP : D > 1960 (1947-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1948 | 750.6 | 778.3 | -27.8 |
| 1949 | 1170. | 808.1 | 362 |
| 1950 | 2341. | 1127. | 0.121E+04 |
| 1951 | 1733. | 377.5 | 0.136E+04 |
| 1952 | 3124. | 1538. | 0.159E+04 |
| 1953 | 2018. | 2170. | -151 |
| 1954 | -497.2 | 570.0 | -0.107E+04 |
| 1955 | 1621 | 2123. | -502 |
| 1956 | 3637 | 3047. | 590 |
| 1957 | 1001 | 2141. | -0.114E+04 |
| 1958 | 746.7 | 174.1 | 573 |
| 1959 | 1912. | 861.8 | 0.105E+04 |
| 1960 | 1291. | 293.4 | 997 |
| 1961 | 4431. | 3878. | 553 |
| 1962 | 3724. | 3753. | -28.8 |
| 1963 | 2984. | 4442. | -0.146E+04 |
| 1964 | 4172. | 4248. | -75.7 |
| 1965 | 4353. | 5688. | -0.134E+04 |
| 1966 | 4860. | 5020. | -160 |
| 1967 | 2457. | 3729. | -0.127E+04 |
| 1968 | 4524. | 3208. | -0.132E+04 |
| 1969 | 4360. | 4731. | -371 |
| 1970 | 2233. | 3157. | -924 |
| 1971 | 6024. | 5704. | 319 |
| 1972 | 5773. | 4427. | 0.135E+04 |
| 1973 | 7596. | 7594. | 1.86 |
| 1974 | 3861. | 3798. | 62.6 |
| 1975 | 1337. | 2307. | -970 |
| 1976 | 6229. | 3024. | 0.321E+04 |
| 1977 | 2615. | 2923. | -308 |
| 1978 | 457.5 | 4487. | 87.1 |

## Appendix 14

### Cochrane-Orcutt Estimation of U.S. Direct Investment Effects in Mining and Smelting on GNP : D > 1960 (1954-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE: DGNPCO
MEAN OF DEPENDENT VARIABLE = 3596.40
STANDARD DEVIATION = 1814.77

CONVERGENCE ACHIEVED AFTER 1 ITERATIONS

FINAL VALUE OF RHO = 0.454597E-01
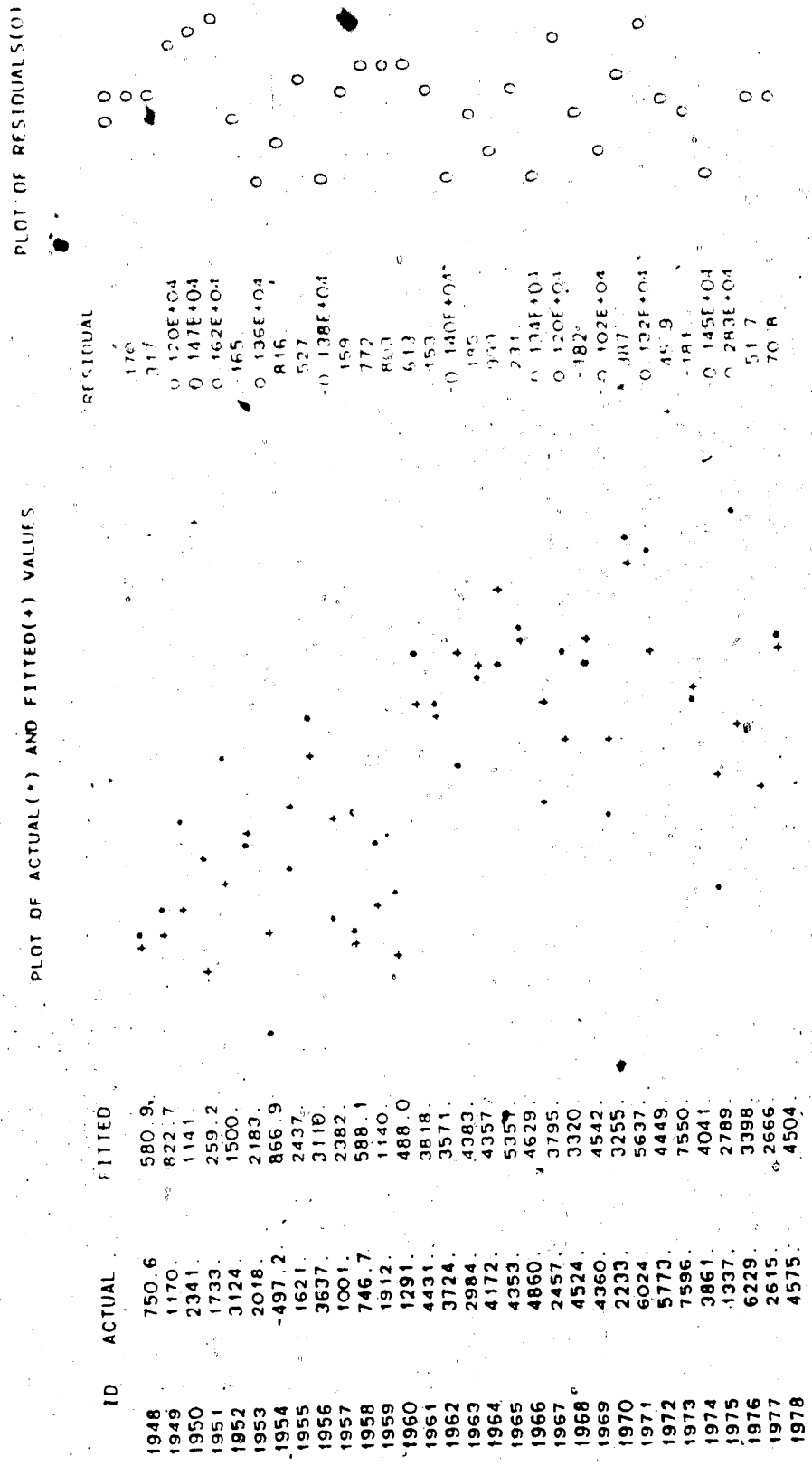STANDARD ERROR OF RHO = 0.199793
T-STATISTIC FOR RHO = 0.227534

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
**************************************

SUM OF SQUARED RESIDUALS = 0.307103E+08
STANDARD ERROR OF THE REGRESSION = 1271.35
MEAN OF DEPENDENT VARIABLE = 3442.52
STANDARD DEVIATION = 1792.98
R-SQUARED = 0.914304
ADJUSTED R-SQUARED = 0.896262
F-STATISTIC( 4, 19 ) = 42.6765
NUMBER OF OBSERVATIONS = 24
SUM OF RESIDUALS = 1521.44
DURBIN-WATSON STATISTIC (ADJ. FOR 0.GAPS) = 2.0156

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3593.10 | 492.519 | 7.29537 |
| DGFCFCO | 0.991040 | 0.296115 | 3.34681 |
| DADIMSCO | 6.66689 | 3.40740 | 1.95659 |
| IADIMS | -3.66389 | 3.75868 | -0.974783 |
| IL9ADIMS | -1.63079 | 1.56045 | -1.04508 |

## Appendix 15

### Plot of Cochrane-Orcutt Estimation of U.S. Direct Investment Effects in Mining and Smelting on GNP : D > 1960 (1954-1978)

PLOT OF ACTUAL(·) AND FITTED(+) VALUES          PLOT OF RESIDUALS(O)

| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1955 | 1621. | 2275. | -654 |
| 1956 | 3637. | 2406. | 0.123E+04 |
| 1957 | 1001. | 1740. | -73 |
| 1958 | 746.7 | -0.3439 | 747 |
| 1959 | 1912. | 842.9 | 0.107E+04 |
| 1960 | 1291. | 1395. | -104 |
| 1961 | 4431. | 3835. | 595 |
| 1962 | 3724. | 3198. | 526 |
| 1963 | 2984. | 4159. | -0.117E+04 |
| 1964 | 4172. | 5304. | -0.113E+04 |
| 1965 | 4353. | 5708. | -0.136E+04 |
| 1966 | 4860. | 5761. | -901 |
| 1967 | 2457. | 3505. | -0.105E+04 |
| 1968 | 4524. | 3812. | 712 |
| 1969 | 4360. | 3935. | 425 |
| 1970 | 2233. | 3281. | -0.105E+04 |
| 1971 | 6024. | 5805. | 219 |
| 1972 | 5773. | 3841. | 0.193E+04 |
| 1973 | 7596. | 5806. | 0.179E+04 |
| 1974 | 3861. | 4623. | -762 |
| 1975 | 1337. | 2729. | -0.139E+04 |
| 1976 | 6229. | 3540. | 0.269E+04 |
| 1977 | 2615. | 3354. | -739 |
| 1978 | 4575. | 3938. | 637 |

## Appendix 16

Cochrane-Orcutt Estimation of U.S. Direct Investment Effects in Petroleum and Natural
Gas on GNP : D > 1960 (1954-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE:  DGNPCO
MEAN OF DEPENDENT VARIABLE =   3596.40
STANDARD DEVIATION =   1814.77

CONVERGENCE ACHIEVED AFTER   3 ITERATIONS

FINAL VALUE OF RHO =   -0.168316
STANDARD ERROR OF RHO =  0.201212
T-STATISTIC FOR RHO =  -0.836509

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

SUM OF SQUARED RESIDUALS =   0.286378E+08
STANDARD ERROR OF THE REGRESSION =   1227.70
MEAN OF DEPENDENT VARIABLE =   4166.16
STANDARD DEVIATION =   1930.28
R-SQUARED =   0.942983
ADJUSTED R-SQUARED =   0.930979
F-STATISTIC( 4,  19 ) =  66.1540
NUMBER OF OBSERVATIONS =   24
SUM OF RESIDUALS =  2351.92
DURBIN-WATSON STATISTIC (ADJ. FOR 0.GAPS) =   2.0451

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3710.97 | 440.418 | 8.42601 |
| DGFCFCO | 0.822422 | 0.287389 | 2.86171 |
| DADIPGCO | 2.84603 | 1.31863 | 2.15833 |
| IADIPG | -0.185829 | 1.81590 | -0.102335 |
| IL9ADIPG | -1.27495 | 0.764122 | -1.66852 |

## Appendix 17

Plot of Cochrane-Orcutt Estimation of U.S. Direct Investment Effects in Petroleum and Natural Gas on GNP: $\hat{D} > 1960$ (1954-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(O)



| ID | ACTUAL | FITTED | RESIDUAL |
|----|--------|--------|----------|
| 1955 | 1621. | 2303. | -683. |
| 1956 | 3637. | 2901. | 736. |
| 1957 | 1001. | 1981. | -980. |
| 1958 | 746.7 | 605.6 | 141. |
| 1959 | 1912. | 619.3 | 0.129E+04 |
| 1960 | 1291. | -479.5 | 0.177E+04 |
| 1961 | 4431. | 3915. | 516. |
| 1962 | 3724. | 2459. | 0.127E+04 |
| 1963 | 2984. | 4201. | -0.122E+04 |
| 1964 | 4172. | 4736. | -564. |
| 1965 | 4353. | 4964. | -611. |
| 1966 | 4860. | 5524. | -664. |
| 1967 | 2457. | 3344. | -888. |
| 1968 | 4524. | 3711. | 813. |
| 1969 | 4360. | 4657. | -297. |
| 1970 | 2233. | 3737. | -0.150E+04 |
| 1971 | 6024. | 6267. | -243. |
| 1972 | 5773. | 4375. | 0.140E+04 |
| 1973 | 7596. | 5868. | 0.173E+04 |
| 1974 | 3861. | 3504. | 356. |
| 1975 | 1337. | 2670. | -0.133E+04 |
| 1976 | 6229. | 3984. | 0.224E+04 |
| 1977 | 2615. | 3853. | -0.124E+04 |
| 1978 | 4575. | 4263. | 312. |

## Appendix 18

Cochrane-Orcutt Estimation of U.S. Long-Term Investment Effects on GNP: D > 1960 (1947-1978)

FIRST-ORDER SERIAL CORRELATION OF THE ERROR
COCHRANE-ORCUTT ITERATIVE TECHNIQUE

DEPENDENT VARIABLE:    DGNPCO
MEAN OF DEPENDENT VARIABLE =    3127.52
STANDARD DEVIATION =    1892.44

CONVERGENCE ACHIEVED AFTER    1 ITERATIONS

FINAL VALUE OF RHO =    0.116007
STANDARD ERROR OF RHO =    0.175583
T-STATISTIC FOR RHO =    0.660696

STATISTICS BASED ON RHO-TRANSFORMED VARIABLES
*******************************************

SUM OF SQUARED RESIDUALS =    0.382048E+08
STANDARD ERROR OF THE REGRESSION =    1212.19
MEAN OF DEPENDENT VARIABLE =    2777.39
STANDARD DEVIATION =    1820.63
R-SQUARED =    0.887159
ADJUSTED R-SQUARED =    0.869799
F-STATISTIC(    4 ,    26.) =    47.1722
NUMBER OF OBSERVATIONS =    31.
SUM OF RESIDUALS =    3600.21
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) =    1.9946

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 4620.23 | 1335.38 | 3.45987 |
| DGFCFCO | 1.01326 | 0.296397 | 3.41857 |
| DUSLTICO | 0.855069 | 0.351757 | 2.43085 |
| IUSLTI | -0.359731 | 0.554868 | -0.648317 |
| IL9USLTI | -1.37095 | 0.839754 | -1.63256 |

## Appendix 19

## Plot of Cochrane-Orcutt Estimation of U.S. Long-Term Investment Effects on GNP:D > 1960
### (1947-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(0)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1948 | 750.6 | 458.3 | 282 |
| 1949 | 1170. | 678.9 | 491 |
| 1950 | 2341. | 1469 | 872 |
| 1951 | 1733. | 272.7 | 0.146E+04 |
| 1952 | 3124. | 1499. | 0.163E+04 |
| 1953 | 2018. | 2428 | -110 |
| 1954 | -497.2 | -698.5 | -0.120E+04 |
| 1955 | 1621 | 1632 | -11.2 |
| 1956 | 3637. | 3438. | 199 |
| 1957 | 1001. | 2293. | -0.129E+04 |
| 1958 | 746.7 | 651.3 | 95.4 |
| 1959 | 1912. | 1225 | 687 |
| 1960 | 1291. | 501.4 | 789 |
| 1961 | 4431. | 4492 | -60.7 |
| 1962 | 3724. | 3848. | -124 |
| 1963 | 2984. | 4528. | -0.154E+04 |
| 1964 | 4172. | 5496. | -0.132E+04 |
| 1965 | 4353. | 4902. | -549 |
| 1966 | 4860. | 4868. | -8.22 |
| 1967 | 2457. | 3005. | -548 |
| 1968 | 4524. | 2884. | 0.164E+04 |
| 1969 | 4360. | 4986. | -625 |
| 1970 | 2233. | 2456. | -223 |
| 1971 | 6024. | 5297. | 727 |
| 1972 | 5773. | 4215. | 0.156E+04 |
| 1973 | 7596. | 6322 | 0.127E+04 |
| 1974 | 3861. | 3744 | 116 |
| 1975 | 1337. | 4308. | -0.297E+04 |
| 1976 | 6229. | 3683. | 0.255E+04 |
| 1977 | 2615. | 2826. | -212 |
| 1978 | 4575. | 4238. | 337 |

## Appendix 20

### OLSQ Estimation of U.S. Portfolio Investment Effects on GNP : D > 1960 (1947-1978)
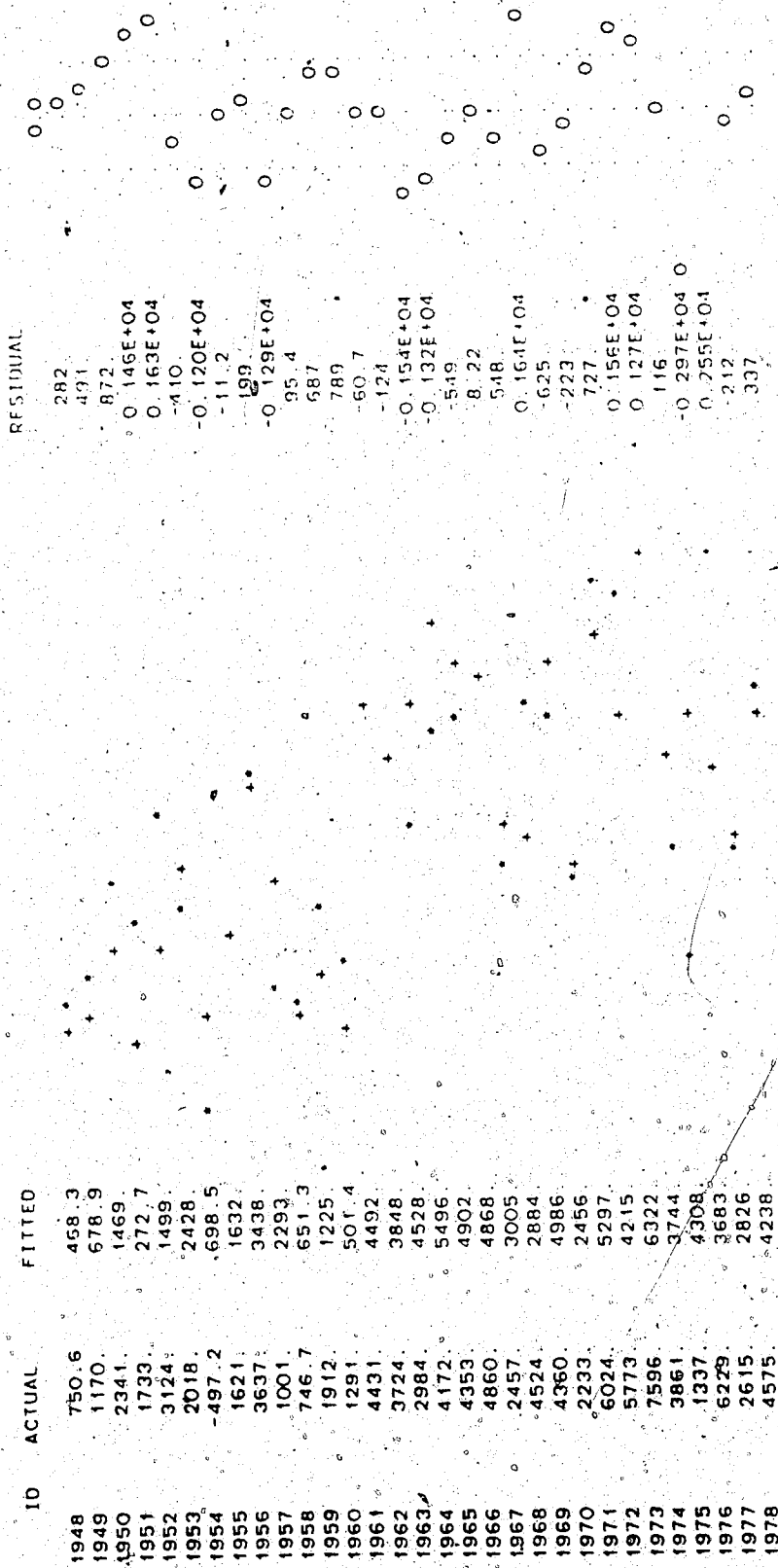
ORDINARY LEAST SQUARES

DEPENDENT VARIABLE: DGNPCO

SUM OF SQUARED RESIDUALS = 0.515663E+08
STANDARD ERROR OF THE REGRESSION = 1381.98
MEAN OF DEPENDENT VARIABLE = 3066.78
STANDARD DEVIATION = 1893.11
LOG OF LIKELIHOOD FUNCTION = -274.088
NUMBER OF OBSERVATIONS = 32
SUM OF RESIDUALS = 11027.6
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) = 1.6453

| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3241.13 | 713.467 | 4.54278 |
| DGFCFCO | 1.16014 | 0.279895 | 4.14492 |
| DUSPICO | 1.35857 | 0.884692 | 1.53564 |
| IUSPI | -1.63476 | 0.998575 | -1.63710 |
| IL9USPI | 0.118252 | 1.26624 | 0.933877E-01 |

# Appendix 21

## Plot of OLSQ Estimation of U.S. Portfolio Investment Effects on GNP : D > 1960
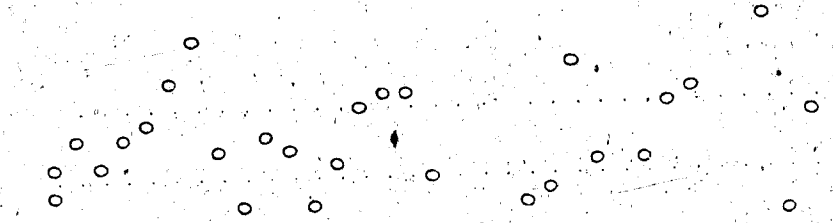### (1947-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES

PLOT OF RESIDUALS(⊖)

| ID | ACTUAL | FITTED | RESIDUAL |
|------|--------|--------|----------|
| 1947 | 1184. | 367.8 | 816 |
| 1948 | 750.6 | 399.2 | 351 |
| 1949 | 1170 | 373.0 | 797 |
| 1950 | 2341. | 1283. | 0.106E+04 |
| 1951 | 1733. | 22.17 | 0.171E+04 |
| 1952 | 3124. | 674.8 | 0.245E+04 |
| 1953 | 2018. | 1591. | 427 |
| 1954 | -497.2 | 86.71 | -584 |
| 1955 | 1621 | 777.8 | 843 |
| 1956 | 3637. | 3120. | 517 |
| 1957 | 1001. | 1429. | -428 |
| 1958 | 746.7 | 496.5 | 250 |
| 1959 | 1912. | 608.6 | 0.130E+04 |
| 1960 | 1291. | -226.6 | 0.152E+04 |
| 1961 | 4431. | 2909. | 0.152E+04 |
| 1962 | 3724. | 3753. | -29.3 |
| 1963 | 2984. | 3885. | -900 |
| 1964 | 4172. | 5226. | -0.105E+04 |
| 1965 | 4353. | 5534. | -0.118E+04 |
| 1966 | 4860. | 5405. | -545 |
| 1967 | 2457. | 2736. | -278 |
| 1968 | 4524. | 2632. | 0.189E+04 |
| 1969 | 4360. | 4071. | 289 |
| 1970 | 2233. | 3356. | -0.112E+04 |
| 1971 | 6024. | 5872. | 152 |
| 1972 | 5773. | 4546. | 0.123E+04 |
| 1973 | 7596. | 6029. | 0.157E+04 |
| 1974 | 3861. | 5339. | -0.148E+04 |
| 1975 | 1337. | 4256. | -0.292E+04 |
| 1976 | 6229. | 3497. | 0.273E+04 |
| 1977 | 2615. | 3345. | -730. |
| 1978 | 4575. | 3713. | 861 |

## Appendix 22

OLSQ Estimation of Net Capital Flow of U.S. Direct Investment Effects on GNP (Long-lag = 0):
D > 1960 (1948-1978)

ORDINARY LEAST SQUARES

DEPENDENT VARIABLE:   DGNPCO

SUM OF SQUARED RESIDUALS = 0.360569E+08
STANDARD ERROR OF THE REGRESSION = 1155.61
MEAN OF DEPENDENT VARIABLE = 3066.78
STANDARD DEVIATION = 1893.11
LOG OF LIKELIHOOD FUNCTION = -268.364
NUMBER OF OBSERVATIONS = 32
SUM OF RESIDUALS = 9296.21
DURBIN-WATSON STATISTIC (ADJ. FOR O.GAPS) = 1.3720

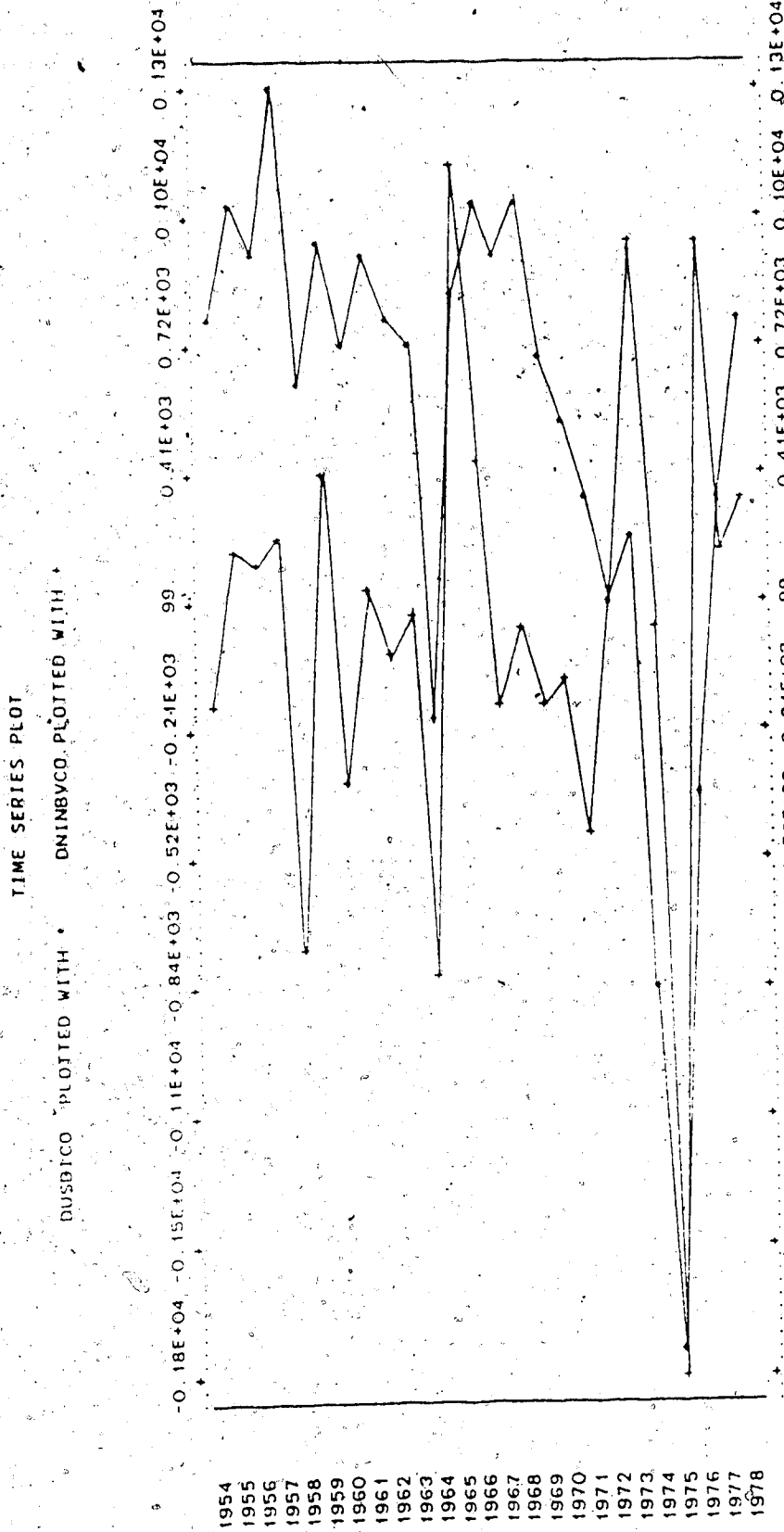| RIGHT-HAND VARIABLE | ESTIMATED COEFFICIENT | STANDARD ERROR | T-STATISTIC |
|---|---|---|---|
| D | 3055.07 | 370.742 | 8.24040 |
| DGFCFCO | 1.16524 | 0.256753 | 4.53877 |
| DNCAFLCO | 6.75336 | 2.96729 | 2.27594 |
| INCAFL | -9.14616 | 3.05170 | -2.99707 |
| IL9NCAFL | -3.14058 | 1.63994 | -1.91509 |

Appendix 23

Plot of OLSQ Estimation of Net Capital Flow of U.S. Direct Investment Effects on GNP
(Long-lag = 0): D > 1960 (1948-1978)

PLOT OF ACTUAL(*) AND FITTED(+) VALUES          PLOT OF RESIDUALS(Q)

| ID | ACTUAL | FITTED | RESIDUAL |
|---|---|---|---|
| 1947 | 1184. | 1572. | -388 |
| 1948 | 750.6 | 897.8 | -147 |
| 1949 | 1170. | 803.8 | 366 |
| 1950 | 2341. | 2151. | 190 |
| 1951 | 1733. | 805.2 | 928 |
| 1952 | 3124. | 1240. | 0.188E+04 |
| 1953 | 2018. | 1548. | 470 |
| 1954 | -497.2 | -799.2 | 302 |
| 1955 | 1621. | 1311. | 310 |
| 1956 | 3637. | 3684. | -47.2 |
| 1957 | 1001. | 182.2 | 819 |
| 1958 | 746.7 | -1482. | 0.223E+04 |
| 1959 | 1912. | 1021. | 890 |
| 1960 | 1291. | -199.5 | 0.149E+04 |
| 1961 | 4431. | 3017. | 0.141E+04 |
| 1962 | 3724. | 3624. | 100 |
| 1963 | 2984. | 4482. | -0.150E+04 |
| 1964 | 4172. | 5283. | -0.111E+04 |
| 1965 | 4353. | 4102. | 251 |
| 1966 | 4860. | 4831. | 28.4 |
| 1967 | 2457. | 3535. | -0.108E+04 |
| 1968 | 4524. | 2678. | 0.185E+04 |
| 1969 | 4360. | 3421. | 939 |
| 1970 | 2233. | 3361. | -0.113E+04 |
| 1971 | 6024. | 5931. | 93.2 |
| 1972 | 5773. | 5279. | 502 |
| 1973 | 7596. | 6003. | 0.159E+04 |
| 1974 | 3861. | 3802. | 58.8 |
| 1975 | 1337. | 3948. | -0.261E+04 |
| 1976 | 6229. | 6241. | -11.7 |
| 1977 | 2615. | 2595. | 19.5 |
| 1978 | 4575. | 3983. | 592 |

Appendix 24

Time Series Plot of DUSDICO with NINBVCO

TIME SERIES PLOT

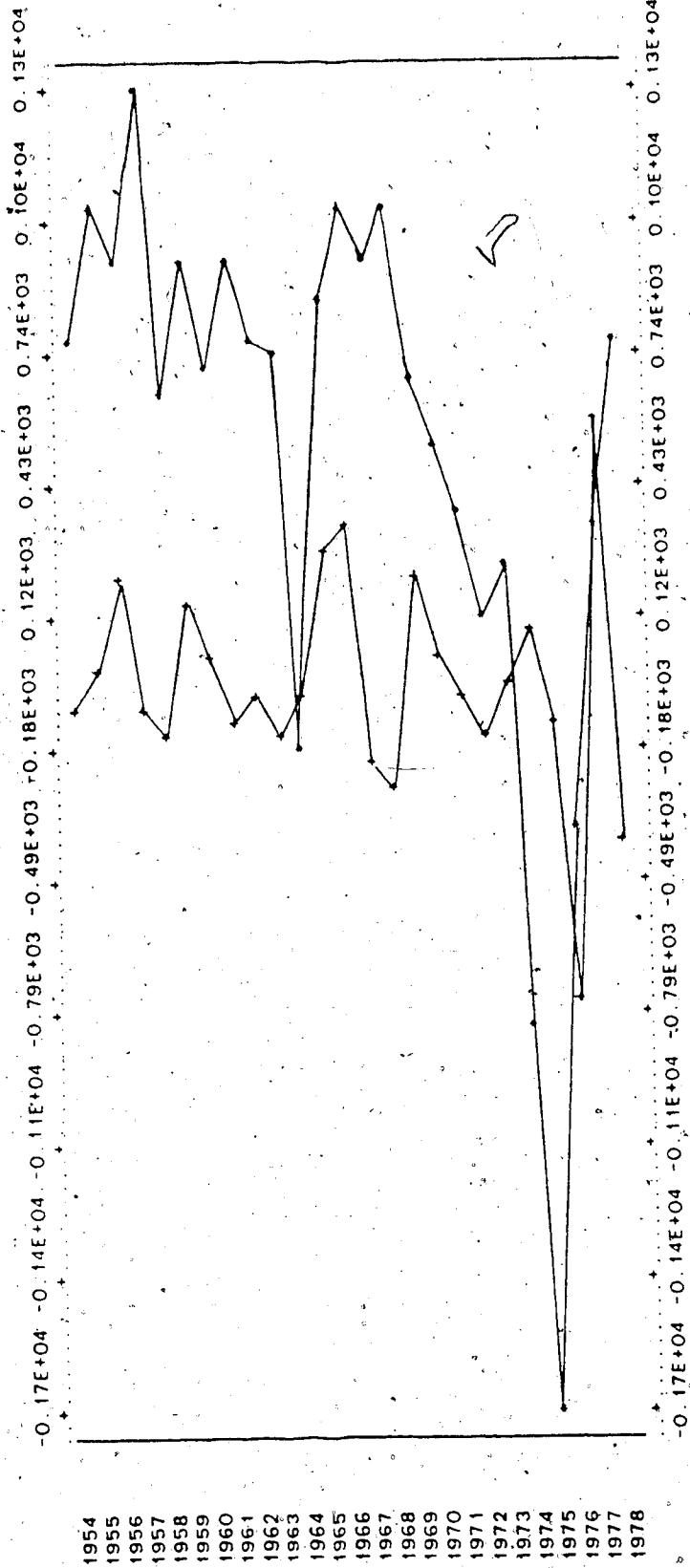DUSDICO PLOTTED WITH •     DNINBVCO PLOTTED WITH +

Appendix 25

Time Series Plot of DUSDICO with DNCAFLCO

TIME SERIES PLOT

DUSDICO PLOTTED WITH •     DNCAFLCO PLOTTED WITH +

APPENDIX 26

U.S. MISCELLANEOUS INVESTMENT (CAN. $ MILLIONS) AND PERCENTAGES

| | |----------Depression----------| |WW II| |BOOM I| |Boom II| |----------Mature Dependency----------| |
| | 1926 | 1930 | 1933 | 1939 | 1946 | 1952 | 1960 | 1965 | 1969 | 1972 | 1975 | 1978 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US Miscellaneous Investment (USMI) | 85 | 94 | 90 | 105 | 140 | 249 | 653 | 1355 | 1764 | 2275 | 2467 | 3182 |
| USMI as % US Long-Term Investment | 2.7 | 2.0 | 2.0 | 2.5 | 2.7 | 3.1 | 3.9 | 5.8 | 5.3 | 5.1 | 5.1 | 5.1 |
| Total Foreign Miscellaneous Investment | 260 | 295 | 270 | 285 | 282 | 447 | 1428 | 2171 | 2712 | 3285 | 3759 | 6350 |
| USMI as % Total Foreign Misc. Investment | 32.7 | 31.8 | 33.3 | 36.8 | 49.6 | 55.7 | 45.7 | 62.4 | 65.0 | 65.6 | 50.0 | |
| USMI as % Total Foreign Long-Term Investment | 1.4 | 1.2 | 1.2 | 1.5 | 1.9 | 2.4 | 2.9 | 4.6 | 4.2 | 4.5 | 3.6 | 3 |

Derived from: CANADA'S INTERNATIONAL INVESTMENT POSITION, 1926-1977 (Government of Canada 1978b)
CANADA'S INTERNATIONAL INVESTMENT POSITION, 1978 (Government of Canada 1981b)

# Appendix 27

## Some Guiding Principles of Good Corporate Behaviour

Foreign-controlled businesses in Canada are expected to operate in ways that will bring significant benefit to Canada. To this end they should pursue policies that will foster their independence in decision-making, their innovative and other entrepreneurial capabilities, their efficiency, and their identification with Canada and the aspirations of the Canadian people.

Within these general objectives, the following principles of good corporate behavior are recommended by the Canadian government. Foreign-controlled firms in Canada should:

1. Pursue a high degree of autonomy in the exercise of decision-making and risk-taking functions, including innovative activity and the marketing of any resulting new products.

2. Develop as an integral part of the Canadian operation an autonomous capability for technological innovation, including research, development, engineering, industrial design and preproduction activities, and for production, marketing, purchasing and accounting.

3. Retain in Canada a sufficient share of earnings to give strong financial support to the growth and entrepreneurial potential of the Canadian operation, having in mind a fair return to shareholders on capital invested.

4. Strive for a full international mandate for innovation and market development,

when it will enable the Canadian company to improve its efficiency by specialization of productive operations.

5. Aggressively pursue and develop market opportunities throughout international markets as well as in Canada.

6. Extend the processing in Canada of natural resource products to the maximum extent feasible on an economic basis.

7. Search out and develop economic sources of supply in Canada for domestically produced goods and for professional and other services.

8. Foster a Canadian outlook within management, as well as enlarged career opportunities within Canada, by promoting Canadians to senior and middle management positions, by assisting this process with an effective management training program, and by including a majority of Canadians on boards of directors of all Canadian companies, in accordance with the spirit of federal legislative initiatives.

9. Create a financial structure that provides opportunity for substantial equity participation in the Canadian enterprise by the Canadian public.

10. Pursue a pricing policy designed to assure a fair and reasonable return to the company and to Canada for all goods and services sold abroad.

# Appendix 27, continued

including sales to parent companies and
other affiliates. In respect of purchases
from parent companies and affiliates
abroad, pursue a pricing policy designed
to assure that the terms are at least as
favourable as those offered by other
suppliers

11. Regularly publish information on the
operations and financial position of the
firm

12. Give appropriate support to recognized
national objectives and established
government programs, while resisting
any direct or indirect pressure from
foreign governments or associated
companies to act in a contrary manner

13. Participate in Canadian social and
cultural life and support those
institutions that are concerned with the
intellectual, social, and cultural
advancement of the Canadian
community.

14. Endeavour to ensure that access to
foreign resources, including technology
and know-how, is not associated with
terms and conditions that restrain the
firm from observing these principles

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## Measures to Increase Benefits and Reduce Costs of Foreign Direct Investment

### Guidelines of Good Corporate Citizenship

A further response to growing foreign control was the issuance in 1966 of guiding principles of good corporate behaviour for Canadian subsidiaries of foreign firms. These were announced by the then Minister of Trade and Commerce, the Honourable Robert Winters.

The guidelines provide as follows:

(a) pursuit of sound growth and full realization of the company's productive potential, thereby sharing the national objective of full and effective use of the nation's resources;

(b) realization of maximum competitiveness through the most effective use of the company's own resources, recognizing the desirability of progressively achieving appropriate specialization of productive operations within the internationally affiliated group of companies;

(c) maximum development of market opportunities in other countries as well as in Canada;

(d) where applicable, to extend processing of natural resource products to the extent practicable on an economic basis;

(e) pursuit of a pricing policy designed to assure a fair and reasonable return to the company and to Canada for all goods and services sold abroad, including sales to the parent company and other foreign affiliates;

(f) in matters of procurement, to search out and develop economic sources of supply in Canada;

(g) to develop as an integral part of the Canadian operation wherever practicable, the technological, research and design capability necessary to enable the company to pursue appropriate product development programmes so as to take full advantage of market opportunities domestically and abroad;

(h) retention of a sufficient share of earnings to give appropriate financial support to the growth requirements of the Canadian operation, having in mind a fair return to shareholders on capital invested;

(i) to work toward a Canadian outlook within management, through purposeful training programmes, promotion of qualified Canadian personnel and inclusion of a major proportion of Canadian citizens on its board of directors;

(j) to have the objective of a financial structure which provides opportunity for equity participation in the Canadian enterprise by the Canadian public;

(k) periodically to publish information on the financial position and operations of the company; and

(1) to give appropriate attention and support to recognized national
objectives and established government programmes designed to fur-
ther Canada's economic development and to encourage and support
Canadian institutions directed toward the intellectual, social and
cultural advancement of the community.

As the guidelines are not in any way compulsory, they constitute only
a limited form of moral suasion.

Following Mr. Winters' letter to the 3,500 active foreign subsidiaries
(designated within this study as the "reporting subsidiaries"), the co-operation
of the larger subsidiaries was requested in providing information that would
enable a continuing assessment to be made of their behaviour. About 400
respondents representing nearly 1,000 companies were asked to reply annually
to a questionnaire from the Department of Industry, Trade and Commerce
which would enable the government to develop a clear understanding of quan-
titative and qualitative impact of subsidiaries on the Canadian economy.

While most subsidiaries have been willing to cooperate in this voluntary
programme, a number have not. Moreover, since the survey does not apply
also to Canadian controlled firms, no yardstick exists against which the per-
formance of the foreign controlled firm may be measured.

No evidence is available to suggest that these voluntary guidelines have
had a major impact upon the behaviour of foreign controlled subsidiaries.
They do not have the force of law. Firms which respond to them may find
that they are entering into practices which their competitors are not prepared
to make.